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THE VINYL REVIVAL - FACT OR FICTION?  
TRI-PLANAR PRECISION TONEARM  
STYLUS BALANCES WEIGHED UP  
DENON DLI03/I03R CARTRIDGES  
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What Hi-Fi? Sound & Vision  
August 2006



# welcome

## EDITOR

David Price  
tel/fax: +44 (0) 1275 371 386  
e-mail: editorial@hi-fiworld.co.uk

## DESIGN EDITOR

Faiza Chunara  
tel: +44 (0) 20 7625 3129  
fax: +44 (0) 20 7328 1844  
e-mail: adproduction@hi-fiworld.co.uk

## PRODUCTION EDITOR

David Noble  
tel: +44 (0) 20 7625 3134  
fax: +44 (0) 20 7328 1844  
e-mail: classifieds@hi-fiworld.co.uk

## ADVERTISING

Debi Silver  
tel: +44 (0) 20 7372 6018  
fax: +44 (0) 20 7328 1844  
e-mail: advertising@hi-fiworld.co.uk

## ACCOUNTS

Sharon Mehlhorn  
tel: +44 (0) 20 8841 8892  
fax: +44 (0) 20 8841 9144  
e-mail: accounts@hi-fiworld.co.uk

## PUBLISHER

Noel Keywood  
e-mail: publisher@hi-fiworld.co.uk

## PRIVATE & TRADE CLASSIFIEDS

tel: +44 (0) 20 7625 3134  
fax: +44 (0) 20 7328 1844  
e-mail: classifieds@hi-fiworld.co.uk

## SUBSCRIPTIONS

tel: +44 (0) 1442 879097  
fax: +44 (0) 1442 872279  
e-mail: hifiworld@websubscribe.co.uk

## WRITERS

Dominic Todd  
Channa Vithana  
Stewart Wennen  
Neal Gibbons  
Paul Rigby  
David Allcock

## hi-fi world

SUITE G4, ARGO HOUSE  
KILBURN PARK ROAD  
LONDON NW6 5LF  
[www.hi-fiworld.co.uk](http://www.hi-fiworld.co.uk)

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DawkinsColour Ltd  
Windsor Street  
London N1 8QG  
tel: 020 7226 3355  
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## testing

Hi-Fi World has its own advanced test laboratory and acoustically treated listening room, and a dedicated team of experienced listeners. We review thoroughly by extensive auditioning, rather than by quick-fire group listening tests. Our engineering team designs a wide range of products in-house. No other hi-fi magazine is so expert and dedicated.



Given that vinyl records aren't so popular these days, why is *Hi-Fi World* devoting most of this issue to black plastic? Simple – it sounds better.

Think on this. Take a close look at eighties glossy magazines, and set your eyes upon the quality of the photography. Then compare it to what you see now in the 2006 equivalent. The chances are that even the coolest titles have slightly hazy, indistinct pictures with sometimes curious colours. That, my friends, is where we are in the world of 2006 digital photography.

Ask professional snappers. They'll tell you that you need something in the region of twenty megapixels or more, for a digital camera to truly match the resolution of a good basic 'analogue' SLR. With large format professional analogue cameras, not even thirty five megapixels come close.

It's the same with sonics. Digital audio is just like digital photography – an electronic facsimile of the analogue original. As the technology moves on, the resolution improves, but there's still a long way to go to match analogue. So, that's why this issue is dedicated to the joys of vinyl.

It's written for newcomers and experts alike. If you're new to analogue audio, we have a weird and wonderful variety of turntables, but spending the equivalent of a good CD player will get you a stunning sounding vinyl player – see p15.

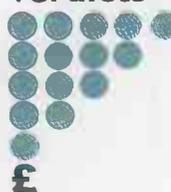
If you're an expert, you'll like our two lead tonearm reviews; the Tri-Planar (p10) and Cartridgeman Conductor (p56). Pains to set up yes, but both will have you pawning your CD collection to buy more Long Players, and you'll never look back.

People displaying 'advanced analogue anorak' tendencies will love the Denon DL103 review (p46), where we still sort of - can't decide if it's sheer genius or, as yours truly once cruelly called it, "an old stinker". Likewise, if you've ever fancied making the world's most fiddly tonearm yourself (when setting up the ready-made one up is hard enough), then you'll love our DIY Hadcock feature on p52.

Finally, for those who prefer laser love to diamond life, we have a fantastic new hi-res digital spinner for you in the shape of Marantz's CD7001 KI Signature SACD player on p62, an interesting tube-transistor hybrid integrated amp in the shape of Vincent's SV-236 on p66, and an exquisite pair of Italian standmounters, the ARS Aura Mi, on p70. Enjoy!

David Price, editor

## verdicts



**OUTSTANDING**  
**EXCELLENT**  
**GOOD**  
**MEDIOCRE**  
**POOR**  
**VALUE**

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worth auditioning  
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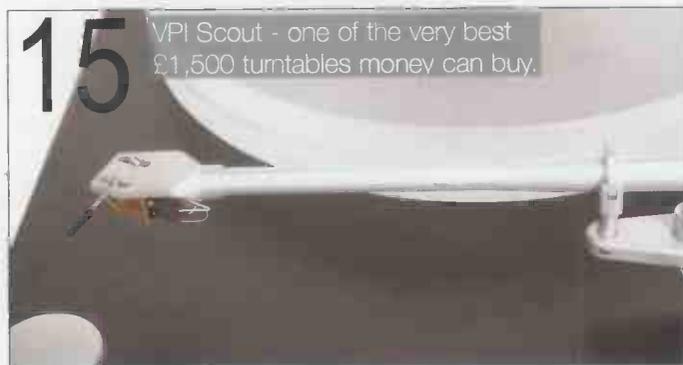
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Tel: 603 9283 8171 Fax: 603 9281 3762 e-mail: info@millennium-audio.com

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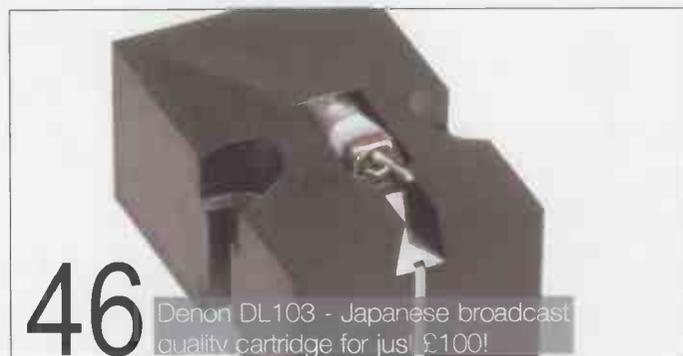
**10** Tri-Planar Precision Tonearm - stunning sound with a price to match!



**15** VPI Scout - one of the very best £1,500 turntables money can buy.



**46** Denon DL103 - Japanese broadcast quality cartridge for just £100!



**56** Cartridge Man Conductor tonearm - not exactly the world's most user-friendly pick up...



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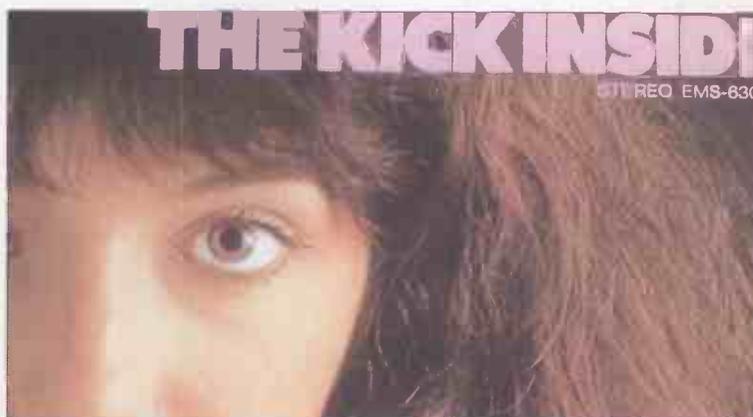
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# news

## NEW REVOLUTION

Revolver, kings of affordable audiophile loudspeakers, have moved dramatically upmarket with the brand new £5,999 'Cygnis'. A medium sized floorstanding true three way design, the company claims high sensitivity (91dB/W) with benign 8 ohm impedance, a frequency response of 45Hz-22kHz +/-3 dB, a handbuilt crossover using air cored inductors, custom polypropylene capacitors and silver plated OFC wiring. The crossover network is acoustically isolated in a dedicated enclosure. Biwirable inputs via heavy duty nickel plated minimum resistance binding posts are fitted, and there's the option of Maple or Dark Cherry veneered bass enclosures, with a high gloss metallic black midrange housing with matching veneered baffle. The bass driver is a 254mm doped compressed paper diaphragm with cast aluminium vented chassis and shielded double magnet, the midband driver a 130mm woven glass fibre diaphragm with cast aluminium chassis and shielded double magnet, and the tweeter a 26mm anodised aluminium dome tweeter with shielded double magnet. *Hi-Fi World* has had a sneaky preview at Revolver's brand new factory in Cornwall, and we are not afraid of saying this is a superb loudspeaker that's completely competitive with the best price rivals. Watch this space for a review, but meanwhile for more information you can contact Revolver direct on 087 00470047 or click on [www.revolveraudio.co.uk](http://www.revolveraudio.co.uk).



## NEW EERA

Valve specialist and Yamaha R1 superbike aficionado Graham Tricker has been appointed UK distributor for the EERA range of CD players, comprising the DL .5 (£1,250), the DL1 (£1,800) [pictured] and the DL2 (£2,999). EERA designer Didier De Luca, who designed the Hélios range of CD players back in the 1990s, has further extended his development in the digital arena and now offers this new range of players. For further details contact GT Audio on 01895 833099 or click on [www.gtaudio.com](http://www.gtaudio.com).

## PRE-PARE FOR A NEW NAIM!

Naim's new NAC122x preamplifier is described as offering "vastly improved performance over the NAC112x it replaces". The NAC122x is based on its larger brother the NAC202 and features a hardwired motorised Alps volume control potentiometer delivering better performance, lower noise in use and an improved feel over the resistor ladder volume control of the NAC112x. The six DIN inputs are relay-switched, contrasting with being multiplexed on the NAC112x, improving performance. Inputs one and six (CD and Aux2) are duplicated on RCA sockets. Much care has been afforded as possible and to isolate the PCB from the environment and hence deleterious vibrations. The NAC122x features an additional output in addition to the Naim standard DIN. This stereo output on two RCA sockets, is optimised for connection to an active subwoofer, supports the growing use of 2.1 systems. Rear panel layout is similar to the NAC202 and hence is Frain-friendly. The NAC122x can be powered from the preamp power outputs of the NAP150x or NAP200 or can be upgraded by powering it from either a FlatCap 2x or Hi-Cap 2 power supply. One of the DIN inputs can supply power to a Naim Stageline outboard phono stage. Should the owner wish to use the NAC122x as part of a multiroom system it can be fitted with a RS232 communications option. Additional control can also be made via a 3.5mm jack socket on the rear panel which supports a modulated RC5 signal. The NAC122x comes with a Five Year Guarantee in the UK and costs £750. For more information, click on [www.naim-audio.com](http://www.naim-audio.com).



## FIREBIRD EXCEL-LENCE!

"It is a rare event to be able to introduce a product with a completely new, patented, earth-shattering technology", but Haliaetus Technologies has precisely that, according to them! Their new range of "must have" monitor loudspeakers, "with a funky design", boasts patented "acoustic nozzle" technology, developed in conjunction with the European Space Agency, no less. This lets a speaker of a small size "produce a sound quality previously only available from large loudspeakers... they allow the use of small diameter drivers and low mass with large accelerations". The Firebird is a "fully optimised realisation of the acoustic nozzle technology" in a modest volume of just 8 litres. The maker says that its elegant curves break up the parasitic reflections inside the cabinet enclosure to give a smooth spectral response and an exemplary sound quality. Prices are £5,600 per pair, or £6,500 including matching stands. For more information, click on [www.haliaetus.com/hava/haliaetus.html](http://www.haliaetus.com/hava/haliaetus.html).

## DIGITAL KILLS THE RADIO STARS?

Anyone with any interest in high fidelity music reproduction will be (even more) disillusioned to hear that the UK analogue portable retail market is dying. The news that Dixons has "pulled the plug" on analogue radios follows the company's December 2003 announcement that Digital Radio sales were outstripping those of analogue. Now, sales of Digital Radios are thirty times higher than those of analogue via its e-tail site, prompting the company to stop giving the century-old format shelf space.

The growth of the market for digital radio has been driven by improvements to the range, better availability of stock, new portable models and investment in new transmitters, according to Dixons. Dixons now offers digital radios for as little as £29.98 via its site, which claims more than a million visitors a month. "The growth in demand for digital radios is further evidence that we're living in the digital age," said Nick Wilkinson, Group managing director for Dixons. "The snap, crackle and pop of the traditional wireless is rapidly being replaced with the crystal-clear sound of digital audio broadcasting." [Is this the same DAB system that I receive? - Ed.] For more details on the greatness and perfection of Digital Radio, click on its [www.dixons.co.uk](http://www.dixons.co.uk).

## SUPER STORE!

...meanwhile, in the world of computer audio, Blu-ray is moving on apace too. LG's new GBW H10N Blu-ray drive, out now, offers up to five times the storage capacity of previous formats; enough for a massive digital music collection on a single disc. LG says, "the launch of Blu-ray technology marks a change in the way business and home users will be able to store and use data by offering increased storage capacity for data rich content, plus it enables the playback of high definition video and sound".

Blu-ray devices use a blue laser, rather than the red laser used in CD and DVD drives, to write and read Blu-ray discs. The discs hold more than five times the storage capacity of traditional DVDs holding up to 25GB on a single-layer disc and 50GB on a dual-layer disc. The GBW H10N also boasts the fastest Blu-ray write speed of 4x, as well as writing to existing DVD formats at speeds of up to 12x. The new format has been supported by a number of the leading movie studios and media houses. LG's Super Multi Blue technology means this drive not only caters for the new BD (Blu-ray Disc) format, but is also fully backwards compatible, enabling it to read and write all three current DVD formats (DVD, DVD±R, DVD±RW, and DVD-RAM). This technology allows all vital data to be backed up and protected with ease. LG's GBW H10N is equipped with a 4MB buffer memory for BD and 2MB for CD format with run prevention technology, which prevents errors. The GBW H10N costs around £499.



## BLU FOR YOU

Toshiba have announced their first consumer HD DVD players for Europe, with the HD-E1 due mid-November and the higher-end HD-XE1 to follow at the beginning of December. Priced at 599 (approximately £405) and 899 (approximately £605) they're ostensibly the same machines, although the latter HD-XE1 boasts HDMI 1.3 and full 1080P output alongside 5.1 analogue outputs, ensuring compatibility with the new audio formats on existing 5.1 input capable amplifiers. It also features a digital coaxial output alongside a digital optical out. The cheaper HD-E1 offers HDMI 1.2 and up to 1080i output but lacks the 5.1 analogue and coaxial digital outputs, but retains the optical out. Both players offer full HD DVD functionality, with all video and audio codecs supported and all enhanced navigation features catered for, and also support upscaling standard definition DVDs (both PAL and NTSC video standards are covered) to 720P and 1080i (HD-E1) and 1080P (HD-XE1) via HDMI, and there's an Ethernet port to enable easy firmware updates. For more information, click on [www.home-entertainment.toshiba.co.uk/](http://www.home-entertainment.toshiba.co.uk/).

## CLEVER HORN

AcuHorn's new rosso superiore 175 loudspeakers claim "a new standard of soundstage presentation". Modernistic innovative design is combined in an uncompromised way with the best components, says the company. Selected woods, silver Siltech G5 series cabling, WBT Signature terminals and the "finest exclusive veneer finish" are featured, along with two Tesla SR200 drivers in a wooden acoustic dipole horn enclosure. Sensitivity is a claimed 97dB, recommended amplifier power 3-30W, weight 35kg apiece and dimensions are 1750x400x210mm. For more information about AcuHorn loudspeakers, click on [www.acuhorn.pl](http://www.acuhorn.pl).



## SPOTTED:

Clearaudio UK's vinyl-junkie PR man David Denyer, spied *in flagrante* with another form of black disc – a 78RPM shellac no less! DD has got the wind-up gramophone bug of late, while his £15,000 Clearaudio superdeck goes increasingly untouched. Nurse, the screens!



## TWO YOU

For those who haven't heard the mutterings, Whest Audio is about to launch what promises to be a stunning high end phono stage, the MC Reference, retailing well over twice the price of the already superb PS.20/MSU20. However, they've gone and surprised us by slipping this one out while we were waiting for something else altogether. The diminutive 210x140x45mm whestTWO is a new 'entry level' £650 phono stage that offers the very unusual bonus of real computer friendliness. It has MM/MC internally switched (comes set 65dB/100ohm), variable loading internally switched, separate bespoke two-channel power supply, software for connecting to a computer for ripping vinyl (Mac and PC) and cables for connecting to a computer and audio system. It is described as, "designed, built assembled in the UK, if that is a good thing!" Oh come, come! For more information, click on [www.whestaudio.co.uk](http://www.whestaudio.co.uk).



## DOCK LANDS

KEF has a beautifully made new iPod dock out to compliment its popular KIT Systems, although it works with "other home cinema amplifiers too", no less! The KEFDock iPod Docking Device allows the owner to use the TV screen to scroll through the music selection and supports no less than ten languages (for on screen display) – a key benefit over other iPod docks on the market. It offers full MP3 functionality to KIT users and is powered to charge an iPod when docked in the unit. KEFDock fits all iPod devices (using adaptors provided) and will support other MP3 players (via a 3.5 mm jack). It comes finished in a silver diecast zinc enclosure with black front (complementing the KIT100 head unit), and works with iPod, iPod with click wheel, iPod mini, iPod Nano and iPod video. For more information, click on [www.kef.co.uk](http://www.kef.co.uk).



## MONSTEROUSLY GOOD IDEA

Monster's new £79.95 iCarPlay Wireless 200 allows iPod users to play stored music wirelessly through virtually any FM station on their car radios, while simultaneously charging their iPods. It features technology that automatically finds the clearest FM frequency so the user doesn't have to manually search for the best station – a real boon. In addition, iCarPlay Wireless 200 clearly displays all essential information on the iPod's screen and features a three-button control to directly access features and settings. Other features include programmable 'favourite station' presets, international modes that allow use in North America, Europe and Japan and a low profile power adapter to minimize dashboard clutter. Click on [www.monstercable.com](http://www.monstercable.com)



# Quality Time

This striking looking device is the ultimate expression of an idea from a watchmaker from Maryland, USA. David Price spends some magic moments with the Tri-Planar Precision Tonearm...



In the great pantheon of pickup arms, things change slowly. Although I'll doubtless elicit criticism by saying this, it was the original SME 'Precision Pick-Up Arm' that put down the blueprint for a true high fidelity tonearm – thanks to this, fine tolerances, low friction and comprehensive calibrations have been available to audiophiles since 1959.

Tonearms haven't come a very long way since then, in the design if not the execution. We've had a clutch of unipivots (Haddock, Michell Focus arm, Naim ARO, Graham) and a few air beams (AirTangent, AirTech), but most of the work has been done on conventional pivoted arms, the purest expression of which is arguably 1986's SME Series V. The aim has been refinement; the greatest rigidity, the lowest bearing friction, the optimum effective mass, the least resonance. The Tri-Planar is another such pretender to this throne. Like the SME it has undergone a long period of refinement (some thirty years), until it has reached this, the seventh

generation. Its name simply refers to the fact that it offers both adjustment and correct geometry in three planes.

## HISTORY

The first official Tri-Planar was the original Wheaton Decoupled Arm, now called the Tri-Planar Mk. II. Although finally introduced to the world at the Consumer Electronics Show in 1981, it was the result of many years of research by the company's founder, Herb Papier. The story goes that Herb had played trumpet in amateur Big Bands and subsequently run a music shop. During World War II, he was accredited for his skill in chronometer calibration by the American Navy. This skill was honed throughout his subsequent civilian life as a watchmaker. Herb finally settled in Wheaton, Maryland, whereupon he started designing a pickup arm in 1967.

He experimented with what he regarded as the three major problems of tonearm design - azimuth, vertical tracking angle

(VTA), and bearing at record height. The design priority was precise adjustment in all three planes. This development mule was effectively the Mk I, but by 1981 he was ready to productionise the design and the Wheaton Decoupled Arm had arrived. He later renamed the arm Tri-Planar, a name that reflects the three planes of tonearm geometry.

The arm was constantly refined and updated throughout the eighties, and won a number of awards. In 1999, Tri-Planar was purchased by Dung Tri Mai, a Minneapolis-based artist. Aged 83, Herb died in 2003, just as the Mk. VII was being introduced. This £3,600 arm, it is said, includes his final thoughts on the arm's design.

## DESIGN

Where to start? Given the one hundred and forty component parts this tonearm possesses, it must be a daunting proposition to manufacture - and is only slightly easier to describe! The arm tube is a chunky, constant-diameter

annealed-aluminium and carbon affair (annealing is a heating and slow cooling process used to increase strength), doubtless selected for its stiffness and low resonance. Glued to this is a damped machined alloy headshell, cut out to reduce weight and increase rigidity (as an aerospace engineer knows, putting big holes in things can – done properly – make them stronger). At the other end, the metal armtube end stub meets the bearing housing through a massive clamping yoke designed to firmly decouple the armtube to the bearing tube.

The clamping yoke is linked to the 'VTA tower', one of the key distinctive features of the arm, and one of the primary adjustments too.

A small locknut can be loosened off to allow the whole arm structure to 'rack up' (or down) in minuscule steps. The dial lets you return to your previous setting, giving you a visual reading rather than having to rely on guesswork. The whole action is beautifully gentle and slick, meaning you can actually adjust VTA whilst playing a record, if you're that way inclined...

The bearing housing is sight for sore eyes; its hardened, handcrafted and polished needle/cone bearings feel magnificent. Because they are individually adjusted in each arm, Tri Mai claims they are as friction free as any unipivot. Anti-skate is by a complicated but highly effective 'thread and lever' arrangement. Azimuth is adjusted by loosening the armtube with a grub screw and twisting it, just like you would the headshell of an SME Series III. Three different counterweights are provided, and tracking force is set by sliding these back and forth – a surprisingly simple solution given the complexity found elsewhere on this arm! A damping trough is provided for silicone fluid damping, although this wasn't used for this review.

The quality of manufacture, fit and finish is superlative. It's interesting however that despite this, it doesn't feel anything like the arm that I have traditionally regarded as the best built in the world (or at least the best finished, and nicest to use); the SME Series V. Despite the stunning standards of assembly, and

the fact that everything fits together with clinical precision (premium quality mechanical Swiss watches are a predictable - but no less apposite - comparison), the Tri-Planar does not feel like an SME at all. Rather, it has an almost home-made precision engineered quality, as if it has been hand built in very low volumes (probably true), where the latter has an almost 'other worldly' hewn-from-solid feel (think sixties Hasselblad and eighties Nikon respectively). Both are superb, yet neither are the same..

**SOUND QUALITY**

It is a stunning performer, and the differences between the £3,600 Tri-Planar and the £1,781 SME Series V are fascinating. In some ways the

SME punches well above its weight in the company of its more expensive American rival. But then again, the SME punches above everything I've ever heard at any price in some ways. This isn't to say the SME is universally perfect (it certainly isn't), and where it falls down - and where the Tri-Planar pushes ahead - is critical to an assessment of its worth.

The Tri-Planar is markedly different to the SME in nature. Where the SME is forward, gripping, embracing and (arguably) 'in your face' in some respects, its rival is none of these. Whereas the SME pushes you right close to the foot of the stage, the Tri-Planar pulls you back almost to the balcony, to give a more panoramic presentation that gives a superior picture of a recording's scale and depth. Because the SME pushes things up close and personal, it's gripping - tirelessly, remorselessly locked right into the heart of the song's mix. In this respect it's forward, but in another it's quite the reverse...

The SME Series V has, to my ears and in my system, quite a dark tonality. This isn't to say it can't sound bright or stark or sharply etched, but in terms of the palette of colours it paints with, they're on the pale and pallid side. One could say 'grey', but maybe that would be cruel. Despite its more distant, less involved physical presentation, the Tri-Planar infuses the music with brighter colours – instruments leap out at you with a richness of tone that the SME lacks.

So, in some respects, it is a more vivid listen.

For example, The Crusaders' 'Street Life' is a spry but sweet late seventies analogue recording, with lots of lovely acoustic instruments, and some great classic electric ones too. The Fender Rhodes jazz piano has a distinctive sound – very distinctive if you've ever heard one resonating around a jazz club or small venue. The SME dulled its 'well lit' harmonics a tad, making it seem a little 'sat upon' and monochrome. The Tri-Planar was brighter and more vivid, with feeling of orange autumn sunshine to its tonality whereas the SME seemed more grey and overcast.

This is hard to explain to the majority of those who've never heard

vinyl through a serious valve system, but vinyl is 'Technicolor' in its tonality, whereas CD tends to sound grey. The SME followed this too, a stark contrast to the Tri-Planar which had wonderful textural and timbral resolution. This particular thing is something Michell turntables do exceptionally well, and the Tri-Planar thrived here. The result was that the SME on the Michell sounded like CD on steroids; super fast, tight, taut, grippy and dynamic, whereas the Tri-Planar just sounded more, well, musical and natural. An



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*analog.* sounds better

acoustic piano sounded like a piano; whereas on the SME it sounded like a superb, hi res 32bit digital sample of a piano...

Here then, we have the crucial differences between these two stunning super arms, but there's more. Starting way down in the bass, and the SME feels more commanding... almost to the exclusion of everything else further up, sometimes. By contrast, the Tri-Planar is lighter but actually more engaging. It plays tunes better; there's more of the sense of it being an organic part of the whole recording, rather than a 'stand out' feature that constantly vies for your attention. Prefab Sprout's beautiful, Thomas Dolby produced 'Appetite' is a case in point. There are fewer decibels of bass, but it's still strong and firm

BlueNote sound. But again it's talking about the recording and the technical aspects of the production, whereas the Tri-Planar just amazes you with the way the hi-hats work off the snares, and how the drums drive the horns, and how the bass pushes the song along. It's a far less 'technical' sound, a more earthy, natural and human one.

The key to the Tri-Planar is the filigree detailing, the wonderful tonality, the amazing insight

**THE SET UP**

Despite its extremely complicated appearance, the Tri-Planar is less hard to set up than I'd feared. The first, and most obvious point is that compared to the SME Series V, the Tri-Planar suffers from being just like every other tonearm ever made, in that it doesn't have the SME's brilliant 'sled' arrangement for alignment. Despite its stratospheric price, you're back in the world of mere mortals, as you have to manually align the cartridge in the headshell. The SME, as you'll know, has a brilliant system that you simply bolt the cartridge into the headshell and then set the tracking angle by moving the whole arm forward or backward with its little lever. This is brilliant, stand-out feature of the Series V (and VI and 309), and sadly – but inevitably I suppose – the Tri-Planar takes you back to earth with a bump.

Oh well, round one to the SME V. But just as the SME's cartridge alignment embarrasses the Tri-Planar (and every other arm), so the Tri-Planar's vertical tracking angle adjustment makes the SME look positively mediocre. With the Tri-Planar, you dial in the VTA, and that's that. The SME's VTA adjustment is more fiddly, and we'll not dwell on the likes of Linn's Ekos and all the others, which are crude. Now, this may be a real boon for some, but interested as I am about VTA, I'm not minded to spend hours fiddling, and unlike the vinyl equivalent of 'care in the community' patients, I don't adjust my VTA for every record I play (some do – yes, really!), so this elegant VTA adjustment isn't as valuable to me as the SME's sublime tracking angle alignment system...

With the SME, you dial in the bias in an extremely civilised way, whereas the Tri-Planar uses a less swish thread and weight arrangement. Fair enough; it's not too much of an inconvenience, but it's another points win to the SME. As for VTF (tracking force), the Tri-Planar also uses ye olde sliding counterweight to set it. It works well enough, but again the SME is so much nicer with its classic SLR camera-style dial. Damn – even if the SME V sounded awful, you'd still want to buy it for its sheer ease of set-up, and its sheer 'Englishness' in the way it departs itself as you're aligning in. It feels like a stunning precision instrument when you're fixing all the settings, whereas (although the Tri-Planar is also a stunning precision instrument), you're back in the less salubrious 'real world' of fiddling with Allen bolts in headshells and sliding

**SPECIFICATIONS:**

- type: gimbal-bearing tonearm
- effective length: 250mm
- pivot-to-spindle: 233.5mm
- overhang: 16.5mm
- offset angle: 22°
- effective mass: 11g
- bearing offset: 22°

**REFERENCE SYSTEM**

Michell GyroDec/SDS  
 Isoplatmat/SME Series V/VdH Frog turntable  
 Pioneer PL-L1000/Koetsu Red Signature turntable  
 Whest Audio PS.20.MSU.20 phonostage  
 MF Audio Passive Preamplifier  
 World Audio K5881 valve power amplifier (modified)  
 Yamaha NS1000M loudspeakers  
 Black Rhodium Tango speaker cable

"if you want to be connected to the music, I've heard none better..."

and deliciously crisp – and Kevin Armstrong's brilliant stylings seem more important to the song as a whole, despite the fact that his string work doesn't smash you over the head with its sheer visceral power. There's the sense that it's a musical song you're listening to, rather than a 'production'.

Move to the midband and – on the surface at least – the recorded acoustic is busier with the SME. It's certainly more impactful, yet the Tri-Planar somehow manages to 'cohere' it better. There's less width to the recording, but greater depth, and the Tri-Planar doesn't half hang some instruments right back. Despite being tonally brighter, yet less impactful, you still find yourself listening to elements of the song right at the back of the mix, and they have better independence from the whole. Genesis's 'Mad Mad Moon' is a case in point; there's a massive, epic swirling quality to this recording which the SME captures brilliantly. But it's plaintive in parts, and the Tri-Planar really signposts this, while the SME V simply fixates on Phil Collins' showy drumstick work. The Tri-Planar captures the sadness, the gentle inflections, in Collins' voice, whereas the SME is simply trying to tell you it's a powerful mid-seventies analogue rock recording.

Moving up to the treble, we find the SME showing off again. It has a finely etched hi-hat sound on Lou Donaldson's 'Alligator Bogaloo' – you can enjoy that wonderful late sixties

into how sonorous different instruments can be, plus how deftly it strings a collection of instruments together to make an emotionally convincing, nay moving, song. It is oddly unipivot-like in this respect, yet it has none of the unipivot pitfalls (light bass, lack of treble air and space). Indeed, it sits exactly half way between the ultimate gimbal sound and the ultimate unipivot sound. It's wonderfully fluid, lucid, musical and emotive, yet it doesn't have any weak points in its technical performance. If you want a tonearm to amaze your digiphile friends, the SME is peerless; if you need one to lock you into the wonder of music, the Tri-Planar is essential.

**CONCLUSION**

We'll take the negatives first. It's not as easy to set up as the SME Series V, but then again nothing else is. It is a complex arm, and the sheer range of accessible adjustments means you can find yourself constantly tweaking it. It is extremely expensive by any standards, yet doesn't quite beat every other arm hands down in every way.

However, if you want to be

connected to the music, I've heard none better. If you want a conventional pivoted arm that majors on massive musicality, fantastic stage depth and exceptional tonality, surely this is the one. As always, a dem is a seriously good idea, but if the price doesn't put you off, then the sound will surely turn you on. Like a Leica or a Lamborghini, I suppose there comes a time when you have to treat yourself to something special.

**VERDICT** 

Stunning build, exquisite design and one of the most naturally musical and lucid sounds around. A remarkable pickup arm.

**TRI-PLANAR PRECISION TONEARM** £3,600

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# Star Players

With so many superbly engineered and beautifully finished designs to choose from, buying a high end turntable seems daunting. David Allcock took delivery of five stellar turntable/tonerarm combinations from VPI, Project, Acoustic Signature, Clearaudio and Michell Engineering, with interesting results...

It goes without saying that the technology to playback records has improved immeasurably since those first music lovers placed the early discs produced by Berliner in 1892 onto their players, and what we're looking at here are five examples of modern turntable engineering in the crucial £1,000 to £2,000 range. At this price point, whilst you do see a few first time buyers, generally these decks will represent a second or third turntable, and their buyers expect real results...

The five contenders are the American VPI Scout, Czechoslovakia's Project RPM10, Germany's Acoustic Signature Challenger and Clearaudio Solution, and the British Michell GyroDec SE. Only one is a fully suspended model, the Gyro, a massive change in the turntable landscape compared with twenty years ago when this marketplace was dominated by suspended subchassis turntables like the Pink Triangle PT Too and the eponymous LPI2 Sondek.

Whilst many of the compromises encountered in entry-level decks have been eradicated once you reach £1,000, there are still some involved. The turntable/tonerarm combination has, in fact, a very simple job to do - simply rotate the record at 33 1/3 or 45 rpm, and isolate the critical vinyl/stylus from extraneous noise whilst tracing the groove identically to how it was cut. Sounds simple, but nobody has yet perfected this combination at any price, so every turntable has some degree of compromise involved in its design!

What the decks tested here represent are different combinations of compromise - the question being which offers the potential purchaser the optimal combination. Potential problem areas include possible eccentricity of both bearing and platter (which would create a loss of speed stability), bearing noise (which would cause low level rumble), speed instability in the drive system (which would show itself as loose bass and a muddy midband), poor isolation of motor noise from the stylus/vinyl interface (making general mush), and overall poor isolation of the turntable from its environment (which colours the sound). With vinyl, even a very low level of noise or interference causes a significant deviation from neutrality.

The turntable designer has more than just sound quality to consider, however. They have to exist in the real world, meaning they have to operate on potentially less than ideal surfaces, they must stay in tune and continue to work day after day over a range of temperature and humidity levels, and given the tolerances involved in state of the art turntable engineering, this is a far greater problem than you may think. They must also operate with a wide range of cartridges, all which have very different requirements for optimal operation. With all of these factors and unknowns working against turntable and tonerarm designers, it's a miracle vinyl playback sounds as good as it does, yet - as can be seen from the combinations under test - there's no shortage of original thinking or new ideas in order to improve vinyl playback still further and conquer these problems and variables. Read on...



## MUSIC USED:

Kraftwerk 'Computer World' (EMI EMC3379, 1981)  
 Kraftwerk 'Tour De France Soundtracks' (EMI 591 708 1, 2003)  
 Dido 'Life for Rent' (Classic Records RTH 2015, 2003)  
 Dave Brubeck Quartet 'Take Five' (Classic Records CS8192, 1995)

## THE TEST

Each turntable was auditioned with both Music Maker III MM and Benz Glider L2 low output MC cartridges; all were placed on a Clearlight Audio RDC Aspekt rack, and were set up using the Katli Audio stylus force gauge and a Polaris Plus alignment gauge to confirm correct geometry along with the gauges supplied with each turntable and tonerarm. A Clearaudio bubble level was used to level each deck. The rest of the reference system was as follows:-

- Basis Gold Debut Standard/Graham 2.0 arm/Benz Glider L2 turntable front end
- Klyne System 7 PX 3.5/Musical Surroundings Phonomena/BPS power supply phonostage
- Krell KRC-3 preamplifier
- Bryston 3B and 14B-SST and NuForce Reference 9 monobloc power amplifiers
- Martin Logan Vantage and Hyperion HPS-938 loudspeakers

## PROJECT RPM 10 £1,500

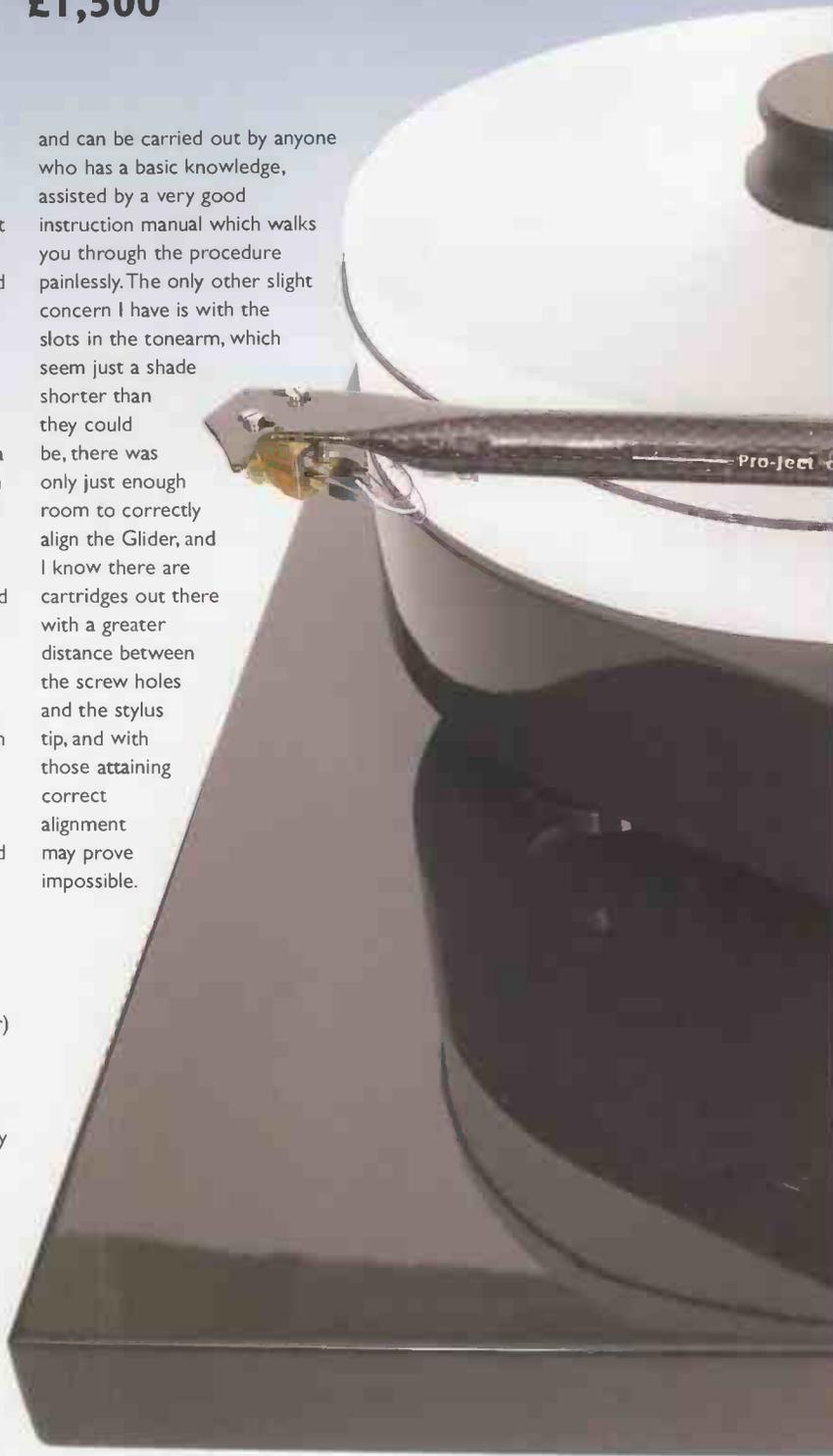
In common with the other turntables in the RPM series, the 10 does not use a suspension system, but unlike the rest of the range, it comes with an 11.5kg isolation platform called the Ground It Deluxe which usually sells for £225. This isolation platform is rather unusual in that it uses a constrained layer damping system with a loose, powdered, damping compound. The turntable itself uses a standalone 2.5kg motor module with a 'wall wart' power supply, and speed change is via a stepped pinion. The main 12kg turntable chassis uses a similar powdered damping compound to both improve stability and isolate the turntable from extraneous vibrations.

The main bearing is an inverted type with a ceramic thrust pad which mates to an acrylic platter, on the basis that the platter represents an ideal physical match for the vinyl. The weight of the platter used would usually cause premature wear and failure of this kind of bearing, but a cunningly hidden magneto repulsive system (effectively two North pole magnets, one in the platter, one in the bearing well, repelling each other) reduces the load by 70%, allowing a quieter, softer material to be used without being concerned by noise.

The tonearm utilises an unusually sophisticated construction at this price point, in many ways it is an updated take on the classic Rega RB250, using a one-piece construction from the headshell to the bearing body, but instead of being cast, it is manufactured from a piece of carbon fibre, whilst the bearings are ultra high quality ABEC 7, the same tolerance bearings as found in the SME IV and V tonearms. Anti-skate is applied by the classic hanging weight system whilst the counterweight is decoupled via rubber O rings.

Setup was relatively straightforward with few surprises. A few nice inclusions were a brilliantly simple acrylic plastic jig to ensure the motor is the correct distance from the main bearing, a high quality bubble level and a very basic see saw type tracking force gauge, tested on p60. If there was a single area which I could complain about, it was the decoupled counterweight of the tonearm, which feels so decoupled it gives the impression it is not very securely attached to the arm. Setup overall took a little under an hour

and can be carried out by anyone who has a basic knowledge, assisted by a very good instruction manual which walks you through the procedure painlessly. The only other slight concern I have is with the slots in the tonearm, which seem just a shade shorter than they could be, there was only just enough room to correctly align the Glider, and I know there are cartridges out there with a greater distance between the screw holes and the stylus tip, and with those attaining correct alignment may prove impossible.

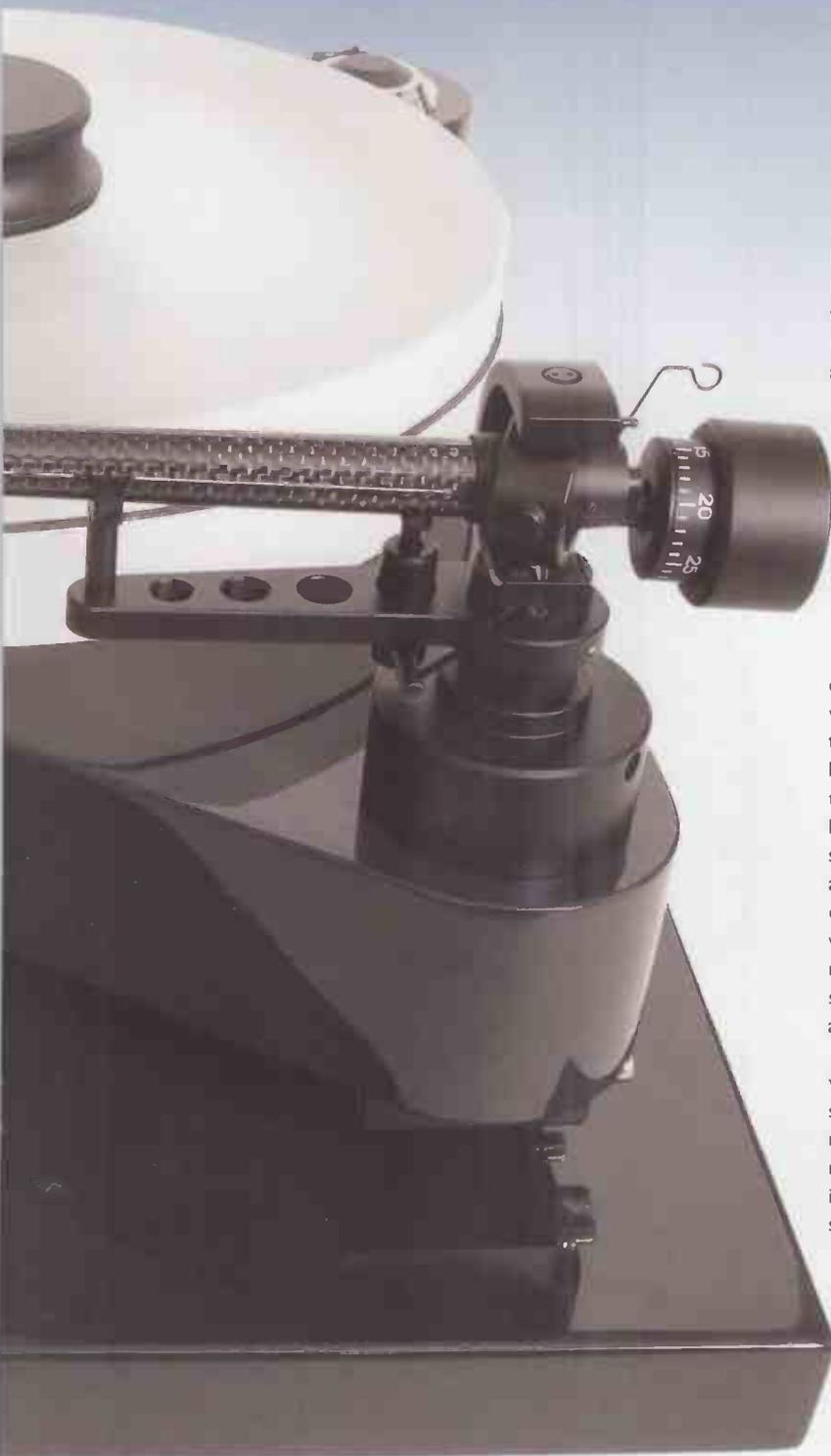


### SOUND QUALITY

The Project RPM 10 was incredibly quiet in operation, not just mechanically (where disconnecting the drive belt and starting the motor with the cartridge resting on the stationary platter gave nothing but silence), but when actually playing a record, this deck seemed to reduce background noise to an astonishing degree. Even the odd car boot sale LP recovery, with vinyl roar which is apparent on my Basis, was reduced to a whisper on this turntable, allowing previously borderline unlistenable albums to be enjoyed - this is certainly no *prima donna* demanding nothing but pristine pressings!

