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## Harbeth Monitor 40 Speakers



Speakers designed by direct comparison to live music have a kind of truthfulness usually denied to those designed just to sound “real” in some general sense. The direct comparison forces the issue of truthfulness to the source. Over the years, the BBC and its offshoots have led the way in this sort of design work, in pursuit of the truthful replication of reality. The idea is not unique to the BBC: the Soundwaves (review, Issue 97) were also designed

that way, for instance. But the BBC tradition is long, and a would-be BBC monitor that did not sound like the real thing would not get very far.

The BBC research department is no longer, having fallen victim to government chopping that also afflicts us here. But Harbeth is a company very much in the BBC tradition.<sup>1</sup> It was founded by Dudley Harwood from the BBC (Elizabeth is Harwood’s wife’s name, hence Harbeth). Its new owner/chief designer Alan Shaw is similarly committed to the concept of comparison with the live event and to making the most accurate, truthful monitor speakers. In his

demonstrations of the Monitor 40s, Shaw plays a recording of his own speaking voice and then speaks for direct comparison. This is a test few speakers survive well, and few designers would hazard in public. Truth is what the Monitor 40s are about.

The phrase “monitor speaker” can have a certain nasty connotation in the US, calling to mind a screeching top for detail, a sacrifice of all else to playing loud – these hark back to the bad old days when “pro audio” was not a phrase always attached to musical sensibility. Times have changed, however. And those bad thoughts never applied to the BBC tradition. The Monitor 40 is accurate in the real sense of having the warmth, beauty, purity, clarity, coherence, balance, and most of all, the tonal reality of live music.

### The Tonal Truth

The innate rightness and truthfulness of the Monitor 40s come to the listener as a unity. But the temptation is irresistible to follow the usual pattern of describing the different frequency ranges and the associated drivers, integrated though they are. From the top down: The tweeter is the SEAS “Excel” soft dome. This is outstandingly smooth and sweet sounding. Designer Shaw tells me that the response is even smoother if one removes the supplied protective screen – nervous time, since the screen is glued on and the tweeter vulnerable and expensive. I haven’t worked up my nerve for this, but give me time. Meanwhile, with the screen still on, the tweeter is already a contender for all-time top hon-

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<sup>1</sup> In the Sixties the BBC decided it would be a good idea to know what their broadcasts actually sounded like, so they started a research program to produce designs for speakers that would reproduce audio signals truthfully. Much of the research involved driver materials and a detailed investigation of cabinet behavior, radiation patterns, etc. This was the largest, most comprehensive investigation of speaker design to that time, and it hasn’t perhaps been equaled since. The BBC had no manufacturing facilities, so their designs were licensed to independent manufacturers, and given the LS designation. The most famous in the US was the LS 3/5A, which started the “mini-monitor” vogue in the Seventies.

ors. It is one of the few high-frequency drivers that lets you hear the highs without making you feel that the driver is adding dirt to the music. Beautiful is the word that comes to mind, a new level of top-end excellence, one is tempted to say.

And the tweeter is superbly integrated with the midrange. As one of my audiophile friends said, "There are highs, but there is no [separate] tweeter!"

The midrange driver is the product of the research program into materials and driver construction carried out by Harbeth with British government sponsorship (cf. my review of the Harbeth Compact 7, Issue 110). This driver is exceptionally, even unprecedentedly free of materials-based colorations. It has essentially no character – not paper, not plastic, not metal, not anything, in effect. And it is superbly articulate. The BBC style monitors have always been close to neutral, that is, smooth, and with flat frequency response. But the Bextrene and polypropylene of yore suffered from a loss of articulation at the top of their operating ranges. The Monitor 40 midrange driver (mounted in its own internal enclosure for isolation from the effects of the woofer) does not have this problem. In particular, this gives stunning realism to speech and the singing voice.

The transition from midrange to woofer is seamless, and low voices and instruments are well served. The Monitor 40s impart none of the artificially lean character to bass and baritone that are often dire problems of electrostatics. The anechoic bass roll-off of the ported box begins around 45 Hz, which might seem a bit high for a largish box (17 X-15 x 30 inches). But the effect is of bass that is well controlled and not working the woofer hard enough to cloud the lower midrange through induced distortion. With room lift factored in, the bass is fully adequate for ordinary orchestral music. For extreme bass – pipe organ, soundtracks – a combination with a subwoofer would give good results.

