

MEGATRON

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Review by the editor Steve Harris

A small British manufacturer makes a single-ended bid for the high ground

In the late 1980s and the early 1990s, the audio underground in the US and Europe finally picked up on the efforts of Japanese audiophiles two decades earlier, and started a revival of single-ended triode amplification. The American interest really got going when enthusiasts started salvaging dusty pre-war systems out of old movie houses. Western Electric's 300B triode, dating back to the dawn of cinema sound systems, became the tube to use. Soon, the originals were like gold dust, but modern Far East and Russian equivalents filled the gap. Such was demand for good 300Bs that, in 1996, Western Electric (Westrex Corporation) started manufacturing the original tube.

Compared with the alternatives, the Western Electric tube costs an arm and a leg (it was announced at \$250). But there was no denying that this is the real thing. It comes in superb retro-style packaging, which will go straight to the heart of anyone who ever owned a Hornby train set, reason enough to feature it here! The packaging is not quite the same as the original: before the war, before plastic foam, the tube was suspended in the middle of a larger box, by a nest of cloth bands.

Single-ended triode operation means single-figure power output, demanding high sensitivity loudspeakers. This in turn means horn-loaded speakers. In America, there are Klipschorns, and various others derived from the cinema tradition. In the UK we have variations on the Lowther theme (Beuhorn, Carfrae and others). So in this country, if you couldn't quite get on with the Lowther concept (basically, a full-range paper-cone drive unit with rear horn loading for the bass, crossing over to front horn loading for the mid/treble), you would have lost interest in single-ended triodes too.

Yet there is a European alternative. Germany has its own tradition of horn speakers, but development there did not get stuck in the radiogram era. Of several companies to have developed modern horn designs, Avantgarde seems to have been the most conspicuously successful: or should I say, the most exportable.

The Avantgarde speaker range was initially brought to the UK by Peter Qvortrup, who got some stunning results from them with his AudioNote amplifiers. But UK distribution of Avantgarde speakers has now been taken on by Graham Tricker's company GT Audio, and this (in case you were wondering) is where TRON comes from.

Graham Tricker, who already had a long experience of rebuilding and restoring classic British valve equipment, built his first single-ended amplifier in 1990. He realised low-powered SETs could be unbeatable – provided that they had been designed for good reliability, very low noise output, and an input sensitivity matched to other equipment. These aspects, he felt, were not adequately addressed by existing commercial products. So it is no accident that TRON power amplifiers are single-ended designs – just what the Avantgarde needs.

TRON's first products, the Nucleus line and phono pre-amplifiers, were launched at The Hi-Fi Show in 1997, when Graham Tricker also showed a prototype 211 single-ended. But the 211 needs a very high-voltage power supply, which made the amplifier big, heavy and hard to make. Then the appearance of the Czech-made high-power KR300B tube made it possible to design a powerful yet manageable SET. The 211 design was abandoned.

The Nucleus tube pre-amplifier is actually a line pre-amp and phono stage in 2 matching boxes. These are a chunky 155x140x225mm (whd), neatly & ingeniously constructed. The front and back bolt on to the extruded sections (finished in black) that form the corners. Flat aluminium section space the corner pieces, the array of ventilation holes in the top forming the 'TRON' names. Each unit has its own remote mains transformer, in a sturdy 100x60x230mm (hwd) box. Connection to the pre-amp units' flying leads is via indestructible-looking 8-pin locking connectors.

The line pre-amp circuit is designed around a single 5687 double-triode, with ECL85 valve regulation for the power supply. There are 5 line inputs (all 100k ohms), and a tape output. Maximum output is 14V, from a 600 ohm output impedance. Frequency response is quoted as 3Hz–38kHz (+/-3dB) and a signal-

to-noise as better than 90dB. Distortion is loosely quoted as typically 0.5%.

Apart from the absence of knobs, the Nucleus, phono stage looks identical. It caters for moving-magnet and moving-coil cartridges, extra gain for m-c provided by transformers: the purchaser can choose from 2 different ratios, said to cater for all moving-coil cartridges. Flexibility in the amount of overall gain is provided by a choice of valves. With ECC83s in use, the output is 1.8V, but by substituting 6072 valves, the output is cut to just over 1V. This helps match to other amps' inputs, for optimum operation of the volume control.