It was also quickly apparent that this deck's tonearm does not like moving magnet cartridges, the Music Maker III lost not only much of its propulsive energy, but also image focus deteriorated, whilst transients were slower than usual with merely average intelligibility, the layering on the soundstage was indistinct and the image quite constrained. Happily the Glider was a far happier match, and a pair of new Ortofon low cost moving coil cartridges also worked very happily on the RPM 10, suggesting this is a turntable designed with MC cartridges in mind.

The sonic balance could be considered very slightly on the warm



in my Shoes' from Dido's 'Life for Rent' a highly realistic and convincing quality.

These qualities of fine balance and transparency extended to the high frequencies. Where some decks have a slight lift to give the short term illusion of greater resolution (which turns to long term annoyance as the high frequencies are continually prominent), the RPM10 instead offers a superbly integrated high frequency range which is fast, highly resolving yet controlled. The cymbals on 'Take Five' from Dave Brubeck Quartet's 'Time Out' had a shimmer and air to them without dissolving into a high frequency haze.

Imaging was very good, offering excellent focus, but it wasn't quite as wide laterally as I have heard, with the stage constrained by the room boundaries, the RPM10 never seemed to get the sound to appear from beyond these boundaries, which is something the very best turntables are capable of. Likewise, whilst stage depth was good, it again stayed within the boundaries of the listening room; the acoustic lacked the air and spaciousness I know these records are capable of.

Dynamically this deck was again very good, but it did seem just a shade polite and controlled; I never really felt it was truly letting go and running right on the edge of control, it always stayed within its limits. This slightly curtailed the energy with 'Legion' from Mark Shreeve, a track which is a percussion minefield for any turntable. The RPM10 seemed to play it safe, but in doing so it robbed the music of the last ounce of energy and enthusiasm.

## CONCLUSION

A superb 'fit and forget' proposition, the Project RPM10 will make the best of any vinyl presented to it and is likely to continue making great music with very little fuss, for years to come, apart from the few aforementioned caveats. The supplied isolation base is superb - very stable in operation, it has very little to cause any kind of sonic degradation over years of ownership. This turntable genuinely tries to make the very best of any vinyl it is presented with, regardless of condition. A side effect of this is that the RPM10 does not quite exploit the very best vinyl to its full potential. It's a deck for the music lover, rather than the enthusiastic tweeker.

"this deck tries to make the best of any vinyl, regardless of condition..."

side, with Dido's voice sounding a shade lush and richer than normal with just a hint more warmth. Bass was very extended and had very little overhang. Transients were just a shade slower than the best. Whilst the bass carried plenty of weight, it just missed out on that ultimate impact where you feel each note as well as hear it. Apart from the

aforementioned touch of warmth the midrange was very good, offering superb intelligibility of lyrics, both from the main and backing vocals, whilst acoustic guitars were easily identifiable as such, with the deck able to describe both the initial spectrum on string followed by the sound of the guitars body, giving the guitar in the introduction of 'Sand

## VERDICT

Brilliant 'fit and forget' deck that gives everything it plays a clean, warm, enjoyable sound – but not quite as effective in absolute terms as some price rivals.

**PROJECT RPM10** £1,500

Henley Designs Ltd

☎ +44 (0)1235 511 166

[www.henleydesigns.co.uk](http://www.henleydesigns.co.uk)

## FOR

- outstanding isolation
- great with imperfect vinyl
- fine musicality

## AGAINST

- slightly constrained image
- not suited to MM cartridges
- slightly warm presentation

## VPI SCOUT (£1,295 WITH 9" JMW TONEARM)

**T**he Scout is the entry-level turntable in VPI's eight-strong range, topping out with the £9,750 TNT HR-X. VPI hail from the USA and have grown from supplying just a couple of turntables, the original HW19 and the TNT, to having a large range of turntables, tonearms and three record cleaning machines including the venerable HW 16.5.

The main chassis consists of a 28mm sheet of MDF bonded to a 12 gauge steel plate, making a constrained layer chassis. Underneath the chassis sit four aluminium feet which run on fine-pitch threads, allowing easy levelling of the turntable. The chassis is not a simple rectangle; a large cut-out on the left hand side houses a standalone motor system, which is a 600 rpm AC synchronous motor with a stepped pulley, damped in a steel housing, the only contact point between the motor and the actual turntable being the elastomer belt.

The belt runs around the circumference of the platter, manufactured from 34.5mm thick acrylic. It runs on an inverted bearing, with a Teflon thrust plate and self lubricating, sintered bronze sleeve, over a case-hardened tool steel shaft hardened to 60 Rockwell hardness. This is bolted to the main chassis with a bolt whose size is more commonly encountered in bridge construction rather than hi-fi! The centre spindle is threaded for the accompanying record clamp, instead of relying on mass. The inside of the clamp is shaped to apply force to the outer edge of the record label, effectively forcing the record to contact the platter.

The tonearm is a simplified version of the JMW Memorial tonearm. This is a unipivot design, with a tungsten carbide point running in a hardened steel cup, controversially without a conventional anti-skate system, instead the spring of the tonearm lead-out wires is relied upon to provide the correct level of bias, these wires being terminated in a very high quality

Lemo connector.

The arm uses a damped aluminium arm tube and an offset counterweight, bringing the centre of gravity below the pivot point, improving stability; it is easily adjustable. This design means you can have several arm tubes pre-aligned with different cartridges and change between them in seconds - a facility usually seen on cost-no-object turntables and tonearms, not at this price point.

The VTA system is of particular note. Releasing two set screws allows you to use a knurled wheel below the tonearm body to precisely adjust VTA. The arm can then be locked to remove the possibility of compromising rigidity of the whole assembly.

Setup was quick and easy, the supplied tonearm jig is a work

of genius, allowing any cartridge to be precisely and repeatedly setup in a matter of minutes with absolute precision, whilst the rest of the turntable fitted together very intuitively. Located on top of my Aspekt rack I first checked the turntable for motor noise, and found it completely silent, the standalone module eradicating any noise from the crucial vinyl/stylus interface, whilst tapping the chassis with the stylus sitting on a stationary record elicited a dull thud from the speakers, with no ringing, suggesting a well damped platter and chassis.

### SOUND QUALITY

This deck immediately showed its lineage to the much more expensive TNT, by impressing with its soundstage. Kraftwerk's 'Computer





it is a true soundstaging champion, presenting a huge, well defined sound...

World' threw a soundstage across the bottom of my listening room which has only been so far surpassed by decks at three times the price. This is not simply a case of a very wide, highly diffuse soundstage, with images smeared several feet wide; rather, each musician on the Scout's soundstage is very precisely located and focused with incredible definition and sounds routinely appearing beyond the room boundaries, whilst maintaining excellent coherence across the whole stage width. This allows the sound to float free of the speaker without clumping around

each box, and also avoiding the 'hole in the middle' effect you hear with some components. Stage depth is also far better than you have a right to expect at this price point, driving a wrecking ball through the front wall of my listening room! The drum kit at the rear left of the stage on 'Take Five' appeared a couple of metres beyond the wall, whilst the delineation of layers in the depth plane was outstanding, generating a real sense of air between the musicians, casting each tightly focused in space.

While bass notes lacked the absolute depth of the RPM 10, I felt

the Scout had better transient attack, bringing a real sense of hammer hitting skin on kick drum, whilst even synthesised bass had greater scale and power. There was very little overhang on the bass, with rapid runs of low notes only losing a little in space and definition to far more expensive competition. The midrange of this deck was an absolute delight, with Dido's voice having a purity and ease which made the presentation entirely natural and unforced, with excellent vocal intelligibility, whilst vocals were rich they were certainly not warm or euphonic, instead they were a model of transparency.

Further up the frequency range, the Scout continued to give an excellent account of itself, with detailed, fast, airy high frequencies with an excellent sense of timing, giving each note plenty of space to fully develop. Dynamics were very good, only lacking the last bit of drive compared with the very best, whilst micro dynamic tracking was superb, aided by the incredibly quiet operation of this turntable.

This high level of performance is available even to recordings which are not in the best condition, giving you access to records which other decks would render unlistenable.

## CONCLUSION

This turntable did not put a foot wrong during the whole time I was using it, and once setup needed no attention whatsoever. It is a true soundstaging champion, presenting a huge, well defined soundstage with excellent focus. Across the whole frequency band this turntable offered excellent integration, without obvious bumps or dips anywhere, and it achieved this without spotlighting any shortcomings in either the vinyl's condition or the recording, making this deck one for the music lover as much as the audiophile. With a solid upgrade path in the form of an improved motor unit and a better power supply, this is a turntable which will provide great music for many years to come.

## VERDICT ●●●●●

With a massive, solid and focused soundstage, superb transients and excellent musicality, this turntable is exemplary at the price.

### VPI SCOUT/9"

JMW TONEARM £1,295

Activ Distribution

+44 (0)1635 291357

[www.vpiindustries.co.uk](http://www.vpiindustries.co.uk)

## FOR

- excellent soundstaging
- super transient response
- transparency
- musicality

## AGAINST

- slightly restricted dynamics

## CLEARAUDIO SOLUTION/SATISFY £1,650



**E**stablished in 1978, this German company has earned a reputation as analogue specialists, but until recently Clearaudio turntable ownership required deep pockets. Recently Clearaudio has expanded their range, both upwards (to the £80,000 Signature) and down, including the Solution reviewed here. It is the entry-level turntable in the Solution series, which then evolves into the Master Solution and finally the £5,600 Maximum Solution, with even the humble Solution being upgradeable to the heady Maximum in easy stages. Packaged with the Solution for this review is the Satisfy Carbon Direct Wire tonearm.

The Solution itself is built around the central bearing, with three legs extending from this centrepiece, and the whole chassis is machined from a single piece of 20mm thick acrylic. There is an aluminium cone on the end of each leg, and on the right hand leg is the armboard. The blanking plates on the end of the other two legs mean it is theoretically possible to equip the Solution with three tonearms should you wish. The 30mm thick acrylic platter runs on a bronze plated, hardened steel inverted bearing, with drive provided by a standalone motor module housing an AC synchronous motor with a stepped pinion - again the only contact between the motor and the turntable is via the drive belt. The

deck comes supplied with an alignment gauge, one of Clearaudio's excellent bubble levels, and the Clever Clamp, an acrylic clamp of very simple construction, yet which is remarkably effective in use.

The Satisfy Carbon tonearm comprises a carbon fibre arm tube with a stainless steel cartridge mount, which uses an elegant and - as far as I know - unique arrangement. It entails the cartridge mounting plate rotating on a single hex head bolt, the cartridge bolting to the plate using conventional mounting screws, and the screw then runs in a long slot set into the stainless steel. The result is a highly adjustable, very versatile mounting arrangement which can handle any cartridge I can think of. The counterweight is decoupled via a rubber 'O' ring inside the weight, which doubles up as a thread to allow precise adjustment of tracking force. The antiskating mechanism uses a magnetic system, where the force can be precisely adjusted with the simple turn of a knurled screw, and with a steady hand this can be accomplished



during playback. The bearings are Swiss, with the horizontal bearing being a ceramic type to maximise longevity as this takes most of the weight of the tonearm, whereas the vertical bearing uses polished sapphire and is almost totally free of any discernible friction. This model of the Satisfy is known as the Direct Wire, a name coined because the tonearm cable is a continuous single piece of wire from cartridge tags through to the RCA phono terminations.

The most difficult part of setup with this turntable/tonearm combination was aligning the tonearm mounting plate - the massive, single hex bolt which secures the mounting plate introduced very small discrepancies during tightening, meaning setup of this combination took just under two hours.

**SOUND QUALITY**

Once again this deck has an excellent immunity to motor noise, but a



small amount of breakthrough was noted when the support stand was struck. This is a deck which is highly responsive to tuning, and rapidly communicates the slightest adjustment to tracking weight, VTA or anti skate. It was also obvious that this deck was designed to only work with the clamp, the sound loses all of its presence and body in the midrange without it.

This is not a flattering turntable, and was less than kind to imperfect vinyl records, making it very clear if there was any noise or dirt in the grooves! It's far more concerned with the musical message than absolute resolving capability, with 'Aero Dynamik' from Kraftwerk having incredible drive and energy in the low frequencies, but it was

"a highly enthusiastic musical performer, with astonishing energy and drive..."

unable to capture the kind of space and timing around each note that the Scout and the RPM10 could, where the RPM10 was somewhat restrained, the Solution was exuberant in its enthusiasm for the music, so much so that it missed some of the detailed sonic cues which existed within the music. Whilst low bass notes carried

considerable low frequency weight and power, they missed out on the absolute impact of each note as an entity, suggesting that the transient response of this combination is a little shy of that of the Acoustic Signature or the VPI.

Through the midrange the vocals were once again very punchy but lacked a little of the subtlety and intonation which were apparent on the VPI. The acoustic guitar on Dido's 'Sand In My Shoes' was very convincing, but its lowest notes were lighter overall and lacked some of the solidity and body of the VPI and Acoustic Signature's performance. High frequencies were clear and open, with the shimmer from cymbals giving the clear metallic sheen which is immediately apparent when you are in

the room with them. Again the energy was there, but it lacked just a little subtlety and delicacy; the start and stop points of each note were a little less obvious than some of the other turntables tested here.

Imaging was excellent, extending beyond the outer edges of the speakers, and just breaking the

confines of the listening room. Image focus was good with each musician's location easy to discern, lacking only the last touch of focus present with the very best here. The depth plane was slightly foreshortened, with the back of the stage just extending beyond the room boundaries, and whilst there was very good layering information, it was never able to fully describe the air around each musician on the soundstage.

## CONCLUSION

This turntable was one of the biggest surprises here - this is a highly enthusiastic musical performer, and has astonishing energy and drive. This deck is an excellent player of rock, pop and dance music, but is a little over-enthusiastic on occasions, with smaller scale and acoustic works lacking some of the subtlety and delicacy which some of the other turntables offer here. Aesthetically this is the undoubted glamour model here, evoking very positive comments from everyone who saw it during its tenure *chez* Allcock. It could never be considered understated or polite, but its approach to music making will win many friends. With a clearly defined upgrade path to the incredible Maximum Solution with almost no wastage of the previous investment, this is a deck which I am sure will stay in a system for many years to come, and as such represents a very good long term investment.

## VERDICT ●●●●£

Wonderfully big, powerful and enthusiastic sound is tempered by a little over exuberance on occasions. Super value, with a great upgrade path.

## CLEARAUDIO SOLUTION/

**SATISFY** £1,650

Audio Reference

+44 (0)1252 702705

[www.audioreference.co.uk](http://www.audioreference.co.uk)

## FOR

- excellent dynamics
- enthusiastic sound
- stunning looks

## AGAINST

- lacks refinement
- imprecise image focus

## ACOUSTIC SIGNATURE CHALLENGER/ MICHELL TECNOARM £1,669

**O**ur second entry from Germany, the Acoustic Signature Challenger is another solid chassis turntable. Whilst not well known here in the UK, in both Germany and the USA Acoustic Signature are known for their heavily engineered turntables at highly competitive prices. The Challenger is the third deck up in their range and is the cheapest turntable to offer a multiple arm option, like the Clearaudio Solution.

The Challenger is based around a solid aluminium chassis with three composite feet, the points of which are machined out of aluminium and are very sharp, as my lower arm

controller which then uses the AC feed and converts it to DC. This DC power is then used to drive internal oscillators to produce a totally clean 24V sine wave - this is the kind of power regeneration seen inside the likes of Mark Levinson Reference components. This power supply has been

will attest. The basic chassis weighs in at 10kg, and this supports a 10kg platter which is manufactured from a soft alloy, the bottom surface of which is then coated in a damping material which feels like Sorbothane to the touch, which damps resonances within the platter. The platter is topped with a felt mat, and does not come with a clamp. The inverted bearing is unique, using a material called Tidorfolon, which is a composite of titanium, vanadium, ferrite and Teflon. This material was developed specifically for using in turntable bearings; it is claimed to be effectively silent in operation, self lubricating and very stable over time, theoretically making it an ideal bearing material, capable of tolerating high loads, operating almost silently and maintenance free over many years.

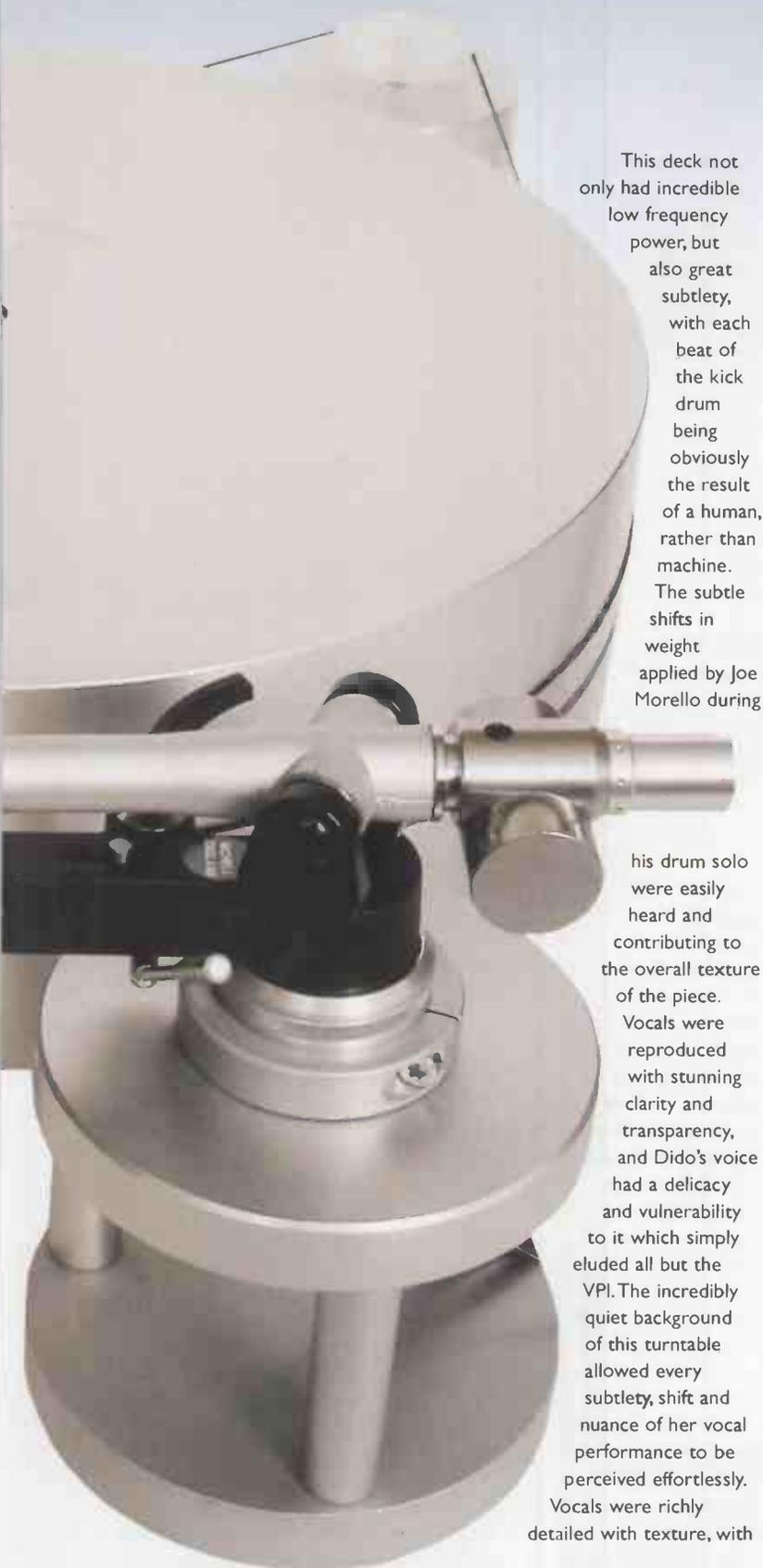
The motor is an AC unit, but working at 24V. Rather than using a basic wall wart supply, the Challenger is supplied with an Alpha power supply, starting with a standalone 240V - 2 x 12V AC power supply, this then feeds a separate motor

designed to give the option of locating the main 240V power supply up to 2m away from the turntable, with another 2m multicore cable between the motor drive and the actual motor, keeping mains power as far away as practically possible from the turntable. The actual motor itself is a standalone unit in an aluminium housing with a single pinion, speed is changed via the motor drive unit. Whilst this turntable can be used with a standard Rega mount tonearm, I have heard it used with the Roksan Nima with great effect, but it was decided to mate it with the £419 Michell Tecnoarm for this review.

Setup was very easy, literally lowering the platter onto the main chassis, placing the motor 5cm away from the turntable in the conventional 11 o'clock position, levelling the chassis, and installing the tonearm. I had the deck up and running in 45 minutes. If you decide to use this arm with the Challenger, I found the Polaris Plus stylus force gauge much easier to use, and more accurate, than the Rega gauge supplied with the arm, and it is well worth the investment for the precision it gives you and the ease with which you can precisely set one of these arms up.

### SOUND QUALITY

From the first note of 'Aero Dynamic' it was immediately apparent that the stakes had been raised considerably, the driving synthesiser bass line arrived in the room with the kind of impact usually associated with £4,000 US superdecks, not £1,500 designs. The bass just seemed to keep going down with each note being felt as much as heard, yet there was simply no smearing. Bass performance has only been heard twice before in my room, from my own Basis Gold Debut and the newer 2200 Signature. This deck also pulled off the trick of giving each note the space to fully develop without sounding slow or unresponsive - in fact, exactly the opposite is true, as this deck had the best timing of the group, propelling the music along with incredible energy and drive, whilst the bass on 'Take Five' had a range of textures which only the VPI really conveyed with any great conviction.



This deck not only had incredible low frequency power, but also great subtlety, with each beat of the kick drum being obviously the result of a human, rather than machine. The subtle shifts in weight applied by Joe Morello during

his drum solo were easily heard and contributing to the overall texture of the piece. Vocals were reproduced with stunning clarity and transparency, and Dido's voice had a delicacy and vulnerability to it which simply eluded all but the VPI. The incredibly quiet background of this turntable allowed every subtlety, shift and nuance of her vocal performance to be perceived effortlessly. Vocals were richly detailed with texture, with

changes in breathing and subtle shifts in emphasis apparent with incredible ease, whilst the high frequencies were equally impressive, with cymbals and acoustic guitars having a very natural, unforced presentation. Still, this deck was incredibly resolving, but this information was placed in a musically coherent context, making it sound incredibly easy for this information to be recovered from the vinyl.

Imaging was excellent too, with utterly solid, convincing images being produced on the soundstage; though the stage was a little smaller than the VPI, the image focus was excellent, and far beyond what I expected to find at this price point. Depth perspective of this deck was also very good, but although lead vocals were placed around 1/2m in front of the plane of the speakers and rear of the soundstage was positioned beyond the physical location of the wall, it still did not quite capture the depth of the VPI Scout. This deck did successfully capture the feeling of true three-dimensional images on a soundstage with clearly discernible space around each performer, with spatial relationships between performers precisely defined.

## CONCLUSION

Whilst this deck screams heavyweight, evoking thoughts of a leaden, ponderous performance, it was none of these. It proved fast, with excellent resolving capabilities, had outstanding transient attack and a huge dynamic range. This was tempered with superb control, sonically it offered virtually no overhang, and could go from a subtle whisper to room shaking volume and back again with ease. The sound is defined by an astonishing bass performance, a delicate, transparent midrange and very open high frequencies, whilst imaging is well focused and accurate. No matter what I threw at this turntable, it handled it with an aplomb more commonly associated with decks from the Oracle stable, and took every type of music I presented and just came back for more. The Challenger is set to make a lot of people reconsider their expectations of a deck at this price point, and offer simply phenomenal value for money.

"this deck is set to make a lot of people reconsider their expectations at this price point..."

### VERDICT ●●●●●

A heavyweight turntable in more ways than one; massive, sharply focused soundstage allied to vast dynamic range; outstanding at the price.

**ACOUSTIC SIGNATURE  
CHALLENGER/MICHELL  
TECNOARM**

£1,669

Select Audio

+44 (0)1900 813064

[www.selectaudio.co.uk](http://www.selectaudio.co.uk)

### FOR

- excellent imaging
- huge dynamic range
- ease of setup

### AGAINST

- constrained image depth

## MICHELL GYRODECK SE/TECNOARM £1,315

**M**ichell Engineering's GyroDec is as much a design icon in the audio world as the E-type is in the automotive world and

Concorde is to the world of aerospace. Despite the tragic recent loss of its founder, John Michell, the company has continued, under new management, to turn out this venerable classic turntable, with the original GyroDec dating back to 1981 and the Spyder Edition now in its seventh year of production. In this case the deck is mated with the latest version of the Tecnoarm, a deft and affordable reworking of the Rega RB250.

Unlike the other decks in this test, the Gyro is a suspended subchassis turntable, with the subchassis slung under the springs mounted on the three suspension pillars. It's been a long while since I've had a new GyroDec in my listening room, the last time was the full GyroDec whilst the company was still headed by John Michell, so I was interested to find out how the deck compared with the newcomers in this group test.

Unbelievably, it's one of the smaller turntables here, and arrived as the usual Michell kit of parts. The SE seemed to go together far easier and quicker than I remember, and was up and running in a little over an hour. The instructions were very good, though a few photographs of the different assemblies wouldn't go amiss for the novice. Tuning the suspension proved more painless than I remember, the knurled tops making very precise adjustments a breeze. The motor supplied is a DC unit with an outboard power supply, with a 1.5m lead allowing you to locate this power supply well away from the turntable and the crucial cartridge/vinyl interface. The platter comes with the striking gold-plated bronze underslung weights to increase mass at the periphery of the platter, whilst the bearing is the classic inverted oil pumping design.

The Tecnoarm is a major upgrade of the Rega RB250, using a perforated arm casting with internal

foam damping, a continuous run of Litz cable from cartridge tags to the very high quality RCA connectors, with PTFE dielectric, full braid shielding and separate earth drain. A Michell Tecnoweight is also fitted; two counterweights on a new precision stub with an underslung counterweight and a superb dial on the weight allowing very precise changes in tracking weight to be made, plus Michell's VTA adjuster. These mods represent major upgrades to the basic arm and attempt to address all the key areas of complaint about the original Rega.

### SOUND QUALITY

Once set up, it became clear that this turntable sounded better than the full GyroDec I last heard in my system; surface noise was far more effectively suppressed, whilst bass had more transient attack than I remember. Indeed, the latest GyroDec SE had a superb sense of timing, with tracks being driven along in a musical and unforced manner. Imaging was also excellent, with solid images heard at

the room boundaries laterally, and stage depth also super with images at the rear of the stage emerging from a location through the wall behind the speakers!

Dynamics of this deck were very good, lacking the exuberance and scale of the Clearaudio Solution, but lending drama and power to individual notes when required, losing out only to the Scout and Challenger in this test. This deck was also capable of giving the listener a lot of information, not only on the macro dynamic scale, but also on the micro dynamic one, with changes of intonation on lyrics and subtle changes of pedal weight on Dave Brubeck's piano being easily discernible.

High frequency performance was lovely, with cymbals having a metallic sheen as you would expect on the actual instrument, and whilst





individual impacts on the cymbal were not as distinct as on some of the other decks here, the sound was well focused and never descended into a high frequency haze in the general area of the cymbal as I've heard from other suspended subchassis turntables.

The midrange was warmer than the other decks here, giving piano notes a little extra richness, and making Dido's voice sound a touch fuller. This was a very pleasant euphonic effect in some respects, but also meant a loss in absolute

transparency, so a slight opaqueness was cast across the soundstage. This manifested itself by sonically removing the listener from the immediacy of the recording and putting them a step away from the event, with the acoustic guitar on Dido's 'Sand in My Shoes' losing a little reverberant energy from its body. This is the

"a design that's as stunning today as it was in the nineteen eighties..."

problem with the Gyro's characteristic panoramic presentation – you don't get the same adrenaline rush on the balcony as you do in the stalls!

Synth bass notes on 'Aero Dynamik' did not have the weight of the aforementioned machines, nor their control – they had a little more overhang, giving the impression of less space between notes. Although you didn't hear the fingers pulling the strings on the acoustic bass in 'Take Five' with quite the same space around

each note as the Challenger and the Scout, it still captured more information than the Clearaudio, albeit without conveying the same energy as its Teutonic rival.

## CONCLUSION

Despite the GyroDec SE being easily the oldest design here, now celebrating twenty five years of production, it is still highly competitive in the current marketplace.

This elegant, classic design is still as stunning today as it was in the nineteen eighties, testament to John Michell's engineering skills. Its sound is distinct, and best characterised as being a smooth, expansive listen with fine timing and dynamics, lovely timbral resolution and an airy treble. In the bass however, it's now a little off the pace, and can sound a tad soft and loose by the standards of the best of the rest. Still, Michell's excellent upgrade path allows for the addition of an Orbe platter, for example, which addresses this criticism – but it's not cheap. Overall then, the Michell GyroDec SE delivers great music with timeless design, and whilst it fails to excel in any area, its all round ability means it has so much to offer.

## VERDICT

Design classic with superlative build and finish. Sound is sumptuously smooth, expansive and effortless, but bass is slightly off the pace.

**MICHELL GYRODEC SE/TECNOARM** £1,315  
 J A Michell Engineering Ltd.  
 ☎ +44 (0)208 953 0771  
[www.michell-engineering.co.uk](http://www.michell-engineering.co.uk)

## FOR

- smooth, effortless sound
- expansive midband
- design, build, finish
- value

## AGAINST

- sonically polite
- bass grip

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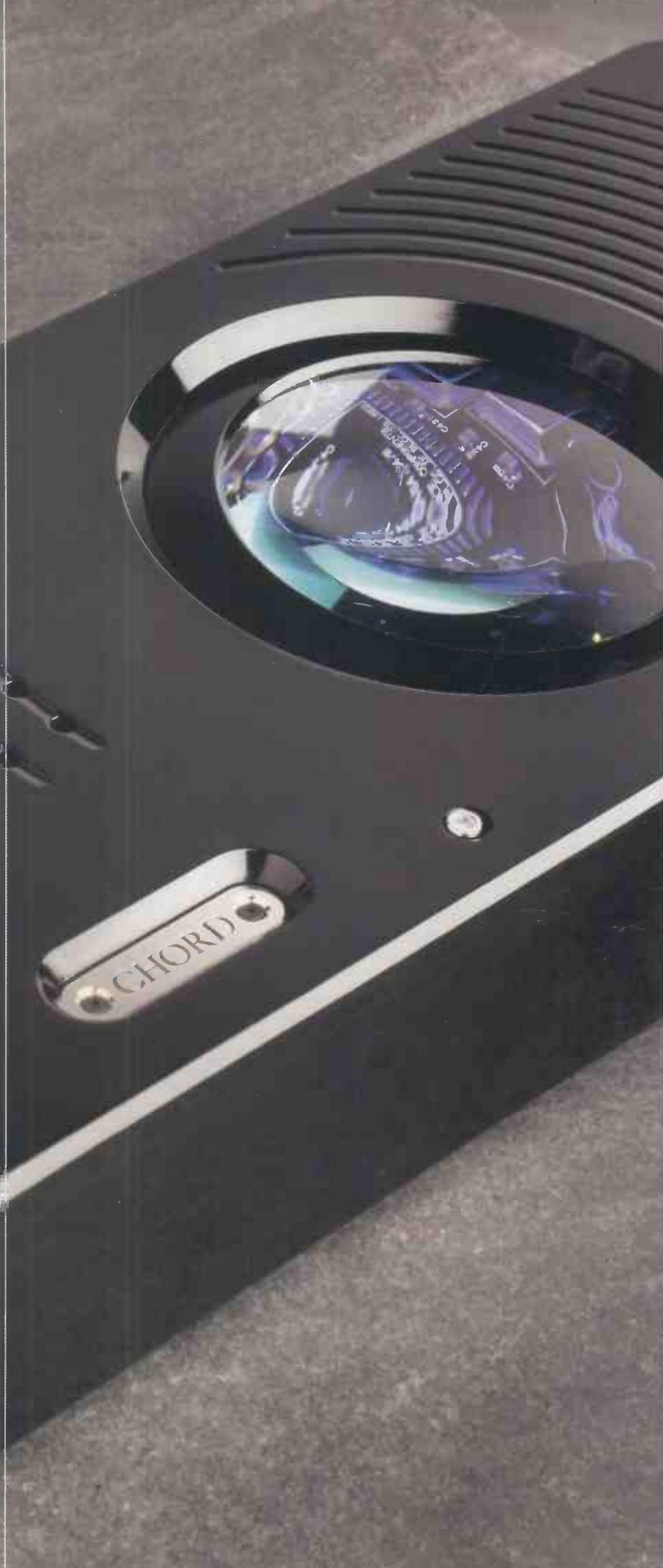
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# conclusion

**T**his has proved a fascinating group, and the median performance was much higher than I expected - these decks all represent, at worst, great value!

If you have less than perfect vinyl in your collection, then the RPM10 is the best turntable here, likewise if you cannot accommodate an equipment rack and you want to know the deck will work, this is a truly fit and forget deck. Its performance in terms of imaging and dynamic range was a little short of the others here, but was excellent on old vinyl with higher than normal levels of surface noise, and it's so well built that it feels like it will continue to work for years. Ensure you mate it with an MC cartridge to hear it at its best, though.

The Clearaudio Solution brings a quality Germany is not known for - exuberance - to the group! It has an incredibly enthusiastic approach to music replay, even though it may not be the most resolving or subtle of turntables here, this is a true music lover and goes out of its way to make everything offered sound musical. It's a true toe-tapper alright, although this sometimes means it misses out on more subtle cues which really connect the listener with the musical event. It must also be said that none of the other turntables here elicited anything like as many positive comments regarding its aesthetics - this is truly the supermodel, the Esther Cañadas of turntables, and had a very high spouse acceptance factor amongst visitors to my listening room! It's also the only turntable here with a clear upgrade path to the exalted heights of the Maximum Solution at over £5,000 with very little redundancy, although the Gyro comes close. Speaking of which...

Michell's GyroDec SE is a real stalwart, and offers incredible

performance for what is fundamentally a twenty five year old design - which shows you the brilliance of its original thinking. In most respects it's still extremely accomplished, but it now lacks that last bit of transparency, and adds a little warmth - yet it can still teach many decks about musicality and midband timing. Still a deck worth auditioning and I'm sure it will continue for many years more. Factor in superb build and an excellent upgrade path (and not as exorbitant as some, either), and it's still a real contender.

To my ears, the VPI Scout is a phenomenal turntable. Partnered with the JMW 9" arm, this is the cheapest combination here, and probably the simplest to set up. It's exquisitely well built, the unipivot tonearm was as stable as the gimbal arms here, contrary to popular belief,

turntable here, and given that it has had to endure the costs associated with shipping transatlantic, this is simply breathtaking value.

As good as this group was, the Acoustic Signature Challenger with Michell Tecnoarm proved to be very difficult to fault. Mating the most sophisticated drive system/PSU arrangement here with a massive, high mass platter and a solid chassis, the whole deck is incredibly simple to set up, very versatile (permitting up to three arms to be fitted)

"at worst, these decks all represent great value...!"

yet its performance could only be bettered by a combination costing nearly 30% more. Fast, incredibly open, a huge, solid, well focused soundstage, with excellent dynamics, an exquisitely detailed midrange and a delicate top end, this deck possessed true sonic transparency, giving the listener a very realistic and convincing window onto the music. This is unquestionably the best value for money proposition here, given its performance as the cheapest

and sonically its performance was outstanding. Whilst I would personally be tempted to mate it with a Roksan Nima or a Hadcock GH228, the Tecnoarm really showed what it could do on this deck. An incredible bass response, with a smooth, richly detailed midrange and an airy, extended top end with excellent imaging, the Challenger is an incredible amount of deck for the money, and my personal choice for purchase.



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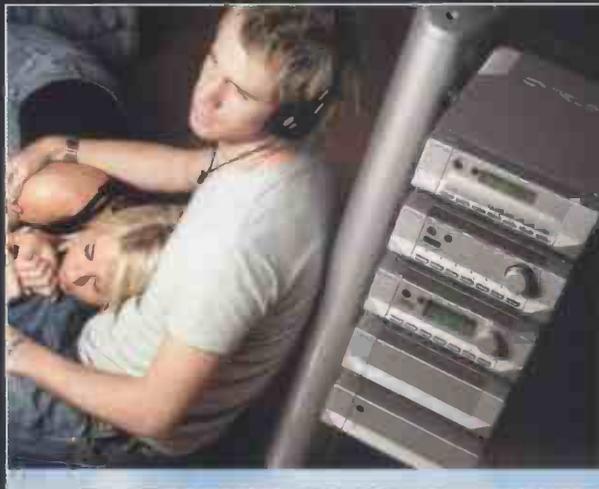
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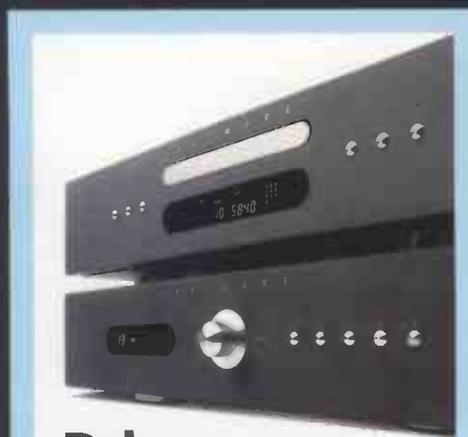


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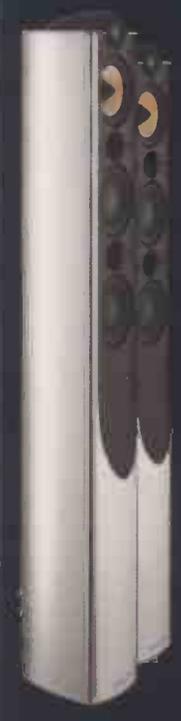
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# Diamond Life

In the early twentieth century, the analogue disc was a luxury item bought by dedicated enthusiasts, and so it is a century later. In the meantime however, it became a mass music carrier the like of which the world had never seen, says David Price...

**E**ver stopped to wonder why a fair sized chunk of the world's specialist high fidelity industry concerns itself, often obsessively so, with catering for a format that has its roots in a one hundred year old technology, and one that hasn't actually changed for fifty? Either the world has gone mad, or there must be something special about the vinyl Long Playing record.

Who would have thought that in 2006, some twenty five years after the introduction of the world's

the dance music explosion, that time saw twelve inch singles push black plastic sales upwards, and at the same time a number of small specialist record labels started producing audiophile vinyl reissues.

Now though, ten years after that first sign that there was life in the old format yet, twelve inch single and LP sales are again on the wane. Chris Green of the British Phonographic Institute told *Hi-Fi World* that it's clear that LP sales are falling. "In 2000, LP sales accounted for 0.6% of the market, compared to 0.2% in 2005".

new generation of UK rock acts including the Libertines, Babyshambles, Kaiser Chiefs and Franz Ferdinand. BPI

Chairman, Peter Jamieson, commented that, "Despite the incredible growth in download sales, there is still a huge demand for the collectible physical formats. It would be wrong to write-off physical formats just yet. Record companies are committed to meeting consumer demand in whatever format people want their music."

Just as the 12" single was buoyed by the mid-nineties dance music explosion, so it is suffering as house music and rave culture have dwindled. The general LP market is also falling slowly, and what's remaining is rapidly being filled by specialist releases – in short, it has now almost completely transformed into a niche, collectors format. The fact that sales of audiophile reissues are growing strongly [see *THE SOFT PARADE*] shows this in no uncertain terms. It betokens the wholesale abandonment on the part of the mainstream music industry of the vinyl LP, and a move to audiophiles and collectors – this is precisely where hi-fi buyers come in.

Just as the major labels are doing 'reissues' of classic albums on CD, so a vast number of specialist labels are coming out with very high quality audiophile vinyl reissues. Classic Records' Kai Seemann believes that it, "relates to the disappointment of digital media. When we started, with Classic Records launching one year later, the CD was ten years old and the public then realised that the promises of 'the pure and perfect sound, forever' were not true. After the CD hype, the audiophiles started hearing again - with obvious results."

Sundazed's Tim Livingston concurs, "Some music fans like to hold a record in their hand, I like that picture sleeve, those liner notes, all of



Many indie, rock and pop bands routinely offer their new albums on vinyl too.

"either the world's gone mad, or there's something special about the vinyl LP..."



the vinyl LP's heyday was during the mid-seventies rock era...

first mass digital music carrier (the Compact Disc), and some fifteen years after the mainstream music industry stopped servicing it, that vinyl is thriving?

Cultural commentators pontificate about its style 'cachet', and the fact that 'retro' is

back. Collectors talk lovingly about everything from those lavish twelve by twelve inch sleeves – and even the smell of the discs themselves. Dealers talk about the irreplaceability of these audio 'artefacts', and how they tie buyers in with the time and place they were released. But the reason this month's issue of *Hi-Fi World* is a vinyl special is simply this – the vinyl disc remains the highest resolution format available to audiophiles.

## VINYL REVIVAL?

After a decade of gloom as they watched the CD replace the LP as the world's mass music carrier, mid-nineties vinyl junkies were surprised to see sales figures moving upwards. Driven by



Nineties dance scene drove sales of 12" vinyl singles strongly, but they're now in decline...

The figures are stark; 751,857 LPs sold in 2000, 351,224 sold in 2005. The 12" single market is no more cheery. In 2000, 4,012,110 twelve inchers were sold, in 2005 that had dropped to 2,076,425. Confusingly though, the 7" single market is going great guns. "To put the figures into context a little, 7" singles accounted for 5% of singles sold on physical formats in 2005, compared to 0.4% in 2000", says Chris Green. The numbers are impressive; 201,380 7" singles sold in 2000, 1,072,608 sold in 2005.

So in terms of the big numbers, it's a mixed bag. Bizarrely, as MP3 downloads have almost killed the CD single dead, so the 7" vinyl has risen, phoenix-like, from obscurity and is thriving. It has come full circle; it was a cheap, disposable but loveable and collectable entry-point into owning music from an artist, and that appeal holds true today too. It's become the currency of collectors – for example, the best-selling 7" in the year to March 2005 was via Iron Maiden. Elsewhere, the format is dominated by a

that. Downloads sales only affect the digital scene. I think that the growing numbers of people dedicated to vinyl love the physical aspect. Vinyl is a sound, it's a feel, it's a smell. It's all there."

The continued increase of interest in vinyl during the last few years is also partly attributable to the murky futures of both DVD-Audio and SACD. The new high resolution digital formats have completely failed to capture the imaginations of audiophiles. The repertoire for these formats remains limited and the title selection can be described as haphazard. It's also very hard to get unless you buy via a specialist retailer. Seemann adds, "I have information from Universal Music that it is now to 'reconsider' the future of SACD as a format for the company. You know that when the majors leak information like this, it's the first step for them to step out of the medium. And if Universal ceases release of SACD, others will follow."

Behind the scenes, vinyl's continued presence has surprised many industry professionals. EMI's record pressing boss Bob Bailey told *Hi-Fi World* that the business underwent an unexpected transformation in the nineties. "The huge drop in demand for vinyl in 1992 looked like the writing on the wall for the format - EMI was anticipating it surviving only a further six to nine months before they were going to stop the presses for good. But the early nineties dance music boom kept the 12" single presses rolling and then audiophile vinyl appeared on the scene, sparking a fresh demand for premium quality LPs. So, rather than abandoning vinyl as anticipated, EMI invested vast sums on upgrading its existing presses and installing new ones! Vinyl didn't die, it changed".



**LP & SACD: two hi res music discs - one 1982 vintage, the other 2004; guess which sounds better?**

## THE SOFT PARADE - PAUL RIGBY ON VINYL REISSUES

There you are, sat at a large kitchen table with a large world map sprawling to its four corners, entitled "Vinyl Production". On it are highlighted territories showing where vinyl is made. In the UK, you see the major labels such as EMI and its imprint Parlophone, the associated Virgin group, Sony/BMG, Warners plus Universal. Then there's the reissue outfits such as Pure Pleasure, Simply Vinyl and Radioactive. In Germany, there's Speakers Corner, SPV and majors such as Universal Germany. In Italy, there's the giant Abraxas label with its many vinyl imprints such as Get Back, Earmark and Akarma. In the USA there's Classic, Sundazed, Mosaic, Cisco, Norton, Analogue Productions, DBK Works, Lost Highway, OJC, Groove Note, Mobile Fidelity and more plus the American majors such as Warners, Rhino, MCA and now Sony who produce their own vinyl.

Then you can add the gamut of indie, soul, reggae, dance and avant garde labels in all these territories from the likes of Domino, Warp, Mute, Rough Trade, Sub Pop and Matador plus limited run sets in the latter and other territories such as Korea and Japan. And they said vinyl was dead...

Well, it is, as a mass medium - there's no way you can argue it's a mass music carrier anymore, but it still serves a role as the audiophile format of choice for vast numbers of people. Contrary to the expectations of many, the wholesale switch to CD created a business opportunity for those prepared to take vinyl into the upmarket and/or specialist category. For them, there is no vinyl revival. Their business was good then, it's even better now - steadily improving and reaching a level that is finally attracting media interest.

Evidence can be sourced via Pure Pleasure Records' MD, Tony Hickmott, "I hear people saying there is a revival but I suspect it's related to [more] people jumping on the bandwagon. Vinyl has never not been here. At Greyhound Records we imported vinyl continuously from 1981", he said.

Tim Livingston, Sales Director for US-based Sundazed concurred, "Our company started in 1988 and we've been producing vinyl the whole time. Sales have always increased but over the past three years we can't make it fast enough - our sales have risen by 40% over the past two years alone."