Nowadays, with increasing driver quality and computer-aided crossover design, we almost take for granted flatness and neutrality in terms of general balance. But in actuality, most of these nominally flat, neutral designs have considerable levels of residual coloration. They sound balanced, but they do not sound really right in comparison with actual instruments. The Monitor 40s come unusually, almost uncannily, close to reality in this sense, with a very smooth balance and a nearly total absence of resonant colorations.

### **Out of the Box: Cabinet Radiation, Diffraction, and Space**

The Monitor 40s are carefully designed to control the cabinet's radiation of sound, but not eliminate it. The cabinet sound is a deliberate part of the intended sound picture. Shaw likes to compare it to a musical instrument, which might seem like a flight of fancy except that it is true. He was inspired, it seems, by looking at the construction of a grand piano. In any case, the Monitor 40s have a natural warmth and fullness that is simultaneously accurate and musically gratifying in a way that often escapes speakers with brute-force rigid cabinet designs. The overall balance is slightly sloped downward from bottom to top, as it should be, in my view. The Monitor 40s are monitors,

but they are not nasty monitors. The woods are full of speakers that claim to be flat but are actually a few dB down in the lower mids and upper bass, have an exposed midrange, a depressed presence, and an exaggerated top end – a kind of "hi-fi" that I find to be without accuracy. Fortunately the Monitor 40s are utterly unlike that musically demented concept.

The speakers incorporate Harbeth's "frameless frame" invention, an inserted grille that minimizes diffraction. The grilles are removable but should stay on. The low diffraction and controlled cabinet behavior make the Monitor 40s disappear acoustically to an extent that is surprising in a large box speaker. Playing them with other speakers also in sight usually elicits from the question: "Which speakers are playing?" With centered sources, one really cannot "hear out" the speakers at all.

The Monitor 40s are very coherent. Even quite close up, one does not hear the drivers separately. But to get the extraordinarily flat response of which they are capable, the listener needs to be at the right height. There is no sense of strain as one finds with speakers where even a small deviation causes disconcerting flips in the sound over broad frequency bands. The wrong height just moves the 40s' sound to a different, not as flat response, but moves it in a comparatively gradual way. Still, right is right.

The 40s need stands, of course (they are boxes, not floor standers). Wood stands seemed appropriate. What I don't want with my music is metal, and then there is just the question of style. To get the height precise, I had stands custom-built by cabinetmaker extraordinaire Anthony Dailey [(805) 581-4989, telephone orders – designed and built to your specifications]. I supplied the height, Dailey did the rest – open structure, solid support, no ringing, perfect.

The Monitor 40s have well-behaved off-axis response and smooth room response. But there is a slight droop in far off axis response at the top of the midrange driver's frequency range. Thus to appreciate the neutrality and smoothness to the fullest, it is a good idea to damp the high-frequency part of the first side-wall reflection or listen fairly close up. Of course these remarks should apply to almost all speakers!

The pair matching of the 40s is almost incomparable. Apparently, the speakers match the production standard usually within a mind-boggling plus or minus 0.2 dB (according to the manufacturer's literature). Certainly my two match exquisitely. Combined with the point-source coherence and the minimal diffraction, the result is a nearly ideal realization of classical stereo imaging. The 40s are direct radiators, and they do not do the soundstaging tricks of dipole planars.

What they do is tell you what is really on a recording spatially, with the same accuracy that they tell you about its tonal character. Depth of soundstage, for example, can vary from non-existent to cavernous, depending on the recording. Same with width. I tried some recordings where I had been present at the sessions. Results – coincident with the real perspective of the recordings. They also do a stunning job with the height illusion. Height I believe is not really recorded in stereo except via reflection patterns and tonal balance cues. But when the height illusion should be

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#### **SPECS**

Drivers: 12-inch woofer; 8-  
inch Harbeth Radial midrange;  
1-inch SEAS Excel soft-dome  
tweeter  
Dimensions (inches):  
17 x 16 x 30  
Nominal impedance: 4 ohms  
Sensitivity:  
85 dB/1 watt/1 meter  
Frequency range: 40Hz-20kHz,  
± 3 dB  
Weight: 88 pounds  
Crossovers: third order; fre-  
quencies 200 Hz, 2.5 kHz

there, the 40s produce it with abandon. Try the Korngold *Robin Hood* [Musical Heritage Society, MHS 5120-907].

