APRIL 2005

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# **HI PERFORMANCE**

Mordaunt Short's *towering* Performance 6 MUSICAL FIDELITY A5cr PRE-POWER CONSONANCE SACD PLAYER

### VINYL SPECIAL:

NOTTS ANALOGUE, ROKSAN, MICHELL, ACOUSTIC SOLID & GARRARD 401 GOLDRING GR2 vs. PRO-JECT DEBUT 3 ORIGIN LIVE CONQUEROR TONEARM AUDIOPHILE VINYL FEATURE ORTOFON RONDO BLUE MC PHONOSTAGE SUPERTEST REGA TUNE UP

1980 Trio Lo-7D meets 2005 Michell GyroDec

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APRIL 2005

COMPETITION 12-PAGE DIY SUPPLEMENT \* READER CLASSIFIEDS

WORLD

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Shown above, C352 Stereo Amplifier, the 2004 What Hi-fi Sound and Vision? magazine Product of the Year with its matching CD Player, the C542. Both models available in titanium or traditional grey finishes.

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

#### ADVERTISING

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

#### ACCOUNTS

 Sharon Mehlhom

 tel:
 +44 (0) 20 8841 8892

 fax:
 +44 (0) 20 8841 9144

 e-mail:
 accounts@hi-fiworld.co.uk

#### WORLD AUDIO DESIGN

www.wondaudiodesign.com							
tel:	+44 (0) 1245 450 651						
e-mail:	sales@worldaudiodesign.com						

#### 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@webscribe.co.uk

#### WRITERS

Dominic Todd LJK Setright Patrick Cleasby Stewart Wennen Channa Vithana Haden Boardman John May

#### hi-fi world SUITE G4, ARGO HOUSE KILBURN PARK ROAD LONDON NW6 5LF www.hi-fiworld.co.uk



Hi-Fi World is proud of its independent status. Published by a company specialising in hi-fi magazines, it doesn't do computer, caravan or mobile phone titles too. Rather, we're a small team of dedicated audiophiles, working to bring you all that's (weird and) wonderful in audio.

Sometimes however, we couldn't half use the full resources of an international publishing superpower. That's because this issue has been one of the most frustrating, labour intensive and time consuming I've ever done.

How so? Well, it's because this one is our long-promised turntable special. The amount of work expended on unpacking, assembling, aligning, setting up and tuning the vast number of analogue audio products tested – not to mention the fabrication of special bits like armboards and balance weights for long discontinued classics - has left us dead on our feet!

So I'm delighted to bring you in-depth comparative reviews of many of the best turntables around – from classic Garrards and Trios to the latest and greatest from Nottingham Analogue, Michell, Roksan, *et al.* We also listen to the first of a new range of wood-bodied Ortofon MCs, scoop the new Origin Live Conqueror tonearm and Goldring GR2 turntable, compare phono stages from Naim, Rega, Monrio and Clearaudio, rediscover audiophile vinyl and even rebuild a Rega for superior sound... and all this

without so much as a crunched cantilever!

Still, we have plenty for those not of 'the vinyl persuasion' (I pray for you in your darkness), from the stunning Musical Fidelity A5cr pre-power amplifiers and Mordaunt Short Performance 6 loudspeakers to Consonance's best ever SACD spinner. Factor in a visit to ATC, purveyors of professional monitors, no less than ten pages of your letters (and our occasionally useful replies) and a twelve page DIY supplement, and this issue is loaded to the gunwales with serious reading for every independently minded audiophile!

#### David Price, editor

#### 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.



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Distributed by Seymour Distribution Ltd 86 Newman Street London, W1T 3EX Tel: +44 (0) 20 7396 8000 Printed by Southem Print, Dorset Tel: +44 (0) 1202 628 300 Our Agents in Malaysia Millennium Hi-Fi & AV Simon Chang Showroom & office, 500-1-3 First Floor Wisma Indah (Shen Court), Jalan Tun Razak 50400 Kuala Lumpur, Malaysia Tel: 603 9283 8171 Fax: 603 9281 3762 e-mail: info@millennium-audio.com

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# **7 NEWS** words from the front ...

