

Spinning the Bottle

Neville Roberts

“So many to choose from... Which one should I buy?” Neville Roberts auditions a variety of modern ECC83 valves (and one not-so-modern!) in his WD Phono3.

With the growing interest in valve-based audio equipment, it's not surprising that the demand for audio valves is also increasing. Web-based trading has made it even easier to obtain valves from all over the world. As a consequence, it seems that not a month goes by without news of a new factory appearing on the scene, or a new range of valves emerging from one of the established manufacturers.

It's been a few years (five, to be precise!) since I have indulged in some serious 'tube rolling' and with the recent flurry of new products hitting the market, the time seemed right to check out a selection of currently available offerings. For this exercise, I decided to focus on one of the most popular driver valves that are employed in modern amplifier designs, namely the ECC83 double-triode.

My World Designs Phono3 makes use of three ECC83 valves (aka 12AX7 tubes) and so I chose this as the platform to test a variety of makes.

With such a vast number of different manufacturers and each manufacturer often offering several grades of the same valve, coming up with a shortlist was quite a task in itself. The difference in sound quality made by valves of the same type from different manufacturers is huge. Some valves can exhibit quite outstanding qualities, while others... well; the kindest thing one can say about them is that they amplify! The latter should be treated like a bottle of wine from a mediocre vineyard – laid down and avoided!

So, what you see here is my shortlist – a 'Top 14' as it were! I apologise now if I have not included your particular favourite bottle – as with many things, personal taste has an important part to play. So what I have included here is a variety of makes that, to my ears, demonstrates a broad spectrum of audio presentation with a summary of each valve's particular strengths and weaknesses.

The shortlist

The ones that made it through to the final are, in no particular order: Mullard (Old Shield) ECC83, TJ Full Music 12AX7, Siemens E83CC, Harma 'STR' and 'Retro' ECC83 (normal and cryogenically treated), Harma DR250 7025 (normal and cryogenically treated), Blackburn MicroTech Solutions TechTube E813CC (normal and cryogenically treated), JAN Philips 12AX7WA (normal and cryogenically treated) and Sovtek 12AX7WC (cryogenically treated).

The cryogenic treatment process was undertaken by Watford Valves & Speakers Ltd of St Albans and involves placing a batch of valves in a chamber and taking them down to -195°C with liquid nitrogen and then slowly raising the temperature to ambient over a 48 hour period. This will change the molecular structure of the electrode assembly which will result in subtle changes to the performance of the valve. Just what those changes are and whether they are beneficial or not, we will see!

Let the contest begin!

To put the valves through their paces, I chose three great recordings that I knew well and would exercise the valves across a range of instruments and musical styles, while minimising the risk of audio fatigue! If the number of recordings was too great, I would have forgotten what the first one sounded like, when the time came to try out different valves!

The three recordings were: Concertos No. 7 & 8 from Vivaldi Opus 7 (from a Philips boxed set 6700 100 of Vivaldi Op7, I Musici with Salvatore Accardo and Heinz Holliger), Stravinsky's 'The Firebird Suite' (The Atlanta Symphony Orchestra - Telarc digital recording DG-10039) and a direct-to-disc live recording from the 1970s of 'Lincoln Mayorga and Distinguished Colleagues Volume III' (Sheffield Labs LAB-I SL5/SL6).

It was now time to whip the top off my Phono3 and settle down with a selection of valves in one hand and a gin and tonic in the other!

Siemens E83CC

First up were the Siemens ECC83s. These have always been a great all-rounder and are up there with the other German premium make – Telefunken. They produce masses of detail with no strain or unpleasant edge to the sound. I can sit and listen to these valves for hours as they seem to work effortlessly to deliver the music to my sitting room.

Blackburn MicroTech Solutions TechTube E813CC



Before I go any further, I should mention that, as I write this review, I have just heard the sad news that Blackburn MicroTech Solutions has closed down after it went into administration. Evidentially, a deal with a distributor in China, where old-fashioned televisions are still popular, has now fallen through forcing BMS into administration. Blackburn Microtech Solutions had a strong research and development pipeline, built from the company's 40-plus years of experience, and this was channelled into their innovative audio valve designs. The administrators are hoping that a buyer can be found for the factory and it is my sincere hope that one will soon come forward with the foresight to see the potential of this firm, their

heritage and their products. In the meantime, I'm sure many will join me in wishing all the former employees well with the hope that they can benefit from a good resolution in the near future. All this should not detract from the fact that the TechTubes are an impressive product. Since these valves are still advertised for sale on the BMS website (although I would check before ordering!), I felt justified in keeping them in this review.

I previously reviewed these valves in the October 2009 issue of Hi-Fi World and remain very impressed with their performance. They demonstrate superb openness and detail, although the extreme top end was very smooth – arguably a little too smooth for some types of music.

I have now had the opportunity to try a set of cryogenically treated TechTubes. Not surprisingly, they sounded very similar. However, as a result of the treatment, both the bass instruments and percussion became a lot clearer and well defined. In particular, high-hats were much brighter and in proportion to the rest of the music.

TJ Full Music 12AX7

The TechTubes were unplugged to make way for the TJs. The headline for these is that they have all the benefits of the Siemens, but more so. They present a sound stage with great depth, openness and spaciousness. The music is clear and refined. The individual instruments in the Vivaldi recording are clearly discernible. The deep bass drum roll at the beginning of the Stravinsky is deep, clean and very believable. Similarly, in the jazz music of the Lincoln Mayorga, the bass is tight, punchy and once again very realistic. In fact, I couldn't really find anything to criticise about these valves – they certainly have the 'wow' factor!



