

The Harbeth Super HL5 Loudspeaker

A Masterpiece of Speaker Design Art

Paul Szabady October 2004 Stereo Times

Every once in a while in the endless flux of audio components, one encounters a truly great musical performer. The Harbeth Super HL5 loudspeaker is one such product. The HL5 has been in production since 1977, eons in the often-faddish world of audio. Now, in its sixth iteration, it remains both state-of-the-art contemporary and part of a glorious loudspeaker design tradition that traces its roots back to the BBC-inspired research that was partly responsible for what can be called the classic British loudspeaker.

The classic British loudspeaker has consistently been a deep source of musical pleasure, particularly so on orchestral and acoustic music. Its hallmarks have been a sweet and neutral tonal balance, free of the harshness, artificial brightness and edge that still are the main audiophile complaints about the sound of their systems, and a pure and true-to-timbre midrange neutrality that allows listening for hours without aural fatigue. Refined and subtle, CBLs often seemed as if they had ugliness filters installed, so easy on the ear were they.

Such results do not happen accidentally, nor are they strictly the result of market demands. The roots of one branch of the classic British loudspeaker tradition anchor into the need for the British Broadcasting Corporation to have standardized and neutral monitor speakers available for all its recording and broadcast activities. The BBC-funded research into loudspeaker design led to a wide-ranging investigation of the science of loudspeaker design, including cabinet construction, damping, and the acoustic properties of various driver materials. The research spurred a very talented team of designers and engineers who later formed companies of their own to manufacture the classic BBC monitors under license, and to continue research and development further in their own speaker designs. Rogers, Spendor and Harbeth are the speaker companies most closely associated with this BBC tradition. Dudley Harwood, the "Har" of Harbeth, was at the core of that very talented original BBC team. Though Harwood sold his company some years ago, Harbeth, through its current owner Alan Shaw, has remained faithful to the company's ideals and proudly maintains the best traditions of the classic British speaker.

Much of the continued excellence of the Harbeth speaker line stems from their research into the properties of the plastics used in building cones, expanding and continuing that seminal BBC research that once led to the first Bextrene-coned drivers. Harbeth's superb and patented RADIAL™ bass/midrange driver is the fruit of this research; its most current incarnation is incorporated into the Super HL5. Harbeth claims state-of-the-art accuracy, neutrality, and freedom from spurious colorations and artificial resonances. Music lovers and audio critics have agreed: the RADIAL™ driver has received worldwide praise, being hailed by many as the best midrange cone driver available.

The Super HL5 is Harbeth's largest domestic speaker and, at \$3895 per pair, its most expensive. Weighing 36 lbs. each and standing 25 inches tall by 12 inches wide by 13 inches deep, the HL5's cabinet is finished with the customary quality that has been a mainstay of UK loudspeakers. Cabinet design and construction are also based on BBC-research findings. The HL5's cabinet is cleverly constructed and tuned to place resonances into non-obtrusive frequency areas, aided by the multiple cabinet screws on the front and back panels that trace their origin back to the days of easy field repair for BBC monitors. The speaker belies the sophistication of its cabinet design by its unassuming presence in the listening room. If you've really got it, you don't have to flout it.

Harbeth did not design the Super HL5 to be overly sensitive to stand design. I used 2 different pairs of wooden speaker stands to raise the cabinets to properly match the HL5's tweeters to ear height. Stillpoints Universal Resonance Dampers were used to isolate the speakers from the stands. The HL5's grills are designed to be left in place during listening and complete the speaker's stealth room presence.

The Super HL5 is a 3-way design, though unusual in that its third driver is a super-tweeter. Two SEAS metal-domed tweeters, an aluminum one-inch tweeter and a titanium one-half inch super-tweeter cover the top octaves; the 200 mm RADIAL driver handles the midrange and the reflex-loaded bass down to a claimed minus 3dB point of 40 Hz in free space. Although the speaker can be bi-wired, I followed the recommendation of Harbeth's US importer and ran the speakers with single wiring.

The consistent and lasting impression of the Super HL5 is its exceptional ability to get to and to communicate



the heart of music. Never, at any price or design type, have I heard a speaker that so completely got out of the way and let the music speak for itself. Never have I heard a speaker that exceeds the HL5's ability to reveal the artistic quality of the music and its performance. Never have I heard a speaker that does so many of the fundamentals of music reproduction so right: timbre, rhythm, phrasing, articulation, parsing, dynamic flow, sound stage reconstruction, placement of instruments, and the delineation of the ambience of the recording site are all produced with an ease and natural-ness so convincing and so adept at evoking musical gestalts that immersion into the music was as easy as breathing.