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Product of the Year 2002-2004 What Hi-Fi Sound & Vision (111, Loudspeakers)

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### Separates System of the Year 2003-2005

Hi-Fi News (99 Series)

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QUA

A M

#### email:news@hi-fiworld.co.uk

# news

#### **ADVANCE ROMANCE**

Breaking news – high-end Denon kit has returned to Europe as the Bristol Show sees the debut of the stereo-only DCD-SAI CD/SACD player and its matching amplifier, the PMA-SAI. Details are limited at the time of going to press, but prepare to fall in love when this serious two-channel combo hits the streets in April. Ask your local Denon dealer whether they've become part of the exclusive distribution network, but be nice to them - if they're not onboard, they're missing out on a £5,500 retail sale for the amplifier and only £500 less for the player... For more details, call Denon on 01234 741 200, or go to www.denon.co.uk.

#### **BORN TO SERVE**

DENON

Unveiled at this year's CES, Cambridge Audio's music server is an attractive silver model, looking deceptively like a simple CD player, which is unsurprising as the 640H is fundamentally a tweaked up version of their 640C CD spinner. A 160GB hard disk has been added, along with a CD burner, and the system is run using Cambridge's proprietary AudioFile system, which is making its debut with this machine. Claims are made for compatibility with both PC or Mac, webstore downloading and file transfer to and from portable players. Connectivity is both via Ethernet and WiFi enabling networks of multiple 640H's! Sounds fascinating, and all of this functionality for a mere £500! We are looking at 'late spring' availability to delight early adopters everywhere - pound to a penny our very own P.C. is salivating at the prospect of all this wonderful convergence technology. Check the specs at www.cambridze-audio.co.uk or call 020 7551 5339.





#### CLASSY T+A

The vogue in SACD machines seems to be swinging back from multichannel to stereo-only, and German manufacturer T+A are in fashion with their new high-end

player. The physical design is attractive and straightforward, and the electronic design looks just as beautiful – with completely discrete signal processing circuitry for the two formats supported – stereo CD and stereo DSD. Jitter reduction is achieved using T+A's own reverse clock process. Multiple Burr Brown D/A converters are used and there is switchable output filtering at 60kHz or 120kHz to deal with DSD's high frequency noise issues before they get into an amplifier. Available in black, silver aluminium, or as a special order chrome version. For further details, including UK pricing (Euro pricing is around the 2,500 mark), call T+A Germany on +49 5221 76760 or take a look at www.TAelektroakustik.com.

al agreed

7



#### **BACK FOR THE FUTURE**

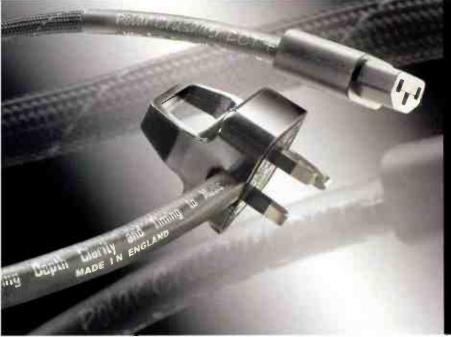
Sennheiser's new HD 465 and HD 485 employ a new evolution of its accurate dynamic driver design featuring new diaphragm geometry. Using high-current aluminium voice-coils, these are claimed to deliver superb clarity. The HD 465 £49.99 claims extremely detailed sound quality and an 18-21,500Hz frequency response, while the more expensive HD 485 at £59.99 boasts a wider frequency response of 16-24,000Hz and improved spatial imaging. Both headphones combine a lightweight design (just 220 grams), ergonomic headband geometry, and replaceable ultra-soft earpads crafted from high-grade materials, to deliver comfort for extended listening sessions. Call 0800 652 500 or click on www.sennheiser.co.uk for details.

#### **DSD FOREVER?**

Major label rock and pop SACD releases are drying up as we speak, and so the SACD press machine has to concentrate on the few inroads DSD seems to be making into the studio community. Under the tutelage of Sony DSD mensch Gus Skinas, John Hiatt has apparently become a convert to DSD recording, so at least that's one newly minted high-resolution title we can look forward to. Most notably big things seem to be afoot in Japan, with DSD increasingly becoming the way to go for recording and mastering and with some labels, including the famous Pony Canyon imprint, either declaring support for SACD or more scarily (for Warners, Toshiba et al) switching support from DVD-Audio to SACD. Would that the UK music business were as enthusiastic about either of the 'new' formats!

