

MELBOURNE AUDIO CLUB

Excerpt from September 2022 Newsletter

I don't like superlatives. I try not to use absolutes. But last month's presentation by Hugh Dean was the best I'd experienced in the Willis Room. I hear you ask, what criteria do I use to make such a call? Well, there are three. First, the presenter has to have obvious mastery of his (or her) subject. Second, he has to be able to communicate that knowledge fluently and convincingly to the audience. Third, the show has to be entertaining. Prior speakers have often met one, sometimes two, of these criteria but it's very rare for anyone to achieve all three.

Hugh did just that, and combined his narrative with a thoughtful collection of a dozen tracks carefully selected to illustrate the specific point he was trying to make. Again unlike so many other demonstrations I've experienced, Hugh's choice of music was anything but gratuitous. Hugh has been making amplifiers for over 25 years. His guiding philosophy, informed greatly by the ideas of Jean Higara and John Linsley Hood, has not changed much over this time. An interview I found on the web from 1999 has Hugh concluding with "*I believe that a hifi system is approaching nirvana when it makes you weep*" (full copy of the interview at: <http://www.arduman.com/aa/Sayfalar/hugh/hugh.htm>).

The way this might be achieved is laid out in a paper Hugh presented to the Melbourne section of the Audio Engineering Society in 2015 here:

<https://www.aesmelbourne.org.au/meetingreportaugust2015>.

Hugh argues for the importance of a 'distortion profile', a cascading arrangement of harmonic distortion, dominated by the 2nd harmonic (at about -75 dB from the fundamental), with the 3rd some 15-20 dB below that, the 4th another 15-20 dB lower, and the 5th lower still, at about -115 dB here:

<https://www.aesmelbourne.org.au/wpcontent/media/>

THE%20AKSA%20STORY.pdf.

For those interested in following up other aspects of Hugh's approach to music and audio, see Peter Xeni's interview with Hugh in the 'Sound Travels' section of Australian Hi Fi of November 2018 here:

<https://www.pressreader.com/australia/australianhifi/20181101/283454962370277>.

Last month Hugh showcased to the club the latest amplifier encapsulating these ideas, his 125 watt per channel monoblock power amplifier the Titan, named after Mahler's 1st symphony. It sits between Hugh's entry level Saksa 85 power amplifier and the Maya 200. A pair of Titans retail at \$4200. Unlike the two earlier mosfet amplifiers, the Titan uses good old fashioned bipolar transistors

(30 MHz Toshiba). Why? Hugh said bipolars gave a more punchy sound than mosfets, better suited to loud and highly dynamic music such as rock (a case of 'mosfet mist'?). In any case, Hugh had a couple of hundred of the Toshiba transistors lying around the workshop and didn't want them to add to the collection of audio stuff his long suffering wife would have to deal with when he shrugged off the mortal coil. But unlike so many high powered amplifiers that rely on a phalanx of power transistors to deliver the end grunt, Hugh is of the firm belief that 'less is better' (ergo the simple pre-amplifier used on the night) and so the Titan uses only two pairs of power transistors in the final stage of each channel (i.e. six including the two drivers). I've always thought this a good idea: I remember one critic arguing that a solid state amplifier that uses an array of multiple power transistors must inevitably sound like a chorus and not a soloist, and it's a soloist we need it to be for highest clarity after all.

Onto the gear and music. Hugh used a pair of his monoblock Titans, fed by an HP laptop running JRiver software, passing the bitstream to a Cambridge Audio DACMagic 100. Hugh used mostly high resolution tracks, mostly 24/96 from 1500 kbps to 6700 kbps. The preamplifier was a simple 24step passive attenuator. The speakers were inexpensive (~\$1600 according to Hugh) pair of floorstanders from Adelaide Speakers in South Australia. I checked the Adelaide Speakers website (<https://www.adelaidespeakers.com/index.html>); the model was the 1293 Summoner, which now retails at \$1800 a pair constructed, or \$1050 less the cabinet. Sensitivity is quoted at a wonderful 93 db/watt/metre but Hugh informed me it was closer to 90 dB/watt/metre. Impedance is a nominal 6 ohms, so they should be pretty easy to drive. I'm not sure anyone would chose the cabinetless option, as the speakers on the night were very, very attractive. They were flawlessly finished in real American oak but other veneers are available according to the manufacturer's website. The driver complement was a 12" Peerless bass driver, 5" SB Acoustics midrange and 1" dome waveguide SB Acoustics tweeter. These are by no means ultra-highend or expensive drivers. The box loading was described by Ron Newbound as a peculiar mix of bass reflex and semi or quasi transmission line.

