

# LS3/5a • paper

» The LS3/5a Shoot Out «  
by Ken Kessler [a HiFi News Report]



## The BBC monitor LS3/5a

by Ken Kessler in HiFi News 2001.6



It's all because of an e-mail. Paul Whatton, who turned out to be quite 'local', had organised a news group on-line, devoted to BBC LS3/5As. Normally, I avoid such groups - I'll give a bottle of Scotch to the individual who can get me off the frikkin' Joenet - but this was different: Paul is the son of Maurice Whatton MIEE, who just so happened to be one of the LS3/5A's designers.

I checked it out, logged on to the accompanying website, and found the kind of enthusiasm which I wish permeated the entire home-ent community.

True, there were some saddos with anal-retentive qualities which would scare anyone new to audiophilia, but that comes with the territory: anoraks are both enthusiasts and psychotics, and the two characteristics are inseparable. You need it to fuel a news group. The topics ranged from what stands to use with the LS3/5As, to what's the best subwoofer, best amp, are JR149s as good, etc, etc, etc. Before I knew it, Paul and I had cooked up a plan to deal with the group's most oft-raised topic: what is the best LS3/5A of them all?

We realised that, without much difficulty, we could gather together examples of the most important ones, that I could easily find qualified listening panels, and that I had the perfect venue for auditioning a small monitor or 12. Over a period of some four months, I arranged three listening sessions with two listeners each, consistent right down to the room's ambient temperature. [68 degrees] The goal was to find which commercially-produced LS3/5A best approximated BBC-badged LS3/5A numbers 001/002, loaned to us by a private collector. Up against them were the following:

- Audiomaster 15 ohm (loaned by web group member Deng Zhuo)
- Chartwell kit version 15 ohm (assembled by and property of Paul Whatton)
- Harbeth 11 ohm (loaned by Alan Shaw of Harbeth)
- KEF 11 ohm (Kessler Kollektion)
- KEF 11 ohm lacquered (Kessler Kollektion)
- Rogers 11 ohm (Kessler Kollektion)

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- Rogers 11 ohm lacquered (Kessler Kollektion)
- Rogers 11 ohm XLR (belonging to Andy Whittle of Exposure)
- Rogers 15 ohm (property of Nic Poulsen of Trilogy)
- Spondor 11 ohm (Kessler Kollektion)
- Spondor 15 ohm (from Spondor's Derek Hughes, once belonging to Spencer Hughes)

Note that all of the 11 ohm models, except for the XLR Rogers and the Harbeths, were bi-wireable, but all tests were undertaken in single-wire mode. And we'd like to think that we managed to assemble a representative sampling. Aside from the lack of a Goodmans model - and most experts thought their omission was a blessing! - we covered a lot of the bases, missing out only on some oddball limited editions made for Asia. We did, however, include two of the 'deluxes': the Rogers lacquered version with WBT terminals from the last 50 LS3/5As they ever made and the lacquered KEF. Technically, these are out of spec because of the cabinet treatment, which varies from BBC practice. Surely this would affect the sound?

### THE LISTENING TEAM

We wanted a mix of industry listeners and civilians, LS3/5A fans and virgins, and that's what we got:

- Jim Creed: plumber, world-class collector of hi-fi, never owned LS3/5As, uses Sonus Faber Extremas; system/collection soon to be profiled in Hi-Fi News
- Steve Harris: Editor of Hi-Fi News and LS3/5A owner
- Nic Poulsen: Founder and boss of Trilogy, valve wizard and ex-BBC employee; bought his LS3/5As (in our survey) while a BBC employee
- Peter Roberts: watchmaker, collector of vintage hi-fi and completely new to the LS3/5A. Uses Quad ESLs as his reference, but now owns LS3/5As.
- Paul Whatton: son of Maurice, LS3/5A fanatic without peer, for the past 5 years, Senior Lecturer in Film & Video at Surrey Institute of Art & Design University College. Previously Freelance broadcast television sound recordist. To quote Paul, 'One of my regular credits used to be on See-Hear the BBC2 programme for the deaf - how do you like that, a stereo sound recordist on a programme for deaf people!!'
- Andy Whittle: Ex-Rogers, now head of Exposure and designer of the Rogers AB1 subwoofer for the LS3/5A. Probably heard more LS3/5As than anyone.