#### **BURN ANYTHING**

If you're in the market for DVD video recording ability, look no further than the amazingly cheap new Akai 5800Di. Its most important advantage is its ability to use both +R/RW and -R/RW discs, as well as boasting a whopping 8 hour maximum recording time. At this price point the addition of PAL progressive playback and DV in for camcorder usage are brilliant convincing bonuses. As far as playback goes just about anything on a shiny silver disc bar Divx video is catered for. Could you go wrong for £199? Read the full specs at www.chai-uk.com\_ or 020 7887 7730 for details.



#### **BY POLAR**

Graham Nalty of Black Rhodium announces two new mains cables that have been dramatically improved by Deep Cryogenic Treatment (DCT). He says, "The outstanding effects of DCT have become an essential part of my highest quality cable design, one that I had to apply to mains cables to complete the full system cable loom." The DCT process involves very slow cooling to around -190°C, then after being held at this temperature, slowly returning to room temperature. The computer controlled cycle takes approximately 3 days, optimising the molecular structure of the metal, which significantly enhances the sound quality of the cable. The Polar Crusader cables are treated by an extended DCT+ process that involves additional pre treatment and post treatment work to deliver further benefits and are fitted with DCT enhanced Rhodium plated plugs and sockets for the ultimate quality of performance. Prices start at £200 for a 1.25m length of Polar Warrior DCT, with I3A plug to IEC socket terminations. For more information, click on www.blackrhodium.co.uk.

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#### news

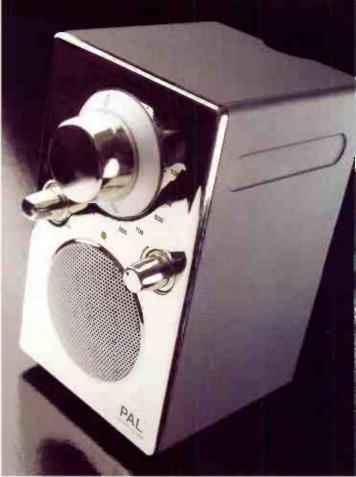
#### **CHROME ALONE**

Tivoli Audio has announced a new addition to its hugely popular Model PAL line-up of rechargeable portable radios with the introduction of a Chrome-Finished model, meaning there are now no less than eleven finishes to choose from (Pink Rose, Earth Brown, Moonlight Grey, Spring Green, Pearl White, Sunset Red, Electric Blue, Neon Yellow, Silver White (iPAL) and Graphite Black)! Price is £139.99 including NiMH battery pack and AC adapter, with a one-year warranty. For more details, see the Ruark Acoustics website at



#### WITHOUT WIRES

The Thomson Lyra seems to have done little to dent the predominance of Archos in the non-Windows personal video player market, and Archos's new offering is bound to appeal to the Bill Gates-haters even more than previous ones, as it now runs on Linux, the OS of choice for the seriously geeky. Better than that, the PMA400 boasts 802.11b wireless connectivity, so you can ditch your PDA too as all that businessman-on-the-road functionality is also encompassed. As you would expect there are direct video (to MPEG-4 SP) and audio (to MP3) record-in capabilities, as well as games, photo and internet support. Testing the PMA400 is going to be nightmare! This one starts out as a Dixons exclusive deal at around £550. Have a look at www.archos.com or call on 0.264.366022





#### ARTIKULAT ANNOUNCEMENTS

Those of you who were fortunate enough to intend the Linn/HFW multi-channel A/V experience at the Proud gallery in October will know that the top of the range Linn surround setup is an awesome proposition. That was the first time the ARTIKULAT speakers had been shown in any form, and now the final production specification loudspeaker system has made its show debut at CES. With a powerful look and an equally powerful sound the ARTIKULAT system will appeal to the most discerning surround enthusiast, with Linn technologies such as AKTIV servo bass, the 3-K Driver Array and CHAKRA highefficiency power amplification delivering a great sound, as those who have heard them will attest. Coupled together with a UNIDISK 1.1 universal disc player and KISTO system controller, as they were at our event, these speakers complete a hard to beat system. Available in fully active and active base variants, with satellite, centre and sub-bass models to complement the floorstanders if required for AV type set-ups. CES also saw the first preview of the forthcoming KOMPONENT lifestyle multichannel speaker system. Contact Linn for further details on 0141 307 7777 or at www.linn.co.uk.