The quality of the Harbeth RADIAL™ driver is at the heart of this remarkable achievement. Harbeth's painstaking research, development, and implementation have indeed paid off. Since 90% of music lies in the midrange, getting the midrange really right is essential. The Harbeth's reproduction of instrumental timbre is exceptional, among the best I've ever heard. I ran through my acid-test orchestral LP's, including *Britten's Guide to the Orchestra*, Rimsky Korsakoff's *Capriccio Espagnole*, and Ruggiero Ricci's *The Glory of Cremona* on which Ricci plays a variety of classic violins from the great violin-making center. Each instrument of the orchestra was immediately identifiable, and on Ricci's record, the differences between the Amatis, Stradivari and Guarneris were obvious. Finally I randomly chose a classical LP, played it without looking at the title and tried to identify the instruments "blind." The Harbeth passed this difficult test with flying colors.

To get timbre really right demands that the driver(s) reproduce the initial transient correctly and properly sequence in time the expansion of the note, thus revealing its harmonic structure and pitch. While initial transient speed seems paramount, equally important is coherent release in time and correct volume tracking: any note will have multiple degrees of loudness occurring simultaneously. Correct reproduction and identification of its timbre and the instrument playing the note depends on reproducing the proper relative volume of each overtone correctly. As important as the initial attack and expansion is, correct volume tracking of the note's decay must be as good. Notes have to start and stop coherently. The more instruments playing, the more fiendishly difficult this tracking becomes.

Where the RADIAL™ driver truly excels is in its ability to clearly reproduce many differing volumes of sound simultaneously. This not only nails the tone and pitch of each note, but also recreates the flow of volume and dynamics between notes: you hear not only the identity of the instrument, but also WHAT it is playing and HOW it is doing it. The Super HL5 achieves the Holy Grail of music making: it reveals inescapably WHY the notes are doing what they're doing. It manages to do this with as many instruments as are playing, extremely important in guaranteeing that the larger whole of musical movement and argument is conveyed.

Of course, a state-of-the art midrange driver cannot do all this by itself. It has to be loaded into a cabinet that does not color its output and be integrated with treble drivers of equal quality. The Super HL5 does this with terrific coherence. I could not identify where the crossovers to the tweeter and super-tweeter occurred, the high frequencies sounding like the natural extension of the RADIAL™ driver. The Super HL5 speaks with one voice. The high frequencies are simply wonderful: no edge, no false brightness, no 'metallic' artifacts from its metal high frequency drivers.

Unlike some classic British loudspeakers, the HL5 did not sound too polite, too reticent, or endowed with too stiff an upper lip. Music emerged with its natural vivacity and élan. The coherence of the RADIAL driver with the extended high frequency response of the 2 tweeters leads to a natural clarity and resolution. The superb ability of the HL5 to simultaneously reproduce a wide range of volumes allows the low level information of the acoustic of the recording space to emerge clearly. This is no distorting Black Hole "sound emerging from a pitch black background": the sound emerges from and fades into the ambience of the recording site, as it should.

The HL5's do not have to play loudly in order to come alive. They convey their musical communication and resolution even at quiet volume levels. This is very welcome, and increasingly important as evidence mounts that long-term exposure to sounds as low as 85 dB (down from the 90 dB levels previously thought to be the threshold) can cause hearing loss. The Harbeth maintained its resolution, its superb 3-D sound field recreation of the recording site, and its sense of rhythm and brio even at levels that allowed social listening with conversation. You don't need to play them at hyper-volume levels to enjoy them.

My long-time reference loudspeaker has been the Sound Lab Dynastat. This electrostatic/dynamic hybrid uses 6-foot tall electrostatic panels from roughly Middle C (250 Hz) on up, mated to a 10-inch woofer that goes down to 27 Hz. Although it was a steal at its original price of \$2500 per pair in 1990, its evolution through the years now places it at \$4770 per pair. Its overall clarity, speed and resolution have made me very skeptical about very expensive cone-driver speaker designs. Although the better tweeters of the past 25 years have come close to matching electrostatic high frequency reproduction, no cone driver is ever going to match the speed of a thin, essentially mass-less membrane driver, be it electrostatic, ribbon, or whatever. Listening to the Harbeth Super HL5 in direct comparison with the Sound Lab revealed that HL5 did not have the ultimate transparency or speed of the electrostatic. But the HL5's utter coherency made this a non-issue, leading to the challenging question of just how much transparency is necessary. If a slightly 'slower' design still reproduces the gestalt of an instrument playing with utter and convincing ease, is pursuing ultimates an unnecessary exercise?