I must say this combination of a large (12") bass driver in a threeway floor-standing system has so much to offer. Some longstanding English firms, such as Spondor and Harbeth, still offer this arrangement in their top-of-the-line models. My motor enthusiast mates often say "*There's no replacement for cubic displacement*" and this applies to speakers as much as to automobiles. A single 12" driver can move as much air for a similar displacement as four 6" drivers, so why not take advantage of that? The only way you can get a small bass driver to move as much air as a big one is to drive it with an atom-smashing amplifier that pushes it far beyond what its physical fundamentals would normally dictate. It's like supercharging an internal combustion engine. The

great English automotive engineer W.O. Bentley was utterly opposed to his 4½ liter racing engine being fitted with a supercharger: "... to supercharge a Bentley engine was to pervert its design and corrupt its performance" he was reported to have said in the late 1920s. "If you want my cars to go faster, fit them with a bigger engine". (A 4½ litre Bentley won the 1928 Le Mans 24 hr race, and came second and third in the following year; the supercharged version never won a race.) We can apply the same logic to bass drivers, and who can argue that the best bass we have ever heard came from Gerald's massive 18" Klipsches? The crossover in the speakers was a universal design adapted for different Adelaide Speaker models. The crossover was obviously the weak link in the chain, so Hugh worked with Ron Newbound to wave a magic wand over the existing design, transforming it from a series crossover to a parallel 1st order crossover for the bass/midrange (somewhere around 250 Hz) and a 3rd order crossover for the midrange/tweeter (somewhere around 2500–3000 Hz). The bass loading also was rejigged to be adjustable by having the lower moving shelf within the cabinet, thereby adjusting the port size. What a great idea! Many bass reflex speakers come with foam bungs that allow you to tune them (a bit), but Ron's implementation is so much more flexible. As I noted earlier, a great strength of Hugh's presentation was the alternation between explaining how he designed and built his amplifiers and then his providing a musical track to demonstrate a specific point. The first track, 'Flight of the Cosmic Hippo', was chosen to highlight the bass response of the setup (the bass line on this track is played on a 5 string fretless bass). And what a bass response it was! Was it a bit overblown in the upper bass? Who could tell unequivocally, given that we were in the Willis Room? It was followed by Patricia Barber's 'A Taste of Honey' and then by Dead Can Dance's 'Opium' to demonstrate that great imaging depth can be achieved with a transistor amplifier if sufficient care is taken with the voltage amplifier stage and the feedback regime.

Hugh argued that an amplifier's voltage amplification stage is where musical engagement is made, either dead or alive. Both tracks were superb in the Willis Room, which really is to say something with the venue's well known wayward bass response and harsh, reflective walls. Some Mozart followed (Divertimento in D) recorded as delightfully as ever by the Chesky brothers in New York. Hugh then spoke about the benefits of making an amplifier as simple as possible but as Einstein is reputed to have said on an unrelated topic, "*no simpler than that*". The next tracks, 'Baby Elephant Walk' and Greg Brown's wonderful 'Billy from the Hills', were played to demonstrate the advantages of avoiding large amounts of global negative feedback with only some local feedback applied. The Titan uses no more than 30 dB global feedback from the output, and only nested feedback from the output to the voltage amplifier stage. Most solid state Class AB amplifiers use up to 65 dB of global feedback, so Hugh's design is a significant departure from much

conventional thinking. Hugh pointed out that he used one metallised polystyrene capacitor in a critical point of the output stage of the amplifier typology, and this choice was paramount for the final sound quality of the amplifier. The result of all this careful design and implementation is great image depth and, critically, musical engagement. I wrote in last month's write up that I'd yet to find a Class D amplifier that engaged me much at all, so was heartened to hear that Hugh also places this value high up on his 'must have' attributes for amplifiers. Curiously, I was flicking through a back copy of Stereophile while enjoying breakfast this morning and came across John Atkinson's review of the ultra-highend Gryphon DM100 power amplifier. He found the sound of the Gryphon was very similar to the much lauded – but idiosyncratic – Jadis 200 valve amplifier but "*... there was an uninvolved character to the solidstate presentation that left the music's customary magic in the bottle*" (Stereophile November 1994, page 123). Yep, that's often the difference I find between valve amplifiers and solid state amplifiers, but somehow Hugh has managed to bridge that gap with his Titans. An audience member then asked about the Titan's power supply. Hugh responded that he preferred traditional linear supplies and pointed out the main problem with switchmode supplies was noise, something not important for most applications but very significant for an audio amplifier, which is essentially a modulated power supply. No argument from me there! The last few tracks included one from the Buena Vista Social Club, the infamous theme from the Pink Panther, a revisiting of the Dead Can Dance recording (a live event recorded in Melbourne and astonishing in its aural width and depth), a symphonic piece by Scriabin and, to finish the night, a gloriously farting, honking saxophone blown by Sonny Rollins.

To conclude, what a night! It was worth venturing out into the cold, blustery rain on a Melbourne winter to hear what Hugh had to say about amplifier design and to experience a masterful exposition from someone who clearly understands his topic, can relate that to an audience, and can keep them entertained for well over 2 hrs. And it shows again that to enjoy our hobby does not require extremely deep pockets: \$1800 speakers and \$4200 monoblock power amplifiers formed the guts of the setup we heard, and the DAC was certainly not an uber expensive one. Yet the combination provided a rare degree of musical enjoyment and, dare I say, engagement.

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