

# Audio Research Reference Phono 3 phono stage

by Alan Sircom



Launched at the tail end of last year, the Reference Phono 3 phono stage by Audio Research marks a significant change in the company, and it's not just cosmetic. The new Audio Research reflects the changes in the audio market, as we move further from products that are sublime on the inside only, to products that take every aspect of the design and build process seriously.

The Reference Phono 3 is a perfect example of that change in stance. It needs no back story and

makes no apologies for itself, being extremely well made inside and out. There are little design touches in the Reference Phono 3 that combine to make this a far more acceptable product to a wider audience, losing the 'lab gear' look of previous models. In fairness, the Reference series has been steadily improved inside and out for several years, but if you compare this 2016 model with the original Reference Phono made at the turn of the century, the toggle-switches, rattling case, and contrasting slimline grab-handles have all been replaced, making the product look more like it belongs in the home, not the test-bench. It's strange how powerful this change is, because the Reference models of a decade and a half ago seemed timeless, yet look old-fashioned by today's standards.



Of course, the big industrial design change is the move to that central black panel and large, softer-

touch buttons. This harks back to very early Audio Research designs and first re-appeared in the G-Series line. It filtered through to the Reference range last year, and this year – with the Foundation series – it looks set to be a root-and-branch design change through the whole ARC line-up. Personally, I think it a marked improvement on what went before, even though I liked what went before.

Any product bearing the 'Reference' name in Audio Research has some big shoes to fill, but arguably none bigger than the Reference Phono 2 SE this new model replaces. The 'Ref 2' and 'Ref 2SE' were some of the most highly praised and keenly sought after top-notch phono stages on record, and was in direct lineage to the cost-no-object Reference Phono 10 two box model. The Phono 3 doesn't exactly tear up the rule book and start again, and ostensibly the layout is similar even if the design has changed. The row of six push buttons to navigate through every part of the ARC's extensive menu system and the large green vacuum fluorescent dot matrix display panel remain 'effectively' unchanged, as do the five levels of loading and the 71dB of active gain used in cartridge matching. This is a better thing than it first seems because the original navigation system was already easy to drive, and the near infinite level of cartridge matching remains state-of-the-art.

Like its predecessor, the Reference Phono 3 is underpinned by an extremely sophisticated logic control (extremely sophisticated for a valve phono stage, that is – this isn't International Space Station grade stuff). You can adjust every parameter through a menu tree, from the amount of time the Reference Phono 3 will run before switching to standby, through gain settings, valve operational life, display brightness, and EQ. Depending on your take on the whole phono equalisation debate, however, this menu system might be completely upside down – I know of collectors who have gone through their LPs and mark whether they are best played through RIAA, Columbia, Decca, or one of several lesser known equalisation curves. The Reference Phono 3

offers the listener the option of scrolling through the Big Three – RIAA, Columbia, and Decca – but you'll need to run through all five main pages of the menu system to get to these. Listeners who change valves once every 2,000-4,000 hours, who never adjust the display brightness or standby settings, and who use the same cartridge month in, month out – but who might change EQ curves once or twice in a listening session – have to tab through a lot of pages to get there. Fortunately, the remote obviates all this, as it has one-touch access to curves, loading, and even tube hours.



I'm trying to sit on the fence deliberately here, because the equalisation arguments rage long and hard. For my part, I have a handful of older LPs (mostly Deccas) that seem to benefit from changing tone curve, and as a consequence the placement of EQ at the 'coffee and liqueurs' page of the menu seems wholly appropriate. No doubt others will get exercised over the same thing. Regardless, I'm pleased there are alternate tone curves on the Reference Phono 3 (as there were on its predecessor), and when called upon, they work extremely well; as in fairness they did on the Reference Phono 2 that went before.

The change from Ref 2 to Ref 3 comes in the guise of two additional 6H30 valves in the analogue stage (now bringing the total number of 6H30 valves in the Ref 3 to seven – six in the analogue stage – plus a solid-state rectifier and a 6550 in the power supply). These two additional valves do not replace the input FETs introduced in the Reference 2, they just add linearity to the analogue stage. Although an oversimplification, that basically means the power supply stage is effectively half of a mono valve power amplifier in its own right, dedicated to feeding the three 6H30 valves for each channel. For a phono stage, that is heroic amounts of clean power delivery.

The transatlantic design team (electronics from Plymouth, in Minnesota, USA, product design from Vicenza, in Veneto, Italy) has come up with something more than just a nice case. In moving

away from Audio Research's classic design lines, the chassis has developed some elegant aluminium side panels that look great, but aren't just for show: they help dissipate heat and resonance away from the all-important internals.

A cynical reading of the Reference Phono 3 would be "two more tubes and a nicer case. Is that it?" But, as ever with such things, the real-world take on this is that the Phono 3 is redesigned from first principles, incorporating the best elements of the Reference Phono 2 rather than simply 'cloning' its predecessor. In fact, the Reference Phono 3 is more like a synthesis of what Audio Research has learned from the rest of its Reference range, distilled into one big phono stage. Those two additional valves help linearity in a manner akin to that discovered in the Reference 10 and Reference 6 preamps.

Having a phono stage that is built like a power amplifier does have a short-term downside. It takes forever to run in. Whether it's those Teflon capacitors (there are a lot of those) or the tubes bedding in or simply some mystery X factor that means the amp needs time to get used to its environment, but as with previous Audio Research products – and especially those in the Reference line – this takes hundreds of hours to come truly on song. It sounds good to excellent out of the box, but keeps on improving for the next few hundred hours (Audio Research itself suggests 600 hours... and not 600 hours of it gently warming up in a corner, 600 hours of active record playing). You could easily be talking a year of record playing before the amplifier comes on song. As I left the keys to my time machine in 1789, and this review isn't beamed back from mid next year, there is still some room for improvement in the sound of the Reference Phono 3.