German audiophile specialists, Speakers Corner, also declared that, from its inception, it has never reported a growth in turnover of less than 10% compared to the previous year. Its latest figures, 2004 compared to 2003, shows an increase of more than 20%. That level of performance is being reflected world-wide. In addition, its major markets have been consistent right from its launch in 1993: the UK, Germany, USA, Japan, Hong Kong, Italy and Korea were on board from day one. However, a lot of additional countries have since joined that list including east European countries, during the late '90s plus, in the past year, the Philippines, South Africa and Turkey.

"A huge help for all of us, in the '90s," said Speakers Corner MD, Kai Seemann, "was the increasing interest of youngsters under 25, who had grown up with CD and thus regarded vinyl as 'cool'. Clubs and bars played vinyl again. If you wanted to be taken seriously in this scene, any new release had to be published on vinyl, too."

Sundazed's Livingston also believed that younger people are starting to 'get' vinyl, not just audiophiles, "There's a couple of record fairs that we do. In one big event, the annual WFMU Record Show, in New York City, we get young kids coming up to us asking us about new releases. They're into it, it's growing too. They're eighteen to twenty five and go for obscure psyche titles, Dylan, Otis Redding and others."

Livingston recognises a romanticism in the rising popularity of vinyl as well as subtle cultural marketing, "there's a lot of TV shows over here where vinyl and turntables are placed in the scene, for example. Also, we notice that stores over here are starting to feature turntables again. We also believe that people are rediscovering the vinyl sound, the warmer analogue feel. Many forget that some records were meant to be heard that way."



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## THROUGH THE PAST, SMARTLY...

The story starts a proper in 1877, with Thomas Alva Edison's wax cylinder, or phonograph. This was the format chosen for the first commercially produced acoustic recording. Although it wasn't a 'record' as we know it, it spawned the 'recording industry'. By wrapping tin foil around a cylinder, Edison famously intoned "Mary had a little lamb" into a diaphragm which caused a stylus to cut a groove of varying depth on the tinfoil, which corresponded to the movement of the diaphragm caused by the air vibrations that impinged on it.

Then in 1887, Emile Berliner patented a machine that recorded these vibrations on a zinc disc, rather than a cylinder. It imprinted grooves on the flat side of the disc; instead of recording the sound by varying the depth of the groove as per the phonograph, it was cut laterally in a spiral groove of constant depth on a flat disc. Sound familiar? Berliner called it a 'gramophone record'.

What followed was a protracted period of format rivalry (sound familiar?) from 1894, when Berliner's Gramophone Company started marketing a 7" 70rpm single-sided disc that played for two minutes at a cost of 50c each. The cylinder and the gramophone coexisted during the first decade of the 20th century, but the gramophone record was easier to mass-produce than cylinders. By 1913, the disc record prevailed and cylinder phonographs were no longer made.

The nineteen twenties saw Western Electric, together with AT&T and Bell Labs, developing an electrical recording system which revolutionised the recording process. Microphones were used instead of acoustic horns, which gave a huge leap in the quality of the recordings. Records were produced double-sided and played for about five minutes per side. In 1925, the speed of a record was standardised in the USA at 78.26rpm, chosen as it was easy to achieve with a 3600rpm electric motor and a 46:1 reduction gear ( $3600/46 = 78.26$ ).

By 1930, the natural material of shellac was replaced with synthetic resins, but they were still noisy, brittle and easily broken. RCA conducted some research into a new form of record material in 1931 using "Vitrolac" vinyl plastic that recorded at a 33 1/3rpm 'professional' speed. This failed to replace the popular 78s at the time, but the lower surface noise and greater resiliency was remembered. Shellac was in short supply, so 78s started to be manufactured in vinyl.

In 1948, Columbia Records introduced the 12" microgroove LP

recorded at 33 1/3rpm and pressed in vinyl. Not to be outdone, RCA Victor launched the 45rpm vinyl single in 1949. This was a turning point as the 45 held the same amount of material as a 12" 78 and was lighter and more rugged. It also a low-cost, collectable commodity that made the fifties rock'n'roll era possible. Meanwhile, the improved sound quality of the vinyl LP led to the birth of high fidelity reproducing equipment.

In the fifties, Alan Blumlein's research into binaural sound for cinemas, patented in 1931, came into play. His system for recording two channels in a single groove of a record recorded at 45 degrees, giving a sum and difference signal, was used by his employer EMI and in 1958 the first stereo LPs were produced.

The 1960s saw the growth of stereo. In 1963, Leak introduced one of the first stereo transistorised amplifiers, the Stereo 30. Early releases, such as George Martin-produced Beatles albums, were mixed in such a way as to showcase the format, but by the late sixties, rock albums used the format in a far more natural way. The quality of turntables, pickup arms and cartridges increased rapidly, and the hi-fi industry became buoyed by its own success. If two was better than one, then four was better than two...

The development of quadraphonic records was announced in 1971, a process giving four separate sound signals from an LP record. A variety of techniques were used, including electronically matrixing four channels down to two. There were two main systems of matrixed quadrophonic records produced, the SQ system from CBS and the Sansui QS system. A different format, CD-4 developed by RCA, encoded rear-channel information on an ultrasonic carrier, which required a special wideband cartridge to pick it up. Typically the high-frequency information wore off after only a few playings, and CD-4 was even less successful than the two matrixed formats. All these formats proved commercially unsuccessful.

No small number of conspiracy theories exist about why LP pressing quality dropped so much immediately before the introduction of Compact Disc in 1982, but suffice to say that the introduction of the convenient, easy-to-make CD did to the record what it had done to the wax cylinder...

Now though, in 2006, who'd have thought that the LP would be around as a purist music carrier nearly a century after its ancestor appeared on the market, with a burgeoning market for audiophile mastered and pressed LPs?

## MASTER CLASS

In the early days, discs were cut directly from the live performance and this was an entirely mechanical process. The invention of the electronic valve enabled microphones to be used that were connected to an amplifier which drove the cutting



*Direct Metal Mastering - audiophile LP going back to its roots.*

stylus. With the development of magnetic tape recording, a master recording was made on audio tape and this was then used to cut the master record.

Early master records were made using a disc of zinc that had been coated with a thin wax. The recording stylus cut through the wax to expose the metal underneath. The disc was then etched with acid to form a groove in the metal master positive. This was then copied to make a negative copy, which was subsequently used to press the final discs for sale. Later, discs were mastered by cutting the full groove directly into a hard lacquer. The lacquer was subsequently electroplated with a nickel alloy. The metal was then removed from the lacquer to produce a master that was a negative of the original disc. This was then electroplated again to produce a positive "Mother" copy. From this, a number of negative "Stamper" were created to be used in the hydraulic presses to mould the final records. This system allows a large number of records to be pressed quickly by using multiple stampers and all from one original performance, and as the stampers wore out, new ones could be made from the mother positives. Thus was born affordable, mass produced gramophone records – the world's first mass music carrier...

LPs were mastered in much the same way, although in the late 1970s, 'direct-to-disc' records were produced by the likes of Sheffield Labs for the audiophile niche market, which completely bypassed use of magnetic tape in favour of a high quality transcription directly onto the master lacquer disc. Also during this period, half-speed mastered and 'original master' records were released, such as Mobile Fidelity Sound Lab's recording of 'Dark Side of the Moon'. Also in the late 1970s and 1980s, a method to improve the dynamic range of mass-produced records was developed, using highly advanced disc cutting equipment. These techniques, marketed as the CBS Discomputer and Teldec Direct Metal Mastering (DMM), were used to reduce inner-groove distortion. Their success – or lack thereof – remains the topic of heated debates in high end vinylphiles circles to this day!

Commercial pressure to keep manufacturing costs to a minimum resulted in thinner records during the nineteen sixties and seventies, and an increase in the use of recycled vinyl being added to the mix. This resulted in a decline in the quality of many records produced, with poor surface noise and a greater tendency to warp. However, the late seventies saw the birth of 'audiophile pressings' that used 100% virgin 180g vinyl. Now that vinyl has become a specialist pursuit, these days virtually all new pressings use virgin vinyl – and pressing standards are generally superb.

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# Stagelines



## Noel Keywood lines up four respected mid-price phonestages from Acoustic Signature, Trichord Research, Lehmann and Clearaudio...

**T**he weak signal from a pickup cartridge is a blessing in disguise – it may be miniscule, but it's of extremely high quality. The signal comes from a beautiful, almost perfect, generator - and you have the opportunity to make it or break it in a way not possible with any other source.

Moving Coil (MC) cartridges are perfect generators, in theory at least. Highly detailed and insightful, they are tonally perfectly balanced when well engineered, and almost silent. But if your hands aren't as steady as the Rock of Gibraltar, then stick with Moving Magnet (MM) types. Bounce one of these and you can replace the stylus yourself. MMs cost up to £300 or thereabouts, the stylus assemblies up to £150. They have a big coil of wire inside, and this produces both noise and a roll down in treble that can warm the sound, although these days not by much. MMs aren't as deliciously clear as MCs, but still very good.

Most phonestages now work with MMs and MCs. Moving Coils produce a miniscule signal (0.2-0.5mV) so need more amplification than an MM, roughly ten times more. Theoretically, they can feed any load, from 100ohms-47kohms. In practice it is best to load match, and the stages here, like most, commonly have selectable options. I like to

see 3-30ohms as an option, as this can suppress zing, but it is rare. You usually get 100ohms and 1000ohms, the former aimed at quality MCs. High output MCs may need a load of 1000ohms, but I don't favour these cartridges (too much wire). Phono preamplifiers are getting quieter, allowing MC outputs to go down, achieved by reducing coil turns and generator impedance. Quality MC cartridges often work best with load values less than 100ohms, but sonic differences are not huge.

The situation with MM cartridges is slightly different. They all need a 47kohm load. Some benefit from extra capacitive loading to modify treble, but this requirement is fading, again as coil turns fall, due to stronger magnets and more efficient magnetic circuits.

Now let's talk about gain and noise. These days, hi-fi amplifiers can be insensitive. With tuners producing typically 0.5V output and CD and DVD players' 2V output, most hi-fi inputs need at least 0.4V minimum. To get that from an MM you need at least x200 gain. Look for x200-x400. Note that Naim amplifiers need just 100mV in, so can work with x100 or so. MCs need x1500 gain minimum, all the way up to x6000 for low output, high quality models (e.g. Linn MCs).

Today's ultra-quiet ICs are getting down to theoretical minimum noise

limits. Feed these with an MM and it is the coil of wire inside the cartridge that you will hear hissing (Johnson noise) in your loudspeakers, not the preamp. MCs have so little wire, however, they are all but silent. In this case it is preamp noise that matters. The only way to measure this is as noise referred back to the input, or equivalent input noise (e.i.n.). This is what I do, and have done here. S/N ratios are meaningless, by the way, as they do not take gain into account. My input noise values are in a 12Hz-20kHz bandwidth, IEC A weighted. It is difficult to get below 0.07uV here and this is very quiet.

As well as amplifying a weak signal up to useable level, all phonestages have also to apply RIAA correction, boosting bass by up to 20dB and attenuating treble by a similar amount. This is usually pretty accurate in hi-fi designs, but small differences are audible I can assure you. And finally, there is the issue of the warp filter. Ideally this will exist as a switchable option, but it rarely is. You get them built in, or you don't. They audibly lessen deep bass, but whether you prefer this or not is down to taste, loudspeakers and room.

Get it right when choosing your phonestage and you and your cartridge will go to heaven, but get wrong and you will be forever damned!



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## ACOUSTIC SIGNATURE TANGO £450

**T**he Tango rear panel carries one pair of phono inputs and one pair of outputs, plus an earth terminal and power input, so connection is easy enough. Two pairs of eight-way slide (DIP) switches alter settings on left and right channels and here the Tango gets a little awkward. The screen printed graphics are sparse, identifying only general MM and MC setting direction, not specific switch functions and, worse, the switch numbers are obscured by the casework. As a result you must have the small leaflet instructions available to set this stage and you have to count the switches to determine position and function, none of which is ideal.

Tests showed that for an MM load of 47k DIP 5 must be set up to MM; otherwise you get a much higher value. Also DIP 1 must be Up for MM gain (i.e. low). DIPs 2, 3 and 4 provide extra loading capacitance for MMs, in 50pF steps up to 350pF. Nowadays MM cartridges rarely benefit from extra loading. Frequency response will change, rarely for the better. Load can be set to 10ohms, 100ohms or 1kohms, a useful range. Tests showed the Tango has a tailored RIAA characteristic, with curtailed frequency extremes. This will influence sound quality.

### SOUND QUALITY

This phono preamp was a strange, almost confusing listen. The Tango does sound warm but that is not say it lacks either clarity or dynamics. There was a tendency to listen into performances more and also, I found, to turn volume up and up! It has richly textured and engrossing midband that allowed vocals a full range of expression. I had no quibbles

listening to either Jackie Leven or Alison Goldfrapp with the Tango, as they were nicely lifted from the mix to have a gentle yet quite forceful presence on the sound stage that was captivating.

Spinning Eddie Grant's 'Electric Avenue' at 45rpm had opening synth sounding big, bold and grippingly powerful: I nearly jumped from the settee. Dubs of vocals and synth stabbed out powerfully from the Yorkminsters - this preamp has real push and comes over as exciting, yet without the obvious cutting edge of other designs. It has big, rounded bass too that underpins the sound nicely, giving performances plenty of body and power. It could, arguably, also sound a little weighty and slow but I did find myself smiling

to insane dynamics from the 'Ride a White Horse' 12in 45 as I found myself turning volume ever upward. There's not a lot wrong with a product that makes listening loud fun, but the sound of the Tango is a little contrived, some might say as an argument against it.

I found much the same performance with Moving Magnet, using Goldring's 1042 cartridge. Like the Black Cube this preamp sounded easy and clean, but again it has a full-bodied sound with a warm tinge when compared to the other preamps. Spinning the Scissor Sisters' 'Mary', bass sounded large and a little boofy but vocals were well separated and the whole had a lively dynamic. I felt the Tango MM stage was a good one, if characterful.

### MEASURED PERFORMANCE

Without measuring it, it would be difficult to see what the distinguishing feature of this stage might be, but it has one. Acoustic Signature roll down high frequencies aggressively, giving the Tango an upper -1dB limit of 20kHz, on the nail. Few phono stages are configured like this and it will be easily audible as warm balance. It could be seen as a useful foil to the slight peaking of most cartridges, a good technical justification at least. Whatever, the Tango will sound warmer than rivals.

Acoustic Signature also roll down bass (i.e. low frequency gain) below 30Hz, giving the Tango an inbuilt warp filter. It was -11dB down at 5Hz. Low frequency gain starts to diminish below 200Hz as a result, so dry bass or light bass can be expected from the Tango. It will suppress cone flap-in reflex loudspeakers though.

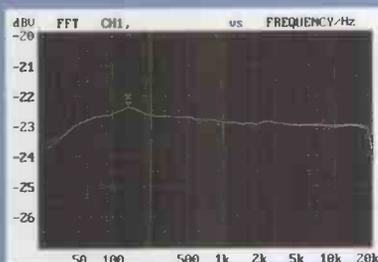
Gain values were x242 for MM and x1484 for MC, useful values that suit modern conditions. Input noise was low too, measuring 0.1uV for MC for example, a very low value.

Maximum output swing

determined overload and this was a low 6V. It gave an MM overload value, referred back to the input, of 25mV for MM and 4mV for MC - low figures, but still satisfactory I believe.

The Tango measures well enough in all areas. It will have a particular sound, that may or may not appeal according to taste and the system in which it is used. NK

Frequency response	30Hz-20kHz
Separation	88dB
Noise (e.i.n.) MM/MC	0.17 / 0.1uV
Overload	6V out
Gain	
MM / MC	x242, x1484



### VERDICT ●●●●● £

Warm and mellow yet beguilingly musical all the same, this charismatic design offers a lovely, quintessentially analogue, sound.

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## LEHMANN BLACK CUBE SE £495

**T**his unit is a little unusual in that it has external and internal settings. Underneath lie two pairs of four position slide (DIP) switches, plus a diagram that allows the unit to be set without reference to the manual. Sliding all switches to Off gives MM matching of a 47k load and 100pF, together with a fixed gain of x188 (45dB). If this is too much (unlikely) you can move internal jumpers to reduce gain by 10dB. A small Allen key and four jumper plugs are supplied to access and set the unit internally.

Moving DIPI to MC increases gain to a useful x2000 (66dB) for moving coil cartridges. Load can be set to 1kohm or 100ohms by the external DIP switches, which is good enough. Should you want to experiment, however, you can fit extra resistors in parallel internally. Also available internally is a warp filter that rolls off gain below 60Hz, and the ability to bypass the d.c. blocking output capacitors, should your preamp possess its own input blockers, as most do.

### SOUND QUALITY

The Black Cube SE has a tidily controlled delivery that's clean and well damped, at least across the midband. 'Take Your Mama Out' kicked off with a nicely maintained sense of pace, the Scissor Sisters' vocals sounding conspicuously clear and concise. This phonostage has not the sense of unbridled depth more

expensive designs achieve, but it was an impressive listen. There was plenty of detail and enough of LP's magic. I wasn't entirely happy that the Black Cube has the most integrated or convincing bass quality; I was often aware of some boofiness.

'Lovely to CU' underlined just how super clean the Black Cube sounds across the midband; I could keep turning volume up with Alison Goldfrapp's multi-tracked vocals on the 'Supernature' album. It helped give the Black Cube a sense of rhythmic grip that worked nicely with my Garrard 401. Dance 45s had the room pulsing with this design, but I could not quite tease out the

sense of an open stage of unbridled dimension from it.

If you intend to use an MM cartridge then this preamp offers impressive results. It was the cleanest of the group with the Goldring 1042, constructing a wide sound stage with sharply wrought images on it. There wasn't a shred of roughness and the midband was just clean, well damped and dynamic. It allowed the 1042 to give a great rendition of 'Take Your Mama Out'. Bass was strong but tight, vocals as crisp as you could wish, timing spot on and imaging stable. The 1042's fine stylus and incisive treble was fully revealed - nice. Great, if not quite an MC!

### MEASURED PERFORMANCE

The Black Cube possesses x188 gain when switched to MM, increasing to x2000 gain when switched to MC. Both are normal enough, even though nowadays many amplifiers have insensitive line inputs of 400mV or worse, in which case volume will likely have to be wound up a little with this stage. The minimum MM gain offered by Trichord's Dino is x256, for example.

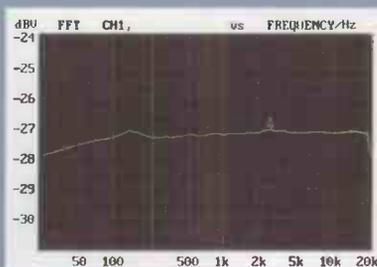
Equalisation was sort-of accurate. Although it stayed within 1dB limits from 25Hz-62kHz at low frequencies gain dropped off slowly, as it often does, measuring -0.25dB at 300Hz and -0.5dB at 80Hz. This sort of broad plateau loss in low frequency energy is quite obvious in use, making for a dry, or even light sound.

Input noise was low, measuring 0.22uV on MM and 0.07uV on MC, the latter being a very low figure, so this is a quiet stage. Overload occurs at 9V output, this being the limiting factor

as usual. It translates to a 48mV input overload threshold with MM and 4.5mV with MC.

The Black Cube has good basic functionality and measures well enough, but it will have a light balance. NK

Frequency response	25Hz-62kHz
Separation	76dB
Noise (e.i.n.) MM/MC	0.22uV / 0.07uV
Overload	9V out
Gain MM / MC	x188 x2000



### VERDICT

Super clean, smooth and even right across the frequency range, this phonostage represents superb value for money.

### LEHMANN BLACK

CUBE SE £495

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### Preamplifiers

The SL2000A is a remote control line stage. Price £450. The SL2000 is a phono preamp with a line stage and an mm phono stage. Price £425.



### Power Amplifiers

There are two mono block power amplifiers in this range. VP20 amps are 18 watt push pull designs with outboard power supply. Price £750. The VP300B amps are 10 watt SE designs with outboard power supply. Price £950.



### Reference Power Amplifiers

There are three SE Reference mono block amplifiers in this range. The DV Ref 300 B amps are 22 watt SE designs with 300B valves. Price £3250. The DV Ref 845 are 36 watt SE designs with 845 valves. Price £2750. The DV Ref 805 amps are 60 watt SE designs with 805 valves. Price £3000.



Products can be purchased from Kronos Hi-Fi or from a select list of dealers in UK.

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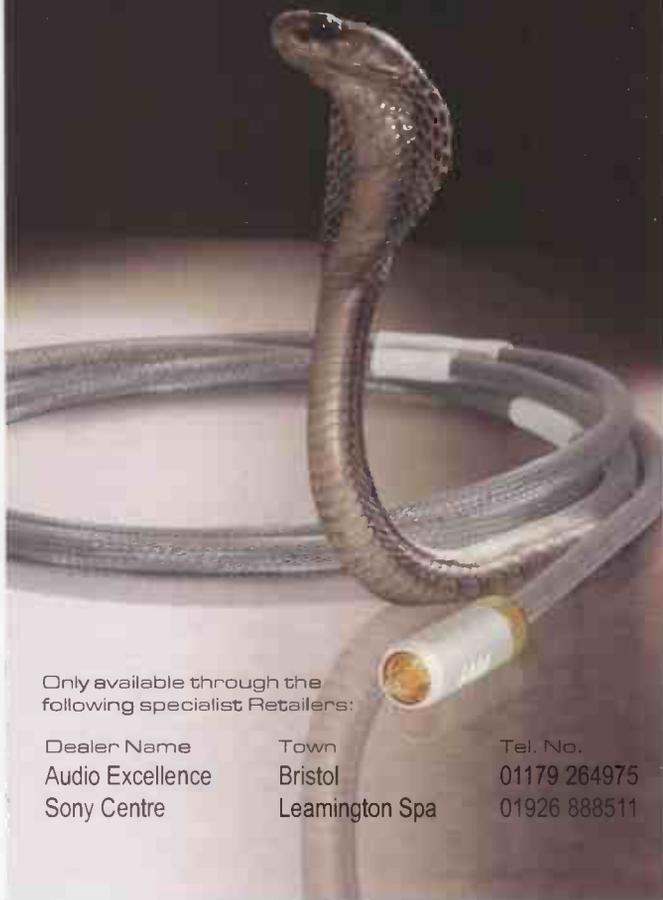
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## TRICHORD DINO+ £570

**T**he Dino offers a wide range of adjustments, easily made, for both Moving Magnet and Moving Coil cartridges, for just £325 in standard form. I tested with the optional £245 upgrade Dino+ power supply, taking the price up to £570.

For MM cartridges the Dino has MM Low (meaning output) and High options. Load can be set to 47k, with minimal capacitance (100pF) or 1000pF (1nF). For Moving Coils the Dino again has more than enough settings to cope with all available.

### SOUND QUALITY

With my Ortofon Kontrapunkt b and the Dino set to MC Low, it displayed a neat enough sound, fairly strong in detail and both fast and reasonably clear. There's little sign of warmth or softness here, the Dino sounding quite strong in its treble delivery. The Dino sounds a little mechanical by today's standard; I was reminded that Trichord have a better sounding design in the Diablo. The introductory guitar line of 'Is It Just Me?' kicked off well enough, with plenty of power, but Justin Hawkins' vocal was held back in the plane of the mix, lacking the sense of independence that can be achieved nowadays by well fettled electronics

There was a little coarseness and muddle at times too, borne out by moving to the better-damped, more orderly Lehmann Black Cube. Increasing speed to 45rpm, Eddie Grant's 'Electric Avenue' showed much the same picture, the Dino displaying quite tight and fast bass - but it is not fulsome here - and a generally clean enough sound that is good and tidy, if not of the resolution

and dimensionality that is possible.

Goldring's 1042 MM cartridge did not much suit this preamp. The cartridge has fairly strong treble, well differentiated if not super smooth. This pushed the already spry and not so smooth Dino a little too far, making the two sound raucous together. It just wasn't a symbiotic combination. The Dino would best suit an MM with a warm balance.

### MEASURED PERFORMANCE

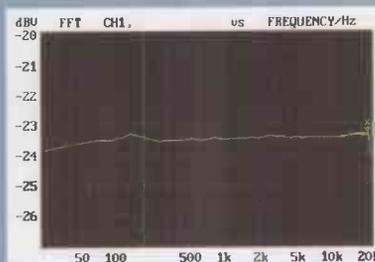
The Dino has plenty of gain options, from x250 for MM with all gain switches set Off, to x10000 with all switches On. However, the advised maximum gain, marked as 'MC v.low' (meaning output) gives x6000 gain. That's plenty of gain range and more than enough with the lowest output MC cartridges. These can get down to 0.2mV, which results in 1.2V output from the Dino. As even the most insensitive integrated amps need 0.6V, the Dino can drive them. It could even drive most power amps direct, if it comes to that.

As usual, overload is determined by output swing, in this case 11V - normal enough. Input overload is this figure, in millivolts (11000) divided by gain, so overload for MC v.low setting is 1.8mV. At x250 overload occurs for 44mV of input.

Frequency response measured flat from 16Hz to 75kHz, within 1dB limits. There is no warp filter and low frequency gain is not curtailed, so bass should be strong.

Noise referred back to the input, with gain set to MM high, measured 0.36uV. With maximum gain (i.e. x6000 at MC v.low) this fell to 0.07uV, so the Dino is quiet. NK

Frequency response	16Hz-75kHz
Separation	82dB
Noise (e.i.n.)	0.07-0.36uV
Overload	11V out
Gain	
MM High (output)	x250
MM Low (output)	x382
MC v. low	x6000
MC low	x3260
MC high	x1445



### VERDICT ●●●●

A light balance provides detail but stage depth is curtailed. Best with warm sounding cartridges.

**TRICHORD DINO+ £570**

Trichord Research

☎ +44 (0)1684 311600

www.trichordresearch.com



## CLEARAUDIO SYMPHONO+ £809

**T**his, the most expensive device, has a 4mm thick aluminium case. Strong, gold plated phono inputs and outputs are fitted on the rear panel. Additionally, a pair of panel mounted XLR outputs provide a balanced line for connection to a balanced amplifier, or at least, one with balanced inputs. You would tend to use this option for long lines to cancel common-mode interference and noise, as well as hum.

Underneath lie two push switches, for right and left channels. Set 'Out' they provide MM matching with a 47k load, 270pF input capacitance and a gain of just x88 (39dB), which is very low. Switched 'In' you get MC and again, gain is very low at just x878 (59dB). The load is set to 500ohms, so there is not the flexibility of MC matching provided by the other phonostages in this group.

### SOUND QUALITY

The Symphono+ allowed changing tonal, timbral and dynamic patterns to be better realised and expressed, making the whole listening experience rich and engaging. With this stage I was immediately presented with a big, wide soundstage seemingly without obvious limit, one that fell back into the distance to reveal depth when it was there in the recording, and also all of a

whole piece. It made the Symphono+ an exciting listen. The unfolding textures of Goldfrapp's 'Ride a White Horse', 45rpm Serge Santiago version, were brutally powerful. The Symphono+ gave this single enormous drive, throwing it out as a big, bold canvas underpinned by explicit timing and explosive dynamics.

No point in running LP if you can't listen to Jackie Leven singing 'Call Mother a Lonely Field', and here the Symphono+ put up a masterful performance, with richly textured vocals and a sense of reverberant

realism that made listening a transfixing experience. The balance of the Symphono+ is a lively one, much like the Chord but unlike the warmer Aqvox preamps I have been using.

With Goldring's 1042 MM the revealing top end of this preamp made the cartridge sound a little edgy in its treble, but once I had acclimatised the Symphono+ proved more revealing of the cartridge than the other preamplifiers - warts and all. It could be argued that at this level you may be better off not using a Symphono+, as it is too revealing.

### MEASURED PERFORMANCE

The Symphono has two gain options, one for MM giving x88 and one for MC giving x878. The MM gain is very low. As a result with most amplifiers, if not all, volume will have to be turned right up. As equivalent input noise was low with MM, measuring 0.16uV, there's no problem here. With fewer coil turns MC cartridges are quiet, but here the Symphono wasn't the quietest, managing 0.16uV A weighted equivalent input noise. With just x878 gain, however, this option is for high-ish output MCs.

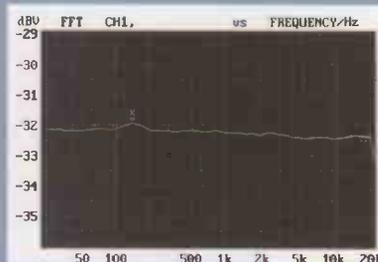
Frequency response was flat from 5Hz up to 58kHz within 1dB limits, with just a small roll down at high frequencies (-0.25dB at 20kHz). As most stages have +0.5dB or so lift here the Symphono will in comparison sound warmer or smoother.

This preamp manages 9V output before overload sets in. Good figures of 11mV for MC and 111mV for MM are achieved, but only because gain

was so low.

The Symphono is best suited to amplifiers with high input sensitivity, meaning 200mV or better. It measures well enough otherwise, but is decidedly short of matching options. NK

Frequency response	5Hz-58kHz
Separation	81dB
Noise (e.i.n.)	0.16uV
Overload	9V out
Gain	
MM	x88
MC	x878



### VERDICT

Superb high resolution phonostage with a tight, grippy and engagingly musical sound.

CLEARAUDIO  
SYMPHONO+ £809

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# conclusion

**I**ronic that the phono stage that measured worst sounded the best - and vice versa. I really was not expecting Clearaudio's Symphono+ to come out top in this group, yet it did so by a good margin. That came as quite a surprise; I thought it would be an embarrassing write off - but not at all. Of all the phono preamps in this group only the Symphono+ was able to reveal what a high quality moving coil cartridge can do, and as such justifies its obvious price premium over the other stages in the group. Better, not only was the Symphono+ lucid and of very high fidelity, it was also grippingly dynamic and fast. This is not academic; it makes LP sound vivid; it injects excitement. It also provides a magnificent soundstage. Only with MM did it arguably prove a little too revealing of the cartridge's blemishes, but then I am not sure you would choose to pair an £800 phono stage with a £200 cartridge.

How many people want to spend £800 on a phono stage in any case? Price is an issue of course and this model inhabits a rare zone at the top end of the market. It's for those with high quality moving coil cartridges, meaning £500 or more and with enough in the way of fiscal reserves to not blink should the stylus magically vanish...

Using it alongside a Goldring 1042 MM for this group test reminded me that good MMs can be very entertaining. I'm also aware from reviewing cheap MCs that they usually are not, conveying little of the magic of a moving coil cartridge. Budget coils commonly sound mechanical or crude to listen to, as a Denon DL103R reminded me when

I gave it a spin at the end of this group test. So whilst the Symphono+ is a lovely stage, it is for high end users. Its revealing nature and lively balance did not especially suit the Goldring 1042 and did no favours to the Denon either. Clearaudio's Symphono+ reminded me of the Chord Symphonic I recently parted with; both have vivid clarity and startling dynamics. However, both the Symphonic and the gentler sounding Aqvox have balanced inputs, a feature the Symphono+ lacks - its only drawback. Having rearranged my Garrard 401/SME312 cabling to fully balanced form terminated by XLRs I find this is the best way to exploit top end MCs and here the Symphono is a step behind current developments.

The Lehmann Black Cube SE and the Acoustic Signature Tango I would rate as equals, even though they sound different. Of the two the Black Cube SE is entirely conventional in its basic sound balance and a good quality benchmark as a result. It did well with moving coil, but was unable to fully reveal the qualities of Ortofon's Kontrapunkt. By way of contrast, it made more of the Goldring 1042 than the Symphono+, damping down its glare and edginess, whilst focusing its imaging into a stable, wholesome reality that came across as realistic and credible. I liked this pairing, feeling it got the best from both items.

The Tango was interesting. Quite why it made me turn volume up and up I'm not sure! I suspect it was its luscious midband. At times I had reservations about bass quality, but all the same the Tango is definitely a product worth hearing. It isn't so

different as to be idiosyncratic, but it is different.

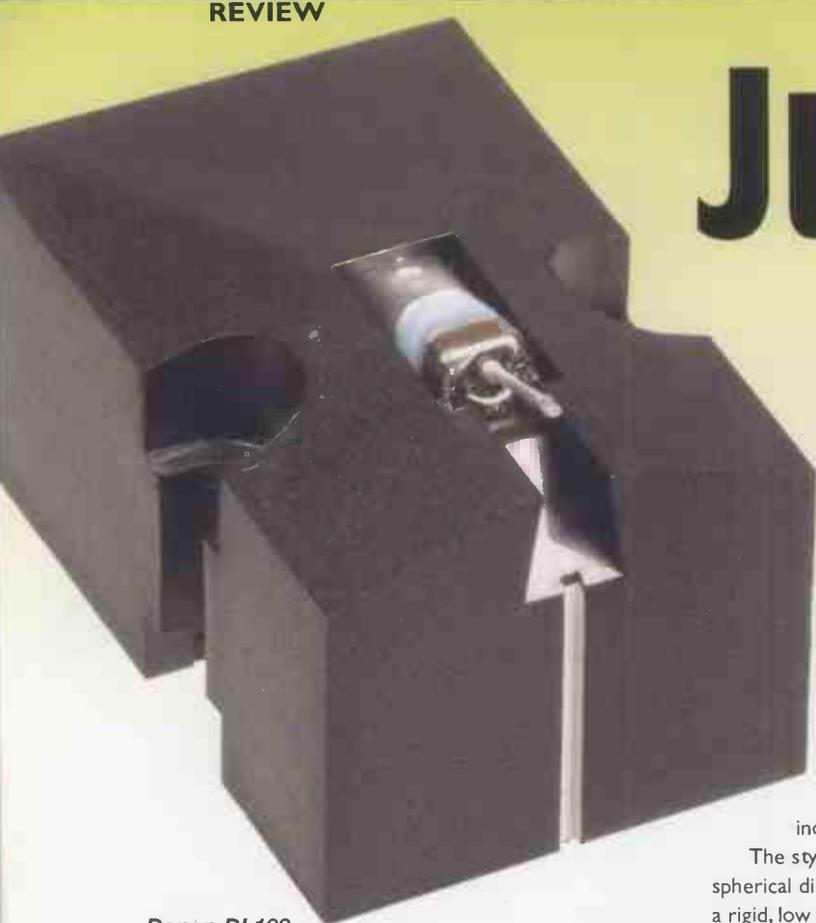
Surprised as I was that the Symphono+ should come first, I was more surprised that Trichord's Dino should come last, even with the Dino+ power supply. Under measurement it was the best of the group and it is also the most flexible when it comes to cartridge matching. Yet listening to it, the internal electronics are off the pace. Whilst the Dino wasn't happy at the bottom of the group I have also been using a Diablo and this is altogether smoother. I still think the Dino is very competitive in its basic form, but the extra price premium of the Dino+ PSU takes it up against far

"only the Clearaudio Symphono+ was able to reveal what a high quality moving coil cartridge can do,..."

stronger competition now.

I used a swathe of new LPs as backbone material for this review, but inevitably I also span a whole load of oldies - many not all so well recorded - and was impressed by just how revealing today's phono stages have become in this price region. Quite a lot of audiophile fine tuning, in addition to good basic design work, is needed to tease the very best from the good modern chips but the world isn't standing still here. These phono stages gave fine sonic results and are well worth considering if you want to get great results from LP.

# Jurassic



Denon DL103

**After forty three years in service most people are looking to retire, but those rules don't seem to apply to Denon's ubiquitous DL103 cartridge, which many still rate as being in its prime. Neal Gibbons joins the heated debate...**

finished in the factory to ensure consistent performance and reliability from sample to sample, a critical need for the broadcast industry.

The stylus is a simple 16.5micron spherical diamond mounted on a rigid, low mass, dual layer alloy cantilever. The stylus is said to be mounted with its crystal structure orientated so that the hardest part is in contact with the groove walls of the record. This ensures minimum wear and a long life. The 103 is a 'stiff' cartridge, meaning it has low compliance. Its suspension is a single point design featuring a short, thin piece of piano wire linking the cantilever to the damper/pole assembly. Tracking force is 2.5g +/- 0.3g and output a low 0.3mV so a step up transformer is recommended. Output impedance is a high 40 ohms

The 'R' version is differentiated by its gold writing and gold vertical line on its 'face'. It weighs the same and also has the same cantilever, stylus and suspension assembly. Where it differs is in the use of 6 nines (99.9999%) pure copper wire for the generator. Also, there are fewer turns lowering mass, output is a little lower as a result at 0.25mV. Output impedance is quoted as 14 ohms.

For the review I had a number turntables and arm combinations, my belt drive Gyro with Orbe platter and HR supply, a Technics SL120 direct drive in custom heavy plinth and my Lenco G99 idler wheel deck. The arms were an SME 3009 Improved, SME 309 Magnesium, Hadcock GH242 and an OL modified RB250. I consulted James Doddington on the *World Designs* BB, to whom I'm indebted for his valuable advice, before I started on the best way to extract the maximum performance

from the DL103.

As the DL103 is a low compliance cartridge it requires a higher effective mass arm than today's medium compliance cartridges, so arm choice is critical. Unipivot arms would be the best mount for it, as due to the low compliance the DL103 dumps a lot of energy into the arm and the 'loose' nature of a single point Unipivot bearing minimises reflected energy. Knife Edge bearing arms like the older SME3009 are also a good bet however the SME3012 with its higher mass would be better suited than my SME3009.

Conventional bearing arms like the Rega RB300 are not so good for the DL103 and the Linn arms should be treated with caution! I was advised to make a small non-magnetic plate to sit between the cartridge and headshell to add extra mass, the cartridge needing about 6gm extra 'work' against. Extra mass in the shape of some stick on lead strip or a 20p coin could be used as well but this is not ideal. Lastly, the DL103 loading needs careful selection, a load between 200-1k ohms being ideal.

## SOUND QUALITY

To run in the cartridge, I mounted it on the SL120/ SME3009 Improved for about twenty five hours. I'd made up a small 2mm thick alloy plate as advised, and also added a little extra mass in the shape of a 5p coin! Balancing out the arm proved a little problematic but I was fortunate to have a spare 'heavy' SME counterweight. Alignment was straightforward due to the rectangular body and vertical line but I was not happy with the poor cartridge mounting slots. Slight over tightening of the mounting screws distorts the plastic body and causes the screws to try and exit the cartridge body, so white knuckle

**R**egular readers could not have helped but notice that neither NK nor DP hold this cartridge in any great esteem, both responding to the letters in an understanding but rather dismissive way with DP mischievously describing it as a 'right old stinker'! But why? What makes this fortysomething pickup cartridge special to some, yet derided by others?

The DL103 roots can be traced back to the early nineteen sixties and Japan's broadcast industry [see HISTORY]. Since its introduction in 1963 many variants have come and gone, the only official versions currently being the standard DL103 and the 'R' version. There a number of aftermarket 'hot rodded' versions though, like the DL103 Pro from EIFL. Currently, just the standard version is available in the UK. However, we learnt that the 'R' version will officially be made available this summer...

## TECH TALK

Measuring 15x15x27mm with wide spaced output pins the DL103 is a little vertically challenged compared to a typical Ortofon MC Supreme, although it compares well to its price rival, the Goldring 1000 series of MM cartridges. It features a slab-sided rectangular plastic body weighing a total of 8.5g with a distinctive vertical white line on its 'face' for ease of cueing. Each cartridge is hand

# Classic

levels of Linn torque are out!

Running into a 100 ohm load in my WAD Phonoll I found the balance a little uneven. Treble lacked extension and clarity, bass was rounded and overblown. The midrange was pushed forward making for some interesting affects on well-known recordings! I experimented with the loading and eventually settled on a 280 ohm load. The sound was now better balanced; the midrange was still a little prominent but was smooth and detailed, the cartridge working with vocals particularly well. Bass was still rounded and the treble veiled, overall there was a lack of dynamics and clarity, however, the presentation had become enjoyable if somewhat warm in a seventies kind of way! Suspecting the SME3009, I transferred the DL103 to the OL RB250 on the Gyro.

No matter what I tried, I couldn't get a satisfactory performance, I found the sound veiled, muddled and lacking cohesiveness and dynamics, suspecting an issue with my OL RB250, I moved on to the SME309 Magnesium. The DL103 mounting slots again caused me issues and I had to use extended cartridge leads for the headshell due to the wide space cartridge pins. The effort was worth it, immediately the DL103 took on a new dimension with a leaner presentation than on the SL120/3009 but one that was more detailed, faster and better balanced. Treble now had air and some fine detail was evident, bass was strong, focused and clean, with good dynamics.

The opening piano on Diana Krall's, 'Stop This World' had weight and vibrancy along with natural tone, Diana's vocals were well projected and clean. The sibilance I sometimes hear on this track was handled well. Next, I tried Paul Simon's 'Graceland'. The opening drum strikes of 'The Boy in the Bubble' rifled out of my Spondor S6es with real speed and impact, all the detail was evident and the track bounced along beautifully.

On 'Homeless', Ladysmith Black Mambazo vocals were rich and full of detail, sibilance was again very well controlled and natural. There was no hint of sharpness or spit to vocals and the tracking seemed excellent, the cartridge locked into the groove

at all times.

On John Lee Hooker's 'Mr Lucky', Robert Cray's guitar playing came over cleanly with his voice clearly separated in the mix. On 'This is Hip' from the same album the music was foot tappingly good, the DL103 able to pick out the rhythm and vocals above all else making the track bounce along nicely. On the negative side, I felt there was still a lack of depth and 'air' to some vocals and also low level detail was missing, the metallic impact of the cymbals on 'This is Hip' were completely missed and they sounded splashy and indistinct. The brushed drum on Diana Krall's 'Stop This World' sounded like a 'shhhhhhh' noise, lacking the necessary detail to distinguish it.

I double checked back on the SL120 with the SME309 and heard a similar presentation, so thought it was time to unleash the DL103R! Straight away it was apparent how much brighter the 'R' version was, even after running in. As the hours piled on the balance changed for the better, however, even after thirty hours I still felt it was too bright, fatiguing in fact. So I experimented with loading again and settled on 47 ohms, which smoothed things nicely.

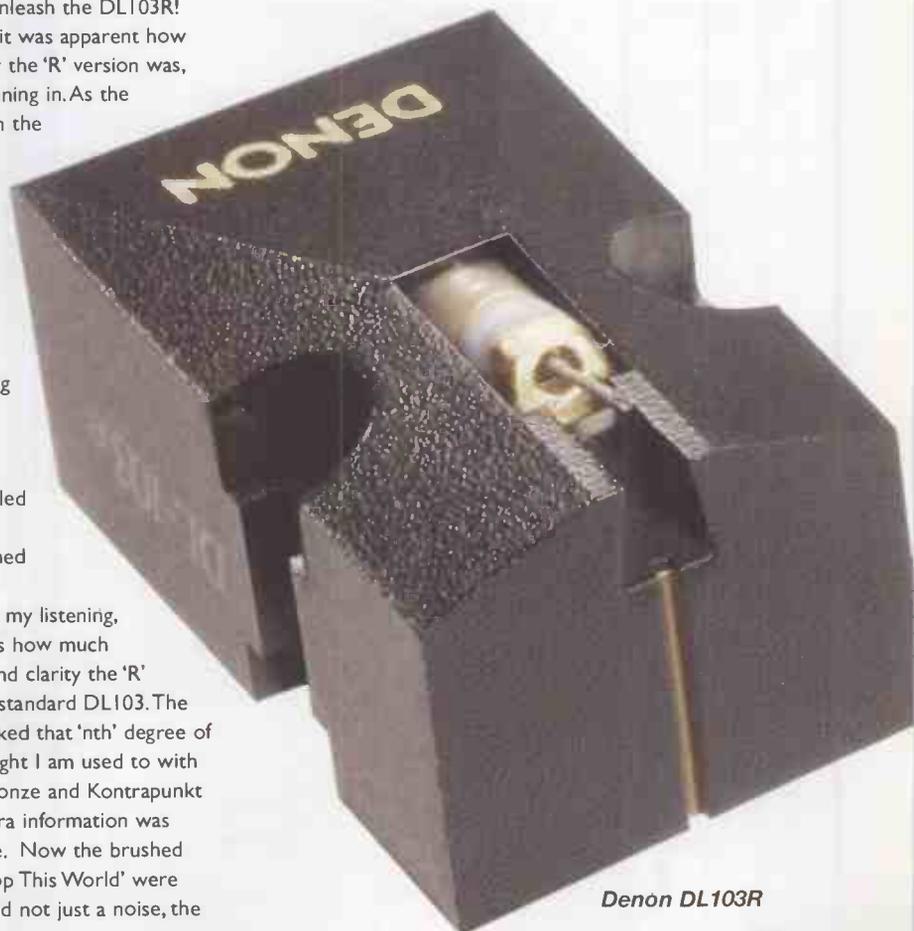
Resuming my listening, it was obvious how much more detail and clarity the 'R' had over the standard DL103. The treble still lacked that 'nth' degree of detail and insight I am used to with my Rondo Bronze and Kontrapunkt B but the extra information was very welcome. Now the brushed drums on 'Stop This World' were discernible and not just a noise, the

## HISTORY

The DL103 was developed as a joint venture between the Japanese broadcast company NHK and Denki Onkyo (Den-on). The DL103 was released in 1963 just as Denon merged with Nippon Columbia and is still used by major broadcast companies today. The cartridge didn't go on commercial sale until 1970, it was to be the first commercial Denon product. 1974 saw the first variant, the 'S', released, a higher compliance Elliptical stylus version. Many further variants then followed through the 70s and 80s, most notably the 'D' in 1977 with even higher compliance and Elliptical stylus, the 20th Anniversary Gold in 1982 and the well regarded 'M' in 1983 with aluminium body, boron cantilever and Elliptical stylus. The LCOFC 'LC' and white bodied 6N 'SL' versions were released toward the end of the 80s and the 'R' based on the SL but with black housing was released in 1994.

cymbals on 'This is Hip' had leading edge information and impact, making the overall presentation more enjoyable. On Katie Melua's 'Nine Million Bicycles' all the detail, air and tunefulness of Katie's voice came over with great realism. It performed the same vocal feat with Mary Black on 'Circus' and Nancy Griffith on 'Late Night Grande Hotel'. I could detect a common thread here! The bass was clean and tuneful, going deep with speed and impact, as with the standard DL103.