### next issue

May's Hi-Fi World is all about amplifiers. We bakeoff the best integrateds from Sugden, Musical Fidelity, Cyrus, NAD and Arcam, compare Exposure's classic VII/VIII pre-power to its latest incarnation. We look at ultimate amplifiers from Halcro and Unison Research, and revisit Trio's stunning L-07D pre-power. Fans of other genres will love Micromega's new CD132 CD spinner, NET Audio's MicroClone DAC and Stax's SRS-4040 Signature electrostatic earspeakers. Reserve your copy now and put a real Spring in your step!

#### 11 New Quebec St, London W1

# Walrus









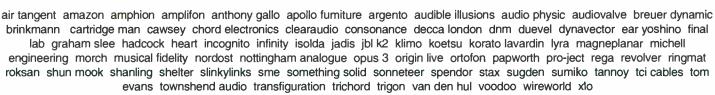
This ad features a few new products we're excited about, as well as a couple of old favourites (which we're still excited by even after all this time!) From top right, going anticlockwise, first off are the Anthony Gallo Reference 3 loudspeakers (£2400/pr). You can't tell from the picture, but these are actually very compact (about 3 feet tall) but have the most amazing bass extension and a very open sound. Next, the brand new Musical Fidelity A5 series amplifier (250W/ch) and CD player, at £1499 each, are superb value. They are designed to be better, and cost less, than the popular 308 series, and don't even feel embarrassed in the company of the famous Nuvista and Trivista series. The CD even features a valve output stage, just like the late lamented Trivista DAC! The Duevel Bella Lunas (£3160 to £4160/pr dependent on finish) need no introduction. This superb Omni design, featured at the recent Heathrow Show, should

be on everyone's shortlist. Origin Live's new Sovereign turntable (£3850 plus arm) sets new, even higher standards for this already envied manufacturer whose decks already receive huge acclaim from the press. Next up is something we thought we'd never see - a valve / transistor hybrid power amp from Tom Evans, famous for their Groove phono stage and Vibe preamp. The Linear A (£3999) is a truly innovative

design which draws on the strengths of both technologies to give transistor speed and control with valve naturalness and texture, another milestone for Tom! Many people will still remember the success we had with the Magneplanar MG 1.6 speakers at the show. These flat non-electrostatic panels with ribbon tweeters produce the most

amazingly believable soundstage, all for the direct import no-middleman price of £1500/pr. The new Duevel Shuttle-Disk rechargeable battery CD player (also £1500) is on permanent demo - bring your own CDs and be pleasantly surprised! Lastly, we had to squeeze it in, what we regard as probably the finest all round (pardon the pun) turntable in the world, the Brinkmann LaGrange with the Brinkmann 10.5 tonearm (£8395 in total), a truly staggering combination.





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sound bites

# SPIN Doctor

Stuart Wennen tries the Rudolph Bruil Record Stabilising Ring, a £200 'go-faster' goody.

erious vinyl collectors will be aware of the difficulty associated with the replay of warped records; I have quite a few that are almost impossible to play. This simple device solves the problem in one fell swoop and addresses a host of other difficulties that turntables present.

The Record Stabilising Ring is constructed from a sandwich of materials. The top ring is fashioned from stainless steel and is machined to fit all but the most obscure recordings (this is due to poor quality control in the pressing plant) whilst the middle ring is made from an acrylic substance sandwiched between the top and bottom rings.

The bottom ring is again manufactured from stainless steel. I am very impressed with the aesthetic quality of the product.

Inside the wooden packing crate there's an extremely extensive instruction manual, the centring ring and the RSR. Although a little DIY is called for in the shape of attaching the timber knob. this is simple to achieve as it involves a little glue and waiting overnight for the glue to harden. Once this has been done we are ready to listen!

I used all of the turntables that are featured in this month's group turntable test. They all accepted the RSR and the clamp with one exception; this was the Roksan

Xerxes This was due to the design of the centre spindle. The top of the spindle has been designed to be removed, so the clamp did not grip correctly.

Rudolph Bruil's RSR is easy to attach - first place a record on the platter, then clean the record with a brush, next place the centring ring on top of the record, and finally place the RSR over the centring ring. Now remove the Plexiglass centring ring and place the weight or clamp over the spindle. It is intended to reduce resonance in the vinyl surface, achieved by the use of a clamp in the centre of the record as well as the RSR at the periphery of the record. Use of the RSR without a suitable clamp will result in very noisy reproduction along with a strange stereo image presentation...

