

Loudspeaker Focus



Rogers LS3/5A Classic Special Edition

The Legend Lives On!

Dick Olsher

It is fair to say that **H. D. (aka Dudley) Harwood** was the primary catalyst behind the development of the LS3/5A loudspeaker in the 1970s during his tenure at the British Broadcasting Corporation's (BBC) R&D Department. He retired shortly thereafter and went on to found Harbeth in 1977, but his work on controlling and damping cabinet resonances, and on means to improve what he referred to as image sharpness, were consequential in the development of the LS3/5A. In a nutshell, it was intended as a nearfield mini-monitor of "adequate sound quality and loudness" for use in small spaces such as mobile field control rooms, where larger existing designs would be unusable. It has been estimated that in today's prices, the Research Team's development costs exceeded one million British pounds. That's well beyond the resources of most loudspeaker companies.

Harwood believed that the main advantage of stereophonic over monophonic reproduction lay in its ability to distribute image outlines realistically in space, and that the greater the num-

ber of distinct sources that could be resolved, the better the system would be in this regard. Spatial performance was in his view dependent on how sharp the images are and how evenly they are distributed across the soundstage. He recognized that image sharpness or focus could only be determined by listening tests, as the perceived image is entirely a subjective phenomenon. Although not explicitly stated in the BBC's LS3/5A's white paper, I believe that subjective imaging excellence was an essential design objective. Factors that contributed to its imaging

precision were a small, 5-liter, well-damped box and well-integrated drivers that created a virtual point-source radiator.

It's interesting to note that the BBC is still protective of its intellectual property after all these years. The designs and specifications for the classic LS3/5A, LS5/9, and LS5/8 are currently being licensed to suitable manufacturers. The intent is to control the quality and integrity of manufactured units. A five-year license is not a trivial investment and requires a signing fee along with a percentage of net revenues. For the record, Rogers is fully BBC-licensed. You should know that there are unlicensed copies in circulation, which means that, unless you purchase a licensed product, there's no assurance of compliance with the original specs. Rogers goes to great lengths to do this. For example, it isn't a trivial task to reproduce the original KEF B110 Bextrene mid/bass driver, which was introduced by KEF in 1966. The cone material was a type of rubberized polystyrene that, when coated with a doping compound called Plastiflex, achieved the required mechanical properties necessary to obtain smooth, low-coloration acoustic performance. Rogers uses a factory in Asia to manufacture the drive units, which are then QC'd and pair-matched in the UK. To duplicate the original Plastiflex doping on the 4.5" mid/bass, a damping layer is applied by hand and allowed to dry for 24 hours, before a second coat of a different damping material is applied. For the KEF T27 19mm tweeter, a mylar dome is used. The dome/coil assembly is

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Specs & Pricing

Frequency response: 80Hz–20kHz (±3dB)

Nominal impedance: 15 ohms

Drivers: Bass/midrange, 110mm Bextrene cone; tweeter, 19mm Mylar dome

Crossover frequency: 3kHz

Sensitivity: 82.5dB/1W/1m

Recommended amplifier range: 30–80Wpc

Dimensions: 190 x 305 x 165mm

Weight: 4.9kg

Price: \$4895; LS3 matching stands, \$1995

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Associated Equipment

Power amplifier: Canor Audio AI 1.10, Futterman H3 OTL, Berning EA-230, JWN 807, and Will Vincent Dynaco ST-70

Preamplifier: AudioPrism Mantissa brought up to Red Rose Model 3a specs

Phono front end: Kuzma Reference turntable, Kuzma Stogi Reference 313 VTA tonearm, Clearaudio daVinci V2 MC Phono Cartridge; Wright Sound WPP200C phono stage; Sound Tradition MC-10 step-up transformer

Digital front end: Audirvana 3.5 software; Qobuz streaming; Denafrips Terminator DAC; Alldaq ADQ-USB 3.0 isolator

Cable & interconnects: Acrotec, Mogami & Kimber KCAG interconnects; Acrotec 6N; Kimber KCAG, ChromaLeaf Canare 4S11, Analysis Plus Oval 12, & Take Five Audio Cryo treated Mogami 3103 speaker cable

Accessories: Sound Application CF-X & TT-7 power line conditioners, Herbie's Audio Lab UltraSonic SS-9 and HAL-O III tube dampers

fitted and QC'd in the UK. Tweeters are then tested, measured, and pair-matched.