JAN Philips 12AX7WA



Next in line were the JAN Philips in their untreated state. I soon realised that I had been spoilt by the other valves I had been listening to! In comparison with the previous makes, the strings on the Philips sounded a bit harsh and 'in your face'. On a more positive note, the midrange was generally clear and forward in the sound stage. However, the image placement of the instruments was less clearly defined and the bass was not as extended and deep. In the jazz pieces, there was a noticeable lack of crispness - it was as if a cloth had been draped over my tweeters. After a while, I found the sound tiring and I could not really listen to these valves for an extended period of time.

Moving on to the cryogenically treated versions of these, I noticed a definite

improvement. The string section had changed into evening dress and they were considerably more refined! The cats had been locked away out of earshot and the sound was overall easier on the ear. However, as with the untreated valve, the gain of the Philips was noticeably lower than any of the others and the performances lacked excitement and vitality.

Harma 'STR' ECC83

I have to confess that I had tried Harmas several years ago and I wasn't particularly impressed with them in Hi-Fi applications, although I accepted that they were most probably better suited for guitar amplifiers. The Harma brand is 'Watford Valves' house wine label and these valves are selected and tested versions of well-known brands. In the case of the 'STR', they are now specially selected JJ/Teslas. So, with an open mind, I started auditioning the Harmas.

They sounded good! A bright, clean sound, with a good rendition of strings. Lovely midrange and clarity in the lower-midrange gave a warm and involving presentation of oboes in the orchestra. On the down side, I didn't find the front-to-back positioning of the instruments to be very clear and some might find the bright presentation a little tiring after a while. Time to move on to the cryo version.

The first thing I noticed was that the depth reappeared and there was definitely front and back separation again. Although the extreme bass was a little indistinct, it was very well extended. There was a great realism to the sound and even though the bright timpani was still there, it was somehow less strained and easier on the ear than with the untreated versions. I wanted to keep these in, but it was time to move on!

Harma 'Retro' ECC83

The Harma 'Retro' are actually made by Reflector in their Saratov Factory in Russia, but selected for the Harma brand. Reflector also makes most of the valves marketed by New Sensor Co. of New York under their Sovtek and Electro-Harmonix brands. These have a totally different presentation to the STRs. They offer a very full midrange and a 'less formal' top end - altogether a much smoother performance, with good image placement. Bass was punchy, but a bit recessed.

The cryo versions retained the 'smooth' theme, but notably wind instruments were sweetened. These valves were really at home with jazz, giving a relaxed and effortless sound – nice!



Harma DR250 7025

Also made by Reflector, the Harma DR250s had the highest gain of all the valves tested. They had the best deep bass performance of all the Harmas and the addition of a bright top end resulted in a sonorous, yet very musical performance. Clarity in the upper registers suffered a bit when the music got loud.

Swapping them for their cryo-treated counterparts immediately improved the image placement. However, I think the extreme deep bass suffered a little as a result and, again, they seemed to run out of steam during the loud passages.

Sovtek 12AX7WC cryogenically treated

Switching to the Sovtek 12AX7WC cryo-treated, they also had superb instrument placement across the whole orchestra, with lovely clear strings and wind sections. I did feel that some of the detail was missing, but the bass was well controlled and the overall performance was lovely, smooth and thoroughly enjoyable.

Mullard (Old Shield) ECC83

Finally, it was time for the joker in the pack – the Old Shield Mullards! I have to say that they still are valves that stand up and demand to be



counted. Great image placement, open and accurate sound stage, fantastic detail, tight bass, great top end, effortless sound, I could go on. In many ways, they are quite similar to the TJs. The only comment I would make is that they don't quite have the extra sparkle that I get from the TJs, which is extremely difficult to define and leaves you with a sense of real excitement.

Conclusions

Firstly, I would like to say that I am indebted to Derek Rocco of Watford Valves (www.watfordvalves.com) for supplying, fully run-in, the majority of the standard issue and all of the cryogenically treated valves used in this review – many thanks Derek!

All in all, this had been a very interesting exercise. At the top end of the market, you do have to part with some serious cash to fit out your equipment with your chosen audiophile components. Also, as with many choices, it is all about balance and what sounds good in your particular system, as well as what sounds good to you. I therefore think it would be most appropriate for me to list my winners and losers, as any attempt at putting them in order of 1 to 14 would only reflect my personal preferences given the styles of music I enjoy.

I'm afraid that in my opinion, the Philips would have to go in the 'losers' category. Generally speaking, the standard set by most of the valves on trial was pretty high and they had too many flaws to justify them ranking with the top professionals.

So that leaves 12 to consider. They all have their various strengths and weaknesses, but to my ear, there are four that rise to the top of the pack.

The Harma 'STR' cryo-treated are really a great all-rounder. Superb realism that you could listen to for hours. The Old Shield Mullards have proved that they can still hold their own with their modern counterparts. If you can find some NOS ones – grab them while you can, but you may have to pay a premium for them.

Then we have the TechTube cryo-treated. These are truly great performers in a Hi-Fi audio system and well deserve their place on the podium. Finally, the TJ Full Music 12AX7s seem to have that 'X' factor that makes them stand out from the crowd.

I'm sure many of you will be thinking, "Which ones has he left in?" Ah - that would be telling!

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