Moving the 'R' onto my Hadcock GH242 and mounted on the Lenco G99 brought a huge grin to my face - I was presented with a smoother



Denon DL103R

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**NK SAYS:**

I was surprised by this pair of DL103s, since their tracking was amazing - far better than that achieved a decade ago when most MCs had distinct problems in this area. Although this is an old design it has been kept up to date. Another clue is inner groove loss. The stylus exhibited minimal loss on inner grooves, unlike stylus shapes of yore.

After testing I was expecting something special, but instead was dismayed by what I heard from the 103R. It had overblown bass, a curiously uninformative midband and prominent treble. Whilst it supported great midband dynamics, there seemed to be a lack of low level detail. Major events were gripping, minor ones missing. I was impressed in particular by its tremendous high frequency resolution and insight and noticed that stereo panning effects were vividly portrayed; there's certainly nothing wrong with its stereo. Here, the DL103R was more vivid than my Ortofon Kontrapunkt b. But I didn't want Nellie the Elephant stamping around my lounge late at night, so I took it off!

The next day I felt compelled to give it more time, this time a few days, mainly to see if I could acclimatise to its peculiar presentation. It does, after all, cost just £200 and as MCs go that's peanuts - on par with a Goldring 1042 MM. I didn't get used to it, and choosing various loads values with a Trichord Diablo did not offer a cure. But in its way, the 103R is impressive and, good value. It has all the basic qualities of a moving coil cartridge in spades, including that sense of see-through clarity. Here, it's unlike budget Ortofon MCs such as the M25FL, for example, which are (were) disappointingly flat sounding. Whilst my 1042 sounded more natural, it had neither the apparent insight, lucid clarity or - especially - incisive treble of the Denon. It sounded a little brash in comparison too. I suspect also that the Denon's bass is a tonic to systems with bass light loudspeakers.

The incredibly cheap 103 sounded nice enough. It was gentler and less lucid than the R version. At less than £100 it has to be good value all the same.

An old stinker? I can understand the view. But at the price perhaps David and I shouldn't be so sniffy! You can have fun with the DL103 or 103R, that's for sure. NK

and more refined performance. Midrange detail was usefully improved and I detected even more low level detail. Imaging and the placement of singers and instruments between the Spendors seemed better as the sound stage gained width and height. The 'R' was starting to really

sing. Initially I thought the bass had lost some depth, however, I was soon proved wrong. Spinning up 'Steamy Windows' by Tina Turner and 'Mudfootball' by Jack Johnson from his excellent 'Brushfire Fairytales' LP the bass came over tighter, faster and more tuneful than before and yet it still had the depth when needed. A slight tendency for the bass to boom with the GyroSE/ SL120/ 309 vanished.

**CONCLUSION**

So, is the DL103 really a 'right old stinker'? From my listening experience the answer to that question is no. However, it's also not the giant killer it is claimed by some. This is not a plug 'n' play cartridge. Far from it, the plastic body is poor and the mounting slots a real problem. It needs a 'band-aid' to work, at least in a half decent manner, when used with today's medium mass arms, which are really designed for medium compliant cartridges.

Treble and low level detail performance of both versions are not as good as, say, an Ortofon MC25FL or a Goldring 1042. They also lack a degree of refinement and stage depth. And yet in my book this is relatively unimportant, as they score highly over both of the former cartridges in key areas like the midrange and bass. I found both versions handled vocals and piano particularly well; there is a real vibrancy to instruments with detail and emotion all conveyed convincingly on everything I tried them with. Sibilance was controlled well and they were both exemplary in their tracking performance. The DL103s are not 'cold' analytical machines like the MC25FL; they get into the groove of the music, presenting and focusing on the most important and enjoyable aspects, making for a very satisfying listening experience.

At their price points (£100 and £200 for the 'R') they would seem ideally positioned to be a partner for the RB250/300 but their

design means they demand a much better arm and not just one of higher mass. I found the SME309 to be a good match but the SME3009 missed out as predicted. The Haddock really brought out the best in both, being a very capable and synergetic mount. Unfortunately, on the OL RB250 I found nothing about the performance worthy of note! I suspected a damaged arm but all seemed well with my Rondo cartridge.

The standard DL103 stands out as a very musical cartridge, it takes effort though, preparation and tenacity to get the best from it but the rewards are good and at the price it's very much a bargain. For a performance with the same positive aspects but slightly more insight and clarity, the DL103R will fit the bill. Just don't expect either of them to best a Kontrapunkt B!

**VERDICT** ●●●●●£

Awkward to get working properly with a poor mounting arrangement, yet it rewards with a musical performance that makes similar priced cartridges sound cold.

**DENON DL103** £100  
**DENON DL103R** £200  
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 www.denon.co.uk

**FOR**  
 - musicality  
 - tracking  
 - price

**AGAINST**  
 - arm compatibility  
 - mounting issues  
 - not plug 'n' play!

**MEASURED PERFORMANCE**

Differences between the 103 and 'tuned' 103R were small, but perhaps this is to be expected as the R version has fewer coil turns of better wire, but otherwise appears to differ little. This will reduce effective tip mass, improving midband and high frequency tracking, whilst reducing output. Less wire does also mean more MC type clarity though, a limitation of high output MCs of yore. The R version did have extraordinary midband tracking, reproducing a 1kHz, 25cms/sec test track with an ease and security few cartridges manage, but the normal 103 just managed to traverse this track as well, so it too tracks well. Both cleared all low frequency tracks.

Frequency response of the normal 103 proved very flat, with a little treble lift on outer grooves. The stylus profile is very effective as there was little loss on inner grooves. The R version has more treble on outer grooves and so will sound just a little more incisive generally; it was flat on inner grooves. Our analysis clearly shows no upper midband loss from either, so both reach a very high standard in this respect too.

Surprisingly, both cartridges also have a vertical tracking angle of exactly 22 degrees, notionally perfect. This results in less vertical distortion (i.e. on left and right images) than is usual. Together with low distortion on lateral modulation both the 103 and 103R are low distortion designs.

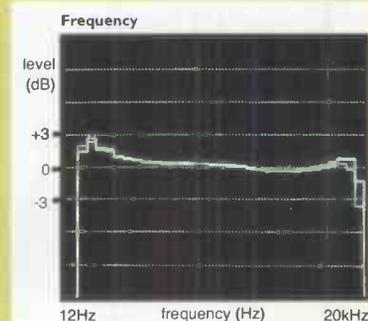
The normal 103 delivered 0.5mV at 5cms/sec peak, or 0.7 at 5cms/sec rms. The R version delivered 0.4mV at 5cms/sec peak. Both need a fairly quiet preamp., and the R version demands use with a high performance stage in particular or its insight will likely be compromised.

Both the DL103 and 103R measure exceptionally well, reaching the highest modern standards. Even though they

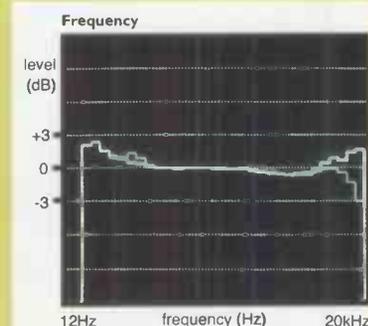
appear traditional, cartridges did not attain this level of performance until recently. NK

Tracking force	2.5gms
Weight	8.5gms
Vertical tracking angle	22degrees
Frequency response	20Hz - 20kHz
Channel separation	27dB
Tracking ability (300Hz)	
lateral	90µm
vertical	45µm
lateral (1kHz)	25cms/sec.
Distortion (45µm)	
lateral	0.75%
vertical	1.4%
Output (5cms/sec rms)	0.7 / 0.56mV (R)

**DENON DL103**



**DENON DL103R**





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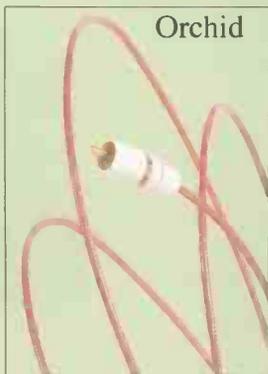
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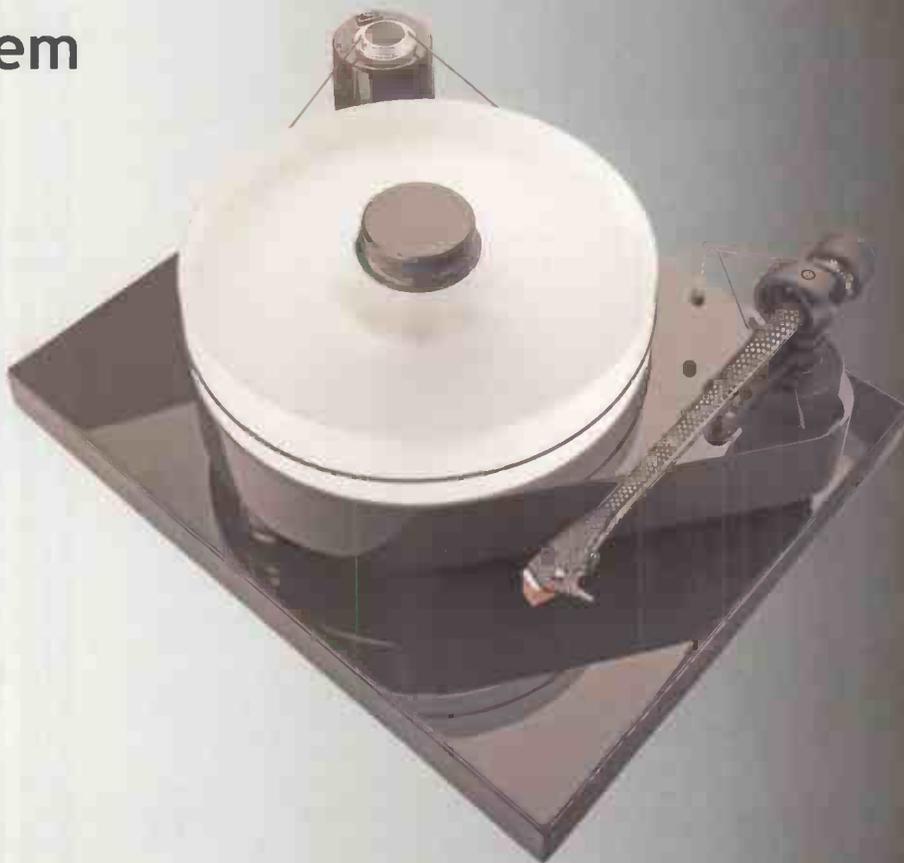
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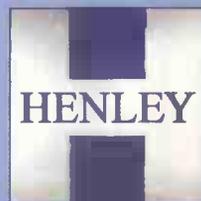
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# Uni-versal Love



**Hopelessly devoted to DIY, Neal Gibbons regales the story of building his very own Hadcock GH242 unipivot tonearm, and battling to get it on to his classic Goldring Lenco turntable...**

then I slipped over the ends the supplied rubber tube and inserted it into the rear hole to act as a grommet. The wires must exit below the arm and not to either side.

Next, the cartridge tags needed

to be soldered on. Nick advised me to scrape off the enamel insulation or burn it off with a hot soldering iron. I chose a combination of the two, using a dry iron as a hot scraper. After tinning each wire I supported the cartridge tags on the end of a 5W wire-wound resistor leg and soldered the tags on. With the tags supported in this way they proved very easy to solder.

Now I needed to perform a similar feat of micro engineering at the other end using the supplied four-way terminating block. The block slides apart allowing easy access to the terminals for soldering. The design allows the tonearm, wiring and cartridge to be removed as a complete assembly. It plugs into a four-way socket that is set into the arm pillar. I followed the color-coded wiring layout as detailed in the instructions to maintain correct left and right connections. As the wires are so delicate, I added a blob of hot glue to provide a little strain relief for the wires as they entered the four-way terminal block.

I was not finished yet: the external wiring now needed to be finished. Nick supplied me with some stiff silver-screened cable. I had a lot of trouble feeding this cable through the arm pillar and bending it to shape, so it would line up for soldering to the underneath of the four-way socket. Eventually after much hair pulling, I settled on a side entry to the socket, securing

I haven't played with Meccano for many years, probably thirty five or more, so imagine my surprise when I took the lid off a neatly wrapped box labeled 'Hadcock GH242 Tone Arm'!

Inside, securely packed, were lots of metal parts, screws and wires. Okay, these were all chrome plated and nothing like a Meccano set, still, as I gazed I could not help thinking back to my childhood...

I felt my Lenco '99 deserved a better arm to replace my OL modified RB250. Positive reviews in this magazine and comments on the World Design bulletin board led me to the Hadcock GH242. Nick at the Emporium could supply them at a very reasonable rate if I was "up for a bit of DIY...". But of course!

The arm Nick supplied came complete, but without any internal or external wiring - that was the DIY bit. Now, I'm of an age where I still think digital watches are a rather neat idea, placing me at a point in life where the old eyesight is not what it was. Looking at the hair-thin Litz tonearm cable and very small cartridge tags, I started wondering what I'd let myself in for.

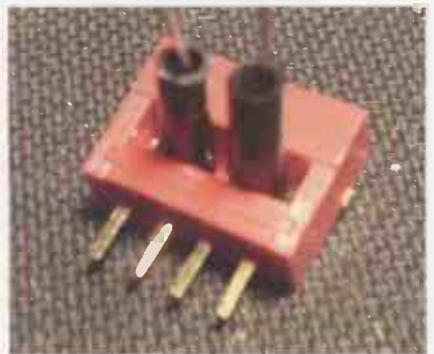
I studied the well-written manual for a week before plucking up enough courage to get started. The first task to tackle was the tonearm wiring - and to my surprise this proved straightforward. I gently pushed the Litz wires into the arm until they appeared at the headshell,

the cable down with more glue to provide strain relief. It doesn't look pretty but it was the best I could do with this cable. Lastly the RCA phono sockets were soldered to the other end of the cable. It was time to take a break: facing me next was the mechanical assembly... errk!

Before I could mount the arm I needed to perform surgery on the



*What comes in the box...*



*The all-important arm connector block.*



*The fiddly arm pillar wiring.*

Lenco plinth. I retained the existing Rega VTA mounting holes and made up an 'arm plate' the same diameter as the OL VTA adjuster out of an old cup place mat! I used the VTA sleeve as a template and marked then drilled three holes. After screwing this onto the plinth I carefully measured out the required 226mm spindle to pivot distance and marked the new arm plate. I drilled an 18 mm hole with a flat wood bit, this allowed for some arm pillar adjustment in case my measurements were out slightly. The plinth arm hole then needed enlarging slightly to clear the nut and washer of the arm pillar.

I attached the pillar to the new arm plate, along with the pivot assembly and screwed it down onto the plinth. A little bit of adjustment was needed to get the pivot to spindle measurement correct. Now all that was needed was to follow the detailed Hadcock instructions for arm mounting, balance and cartridge alignment.

Alignment is a little different than normal. The headshell has fixed cartridge-mounting holes and the arm base is not adjustable like an SME. Instead, Hadcock have made the headshell itself adjustable – it can slide up and down the arm tube and can also be rotated for azimuth adjustment. The headshell is secured with a grub screw when alignment is correct.

Cartridge overhang is listed as 17.8mm so I decided to mount my Ortofon Rondo Bronze cartridge and then measure from the stylus to the arm pivot (226+17.8mm) 243.8mm, sliding the headshell on the arm tube until the measurement was correct. As long as my 226mm measurement was correct, alignment should be close or spot on from the start, so I thought! However I ran into some problems. The Rondo cartridges have two raised 'lands' fore and aft to facilitate azimuth adjustment for those arms that don't provide it.

"the Hadcock's most definitely not for the faint hearted, but all this fades away as soon as it starts to play music..."

With the Hadcock, the front land just catches the front of the headshell, the rear land is cleared. This means the cartridge sits nose-down in the headshell. I tried placing some washers under the headshell but this allowed the cartridge to flex. I took drastic action and ground off 2mm

from the front land with a model drill and grind wheel, and it worked!

Annoyingly, the headshell holes are threaded, which is fine if you have a cartridge with 'through' mounting holes, as it makes cartridge mounting much easier, but with blind holes such as those of the Rondo and Kontrapunkt range it makes for a frustrating experience. Non-threaded headshells are available though, or if you're brave enough run a slightly larger drill down each hole to remove the thread.

Next I pushed on the large and small counterweights to the arm end stub. The large counterweight hole is offset slightly allowing it to adjust azimuth when rotated. Before placing the arm on the arm pillar it was necessary to fit the 'Unilift Cueing' arm, again secured with a small grub screw. I then plugged in the arm wire plug and gingerly positioned the arm on its pivot. This is my first experience of a unipivot tone arm and I was not prepared for the amount of freedom in all planes they have - surely this is never going to work, I thought!

Calming my nerves, I managed to balance the arm and was amused to find the magnet in the Rondo was strong enough to be attracted to the centre spindle, slowly moving the arm across the full width of the Lenco! This just shows how low the friction is with a unipivot.

With some tracking force dialed in, I check the cartridge alignment and noted it needed some adjustment. I messed about with this for quite some time. I could not move the headshell far enough forward so in the end I moved the arm base forward despite it being set to exactly 226mm. With the alignment finished I adjusted tracking force to the correct figure and lowered the arm on to a stationary record to adjust azimuth with the large counterweight. Next I lowered the arm pillar to set vertical tracking

angle and added the thread and weight bias compensation. I adjusted the bias by ear and also with the help of a test record.

Finally, I sat down to listen, or rather I didn't! Switching on I was presented with a loud hum! The arm was earthed okay, so I decided to



*The very wobbly bearing housing.*



*Soldering the cartridge tags is not easy...*



*On the Lenco plinth at last!*

take a leaf out of SME's book and add two flying earth leads from the back of the phono plugs to the earth post on my phono preamp, and the result was silence.

Settling back to listen, I was presented with a beautifully detailed and wide soundstage. Dynamic range was much greater, and there was none of that slightly stunted and truncated performance of my Rega arm. Bass took on more depth and detail, the midrange seemed fuller and had none of that grey tendency' of the Rega especially on female vocals.

I battled though a lot of challenges to get this arm up and running. It's tricky to set up, tricky to use and the finish is not in SME territory - so it's most definitely not for the faint hearted. However, all this fades away as soon as it starts to play music... superb!



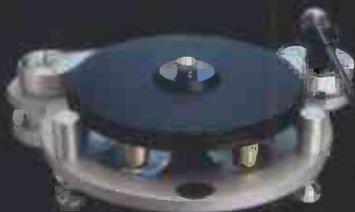
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# Surface Tension

Stressed out by the snap, crackle and pop of dirty records? Stewart Wennen tries some serious record cleaning remedies...

Disco Antistat



Moth Record Cleaning Machine MK2

Decca Deram Record Cleaning Brush



Camel Hair Brush

Vinyl enthusiasts are painfully aware of vinyl surface noise, alternatively known as 'the scrunches'. Although it's the bane of many vinyl junkies' lives, it can actually be avoided, or at the very least minimised, at a relatively modest cost, or a little effort.

The easiest thing is to start with a perfect surface, and keep it that way. This involves buying new records, and the simple expedient of replacing the standard, cheap and nasty hard paper inner sleeves that come with all modern British vinyl releases, with Goldring's Exstatic polythene lined inners. These are soft, so any tiny particles of dust or grit that may have got into the groove (or indeed on to it), won't abrade the rest of the disc surface when the record's put back.

A quick swipe with a carbon fibre record brush, such as the Decca mentioned later in this article, is then all you need, should the surface get too dusty. Polythene lined inners are vitally important for quiet records over a long period of time; their importance cannot be understated. If you don't use them, then you're effectively sandpapering your discs every time you take them out or put them back of their sleeves.

Of course, many plastic wax fans buy secondhand. This isn't half as bad as it may seem, as the use of a decent record cleaner can have dramatic results. With secondhand records, many of which might cost a pound or two from a junk shop, the main worry is the damage they might do to

your stylus, rather than the other way around, so it's a very good idea to get old records 'wet cleaned' as a matter of procedure when you buy them, then slip them back into a nice new polythene inner and junk the ancient bit of dirty, faded paper the record had previously been residing in...

Moth's Record Cleaning Machine is simplicity itself to operate, and if utilised correctly reduces the noise floor significantly. The latest (Mk2) version of this machine has a feature not available on the earlier design, which is a two-position motor switch. This addition is worth its weight in gold, as it enables the user to thoroughly scrub the records. Supplied with the machine is a brush and half a litre of Moth LP record cleaner, which you squirt onto the surface of the record being cleaned, which is then scrubbed into the surface of the record using the supplied brush, then the record is inverted. The clamp is now fitted, the motor switch is put into the forward direction, and the vacuum pump switched on.

Whilst the vacuum pump is sucking the debris out of Side A, we can squirt some cleaner on the top surface, and scrub it in. When all the debris has been removed from the underside of the record, the pump can now be switched off, and the record rotation stopped, and it's just now a simple job of inverting the record, and onto cleaning Side B.

The Moth machine isn't the most elegant design around (you can spend twice this on rival designs, if you like),

but it gets the job done properly, for most lightly soiled records. However, for absolutely disgusting ones, the Disco Antistat bath system can be used to clean the records initially, whereupon they can be put onto the Moth machine wet. This belt and braces approach cleans far more effectively than the Moth machine alone.

Individually, the Disco Antistat bath system works well, but the problem is that it leaves some gunge in the groove. Actually, the best way of removing this is the stylus itself, so you can just use it for cleaning, and then play the cleaned disc and keep cleaning the stylus until it doesn't throw up any more scunge. The Moth is very effective at sucking the scunge out, so it's a far neater solution, but expensive too. I can recommend both of these machines individually, but in combination, they have no peer in my experience.

Once a record has been cleaned and placed upon the turntable, airborne dust should be removed with a soft carbon fibre brush, the best of which is the Decca Deram. At £5.99, this must be considered an absolute bargain, and is actually all most people will ever need – certainly if you don't make a habit of buying filthy secondhand discs. Even with routine use of the carbon fibre brush, the stylus is still bound to get a little dusty, and for this a Camel Hair artist's brush or clean eyeliner brush (bought from high street chemist or stolen from 'her indoors') does the job.

DISCO ANTISTAT	£53.99
<a href="http://www.hifigear.co.uk">www.hifigear.co.uk</a>	
MOTH RECORD CLEANING MACHINE MK2	£450
<a href="http://www.britishaudio.co.uk">www.britishaudio.co.uk</a>	
DECCA DERAM RECORD CLEANING BRUSH	£5.99
Presence Audio	
☎ +44 (0)1444 461611	

# Air head!



**The Cartridge Man's new Conductor is a tonearm with a difference, says Stewart Wennen...**

It's no surprise that most tonearms are of the 'gimballed' variety. Making a long tube with a couple of lateral and horizontal bearings at one end and a pair of cartridge mounting slots at the other isn't the hardest thing in the world. It suits economical mass production, so can you blame manufacturers like Rega and SME who – let's be frank – do it very well? With careful fettling, fine results can be eked out of this elegantly simple and cost-effective format, so why spoil a winning formula?

Well, although it may be possible to get good results for a relatively low build cost, the trouble is that 'pivoted' tonearms aren't actually ideal for the job in hand – which is to trace the groove of an LP record with the lowest possible distortion. Indeed, it's an almost insurmountable problem – due to their inherent design, gimbaled arms can only be geometrically correct at two points on the record surface. The stylus tip is for most of the record surface is at a slight angle to the groove walls,

so distortion is present most of the time, and impossible to remove...

Parallel tracking pickup arms are – in theory – the nearest approach to playing vinyl correctly, because (of course) cutting lathes use parallel tracking cutter heads. The trouble is, they can be difficult to get right, and it's all the more tricky when you're building one down to a budget... Hats off then to The Cartridge Man, who have come up with this amazing engineering *tour de force* at £1,500. This might seem a lot for a pickup arm, but even so, there are some far less technically accomplished designs on sale for much more.

## DESIGN MATTERS

The Conductor 'air bearing' parallel tracking pickup arm is constructed using simple engineering principles. Rather than pivoting across the disc surface as per a conventional Rega RB300 (or suchlike), the Conductor's arm tube 'floats' across the record tangentially, simply following the groove as it winds in to the centre of the disc. Instead of relying on

low friction ball race bearings, the carriage that supports the arm tube quite literally floats on air.

This is delivered from the (supplied) air pump, chosen for its reliability as well as having an inbuilt filter and a variable airflow control. This pick up arm relies on air flow rather than air pressure. The advantages in this type of operation are tremendous; there is no reduction in the air support at any point in the carriage position on the air beam. This is due to the type of air pump and the fact that there are two air inlets on the arm base.

Diaphragm pumps can be rather noisy but correct set up can reduce the noise intrusion to low levels, especially if we remember that this arm relies on airflow rather than air pressure. An air expansion tank is also supplied and use of this tank is strongly recommended, as it tends to smooth out the airflow, so there is a constant supply of air to the arm. It is very important to place the expansion tank within one metre of the pump, although the further

away from the pick up arm the pump and tank combination is the better. My pump and tank are at least five metres away thus providing a very smooth delivery of air to the arm. We can see there are two air inlets to the air beam. This is to ensure that the carriage is supported on the air cushion along its whole length.

The arm carriage runs from right to left with no friction at all, because the arm tube is supported on a consistent air cushion. As a result of the removal of friction there is much less noise and almost no distortion of the audio information. Another advantage this pickup arm has is it is completely removed from the feedback loop.

The air beam is turned from brass, and is then chromium plated, and has a line of small holes in the top. These are to deliver the air to support the pick up arm carriage. The arm carriage is again constructed from handcrafted alloy. The carriage supports the pickup arm tube and it is made from carbon fibre, to which is attached a circular headshell. The balance weight is made from black enamelled brass. The arm is of the static balance type. Bias compensation is not used as it is not needed. Arm wiring is from Cardas Litz cable, using five wires in the arm loom. These are led out of the top of the arm tube to captive sockets at the rear of the arm support structure. Vertical Tracking Angle adjustment is catered for in the armbase construction. If you want to mount this arm on an unusual turntable then The Cartridge Man has made a variety of arm mounts available through the distributor.

Generally, the quality of the arm is superb – the finish of the main unit is beautiful – but it's a shame that you can't say the same about some of the other ancillaries. The plastic air pipes running to the air intakes didn't seem terribly robust, the Rega arm lift fitted as standard isn't the smoothest to use and the lead out wires from the arm tube to the phono sockets are barely up to the job. Still, we're willing to forgive these 'foibles' considering the unusually low (for this type of arm) retail price. Still, we'd certainly hope that the latter is addressed during production, as right now it's a case of 'spoiling the ship for a ha'porth of tar'...

## SOUND QUALITY

There's little doubt in my mind, and indeed in that of editor DP (who's been running one of these in his own system for some ten weeks now) that this is a special bit of kit. Essentially, here we have a

massively capable and largely flawless performer, one which puts even the best conventional tonearms to shame in most respects...

If there's one standout characteristic of the Conductor, it's the tremendous sense of solidity it gives to any music it plays – which is precisely what you'd expect from a top class parallel tracking tonearm. First impressions were of a cavernous stereo image with massive depth retrieval – again, these are classic signs of a tonearm whose architecture provides for minimum distortion. With width and height to die for, an extraordinary stereo soundstage was evident from the first piece of music I played. This pickup arm does an absolutely first class job of transcribing the music.

The first record on was Beethoven's Pastoral Symphony



*General standard of finish is excellent, but...*

"although I've played this disc to death, it now sounded like I was listening to a completely different recording..."

conducted by Bruno Walter with the Columbia Symphony Orchestra (CBS CB 251). A magnificent piece of music, if this is transcribed correctly it can move me to tears, and so the Conductor did. Its pace was astonishing; as the first movement gathered momentum, all the power of the recording was on display. The Conductor has a tremendous ability to reproduce subtle rhythmic changes; I was listening to the music, not the equipment.

throws a huge soundstage into any listening room. All the key musical clues were portrayed without artifice. The tonearm's innate natural musicality let the music's flavour flood out. In the bass, the arm is massively commanding, with super-fast transients, a seriously strong grip on the proceedings and a light, flighty musicality that lets the song lope along with carefree abandon. It's not quite as tight as an SME Series V downstairs (I know no other arms



*...it's a shame about the fiddly cable connections & poor socketry!*

So to 'Nice Work' by the renowned Carol Kidd. Recorded by Linn Records (and sadly no longer available on vinyl), it's an album that

that are), but it's very, very close and significantly better than the SME in the musicality department.

Midband is sublime, with a lush

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BIRMINGHAM B9 4AA  
**0121 224 7300**  
[www.griffinaudio.co.uk](http://www.griffinaudio.co.uk)



*Air hose fixings were less than ideal in the review sample...*

vocal quality and brilliant articulation. Voices just floated between the speakers. Sandy Taylor's piano playing was described with sublime authority along with the subtle rhythm changes shown by the extremely competent duo of Murray Smith and Alex Moore. As the album played to its conclusion I was struck with the thought that this was amongst the nearest to the 'real thing' I have ever experienced in my listening room.

Next on the Acoustic Solid turntable was my copy of 'Let's Stay Together' by Al Green, which served up an arrestingly strong bass sound. Further up the scale, I could discern the subtle horn section overlaid with the rich, dark vocal quality of one of the must underrated soul singers ever to record. The Conductor had brilliant rhythmic alacrity as ever – it has all the skills to reveal the subtle phrasing of the musicians – and makes any conventional tonearm seem frigid by comparison. Although I've played this disc to death over many years, it now sounded like I was listening to a completely different recording.

The next album was a complete change of style again, Joe Cocker's 'Sheffield Steel', a blues album *par excellence*. In the past this album showed little subtlety, but from the opening phrases it showed the Conductor's unerring crystalline neutrality. Again I was very surprised at the delivery of the vocal line, which was uncannily lifelike. With Sly Dunbar on drums and Robbie Shakespeare on bass along with a multitude of fine musicians, this album has a presence to be listened to over and over again – and this arm is the tool with which to do it.

Moving on, and John Williams solo guitar wafted into my listening room. Recorded almost forty years ago in mono, this album is one of

the finest classical guitar performances I have ever experienced. The instrument was the correct size, and bristled with delicious detailing. Sadly no longer available, this album showed the Conductor to be a superlative pickup arm.



*...and the circular headshell is a pig to use - but despite all these detail niggles, it's a stunning sonic performer.*

Bruch's Violin Concerto was next on the turntable; Herman Krebbers was the soloist along with the Brabant Orchestra conducted by Hein Jordans. From the large string sections to the absolutely wonderful playing of the solo violin this recording gave a very good account of itself, the Conductor's forensic detailing once again moving this from the enjoyable music experience it is with lesser arms to a wholly profound one.

### CONCLUSION

Overall then, this arm comes close to being sonically faultless – which is astonishing at the price.

There's nothing to criticise in regard of the music it makes, the detail it extracts, and the tremendously heightened listening experience it gives. The downside is simply that of the mechanical detailing. As previously mentioned, it doesn't seem the sturdiest and most durable of devices, and whilst it should easily withstand domestic use it proved less happy when being used as a review tool. We had problems with the arm lead-out wires and phono sockets (which we are assured are being upgraded), and the pump is also a less than ideal thing – simply because it's noisy and so has to be placed a long way from the listening room (i.e. outside it) – this is fiddly.

If you're willing to put up with its operational 'foibles' (and this is possible given a bit of patience), then you have one of the finest pickup arms yet made. Its designer gets a wholehearted round of applause for simply 'going for the one' correct solution (i.e. parallel tracking) and trying to make it work on a

reasonable budget, and succeeding. The result is an arm that's less user friendly than most, far less well suited to constant fiddling, fettling and cartridge swaps than those brilliant 'plug and play' SMEs, but ultimately more capable too. It's a slightly flawed diamond at a price point that's populated by less polished stones.

### REFERENCE SYSTEM

Acoustic Solid Small Machine Royal turntable  
Music Maker Mk 3 cartridge  
Graham Slee Revelation phonostage  
Custom built passive preamplifier  
Nu Force 9 power amplifiers  
ATC SCM 35 loudspeakers  
Black Rhodium cables/interconnects

### VERDICT

One of the most musically convincing tonearms ever made, with a massive performance to price ratio - but fiddly and fragile with it.

### CARTRIDGE MAN

CONDUCTOR £1,500

HiAudio

+44 (0)8450 525259

www.hiaudio.co.uk

### FOR

- stunning, commanding sonics
- effortless, natural musicality
- spookily low surface noise

### AGAINST

- fiddly lead out wires
- cheap phono socketry
- excessive pump noise
- a pig to set up!

# Weight, here

**Cartridge tracking weight is critical to both the sound of your system and the life of your records, so getting it right is essential. As not all tonearms have tracking force calibration, and setting it by ear isn't always ideal, a range of stylus balances are available to do the job, writes Stewart Wennen...**

**W**hy get the balance right? Well, every cartridge manufacturer specifies a tracking force weight range, from – for example – 2.0g to 2.5g. You'll find the lighter you track your cartridge, the lighter and breezier the sound will be, but this will be tempered by a sense of instability too. Conversely, tracking at the higher end of this range will give a more secure sound, but also slower and more leaden too. For this reason, many manufacturers specify an optimum recommended weight. The trouble is, the tracking force calibration – if fitted at all – on most arms isn't the most accurate, which is why you'll need a good stylus balance.

There are two types. Cheaper is the static balance gauge, which is a simple mechanical set of 'scales'. It doesn't need batteries, doesn't require recalibration, and is easy to use. Electronic stylus balances are invariably more expensive, more complex to calibrate, will not stand being dropped repeatedly and use batteries at a fair rate – but they are more accurate if properly used. Given that you can spend anything from £5 to £1,000, it's a big and oft confusing market out there, so we decided to round up five favourites.

## ORTOFON STYLUS BALANCE £6



The cheapest gauge I know of, Ortofon are to be congratulated for making such a value for money product, although don't think it's a universal panacea. It's a static balance

type which has only two parts – a base and a measuring beam (with a small metal weight glued to the underside of the measuring beam). The vernier on the gauge is set in Newton metres (N m), not grams, but is still easy to understand. Because it's so cheaply made, the metal balance weight can fall out, and if it does so, you can't glue it back because you've just rendered your scale inaccurate due to the weight of the glue! Most samples of this gauge are fine, but it does happen occasionally, so don't expect it to be as long-lived as the pricier designs in the group. It proved reasonably accurate – as much as the more expensive Shure, but was fiddly. Good, but it's still worth spending more.

## SHURE SFG-2 £23.50



One of the most long-lived cartridge balances, this started production back in the nineteen sixties! It comes under the static balance category, with no batteries required, and the instruction sheet is very simple to comprehend. This gauge has two scales within, one for greater than 1.5g, and one for less than 1.5g. With its polished aluminium weighing bar and mirror at the opposite end of the gauge, the Shure is thoughtfully constructed. With the aid of the instructions, it took me three quarters of an hour to dial in the weight on my resident cartridge (1.55g) exactly, so it's rather complex to use at first and does take some getting used to. I found it much less

accurate than any of the electronic devices on test (about 10% error). Something of an anachronism then, but those who know it often love it and won't want more. Still good after all these years.



## DECENT AUDIO STYLUS FORCE GAUGE £28

This very affordable digital electronic gauge lacks the impressive build of the pricier items here, but none of their versatility – indeed it will weigh up to 50g with very good

accuracy. It uses two AAA batteries as a power source, and the display is backlit. Despite this, it's not the easiest to use, because of reflections coming from the surface of the display. To save battery power, the backlight switches off after a period of time and requires switching on again, which can be annoying. This gauge does not automatically recalibrate; you have to push buttons to do this; but reads in a wealth of units – grams, ounces, karats, and DWT (unsurprisingly perhaps, it's an adaptation of a jeweller's gauge)! Overall, it's no less than brilliant value for money at the price, with decent accuracy, acceptable build and great flexibility.



**ORIGIN LIVE PHONOGRAPH ARM LOAD METER £57**

This gauge comes in very elegant packing, supplied with a single sheet of A4, bearing the instructions. It is another electronic gauge, and when removed from the packing, you will see that the gauge sits in a very attractive vinyl wallet, along with two spare batteries, and a 5g calibration weight. Upon switch-on, we are greeted with a backlit four digit LC display, which takes around five seconds to settle down. The light works for twenty seconds then self-extinguishes, but can be reinstated by pressing the 'light' button. Origin Live make no pretence about where the gauge originates, as it's written on the underside in plain letters (China). It weighs between 0.1g and 5g, and is fairly accurate (under 5% error) if you ensure it's totally level, though I found some difficulty using it, as the buttons are fiddly. Elegantly presented and packaged with a simple instruction sheet, this does the job sufficiently accurately for most people, and will be all most ever need.

there's no need for extensive instructions. This gauge requires no record on the platter - simply switch on and go. It is easily the most accurate of the group, with an accuracy of 0.01g between

0.1g and 4g. Due to there being no mechanical parts, platform aside, the unit should last a long time, but only if you recharge the batteries every two months with the supplied charger. Is this needless complication - standard alkaline batteries aren't that expensive these days, and would obviate the need for a charger? Still, it's a complete solution, albeit at a hefty price. A superbly effective bit of kit, but so it should be at this cost!

**CLASSIC CORNER:**



**GARRARD SPG-3**

Made by the once famous jewellers who also built turntables, this mechanical gauge is deceptively simple in its operation. Its weighing platform acts against a circular spring, so manual calibration is required (there is a 5g weight inside the bottom of the case). Although beautifully simple to use, the downside is that it is dependant upon room temperature, as metal expands when it gets hot, and this is extremely difficult to compensate for. This gauge is much nicer to operate than both the Shure and the Ortofon, and was consistently accurate. If you get the chance to get one of these then buy it - if nothing else, it is a wonderful conversation piece amongst classic vinylphiles!



**TECHNICS SH-50P1**

Introduced in 1977, this electronic stylus balance is long since deleted, but still turns up on internet auction sites. It was used as a reviewer's reference for many years, until the latest generation of digital gauges started appearing in the nineties. With its elegant outer case and analogue meter readout this gauge looks rather good. The internal batteries take some finding, but are still available. This gauge comes with a 1.5g calibration weight, so setting up for accuracy is very simple. Just switch the gauge on until the red LED lights; the needle on the gauge should read zero initially; and then place the calibration weight upon the stylus pad - if it reads 1.5g, the gauge is ready. Due to the thickness of the weighing platform, the Technics has to be used without a record on the platter, otherwise, due to moments of force and other characteristics; this gauge will read inaccurately. I found the Technics very simple and elegant to use, consistently straightforward to set up and accurate too.



**CARTRIDGEMAN DIGITAL STYLUS FORCE GAUGE £225**

An electronic gauge with a high quality red LED digital read out, this is by far the most expensive device tested here, underlined by its great build quality. Upon switch on, the unit automatically recalibrates itself, so

**VERDICT** ●●●●●£  
Plasticky build but costs next-to-nothing and does the job adequately - this will be enough for many people.

**ORTOFON STYLUS BALANCE £6**  
Henley Designs  
☎ +44 (0) 1235 511166  
www.henleydesigns.co.uk

**VERDICT** ●●●●●£  
Old, fiddly and not especially accurate, but well made and dependable all the same.

**SHURE SFG-2 £23.50**  
Armour Home Electronics  
☎ +44 (0)1279 501111  
www.armourhe.co.uk

**VERDICT** ●●●●●£  
Brilliant value for money thanks to low price, high accuracy and great versatility.

**DECENT AUDIO STYLUS FORCE GAUGE £28**  
Turntable World  
☎ +44 (0)845 6019390  
www.hifisound.co.uk

**VERDICT** ●●●●●£  
Highly affordable electronic stylus gauge that's usefully accurate and easy to use.

**ORIGIN LIVE PHONOGRAPH ARM LOAD METER £57**  
Origin Live  
☎ +44 (0)2380 578877  
www.originlive.com

**VERDICT** ●●●●●£  
Undeniably expensive, but it returns consistently accurate numbers and is extremely simple to use.

**CARTRIDGEMAN DIGITAL STYLUS FORCE GAUGE £225**  
HiAudio  
☎ +44 (0)8450 525259  
www.hiaudio.co.uk



# Name Brand

**Does Ken Ishiwata's signature on a CD player mean more than just guaranteed sales? Well, in the case of Marantz's SA7001KI Sig SACD player, very much so, says David Price...**

It is to the strains of the SACD remaster of Roxy Music's 1981 classic 'Avalon' that I write this review, via Ken Ishiwata's latest wunderkind, the new Marantz SA7001KI Signature.

It sounds great (more of which later), but there's one thought that can't leave my head. Now that Sony have given up (it seems) on bothering to provide the UK market with hi-fi products – and that includes all forms of audiophile CD and SACD players – Marantz is effectively on its own when it comes to bespoke Super Audio Compact Disc players, in a gang of one.

Meanwhile, SACD software releases have tailed off. Actually, as I'm sure our Patrick Cleasby will confirm, there are still regular SACDs arriving on the market, but it really is something of a niche thing. DVD-Audio, meanwhile, seems to have evaporated to the state of an inert gas; it's there, but nobody notices...

Why then even bother to make a Super Audio Compact Disc player? Well, SACD does sound better than CD by a fair few percentage points, providing you've got a machine that

plays it and the software available (and if you follow the likes of Record Collector or any of Patrick's missives, you'll know it still is – but you'll have to search it out).

For this reason, I doff my hat to Marantz, a company that gives you a choice when others, for reasons best known to their OEM mechanism suppliers, choose not to. (Actually, there's another point – SACD is still big in Japan, and so to Marantz's home market, it makes sense to include it).

To be brutally frank, I think most UK punters will say – 'okay, I'll take the SACD functionality, but only if it doesn't compromise CD replay, which is 99% of my music library'. I think this is an extremely apposite point – SACD playback isn't going to be the deal-maker, but poor CD sound will certainly be the deal-breaker... Well, the new £600 Marantz SA7001 KI Sig is an intriguing machine. It promises a lot at its modest price point. It has some stiff new competition to match, not least Audiolab's new 8000CD (reviewed last month), which really is exceedingly good at £650.

Superficially then, it's in luck. Despite being lighter, the Marantz looks more visually impressive than the Quad – erm, sorry, 'Audiolab'. There's a very chunky brushed aluminium front panel which looks swisher than the Audiolab's silver painted pressed steel affair. There's a nice big display, lavish looking fascia buttons and the general impression that you're buying a slightly low calorie, lightweight version of high end Japanese esoterica (which indeed it is – see THE BUILD). By contrast, the Audiolab looks more of a cottage industry product; funny really, as ten years ago we were all wowing at its precursor's high production values...

The worst thing about SACD machines is the time they take to think about things, once you've hit the disc tray close button and pressed play. It's faster than DVD players, and also quicker than earlier SACD spinners, but you're leagues behind those old early nineties Sony CD players which had started playing track one before you'd had a chance to put the remote down. It's not as fast as its Audiolab price rival however, which is of course a



"Ken Ishiwata has gone hell-for-leather for musical incision..."

bespoke CD machine. Still, the display is a quality item, and it's nice to see CD Text (remember that?) where appropriate from SACD. It's also defeatable, whereupon a solitary red LED glows from behind the display window.

### SOUND QUALITY

Well, what do you expect? It's a great sounding machine, and the sort of upgrade it provides over decent budget machines such as the Usher CD-1 (reviewed last month) is profound. It's a less dramatic step up from the Rega Apollo or the Rotel RCD-06, but still worthwhile in most respects. The main problem is this 'new' arrival in the shape of Audiolab's 8000CD, which at £650 is fantastic in some (but not every) respect. Still, to cut to the chase, the Marantz SA7001 KI Sig is more than 'price competitive' in its class, and is truly excellent both on CD and SACD, so it should give its rivals plenty to fret about.

It's no surprise that this, the latest Marantz KI Sig machine sounds very much like, ermm, any other Marantz KI Sig machine. What we have here is what's fundamentally a warm, smooth, soft machine that's been steroidally enhanced, and the result is more incision, more dimensionality, more detail, and surprisingly perhaps, it has turned it into a bright, vivid sounding machine in most respects. The Audiolab 8000CD is also a light, spry performer tonally, but in some respects actually sounds fuller in

the bass – certainly in the low bass – than the Marantz. Still, the KI Sig is no nineteen-eighties Sony, so don't get me wrong, you'll not be reminded of root canal surgery (even if you've never had it), it's just that Ken Ishiwata has made no attempt to tone it down, roll its treble off to give it a euphonic sound – rather, he's gone hell-for-leather for musical incision, and that's the critical phrase.

As with all KI Signatures, the midband is the beginning and end of its sound. To wit, you get a very open and expansive soundstage, but it's not tonally dried out (as per the Audiolab). Rather, it's sumptuous and possessed of a fine palette of tonal colours; things don't sound black and white, or grey, but there are plenty of golds, oranges and greens in there too – if you pardon my metaphor. David Bowie's voice on 'Ashes to Ashes' was full and expressive, and it was his phrasing that really struck home. Whilst the Marantz doesn't have the 'clockwork' timing of the Audiolab, it nevertheless seems to catch phrasing, and consequently emotional accenting, better. It feels – dare I say it – more 'analogue' than the 8000CD, catching the ebb and flow of the song better.

