A Touch of Glass!

Neville Roberts

What next? So you've upgraded all your relevant electrolytics with Black Gates, your coupling capacitors with paper-in-oils of various types and experimented with a range of resistors in the signal path, what is left for you to do with the residue of your monthly paycheque burning a hole in your pocket?

With the ever increasing range of valve-based audio equipment in recent years, the choice and availability of valves is also growing. Web-based trading has made it even easier to obtain new and second hand items, including valves, from all over the world. The prices charged for a particular type of valve can range from a few pounds to over ten times that amount.

Figure 1. The Hopefuls Eagerly Awaiting their Turn!

In the DIY Supplement No. 65 published in May 2002, Clive Meakins reviewed a variety of 300B triodes, which I found extremely helpful when it came to selecting the output valves for my WAD 300B PSE. It certainly seems to be a case of getting what you pay for here, but what about the other valves in the audio chain; the small signal valves and even the rectifiers? I therefore set about trying several types of valve in my power amp (6AU6, ECC82 and 5U4 rectifier) and also the WAD PreII (6922/E88CC) and PhonoII (ECC83).

Armed with a variety of valves that I had accumulated over the years and a few borrowed from friends, I settled down like Simon Cowell to audition the first 'hopefuls' (Figure 1)! Incidentally, all new valves were thoroughly run in for about 24 hours before testing.

Figure 2. Three of the ECC83s: Mullard Yellow Logo, Mullard White Logo and JJ

PhonoII and ECC83

First up were the JJ ECC83s as supplied with the original kit (see Figure 2). When trying to make comparisons of this nature, it is best to have a reference to work to, and the valves as supplied with the kits seem to be a good place to start. Compared to a set of Harma 7025s, the JJs had a bit more life and character to the sound. This was also the case when the JJs were compared with a set of Sovteks, which sounded rather dull in comparison.

Then came the turn of some Mullard NOS (New Old Stock) NIB (New In Box) with the new logo and some used older Mullards with the old logo (see Figure 3). This was a big improvement. The new Mullards had literally tons more detail than the JJs, giving all the records a clear, effortless detail without any tendency to harshness. Thanks to web-based auction services like e-Bay, it is now relatively easy to purchase NOS and used older valves, and I was able to acquire some used Mullards with the old shield logo in both the white and yellow print variants – more about that later. Firstly, fitting the white logo versions, the music retained all of the clarity and detail of the other Mullards, but had gained a sense of realism over their modern counterparts. Listening to my copy of "Lincoln Mayorga & Distinguished Colleagues – Volume III", Sheffield Labs SL5/SL6, which is a 'direct to disc' recording and is the closest one can get to a live recording, the brass instruments simply sparkled. How they managed to move the percussion section into my sitting room, I will never know! Some say that the yellow print versions are superior to the white print valves. I have to say that I couldn't tell any difference between them – they both sounded fantastic and were the clear winner in this section.

Figure 3. The Mullard Old and New Logos

Figure 4. Some E88CC / 6922 Valves: Edicron, Philips, Russian Navigator, Mullard New Shield and Mullard Old Shield Logo

PreII and 6922 / E88CC

Leaving the Mullards in the PhonoII, I started as before with the supplied Edicron 6922 and then swapped it with a Philips JAN 6922 (see Figure 4). Alas, the Philips sounds rather weighty in the middle and somewhat light at the two extremes. To my ears, it was a rather bland sound. Time to move on! Next came an NOS Russian Navigator 6H23. This valve gave a very enjoyable and musical sound. I felt that the bass was tighter than the Edicron. Overall, the 6H23 was lively and energetic, without any sense of harshness.

Unplugging the 6H23 made room for a Siemens E288CC (Figure 5) complete with its gold-plated pins. Again, the bass was better controlled than the Edicron and the detail was excellent, but there was a greater sense of space and quality. Not a sign of

Figure 5. The Siemens E288CC

harshness in the upper register, but an open and effortless sound – wonderful. However, there are a couple of downsides. Firstly, the price tag of around £130 and secondly, it is a taller valve than the 6922 and it won't allow the lid of the PreII to be fitted!

Anyway, moving on and a Sovtek 6922 took the place of the Siemens. It felt as though some of the detail had been removed. It did give a lovely, smooth 'valve sound' which may appeal to some, but on balance, I preferred the sound of the Edicron.

Next, a new logo NOS NIB Mullard E88CC (also with gold-plated pins) was removed from its blue Mullard box and installed. A great sounding valve. Good, controlled bass with detailed and clear top end without any hard edge to the sound. Pretty close to the Siemens, but the Siemens pipped it to the post (both in sound and in height!). Finally came the turn of an old shield Mullard E88CC. This was a bargain purchase from e-Bay. It sounded every bit as good as the Siemens, but with even better, tighter bass. Another winner from Mullard – and at less than a tenth of the price of the Siemens and it fits into the case! Are we detecting a trend here?

300B PSE and ECC82

Moving over to the 300B PSE monoblocks (resplendent as they are with their set of TJ Mesh Premium 300Bs!), it was very easy to swap over the supplied EI ECC82 valve and try a few alternatives. I tried a few variants, including Sovtek and other Russians and ending up with some old and new logo Mullards, with the latter being of the yellow print type (Figure 6). To be honest, the effects were very subtle and required repeated swapping to conclude that, once again, the Mullards had the edge over the competition, with the EIs coming a close second. In the 300B PSE, I could not differentiate between the two types of Mullard that I tried.