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Because I was conducting the sessions, I bowed out of the listening, but I will state at this point that I agree wholeheartedly with the final tally. What everyone agreed was that BBC 001/002 were so vastly superior to all of the others that we simply couldn't include them in the survey. Instead, they acted as the true reference, and were auditioned before the sessions and again half-way through.

### THE LISTENING SYSTEM

Because we wanted the system totally optimised for the LS3/5A, to be free of variation, to be consistent and to be easy to use, I settled on the Krell KPS25sc CD player as the best front-end, fed into the Musical Fidelity M3 integrated amplifier with Discovery cable. Naturally, there were calls for the speakers only to be driven by Quad IIs, or for the source to be vinyl, yadayadayada, but such naivety, indicative of people who have never undertaken a multi-unit test, was swiftly dismissed.



Why? In order to guarantee, for example, that an LP used for the demo source was in exactly the same state for each speaker, one would need 36 virgin copies of the same disc (12 speakers x 3 listening sessions). LPs wear, right? And then there's stylus wear. Given slight impedance variations speaker to speaker, warm-up, valve life, ad nauseum, I wanted a new amp but one which was run in, bomb-proof, with remote control for ease of use, and with so much power that we'd never get it near to clipping. Enter the M3, globally regarded as a stunning performer.

System ancillaries included A.R.T. Audio cable, Foundation 24in stands made originally for LS3/5As, and Mana Acoustics' superb platforms, designed to go under speaker stands. The latter proved to be an amazing addition, even though the Foundations Mana stands would be spiked directly into a solid concrete floor 3ft thick. They seemed to extend bass and improve lower level control, while smoothing the upper registers. Uncanny!

Each speaker was auditioned with three completely different pieces of music, chosen to both exploit and challenge the LS3/5A. If we were true to its original purpose, spoken word would have been enough; as Harbeth's Alan Shaw told me, he designed his ear-

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liest speakers using his daughter's voice as the reference. The music we used included:

- The Judds: 'Don't Be Cruel' from (RCA PD90243) - clear female vocals, modern studio production, superb country musicians, but with the potential to suffer sibilance
- Corey Harris: 'High Fever Blues' from (Alligator ALCD4850) - textured male vocals, mainly acoustic blues, deep punchy brass, taxes the low end while exploiting the middle
- Eddy Louiss: 'Blues For Klook' from (Nocturne NTCD101) - wholly synthesised jazz, with deep bass, rapid transients and frightening dynamics

The listeners graded each speaker on a scale of 1-10 (10 being the best) in the categories of bass, mid and treble quality, transients and imaging, with the overall result determined by points. Hence, with six listeners, a perfect score was 300.

### LS3/5A TEST RESULTS

Now, what you've all been waiting for: the final tally. And, to my absolute delight, it proved to be thoroughly unpredictable, with only one of the news group's preconceptions - that the Chartwell was a killer - coming true:

- Harbeth 11 ohm 257.5
- Chartwell 15 ohm 243.5
- Rogers 11 ohm (lacquered) 243
- Spendor 15 ohm 239.5
- Spendor 11 ohm 233.5
- KEF 11 ohm (lacquered) 233
- Rogers 15 ohm 230.5
- KEF 11 ohm 226
- Audiomaster 15 ohm 217
- Rogers 11 ohm 212.5
- Rogers 11 ohm XLR 197

So what do we make of this? Out of 11 pairs, we rounded up four 15 ohm and seven 11 ohm, and the 11 ohm models took 1st, 3rd, 5th and 6th places, clearly indicating - were this a Grand Prix - that the 11 ohm team beats the allegedly superior, 15 ohm originals. Conversely, an 11 ohm speaker nabbed the bottom position by a solid 15.5 points ...