#### **Room Reach and Point Sources**

The more directional a speaker is, the more direct sound reaches the listener compared to reflected, room-influenced sound. Large planar radiators, for example, "reach" much further into the room than do wide dispersion point sources. On the other hand, most natural sound sources are not very directional and act like omni-directional point sources or at least the front forward facing half of such. The human voice is like that, for instance. Thus, a point-source forward-radiator tends to have a more natural sound than, say, a large planar without electronic tapering to simulate a smaller source. No human voice ever emanated from a flat 2 x 6-foot sheet. (The grand piano is one of the few musical instruments that does act as a large dipole, but at audience location, it is still small in perceived spatial extent.)

The Monitor 40s go for point-source naturalness at the expense of directional "reach." The comparison with the Dali Grands (review, Issue 114) is interesting. Both speakers are flat in overall balance. The Grands, with double driver arrays, have more reach into the room than the single-driver (in each range) Monitor 40s. The Grands thus tend to be very flat at the listening position almost automatically.

The 40s are more placement sensitive, if you listen at largish distances. Considerable experimentation with placement is needed to smooth the room response, and it may not even be possible to get the same kind of in-room uniformity that the Grands do in most rooms. (This all refers to frequencies below around 500 Hz. Above that, the direct sound will tend to be most significant and, as noted, the 40s are almost totally flat.)

On the other hand, the point-source nature of the 40s gives them a more natural sound on the human voice. Life is full of compromises! Moreover, in practice, the room interactions of a speaker like the Harbeth do not make it sound non-neutral but give the ear/brain a little more sense of being in the listening room than one gets from highly directional speakers. Of course the original acoustic can be made dom-

inant by careful set-up and sitting close for immersion in the direct soundfield.

#### **The Personal View**

Let me turn away from abstract criticism to my own feelings for these last few paragraphs. I know that the Monitor 40s are not perfect, nor are they all things to all people. They won't play as loudly as some would like, the first side-wall reflection needs to be damped in the highs, the bass could go down further, the soundstage is that of a pure forward radiator (which I like, but some do not). Furthermore, the speaker is so smooth that some will say it is unexciting. But for me, the nearly ideal tonal character when the speaker is set up properly, the superb midrange articulation, and the exquisite high frequencies carry all before them, and make this speaker hypnotic, addictive, irresistible.

Of course the Monitor 40s are of moderate size and do not have the orchestral "scale" of the giants. But their tonal accuracy makes them sound extraordinarily like an orchestra in a way that escapes almost all others, large or small. On a clean, simple-miked, neutral recording, the illusion of orchestral reality is startling, missing only sheerest magnitude. And the reproduction of chamber (classical or jazz) and vocal music is in the very top rank.

The real punch line here, though, is something quite beside the audiophile categories and descriptions. The Monitor 40s sound *beautiful*, and with the beauty of real music, the beauty of reality. They are accurate, as befits a would-be ultimate monitor speaker. But their uncolored, ultra-pure, balanced sound actually makes a great many recordings sound wonderful. The 40s tell you what is wrong, but they do not fling it at you. Adding nearly nothing of their own, they let you appreciate the recordings to the fullest.

I find the whole matter of the perception and reproduction of space a fascinating business. And I have spent a lot of time reading Blauert, Cremer, Zwicker, Gerzon, and the rest of the great experts on spatial acoustics and perception, to find out how it works. But when I think of music itself, I find that aspect secondary. What I really want is a system that sounds beautiful to me with the beauty of nature. This the Monitor 40s do all but incomparably well.

A pianist friend perhaps summarized it best, after I had played her a piano recording on the Monitor 40s [Rangell playing Bach's *Goldberg Variations*, on the Dorian label]. She said, "It sounds real, but it is almost more beautiful."

ROBERT E. GREENE

**The Monitor 40 reviewed here was the passive version in cherry veneer, and priced accordingly. A ruggedised studio version is available, as is a fully active version at special prices. The Monitor 40 is available from HHB USA in USA only: for other countries HHB Canada, HHB UK, Canford UK or Harbeth.**

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