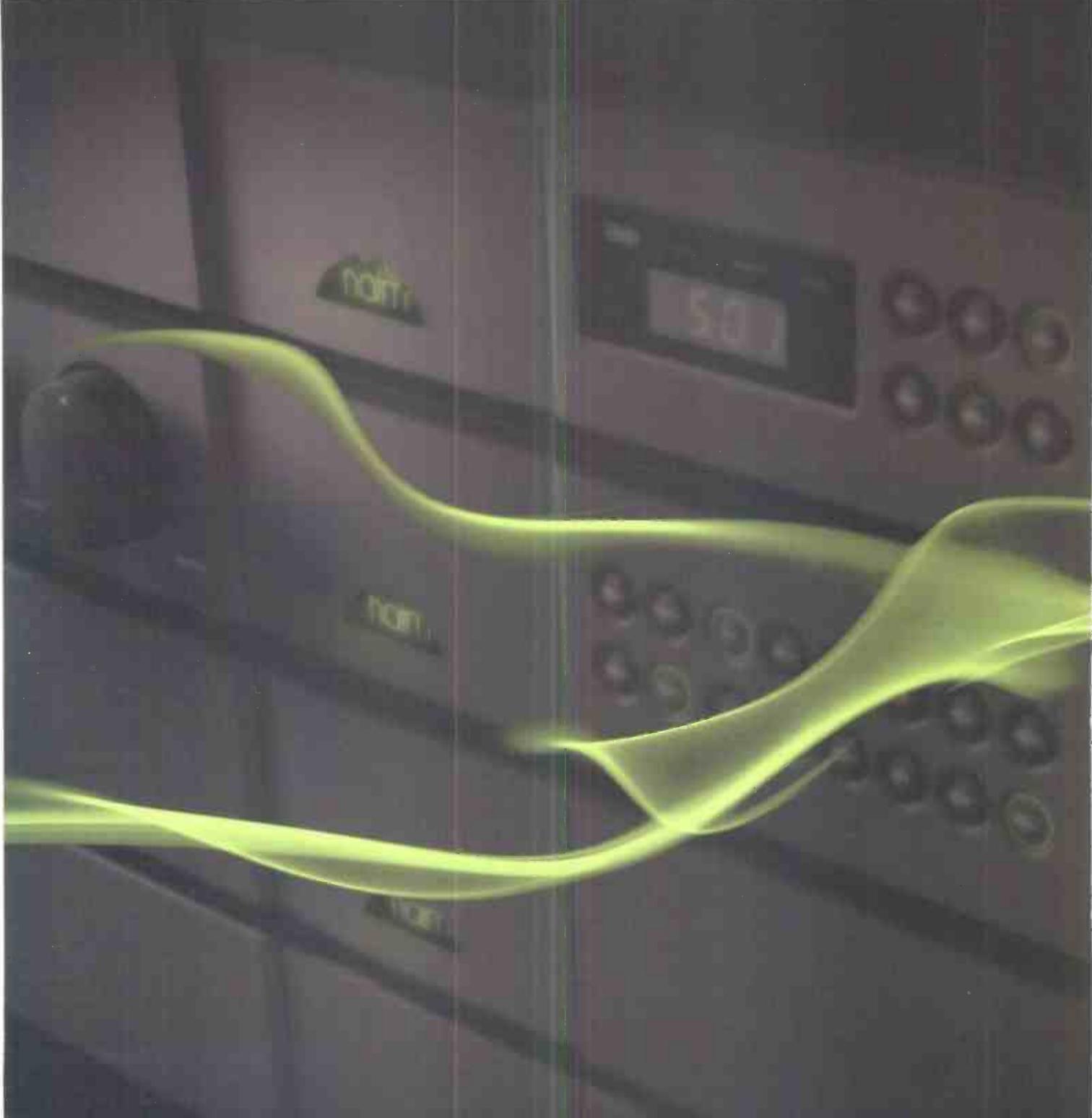
However, its timing is only partially accomplished, because the Audiolab's bass is far tauter and tighter low down. You can hear bass guitar notes start and stop amazingly crisply on the 8000CD, whereas the SA7001 KI Sig seems to slur them ever so slightly. This gives the Audiolab a more architectural

feel (everything is built upon its wonderfully accurate bass) whereas the Marantz is more gushing, more emotive, more passionate (in the midband) – yet looser and less controlled too (especially low down).

If the Audiolab has the bass, then the Marantz wins the midband; this is its finest hour. Supertramp's 'Child of Vision' was brilliantly insightful, yet it wasn't just throwing out vast tracts of information in a matter of fact way (as per the Audiolab), it was really stringing things together as an organically cohesive whole. Suddenly, you could hear why the musicians turned up on the night, and marvel at how amazingly tight they were as a combo, despite their seventies slacker image.

Dynamically, I'd say it was neck and neck; the Marantz is slightly better on 'microdynamics' (those subtle inflections), whereas the Audiolab was slightly ahead on 'global dynamics' (in the way it was able to signpost how music got louder and then quieter, over the duration of a song). Both, actually, were quite excellent in this respect, and I am genuinely surprised that you can get this level of performance from CD at this price. Whilst I'm not so convinced that high end machines are any better than those a decade or two ago, certainly budget stuff just keeps improving, but I digress...

The treble performance of the SA7001 KI Sig was a joy too; like gold in the sand, it glistened and sparkled with the rock drumming on Roxy Music's 'Take a Chance with Me'. By



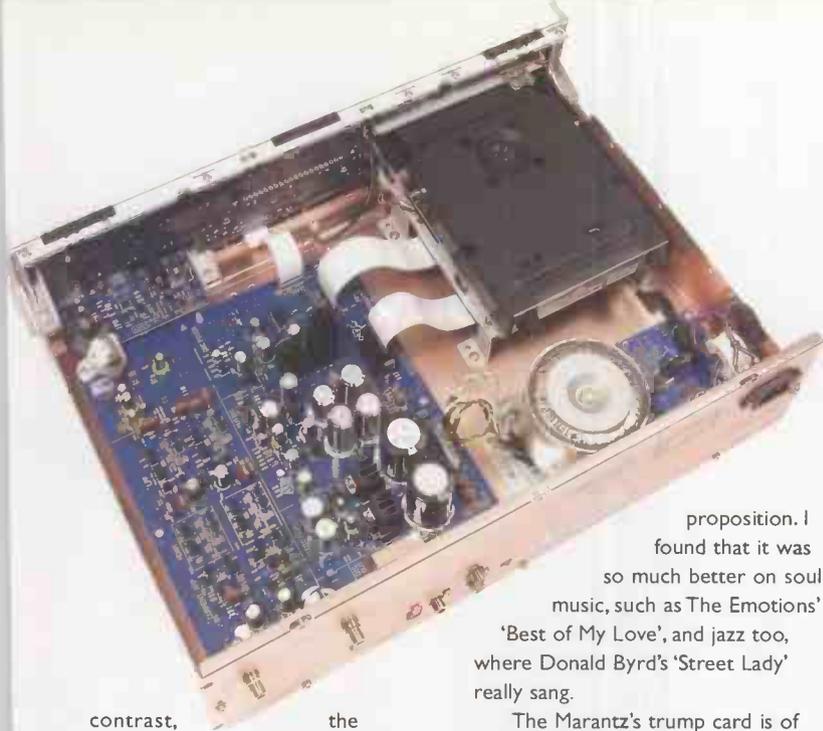
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world class sound...



contrast, the Audiolab was crisper, finer and faster, yet thinner tonally and seemed to lack a bit of space. Although the Marantz never sounded as dazzlingly fast as the Audiolab (which is quite outstanding in this respect), it always sounded more natural and believable – that, of course, reflects the taste of its talented tweeker.

Like any fine unipivot tonearm, the Marantz drives the music from the middle, and is so commanding that you forget it's less able up top and down below. The Audiolab's low bass is stronger, its upper bass a tad lighter, its midband thinner and more 'papery' sounding, lacking that wonderful colour palette. Treble on both is excellent at the price, but the Audiolab is better defined. Still, despite what's probably a points win to the 8000CD, I think the SA7001 KI Sig wins the day as a real listening

proposition. I found that it was so much better on soul music, such as The Emotions' 'Best of My Love', and jazz too, where Donald Byrd's 'Street Lady' really sang.

The Marantz's trump card is of course SACD; this may not swing it for everyone, but there's no doubt that it made an extremely nice noise with Propaganda's 'Duel', with a vast soundstage, a real sense of air and space and an innate musicality that elevated the proceedings above CD. Bass was fuller, the midband more delicate and dimensional, and the treble possessed of some beautiful detailing.

Mischievously, I did an A-B between the SA700A KI Sig against my Marantz CD63 KI DP. This is of course a custom built machine, and not commercially available, but it shows how brilliant CD can be. The KI DP well and truly humbled the SA7001 KI Sig on ye olde Compact Disc, but asked to play

the SACD layer of Propaganda's 'A Secret Wish' (while the KI DP played the CD layer), the SA7001 KI Sig just pulled ahead. So what you say? Well, interestingly an identical comparison but with Sony's SCD-XA9000ES (£1,600 in 2004) saw the KI DP beat the Sony, even though the Sony was playing SACD and the KI DP mere CD! This means that the Marantz SA7001 KI Signature's SACD playback is superior to a (still current, at least in Japan) Sony machine at nearly three times its price – in other words, it's excellent.

**CONCLUSION**

It's a lot of machine for your money, put crudely. For me, on CD, it was swings and roundabouts between the Marantz SA7001 KI Signature and its Audiolab 8000CD rival in many respects, but in terms of musicality it truly won the day. Factor in excellent SACD playback (two channel, mind!), decent build and fine ergonomics and styling (if you like chunky Japanese machines), and it grabs the full five globes. A truly excellent affordable audiophile silver disc spinner, and one to stand you in good stead for your future SACD purchases, all three of them!

**VERDICT**

Lovely, lucidly musical midband, fine tonal colouring and a big stereo soundstage make this a great machine – and excellent SACD might please some too.

**MARANTZ SA7001 KI SIGNATURE** £600  
 Marantz  
 ☎ +44(0) 1753 680868  
 www.marantz.com

**THE BUILD**

The SA7001 incorporates engineering lessons learnt during the construction of the company's flagship £2,500 SA-11, and the same 24bit/192kHz Cirrus Logic CS4397 'Super DAC' found in the Marantz SA-15. This multibit, Delta Sigma D/A converter incorporates DSD as well as PCM conversion, meaning that when playing SACD, its Direct Stream Digital coding isn't transcoded into CD's PCM, with its attendant prickwall filtering, causing high frequency woes. There's a goodly sprinkling of hand picked, audiophile grade passive componentry, including Schottky diodes and Marantz's Current Feedback HDAMs (proprietary High Definition Amplifier Modules, which replace cooking 'op-amps'). These components work in a dual-mono, symmetrical circuit topology for "short, direct and mirror imaged signal paths". All digital, analogue and control circuits are shielded in their own enclosures to prevent crosstalk and other unwanted interference. Independent power supplies for each dedicated system block secure are used, and there's KI's trademark copper-plated chassis, with a thick anodised aluminium front panel, extensive bracing and shock-absorbing feet. The transport features a servo and decoder mounted on a four-layer glass epoxy board for lower noise interference, and the disc tray is finished with a coating that also dampens vibration, while its black colour means minimal effect on laser diffusion.

**MEASURED PERFORMANCE**

With CD the SA7001's frequency response reaches from 2Hz up to 21.25kHz, the upper limit being normal enough for CD. It has a flat characteristic with no peaking or roll off to affect the tonal balance. SACD response was more extended than most, reaching 60kHz (-1dB) before rolling off gradually to 100kHz, where it was -10dB down, as our analysis shows. These are good results for both carriers.

Distortion levels were low throughout the signal range of CD, by CD standards that is. SACD produces ten times less distortion at low levels however, 0.02% at -60dB for example, and the SA7001 looked especially clean on the spectrum analyser when reproducing a -100dB tone. This is where SACD excels and the 7001 was especially strong, having a smooth noise floor free from sampling artifacts and quantisation noise. It's a very high resolution, no distortion player.

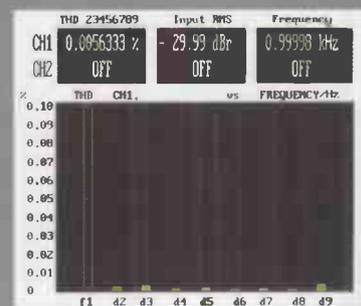
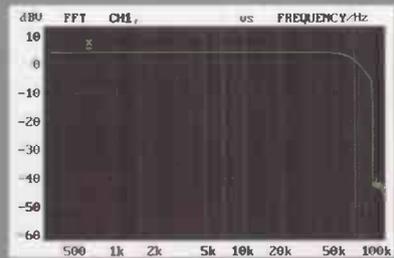
All other performance figures were normal enough.

The SA7001 measured well with CD bit especially well with SACD. It will likely give top notch results with the latter. NK

**Frequency response (-1dB)**

SACD	2Hz - 60kHz
CD	2Hz - 21.25kHz

Distortion	CD	SACD
0dB	0.004%	0.002%
-6dB	0.003%	0.001%
-60dB	0.26%	0.02%
-80dB	2.8%	0.24%
-100dB	-	1.9%
Separation (1kHz)		113dB
Noise (CD, IEC A)		-114dB
Dynamic range (EIAJ, CD)		112dB
Output		2.4V





# Ray Of Light

**Pretty things in windows aren't the sole province of Amsterdam's more 'colourful' districts, as Vincent's new SV-236 integrated amplifier features a brightly lit tube bang in the middle of its fascia. Tube aficionado Noel Keywood tunes in...**

**S**itting a valve in a window to show off its assets is one of hi-fi's more extraordinary ideas. I first came across it in a venerable Japanese amplifier, a Lux I believe. Okay, valves have visual appeal, but putting them in windows is a practice with no parallel, except possibly in Amsterdam. And, with both I suspect, the promise is more appealing than the reality...

The Vincent SV-236 amplifier is in truth a transistor amplifier with three inexpensive Chinese manufactured triode valves acting as preamplifiers, two mounted internally - and that one in the window. As such it's a hybrid amplifier, priced at £999. So can the promise of valve sound quality match the reality in this case? Its not too high a price to pay after all, for what superficially at least looks attractive.

Behind the Vincent name are Thorens of Switzerland and their German distributor, Sintron. Product

development and engineering takes place in Germany they say, but assembly is in China, hence the presence of Chinese manufactured Raytheon 6N4 triodes in this product.

Inside the SV-236, circuitboard and component quality looks good. In normal German tradition a huge toroidal mains transformer is used, whilst the active devices are bolted to side heatsinks that get merely warm. The amplifier runs in Class A up to 10W. It is substantially built and finely finished.

German companies are often big on specifications and technology claims, but not Vincent. In both their lavish manual and contrastingly skimpy product handbook little is said of underlying technologies, such as they are. The presence of bass and treble tone controls, plus a Loudness button on the fascia hint at a target buyer that's not an audiophile in the way *Hi-Fi World* readers would perceive one, yet still wants what

is perceived to be an audiophile experience, hence the valve in a window.

At 430mm wide, 142mm high and 450mm deep the SV-236 is large, although it will fit a 19in rack comfortably enough. Weighing 20kg (44lbs) it can be a struggle to get it in, however. The weight isn't all for nothing though. The mains transformer doubtless counts for a lot, but it allows the amplifier to deliver 136W into 8ohms our measurements showed, increasing to 225W into 4ohms, significantly above Vincent's specification of 100W and 200W. It's a healthy output by any standard, enough to cope with insensitive loudspeakers, large rooms and any need for high volume, providing it isn't insane.

As loudspeakers become steadily more sensitive though, high power is unnecessary and, sometimes, unhelpful. Vastly powerful amplifiers rarely sound good at low levels, a drawback sensitive loudspeakers tend



"an amplifier with the structural impact of downtown New York - it has stature..."

to reveal. Pure Class B amplifiers are worst here - and there are many around. The SV-236 runs in Class A up to 10W, which helps smooth crossover discontinuities and gives a more amenable presentation, usually lacking the almost dry, grainy sound of typical transistor Class Bs. With a pair of reasonably sensitive floorstanding loudspeakers 10W is plenty enough to go very loud in small to medium sized rooms. As useful as Class A working is, it isn't a universal panacea ensuring good sound, and valve amplifiers are not by their nature Class A either, as some mistakenly think, unless they're single-ended that is. But all the same, organising 10W of it is a sensible design decision I feel. Our time and frequency domain distortion analysers clearly showed this helps keep performance looking tidy at low power levels.

The SV-236 is sturdily built, a steel chassis carrying an 8mm thick machined alloy fascia, into which alloy knobs are recessed. Big heatsinks either side dissipate the heat generated by Class A working. The rear panel carries two pairs of gold plated loudspeaker terminals for bi-wire connection. These are not switched. Pressing the large central power button causes a red LED inset into the volume control to flash whilst the valves warm up, and before the output protection relays click in. This introduces a lengthy start up delay of thirty seconds. In addition to

the protection circuits there are two internal power line fuses, by the way, and a rear IEC socket mains fuse. Once the red led lights continuously the SV-236 is ready to go. The valve in the window illuminates red/orange immediately the power button is pressed and the remote control unit gives five brightness settings from zero to maximum. At zero the glow of the 6N4 filament can barely be seen, hence the need for a visual boost to remind onlookers that this amplifier uses valves.

In addition to the tone controls and Loudness (bass and treble boost) button I mentioned earlier, the input selector knob spins round freely to select from six inputs, marked simply S1-S6. There's no phono input for LP and no tape monitor input. There are tape outputs and preamp outputs, but no way of either accessing or disconnecting the power amp stage alone. All controls have a firm feel about them and this is a nice amplifier to use. In its own way it's attractive to look at and if you like it then Vincent have a Design Line 3 with matching hybrid products, including a pre/power amp combo, a CD player and a tuner.

Anyone who has swapped preamps around a bit will know that they can, in a subtle yet hugely influential manner, make or break the overall sound of an amplifier. A poor one places a blanket over the

sound, something I've encountered in the past with budget preamps stuffed with low cost, low quality components. They look like good value, but turn out to be the opposite. You get lots of inputs, a nice big volume knob in front (if a weedy pot. behind it) and plenty of gain, but they destroy the hi-fi bit of the sound; you end up with something that's flat, coloured and boring, no matter how good the power amp. may be. Using valves to provide gain is, potentially, a good idea, as one or two double triodes will normally do. They are small, run cool, have plenty of gain, a long life (10,000 hours) and cost little, in this case just a few pounds sterling. You should get an easier going, more spacious sound as a result, and this is what I expected from the SV-236 as justification for its existence. Of course, with a hybrid like this the other benefit is the ability to drive loudspeakers effectively. In effect then, you seemingly get the best of both worlds, although a flavour of both might be more apt...

### SOUND QUALITY

This amplifier is nothing other than strongly structured in its sound. It paints a big, solid picture with both definition and body, an amalgam of valve dimensionality and solid-state control, for that's how this particular joining of forces pans out

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in subjective terms. In outline at least, Spinning the Scissor Sisters' 'Laura' had drums sounding solid, hard-hitting and taut. The bass line was explicit and well timed; all this was made very obvious by the Vincent. This is a bold and expressive amplifier - certainly no wilting rose. It's quite a few steps up the ladder from more conventional solid-state rivals and is worth hearing for this aspect of character alone. If you've ever felt that the hi-fi amplifier you are auditioning is too laid back, refined to the point of boredom and lacking get up and go then the SV-236 is an antidote. Here's an amplifier with all structural impact of downtown New York; it has stature.

Thinking of the many limitations that readers struggle with according to our letters pages, I suspect the Vincent is as good a £1,000 adrenaline injection as you'd get. But the other side of the coin is that it's so forceful as to be almost overwhelming, hard hitting cymbals being too hard for me through Tannoy Yorkminsters. I wheeled in a pair of Spendor S8es and this combination worked well, but whilst I thought the Spendors may tame the exuberant top end, they did not. Heavens, even the S8es sounded bright - and that's saying something...

Yorkminsters well portray the extra bandwidth and dynamics of DVD-A, but partnered with the SV-236 starkly vivid recordings like Clapton and 'Kings Riding with the King' were an impact too far. Cymbal strikes rang around the room and steel guitar strings twanged viciously. Whether this is too much or just what the doctor ordered is a matter of taste I'm sure, but I gravitate and am used to a little less 'sparkle'. Phil Collins' 'That's the Way It Is' was similarly over-lit across the treble regions and here the SV-236's solid-state output stage imposed its character on the sound.

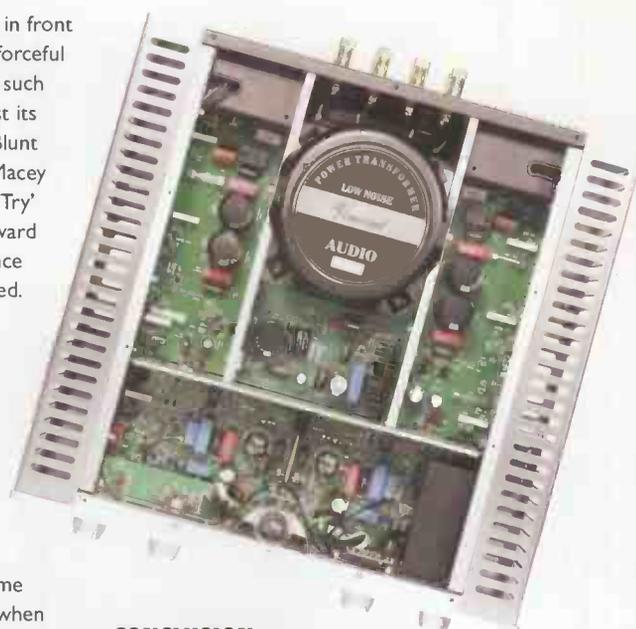
I use Yorkminsters to glean the best from the many valve amplifiers I use and review, including my own, but I decided long ago that they're none too kind to solid-state amplifiers, except the most svelte. So Spendors it was. All of which is to say that Vincent's SV-236 is forceful and projective, fast and powerful, but not for the faint hearted! This is an amplifier for those who want to boogie, not those who want to luxuriate in smoothness and subtlety. It strong-arms loudspeakers into action and seemingly has supreme grip. In the best valve traditions it also has a beautifully clear and deep sounding midrange that fell away behind vocals, leaving singers like

James Blunt sharply outlined in front of me. It was the amplifier's forceful treble delivery that imposed such strong image definition, whilst its see through midrange kept Blunt free from his surroundings. Macey Gray's smoky rich tones in 'I Try' were similarly projected forward with deep insight, every nuance and insinuation nicely captured. Background instrumentation was as clearly outlined as I have ever heard it. I can't help feeling anyone would be impressed by this performance, as its vivid and obvious - almost Technicolor.

The sheer resolution of this amplifier's top end came across as a torrent of detail when spinning LP; the Scissor Sisters LP is a little ill defined generally against the CD I find, but in conjunction with an Ortofon Kontrapunkt b the SV-236 showed that the LP is rich in high frequency detail not available from the CD, highlighting its ability to reveal detail, if by a method of brutal exposure! Not in an especially delicate way, I must say. From the very outset I was aware of a full-bodied, intense treble quality full of activity, one that trumpets its presence for all to hear.

Happily, although the amplifier has strong bass that runs deep, it wasn't over inflated. I liked its solid hitting nature but articulate progression. The extra body that valves bring to the table, allied to solid-state levels of grip and control worked nicely together in this package.

Whilst the SV-236 has a valve-like midrange that displays almost glaring clarity, it is more solid-state at spectrum extremes, as you'd expect. Whilst the valve complement carried on-board this hybrid fleshes out the sound, it doesn't construct the stage depth of a valve amplifier. Nor does it provide the sense of smoothness or liquidity of sound where the whole flows effortlessly. I think treble quality and forwardness likely appeals more to a German ear than a British one, but its rich and detailed nature wasn't anathema to me - in truth, I was intrigued by it.



**CONCLUSION**

Vincent's SV-236 is a hybrid amplifier that mixes what you see in the window with plenty that you don't, to come up with an intriguingly unusual experience. I feel this is an amplifier for those that want more from solid-state rather than those looking for a full valve experience. Its vivid sound and hassle-free operation have plenty of appeal and there's not so much around to challenge it, as hybrid amps are few and far between. I liked it - the sound that is - especially at the price. This amplifier isn't all window dressing.

**VERDICT** ●●●●●

Its rich, vivid and powerful sound has plenty of allure, but brightly lit treble can overwhelm some systems.

**VINCENT SV-236** **£999**

Vincent Audio

+44 (0) 1702 601410

www.vincent-audio.com

**MEASURED PERFORMANCE**

The solid-state output section of this amplifier has plenty of power, producing no less than 136W into 8ohms and 225W into 4ohms - enough to drive any loudspeaker to high levels even in a big room. Regulation was good from the massive internal mains transformer, so bass should sound well controlled.

The amplifier runs in Class A up to 10W (and Class B thereafter). At all power levels third harmonic distortion dominates the distortion spectrum, but as output increases higher order products appear. This suggests a shiny or glassy clear basic presentation that will coarsen at high volume. However, overall distortion levels were low, hovering below 0.1% even at high frequencies, except into low 4ohm loads. Then distortion rises to a significant 0.25% at 10kHz, a condition that isn't uncommon with real life loudspeakers. So the SV 236 works well as a solid-state amp but isn't beyond criticism.

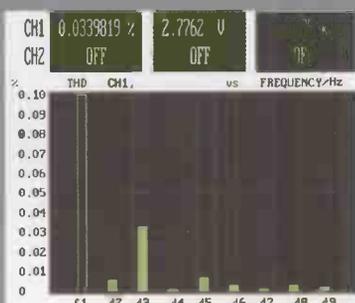
Valves have plenty of gain and Vincent exploit this, using three inexpensive 6N4 triodes to yield a sensitivity of 160mV, sufficient for any source. Noise levels were low, considering this, with negligible hum.

With tone controls out frequency response was flat and wide 6Hz-73kHz.

Pressing the Tone button introduces +4dB of broad bass boost even with the Bass and Treble controls set to zero. Each introduce 10dB lift or cut above and below 1kHz, in classic fashion. A Loud button also introduces low and high frequency lift.

The Vincent is solidly engineered and measures well. It should give a good account of itself. NK

<b>Power</b>	136watts
<b>CD/tuner/aux.</b>	
<b>Frequency response</b>	6Hz-73kHz
<b>Separation</b>	78dB
<b>Noise</b>	-86dB
<b>Distortion</b>	0.03%
<b>Sensitivity</b>	160mV



# Azzurri Dream

**With the Ars Aures Mi, Channa Vithana finds one floor loudspeaker that's as musically satisfying as it is aesthetically rewarding...**



Italian hi-fi is never dull; standards of design, build and finish are now excellent, albeit sometimes quirky. Loudspeaker manufacturers like Sonus Faber and Opera present beautifully crafted models from affordable to fantastically priced.

Another characteristic of some (but not all) Italian loudspeakers is a warm, mellow sound best suited to jazz or classical music. Ars Aures (pronounced Arzurez), based in Castelvetrano, Sicily, does indeed work well with these musics, but proves more altogether complex and musically accommodating than many Italian designs.

Having only seen - but not heard - their Sensorial model at the April Park Inn Heathrow Hi-Fi Show, Ars Aures was still a new company to me when I unpacked these speakers for review. UK distributor Signature Audio Systems told me that, "Giuseppe Nitzola (MD) of Ars Aures is the professor of Acoustics at the University of Sicily in Palermo, Italy (and) in 1997, with the support of the University, he set up Ars Aures in a purpose built factory."

Ars Aures are currently producing three lines of loudspeakers; the Sensorial, Musical Note and FI. The Musical Note series comprise the Do, Mi, Fa and Sol models with an as yet missing 'Re' between the Do and Mi. For review we have the Mi model at £5,999 which sits between the (£2,999) Do and (£8,999) Fa while the Sol costs £17,999.

The Mi is beautifully constructed and at 35kg very heavy for its diminutive 990x235x280mm dimensions. The Mis are made from laminated HDF, because, "HDF is used for its superior anti-resonant qualities. Compared to MDF, HDF is more expensive to buy and cut, but we feel the sonic improvements are worth it." The gently swooping baffle is two inches thick (51mm) while the cabinet is between 33mm and 82mm thick. It has no sharp edges to avoid "edge diffractions" and consequently with the lavish eighteen layer finish, the Mis - though less futuristic in silhouette than the (£11,000) Sensorials - remain elegantly proportioned.

Standard colours (high gloss or matt) are: Piano Black, Diamond Black (metallic), Seal Gray, Azzurro California (metallic blue), Mocha (deep metallic brown), Aubergine, Silver, Red (Ferrari) and Royal Blue. Bespoke finishes can take between six to eight weeks at extra cost by sending a Pantone number or sample.

The Mi features a one inch (25.5mm approx.) Scanspeak Revalorator tweeter which Ars Aures says is, "one of the finest dome tweeters ever produced and has the frequency response to enable us to design a musically coherent crossover". There are

two five inch (127mm) Focal (W Cone) mid/bass drivers which were chosen for, "frequency response, very low distortion and excellent linearity". There is a port at the rear, along with single-wired binding posts and four adjustable chrome spikes at the undercarriage. A removable front panel finished to match the cabinet can be magnetically attached over the drive units for protection. Finally, for their UK launch, Ars Aures and Signature Audio Systems are offering a free five day trip to meet the company (including a visit to the Marsala winery) with every pair of Mis purchased before Christmas 2006!

**SOUND QUALITY**

I set these loudspeakers up in my 5x7m listening room with block/brick construction and carpeted flooring. I recommend solid plinths (like marble/concrete slab) for a stable, isolated and level platform for the Mis, before placing onto carpet/non-levelled flooring, as they have a small spiked footprint and there's improvement in bass-articulation, definition and tempo. I located the Mis 1800mm from the rear wall, 2200mm apart, 1400mm from the side walls and firing straight ahead without any toe-in.

Once set-up, the Mis were clear yet fulsome with 'Fanfares' from the Janá ek recording. The demanding crescendos were handled exceptionally well, with powerful low frequencies articulated in an intelligible and controlled way. The Mis reproduced the high frequencies of the horn and violin with excellent definition, timbre and very high resolution. Overall, the Janá ek recording came across with superb finesse and deep, clear low frequency weight, showing an outstanding ability to reveal the decay of musical notes as

instruments faded in and out. Thus the Mis, from a whisper or crescendo, were able to recreate convincing three dimensional orchestration.

'Fire In The Head' by The Tea Party was highly energised and the power, definition and atmosphere of the eastern-influenced rock was recreated superbly. The Tea Party recording is demanding, but the Mis handled the frequency extremes with ease, while the lyrical and rhythmic thrust remained intact. Reproduction of percussive timbre convinced me their capability was excellent with rock. Vocals were clear and expressively articulated, while the complex mix of multi-textural instruments, percussion and various guitars remained cohesive. These speakers provided a powerful, detailed and sophisticated response to a complex recording full of intricately arranged and performed music.

'She Drives Me Crazy' by The Fine Young Cannibals (FYC) was tight and propulsive – confounding the notion that Italian loudspeakers can't boogie. This late eighties release can sound brittle, but here the music was outstanding in every aspect. Roland Gift's vocals were clearly enunciated within his peculiar yet emotional singing style, and the fifties swing rhythms of 'Good Thing' were superb. The music ebbed and flowed with the disciplined underpinning of grip, control and poise. The 'Raw & The Cooked' can be a bit of a handful at 'party' listening levels. However, the Mis went from the rhythmic delights of 'Good Thing' to the colder, mechanised cover of 'Ever Fallen In Love' effortlessly without harshness. Though accommodating of differing recording idioms, the Mis don't roll off high frequencies to flatter harder recordings, while dynamically squashing well-tempered ones. Rather, they proved unflappably musical and transparent, whatever recording they were called upon to play.

'Dark Is The Night' by A-ha from 'Memorial Beach' sounded powerful, brooding and atmospheric - just as it should. There was a deep, wide canvas for the rolling drum tracks while Morten Harket's vocals were timbrally convincing. The propulsive rush of 'Cold As Stone' was a

delight, as the powerful percussive parts of the composition framed the eerie electronic sounds with high resolution rawness from the lead guitar melody. The Mis proved controlled in the frequency extremes, yet uninhibited with the music on 'Memorial Beach'.

**CONCLUSION**

The relatively small sized (£5,999) Ars Aures Mi loudspeakers are expensive, but their flawless quality and finish is reassuringly commensurate with the price. They are beautiful yet restrained in design, and will therefore be more desirable to traditionalists than the sleek, avant-garde aesthetic of the Bösendorfer VC2, for example.

Sonically, their strengths are a deep and powerful stance when required, with an unflappable sense of control and definition. They have excellent timbral qualities with vocals and instruments while high frequencies are very sophisticated in revealing subtle nuances and natural spatiality. Fully run-in and properly sited, the Mis deserve a long audition with rhythmically astute, finessed and powerful amplification plus source (like the Densen components I used) to really drive them. Thus aspirated, I found the Mis took just about any music in their stride. Costly, but enthusiastically recommended nonetheless.

**REFERENCE SYSTEM:**  
 Densen B-400XS-CD player (£2,600)  
 Densen B-200 preamplifier (£1,100)  
 Densen B-350 monobloc power amplifiers x 2 (£5,200)  
 Shahinian Obelisk loudspeakers (£4,400 approx.)

**VERDICT** ●●●●●  
 Sublime build and finish allied to an insightful, assured and even-handed musical performance makes these an essential high end audition.

**ARS AURES MI LOUDSPEAKER** £5,999  
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 - musical across genres  
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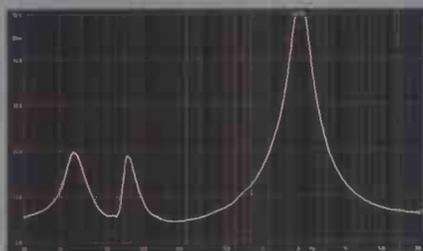
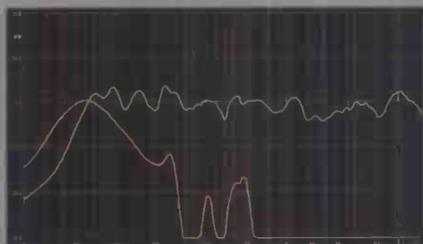
**AGAINST**  
 - price



**MEASURED PERFORMANCE**

The two small bass/mid units of the Mi produce even output up to the crossover point of 2kHz. Although there are undulations, our response shows, these are not uncommon in conventional loudspeakers. The Mi manages even output from 48Hz (-6dB) upward. There is a dip where the tweeter cuts in above 2kHz, but this is only likely to soften the sound a little, making for an easy-on-the-ear delivery. The tweeter isn't the smoothest but it does manage to reach 20kHz. The peaking suggests the tweeter may have obvious character. Sensitivity was reasonable at 88dB SPL for one nominal watt of input. These days floorstanders can deliver 90dB, but the Mis aren't too far behind. They'll go fairly loud from a few watts. As a load these 'speakers are heavily reactive our impedance curve shows, which may not get the best from some amplifiers. The Ars Aures Mis are tidily

engineered. They are broadband and quite even in their delivery. I would expect a good sense of balance, without undue sharpness in the sound, and probably low colouration from the mineral loaded cones. NK



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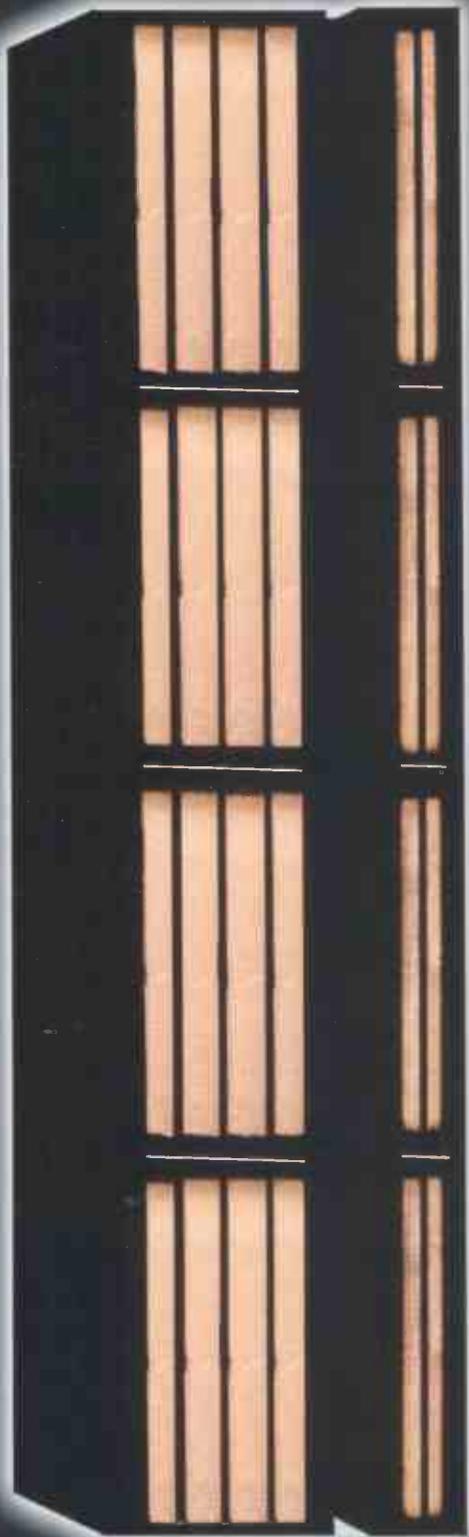


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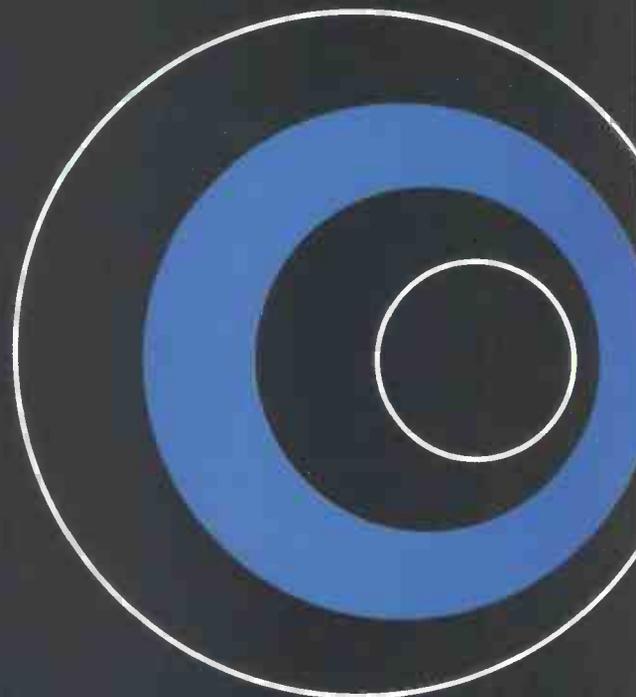
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"those unearthing the treasures are specialist record labels, the true musical archaeologists..."



## paul rigby

**W**hen you walk around your local independent record shop, 'megastore' or browse the virtual isles at Amazon, do you have any idea that you are, in fact, walking around an aural museum?

It's true. Music retail stores are the musical equivalents of The Smithsonian, Louvre or Kew Gardens. Bizarrely, these capitalist driven, profitable and competing retail machines are both catalysts and reservoirs of our entire musical culture, and without them we may not have only lost unique music and important creative artists but entire swathes of our cultural history.

The 'push factor' is in this case, money. Without the profit motive and shops to act as facilitators, virtual or otherwise, there would be no means to actively seek out rare recordings and forgotten artists (a task that often requires lots of time and monetary backing), no incentive to work hard on each recording to enhance sound and no reason to back that up with associated, in-depth, well researched written liner notes. Those unearthing and preserving these treasures are specialist record labels, the true musical archaeologists.

Take the UK record label, Document, a company that retains close connections with thousands of dedicated collectors all over the world, from which it can source ultra-rare blues recordings for reissue. Its output was, especially in the early days, prolific. So much so that it can boast a catalogue that includes just about all of the recordings of blues, gospel and spiritual recordings made between the late 19th century and the early 1940s. It is safe to say that, without Document, many of these recordings would now be lost forever and many

more would only be available to the privileged few.

A good example is the recently released Edison series, via Document, a set of previously unissued recordings produced by the Edison Company from 1914-1929. The cultural history available to Document within this series includes Vaudeville, Jazz, Dance Bands, Opera and vocal speeches by political and popular figures. These recordings sat, in decaying boxes, on the third floor of the old Edison factory building, in a poorly insulated room. That they were saved and methodically cleaned is a triumph of chance over fate.

Examples of the recordings include 'Jazz And Blues On Edison Vol.1' featuring the wonderfully named Wilbur Sweatman's Brownies and Eva Taylor, one of the very first African-Americans to ever be heard on the radio. Also, 'Country Music Pioneers On Edison' which follows the very dawning of commercial country music including works from Shirley Spalding, Fred Van Eps and The Dixie Mountaineers. These are not pampered stars but real people who formed an active part of the history evolving around them: singer, Ernest V. Stonemen, lost everything in the Depression and lived in poverty with his wife and nine children and Charles Powers, of the Powers Family also featured on this CD, was captured by the Japanese in WW2, survived the infamous Bataan death march only to perish in a prisoner of war camp later.

Another UK company featured in this month's reviews, Ace, is also co-responsible for 'saving' our musical history, on a global scale. Take the reissues from the old Modern label, called 'The Modern Downhome Blues Sessions'. It saw Ace rescue recordings made from field trips made by Joe Bihari and Ike Turner for Modern Records, in the deep south of the USA, from March 1952. They

include contributions from Elmore James, Boyd Gilmore, Houston Boines and Drifting Slim. All classic works that would have been lost to our ears without the diligence of Ace Records.

Musical archaeology can also become investigative. A case in point refers to the soul vocal group The Impressions, and the album 'ABC Rarities' issued by Ace, featuring rare unissued tracks. The album took a team of researchers to piece together the various locations to source the original master tapes. All the targeted masters were eventually found for the rarities album, except one - the opening track, 'Can't You See'. The track had appeared on the first pressing of 'The Impressions' their debut LP for ABC-Paramount. However, the track was deleted on later releases...

"I rang the Universal tape vault in Los Angeles and asked them to pull the stereo master reel for the A-side of the album," said Ace MD, Roger Armstrong. "I asked [Universal] to check how many rills (spacers between tracks) were on the reel and the answer was six. This meant that there were seven cuts on the reel and as the A-side of the album only had six I assumed that the missing stereo master of 'Can't You See' had been parked at the end of the reel."

It had - the mystery was solved. But only by someone with the passion and the knowledge to know what questions to ask in the first place. The moral of the story? Our musical heritage is being saved piecemeal, by anoraks.

God bless 'em! ●

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"do pro-Digital Radio politicians have any idea how much power a DAB tuner uses?"



## dominic todd

**M**ost Friday evenings I find myself travelling by car. It's rare for me, as I usually just walk or use the train during the week.

Getting out into some decent countryside before midnight on Friday does, unfortunately, mean relying upon the car rather than taking public transport...

As with most other audiophiles, I usually dread having to switch on car stereo systems, euphemistically labelled 'In Car Entertainment' (ICE). The results are, more often than not, a disjointed mangle of sound with boomy bass and harsh treble, which I suppose is needed to overcome all those extraneous car noises. And so, listening to music in a car is something I rarely do for pleasure.

After I've had my fill of flapping cones and sibilant tweeters courtesy of those heavily compressed music stations, I switch over to Radio 4. As it happens, it's usually 'Any Questions' that's on the air. Sometimes - and I'm sure I'm not alone here - the inane and blatantly crowd-pleasing panelists' responses drive me to me shout at the radio. When I've really had enough, I just switch it off altogether and drive along in silence.

Yet, the times when it's remained on recently, I've been constantly struck by the script politicians appear to be reading from when they answer questions concerning the environment. Without fail, the first aspect they mention is energy saving light bulbs. Next up comes the trips (usually taken in a less than efficient car) to the recycling area. The presenter then piously mentions the Toyota Prius. Politicians usually draw air through teeth and claim that their ten year old Jag is actually better on a long run [it probably is! - Ed.]. Finally, with a desire to quickly

change the subject, the politicians turn and viciously assault that poor old scapegoat, the standby button.

Yes, this seemingly innocuous little glowing light that has kept equipment conveniently alert for years is now Public Enemy Number One when it comes to global warming. At the moment it seems like it is TVs that are coming in for the brunt of the criticism, but how long will it be before hi-fi is affected?

In actual fact, separates have usually fared well in the respect of not using a standby switch at all. Either the unit was powered all the time with no power button in sight (shush - don't tell the government!) or it simply switched right off. The usual advice was that to enjoy your system at its best it needed to be switched on between twenty minutes and two hours before listening commenced. No doubt it won't be long now before manufacturers are urged to quote in their instruction manuals that listening must commence immediately after switching on the unit (much as is the case with cars now, and hang the engine fluid temperatures).

These days however, more hi-fi separates use standby circuits. Generally these are seen as a good thing as they keep the crucial circuits warm, without absorbing the energy needed in the full on position 24/7. Despite this, I can see it not being long before commercial and needling political pressures are put upon manufacturers to do away with this control altogether.