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Then a sane voice pops up, 'But all of the 15 ohm models are by definition older, and therefore likely to suffer from age!' To which we must reply, 'This may be arguable in their defence, but the hands-down best-ever LS3/5A is the 15 ohm BBC model we used as a reference, which was so good that we took it out of the running. And that's one of the oldest LS3/5As on earth. And the No. 2 speaker after the Harbeth is a 15 ohm model. So age is NOT a factor.'

As we tried analysing the results, it became clear that the two lacquered models benefited from having heavier cabinets (as did the hand-built BBC Nos. 001/002 and the Chartwell kit), although technically that would make them non-standard. But then you have to look at the scores: the much revered Chartwell only beat the much-loathed lacquered Rogers by 0.5 point, while the Spendor 11 ohm - a standout among the standard 11 ohm models - beat the lacquered KEF by only 0.5 point. And if I'd had my druthers, I'd knock off those half-points and call 2nd and 5th places „ties“.

Paul mused about the way the results panned out, noting that, 'LS3/5a cabinets were not usually - or at all? - made in-house by the licensees but were subcontracted out to a number of specialist cabinet manufacturers in the UK. And this got me thinking. The BBC reference LS3/5As which were made up by their equipment department used screwed-on backs, whereas production units were glued together. Anyone who has been lucky enough to hear a pair of these will know that they sound outstanding. I don't think anyone who took part on the listening panels would disagree that they sounded better than any of the production LS3/5As.

'Andy Whittle from Rogers suggested to me that the screw-on-backs were probably the reason they sound so good. Screwing instead of gluing the backs makes for a lossier cabinet, something that is very desirable. Harwood also reported in his BBC technical paper on the development of the cabinet for the LS3/5 that a pair with faulty gluing between the fillets and cabinet walls sounded and measured outstandingly well (he published the measurements). But he added that, unfortunately, it wasn't possible to make speakers with consistently bad gluing!

'So there's my hypothesis: the differences in LS3/5As are the result of variation in cabinet manufacturing. Wouldn't it be interesting to see if there was any correlation between the cabinet manufacturer used and the rated performance?'

Er, thanks, Paul, but I'll leave that to someone else.

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After all the tests were completed, there was a consistent response from all six listeners; note that they were in three groups of two and never consulted with the others. All the listeners, to a man, left with a newfound respect for the LS3/5A, even Andy Whittle who must be way beyond bored with the speaker. We sat there amazed as the speakers continued to deliver sound which, even by 2001 standards, defies belief. (It was only after switching to Wilson WATT Puppy System 6 that we realised how much was missing down below, especially from the Eddy Louiss track.) Secondly, all agreed that it was a scandal that the speaker was no longer available. And even though everyone accepted that the XLR-equipped Rogers 11 ohm model deserved last place, Peter Roberts summed it up with the following: 'Whatever way you look at it, there wasn't a bad one in the lot.'

### LS3/5A VARIATIONS

Aside from acquiring 'famous' pairs, like Spencer Hughes' own and pair 001/002, we mixed it up with some success, for this is the most comprehensive list we can assemble; we've left out oddities like those customised by the Mod Squad. Also, acknowledging Trevor Butler's definitive LS3/5A history from Hi-Fi News, March 1990, we accept that wannabe licensees like JPW and RAM probably never produced speakers which actually reached the street:

- Rogers 15 ohm
- Rogers 11 ohm
- Rogers 11 ohm Studio Edition
- Rogers 11 ohm bi-wire
- Rogers 11 ohm Limited Edition (Lacquered rosewood)
- KEF 11 ohm bi-wire
- KEF 11 ohm Limited Edition (Piano Black lacquer)
- Spendor 15 ohm
- Spendor 11 ohm
- Spendor 11 ohm bi-wire
- Spendor 11 ohm Cardas Wire Special
- Harbeth 11 ohm
- Harbeth 11 ohm Gold Pro (rosewood cabinet, gold plated grille tweeter)
- Harbeth 11 ohm Gold Special Edition (ebony cabinet, gold plated grille tweeter)
- Harbeth Alan Shaw Signature Edition

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- Goodmans 15 ohm
- Audiomaster 15 ohm
- Chartwell 15 ohm
- Chartwell 15 ohm Project 50 kit

### SOME LS3/5A TRIVA

- ❶ There never was a Harbeth 15 ohm version
- ❷ All 15 ohm version use „transformer“-like inductor in the x-over. No 11 ohm has this type of inductor.
- ❸ Whacko collector types, especially in Asia, favour the Chartwell over all others. The latest collector lunacy (especially in Malaysia) is lusting for 'white belly' LS3/5As, which - as far as we can tell - refers to 15 ohm versions where the white colour in the bass unit is the result of application of the glue or epoxy.
- ❹ For 1978 the line up was:  
Audiomaster £168.75 — Chartwell £168.75 — Rogers £173.81
- ❺ For 1984 we had:  
Goodmans £194.00 — Rogers £228.00 — Spendor £222.00
- ❻ As far as we can tell, the production numbers in pairs from the four major suppliers were as follows with Chartwell, KEF and Goodmans probably numbering only in the hundreds.
  - :: ROGERS ca 50k
  - :: SPENDOR ca 22k
  - :: AUDIOMASTER ca 10-12k
  - :: HARBETH ca 7k
  - :: TOTAL: circa 100,000 including all others.

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### LS3/5A ON-LINE

Our fave little monitor is well-served by the world-wide web. The Harbeth and LS3/5A sites will provide you with the original BBC technical papers, while the LS3/5A site has reproduced Trevor Butler's history of the speaker.

- :: Harbeth: [www.harbeth.com](http://www.harbeth.com)
- :: LS3/5A web site: <http://groups.yahoo.com/group/ls35a>
- :: LS3/5A news group: <http://home.freeuk.com/pwhatton/ls35a.html>
- :: You can also join the news group at <http://groups.yahoo.com/group/ls35a>

### FROM DEREK HUGHES

I'm reproducing this verbatim; watch this space, because we WILL follow up on it:

Hello Ken,

To fill out a few details on the thinking behind the LS3/5A crossover project, our thought is to produce crossovers in individual boxes (to give maximum flexibility of positioning), using high spec components, air-cored chokes wound with OFC wire, Polypropylene caps, non-inductive Metal Oxide resistors. The crossovers would be bi-wired, with the output being on both binding posts and Speakon.

We also plan to produce a 'premium' version with higher-spec caps and foil tape chokes. We also feel that to match the LF & HF levels by Auto-transformer (as in the original version) is a better solution technically than the resistor ladder network of the later version, so our crossover will use an Auto-transformer for both old & new versions. We also feel that although powder cores are better at high power levels compared to the original RadioMetal chokes, they tend to give inferior performance at low signal levels. Air-cored chokes give better performance than either, of course.

We hope to have the first prototypes ready in about 4-5 weeks. We also plan be able to provide a 'conversion' service to customers if they wish.

Hope this is helpful

Derek

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### ROGERS RETURN?

At the Tonbridge audio fair, I was handed a press release stating that 'Two of the oldest and proudest names in loudspeaker manufacturing, namely Rogers and Richard Allen, have been combined to build „the best of British audio“ and are to be branded collectively as Rogers RA.' The new company has announced that it will be producing assorted speakers including the Studio 7 and Studio 9, but most intriguing is the punchline: the suggestion that the company might relaunch the BBC LS3/5A.

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