That sound combines the texture, soundstage spaciousness, and richness of valve phono stages with the detail and silent backgrounds of solid state. This is a balance, but it's both a dynamic one, and one that will appeal to many, many listeners. This sense of balance makes for a presentation that is extremely realistic, irrespective of the music played. Of course, the more live and acoustic the recording, the more 'real' it sounds, but even an old 45rpm 12" single of 'Two Tribes' by Frankie Goes To Hollywood [ZTT] sounded 'realistic'. In fact, this Trevor Horn throwing a studio at a remix is jaw-dropping on the least impressive audio equipment, but here it sounded unfeasibly dynamic, rich, and

impressive. Listen to this dance-music-meets-1980s-paranoia masterpiece through a system worthy of the Reference Phono 3 and you'll be left gasping by the end of the piece. Switch back to more traditionally audiophile-chummy, dynamic recordings like Tennstedt's powerful version of Mahler's Third Symphony [EMI], and you'll be in the same state. This is not LP replay for the casual user; it's for protracted musical sessions and enjoyment red in tooth and claw.

The Reference Phono 3 also always seems to have reserves in the tank. This doesn't mean it never gets out of low gear, more that it is entirely unflappable. You might not think of a phono stage in terms of its musical robustness, but once you have experienced the authority of an phono amplifier (and let's be clear on this, the Reference Phono 3 should be classed an 'amplifier' not a 'stage'), its hard to look back at less robust designs.

Yet for all that unflappability, there's one key word that effectively sums up the defining characteristic of the Reference Phono 3: agile. While few phono stages sound 'arthritic', when listening to the Reference Phono 3, one gets an underlying sense of agility. It reacts to the most subtle changes in timbre, tone, or dynamics without the least concern, and to such an extent it makes many rivals seem slightly ponderous. More interestingly, the handful of phono stages that match the Reference Phono 3's agility often do so by sounding 'twitchy' in comparison. 'A Night In Tunisia' from Art Blakey and the Jazz Messengers' A Night At Birdland Vol 1 [Blue Note] is a perfect example of what this phono stage does so well. The opening drum and percussion passages are full of subtle textures and dynamics, then the rest of the band kicks in like a whirlwind. The Reference Phono 3 tracks these changes perfectly and deftly, with outstanding (here comes that word again) agility.

Here's the thing. There are some who take the whole 'user adjustable EQ curves' aspect as intrinsic to a good phono stage. There are some who insist on absolute adjustability of cartridge loading as key to good phono reproduction. There are some who demand a low noise floor from their benchmark phono stages. Even in high-end audio's thermosphere (the one beyond the one beyond the stratosphere, populated by aurora, meteorites, and ballistic missiles), typically you might have to make do with a 'two out of three ain't bad' approach to



phono stage design. The Reference Phono 3 is that rare exception that ticks all the boxes: it is quiet, it is almost infinitely adjustable, and it does come with a profusion of EQ options. However, what makes the Reference Phono 3 really shine is that if you are simply a 'fit and forget' kind of listener, who will never delve deep into listening out for the optimum loading for each channel of a cartridge, and who will never, ever play anything other than the standard RIAA curve, the Reference Phono 3 still has much to offer, in sound quality terms.

The term 'reference' still has meaning for Audio Research, and it doesn't use the term lightly. The Reference Phono 3 is a true reference point in turntable replay, as it extracts a remarkable amount of information from the cartridge, and yet plays it in a manner that invites you to listen to more and more albums. Those hundreds of hours of run-in will never be viewed as a chore, more as a pleasure, unveiling both what your records are capable of and just how much better your Reference Phono 3 gets. And those hundreds of hours will pass quickly, too. From a position of not firing the ejector seat on my own career at least, there can be no 'best' in high-end audio, but the Audio Research Reference Phono 3 is one of those rare devices that gets closer to 'best' than most. Highly recommended.

## Technical Specifications

**Type:** Hybrid phono stage

**Tube Complement:** (6)-6H30P dual triodes, plus (1 each) 6550WE and 6H30P in power supply

**Controls:** Six Push Buttons: Power, Menu, Option, Enter, Input, Mute

**Inputs:** 2x RCA stereo pair, earth tag, RS232 comms

**Outputs:** Balanced XLR pair, single-ended RCA pair

**Frequency Response:**  $\pm 2$  dB of RIAA, 10 Hz to 60kHz; 3 dB points below 0.3Hz and above 300 kHz

**Distortion:** Less than .002% at 1.0V RMS 1kHz output

**Gain:** Selectable 51 dB (Low) and 73 dB (High) at 1kHz BAL; 45 dB (Low) and 67 dB (High) at 1kHz SE. (MC and MM compatible)

**Input Impedance:** 47k Ohms and 100 pF SE. Selectable loads: 1000, 500, 200, 100, 50 Ohms, and Custom

**Output Impedance:** 400 ohms Balanced, 200 ohms SE. Recommended load 50k-100k Ohms and 100 pF. (10k Ohms minimum and 2000 pF maximum)

**Phono Equalization:** (selectable) RIAA, Columbia, and Decca

**Dimensions (WxHxD):** 48x19.8x41.9cm. Handles extend 4 cm forward of the front panel

**Weight:** 16.6 kg

**Price:** £11,998

**Manufactured by:** Audio Research Corporation

**URL:** [www.audioresearch.com](http://www.audioresearch.com)

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