I have to make it clear at this point that, like the government, I too am keen on being responsible with my use of energy. I'm a man who, after all, leaves most of his carbon footprint after having stepped on a pencil walking to work. What riles me is the hypocrisy of it all. The

combination of higher energy costs and environmental concerns will, no doubt, bring about legislation that limits or bans standby switches. Yet, at the same time, it's the very same politicians who are urging us of the need to switch over to Digital Radio so that the old analogue transmitters can be switched off.

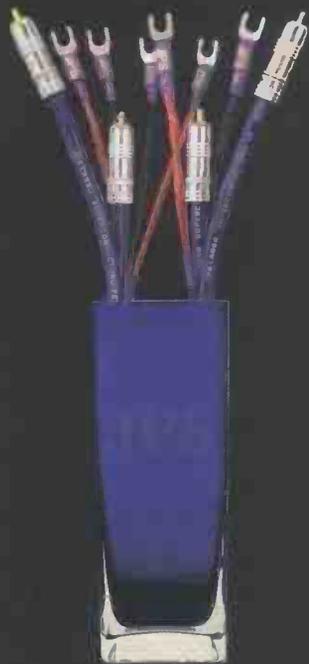
Interesting this one, because do most of the Members of Parliament have any idea how much power a DAB tuner uses? I very much doubt it, but I do because I checked the other day. After finding that my new Pure Evoke tuner that, I must add, is excellent in other respects, chewed through batteries at an alarming rate, and far higher than my old analogue Sony, I checked out a few figures. Perhaps tellingly, the likes of Sony, Cambridge Audio and Denon didn't even quote power consumption figures. When I finally found two like for like DAB and analogue tuners with full specs, thank you Arcam, it came as little surprise to find that the DAB used twice the juice of the old analogue design.

It is reckoned that there are around 100 million radios of various types in existence within the UK. If we say that, on average, each uses about 10 watts of power than a mass switchover to DAB would incur a potential power increase of 1000 mega watts, or a couple of power stations to be on the safe side! Okay, so it's not likely that all the nation's radios will be on at the same time, but you can see the point here.

Voices are raised when the chances of political backlash are nil, yet muted when political contradiction is likely to be exposed.

Well, as for now, it looks like my own car radio will be most definitely turned off. Perhaps the politicians are helping protect the environment after all! ●

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"providing good audio quality is totally at the discretion of the broadcasters..."



## steven green

**T**he previous regulators of commercial radio, the Radio Authority, adopted a 'light touch' approach to regulation (the BBC is self-regulating), which is summed up by the term 'let the market decide'. The new regulators of commercial radio are Ofcom, which believes even more strongly in market forces, and they're proud to boast that they're "biased towards non-intervention" and they "promote self-regulation wherever possible". I'd like to question whether this approach is the best way to regulate audio quality on digital radio.

The theory behind applying market forces to the regulation of audio quality on digital radio is that if a radio station reduces the audio quality too far, then people will stop listening. The reduction in the number of listeners impacts on the bottom line, which commercial radio stations will do anything to avoid, and this dictates that they will always avoid reducing the audio quality too far in the first place. Put like that, it's difficult to fault their logic...

However, 98% of all stereo radio stations on DAB in the UK use a bit rate of 128kbps, which provides poor audio quality, and a large and increasing number of music radio stations are broadcasting in mono on DAB. So why hasn't this seemingly logical approach to regulation actually worked in practice? The problem is that it ignores two key factors: content and greed.

Radio listeners are motivated first and foremost by content. For example, people listen to Wogan in the morning because they like to listen to Wogan, not because the audio quality is best on Radio 2. Radio listeners also tend to be loyal to a small number of radio stations,

because they like the music played or they like some of the DJs on those radio stations – again, it is the content they value most.

So if a radio station on DAB broadcasts at a poor level of audio quality, the listener has the choice of either listening to the radio station at the audio quality that the broadcaster deigns to provide it at, or to not listen to it at all. That's hardly a choice to someone that actually wants to listen to that radio station...

So in reality, all the 'let the market decide' approach to regulating audio quality achieves is to avoid the audio quality reaching such an abysmal level that large numbers of people actually do start switching off altogether. What it also means is that providing good audio quality is totally at the discretion of the broadcasters themselves, which makes a mockery of the term, 'let the market decide', because that suggests that listeners somehow have a say in what audio quality level is delivered, which couldn't be further from the truth. Of course the commercial radio groups know this very well, which brings me onto the second factor: greed.

With DAB multiplexes, either fewer radio stations can be transmitted at higher audio quality (e.g. six 192kbps stations) or more radio stations can be transmitted at lower audio quality (e.g. nine 128kbps stations). But the profitability of commercial radio soared throughout the 1990s as a result of a rapid increase in the number of commercial stations transmitting, and they think that launching lots of new radio stations on DAB will allow profitability to increase further once DAB has become mainstream. So the commercial radio groups, in full knowledge that listeners value content ahead of audio quality, have

decided to launch as many radio stations as they can at the lowest audio quality they're allowed to.

A good example of this trading-off audio quality to allow new stations to transmit was when Emap launched the Smash Hits digital radio station, and it reduced the bit rates of all its existing radio stations to 128kbps in order to squeeze Smash Hits onto the multiplexes. Then, more recently, it launched the Kerrang radio station, but as there wasn't much room left on the multiplexes, Emap decided to transmit Kerrang in mono on a large number of local DAB multiplexes.

However, it should be remembered that the commercial radio groups are all quoted on the stock exchange, so they are actually duty-bound to maximise profitability for their shareholders, and if it is more profitable to provide its radio stations at low audio quality or in mono instead of stereo then that is exactly what they'll do.

The main problems militating against the broadcasters providing their radio stations at high audio quality, however, are that DAB is extremely expensive to transmit on (it costs £1.2m per annum to transmit a 128kbps station on the national Digital One multiplex, so transmitting at 256kbps to provide high quality would cost £2.4m!) and it is incredibly bandwidth-hungry, so it would have required an inordinate amount of spectrum to satisfy the broadcasters' demands for new stations whilst at the same time allowing those stations to transmit at high audio quality.

Therefore, given the use of the DAB system for digital radio, the 'let the market decide' approach to the regulation of audio quality was always destined to fail, and the current situation was inevitable. ●

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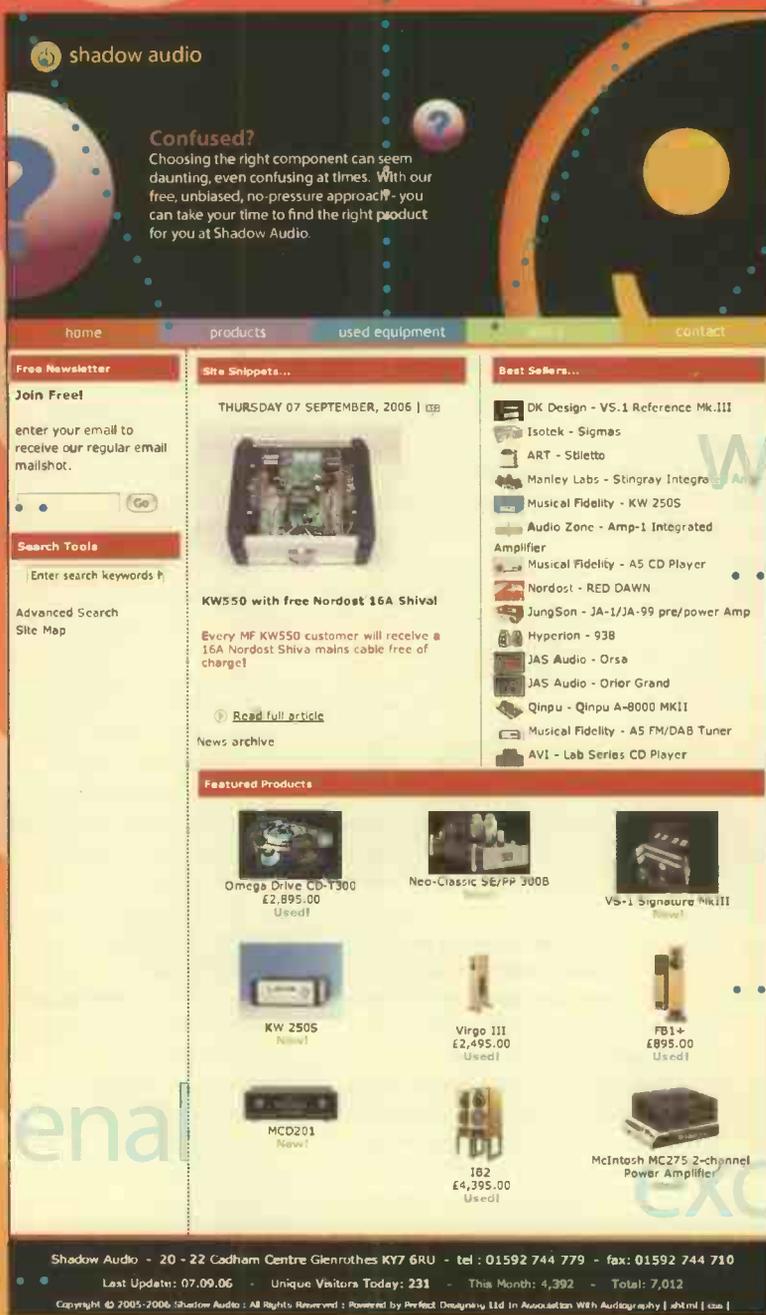
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"high speed vinyl outguns digital formats by a comfortable margin in the excitement stakes...."



## noel keywood

**E**ven when I spin dodgy old LPs, played to death long ago with cartridges I'd rather not mention, it's great to listen right into the performance. No matter how disorganised the original recording arrangements might have been, with a second-rate studio, poor mics and hissy tape machines, LP seems able to convey the full extent of the original performance. Later CD reissues are often a shock, a sonic hash. So whilst I'm surprised - even amazed - to be buying music on LP again, I am also loving it! There's still nothing quite like listening to LP, when you have a decent vinyl playing front end that is.

What should you get? Well, I hope this issue gives you a good idea. Happily, you need not spend a fortune. Although the very best products will cost you at least £1,000 apiece, you can get a fantastic sound for far, far less. Denon's DL103 moving coil cartridge has been below my horizon but the tuned up R version is an 'interesting' experience that offers high drama from vinyl at a rock bottom price. You'll see a discussion on it in p46 of this issue. Mount a cartridge like this in a good turntable and run it through a decent phono stage, both of which need not cost the earth, and you should end up with a stunning sound for no more than £1,500 or so, possibly a lot less. This will resurrect your old record collection - if you didn't ditch it because someone said CD was perfect (!) - and it will also sound amazing with all the new LPs now coming onto the market.

There have been some interesting twists and turns in the progression of the LP over the last decade. In spite of a dwindling market there has been really strong progress in equipment

terms. The whole idea of Zen-like attention to fine detail in the design and construction of hi-fi products has paid dividends in this field, because it is 'analogue'. Here, an industry once constrained by dogmatism built around simplistic engineering views has managed to revitalise itself. Once upon a time record decks and arms were seen as entirely passive items that had no affect upon sound quality, other than through mechanisms such as rumble, wow and flutter. Nowadays every little part is seen as having an influence and is up for inspection.

Today's record playing equipment has been tuned right up - and the process continues. As wonderful as the one-piece structure of Rega's early RB300 arm may be, it came with dreadful wiring - but not any more. Nowadays, you can get a rewired Silver version from Origin Live and Rega offer more highly refined versions in the RB700 and RB1000. The RB300 was a fine arm and still is, but the world moves on. Firms like Rega, Origin Live, Goldring and others have moved with the times and offer great products, right up on the cutting edge of LP technology, at realistic prices.

Much the same can be said about pickup cartridges. Take a peek at Rega's words on their new Alpheta moving coil cartridge and you will see straight away that they have rejected traditional design techniques for new and better ways of doing things. You don't have to come up with radical new ideas though; Goldring have constantly improved their cartridges, so a 1010 measured a few years ago isn't at all like a recent sample.

Listening to today's record playing equipment reminds me how far the industry has progressed. I have never heard as much from my old LPs,

and the new ones I am buying are impressive too, especially 12in 45s. These are popular for DJ use because of their unbelievable dynamics. Whatever it is that gives them such impact I do not know. What I do know is that they have a quality missing from CD, SACD or DVD-A. Okay, perhaps they are EQ'd up to the limits but I'm more than a little susceptible to spinning everything from Eddy Grant's 'Electric Avenue' (1982) to Goldfrapp's recent 'Ride a White Horse' at awesome levels through Tannoy Yorkminsters. It's great to have a system that, when wicked up delivers dynamics that take your breath away - and for this the 12in 45 is peerless. As my collection of these things reaches back to before the CD, precisely to the wonderfully dated lyrics of Heaven Seventeen's "(We Don't Need This) Fascist Groove Thang" when Ronnie Reagan was "president elect", high speed vinyl has been outgunning digital formats by a comfortable margin in the excitement stakes.

The 12in 45 is just one part of the vinyl experience that's worth enjoying. The other is the oldies of course, well worn or even new: if you haven't checked out all the re-pressings now appearing of greats like The Who and Hendrix, take a look at the Stamford Audio or Diverse Vinyl websites. And then there all the new LPs now appearing. Heavens, even the Virgin Megastore on Oxford Street is stocking 180gm vinyl these days! So whether you want to hear your oldies again, shake the house with 12in 45s or would like to replace treasured originals that have seen better days, as I need to do, just get a really good vinyl playing front end. For real musical enjoyment it just can't be beaten. ●



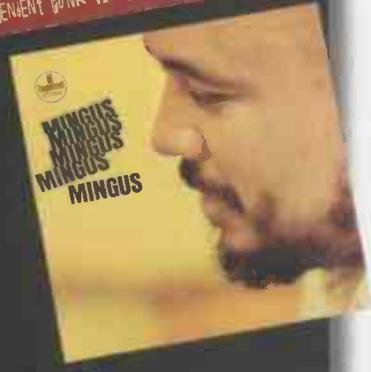
**MCCARTHY**  
**The Best Of McCarthy:**  
*That's All Very Well But...*  
**Get Back**

Influenced by classic British punk groups, McCarthy quickly evolved into a jangly guitar indie group that were known for their left-wing politics. Their sound was a little bit Smiths/ Pale Fountains, but they were largely ignored by the UK apart from John Peel and a couple of DJs on Radio Merseyside, which is where I heard them. McCarthy, apart from being a great indie group on their own merits, are of particular interest to all fans of Stereolab, as two current 'Lab members used to be in the group: Tim Gane and Laetitia Sadier. This excellent album features a variety of singles plus rarities and some rare Peel session stuff.



**ANGELIC UPSTARTS**  
*The Independent Punk Singles*  
**Collection**  
**Get Back**

One of the more interesting groups to emerge from the punk era, the Upstarts were certainly one of the most politically-aware of the time, and controversial too, producing such ditties as 'Brighton Bomb' (also on this album) about the IRA's attempt to assassinate the Conservative cabinet. The band were aligned to the skinhead fraternity but, although that movement later moved towards racist and fascist attitudes, the Upstarts retained the earlier Skinhead attitudes which was pro-black, pro-reggae even, which set them at odds with their audience. All of the band's singles are present on this double album featuring three live cuts including 'The Young Ones'.



**CHARLES MINGUS**  
*Mingus Mingus Mingus Mingus*  
**Mingus**

Speakers Corner/Impulse  
Jazz bassist extraordinaire, Mingus was an evocative, emotional man – he railed against racism and, whilst he could be a gentle giant he also used his bulk as a weapon of intimidation and he was not above halting concerts to chew out inattentive audiences, even cashiering a musician now and then on the spot. At one of his concerts in Philadelphia he broke up the show by slamming the piano lid down, nearly smashing his pianist's hands and then punched trombonist Jimmy Knepper in the mouth. This album is a revisit to his greatest hits which he 'remixes', basically, even changing the names of the original tracks. The result is a wonderful album.

**SAINT JUST**  
*Saint Just*  
**Akarma**

One of the joys of progressive rock is its innovative European variations. This slice of '70s Italian progressive rock was, for those fans of the genre, not typical of the usual Italian prog scene. This album took influences from folk, psychedelic and classical and leant more towards the acoustic. Prog rock groups are known for their elaborate arrangements and bombastic instruments. Saint Just's most effective instrument was the vocals of Jane Sorrenti that float above the music – her vocal delivery is definitely an acquired taste. The band produced two albums, this was the second, produced in 1974. The first, 'La Casa Del Lago', was released in 1973. This reissue is well mastered with thick card gatefold.

**JOHN COLTRANE**  
*Ballads*  
**Speakers Corner/Impulse**

Playing along with McCoy Tyner, Jimmy Garrison and Elvin Jones, this album, released in 1962, was in some ways controversial. Not because the album was found to be 'difficult', although Coltrane did receive that form of criticism too, but because, perversely, he was accused of producing too simple an album. Some thought he made the album to satisfy his 'difficult' critics and that he hated 'Ballads' as a consequence, which is not so. The bottom line is a beautiful album. Simple in form but not without his trademark sonic explorations. The album is a perfect reissue: placed on 180gm vinyl with a heavy gauge cover and no barcodes, etc., to spoil the illusion – all of that is on the shrink-wrap.

**AL GREEN**  
*...Is Love*  
**Get Back**

One of the great soul singers of all time, Green was known for his emotive singing. Lacing his soulful vocals with gospel vibes, Green would add a sprinkling of moans and wails to 'sex-up' his performance. This album was released in 1975 and was notable for finding Green in a reflective mood. His normally lush, up-tempo songs of optimism are largely pushed to one side to make way for more, well, depressive ballads. Yet his severe tones are all the more interesting on this album. They are raw and sensitive, giving this Green album a 'bares all' feel to it. Released on its customary 180gm vinyl and heavyweight card packaging, this is an excellently mastered issue. Recommended to soul fans.



**BRUCE PALMER**  
*The Cycle Is Complete*  
 Akarma

If you have this nagging sensation that you might just have heard of Bruce before, then you'd be right. He was the original bassist in Buffalo Springfield, one of the major rock groups of the '60s and known for playing with his back to the audience (a practice he continued in band photos). This solo album, released in 1971 and now re-released in a gatefold format, is a whacked out jam session of mainly instrumental works that mixes rock, jazz and folk. Each track is an individual piece of work in style and form. It was Palmer's only solo release but is related to another 'out there' musician, Skip Spence, who also released his solo work in 1971, 'Oar'.

**THE WHO**  
*A Quick One*  
 Classic Records/Reaction

A pretty amazing band and a pretty amazing album, one that is often underrated. This second album release featured all the band contributing songs – largely as a result of pressure from the band's managers. Of course, Townshend ended up contributing the most including the title-track mini-opera which, ultimately, would prove an early prototype of the later rock opera 'Tommy'. This second album showed a new level of maturity with more complex melodic and lyrical themes but, significantly, it also showed how good a song writer was John Entwistle with his 'Boris The Spider' and 'Whiskey Man' efforts. This Classic Records edition is superb – great packaging and the best master of the album there has ever been.

**MARC ALMOND**  
*The Willing Sinner*  
 Get Back

Originally entitled 'The Willing Sinner – Live In Berlin', this reissue records Almond's performance at the Passionskirche, a beautiful church in the Kreuzberg district of Berlin. A cracker of a concert, which was originally staged on 15th September 1991, this double album, in a single sleeve, features many of Almond's highlights. In fact, it is quite an eye-opener to realise just how much solo work Almond has completed since the break-up of Soft Cell – ten albums before this effort and another 19 after it. This live album includes the No. 1 hit, 'Something's Gotten Hold Of My Heart', in which Almond originally duetted with Gene Pitney, although he sings solo here plus 'Stories Of Johnny' and 'Orpheus In Red Velvet'.

**CHET ATKINS**  
*In Hollywood*  
 Classic Records/RCA Victor

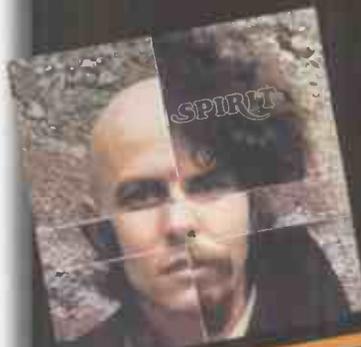
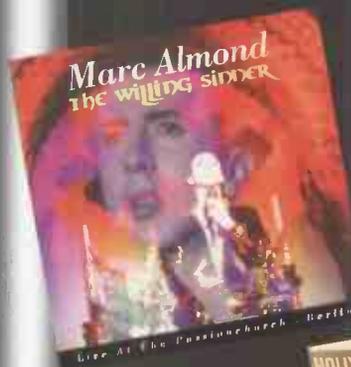
...named because – yes – he recorded the album in Hollywood, this is one of Chet's best releases, in this case from 1959. One of the world's most respected guitar pickers, the album features Atkins at his most elegant with luscious guitar licks and accompanying string arrangements plus, as Hollywood dictates, the inclusion of three film themes: 'The Theme From Picnic', 'Theme From A Dream' and 'Armen's Theme'. Other memorable tracks include Fats Waller's excellent 'Jitterbug Waltz' and the traditional remake of 'Greensleeves'. Classic has done itself proud with the mastering which is admirably quiet where it should be and dynamically exciting in the right places, which allows the music to set the mood and not the record itself.

**SPIRIT**  
*Spirit*  
 Sundazed/Ode

An eclectic rock outfit, the band were just as likely to play an acoustic folk song as they were prog rock or even a jazz instrumental. With a lifespan ranging between 1968 and 1977, Spirit released this self-titled album in 1968 and showed the full gamut of stylings. The problem with this approach was that, because they failed to settle on a single style, their level of genre maturity was comparatively low. Hence, they failed to push the boundaries on any one field, unlike their contemporaries. However, the album is still an excellent debut, full of unpredictable themes and raw talent. This particular release is the mono edition, a rare beast but Sundazed has completed the job superbly.

**THE SCRUFFS**  
*"Wanna Meet The Scruffs?"*  
 Rev-Ola

Sometimes a group of talented artists hit the scene with a bang, unleashing a brilliant album in the process... and then sink, never to be heard of again. Stand up and take a bow, The Scruffs! They were obviously influenced by Big Star but, unlike others of that ilk, this lot actually sounded good. With power pop oozing from their very veins, this US-based band brought their crunchy pop vibes along with a very British sense of melody. This new release sees the welcome return of the album (the first since a 1997 CD re-release) and to allow those who missed it first time around to see what the fuss was all about. If you like intelligent angst, buy it.



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# Designing speakers

## Part 1 - The Baffle

**At first sight speakers look simple, but there is hidden complexity behind all that woodwork. In this series Peter Comeau uncovers the facts and explodes the myths and shows you how to create your own home-grown loudspeaker from basic theory and practice.**

**M**ost DIY speaker designers start off with the assumption that all you have to do is put some drivers in a box, fiddle about with a crossover and the job is done. Perhaps that is why we see so many new speaker manufacturers hit the hi-fi market every year?

Unlike an amplifier, turntable or CD player, speakers are easy to construct. But that doesn't make them easy to design. What I want to do in this series of articles is to dispel a few myths, point out the pitfalls, and shed light on how to get started and what to look out for.

Almost everyone starts a speaker design by choosing a type of enclosure that suits the look and sound of the system they are after. As with almost everything in loudspeaker design, there are no absolutes. If you are looking for an instant answer, don't expect one here. And don't think you can look at commercial speakers or pick something out of a book to get you on your way either! It is time to make some hard and fast decisions before you start choosing your drive units.

OK, let's start with the basics (and apologies to those who already know them). There are really only four types of enclosures that you can

put speakers in, though each can have sub-classifications that might seem, in themselves, to be unique (but they aren't, as we shall see).

The simplest enclosure is not an enclosure at all, but it is a very useful one to consider first because of its simplicity and second because it can teach us a lot about how drivers behave when they are put on a baffle.

I am talking about Open Baffle, or OB, speakers here. You don't see them very often but an Electrostatic or Planar speaker is exactly that, an Open Baffle. Very, very few commercial manufacturers put moving coil drive units on an Open Baffle, and it is not hard to see why. The baffle is there to stop the output from the front of the cone (or panel) meeting the back and canceling it out. As the cone moves forwards it increases the air pressure in front and decreases the air pressure behind. So the sound from behind the cone is 180 degrees Out Of Phase with the sound in front and the two

**Baffle - a board on which the driver sits which helps separate (baffle) the sound from the front and back of the cone. In the early days of the moving coil speaker this was all that was used. Later the board was fitted with sides and a top and bottom to extend the baffle, as you can see in early radio sets.**

will cancel out where they meet so you won't hear anything at all!

To stop this happening we mount the driver on a baffle board. Now the dimensions of this board are critical as it will only stop the sound from the front meeting that from the back where the board is bigger than half the sound's wavelength. If the half wavelength is bigger than the baffle then the sound stretches round the baffle to meet the sound from the back and the front and back radiation cancels out. So the baffle has to be



*Gilbert Brigg's Wharfedale SFB-3.*

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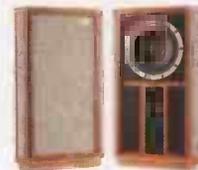
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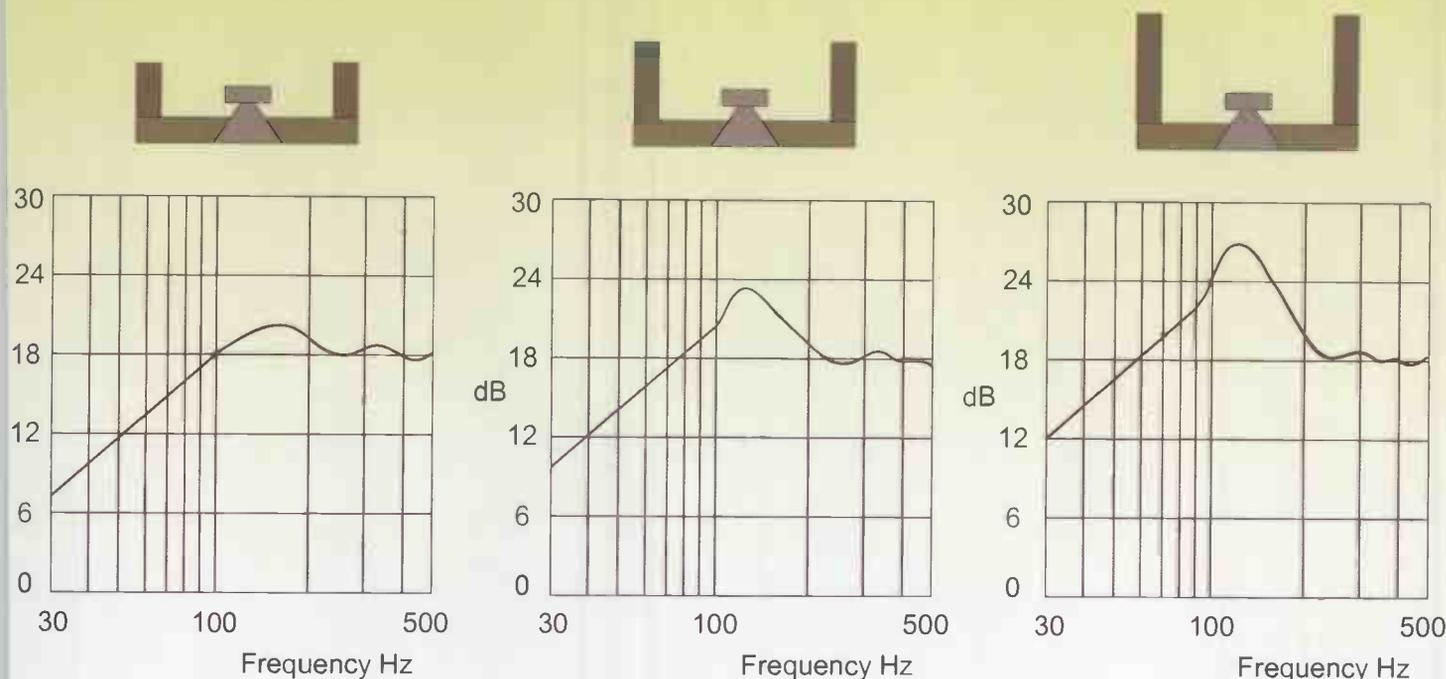


Figure 1. Response of 60cm wide baffle with edges folded back showing how bass output peaks as the folds become longer.

big otherwise the bass frequencies, which have the longest wavelengths, can't be heard.

If you are worried at this stage that your electrostatic or planar speaker doesn't have a baffle board, don't be. If you think about it the speaker panel is its own baffle, and its dimensions help decide the lowest frequency that the panel works down to. And things aren't quite as bad as they seem below that frequency either, as we shall see.

If you consider that the wavelength of sound at 43Hz is 8 metres or 26.27 feet then we will need a baffle size of 4 metres across in order to maintain the output of our speaker down to that frequency. Not many people would like a couple of baffles of that sort of size in their room. What is worse the panel resonance from a large baffle can be high enough in frequency to add significant coloration to the speaker output. In a box we can control the panel resonances by bracing. An OB is a free edge panel and has much stronger resonances. We must therefore be careful to construct an OB carefully to reduce panel resonance, as in Gilbert Brigg's Sand Filled Baffle shown in the photo above.

Thankfully we don't have to go this big to make a pair of OB

speakers work well in a room. That is because the baffle doesn't suddenly

stop the output of the speakers dead at the half wavelength frequency. Instead, as the sound starts to diffract round the edge of the baffle, the cancellation occurs gradually, decreasing in Sound Pressure Level (SPL) at 6dB per octave.

Now, at some point below 100Hz in a real room, our speaker will start benefiting from room gain. The baffle board the speaker is attached to has some edges which are attached to the floor and, possibly, the side wall of the room. So the wall and floor extend the baffle. Taking these into account we can make the baffle much smaller than is theoretically necessary. We can also bend the sides of the baffle backwards which makes the speaker far more room (and wife) friendly.

You have to be careful about creating sides like this, however, as the baffle now starts to become a type of open back enclosure, rather like the old radio and TV sets. This can cause a peak in the bass response before it starts to

Why did I choose 43Hz when 20Hz is normally taken as the lower limit of audibility? Well 43Hz is close to the bottom note of a bass guitar and below the frequency range of most instruments except for Grand Piano, Pipe Organ and Welsh harp which have fundamentals a little lower. Very few speakers deliver much acoustic power below 43Hz despite what they might claim.

roll-off, a point not missed by the radio designers who use this peak to reinforce bass output (see fig 1). The peak occurs because the enclosure is beginning to act as a pipe, with an acoustic resonance where the depth of the cabinet is a quarter wavelength long. For example a baffle with edges folded back 60cm will have a peak in output at around 120Hz. And it gets worse. There are associated peaks at odd multiples of this frequency, for example the third harmonic at 360Hz – and emphasis of frequencies this high up in the midrange is not we want to hear at all.

To get round this it is usual to taper the sides to avoid any single, audibly obvious, resonance. But remember the quarter wavelength bass resonance principle; as the old radio set designers found out, it can be quite useful. Remember too all this stuff about diffraction round the edge of the baffle because you'll be needing it when we come on to the other types of enclosures next month.

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# WD88VA Part 5

## Performance

When we set out on the long design process for the WD88VA we knew the goal – to get the best possible sound out of the revered KT88 beam tetrode. This valve is capable of 40W from a pair in push-pull, but this is pushing the valve characteristic hard and, we found, doesn't give the mellifluous and musical performance we were after. Accordingly we have chosen a more gentle maximum output of 35W into 6 Ohms with the following distortion results.



Output into both 8 Ohms and 4 Ohms was perfectly balanced at 30W 0.5% THD showing that this amp will drive a wide range of speaker impedances successfully. This lends credence to the choice of a fixed 6 Ohm output transformer winding; there really is no point in degrading the transformer quality by offering multiple taps in our view.

Of more interest is the distortion performance at lower power levels. Why? Because this is where we hear distortion at its worst. Any amplifier is pushed only occasionally to high power levels (unless you are partying with a very dynamically compressed music source) when the musical dynamics require it. For most of the time we are listening in the 1 – 2 Watt region and this is where the distortion components are most audible. Ideally we should look for a graded level of harmonic distortion here i.e. with second order dominating over third order and higher level harmonics fading into the background noise.

This is exactly what WD88VA does. Distortion at 1W output at 1kHz is 0.009% rising to 0.025% at 5W, and the second order harmonic dominates as prescribed. This characteristic remains stable at both 20Hz and 10kHz, just rising slightly at the latter frequency to 0.04%. These

are academic figures, as we don't hear harmonically related distortion dominated by second harmonic below around 1% THD, but it is an indication of the quality of the circuit design.

Above 5W the even order harmonics begin to fall in value. This is entirely as predicted and is typical of a low distortion Push-Pull valve amplifier. In a well designed circuit the even order harmonics will be cancelled by the perfect balance of a symmetric PP output stage. At low levels the output stage distortion is negligible so we are measuring only the dominant second order harmonic from the input valve. Above 5W the output stage distortion starts to dominate, the effect being that the even order harmonics stay low and the third order harmonic becomes more obvious on our measurement graph. I stress that this is only in measurement terms using sine wave signals, the performance will be very different from a music signal.

Using a gated signal source we checked for overload recovery, as dynamically the amplifier shouldn't oscillate or latch when driven into clipping by a short term transient, and found it excellent. In terms of frequency response the amplifier is -1dB at 30kHz and flat to 5Hz. Full power is delivered from 25Hz to 20kHz. Sensitivity with the input volume control wired conventionally

is 440mV for full output. If you use the optional shunt version (details supplied with the kit) then sensitivity drops to 880mV which is fine for being driven by a preamp. Lastly we looked at background noise levels. Our target here is less than 1mV as this is at the low level of audibility. At full volume setting wideband noise was less than 0.2mV. To all intents and purposes neither noise nor distortion will interfere with your music listening.

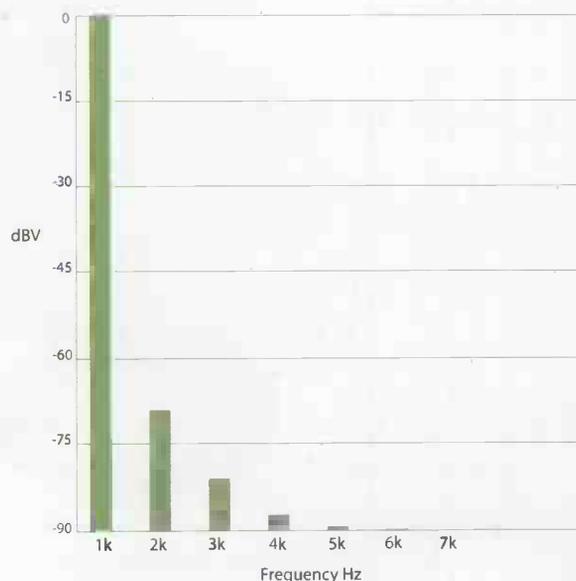


Fig 1. Distortion spectrum from a 1kHz tone at 1W into 8 Ohms

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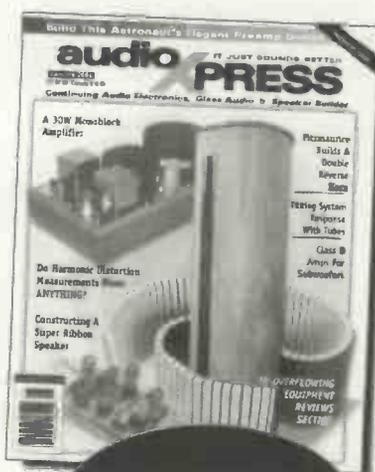
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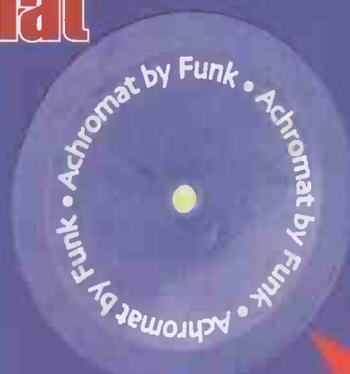
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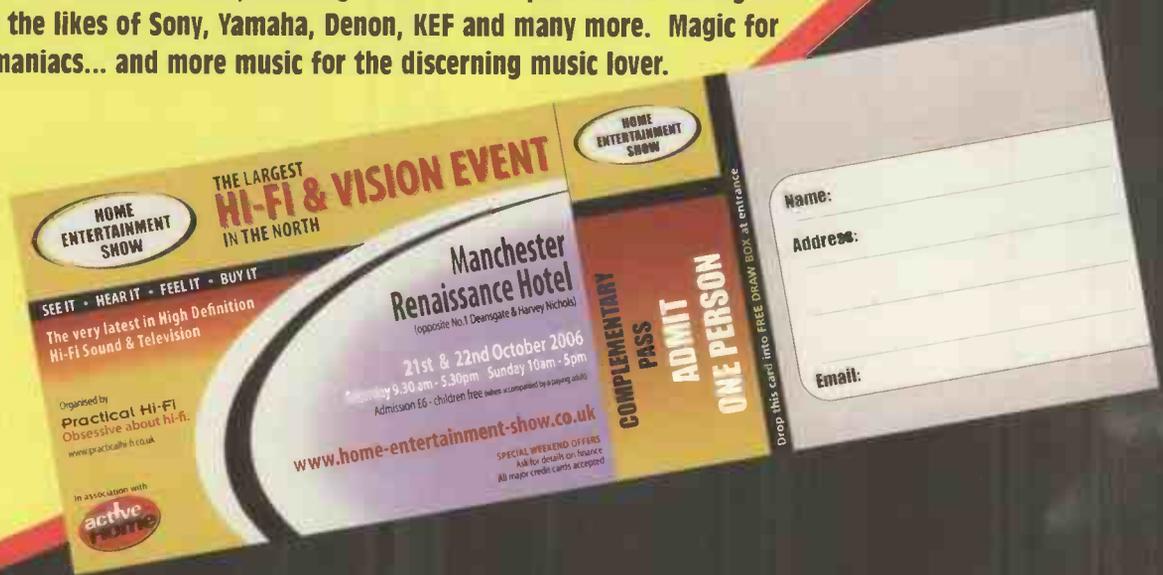
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# The Home Entertainment Show

## - something for everyone!

The list of exhibitors for this year's show extravaganza just keeps growing and growing.... We have all the big names in home cinema, sporting their latest products, showing you how realistic the experience can be. Fantastic films, amazing movies and superb sound throughout from the likes of Sony, Yamaha, Denon, KEF and many more. Magic for movie maniacs... and more music for the discerning music lover.



It's very important not to forget your roots, so for Practical Hi-Fi this show is an opportunity once again to show how passionate we are about good ole' stereo music reproduction... Up on the second floor, you will find more serious music addicts than ever before. Fortunately they are some of the industry's leading lights on the subject, and you will be able to judge for yourself which presentations you love most! You'll even be able to meet the designers...

Many new audiophile products to be launched...

There will be new loudspeakers from Acoustic Reproduction Technologies, with their newest addition to the Emotion series, a smaller, more domestically acceptable monitor that promises to bowl over the competition. Valve friendly for the 'triode brigade', the word is that they also perform on a variety of

transistor amplifiers. One to check out for sure...

Dynaudio will exhibit their fantastic new range of Focus speakers, which offer value for money high end sound along with superb build quality and finish.

More new speakers this time from ProAc, who will show for the first time in the North West the incredible new D28, a floorstanding speaker set to redefine the genre at the price point. And for the first time, ProAc design guru, Stuart Tyler will be on hand to discuss the design and answer your speaker questions. Yet another great reason to visit the show!

Also, for the first time in twenty years, legendary hi-fi designer Max Townshend himself will attend the show, exhibiting the very latest products from his innovative company Townshend Audio. Max promises to make this

a very special event, and will show a number of unusual and excellent products. It's all a big secret at time of writing, but this designer has always delivered phenomenal sounds with his sometimes unusual 'off the wall' designs. You can judge for yourself the qualities of this bespoke "total" system. And yes, there will be a device on demonstration that promises to solve the problems of 'room-boom'.

Also new to this year's event is up-and-coming amplification company Anatek Audio. With superb reviews from UK and International Hi-Fi press, this is a relatively young 'upstart' company making a big noise and forcing some of the older more established brands to sit up and take notice. The company will use this event to launch a new integrated model, to complement its already established Pre and Mono amplifiers. Perhaps your next amp upgrade will



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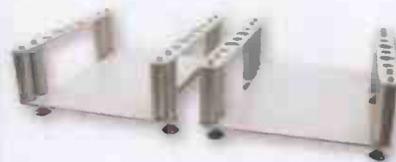
Townshend Audio's complete stereo system has evolved over thirty years. Our goal is to produce the best sound possible, which requires the best components possible. Our philosophy does not permit introducing a new range every year, since there can only be one best.

Some of the principal Townshend Audio components are shown here. Each one of these neutral devices will lift the sound of your system, and may be added in any order. Our Isolda EDCT impedance matched, deep cryogenically treated speaker cable, for instance, is the only cable sold in unequal lengths, as its sound is the same for a 1 metre run as it is for a 10 metre run. (If a cable has to be used in equal lengths, that is an admission that it changes the sound.)

For full details of our products, please see our website or request a printed brochure.

For details of where to buy them, please contact us by phone or email. The complete system is on demonstration at our Hampton Court premises and may be auditioned by appointment.

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come from Anatek, so be sure to visit and listen hard!

For the second year, UKD will demonstrate a variety of speakers, amplifiers and source components. Again, these guys will be on hand to answer and discuss any of your audio queries. Perhaps you fancy making a move over to valves, or maybe even a pair of electrostatic speakers. Or, perhaps you require to downsize the system but not its performance. UKD offer a very wide base of products from the likes of Diapason, Finyl, Unison Research, Audio Analogue, Opera, Graaf and many more. Indeed, decide for yourself but we are sure you will find more than one product of interest in this demonstration suite. Something here for everyone, but the promise of system synergy throughout!

Dali will exhibit for the first time at this year's Home Entertainment Show, and as always will make big sounds from their superb range of speakers. Beautifully designed and finished, these speakers ooze quality, and therefore demand that you visit the suite to investigate their sound quality. Simply stunning we're sure you'll agree...

Oh, you may of course wish to upgrade or get into vinyl (the records that is, not the clothing). For those who have such a craving, Michell Engineering will demonstrate their range of turntables alongside the amazing Trichord phonostages and amplifiers. We believe you will find out exactly why this company are the UK's oldest record player manufacturers, and still going strong! Other vinyl spinners will be seen and heard from Project, Roksan and The Funk Firm.

Sugden will demonstrate the all-new Masterclass series of amplification which promises the great sound the company is famous for, but with many electronic innovations in circuit design and power supply configuration - it just gets better and better. They may be the oldest British audio electronics manufacturer around, but they continually learn new tricks, and find new fans every year. Once again their committed designer Tony Miller will be on hand to answer questions and show off his latest creations. In the same room will be the awesome Focal range of loudspeakers from France. Beautifully styled and handcrafted, you should take a little extra time to listen to the results this combination can produce.

Lastly, but by no means least, the Home Entertainment Show is proud to once again welcome Naim Audio to this year's event. This coincides very nicely with the fact that Practical Hi Fi Preston are the newest retailer in the North West to showcase this prestigious range of audio products. With an ever-expanding range of superbly manufactured amplifiers, CD players and loudspeakers, this room really should be high on your list of must visits. From the entry level 5 Series electronics with the amazing N-Sat speakers up to the more revealing and exciting 500 series and pre-power combinations, this is an audiophile marque that rightly deserves the enviable reputation it has built over the years. Another great reason to make a day or two of it and visit the show!

Whether your interests lie in the very latest technologies and automating your home, or simply in recreating wonderful music in your favourite room, come check it all out at the show!

*Please call in to any of the Practical Hi-Fi stores to collect a half price ticket or two!*

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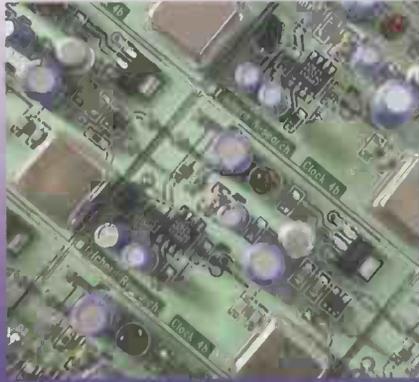
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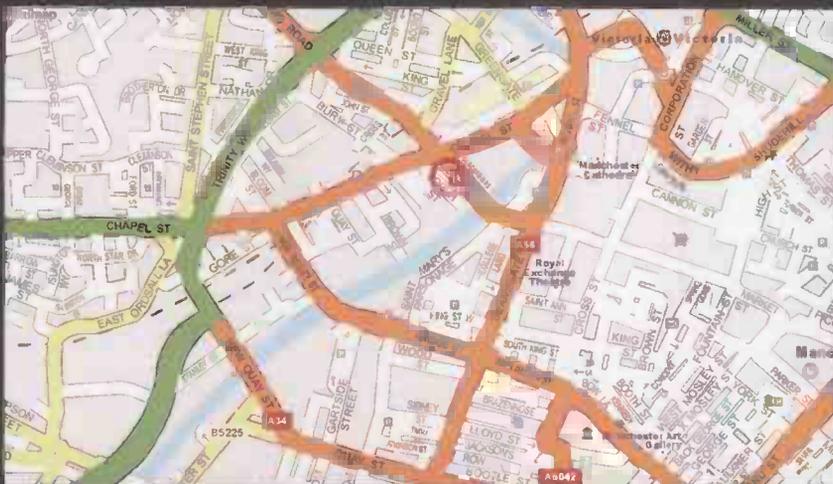


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## Letter of the Month

### TALKING RUBBISH

Remember the old 'flat earth' adage - garbage in, garbage out? The most important link in the hi-fi chain was the front end, followed by the amplifier and then finally the loudspeakers. Times had changed, I thought, even though I didn't lose my 'flat earth' feathers until the late nineteen nineties. Up until then I used the obligatory Linn system (for some reason I preferred the Linn amps to the Naims). At around that time I fell off the edge of the (flat) earth and bought something totally different instead. However, after a recent experience I truly believe that old 'garbage industry garbage out' adage is as valid today as it was twenty years ago...