In hindsight, it is easy to acknowledge that this BBC-spec mini-monitor is, in fact, one of the most influential loudspeakers of all time, having inspired a host of imitations since its inception in the 1970s. In view of its cult status, I'm certain that most hardcore audiophiles have had a chance to audition a pair over the years. My close encounter with the LS3/5A materialized in the 1980s. And yes, back then I was not only enamored with its wide

soundstage and exceptional image focus but also found its midrange transparency and clarity to do justice to reproduction of vocals. However, to be frank, its limited dynamics were cause enough for me to part company.

Fast forward a few decades, and we meet up with Andy Whittle, Rogers HiFi UK's head designer. He is a man with extensive experience in the loudspeaker business, having started in 1985 with Goodmans loudspeakers, which at that time had a license for making the BBC LS3/5A. While overseeing Rogers' UK production, he began experimenting with Panzerholz, a German high-tech resin-loaded wood product that is compressed to half of its original dimensions. It is much denser and more acoustically inert than ordinary wood. His goal was to improve the LS3/5A's jump factor. Toward that end, he replaced the thin front baffle with Panzerholz, which is now standard in the Special Edition, together with upgraded drivers and crossover resistors.

After auditioning this version, I'm convinced that it represents a major increase in performance. Nothing has been lost in terms of spatial conviction or image focus. But midrange transparency has increased, and, *über alles*, the sensation of compelling emotional tonality consistently draws me into the musical performance, along with enough detail and microdynamic resolution to satisfy even an old hand like me.

One of the factors that contributes to imaging excellence, namely a small wide-range mid/bass driver that is comfortable being crossed

over at 3kHz, acts to constrain bass extension. For deep bass, you need a big woofer and a large matching cabinet. There is no way to cheat the laws of physics. However, midbass response was quite generous in my room, being a bit peaked at 80Hz, and flat to about 70Hz. Listening to the Bach Cello Suites, I didn't feel that tonal weight was compromised. The majesty of the cello shone right through. Of course, this is not the speaker for reproducing a 32Hz synthesizer note. It performed admirably on Baroque music, jazz, and vocals. On the other hand, it wasn't ideal for wide-range orchestral music; still, it was perfect for the sheer enjoyment of Mozart violin concertos.

Being a sealed-box design makes for a significant improvement in bass-line defi-



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dition over a bass-reflex box. The bass rolls off gently at 12dB per octave below 80Hz. While there wasn't much deep bass, the midbass was plenty satisfying. I had almost forgotten how much more natural sealed-box bass could sound relative to bass-reflex. One thing was certain, unlike so many stand-mounted mini-monitors that manage to sound anemic through the upper-bass range, the Rogers was able to generate sufficient tonal weight to do justice to piano timbre.

This is a true 15-ohm nominal load with a benign 12-ohm impedance minimum. Not only is this an easy load for a tube amp, but the impedance magnitude is fairly flat from 1.5kHz to 20kHz, thereby minimizing tube-amp load interactions and ensuring tonal accuracy through the upper mids and treble range. I cycled through a few of the tube amps in my collection, including the Berning EA-230, JWN 807, and Will Vincent Dynaco ST-70, and discovered that the Rogers is exceptionally revealing of an amplifier's intrinsic sonic character. In view of its modest sensitivity, it really requires a minimum of 30Wpc to fully energize its dynamic range. It is also a match made in heaven for any Futterman-style OTL. In particular, my refurbished Futterman H3 OTL purred like a fat cat on a hot tin roof. This coupling with its honey-sweet midrange textures exemplified soothing and luxurious sound at its best.

The tonal balance changed with the Tygan grilles off, being

more forward. This was confirmed by measurements which showed increased output in the presence and lower-treble regions (between 4kHz and 9kHz). With the grilles on, the balance was more mellow and perceptually sweeter sounding through the midband. In either case, the frequency response exhibited that notorious midband peak (+3 dB) at about 1.2kHz that has been observed in the past and ascribed to a breakup mode of the Bextrene cone. With the grilles on, I could not detect the peak as a coloration, but with them off it was audible as a slight case of nasality. The moral of the story is to be sure and leave the grilles on. And in case you're wondering, the matching Pan-

zerholz stands did improve performance and are a recommended coupling.

This LS3/5A Classic Special Edition has cast a spell over me. It has simply made it difficult to stop listening to the music, and that is a high compliment, indeed. Very few speakers, regardless of cost, have been able to do that over the years. It's remarkable that this denizen of the 1970s is still relevant today. Much like the QUAD-57 ESL, it has achieved classic status, and not because of its performance at the frequency extremes. Andy Whittle tells me that this is the best LS3/5A that Rogers has ever built. In my estimation, it may well be the finest LS3/5A available today. The legend lives on! **tas**