Figure 6. EI, Mullard New Logo and Mullard Old Yellow Logo ECC82 Valves

300B PSE and 6AU6

The original valve supplied by WAD was an Edicron 6AU6. I obtained a pair of Sylvania 7543s to try instead (see Figure 7). This is a low microphony version of a 6AU6 and, given that it is the first amplifying valve in the 300BPSE, this seemed to be a useful feature. The Sylvanias were noticeably more detailed with better imaging than the Edicrons. This was a definite upgrade, and they only cost a few pounds each new.

I had also borrowed a pair of standard Sylvania 6AU6s and similar offerings from Westinghouse, RCA and Brimar. I also managed to track down some the Mullard equivalent EF94s (Figure 8). The Sylvania 6AU6s were not quite as clear in the top end in comparison to their 7543 relatives. However, the bass was as tight and well extended and the imaging was still better that the Edicrons.

Next to try was the Westinghouse 6AU6s. With this valve, the sound stage sounded flatter front to back and the bass was a little "woolly". Further listening revealed that the top end was slightly muddy in comparison with the others tried.

The Westinghouse offerings stepped aside to make room for the 6AU6s from RCA. These were lovely valves with an excellent depth to the sound and orchestras seemed bigger and fuller. The bass was tight and well extended and the top end was clear with no harshness.

Figure 7. The Edicron 6AU6 with the Sylvania Equivalent 7543

Now it was the turn of the Brimar 6AU6s. Alas, these were not quite up to the job as they showed themselves to be somewhat thin and less controlled in the bass. Orchestras sounded a little "boxy" and the top end was less clear than any of the other valves tried.

Last in this section was an old shield Mullard EF94 in yellow print, another in white print and a matching Mullard branded 6AU6 white print. All three variants sounded the same and were very similar in character to the Sylvania 7543. They had a great realism with excellent clarity and very tight bass. I did notice that the gain of the yellow print EF94 was noticeably higher that the other two, which skewed the sound stage somewhat. This highlighted the importance of ensuring that used valves are reasonably matched before deciding to purchase them.

Figure 8. Other 6AU6s from Sylvania, Westinghouse, RCA, Brimar and the Mullard EF94

It is quite difficult to declare an overall winner in this section as the effect of the different valves in the 300BPSE is quite subtle. The top three are the Sylvania 7543, RCA 6AU6 and Mullard EF94/6AU6. However, for me the RCA just pips the other two to the post with its fuller sound stage and tight bass.

300B PSE and 5U4

The last valve to be auditioned was the 300B rectifier valve. "Why change the rectifier?" you may well ask. What difference can that make to the overall sound? Well, from my experience, a huge one, and this is not unreasonable when you take into consideration that with a single-ended Class A amplifier, such as the 300B PSE, the power supply is in series with the output stage and therefore in the signal path.

At this point, I should mention that I did try some used 5U4Gs, but ended up being rather disappointed. The sound was thin and bass light and at higher volumes, strings sounded decidedly harsh. I came to the conclusion that the emissions were down and they simply couldn't deliver the power anymore. The message is simple – don't by second-hand power valves. Small signal valves go on for ever (well almost), but used output valves and rectifiers should be avoided. You have been warned!

Figure 9. The GEC and Edicron 5U4G Valves

The supplied Edicron 5U4Gs were next replaced with some Russian equivalents. These can be picked up brand new for a song and they did not sound bad at all. However, I felt that the Edicrons gave a fuller, more rounded sound.

Unfortunately, a friend with a similar setup to mine had been expounding the virtues of a pair of NOS NIB 5U4Gs made by GEC that he had acquired. I say "unfortunately" because they cost around £75 each and the Russian ones cost only a few pounds. However, a pair of the GECs were obtained and carefully fitted into place. These were brand new and had obviously been lying around for a few years as the boxes were a little worst for wear and bore the date "1943", which can been seen on the box in Figure 9!

The difference was not insignificant. Right from the word "go", the whole sound stage opened up with stunningly accurate image placement. Yes, the bass was tighter and more extended than with the Edicrons or the Russians, but the precise location of instruments in the room was a startling improvement. One of my standard test records is Stravinsky's The Firebird Suite performed by the Atlanta Symphony Orchestra on Telarc digital recording DG-10039. The deep and extended drum roll during the opening sequence which is so low in frequency that it is almost felt rather than heard now had a defined pitch. Further into the recording, the "twittering" of the strings were clear and crisp but not at all harsh.

All in all, this had been a very interesting exercise. To summarize, I would suggest that you get what you pay for with the power valves such as rectifiers, but with small signal valves, you can definitely pick up a bargain. That does not mean that one does not need to be careful, as all markets have their share of rogue traders, but with a little common sense, there is plenty of opportunity to find what you are looking for at a reasonable price.

To my ears and for most applications, I really like the old shield Mullards in both the white and yellow variants of printing. However, I have seen some go at auction for silly prices, so be restrained! Don't be put off from buying used small signal valves as long as they have been tested and matched. Also, don't discount some of the Russian valves as they can be picked up quite cheaply brand new and, as with everything, it is also a case of finding valves that work well with your equipment and personal taste. For me, I can't think of a better way

of summing up than the use of the well-worn phrase “They don’t make ‘em like that anymore”!

--ooOoo--