I am lucky enough to have two systems. I have a budget system in the family lounge and a high-ish end system in a room that I can call my own. Recently I got the itch and auditioned the Martin Logan Vista electrostatic loudspeakers and ended up ordering a pair. These loudspeakers are a million miles away from the flat earth. However, what you may find interesting is that I wanted the dealer to take my Jamo Concert 11s in part exchange. Because of the figure I was offered I decided to keep them and put them in my budget system. Instead, they will be taking my Mission 774s in part exchange.

I therefore needed to move the Jamos into my lounge. These are big, heavy speakers and a friend managed to help me. They cost £2,300 about five years or so ago and the Missions were a £199 new old stock job from Richer Sounds. With my Cambridge Audio 640 amp and CD player the Jamos sounded acceptable and that was about it - fine for background music. Hooking up the Missions to my high-ish end system (for the record, this consists of a Musical Fidelity A5 CD, A5 pre and A5 power, a Wilson Benesch Full Circle, Townshend Audio Seismic Sinks, Maximum Supertweeters, an Isotek mini-sub and carefully chosen mains leads,

interconnects and speaker cables), the Missions sounded absolutely wonderful. Of course, they were not as good as the Jamos. This illustrates to me how important it is to get the front end correct, then the amplifier, then last of all the loudspeakers. These two hundred quid speakers sung like I have never heard them before.

Perhaps Chris Frankland was right after all? In his eighties magazine *The Flat Response*, he advocated that if you had a £1,000 budget, £800 should be spent on the front end, only if it leaves £100 to be spent on each of the amplifier and speakers...

My current system (with the soon to be delivered Martin Logans) is as far away from the flat earth as it can be. Looking through old copies of TFR from just over twenty years ago, Chris Frankland gave American gear (for example, Martin Logan) such a slating that I thought at the time there was not any point in auditioning any of it because if he said so it must be a load of crap. Even though twenty years have elapsed, when I auditioned the Martin Logans at KJ West One I was bowled over by the sound I heard from the same make of equipment that flat earthers derided.

In 'The Flat Response', he concluded that Audio Research gear

was awful. He compared an Audio Research preamplifier to the preamp section of an NAD 3020 (I had one of those as well) and went on to conclude how much vastly superior the £80 NAD amp was to £1,800 worth of Audio Research gear! The Audio Research gear I listened to the other week sounded absolutely fantastic. I listened to their CD player and amp as well as a Wilson Benesch Full Circle and the truly amazing SME 30 turntable (thanks to Arif at KJ West One). Were flat earthers of the 1980s deaf? Have you any ideas? Did Linn/Naim gear sound so

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FEDERATION OF BRITISH AUDIO AWARDS  
Ballot Form Inside

**The Flat Response - Chris Frankland and Noel Keywood in perfect harmony!**

much better then? I do not know these answers because I had never heard any other hi-fi then, as certain magazines and dealers told me it was not worth bothering with. Do you have any answers? Could it be that flat earthers became used to a particular sound and

*anything other than the flat earth sound was alien to them?*

*Finally, do you know why there are two hi-fi shows both at Heathrow and both on the same days in September? Neither your publication nor Hi-Fi News has mentioned the other. Is this some kind of bitter rivalry? You would not have two Motor Shows at the same time, let alone at the same location. Food for thought!*

**Jonathan Diamond**

Hi Jonathan. I was alive in the 'flat earth' period and working with Chris Frankland, et al. Linn and Naim offered a sound that was highly refined in one direction. It had strong appeal in certain areas, especially with Rock music. By comparison, all else was not worked out, especially the sea of mass-produced product from the Japanese majors - and even the valve amplifiers I preferred. What Chris and Co. identified and enthused about was a joined together experience of far greater refinement and particular direction. In this sense he was before time, as were the manufacturers who produced such kit. These days, no end of specialised amplifiers and loudspeakers are available and the Far East brand names Frankland & Co. tried to steer people away from are now seen as manufacturers of undifferentiated CE product. Granted, much of the flailing was driven by prejudice and hit the wrong targets. The Audio Research versus NAD comparison was a bit odd, to say the least. But even here his findings fitted his preferences; Chris didn't like valves, believing they gave a soft, slow sound lacking bite and verve (which, with duff designs, is true). He did not value stage depth and stereo imaging either, in line with many of his peers.

As you say, they were "used to a particular sound and anything other than the flat earth sound was alien to them". There was contrivance in there, especially with loudspeakers, that were tuned for "speed" and "hard hitting bass". Electrostatics like the Martin Logan were right off the agenda. I am aware that the Frankland sound exists in people's heads today; even now it is a valid choice. Saying that, perhaps David and I should assemble some modern equivalents! As much as I love valves, electrostatics and such like, I am very aware that punchy solid-state systems have a significant place in the scheme of things and that they are better worked out than ever.

On the matter of shows, yes we are promoting a parallel Heathrow Show that this issue should just reach in time. Originally, it was staged by

the Chestergroup - unrelated to us - to bolster the flagging Hi-Fi News Show that was growing weaker year by year. Britain needs a major show in the South East and there's little alternative to this location at this time of the year.

I understand an offer was made to the organisers of one show to allow visitors to enter the other for free, but this offer was rejected - a pity. Thus they became 'rival' shows, when in truth we all would have preferred them to be simply parallel shows.

We decided to support this show after attending the Chestergroup's Manchester Show and being impressed with the response from both visitors and exhibitors. The Heathrow Show now has all the exhibitors it is able to accept within available floor space, so our decision is vindicated. Hopefully, this new show will grow into the major event we all need, to see the ever-expanding range of true high fidelity products now being produced around the world, especially from the many specialist manufacturers you mention.

**NK**

Chris Frankland is one of my favourite hi-fi writers, not because I believed everything he wrote (which I certainly didn't), but because his boundless enthusiasm for music and hi-fi (albeit a very limited range of both!) was infectious, and an antidote to the stuffy, self-indulgent rot found in some other magazines at the time. Reading Popular Hi-Fi in the late seventies, which Chris edited before he founded The Flat Response, got me into hi-fi - I thought it was fantastic. The other magazine I loved back then was Hi-Fi Answers, then edited by a certain Mr N. Keywood. Noel's exhaustive technical contributions to that, and later to The Flat Response and Hi-Fi Review, were a great counterpoint to CF's wide-eyed passion for the subject - and a winning combination.

I make no apologies, I have tried to give Hi-Fi World a flavour of the long-deceased Chris Frankland Popular Hi-Fi, and Noel of course brings the best of the late lamented Hi-Fi Answers too. It's a successful combination (our circulation is extremely strong now) and we love the sense of 'connectedness' we have with you, our readers. So, I think Chris Frankland's main contribution to hi-fi magazines was to bring the first real, grass roots, ground-up hi-fi magazine to the UK...

Chris's 'Garbage In Garbage Out' philosophy was correct, but it wasn't Chris's, I believe, but Ivor Tiefenbrun's.

Ivor marketed Linn Products brilliantly back in the seventies - and this was a great catchphrase, taken from the computer industry. Chris was merely an enthusiastic exponent, but regardless of whoever deserves credit for it, it is correct. A great speaker won't make a bad source sound good, nor will a great phonostage flatter a cartridge. My only problem is that - in hi-fi - it's a tad reductive; system synergy is just as important, and 'GIGO' doesn't account for this. This is why it's vital for any audiophile to ally themselves to a decent dealer - something which CF, coincidentally, never stopped telling people! **DP**

### THE TRIP

*I read your magazine and more enthusiastically your DIY Supplement and still retain copies from 1995. I am from the audio cassette/vinyl record generation where pure acoustic music is reproduced with verve, and emotion that instinctively reaches the soul. However, by 1994 I surrendered my record player and cassette deck to the Oxfam shop and tried the much praised Rotel 965 CD player and Aura Evolution amp. with B&W 620 speakers. Within three months I was back at the audio retailer to pick up a Thorens TD160 MkII as a secondhand but well serviced item...*

*The old Rotel/Aura/B&W combo was too clinical, but served its purpose as background music. Personally, I would have returned to the Thorens, but my collection of music grew with CDs. So I had to improve the Rotel and indeed fitted the Rotel discrete output board, slit foil capacitors and better interconnect. Matters improved but within months, I realised that the reproduction was still thin and acoustic reproduction, though evident, was not inspiring.*

*So it was back to the Thorens and to searching specialist LP sales for expensive vinyl releases. With the new century, it was time for a major rethink. I chose to use the knowledge acquired through your magazines, found an electronic engineer friend and set to major tweaking of all my equipment. The Aura Evolution MkII got new Burr Brown op. amps, a new bridge rectifier for the power supply, new potentiometer, new silver mica caps, Welwyn resistors and even some signal cabling change. The Rotel CD player got a new clock and power cable. The Thorens got the Origin Live motor and power supply - and even a modded Rega arm. The B&W speakers got a hardwired crossover unit and purest copper cable, internally and externally. The inside of the box got the Deflex acoustic treatment. I accepted the 'power cable significance' and introduced dedicated power cable to all equipment.*



### The end of the journey for digiphiles?

My £1,000 system of 1994/5 had now received a £500+ upgrade. The sound was now as good as most 'quality audiophile' systems. I could live with the CD player but again, reading your mag., sent for the Northstar DAC. Also, as I could not identify a Kevlar cone loudspeaker design among your kits. I set to build one from Falcon Acoustics/ Focal design, reading carefully your mid/ late 90s speaker building kit DIY supplement for best practice.

I was satisfied my music had arrived with a further spend of £500, so 2003 brought the good, well considered fruits of my many years of Hi-Fi World readings. With the new external DAC, I became very conscious that CD playback quality was very dependent on the actual CD mastering production. Very obviously, modern recordings on 20bit and 24bit remastered discs reproduced better. Verve, Chesky, Sony, Columbia, B&W, Naim and others took great care in their CD production and this had the biggest impact on my equipment. I began to collect carefully selections with those enhanced features.

Now, the Rotel 965 is giving up on its prized CDM 4119 transport mechanism - so where next? Computer based audio has not been convincing so far. Acoustic music and 'unplugged performances are becoming very rare. Growing older, I am even more selective and return more often to the 'older music' that brought joy and contentment.

Computer audio is data processing, but I am advised that with better software it may be the saviour of CD audio with interpolating/ and upsampling. It is this idea that intrigues me, given the limitation of 'Red Book' CD's constraint to 16bit. Now that we

have true 24bit DACs and 20-24bit recording, could playback through a computer upgrade 'the bits' to give a realistic or convincing perception of my late 1960s to 1980s acoustic jazz, ballads and American folk (Johnny Cash, Bob Dylan, Neil Diamond, etc.) music? Crossroad time again - Cambridge Audio, Zero One and others are heading that way - what say you?

**J. Sylvain**

You can't get more out of 16bit by extrapolating up to 24bit. This technique just processes it better, as filtering becomes easier, to get the entirety of what's there. It cannot add information that hasn't been recorded in the first place. Until recently, my experience suggested there was very little more to be had from CD - and what we were getting was pretty dire, which is why I have derided it as a medium for so long. However, both Chord's DAC64 and Tube Technology's players and DACs, both of which use WTA filters, suggest there may be more to it. They tease a sense of atmosphere and stage depth from 16bit recordings that helps bring them alive. I am not suggesting that 16bit processed well can match a good 24bit recording, or a Direct Stream Digital (DSD) recording that you find on SACD. Good DVD Audio discs and - especially - SACDs possess a considerably more intricate sound than CD. You won't get this by reprocessing CD. So in your case I suggest you check out the CD players I have mentioned or consider a CD/ SACD player like the Marantz SA7001 KI Signature tested in this

issue. As DVD-A has all but died - I can't find any now in HMV - and Blu Ray is a video medium not yet with us, I suspect SACD may trundle on satisfactorily for some time yet. Sadly, there's no indication that Blu-Ray can handle DSD; it only has six channels of 24/192 (max) multibit. As Sony are spearheading Blu-Ray, however, we can easily speculate that players able to read SACDs may appear. **NK**

### LIFE SUPPORT

Last year I gave my brother my hi-fi, comprising Linn Sondek/ Soundcraft arm/ Arcam P77 cartridge, Meridian 506 CD player, Linn Pretek preamplifier, LK280 power amplifier and Epos E11 loudspeakers as due compensation for his kidney. This was a hard decision as I love my music. Oddly enough, he wasn't bothered by this gift and would only accept the speakers. So, taking back the rest I used my original pair of Mission 730s, which were twenty years old (the only item bought new) to play stuff...

The Meridian was skipping tracks so I took it to them for a service. After fitting a new lens and service it sounded so much better, so I don't feel the need for a change here. Time to change the speakers, as most of my kit is bought secondhand, the local hi-fi shop (which is very good) knows I cannot afford the higher priced 'speakers so it would be wasting their time in auditioning £500-£700 'speakers. So after much research I bought Spondor S3s. They are so lifelike and it all sounds real. It seems pretentious to write, but on Josh Roban the voices have texture and the timbre is so much better.

Saying that, there doesn't seem to be as much spark as with my Epos E11 'speakers, when using the same Gale cheap cable. The quality is better with the Spondors and it is more noticeable with the crispness of the drums on Jupiter (Holst Planets) but it doesn't make me want to dance like Epos. I expect my cable needs upgrading and the Pretek has not had the best of reviews but any equipment would be bought secondhand such is my budget of around £300.

**Edward Rees**

The Epos E11 always was for people who liked a tight, fast delivery, but they were not subtle, nor especially revealing, unlike the Spondor S3s, which really are right at the other end of the spectrum, as you have found out. I think you can only ameliorate this situation with a hard-hitting amplifier that is at the same time smooth, and here I would choose a Myryad M1120 or a Roksan Caspian. New, these are out of your price range, but you may find one secondhand. They will get the most

from your Sendor S3s, without compromising them. A Shanling CD-T80 CD player will also liven things up considerably, but again it is above your price unless you can find a distressed sample secondhand. Try upgrading your cables by all means, but I would not expect this to make such a difference. And - er - I would like to point out that you're not meant to dance to The Planets, Edward; perhaps you are just expecting too much from your hi-fi!

**NK**

### KEEPING TIME

*Thanks for your advice about the benefits of re-clocking the Teac VRDS 25 CD transport. I subsequently phoned Mark at Audiocom and he sounded most helpful. I think I will go with the £550 package as detailed in June's issue. Mark did suggest not using a DAC at all as this will reintroduce problems with the extra wires and componentry, which runs contra to your suggestion of the DAC 64. What are your thoughts please?*

*I have a VPI Scout and I really love its sound, running through a Whest Audio ps20. Have you any thoughts of reviewing this deck? I love its clean, incisive sound and it would be right up your street. Also, I am currently using the supplied Whest Audio phono leads and the blue loading cartridges with a Dynavector 10x5. Any thoughts as to how to get the most out of this phono stage?*

*My system is as follows: TEAC VRDS 25, VPI Scout, JMW 9.0 tonearm, DV 10x5 cartridge, homemade passive preamp (Music First pots. ), Audio Research D70 power amp., Monitor Audio Studio 20se loudspeakers, DIY silver interconnects, Chord speaker cable (cheap). I am very pleased with the sound but I think 'speakers are now the weak link. I like a wide range of rock, pop and jazz with a leaning towards acoustic and electronica, like Joni Mitchell, Miles Davis, Coltrane, Radiohead, Four Tet etc. and am looking for an airy yet full sound. I guess Quad ESL988s would be good but have not got the room. Any suggestions as to speakers?*

**Matthew John**

Hi Matthew – I can see Mark at Audiocom's point re: not using an external DAC, as you're adding extra complication (and thus extra opportunities for things to go wrong down the chain), but I really do think the benefits of the Chord DAC64 outweigh the pitfalls of external DACs. As you'll see, in this issue David Allcock has reviewed the VPI Scout with extremely positive results; I have my preferences, he has his,



**Monitor Audio GS60 – electrostatic clarity plus small room operating capability...**

but either way the VPI is a superb deck and a great start point for a serious system. Your Whest Audio phono stage is excellent too; it's on the lean, analytical side of things, but brilliant all the same. The supplied interconnects are very good indeed, but a run of Black Rhodium Polar Opera DCT adds a little swing to the super stark quality of the Whest, and a soupçon of warmth too – a fantastic combination which I myself am currently running. I think you should go for Monitor Audio GS60 loudspeakers – these are wonderfully tight and grippy and resolving, and give an almost electrostatic-like clarity, but in much smaller rooms.

**DP**

### BI CURIOUS

*On reading your review of B&W 801D loudspeakers I am very impressed and intend to purchase them. My present system is Wilson Benesch Orators, Musical Fidelity A5 amplifier and A5 CD player. I will be using Avid single wire speaker cables and would like to know whether to use the high frequency inputs or the low frequency inputs? Can I also have your thoughts on biwiring only? B&W insist on this but I am not so sure. My WBs sound better single wired.*

**Ken**

Generally, the argument for biwiring is a good one and most times it offers better results. Having said that, I use single wire! But that's

because I use very short runs, push little current, and back emfs are low. Biwiring in my particular situation makes little difference I find, but I use fairly thick and well run in Van Den Hul Royal Jades. But if you are pushing insensitive loudspeakers to high-ish volumes down long wire runs then it makes a significant difference. The 801D is commonly run at high volume in studios and the like, where biwiring is likely to make a difference. However, balancing this is a high sensitivity of 91dB. I think you'll only know by experimenting, quite frankly, as every situation is different. Technically, biwiring makes sense but in practice you may not feel it has so much to offer. **NK**

Agreed – you should experiment, even if you choose to mono-wire and have the option of running to the high or low frequency inputs. Just listen and see which suits your room better. As for mono-wiring vs. biwiring, although biwiring is better in theory, in practice it's rarely as simple. It depends on how expensive your cable is. If you're running £100 per metre cables, and need eight metres, then can you get better results by spending that £800 elsewhere? Unless you've got a £10,000-plus system, then the answer is probably yes, so you shouldn't biwire! See what I mean? It's all about practical cost-benefit analysis, as opposed to theory. For your

information, I got stunning results with the 801Ds from two monowire runs of Black Rhodium Tango, going into the low frequency inputs. **DP**

#### UP FRONT

Recently I've bought a Densen B330 power amplifier (a reference of Channa Vithana if I'm not mistaken) secondhand and now I'm looking for a matching preamp. Obviously a Densen preamplifier seems the most logical choice but lately I've read some very positive reviews about passive preamps with autotransformers like Music First, Sonic Euphoria etc., David Price thinks highly of the Music First Passive Magnetic also which makes me wonder if these preamps would be a good match (technically and sonically) with my power amp? An alternative might be a tube preamp, I've heard that matching tubes with solid state can give the best of both worlds, although I think that the result would be much different than the combination with a passive preamp. I hope that you can give me any advice about the above?

**Ben van Baaren**

The MF Audio Silver Passive Preamplifier is the best preamplifier I've yet heard – in my system. As my system is an extremely high resolution one, then it would suggest it's one of the best preamps in absolute terms, but as most systems are more coloured than mine, it might actually work less well in 'real world' applications. As you don't tell me the rest of your system, or your preferences, it's hard for me to be definitive as a result. I suggest you find yourself a good dealer who can lend you an MF, or others, and see how it sounds in your system. **DP**

#### CASE CLOSED!

From reading your many comments on the Yamaha NS1000 loudspeaker you



**B&W 801D – to biwire or not to biwire?**

appear to have spent many of your waking hours wrestling with the problem of releasing the full potential of these beasts. The Yamahas - a mint, matched pair of ebony veneered NS1000 - are a fixed point in my system, around which all else must work, as I believe they will be my last speakers (they will if I ever have to move them!) and apart from an intended upgrade of input terminals (worthwhile?) they suit my style of listening. My system comprises a Sony SCD777, to be upgraded via Audiocom or vacuum state, Thorens I24 with which I am still playing with arm and cartridge options, DIY version of Music First passive preamp using S&B silver transformers, and Marantz MA-5 power amps. I feel this system is going in the right direction but I am sure there is more to come.

With regard to the power amps,

what is your opinion of the MA-5s in Class A, with NS1000s? In my listening environment they appear to be able to drive the beasts at reasonable levels, but could I do better? Options I have considered are upgrading components in MA-5s (if so which, with what and by whom?) or should I consider an Audio Research VS55i, NuForce Reference 9 or A. N. Other amplifier? Interconnects/ speaker cables. This is an area where I am completely at sea. I have considered Missing Link, LFD, Black Rhodium etc. Any thoughts on silver vs. copper (or plated copper), or silver interconnects and copper speaker cables for cost effectiveness? Obviously, costs are always a consideration. I can't afford exotica and I know you are not an advocate of that approach, but if there was an amp/cable/interconnect that could really make a difference I would



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be happy to start saving. I really feel frozen by indecision akin to a rabbit in the headlights, Synergy please? You are probably one of the few people with genuine understanding of the NS1000s.  
**Andrew Bancroft**

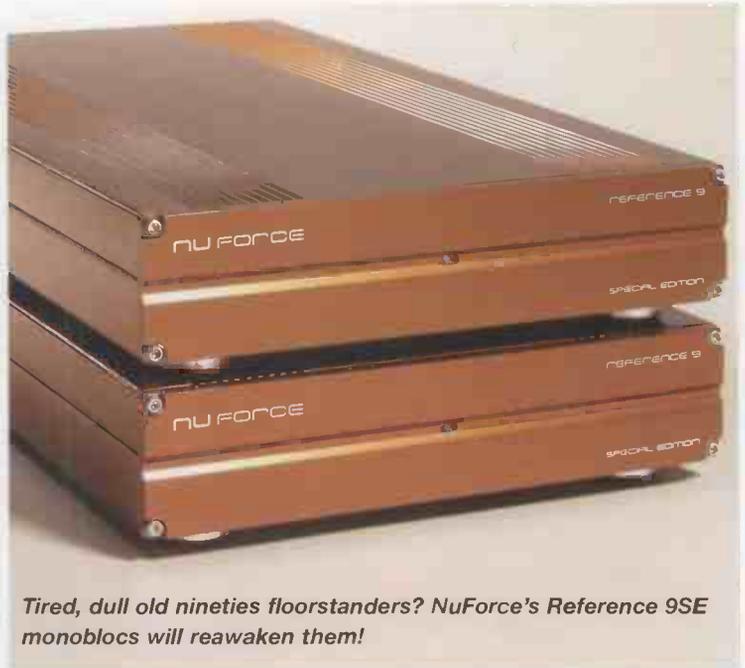
My apologies, readers. I promise that this is the last ever letter about a weird pair of seventies speakers that were designed like no others. Given the fact that about 99% of all Hi-Fi World correspondence is about these speakers (that only about three people in the whole world own), and that they're all predicated on the contention that [a] they're the best speakers ever and [b] they sound awful in my system, then I've decided that the laws of statistical mathematics prove that [a] they're rubbish and [b] no one's interested, except three people. So for that select, aforementioned, bunch, I say this. In our world of three people who think Yams peerless, then we should all buy MF Audio Silver Passive Preamps, Nu Force Ref 9SEs and Black Rhodium Tango cables; Black Rhodium Polar DCT interconnects should be used throughout and the result combo is [i] stunning, [ii] smooth and musical sounding and [iii] able to deliver debilitating blows to the chest area with effortless insouciance - punchy enough to fell the likes of Mike Tyson, no less. Apologies to everyone else who's fallen asleep by now. If anyone else has NS1000 grief, please just call me direct on 01275 371386 and we won't bore non-believers anymore.  
**DP**

### MONSTER SOUND

I have a pair of Kef Reference Model 4 loudspeakers bought secondhand, which I find lacking in the transparency and dynamic departments. Will any of your reviewers have any idea as to what amplifier will be a good match with these monsters (no complaints on midband though)? Stereophile recommended a Krell KSA-300S, which is way out of my budget, but Hi-Fi+ tested a Reference Model 3.2 with a 20W tube amplifier, which seems rather confusing. Your reviews summary stated something to the effects of electrostatic-like soundstage and superb bass, which I believe I have yet to come even close. Existing set-up with ARC LS-11/Sonic Frontiers SFL-1 + Aragon 8008ST with Monster M1.4 biwiring cables and some VDH D102Mk III interconnects. Any advice appreciated!

**Jerry**

Okay - you don't specify your budget (why bother to write to a hi-fi mag and not mention this trivial detail?),



**Tired, dull old nineties floorstanders? NuForce's Reference 9SE monoblocs will reawaken them!**

so I'm going to have to wing it here. For around £775 the Lyngdorf Audio SDA2175 gives a solid and muscular 250W RMS per channel; it's strong, smooth, dimensional and never breathless. These could take your KEFs by the scruff of the neck, especially in the bass. Ultimately it's a tad limited in dynamics, so £3,100 spent on a pair of NuForce Reference 9SE would give you all the power, punch and dynamics you would ever, ever, need - along with a bright, spry tonality to liven your quacky old KEFs up. Forget valve amps with these, at least if it's power and punch you want, unless you have about £2,600 to splash on the latest McIntosh MC275. **DP**

### OFF OR ON?

I'm a keen fan of FM radio; I listen to it for six hours per day, almost exclusively Radio 3 as I'm also a classical music nut. Following your excellent look at the various aspects of radio transmission and reception I thought I would try to get a bit more information about FM switch off so e-mailed them. You and your erudite readers might be interested in their reply to my question as to when exactly they proposed to switch to the vastly inferior DAB:

"Thank you for your e-mail regarding DAB radio. We understand that you have some concerns about analogue radio switch off. The Government will decide when analogue radio will be switched off in the UK. To date no decision has been taken. The BBC has recommended that OFCOM should address a switchover date in three years. The BBC believes that all of the current radio stations broadcast on analogue radio need to be replicated on DAB before switch over can be considered. We hope that this

clarifies matters. Thank you again for taking the time to contact us.

**Best wishes,  
Radio 3 Online"**

So, much as I would love to invest in a Magnum Dynalab, it looks like we are going to have a load of redundant FM tuners in the amazingly near future. When I further asked them about the recent drop in bit rate from a poor 192kbps to an even poorer 160kbps they replied that this was to accommodate other BBC DAB broadcasts, mainly Radio Five Live for sports fans (!) and that they were using a new algorithm which they believed gave the same quality as the 192kbps DAB. In previous editions of Hi-Fi World Steven Green has already condemned this 192kbps as inferior to the existing FM transmissions. Needless to say, I have left a strong protest about this dumbing down of Radio 3 with Ofcom! Please can Hi-Fi World set up a petition to turn us into the Kingdom of Sweden that has just abandoned all plans of DAB!

**Tony Smith**

Read the BBC statement closely Tony and you will see qualifying conditions must be met before switch off can even be considered. One is that all stations currently on analogue radio, meaning VHF/FM and AM, must be made available on DAB. Another is that everyone in the UK is able to receive DAB, and another is that a large proportion of the population is able to receive DAB: i.e. they have, or can easily purchase DAB radios. Put that little lot together and you end up with some formidable hurdles. Also, whilst the BBC are playing possum in the UK on DAB quality I can assure you they

know full well that it's a dead duck elsewhere. Britain and the BBC are strongly influenced by the European Broadcasting Union (check out [www.ebu.ch](http://www.ebu.ch)) where debate about modern broadcasting technologies, rarely spoken about in Britain except by a few lone experts like our own Steve Green, rages strongly, so we are unlikely to veer off into a technological dead end again, courtesy of the BBC, soon. And the situation is, as Steve has pointed out, that a whole swathe of new delivery systems for TV and radio wait in the wings for global acceptance. This being the case, I somehow wonder whether anyone will ever have the courage to decide to switch off VHF/FM and move us all to DAB. **NK**

is that commercial radio sees DAB as a way to significantly increase its advertising revenue - commercial radios revenues and profitability soared in the 1990s as a result of launching lots of new stations, and they think that launching lots of new stations on DAB will eventually have the same effect. It also costs a lot to transmit both FM and DAB simultaneously. So commercial radio is in favour of switching off FM in as short a time as possible, and with Ofcom promoting self-regulation wherever possible (their words), I'm afraid that they will actually try and facilitate this happening rather than trying to stop it. But it is still a long, long way off, so I certainly wouldn't let it put you off buying a new FM tuner. **SG**



*Should the alleged analogue 'switch off' stop you buying tuners like Magnum Dynalab's MD100T?*

Tony, on the issue of switching off FM: I think it will eventually be switched off, but would be very surprised if it was switched off before around 2017, and I wouldn't be surprised if it's still going in 2020. To put the situation into perspective, there's estimated to be around 120-150 million products in use in the UK that contain FM receivers (e.g. hi-fi systems, micro systems, car stereos, portable radios, portable stereos, personal stereos), but only three million DAB receivers have been sold in the UK to date and that's after four years of very heavy TV and radio advertising for DAB. There's also far less of an incentive to switch to digital radio than there has been for switching to digital TV, because whereas the vast majority of people are agreed that we need more than five TV channels, there's already a reasonable range of FM and AM radio stations available, especially in cities, although you might beg to differ if you live out in the sticks. The reason I think that FM will eventually be switched off

### MAPLINS

*I was wondering if you could review some Maplin gear? It is obviously going to have very much lower overheads than specialist hi-fi shops and therefore many of their components must be very good value. They do a range for example of silver coated braided, shielded wire, for speakers and interconnects. It may save everyone a lot of money if you could take a look at these. I think also the odd build your own speaker project with Maplin in mind would not go amiss - there are entire crossover units for sale at Maplin - no soldering required. Away from Maplin, there is Avondale who are basically claiming they are making the best value hi-fi in the world - that should be put to the test? Another site worth investigating is HYPERLINK "<http://www.venhaus.com/>" [www.venhaus.com/diysilverinterconnects](http://www.venhaus.com/diysilverinterconnects) where you can build your own cheap interconnects. You don't have to be a nerd to do this! It simply rankles to pay a lot for a bit of cable. Any info about the above would be great.*  
**Piers**

Hj Piers - I spend quite a lot of time getting bits from Maplin to make up cables for test equipment, as well as some for basic audio use, and find they are good value, but not necessarily more than this. Prices are low, that's for sure, but even with a double screened mic cable, for example, the insulation is PVC rather than PTFE, which is more difficult to work with but sounds better. Taking everything into account, including the need to make very high quality silver solder joints in small plugs and what have you, I don't think commercial cables are poor value. This is hardly surprising as there is so much competition. By all means buy Maplin cables, as I do, and sweat when making high quality connections with a large magnifying glass and clamps to hold all the parts steady, as you must. You will end up with a good cable, but it won't be as well soldered as a commercial cable from what I have seen, it won't have PTFE insulation and it won't sound quite as sharp and focused in my experience either, although that is not to say the results are disappointing. You may be interested to know I soldered up Maplin's heaviest Shark loudspeaker cable recently into two single short mono wire runs and it wasn't a patch on Van Den Hul Royal Jade cables; you couldn't compare the two. Maplin's is great value, but you get what you pay for. What I like about the chain is that it exists at all, quite frankly. Can't get BNC connectors in M&S can you? **NK**

### SPORTING CHANCE

*I was stirred to write this to you, having just read Hi-Fi World's own articles about radio and DAB standards. As a long time enthusiast of the wonderful FM live broadcasts on Radio 3 I was amazed by the reply to a letter in the latest issue of Radio Times (29th July to 4th August), page 137 under 'You Ask Us'. A reader had written to complain about the poor quality of the Proms broadcasts. I was stunned to read that the bitrate had been reduced to 160 kbps to allow more room for Five Live Sports extra! And further stunned by the reply which claimed that a number of tests had confirmed that there would be no adverse effect on sound quality. Oh well, I suppose I was silly to think they would admit to any quality issue. What can we do? I for one will treasure the remaining time before FM switch off and bask in the wonderful sound of live FM Radio 3.*

**Gregory Gyllenship**

Thanks for that Gregory. I too hear a vast difference in sound quality

between Radio 3 on VHF and DAB; the latter is a sadly deficient simulacrum. Interesting that there are plenty of people such as yourself who appreciate and enjoy the fine sound quality of Radio 3 live broadcasts. It is useful if everyone complains about this, as we do continually in Hi-Fi World. **NK**

There are two golden rules in UK broadcasting: (1) The BBC is always right, and (2) See rule 1. **SG**

Methinks the time is nigh to start a campaign, not that the powers that be, who of course know better than us simpletons with ears, would ever listen **DP**

### THE VINYL FRONTIER

Since SACD seems to be slowly dying I decided to trade in my thirteen year old turntable and bought a Project Xpression, so as to have a high quality source. I got bitten by the vinyl bug in a big way and got a bit too enthusiastic and tried to get the alignment of my AT 440ML cartridge absolutely perfect. I did get the alignment perfect as humanly possible, but unfortunately during this exacting process I also managed to hit the stylus with the stylus pressure gauge. Afterwards I was rather saddened to hear a grinding noise and saw the

cartridge seemed to be dragging its bottom along the record! The cantilever/suspension seem to have collapsed. I can only say that I am glad it wasn't a Koetsu! Anyway, this seems to be a good opportunity to upgrade!

Due to limited funds I am considering the following options. Get a Dynavector DV10X5 and connect it to my Rotel RA 02 MM phono stage or, at a pinch, get the Project phono box for the MC stage. Get an Audio Technica AT 150MLX moving magnet cartridge. Denon DLI 110 with a better quality phono stage like Project Phono box SE. Get a new stylus for the AT440ML and trade in the Project Xpression for Project RPM 6SB. Which upgrade will give me the best improvement for my money? My current system consists of Rotel RA 02 and matching tuner, Sony XB920E CD, Pioneer 675 Universal player, REL Quake sub. and Eclipse TD 508 speakers. I also have older pair of EPOS M12 I swap in to the system when I feel the urge. Keep up the good work!

**Dr. K Fonseka**  
Australia

Don't worry, K, I've just pranged my Koetsu Red Signature, and a stylish Wimbledon resident named Ricardo is about to send the boys round, which will be the be end of

my Sunday walks. Okay CD fans, I admit, you were right all along - vinyl's a pain in the proverbial cantilever (quite literally in my case). Unfortunately, the good Doctor here from Down Under proves that once you're hooked, there's no going back, and so I'd counsel a Dynavector 10X5. I know you mentioned the D word (i.e. Denon); but no, no, no. They're seventies throwbacks, and I don't like them. I don't care what extremely erudite people such as World Designs Peter Comeau (with a technical grip of the mechanics of moving coils far better than I) say - they're pants. There, I've gone and done it now - I've turned into Jeremy Clarkson. **DP**



**Dynavector DV10x5 - DP and NK think it's better than Denon's DL103, NG disagrees..**

### ITS COOL

As the owner of a McIntosh MC275 Mk4 amplifier for over a year now, I hope you can mention some of the following points which, although not directly related to sound quality, mark

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this amplifier out as a special product, make it a pleasure to use and own, and should put some of its brethren to shame. Mechanical noise - or rather lack of it - like the Quad II-40 the transformers are potted in tar so it is totally mechanically quiet. Low standing current - chassis and transformers stay very cool (actually the chassis is usually cold to the touch) thanks to very low standing current and the output valves last forever (OK, well almost). If you catch of Ron C's posts (who works for McIntosh) on the Audio Karma McIntosh forum you can see that output valve life in the 10,000 + hours is possible (the circuitry is broadly similar to the EAR 509 and I have seen 10-20,000 lifetime quoted for the PL509s when used in the 509 in studio applications). Balanced circuit - I have a copy of the schematic for the current Mk 4 version and, using balanced inputs, the circuit is beautifully symmetrical right down to the feedback which (because it comes from a dedicated feedback winding on the transformer and is totally separate from the loudspeaker winding) can be applied equally to each half of the circuit.

**Fergus.**

Hmmm - OK Fergus. I am not sure these are the criteria by which a hi-fi amplifier is best judged. Designers use high standing currents to bias heavily into Class A, for example, so there is a trade off here between heat and sound quality. McIntosh are known for using a sophisticated balanced output stage with independent feedback output windings and this was once widely thought to be responsible for fine sound quality.

The EAR509 is based on the PL509, a rugged and inexpensive television line output valve that not everyone feels is the best sounding thing going. It is cheap, rugged and plentiful, but is not a dedicated audio valve like the KT88 used in the '275. The life expectancy of a PL509 says

little about a KT88, as valve electrode structures - especially spacings - vary widely between types.

All the same, the fact that you are a happy owner of a McIntosh MC275 is important in itself. Pity you didn't tell us how it improved your system or listening experience subjectively. I'm particularly interested in hearing the views, good and bad, of all those who have moved from transistor to tube, McIntosh MC275 or all else. **NK**

### KAT 88 MODS

A few years ago, WAD made a kit named KAT88. It was a very good amplifier which I built. But I did not like the 6AU6 as driver and the ECC82 as phase inverter. The 6AU6 is too microphonic and hard to find if you want good tubes. The ECC82 gives too much distortion in phase inverter from, to my taste. I spent a lot of time with some Russian valves, like 6n2p, 6n3p, 6n6p. I love them. They are built like a tank, are not microphonic, are very linear and very good sounding. So I have redrawn the KAT88 with a 6n2p and 6n6p in driver and phase inverter. You can see it on this page: [www.ptsoundlab.com/tubes/amplis/kt88/classa40w/monkt88ca35w.htm](http://www.ptsoundlab.com/tubes/amplis/kt88/classa40w/monkt88ca35w.htm).

**Pascal**

**PS. - Excuse me for my English, I'm French!**

Thanks for that, Pascal, and don't worry, most Anglaise don't manage as grammatical English as you. **DP**

### ANY OTHER BUSINESS

I have bought a large external drive for my PC to back up my CD collection in WAV format. This will make it easy to produce 'portable' copies in current or future formats, i.e. MP3 or AAC etc. While backing up in WAV format, I am tempted to add CD Text. However, in doing so, I am concerned that CD Text would not be compatible with, say, MP3 ID3 tag text or other potential text

systems. Is there a compatibility issue? Finally, I've attached photos of a monobloc amp, the main body of which is 340x60x250mm - roughly the size of my Quad 77. The unusual feature is two large finned heatsinks projecting out of the back at one end only. The toroidal transformer size suggests something around 300VA, i.e. around 150watts output. Although substantially constructed, it is undoubtedly a cottage industry product from the 1980's. Any ideas? Any information would be helpful. **Bill Parish**

Hi Bill - CD Text may not be what you think it is - it is actually supplementary information occasionally encoded onto CDs that will display Artist/Title/Track information on CD Text-equipped players (a relative minority). It is not picked up by many ripping tools. I suspect you rather mean the almost ubiquitous Gracenote CDDB web lookup method - use that, we all do! My other recommendation is to save roughly 50% of your space by encoding in one of the lossless formats. The natural candidate is Apple Lossless, as the file-level tagging you mention is retained if you later expand to WAV or transcode to MP3, including artwork. iTunes also admirably supports the bulk transcoding you allude to. **PC**

Any readers with a clue as to Bill's mystery amp should write or email in to the usual address. None of us here at Hi-Fi World have the foggiest! **DP**

**Anyone know what this silver eighties biscuit tin was supposed to be? Please write in!**



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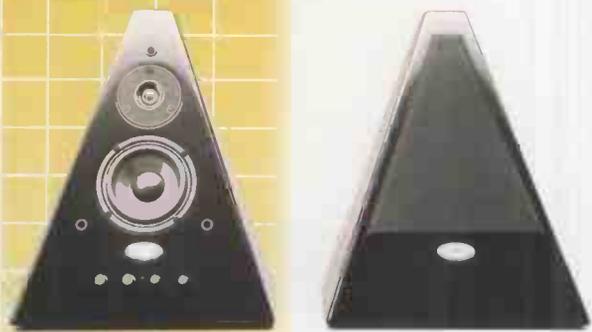
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  - REGA RADIO, boxed 200
  - ROTEL R1940AX remote tuner 125
  - SONY D7775 dbb and fm tuner, champagne finish 250
  - SONY TC377 reel to reel with dust cover 350
  - TEAC 4030S cassette deck, black boxed 350
  - TEAC X-1000R reel to reel 150
  - YAMAHA TC 800GL ski slope cassette deck, 150

- SOLID STATE AMPS**
- ACCUPHASE 200 preamp, 25 years old but lovely 200
  - ARCAM ALPHA 9 amp 225
  - AUDIO ANALOGUE BELLINI mk1 preamp 400
  - AUDIO ANALOGUE BELLINI mk2 DONIZETTI monos 450
  - AUDIO ANALOGUE PUCINI SE, boxed 400
  - AUDIO ELECTRONIC SUPPLY SE MOSFET power amp 450
  - AUDIOLAB 8000C lp graphite pre/power 325
  - AUDIOLAB 8000C black, boxed 600
  - AVANTAGE MONOBLOCKS STATEMENT 250, silver finish 2500 pair
  - AVI INTEGRATED amp, original model 400
  - AVI 2000 preamp, 10 years old but fine condition 325
  - AYR ml 1 60 watt monoblocks 300
  - BRISTON B.58 preamp 250
  - CABASE POLARIS AM1000 monoblocks, boxed, as new 1250
  - CAIRN 1000 preamp 500
  - CAIRN MEA monoblocks 500
  - CHORD SPM800, boxed 900
  - CHORD SPM 1000B, boxed 1100
  - CLASSIC MODEL 30 preamp 200
  - CINQUEVA POWER AMP 275
  - CINQUEVA 4 DC PREAMP 430C MONOBLOCKS 375
  - DEKSER TWO with PSK, factory serviced 250
  - DENON B120 amp 300
  - DYNAVECTOR L200 pre with mm phono, boxed 700
  - ELECTROCOMPANIE orig class A pre & poweramp, 400
  - KRELL K57P preamp, serviced 500
  - KRELL PAP 5 preamp 900
  - KRELL KSL 1000 power amp 900
  - KRELL REF 105 mk1, walnut 200
  - LUMLEY A2100 100 watt transistor power amp! 375
  - LUMLEY L2000 power amp, boxed level 375
  - MAGNUM 250 pre/power, with mm and mc inputs, boxed 300
  - MAGNUM SE CLASS A integrated 400
  - MARC LEVINSON M100A preamp with fisher/rca adaptors 900
  - METAKS CHARISMA PREAMP, chrome finish 1525 400
  - MICHEL ARGO/HERA line level preamp 325

- MICHEL ALECTO MONOBLOCKS**
- MONARCHY SN power amp 350
  - MUSICAL FIDELITY PEE 6 with M465 monos, chrome 675
  - MUSICAL FIDELITY X-A1 amp 250
  - MUSICAL FIDELITY X-PRE AND XASO monoblocks 900
  - MUSICAL FIDELITY A300C 200watt power amp, boxed 1200
  - MUSICAL FIDELITY A370 upgraded to mk2 1350
  - MUSE MODEL 3 preamp 1150
  - MUSIC FIRST AUDIO PASSIVE MAGNETIC pre (TWC) home demo 300
  - NAIM MAC 102 AMP 180 300
  - NAIM MAC 321110 pre/power 300
  - NAIM NAIT 3 integrated amp, line only 300
  - PASS X0 preamp 3 box 3000
  - PIONEER M73 power amp, reference series 500
  - PIONEER REFERENCE AMP D90 450
  - PLINIUS 9100 integrated amp, boxed silver, 850
  - PRIMAR 120 amp 400
  - QUAD 34/405 MK1 with din socket inputs 390
  - REGA CURSA PREAMP 250
  - REGA MAIA power amp, boxed 300
  - ROKSAN XANDI III amp, boxed 350
  - SANJUI AU-X1111 MOS/VINTAGE integrated 1500
  - SIN AUDIO CLESTUDIO PW4000 integrated amp 550
  - SOMERGRAPHE 250 pre-power - made by conrad johnson 1200
  - SUGDEN C5151T pre-power orig model, late 1940s class A power amp 400
  - SUGDEN A21P black finish, power amp version 250
  - TALK ELECTRONICS HURRICANE 5 preamp with WHIRLWIND 2 psu 700
  - TECHNICS SU-C3000 preamp, battery powered 600

- LOUDSPEAKERS**
- ACOUSTIC ENERGY AE1 speakers, boxed with pillar stands 450
  - ADAM MONITOR S3a active, boxed 1250
  - ALSON ONES, fully refurbished 750
  - AUDIO ELECTRONIC SUPPLY SE, boxed 1200
  - ALON 5 loudspeakers, boxed 350
  - ALPHASON ORPHEUS ribbon hybrid speakers 350
  - APOGEE CENTAUR MINORS - seriously upgraded and modified 1000
  - ARCON CANTUS LEISURE 2 SE 600
  - BKS 107 MK2 wood sides boxed 1200
  - BKS 107 MK2 SUPREME, GRANITE 1200
  - CABASE FARELLA 400 - boxed 200
  - CELESTION DITTON 44, BOXED 400
  - CELESTION DITTON 66 speakers 450
  - CHARIO ACADAMY L solid walnut, excellent punchy standmounters 775
  - CHEVIN AUDIO CA14R 400
  - CURA 10 speakers stand mount 500
  - DIEBIS SOLITAIRE, black, boxed pair 100
  - DYNAUDIO CONTOUR L.8 mk2 floorstanders, boxed 1050
  - HALES RELATION 2 2000 new 650
  - HYPERION HPS 918 in stock home demo available 3750
  - ICON AUDIO ICOMP6C, upgraded with PM2C, boxed 700
  - INFINITY MODULUS, mint black ribbon hybrids, boxed with stands 150
  - IBL L36 3 way decade series nice 300
  - IR 149 with new foam grilles 300
  - KEF Q1 cherry 200 pair
  - KEF Q35 speakers, black 200
  - KEF REF 105 mk1, walnut 2000
  - KHARMA 3.0 speakers 2000
  - LINN granite ribbon speakers, very small, boxed superb treble 700
  - LINN ISOBARIKS rosewood DMS serial# 005502, with stands 450
  - LINN KEILEDH with ku-stone stands, black 275
  - LUXMAN LX77, like Yamaha ml1000, japanese 3 way in heavy cabinet 250
  - MISSION 774 black boxed 200
  - MISSION 774 dark rosewood 250

