

Trilogy 933/900

MARTIN COLLOMS ASSESSES A VERY INTERESTING AND SERIOUS TWO-BOX HEADPHONE AMPLIFIER

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Encouraging rumours have been circulating for quite a while about this unusual headphone amplifier from Trilogy, a well established audio company based in South East London. Long known for possessing certain skills in thermionic valve audio design, the company is also well able to create in solid state, not least this 933 model headphone amplifier which has been quietly building something of a reputation over the past year or two. Incidentally, Trilogy designer and founder Nic Poulsen was also responsible for the successful Isol-8 line of mains power cables conditioners and filters, which are run from a separate organisation.

Given that good headphone amplifiers may be available for £500 and luxury examples may cost £1,000, this £2,000 Trilogy 933 has a rather high pricetag, even though it does come complete with a very convenient infra-red remote control. (Do note, however, that this must not be mislaid, as there are no front panel controls whatsoever.)

The surge in popularity of headphone listening might be difficult for traditionalists to understand, but it does mean that dozens of headphone amplifiers are now available at all conceivable prices, from the Creek *OBH 21SE* at around £300 up to the almost £5,000 McIntosh example. Our last issue reviewed models from Oppo, Lehmann, Beyer and Pro-Ject, while this issue includes coverage of the Sennheiser *HDA 600* as well as this Trilogy 933.

While most sales of decent quality headphones are made at prices between £100 and £200, an altogether more aspirational group is found with pricetags that extend up to £2,000. These can make it possible to hear greater levels of musical subtlety, and also distinguish between different driving amplifiers, leading to improved satisfaction and enjoyment.

Test Results

As the designer points out (see Boxout), the 933's amplification section does indeed run warm, no question, and at about 35°C on my estimate, so I would therefore keep its hefty milled-from-solid-alloy casework unobstructed and away from direct sunlight, for fear of overheating. This is actually a two-box unit: the actual amplification section weighs 1.3kg, while the stainless steel clad power supply

unit, ideally placed on a different shelf, turns the scales to 2.85kg.

Based on a choke input design, the stable low noise power supply feeds selected Mundorf reservoir capacitors with a total power input of 22W. The amplifier's input impedance is 20kohm with a gain of 19dB, which is only slightly dependent on loading in view of the low 3ohm output impedance. Rated output is an ample 0.8W into 300ohms, while distortion and noise is rated at less than 0.05% at 10mW output. I confirmed that this was held from 10Hz right up to 100kHz, and that absolute phase is preserved. The signal-to-noise ratio is rated as equal or better than 85dBA (I got 86dBA, or 71dB unwt'd. inc. hum). The stated frequency response is 15Hz – 120kHz ±0.5dB (it was measured at -0.02dB, 30Hz – 30kHz). Distortion showed admirably low order components, mainly 2nd harmonic. All these are very respectable figures and the technology has clearly been well optimised for headphone use.

Sound Quality

From the off the Trilogy 933 sounded a little dark and rich when compared with the general run of 'me-too' solid state headphone amplifiers – but it only required a few minutes to realise that actually the reverse was true, and that much of the competition tended to sound brighter and thinner than it should. The Trilogy demonstrates an appealing vein of subtle clarity and high resolution. Information is not thrown at your ears; rather it clearly resides in the deep, well focused and stable soundstages that are created.

Furthermore that impressively high standard of sound quality remains consistent across a wide range of volume settings. It will play very loudly if so required, without aural strain, yet the sound remains very detailed and satisfying even when whisper quiet, and an exceptional overall dynamic range is demonstrated. I heard new detail and compositional complexity that I had not previously experienced with many familiar CDs, including Pink Floyd's densely scored *A Momentary Lapse of Reason*, for example.

Commenting as a picky engineer, a touch of DC offset was audible as minor clicks alongside the volume control action, and also when inserting the jack plug. A tinge of 'ssh' circuit noise, and a trace of 100Hz hum was just audible with more

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sensitive headphones, but these were down at the audible noise floor threshold, and lower than the background noise of nearly all program material. Furthermore, I considered that these minor artefacts did not detract from the performance, and were in fact inaudible in normal use. The 933 simply grew on me with prolonged use, as I continued enjoying its powerful and musically involving performances. It is fitted with little rubber feet, and picky individuals might wish to experiment on both enclosures with alternative supports, such as the Norwegian self adhesive SoundCare devices. The remote control unit worked well, and is in fact very convenient, with nicely judged volume steps.

Clearly capable of audiophile quality, the information retrieval was consistently satisfying, but the excellent dynamics and dynamic contrast, combined with the very high resolution of fine detail, was still more rewarding. The bass is deep and thunders powerfully when required, and the whole soundscape is imbued with an impressive sense of power and drive, though rhythm and timing did not quite match this standard on rock music. Soundstages were expansive with very good focus and excellent ambience and space; with eyes closed it was so easy to lose yourself in the vivid soundscapes generated.

It made stock headphones sound better, for example the PSB M4Us (*Vol7 Nos1&2*) moved up to the high end, while the micro bud Sennheiser IE 800 (*Vol8 No3*) showed its studio quality pedigree and rivalled the big Denon both for bandwidth and micro detail. Somehow Trilogy's 933 seems to bring out much of the best qualities of the products connected to it.

Conclusions

Designed by an engineer who is also an enthusiastic audiophile, Trilogy's 933 headphone amplifier delivers audiophile sound quality. I always enjoyed using it when I had the opportunity, and award it an Audio Excellence rating despite some reticence in the timing department. It's delightfully balanced musically, with excellent dynamics, bandwidth and clarity, delivering expansive stereo images with fine detailing. This headphone amplifier is a notable achievement overall, and could indeed make a very fine power amplifier for loudspeaker drive if it could be scaled up without any difficulties.

Manufacturer's Data

Trilogy 933 (headphone amplifier)

Inputs	2 (RCA/phonos)
Outputs	1x stereo 6.3mm jack
Standard Finish	Silver anodised
Power consumption	22 Watts
Input Impedance	≥20KOhms
Gain (max)	19dB
Frequency response	15-120KHz +/- 0.5dB
Output impedance	≤ 3 Ohms
Output Power	800mW/300ohms, 250mW/60ohms
Distortion (THD)	≤ 0.05% 10mW into 300 Ohms
Signal to Noise Ratio	≥ 85dB A Weighted
Size (WxHxD)	150 x38x220cm
Weight	1.8kg

Trilogy 900 (power supply)

Size (WxHxD)	132x57x225cm
Weight	2.85kg
Price	£1999 (both units)



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Nic Poulsen Comments

"The 933 was challenge to design and at the same time get right in marketing terms. It was, and is, an expensive product, and at the time it was launched it was more expensive than almost any alternatives. I aimed to create a design to a notional concept which we later described as *an amplifier for headphones*. As I see it, everything about the 933 is true 'high end', using discrete rather than IC chip-based circuits, a substantial and separated choke input power supply, single-ended Class A amplifier topology, costly transistors and FETs sourced from Japan; the list goes on.

"My distributor Nigel Crump, who has been involved in the headphone arena for 'far too many years', warned me as an amplifier designer that the resolving power of good headphones would be a shock compared with loudspeakers, and so it was. Like all really high end high resolution products, you hear everything that you do in the circuit design, and equally, every component that goes into it. As a result the 933 is a low feedback direct coupled design which runs quite warm and consumes some 15W of power, which is necessary to reach the optimum operating point of the Toshiba MOSFET output devices and achieve the best dynamics."