First impressions were of a reduction in surface noise, which was dramatically presented with silence on the run in grooves and also on the run out. I think this is due to the record being clamped to the platter. After a while the differences with the RSR in comparison to running the Bastin/ Garrard 401 without the RSR were obvious. Stereo imaging with the RSR was much larger in all dimensions. Speed stability was measurably superior this was evidenced by playing solo piano, solo voice and flamenco guitar. This is due again to the record being clamped to the platter and the extra centrifugal force, as the platter with the RSR has a greater diameter, along with a larger mass. Transient recovery was improved a great deal, as was the overall reproduction of the vinyl. Bass instruments were almost unbelievable in their clarity and weight. Details in the recordings just hinted at without the RSR were displayed with subtlety.

Music I have not listened to for years was played and along with warped records was enjoyed. Treble presentation was delivered into my living room with consummate ease with no hint of 'glassy' extension. Although the RSR

seems rather unwieldy the advantages of this accessory are truly tremendous, almost to the point of being so natural that I was listening to the performance rather than the equipment. The clamp in the photos is manufactured by Acoustic Solid, although I tried the Michell clamp as well with very good results.

Rudolph Bruil will make special RSRs for turntables that have larger platters than usual, and he supplies the RSR in kit form, although I have not tried one I am sure that the performance of the self build is as good as the assembled version that I have listened to. In concept this



First stage: place cantering device on top of the record.



Second stage: drop the record stabilizing ring on the edge of the record and you can now take off the cantering device.



Rend stage, put a securit of denning on the dentity of your record. Altern observat to the solar field without any you will dance to start again. We are now reach to solar records. The mouth in the exclans also not come with me MERS of a symbolic from Acchine.com

arrangement is so simple it is almost laughable. As my journeyman said, "simple engineering is elegant engineering." The Rudolph Bruil Record Stabilising Ring is an extremely worthwhile investment and gets a thoroughly deserved recommendation.

() +44 31 20 627 2728 www.soundfountain.com

# direct, live

Thanks to the whimsy of the UK hi-fi press, for a great many years Japanese quartz locked, direct drive turntables lived in the audiophile doghouse. After all, they were so 'unmusical' compared to our home grown superfi supremo, the Linn Sondek LP12, weren't they...? Well recently, there's been a renewed interest in this 'forgotten generation' of disenfranchised decks, as people have realised that suspended subchassis belt drives aren't the last word on vinyl replay. So we decided to judge for ourselves by pitting one of the best classic DDs against one of the best modern belters. David Price takes up the story...

ow, don't get me wrong. I love the Linn Sondek LP12, truly I do. In some respects, I still believe it to be the best way to listen to music, so lilting

and liquid a listen is it. But what I can't say I'm too enamoured about is the way the UK hi-fi press reacted to it in the heyday of vinyI – the late nineteen seventies.

If you believed most of what was written about this fine bit of kit, it was so far ahead of all other turntables of the day that they simply weren't worth mentioning. Hi-fi magazines from a variety of publishers, some now long gone but others still around, apparently suspended all critical judgement and raised the status of this excellent transcription turntable into that of a deity.

This had the effect of swaying an entire generation of British audiophiles into buying the Linn, which I grant you wasn't such a bad thing. What I'm less pleased about, however, is the obverse – which is that the magazines all duly dismissed the serious alternatives. And these, aside from a handful of British rivals (Ariston, STD, JBE, Dunlop) were by and large the statement products of the major Japanese electronics manufacturers – Sony, Micro, Denon, Pioneer, Luxman, Nakamichi, Onkyo, Technics and Kenwood.

These stunning bits of kit were arrestingly styled, brilliantly (over) engineered and supremely well finished – so much so that they made the fine Linn product look nothing special. Yet in the pages of the British hi-fi press, they were almost, to a

(Branser of

review

man, ignored or simply dismissed as being flawed due to their direct drive motor system. If you believed many hi-fi hacks at the time, Direct Drive could simply never sound 'musical'. Never was there such a blatant case of 'technological determinist' nonsense in print – it was akin to insisting that, because of their electronic circuitry, somehow digital watches could never tell the time 'properly' - rot!