- TURNTABLES/ARMS/CARTRIDGES**
- ACOUSTIC SIGNATURE ANALOG ONE MK3 with O.LIVE ILLUSTRIO 3000
  - AUDIO RESEARCH PH3 phono stage 750
  - AUDIO TECHINICA ATOC30 mc 200
  - BOULDER HST1 PHONO STAGE 1750
  - CARTRIDGE MAN MUSIC MAKER mk3 in stock
  - CARVER mc stepup with 3 impedance choices 200
  - CYRUS Aeg7 PHONO STAGE, black, boxed 325
  - DYNAVECTOR D120K very high tones, as new 300
  - EMT SUPRME mc cartridge 1995
  - GARRARD 401 on plinth with lid 600
  - GRAHAM SLEE PHONO STAGES NOW IN STOCK
  - GRYPHON HEAD AMP & 2 PSU 600
  - HCCOCC- GH242 vd hull silver wired, new 750
  - LECTOR HY VALVE PHONO STAGE 1000
  - LINN LP12, black, cirrus transpin, valhalla #80,000 FTFOK LVIII 1800
  - LINN TONEARM CABLE UPGRADE money back if you don't like it! 175
  - MANTICORE MANTRA with OL wired and modded rega arm 400
  - MICHELL LG90 SE new, decent trade in offered 419
  - MICHELL TEKNO A arm UK sales only 2500
  - NOTTINGHAM ANALOGUE DAIS (modern version) ANNA ARM 250
  - OKKI-NOKKI RECORD CLEANING MACHINE, new boxed 400
  - ORIGIN LIVE kit one modern deck with rega arm & goldring cartridge 400
  - ORIFON M20 SUPRME 200-300 hrs use only, excellent 275
  - ORIFON M2000 MK2, boxed 400
  - ORIFON KONTRAPUNKT A new boxed 500
  - ORIFON ROHMAN, just retipped, boxed 550
  - PINK TRIANGLE PT100 with GRADO ARM 700
  - REGA RB600 arm origin live wired and counterweight mod 350
  - SEBAST COGNOSCENTI (piano black varniz), SHE 309 1000
  - SHUNO BLUEPOINT SPECIAL, boxed uk sales only
  - TALK ELECTRONICS BREEZE 1 phono stage 150
  - THORENS TD1 26 ELECTRONIC, no arm 150
  - THORENS TD1 60 with thorens arm 100
  - THORENS TD1 66BC & REGA RB250 arm 175
  - TRICHORD DINO, black case 200
  - VAN DEN HULL MC10 just rebuilt, 450
  - WEST AUDIO 2.0 phono stage and reference psu NEW ON DEMO



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Ruark Talisman MK II speakers	£495
Hales Transcendence 5 speakers	£2895
Living Voice OBX-R2 speakers	£2800
Dynaudio Audience 7 speakers with stands	£395
Elic CL330 Jet speakers with stands	£995
Origin Live OL-2 speakers	£250
KEF Concorde speakers	£150

**PRE-AMPS;**

Quad 44 pre amp (late model)	£150
Conrad Johnson MC-10 Pre Amp	£395
Naim Nac 92 with Nap 90/3 amp	£595
Proceed PAV pre-amp	£995

**AMPLIFIERS**

Mark Levinson ML432 Power Amp	£4995
Audio Anaglogue Puccini Integrated Amp	£295
Quad 303 Power Amp	£95
Mark Levinson 11 & 12 Pre/Power Amp	£1695

Ayre AX-7 Integrated Amp	£1495
Kora Trode 100 SB Monoblocks	£3500
Mark Levinson 383 Integrated Amp	£2995
Classe A CA201 Power Amp	£1995
Arcam Alpha 8R Integrated Amp	£195
Arcam Alpha 8P Power Amp	£195
Cyrus 2 Integrated amp	£175
Mark Levinson 431 amp X-Demo	£3750
Perreux 200ip int amp	£1095
Audionote Neiro mono-blocks	£5495
Parasound HCA 1000A amp	£345
Audionote Keron mono's (new £28000)	£11995

**CD PLAYERS & TRANSPORTS**

Krell Studio DAC Balance/AT&T	£495
Electrocompaniet ENC Reference 1 CD Player	£995
Micromega Drive 3-DAC1	£495
Sonic Frontiers Transport 3 (5K new)	£1995
Sony CDPM41 CD Player	£60
Pioneer PD-S302 CD Player	£95
Counterpoint DA-10E DAC	£395
Roksan Atessa with ROC DA1 dac & PSU	£695

**MISCELLANEOUS**

Audience 4R power cords (£338) only	£195 each
Kimber high current power cord	£50

Russ Andrews "The Yellow" power cord	£20
Quad FM4 Tuner (late model)	£195
Technics ST-610L Tuner (FM/MW/LW)	£65
HNE 3 Tier Granite Stand	£375
Transparent Music Wave+ 10-ft pair	£425
AVI Tuner	£675
Accuphase P1200 Mains regenerator	£3500
Hitachi FT5500 MK II Tuner	£125
Technics ST-GT550 Tuner	£65
Winds ALM-01 Stylius Gage (New)	£525
Sony ST-SE570 Tuner	£60
15 Foot Transparent Music Wave Super single mono run.	£795
Zerodust Stylus cleaner (new)	£25
Zerodust CD & lens cleaning cloths (new)	£17.50

**TURNTABLES, CARTRIDGES & TONEARMS**

Linn LP12/itok with free Adikt cartridge	£495
Trichord Delphini Phonostage with PSU	£595
Kinshaw Perception phono stage with power supply	£350
My Sonic Eminent (EX review)	£1995
Audio Tekni Cartridge with step up	£2450
Blue Pearl (the prototype) Turntable with Graham Phantom arm	£9995
My Sonic Eminent cartridge (new)	£2750
Project 9c S carbon fibre silver wired arm	£375

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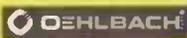


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Established 1988

I have the following items for sale. This is an assortment of ex demonstration (ED) or secondhand (SH) equipment. Most of the ex dem pieces will carry a warranty and are generally in pretty much as new condition. Secondhand items too are generally in as new condition. Please call to ascertain exact details. Unless otherwise stated items will be in original manufacturers packaging. If an item needs to be sent then the carriage costs will be borne by the buyer.

1. Tannoy Dimension 12 loudspeakers. Cherry. ED. Virtually unused. £4500.
2. Innersound Eros 111 semi-active hybrid Electrostatic speakers. Maple side cheeks. Complete with 600 watt bass amp. Brilliant, Brilliant speakers. ED. (New price £7500) £5000.
3. Sugden Masterclass AA mono blocks. 150 watts Class A. Black. ED. £4500.
4. Sugden Masterclass pre amp. Black. ED. £1595.
5. Tom Evans Vibe line pre amp. ED. £2700.
6. Unison Research SR1 hybrid valve amp. ED. £975.
7. Complete Chord Choral system including rack. Comprises Blu cd transport, DAC 64, Prima pre amp and Mezzo 50 power amp. Silver. ED. (Price new £11935) £8750.
8. Chapter Audio Verse 11 (NOT Plus) power amp. ED. £2250.
9. Roksan Kandy KA-1 Mk 11 Integrated amp. ED. £225.
10. Roksan Caspian CD player. SH. Some minor marks. £450.
11. Densen Gizmo. Brand new in box. £125.
12. Moon IS integrated amp. Black. No remote. Remotes are available separately from importer or me. ED. £1800.
13. LFD LS1 lineage pre amp. Black. SH. No box. £375.
14. Plinius SA102 power amp. Black. ED. £2995.
15. Plinius M8 pre amp. Black. ED. £1600.
16. Red Rose Spirit amp. ED. £695.
17. Red Rose Rosette amp. ED. Brilliant - especially partnered with R3 speakers. £1250.
18. Red Rose R3 speakers. Maple. SH. £1750.
19. Red Rose R3 speakers. Maple. ED. £1995.
20. Red Rose Rosebud 11 speakers. Piano Rosewood. ED. £2250.
21. Red Rose Spirit speakers. Rosewood. ED. £650.
22. Red Rose Spirit speakers. French Afrosomia. SH. £700.
23. Proac Tablette 2000 speakers. Walnut. ED. £425.
24. Acoustic Energy Reference AE1 speakers. Gloss Black. With stands. ED. Very little use. £1850.
25. Musical Fidelity A3CR pre amp. Silver/Gold. ED. £650.
26. Musical Fidelity A300CR power amp. All Silver. ED (unused) £1500.
27. Consonance J5000 Plus 300B integrated valve amp. ED. £1095.
28. Consonance M100 Plus 300B integrated valve amp. ED. £1150.
29. Wadia 301 Mk 1 cd player. Variable output. Silver. ED. £2250.
30. Audio Synthesis Desire. Decade power amp with Black Gate capacitor upgrade. ED. £2250.
31. Avid Diva turntable. No arm. ED. £975.
32. Audio Analogue Maestro. An absolute monster of an integrated amp. ED. £1995.
33. DNM 3B Twin 2 box pre amp. SH (Cost new £3000) £1350.
34. Exposure XX111 pre amp. New. £995.
35. Exposure XXV111 power amp. New. £995.
36. Exposure XX111 CD player. New. £995.
37. Consonance Cyber 50 valve line pre amp. Mahogany top. ED. £725.
38. Consonance Cyber 40 valve phono stage for m/m and m/c. Cherry top. ED. £650.
39. Living Voice Auditorium speakers. Cherry. Black plinths. ED. £1250.
40. Audia CD One cd player. Black/Silver. ED. £2750.
41. Audia Flight pre amp. Black/Silver. ED. £2750.
42. Audia Flight 50 power amp. Black/Silver. ED. £3000.
43. Vienna Acoustics Haydn speakers. Rosewood. ED. £400.
44. Vienna Acoustics Mozart speakers. Beech (one grille is broken) ED. £850.
45. Vienna Acoustics. Beethoven speakers. Black Ash. ED. £1500.
46. Anthony Gallo Reference 3 speakers. Black/Silver. ED. £1800.
47. Harbeth HL P3ES 11 speakers. Cherry. ED. £550.
48. Talk Electronics Thunder 3.1B cd player. Fixed output. Silver. ED. £1450.
49. Talk Electronics Hurricane 3.1B pre amp. Black. ED. £1350.
50. Talk Electronics Tornado 3.1B monoblock 200 watt power amps. Black. ED. £2150.
51. Veritas "20" speakers with matching stands. Piano Black. ED. £995.
52. Veritas H3 Floorstanding folded horn speakers. 102db sensitivity Gloss Black. ED. Paul Messenger rated these as one of his products of the year when he reviewed them (cost new £5995) No boxes. £3500.
53. Totem Model 1 speakers (not Signature version) Cherry. SH. £750.
54. Alon 1 speakers. Light Oak (cost new £1695) ED. £650.
55. Alon Petite loudspeakers. Walnut (cost new £1295) ED. £600.
56. Proac CC1 Centre channel speaker. Mahogany. Slightly marked. ED. £350.
57. PS Audio P600 Multwave mains regenerator. ED. £1995.
58. Audionote ANK/SpX speakers. Walnut. SH. £550.
59. Audionote AZOne speakers (the original design) Never used. £250.
60. Proac Response 1.5 speakers. Black Ash. ED. No boxes. £750.
61. Meadowlark Swift speakers. Light Oak. ED. £550.
62. Philosophy Audio Gold Series speaker cable. 5m Bi Wire terminated with banana plugs. This cable is one of the very very best. ED (Cost new £1875) £1200.
63. Musical Fidelity X-80. New. £275.
64. Musical Fidelity X-150. ED. Never used - displayed only. £450.
65. Wheaton Triplanar MkV11 tonearm. With fly lead terminated with RCA phono plugs. Brand new and unused. Complete with manual and gauges. £2750.
66. Pathos Logos hybrid valve amp. ED. £2150.
67. Musical fidelity M3 Nu Vista integrated amplifier with separate power supply. As new condition. Boxed. SH. £1750.
68. SME Model 30 with special order Silver V arm fitted with Micro Benz LP moving coil cartridge. Arm lead is Nordost Quattrofil. As new with all tools and crate. Two and a half years old. Little use. Previous owner buying house !! £1750.

- \* LATEST NEWS : THOR PRE AND POWER VALVE AMPS FROM THE USA NOW ON DEM - AMAZING THEY ARE TOO !!
- \* NEW SUGDEN MASTERCLASS AMPS IN SOON
- \* MOON SUPERNOVA CD AND i7 AMP ON DEM
- \* VELODYNE DD 15 AND 18 ON DEM
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## Ex-demo and second hand items

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<b>Digital</b>			ProAc Tablette Reference 8 Signatures YEW S/H	925 749
Audio Synthesis DAX Decade 22 Bit Balanced S/H	3500	1799	Revel F50 Performa In Sycamore S/H	6500 3299
Audio Synthesis DAX Decade 22 Bit Single ended S/H	2999	1499	Sonus faber Concertino Home Piano lacquer S/H	699 399
Densen Beat400 XS x demo	2600	1749	Sonus Faber Leather Stands, fixed height, x-demo	310 199
Krell SACD Standard x-demo	3998	2995	Spendor S3 Cherry S/H	599 379
Krell KPS20i/L CD/Processor S/H	14995	3299		
Musical Fidelity Nu Vista CR 3D Player S/H	2999	1699		
Orpheus labs One DAC with anagram x-demo	3150	1799	<b>Cables and Accessories</b>	
Orpheus labs Zero CD player x demo	4600	2999	Atacama 50cm Sand filled stands S/H	179 69
Primare V10 CD/DVD Player x-demo	795	499	Audio Note 2x5ft bi wired AN Spa Speaker cable S/H	599 299
Sugden masterclass CD x demo	2700	1999	Audio Note 1m ANVx AES/EBU balanced Digital S/H	165 99
Sony CDP X940 SACD Player S/H	549	249	BCD Engineering 1000 Table 4 tier S/H	1650 899
Theta Generation V Balanced S/H	6290	1299	Cogan Hall Intermezzo EMD 0.75m RCA S/H	N/A 99
Theta Pro Basic II DAC with Oscom/Balanced S/H	2990	695	Cardas Cross 1.5m RCA-RCA S/H	550 299
Wadia 302 Black x-demo	4000	2999	Cardas Golden Cross 1.5m balanced S/H	940 499
			Cardas Golden Cross 1.5m Balanced S/H	940 499
			Cardas Golden Cross 2.5m bi wired speaker cable S/H	1700 799
<b>Analogue</b>			Madrigal MDC1 1m AES/EBU 110ohm Digital Cable new boxed	420 249
Crown Jewel Ltd Edition MC Cartridge 100hrs	2650	1499	NBS Pro Balanced 4ft interconnect S/H	1799 499
Conrad Johnson EV1 Phono stage x demo	1650	995	Nordost Shiva 2m mains cable x-demo	220 175
Dynavektor DV17d2 MKII S/H	599	299	Isotek Substation fully loaded S/H	750 399
Kuzma Stabi/Stogi S Turntable New & Boxed	N/A	1399	Isotek Qube2K S/H	1495 849
Mc Cormack Micro Drive Phono Stage S/H	650	399	PS Audio Ultimate Outlet S/H	328 169
Ortofon Rohmann MC Cartridge 300Hrs S/H	1000	449	Siltech FT12 G3 2x0.8m Silver Speaker cable x-demo	540 275
SME Model 10A 4 years old S/H	3200	1699	Siltech LS188 Classic 2x3m Silver & Gold Speaker cable BNIB	3950 2995
Sumiko Pearwood Signature 500hrs S/H	995	399	Siltech Signature G5 0.75m AES/EBU Balanced Digital Cable S/H	530 249
Rega P2/Bias Turntable S/H	270	179	Siltech Signatures G5 0.50m AES/EBU balanced Digital cable S/H	420 179
Roksan Xerxes Alphason Xenon XPSII S/H	N/A	549	Siltech SPO18M 1.5m UK mains cable S/H	420 179
			Siltech SPO18M 1.5m UK mains cable S/H	420 179
			Siltech SPO18M 1.0m UK mains cable S/H	299 119
<b>Preamplifiers</b>			Siltech SPX20 1m IEC-Shuko Mains cable x-demo	199 95
Audio Analogue Bellini Remote Preamplifier X-demo	625	399	Sound Organisation Record Rack with CD insert S/H	N/A 40
Audio research LS1 Hybrid Preamplifier S/H	1798	649	Spectral MI330 2m RCA BINB	580 349
Conrad Johnson PV10bL valve Preamplifier x-demo	1299	799	Spectral MI-350 20ft Interconnect RCA-RCA x-demo	1400 799
Conrad Johnson PV14L Remote controlled valve x-demo	2399	1750	Spectral Z Chord III 2m mains cable x-demo	999 499
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Hi-Fi World measures all incoming products before sending them out to reviewers and is unique in having such a rigorous vetting system. It reflects our dedicated approach to assessing audio equipment. Nothing gets by before thorough scrutiny.

In-house measurement is costly and time consuming, yet it has always been central to our belief that both readers and manufacturers deserve it, because there is no alternative if complex technologies are to properly assessed.

Measurement achieves many things. It ensures a product is working properly before it is subjectively auditioned. We pick up problems like loudspeaker drive units wired out-of-phase by accident, digital filters that roll-off in a bizarre fashion due to design error, a transmission line loudspeaker with no bass (!), amplifiers with excessive d.c. offsets, excessive jitter and all manner of other funnies.

Manufacturers published data is then checked against our measurements. There is usually little problem here.

The reviewer is then given the results. This gives useful guidance on what to watch out for in listening tests. For example, if three CD players use the same chip set they may well sound much alike in their basic attributes, if not identical. This is useful information for a reviewer.



Hi-Fi World uses a range of test equipment from around the world, including a Rohde & Schwarz UPL for testing CD and DVD players. Amplifiers are tested with 8903B Audio Analysers from Hewlett Packard. Loudspeakers are measured with a Bruel & Kjaer measuring microphone and Hewlett Packard 3561A spectrum analysers. We use three of these for basic test work and to ensure our listening room and conditions are balanced. Tuners are measured with a Leader 30125 Lab generator and Marconi 2015 RF generator, plus external MPX filters and equalisation.

We continue to upgrade our testing to keep up with the latest standards, to ensure that both readers and manufacturers receive the most accurate information possible about the items we review. No one does it better than Hi-Fi World.

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## WIN A FANTASTIC ASTINtrew CD PLAYER, PREAMPLIFIER AND POWER AMPLIFIER WORTH £1,739!

**A**STINtrew is a brand new company that designs and manufactures stylish yet affordable hi-fi, and this month's *Hi-Fi World* competition gives you the chance to win a complete electronic system, comprising the AT1000 preamplifier, AT5000 power amplifier and AT3000 CD player. Here's what Channa Vithana had to say about it in the October 2006 edition:

"Founded by Michael Osborne in 2005, the ASTINtrew system comprises the (£495) AT1000 preamplifier, (£645) AT5000 power amplifier and (£599) AT3000 CD player. The AT1000 preamplifier uses a Burr Brown PGA2311 resistor network volume control chip (and flywheel type

dial). Internally, for the power supply, the AT1000 uses a screened toroidal transformer with isolated power supplies for better sound. The AT5000 power amplifier is a dual mono type. The two (overrated) 300VA toroidal transformers used offer both channel isolation with plentiful dynamic headroom and bass control.

The (£599) AT3000 CD player is distinctive for an affordable design in that it uses a Phillips VAM1202 transport (and CD711 servo). This transport is isolated from the main casework by being mounted on a 4mm thick aluminium base plate, with compliant anti-resonance dampers between it and the plate. In operation, the transport itself is quiet and its disc-loading drawer glides in and out

smoothly with low noise. For the electronic design, ASTINtrew says, "a hybrid valve buffer output circuit for the AT 3000 was developed using the ECC88 double triode valve, selected for its exceptional linearity. Each unit measures 430x340x110mm and the finish and build quality is very good for the asking price as the gunmetal/titanium finish is superb.

Rhythms from the cello, violin and viola of the Balanescu Quartet from their 'Maria T' release were reproduced with a surprisingly high resolution sound. The timbre of the violins, for example, was excellent; they sounded well defined and extended while the deeper cello parts were agreeably deep, textured and also very nicely defined. Instrumental separation was excellent - the ASTINtrew system produced deep, wide and communicative music via the string music of the Balanescu Quartet. On 'Yesterday Once More' by the Carpenters, the sound had excellent spatiality, which helped to create a wide and deep presentation. Instrumental separation was also excellent and thus clearly differentiated the peerless lead vocals from the ostensibly easy-listening compositional style of the music. Instrumental and vocal resolution was superb and combined with the excellent spatiality...

The simple acoustic arrangements at the beginning of 'Peace At Last' by The Blue Nile produced the perfect canvas for Paul Buchanan's longingly melancholic vocals. Both vocals and instruments had excellent definition, texture and resolution and when the wonderful gospel break arrived, the ASTINtrew system didn't get flustered and was able to control this extra level of vocal texture and dynamics with ease, without stiffing its communicative ability. Surprises all round, then, at what this 'clean sheet' designed ASTINtrew system managed to achieve... individualistic visual identity accompanied by great sound quality, build and value."

If you'd like to win this superb system, then all you have to do is answer the following four easy questions. Send your entries by 31st October 2006 to: **November 2006 Competition, Hi-Fi World magazine, Unit G4, Argo House, The Park Business Centre, Kilburn Park Road, London NW6 5LF.**

### QUESTIONS

[1] ASTINtrew was founded by whom?

- [a] Michael Osborne
- [b] Ozzie Osbourne
- [c] Michael Palin
- [d] St. Michael

[2] The AT1000 pre-amp uses what volume control chip?

- [a] Burr Brown PGA2311
- [b] Analogue Devices PX2434
- [c] Crystal Semiconductors DD222
- [d] National Panasonic KL334

[3] The AT3000 buffer circuit uses which tube?

- [a] ECC88
- [b] 300B
- [c] 845
- [d] K5881

[4] Which Hi-Fi World writer reviewed the ASTINtrew system?

- [a] Channa Vithana
- [b] Armit Unilet
- [d] Kulwinder Singh Rai
- [c] Rahiel Nazir

November Competition  
Hi-Fi World Magazine  
Unit G4 Argo House  
The Park Business Centre  
Kilburn Park Rd,  
London NW6 5LF

### RULES AND CONDITIONS OF ENTRY

- ONLY ONE ENTRY PER HOUSEHOLD
- MULTIPLE ENTRIES WILL BE AUTOMATICALLY DISQUALIFIED
- PURCHASE OF THE MAGAZINE IS NOT A PRE-CONDITION OF ENTRY
- NO CORRESPONDENCE WILL BE ENTERED INTO
- THE EDITOR'S DECISION IS FINAL
- NO EMPLOYEES OF AUDIO PUBLISHING LIMITED, OR OF ANY COMPANIES ASSOCIATED WITH THE PRODUCTION OR DISTRIBUTION OF THE PRIZES, MAY ENTER

**entries will be accepted on a postcard only**

**AUGUST 2006 REVOLVER RW45i LOUDSPEAKER WINNER:  
Michael Stone of Newport South Wales**



## DIY Valve Amplifier Parts - Valves, PCBs, Connectors, Hardware



We stock a full range of valves (tubes) from famous manufacturers. The list below is a selection of favourites. If you don't see what you want - please ring or e-mail. We are happy to match valves on request.

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Sovtek 5881	£12.49
EL34 ElectroHarmonix	£11.85
JJ EL34	£15.49
5U4G Russian	£9.94
GZ34 JJ	£16.99
5687 WB Philips NOS	£12.49
Svetlana 6N1P	£6.50
Mullard ECL83 NOS	£14.99
ECF80 EI	£7.30



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B7A Chassis Mount	£4.70
B9A Chassis Mount	£4.70
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by Morgan Jones £29.50

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by Morgan Jones £19.50

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by R.C. Alexander £18.00

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by Owen Bishop £19.50



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phono plugs - pack of 4 £25.00

Gold plated, teflon insulated  
phono sockets - pack of 2 £4.75

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pack of 2 £9.40

Twin speaker Terminal Set  
chassis insulated - Red/Bk £2.94

Chassis mount earth post  
nickel plated £1.23



ALPS Blue Beauty  
50k dual log pot. £13.69

Stereo carbon track  
100k dual log pot. £2.95

Cermet 'Humbucker' 2W at 70 C  
22R or 100R linear pot. £8.99

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2 pole 6 way rotary wafer £1.88

AC 'mains' chassis switch  
DPST 4A silver contacts £1.99



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PSU II power supply	£16.25
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## POWER SUPPLY PARTS

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Cree CSD4060A rectifier diode  
Schottky 600V 4A £6.75

Jensen 4700uF 16v DC  
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RIFA 100uF 100V DC  
Axial Al Electrolytic £4.25

Polyester 0.1uF 630v DC  
Metalised film £0.55

Panasonic 220uF 500V DC  
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Bridge Rectifier 25A 700V  
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**LEGENDARY CROWN DC300A** power amplifier in superb condition, recently serviced AB+B output configuration. Freq Response DC - 20kHz. T.H.D. 0.0005% at full power. Will drive into any load.  
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£350. Tel 07932 664480. (Dec)

**WANTED: QED Speaker stands.**  
Tel: 020 8262 7568 (evenings)  
(Nov)

**TEACA-7300** Direct drive capstan I.C. logic control reel to reel + spare tape, £300. Nakamichi 1000 cassette £900. Audio Synthesis Dax Decade 2, remote control, £750. Tel: 01189 760 756 (Nov)

**B&W NAUTILUS 802**, 3 way floorstanding cherry speakers, Cyrus APA7 mono's + ACA7 + PSXR, Pioneer F504 RDS, Primare 30.2 CD, Rega Planar 25 with cartridge DV20X Lehman Audio Black Cube. All in excellent condition. For full details telephone 07779 142 961 or Email: myketyke@netbreeze.co.uk (Nov)

**WANTED: BANG & Olufsen U70** stereo headphones. Must be in excellent/mint condition. Offering £180. Email: fiskallen@aol.com or telephone evenings 5pm - 9pm 01865 378 578 (Oxford) (Nov)

**LINN IKEMI £950**, Trivista 21 DAC £750, Talk Electronics Hurricane/Whirlwind pre with Tornado monoblocs £750, all good, prefer to demonstrate. Reason for sale; have gone all valve. Tel: Chris 01227 274005 (Kent) or E-Mail chris.iredale@btinternet.com (Nov)

**NAIM 150x**. Purchased new in Oct. 04. Mint, boxed, remote, lead. Can Dem. 01273 385209 (Brighton) (Oct)

**CLASSIC HI-END HI-FI**. Pioneer PD91 Reference CD Player, re-clocked by Trichord Research. Piano laquer Black with Polished Mahogany end cheeks. Exemplary condition, Instructions, Boxed £490.00 ono. Asemblage DAC 3, VGC, Vaish Caps, Black. £290.00 ovno. Tannoy ST200 Supertweeters in Oak, Exemplary, Boxed. complete with ST81C speaker cables £600.00 ovno. Emigrating. Tel: 01403 251935 or Email: John501hifiman@aol.com (Nov)

**PHILIPS CD204** CD Player, classic 1st gen 14x4 machine, CDMI Pro Mech, stunning sound, mint condition, boxed, minor fault but still plays perfectly. £95. Tel: 07921 905827 (Nov)

**NAIM EQUIPMENT**, c/w boxes, manuals, leads, remotes etc. NAC52 and SuperCap (1996) £3300. Pair NAP135s (1989) £1900. CDX (2001) £1200. NAT02 (1995) £750. CDI (1994) £450. Tel: Mark 07770 667 037 (Nov)

**SHAHINIAN COMPASS** speakers. Light oak in mint condition. Superb natural sound. £1450 (£2600). Quicksilver valve monoblocks, smooth, powerful amps upgraded by Croft. £850. Tel: 0115 9383 814 or 07752 619 300 (Nov)

**UNISON RESEARCH Smart 845** monoblock amplifiers, £1600; GRAAF WFBOne preamplifier, £700; PMC FB1 loudspeakers, £700. All prices are ONO, or will accept £2500 for the lot. Tel: 01923 219711 (Watford) (Dec)

**EXPOSURE XVIII** regulated mono-block power amplifiers and Exposure XVII Stereo pre-amplifier £1000. Tel: 0114 268 5753 (Nov)

**PAIR OF LOWTHER EX3** drive units in well made 'single upwards driver Audiovector' style cabinets. Excellent sound and condition. £550 ono. Tel: 01636 830 131 after 6pm (Nov)

**LINN ISOBARIK** domestic monitors with dedicated stands. Home use only. £1200. Moving house, can be heard working. Tel: 07931 316 710 or Email: ianpegam@aol.com (Nov)

**MUSIC FIRST** Transformer coupled passive pre-amp. Read the reviews. Balanced and single ended. £795 (£1500). Leak Troughline Series Three One Thing Decoder, just fully overhauled. £345. Fine condition. Tel: 01424 203 192 (Nov)

**MF X-10-v3** MuVista Buffer £190. MF X-Cans-v3 valve headphone amplifier £120. NAD 1000 monitor pre-amplifier £100. NAD 910 Dolby Pro-Logic processor £50. All boxed with instructions. Tel: 01344 454 504 (Bracknell) (Nov)

**BONNEC TIMPANO** pre-amplifier includes phonostage latest silver board specification £3500. Linn Klout power amp (x2) £850 each. Can sell separately. All mint condition. Tel: 07736 269 707 (day) or 01704 536 852 (evenings) (Nov)

**MERIDIAN LIVE** speaker system M20.5 includes Transporter 207 + CD box player 207. Cost £5000. Will accept £1250. Tel: 01708 450 186 (Nov)

**CELESTION TWEETERS** Wanted, HF1300 & HF2000, in 8 ohm versions fo IMF RSPMIV. (These read about 5 ohms DC resistance with a multimeter) also TDL Reference/Standard Studio 4's. Tel: 01287 209 115 (Nov)

**WANTED: MUSICAL Fidelity** DAC21 digital analogue converter in mint condition. No dents. No scratches. I will pay decent price. Tel: 0777 229 1425 (Dec)

**TALK THUNDER** Three CD player, Talk Cyclone One amplifier, both silver. 4x 4.5mVan den Hul CS122 cable for biwiring. Excellent. Purchased £1700 2003, sell £375. Tel: 0116 284 9087 (Nov)

**PRIMA LUNA** Line level valve amplifier, 4 EL34s, brand new, boxed, £650. Spondor SA1 mini monitor loudspeakers. Really rare, super-fi, cult item, £350. House move. Lots more available. Ring John 01704 530 928 (Dec)

**SANSUI AU719** classic Japanese heavyweight amplifier. 17 kilos, 1970's, 90x90w. Excellent condition. Manual and circuit diagram. £175. Technics ST-S6 FM/AM tuner. Instructions. High performance. £85. Tel: 01274 632 492 (Bradford) (Nov)

**CREEK 4040** amplifier. Early model. Small. Instructions. £85. NAD 402 FM tuner. Excellent. £85. Technics stereo, 3 head, cassette deck, RS-AZ6. Mint. £75. VWharfedale Diamond Mk1, sprayed white. £70. Tel: 01274 632 492 (Nov)

**NEAT ACOUSTICS Ultimatum MF9** special piano black finish. Immaculate. £5750. Delivery possible. Tel: 07852 265 721 (Nov)

**ORACLE CD2000** Transport. Pristine condition. Perfect in every way GBP3,500. Viva Audio Solista, barely run in GBP5,000. Tel: Chris 07796 957142 or Email: eliseathome@hotmail.co.uk (Dec)

**AUDIOLAB 8000S** Integrated Amplifier: £250. Audiolab 8000P Power Amplifier: £250. Audiolab 8000CDM & DAC CD Player and Decoder: £400. All in good condition, with original packaging, manuals & quality interconnects. Or all units for £800 ono. In addition: Quality cherry wood and glass shelf Hi-fi stand: £200 Contact Mark on Tel: 01284 850750 (Nov)

**EXPOSURE XVIII** regulated mono-block power amplifiers and Exposure XVII Stereo pre-amplifier £1000. Tel: 0114 268 5753 (Nov)



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22cm (8") Paper Cone Bass unit 89dB for TL or Aperiodic designs
- SEAS CA18RLY** £51.11  
18cm (7") Paper Cone Bass unit 88dB for TL or Aperiodic designs
- SEAS CA15RLY** £53.52  
15cm (5.75") Paper Cone Bass unit 87dB for Bass Reflex designs
- SEAS 29TFF/W** £38.34  
29mm soft dome treble unit used in the WD25 STD speaker kits
- SEAS T29CF001** £137.82  
29mm Excel soft dome treble unit used in WD25 XL speaker kits
- SEAS T25CF002** £161.09  
25mm Excel 'Millennium' treble unit lowest distortion, smooth response



- SONIQS M8 spike set** £4.70  
Set of four speaker floor spikes with matching M8 cabinet inserts
- SONIQS M4x16mm** £0.08  
**SONIQS M4x25mm** £0.09  
Hex Hd Nickel Plated wood screws

**SONIQS PDC per metre** £2.61  
Heavy 6mm Bitumen Panel Dampening Compound 50mm wide strip

**SONIQS CDF per metre** £1.49  
Long fibre enclosure damping mat 30mm thick by 250mm wide

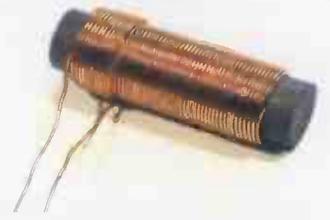
**Aperiodic reticulated foam** £1.25  
80ppi reticulated foam strip for Aperiodic port airflow resistance



### SONIQS Polypropylene Caps

SONIQS capacitors are formed from high voltage polypropylene film and hand soldered using silver solder to copper leads. Construction and resin encapsulation has been formulated for optimum acoustic and electrical performance.

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**PXX 3.3uF 250V** £1.70  
**PXX 4.7uF 250V** £2.06  
**PXX 5.6uF 250V** £2.35  
**PXX 6.8uF 250V** £2.66  
**PXX 8.2uF 250V** £2.90  
**PXX 10uF 250V** £3.18  
**PXX 12uF 250V** £3.74  
**PXX 15uF 250V** £5.03  
**PXX 18uF 250V** £6.03
- SAX 1.0uF 630V** £2.40  
**SAX 1.5uF 630V** £2.81  
**SAX 2.2uF 630V** £3.17  
**SAX 3.3uF 630V** £4.19  
**SAX 4.7uF 630V** £4.49  
**SAX 5.6uF 630V** £5.28  
**SAX 6.8uF 630V** £6.16  
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High Power resistors encapsulated in Vitreous Enamel to minimise vibrational effects. Tolerance 5%. State value when ordering.

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 £3.60

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# private ads

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I.P.L. S3TL Transmission Line speakers. Nicely constructed. Mahogany. Reluctant sale. Downsizing. £250. audio Technica AT OC9 MC cartridge. Very low miles. Any inspection. Lentic head amp. Together £150. Tel: 01362 850 258 before 8pm. (Nov)

BEARD P35 Mk1 power amp £400. Audion Sterling SE amp with DACT volume control £300. Lowther Acoustas with DX2 drive units. Will split, £300. Arcam T51 AM/FM tuner £70. Cambridge CD32 £30. Quad 303 all Net Audio mods done £225. Meridian 203 DAC £90. Tel: 01724 710547 (Lincolnshire) (Nov)

WANTED: ARMSTRONG 701/721 pre/power amplifier. Armstrong 602 loudspeakers. Tel: 01843 843 145 (Nov)

QUAD ESL 57's fully rebuilt using One Thing panels, new electronics, new wiring, refurbished cosmetics, mint. Will dem. £975. For more information contact Andy 0116 239 2373 (Nov)

RICHARD ALLAN LS3/5A in walnut. Boxed, in mint condition, 2 years old, very low use. Cost new £1000. Accept £650. No offers. Tel: 01765 698 637 (N.Yorks) (Nov)

FOR SALE: Jamo D135 loudspeakers, minor marks otherwise good condition (no-charge). TDL NM2 loudspeakers scruffy, no-charge. Hitachi 84870 loudspeakers good condition no-charge. Proac Tablette The One O.C. knocked about a bit. No-charge. toshiba freeview receiver no-charge. Goodmans VHS no-charge. Tel: 01843 843 145 (Nov)

WANTED: MISSION 770 loudspeakers, 1978+ vintage. Tel: 01843 843 145 (Nov)

# trade ads

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NORTHWEST AUDIO Jumble, Saturday 11th November, 10.00am to 4.00pm. Stanfield School, 134 Liverpool Road, L23 5TH. M62, M6 access. Parking, Refreshments, Hi-Fi Bargains, LPs, CDs, Magazines. Trade tables available. Phone John 01704 530 928 (Dec)

VINYL LPs Wanted. Folk, Rock, Jazz, Blues, Reggae, Soul, Classical. Must be in excellent condition. See website for more information. Phone:- 0845 094 1997 Lists:- tantrel@bigfoot.com Website:- <http://www.tantrel.com/> (Mar07)

STUDER REVOX Sales Service. PR99 III £950. A77 II £400. PR99 II £750. C221 £350. B710 £400. B760 £450. A710 £550. B67 £450. A807 £550. A80VU £1200. A810 £1400. Tel: 01246 275 479 (Nov)

BRILLIANCE INTERCONNECTS and speaker cables employ Teflon insulation throughout. HFW said 'Results way beyond those expected at the price' and 'Sound/£ ratio is superb'. Demonstration cables available. Contact Mike on 07963 117 341 [www.brilliancehifi.co.uk](http://www.brilliancehifi.co.uk) (Nov)

AUDIOPUBLIC, 78 Otley Road, Headingley, Leeds, 0113 217 7294. Yorkshire's newest Hi-Fi retailer, stockists of Naim Audio, Rega Research, Conrad Johnson, Sugden, Dynavector, (cartridges and amplifiers) and many more. Please call for advice. (Nov)

FOR SERVICE, Repairs, Upgrades and Re-Manufacturing of all valve audio equipment. Leak Troughline specialists, re-aligned etc. For more information contact E.F.G. (London) Ltd inc. E. Gane and Son Est 1948 on 020 8743 2727 (Nov)

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AMAZING CABLES! DIY or ready made solid silver interconnects, speaker cables and powercords, with world-class connectors. True high end performance at real-world prices. Sole UK agent for Voodoo Cable of Germany - [www.voodoo-cable.com](http://www.voodoo-cable.com) Tel. 0115 982 5772 after 7pm, Email [bob@skydivers.co.uk](mailto:bob@skydivers.co.uk) (Jan)

AUDIO SHED. Top quality hi-fi for sale. Beuhorn, Croft, Voodoo, Headlund Horns, Experience Filtration, H-Cap, Cut Loose Audio, Canary Audio, Omega speakers etc. Blackgates and Audio Valves also available. Please call 01923 828 765 or 07900 918 882 (Nov)

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December's Hi-Fi World is a classic issue. No, that's not us being presumptuous about its quality - rather, it's devoted to classic kit, old and new! You'll find a wide range of audio classics reviewed, plus features about buying and maintaining vintage and modern equipment. Here's what we hope to bring you:

PHILIPS CD204 - FIRST GEN CD SOUNDING GREAT  
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BASIS 2001 SIGNATURE TURNTABLE - THE LATEST AND GREATEST, COMPARED TO A CLASSIC BASIS

plus:

- NAD M3 DUAL MONO AMPLIFIER - MAX POWER FROM A CLASSIC NAME
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# THE YES ALBUM

## YES

### 1970

"imagination was allowed to fly, and musical exploration took precedence..."

**Y**es – the archetypal progressive rock band, and one often derided for musical pomposity that made Beethoven look like a three-chord punk rocker.

Derided for ace keyboard player Rick Wakeman's magnificent wardrobe and banks of synthesisers. Derided for a group line-up that has undergone so many changes (there have been fourteen full-time members in the band's history!). And derided for a suite of pseudo-mythical, quasi-religious lyrics that made the Dalai Lama look like a quack prophet from Monty Python's 'Life Of Brian'. Yet, Yes are also one of the most imaginative, risk-taking, focused and, above all, uplifting musical outfits the world has ever seen...

'The Yes Album' was the group's third album, and the release that launched the group into stardom. "Ahmet Ertegun dropped Yes right after the 'Time And A Word' album," said Phil Carson, the then UK boss of Atlantic Records, "I called up Ahmet and was able to convince him to withdraw the drop notice, which he did. Then we made The Yes Album which most Americans think is still the first Yes album."

This album also saw the recruitment of future band stalwart, Steve Howe. Talented guitarist, Howe lent a range of magical guitar moments on the album but his *piece de resistance* was 'Clap', known as 'The Clap' because of Jon Anderson's introduction on the record and, thus, forever associated with a particular

'intimate disease'. Not, so, apparently! The title is derived from Howe's young son Dylan, who clapped while Steve was playing the piece at home. On the flipside, the album was the catalyst for the departure of keyboard player, Tony Kaye, before Wakeman was drafted into the fold.

This was the album that changed the direction and the form of the band. With longer and more complex ditties such as 'Yours Is No Disgrace', 'Starship Trooper' and 'Perpetual Change', the band were allowed to explore every corner of a song as opposed to knocking out a couple of verses and a chorus punctuated by a middle-eight. With these titles, imagination was allowed to fly and a musical exploration took precedence.

Like their classical forebears, the band examined complex rhythmic structures and time signatures. The technique allowed the writers to dwell. Now, it was okay to be patient, to examine the music from all angles and to reveal its beauty in detail as opposed to rushing, hell for leather. For the first time, magnificent and complex musical structures could be built. Although, inspiration still came from the usual sources, "I had the book, [Robert Heinlein's *Starship Troopers*] I was a Sci-Fi freak," said Anderson. "I was reading those kind of books. I just thought it was a very strong title for a song. I just had this vision of the 'Starship Trooper' finding the self and the soul and the light within, y'know."

When the album was released,

those close to the band worried that the album might not be promoted properly by Atlantic. What followed was a twisted psychological scam mixed with lots of good luck. It began by the band management personally running around London putting posters into Virgin record shop windows. Consequently, the album entered Virgin's own chart. Then a simultaneous postal strike prevented general record store sales returns. "So the music papers took their charts from Richard Branson's Virgin store. Whatever he sold there was the chart," said bassist, Chris Squire. And, because London was a Yes fan hub, the album reached No.1 in the Virgin chart.

Consequently, when the strike ended, other shops wondered what the fuss was about, they stocked the album too and, because of the chart fudge, everyone wanted to investigate this strange No.1 album. This then forced Atlantic USA to sit up and take notice, "Oh my God", said the Atlantic staff, 'this little folk group seem to have a number one album! We'd better do something about promoting them!'" smiled Squire. After the album came out the group caught fire in America.

As far as recommending format editions, then if you have the original issue CD, bin it. Head for one of the remastered editions out there and you won't go too far wrong. For the vinyl, the original edition is very good. Another recommended edition is the more recent Rhino/Elektra release on heavyweight, 180gm vinyl. **PR**

EST.



1979

## INTRODUCTION

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Before you buy "an authentic Italian loudspeaker" please enquire where it was made! Opera combines the traditional Italian passion with 21st century maths of designer Mario Bon. The value and performance are outstanding. And they are made in Italy: I watched them being built!! Models stocked: from the £595 Mezza to the £9,995 Tebaldis. Highly recommended combining emotion and accuracy; value and looks.



## ESOTERIC

TEAC decided to keep UK customers waiting for the special edition X-03se at no extra price for the stiffened power supply and other refinements. It has been worth the wait. This is a combination of VRDS precision engineering and painstaking audiophile refinement. At £4,995 it has to be the high-end bargain of the decade.



## UNISON RESEARCH

We commend the quality and value of Unison Research amplifiers (we stock models from £950 to £32,950!). From the astonishing 845 Absolute, the chief designer Prof Sacchetti has derived a series of wallet-friendly integrated valve amps; the £5500 Performance; the £2950 Sinfonia and now the £1795 Preludio. Hard to believe, but makes Chinese products overpriced (even the Chinese amps with British or American badges!)



## JPS LABS

The next decade's cables available now! SuperConductor brought JPS to the attention of the world's audiophiles almost 20 years ago. Now the third generation SuperConductor is launched: interconnects and loudspeaker cables which definitely deliver performance audibly ahead of anything you have heard. Thanks to JPS policy of minimal marketing, the price of a metre pair is £795 and £349 for the "junior" version. Home loan/ approval is available.



## LYRA

The SKALA phono cartridge is £1,895. Now any new model from LYRA creates headlines in the world of analogue, but the SKALA is the fifth generation of new technology which defines the future of what is now the greatest phono cartridge designer: on Planet Earth. To offer this performance for less than £2,000 is Heaven on Earth!!



## PATHOS

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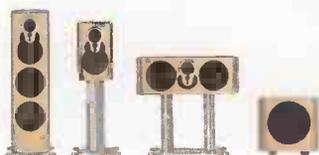


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