

MFA Reference Phono Amplifier

ANDREW HARRISON TRIES ONE OF THE MOST ELABORATE AND COSTLY PHONO STAGES AROUND, COMPLETE WITH VALVES



Stevens & Billington is the company behind the Music First Audio (MFA) brand, and specialises in signal transformers for broadcast and high-end audio applications. MFA quickly became recognised for its class-leading transformer volume control (TVC) pre-amps, using tapped transformers to control the volume of line-level sources, as well as a range of moving-coil step-up transformers. Now it also produces two phono stages – a solid-state *Classic MM Phono Amp 632* at £2520 (reviewed in *HIFICRITIC Vol10 No2*, p47), and this valve-based *Reference Phono Amplifier (RPA)* at £9840.

Music First Audio's dedication to transformers makes the specification of the *RPA* initially surprising, as it's entirely devoid of any signal transformers at its input, between the stages, or in buffering the output. However, the unusual design – a collaboration between S&B's Jonathan Billington and Nick Gorham of Longdog Audio – does still call upon the company's wire-winding expertise, using two custom inductors per channel at the heart of a novel passive RIAA equalisation circuit.

And as a moving magnet-only design, the *RPA* will almost certainly call upon separate step-up transformers such as MFA's own *Classic* (£2040) or *Classic V2* (£3000). (Few customers at this performance and price level will be using moving-magnet cartridges I'd reckon, although the amplifier's decent gain of 52 dB should allow high-output moving-coils.)

Almost every phono pre-amp ever made has relied on simple RC filter networks, built up from a combination of resistors and capacitors to restore a flat response from a vinyl record's pre-emphasis. Adding inductors (L) to form an LCR-based RIAA network does have a precedent though, starting with the first Westrex 45/45 stereo disc cutting lathe in 1957.

A small band of enthusiasts, initially in Japan and other Far East territories, have been experimenting with LCR-based phono amplifiers since the 1980s, although very few commercial products have followed the lead. To my knowledge, there's only esoterically priced valve stages from Wavac and Allnic (*HIFICRITIC Vol10 No4*, p38) plus standalone passive filters for DIY applications (*Tango EQ-600P*) as well as Stevens & Billington's low-key *EQ600* unit.

A passive equalisation approach, in contrast to filters placed in a feedback loop, is often prized for its more natural sound. Active RIAA is the more common circuit design, but by way of contrast some designs tend to exhibit a distortion characteristic that rises with frequency, which might explain the more 'etched' and over-detailed sound of many examples. Passive EQ designs may also be kinder to vinyl surface noise, making less of a meal of every transient click, for example.

Making that passive network LCR rather than RC has the advantage of constant impedance, such that following stages are literally unfazed by the T-network's sharp tonal tilts. In fact, accurate phase response, an issue with many filters, is a mooted advantage of the LCR topology.

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Design and Construction

The MFA *RPA* is a two-box design, the larger unit housing the RIAA equalisation and the all-valve gain stages, and this is fed power by the smaller dedicated linear supply. The latter has a custom toroidal transformer and provides initial high-voltage and heater regulation using solid-state technology. The main box then adds more power smoothing, with ten heat-sink equipped silicon regulators mounted on each of two mono circuit boards. The two boxes are linked by a thick 1.4m umbilical, terminated by heavy-duty Lemo connectors.

Three valves per channel are used: a *D3a* pentode for initial gain, followed by the passive EQ, then a shunt-regulated *6072a* double triode to restore the level lost through equalisation, and finally another triode (*5687*) as output buffer. A third PCB hosts the passive RC equalisation components, a hand-matched layout of Mundorf M-Caps and 0.1% metal-film resistors that follows standard RIAA curve without added LF filters. Standing either side of the RC board are two large cans, personally initialised JGB, each containing two S&B inductors: air-cored for the high frequencies; and with a mu-metal core to provide a high-inductance low frequency choke.

Overload input margin is specified as 300mV, which is two orders of magnitude above the nominal MM output. Input impedance for the single RCA phono inputs is set to standard 47kohm, with 15pF capacitance. Output is single-ended only, on well-spaced phono sockets.

Compared to US and Japanese super-fi designs, the aluminium casework is functional, far from stylish, and almost lightweight at 6.3kg and 5.4kg for main box and power supply respectively. The supply fascia has a blue-lit on/off button, and a delay circuit mutes output for 30 seconds after switch-on, allowing the electronics to stabilise before the relays click in for operation. Power consumption was around 108W, though the *RPA* didn't demand constant powering to achieve final sound quality.

Sound Quality

Low noise was one priority that was required to earn the 'Reference' name, and although final signal-to-noise ratio figures are not published, I can attest to the unit's supreme quietness in use, akin to my best active solid-state stage. As hoped, surface noise intrusion was blissfully low: nearly absent on the best cuts and effectively masked elsewhere on other occasions.

For the moving-coil step-up I tried both the

MFA *Classic* and the *Classic V2* transformers, the latter sounding fractionally more flowing and coherent sounding. Three quite different turntables (from Rega, Linn and Michell) were available during testing and while their combined price still probably undercut that of the phono stage plus step-up, the differences wrought in clarity and naturalness over more mortal pre-amps was enough to make me reconsider the usual system hierarchy. Cartridges included the Ortofon *Kontrapunkt* and *Windfeld*, the Transfiguration *Orpheus* and the Clearaudio *Victory Gold*.

An utterly natural tonal balance was the starting point for a privileged journey into this phono amp's capabilities. Treble rendering was silky smooth and soft to the ear, while still allowing deep insight into instruments' upper harmonics and the recording acoustics. It never appeared showy or spotlighted to bolster detail: sweet, yes, but clean and not cloyingly romantic.

Midrange presentation was equally without artifice, revealing beautifully staggered three-dimensional soundstages that could cement and showcase individual players or singers. It made the sonic characters of Linn *Ittok LVII* and SME *309* arms easily discernible, the former showing some midband 'shout' while the SME was drier but kinder to vocal pieces, drawing me into voices, whether rapped or choral, in a way that I'd not normally notice.

However, the bass performance undoubtedly saw the biggest advantage over standard phono stages. That could be the LCR phase accuracy, because the texture and timing of bass guitar sounded spookily (dare I repeat?) natural. The lowest pitched pedal notes and synth lines from The Orb had a palpable solidity, and even better were the sprightly bass figures played from the *Sondek*. The MFA *RPA* always unrolled a life-like delivery of low-frequency pitch and timbre, then guilelessly blended the whole from bottom to top.

Conclusions

At first sight of MFA's extravagant phono project, I was rather put off by both the ruinous price and the kit-build looks, but an hour's listening helped me forget any aesthetic prejudice. Although this remains one pricey way to match a cartridge signal, I've heard US valve stages at the same and double the price that are both far fussier to live with and also lack the rightness I was hearing from this combination. Given the outstanding sound achieved with relatively real-world cartridges, this exceptional phono stage can certainly jump to the head of any queue for a big-budget upgrade.



Manufacturer's Specification

Type	Two-box valve moving-magnet phono stage Solid-state linear supply and regulation Passive LCR RIAA equalisation Dual mono circuitry
Valves	2xD3a, 2x6072a, 2x5687
Input	1x single-ended RCA/phono pair
Output	1x RCA/phono pair
Power consumption:	108W
Weight	6.27 + 5.39kg
Size (WxHxD):	430x133x285mm + 430x88x285mm
Price	£9840 (inc VAT) (plus step-up)

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