#### **TIME PASSAGES**

In the mid seventies, various big Japanese consumer electronics companies were in the midst of a fierce scrap to become the largest and most successful. Sony and Matsushita (Panasonic and Technics) were the leaders, but smaller names (still massive by UK standards of today) like Pioneer, Denon and Kenwood were snapping hard at their heels, recruiting the brightest and best audio engineering graduates from Japan's technology-savvy universities. As vinyl was the de facto domestic audiophile music medium back then, a company's top turntable was the ultimate expression of its design, engineering and manufacturing excellence.

This race continued until the end of that decade, with ever more sophisticated yet subtle designs. Yet by the early nineteen eighties, the Japanese giants were moving out of analogue. Quite simply, digital was the future, and there was no reason for them to devote large amounts of money to researching and developing new 'AD' (analogue disc) players any more.

This meant that Japan's 'golden age of analogue' spanned from about 1977 to 1980, when every deck seemed to get better and more audacious. Sometimes, in the case of the Nakamichi TX-1000, this meant the deck getting needlessly (nee stupidly) complex; at other times, as with Technics' SP15, it was merely more sleekly styled, but on other occasions – as with Sony's TT-8000 and Kenwood's Lo-7D, the deck in question was a breathtaking, almost sublime, technological tour-de-force.

In my humble opinion, the 'Trio/Kenwood' Lo-7D was always the ultimate Japanese audiophile deck – a complete, fully integrated machine that showed stunning attention to detail by today's stamdards, let alone those of 1979 [see SPOTLIGHT]. Looked at objectively, I'm afraid any and every British turntable of that generation seems crude by comparison. For this reason, we chose a mint, fully serviced example to face off one of today's best 'affordable' superdecks, the latest DC-powered Michell GyroDec.

Interestingly, the Gyro itself dates back to April 1980, barely a year later than the introduction of the '7D, but it has the benefit of continual development, from that day to this. Whereas the Japanese deck is as it was when the design was signed off than even I had expected. This deck mormally wears an SME Series IV and Koetsu Rosewood, so I was surprised by its powerful, pacey, commanding sound – complete with a brilliantly expansive recorded acoustic that beamed right out of the Quads. Treble was sweet, bass fulsome and warm and propulsive, midband glassclear and bristling with detail. It would be a tough act to follow. Over

### "If you believed many hi-fi hacks at the time, Direct Drive could simply never sound 'musical'!"

in early 1978, the Brit has received variously a new inverted bearing, acrylic platter, chassis damping and a new offboard DC motor (with VC power supply). So we're not just looking at two design philosophies, but also comparing two points in time twenty five years apart (1979 and 2004) too...

#### THE BAKE-OFF

The chance to audition one of the best surviving examples of one of the best ever Japanese superdecks was good enough, but to do it under strict 'laboratory conditions was almost unique – as we were able to kit both decks out with identical arms and cartridges (factory fresh, brand new, boxed, Michell Tecnoarms and Ortofon MC25FL moving coils). Better still, we were able to use my own (very revealing) reference system, comprising Trichord Delphini NC, MF Audio Passive Preamplifier, World Audio K5881 (Andy Grove Signature) and Quad ESL-989s with Townshend Maximum Supertweeters. Superb phono stage, transparent preamplification, smooth but feisty tube power and electrostatic and ribbon speakers - not bad, eh?

We were oh-so-careful to ensure that both arms and cartridges had identical running in periods, all contacts were clean and all screws tight. This was a moment of truth for me – was my own Michell GyroDec, a deck II know and love, about to get pasted by a foreign techno tour-deforce? Or would this ultra moderm, state of the art belt drive with exoskeletal subchassis, DC motor and acres of Perspex be too much for an old Japanese seventies throwback...?

We kicked off the listening with Jennifer Warnes's 'First We Take Manhattan', from the 'Famous Blue Raincoat' LP. The Gyro went first, turning in a far better performance to the Lo-7D, running exactly the same arm and cartridge...

Even the opening couple of bars showed the difference. The image size was obviously smaller and more constrained within the extremes of the two ESL-989s, whereas with the Gyro it had soared out of them.

The next most obvious difference was that the keyboards sounded tonally thinner and more 'wiry' (making the Gyro sound positively warm and sumptuous – not a trait it's famous for...). Would this be a rout, the Lo-7D kicked out at the first hurdle for its weak knee'd, anaemic sound? Then the groove kicked in... and wow – what



#### To minimise hum and vibration the Lo-7D has an external power supply.

a different a (four bar) phrase makes!