Passive circuitry is used for RIAA equalisation. Like the line pre-amplifier, the phono unit is built using custom-made components, mounted on a special circuit board via turret tags, using hardwiring between components. Once again, the power supply is regulated using an ECL85 valve. In practice, GT Audio will be able to advise and make sure the phono stage is set optimally for the customer's cartridge.

SINGLE-ENDED POWER

In TRON's Type 300B amplifier, a 5842-triode valve drives the directly heated 300B output tube, connected to the loudspeaker via the specially made output transformer from Partridge. There are no capacitors in the signal path, nor any overall feedback. The power supply rectifier is a 5Z3 valve, which is connected in turn to a pi filter. The valves are heated with DC to eliminate hum problems. Although high-sensitivity horns will make the most of a few watts of amplifier power, by the same token they reveal any noise problem in the amplifier, which might have remained inaudible with conventional boxes. It's claimed that in the Tron Type 300Bs, hum on the output stage has been reduced to around 5mV peak-to-peak, low enough to be inaudible even when using loudspeakers of well over 100dB/W sensitivity. Custom-made components are used, hardwired between stages using copper wire. Traditional hardwiring methods used for all signal wiring can be seen in the 'internal' view. This also shows the neat, all-aluminium chassis construction: the black-finished case members are made from a custom extrusion and are sandwiched between the top and the bottom plates, which are brush-finished and anodised. Transformer covers are also of aluminium. The unit measures 460x235x35mm (hwd), and its functional, well proportioned looks are complemented by their high standard of finish and, finally, by the delightful TRON badge in which a red orbiting electron (or is it the moon?)

is actually the power-on LED. On the back are IEC mains inlet (Tron supplies a fearsome-looking heavy cable for this), one pair of good quality phonos for the input, and 2 sets of high-grade 4mm binding posts for speaker connection. The amplifier doesn't actually look too bulky in the home, but it is heavy: depending on your personal health, this stereo chassis comes close to the limits of liftability. When moving it around many users will enlist assistance rather than risk groin strain.

Power output is specified as 9W per channel, this being the limit for a Western Electric 300B operated within the maker's specifications. However, it can be supplied with Kron KR 300B valves, claimed to produce 18W/ch. Another way to get more power is to contemplate a pair of TRON monoblocks, on a similar chassis using 1 x 300B tube per channel.

A casual follower of hi-fi trends might still think of the 300B as the most famous and desirable triode for single-ended purist amplifiers. But the cognoscenti have moved on, and there are now many devotees of another directly heated triode, developed in the 1930s. TRON's Type PX25 stereo power amplifier, which actually appeared before the Type 300B version, looks exactly the same but with a pair of the straighter-looking PX25s instead of Western Electric balloons. Inside, the rectifier is now a U18/20 valve and supply voltages are adjusted to suit the PX25. You would not buy this amplifier for its power-to-weight ratio: as TRON says: 'in spite of its generous dimensions, it produces 5Watts'.

SOUND QUALITY

For this review, I was loaned a complete system, consisting of Nucleus Line Pre-amplifier, Nucleus Phono Pre-amplifier with both the Type 300B and the Type PX25 power amplifiers, along with TRON's own interconnects. I was able to listen to the units over a period of many weeks, and with a variety of ancillary equipment. For compact disc I used mainly the Exposure CDP and Musical Fidelity E624; vinyl replay was via a Roksan Xerxes/Artemiz and various cartridges; the Avid Acutus (reviewed last month) with SME Series V arm and van den Hul Frog cartridge; and (briefly) an SME Model 20 turntable with SME V arm. Speakers used included Avantgarde Uno horns and a variety of others.