The bass response of the HL5, while described in their product brochure as 'warm,' is more aptly described as rich in tone rather than austere or acerbic. The lowest bass notes of the double bass were clearly rendered, and my acid test of bass differentiation – Ron Carter's *Piccolo*, a live album where Carter's piccolo bass plays with Buster Williams' lower-pitched double bass – featured both clear differentiation in pitch and the tunefulness and rhythmic speed of their interaction. My second audition room, 18 by 14 feet in dimension, augmented low bass

even further than my larger free-standing reference room, and tightness of bass response varied a bit with the quality of the 2 stands I used. The overwhelming ultimate conclusion, however, was that the use of Stillpoints underneath the speakers made the biggest difference: not only in the tautness and definition of the bass region, but also in the overall coherence, clarity, and musical brio of the speaker.

The HL5 proved a non-fussy, non-neurotic speaker to use. It is very ease to drive, its 8 ohm load and 86 dB sensitivity complementing a wide variety of amplifiers, from my antique 1960 EICO HF89 tube amp, to my middle 1970's Marantz 1060 integrated, and on through the Rotel RB 980, Meitner STR55 and Crimson 630 power amps. The HL5's have the rare and near-magic ability to extract the best from any electronics driving them. While differences between electronics were clearly differentiated, they were never in the spotlight and did not interfere with musical perception and flow. Speaker cabling had the same effect: I tried 5 different cables, none of which interfered with the Harbeth's strengths. I had particularly wonderful musical and sonic results with the DNM/Reson Solid-Core. Since this cable retails at \$5 a foot, users of the HL5 will not have to mortgage their house to find a compatible cable. Differences in turntables, arms, cartridges, and phono sections followed the same pattern: obvious delineation of the differences, but a focus on the components' strengths. While this might be misunderstood as perhaps a lack of ultimate revealing qualities, I think a more apt description is that the HL5 is so right and has the basics so well done that it's hard to capsize its boat.

While \$3895 speakers aren't exactly pocket change cheap (though compared to the insane prices of many High End dynamic speakers they are) the fact that the Super HL5 does not require obscenely expensive electronics to get them to sing makes them a very rational product. Extremely musical and reasonably priced products like the Rotel integrateds and power amps, the Creek A50i integrated amp, the Rega P2 turntable, Shure V-15 V xMR cartridge and the DNM/Reson interconnects and speaker cables will allow complete access to the Harbeth's compelling and magical musical world.

The Harbeths successfully tread the finest of balances between resolution and musicality. The recording signatures of the Mercury, RCA, Columbia, Argo, Philips and DG labels are immediately obvious; yet never interfere with musical communication. A long listening session comparing performances of Beethoven's *Eroica* and Berlioz' *Symphonie Fantastique* revealed the Harbeth's aesthetic power: the quality of performance was completely transparent, first-rate playing completely distinguishable from the second-rate and the also-ran. As a direct access into art, the Harbeths are unparalleled.

The conclusion is obvious. The Harbeth Super HL5 is a **true masterpiece of speaker design.**

Specifications:

Transducer system: Vented 3-way loudspeaker
Drive Units: (Woofers) Harbeth 200mm RADIAL™ polymeric composite cone, antimagnetic. (Tweeter) Custom 25mm ferro-cooled aluminum dome. (Supertweeter) 20mm titanium dome Neodymium magnet, waveguide face.
Frequency response: 40Hz - 24kHz ± 3dB free space, 1m with grill on, smooth off-axis response.
Sensitivity: 86dB 1W/1m
Amplifier suggestion: 25-150W
Nominal Impedance: 8 ohms nominal
Power handling: 150W program
Connector: Four 4mm gold-plated binding posts (biwireable).
Dimensions (h x w x d): 638mm x 322mm x 300mm
Finish: Cherry, Maple real wood (standard). Others available to special order.
Weight: 16.8kg each, 19.6kg packed singly
Special Features: AV ready with controlled magnetic field and suitable for close proximity to TV and computer screens.
Recommended listening: On stands at approx. tweeter height
Technology: Low-Q critically damped crossover
SuperTunedStructure™, SuperGrilleT

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