I started, in fact, with the Nucleus/Type PX25 combination feeding the Avantgardes, and with the then-resident Avid record deck as a source. The sheer class of the Tron amplification was immediately obvious. It created a

big soundstage, with tremendous detail and that unmistakable single-ended virtue of abundant life and excitement. (Remember the Avantgarde speaker has its own active bass section, operating below 150Hz; although driven via the main amplifier's speaker terminals, this means that you cannot really use the Avantgarde to judge amplifier bass quality.) I didn't find it hard to understand why a lot of users have fallen for the PX25, but here I was being offered the choice between this and the 300B. Graham Tricker, a shrewd judge of character as well as valve sound, quickly decided that I was the '300B type' and immediately shipped over the Type 300B.

Side-by-side comparison certainly revealed a quite different balance. If you'd become accustomed to the PX25, you'd probably say the 300B was soft; yet I found that, in TRON's application, it gave me the classic single-ended virtues in a more completely enjoyable form. The soundstage was much less forward. I would say it was between and behind the speakers now, rather than level with them or projecting – but this might give a somewhat misleading idea of the Avantgardes, because whatever source you use, these speakers seem to bring the music into the room, rather than leaving it outside the window behind, and without ever being too 'forward'. The 300B really did have more of that 'liquid' midrange smoothness, a generally warmer balance and one that would perhaps be kinder to rougher sources. When it came to signal-to-noise ratio, the TRON pre- and power amplifiers all performed as advertised, and were all superbly quiet with the 99dB/W-sensitivity Avantgardes. I'm sure there are other valve-amp manufacturers whose hearing has developed a notch filter at 100Hz, and a severe treble roll-off, as they don't seem bothered by levels of power supply buzz and sizzling hiss which would upset any normal person living in this world of silicon semi-conductors. With TRON, though, there really is no compromise in this respect. You switch on, the music comes with no more fuss than with any solid-state amplifier.

During the review period, I was also able to compare the TRON 300B with a well-used AudioNote Conqueror, using AudioNote-branded 300Bs. Although in its day a less expensive product, the Conqueror stood up quite well in this comparison, if not actually living up to its name. (It usually does when you put up against most solid-state amplifiers.) It was certainly not as quiet as the virtually noise-free TRON (the sample may or may not be typical), but it seemed to have, if anything, an even greater feeling of freedom, an effortless quality, like an engine that has been well run in.

Yet somehow the TRON Type 300B could produce an amazing soundstage, where things could happen in the 'back corners'; some subtle limitations of staging which I had previously ascribed to my listening room were magically overcome. In this aspect, it shows its superiority, and I suspect that all the careful work that has gone into making it so very quiet has also helped in low-level detail and ambience retrieval. A very common criticism of single-ended triodes is that they have no bass. To assess this aspect, I hooked the TRON power amplifiers to Rogers Studio 7. In theory, a far from sensible combination, as sensitivity is well below 90dB/W, so you cannot expect realistic concert-hall levels. You can get nice sounds, though. Predictably, that bass was light, but had a natural, unforced quality. On the other hand, the combination of 300B-type midrange and the Rogers' well-tuned dispersion characteristics allowed them to produce a beautiful, airy sound stage.

CONCLUSION

Summing up the achievement of these Tron products is not easy, especially as at this point the rather alarming effect of accumulating price tags has been taken into account. The Type PX25 power amplifier is £6150, but if you are already for that type of expense the £6550 of the Western Electric-equipped Type 300B version will not and should not dissuade you. The line pre-amp and phono stage are now £3500 each, which is not a small sum. So we are looking at an amplifier system costing, by the time you've treated yourself to a couple of audiophile LPs to play on it, nearly £14,000! It is a keen enthusiast who will pay such a sum for an amplifier that offers less than 10W power output, no remote control and in which the active devices amount to a total of less than a dozen valves.

So the question is not whether such products are good value for money, but whether they justify their existence. I think they do. You can get most of what the TRONs do for a lot less, but you can't get all of it. Graham Tricker set out to produce a very high quality amplifier that would do just this to the best high sensitivity speakers, and he has succeeded. If you are lucky enough to be able to afford the big Avantgarde models, the TRON provides the perfect match. And for the rest of us? In their combination of meticulous build quality, sound and general integrity, the TRON products set standards for others to match. We can at least be glad they are British.