Put simply, the Trio's timing was in another league. Although the Gyro was wonderfully propulsive, switching to the '7D was like pressing the 'autofocus' button on a digital camera and seeing the entire mix suddenly appear in sharp relief. At a stroke, you could hear instruments starting and stopping with rifle-bolt precision, whereas with the Gyro it was a blur – or to be more accurate, a time-

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smear, as if you'd got camera shake thanks to a low shutter speed in low light... The Trio was awesomely tight and precise, unlocking a massive amount of low level detail, throwing out the minutiae of the mix like it was laseretched on the loudspeakers. Stunning.

Moving to Steely Dan's 'King of the World', the pattern repeated itself. Once again the GyroDec threw out a vast, embracing soundstage, with oodles of strong, positive, speaker-forward image projection, It was commanding and ohso-satisfying to behold. There was a lovely patina to the instruments, you could really hear how warm those vintage seventies analogue(!) keyboards were. Yet switch to the Lo-7D and there was a whole layer of detail back behind the speakers that, as if by magic, appeared. Best of all was the way you could hear the plectrums strike the guitar strings, and hear the drummer's accenting on the snares and hi-hats on the left channel, and the overdubs throughout the middle eight. All of this was audible on the Gyro, but seemed to be conveyed 'in passing', whereas the Lo-7D made it a pivotal part of the song. Still, to give the Michell lits due, the 7D's soundstaging was again obviously smaller and more compressed, and although brilliant at 'microdynamics', it lacked the sheer force of the Gyro on crescendos. And once again, the tonal colouring was distinctly 'pastel' compared to the fullblown 'Technicolor' of the Michell. Neither of these two giants was going down without a fight.

Next stop was Astrud Gilberto's 'The Girl From Ipanema' on a beautiful MFSL pressing. The Gyro was on first, and the Lo-7D supporting members of our listening panel sat there looking fairly gobsmacked. The Michell threw out a vast, chasm-like soundstage, towering beyond the Quad electrostatics. The textural detailing was awesome -Astrud's voice was disarmingly silky, sensual and seductive, the saxophone soared miles into the sky and the guitar picked away sweetly stage right. Beat that, Trio san! Well, within a second, the Lo-7D told us precisely what the Gyro had been doing wrong - the guitar so much more accurately carried, and sounded like a real one as opposed to a warm, euphonic, impersonation. You could hear each note start and stop the whole 'attack, delay, sustain, reverb' thing. Cymbals had a delicious crispness and clarity, with real incision. By contrast the Gyro sounded woolly and vague.

And finally to the synthetic, electronic, strains of Kraftwerk's 'Computerwelt', where surely the superior timing and insight of the Trio would hit the 'back of the net', showing up its modern belt drive rival for the impostor it is? Errr, no. Amazingly, I actually preferred the Gyro on this, as – despite its poorer pitch stability – it sounded more musically, emotionally involving. The Lo-7D was distinctly 'matter of fact' about this track, but the Gyro really got into the groove and attempted to string the whole mix together in a more emotionally committed way. Once again, compared to the Lo-7D, bass sounded flabby and over warm, midband seemed fuzzy and imprecise (if obviously more expansive and dimensional) and treble curtailed.

#### **CONCLUSION**

A dead heat, on points, the Gyro had far superior imaging and staging, nicer and yet more varied tonality, and a more musical and emotive take on the proceedings. Yet the Lo-7D ran with metronomic precision, faithfully capturing the starts and stops of notes and thus every instrument in the mix – and was thus by far and away the better focussed and detailed. Combine their respective strengths, and you'd have the best turntable in the world, methinks...

Of the two dedks' respective failings, I think the Gyro's are more serious. Real attention to detail in placement and setup may pull a bit more tonal colour and imaging capability out of the Lo-7D, but it wouldn't make the Gyro time any better. And when you think that the Trio/Kenwood is twenty five years older, yet it has so much more temporal accuracy, you can't help but lament the fact that everyone uses belt drive these days – it is so obviously flawed.

To be fair though, the Trio sold for about £1,000 a quarter of a century ago, whereas the Michell sells for that now. Given that – in real terms – the Michell costs around a quarter of the Trio, it performed brilliantly. Despite its (absolute) timing troubles, it put the Japanese behemoth to shame in a number of respects - so it's hardly a rout. Indeed, a great vinyl sound is probably cheaper than ever now, and yet back in 1979 you could still get something that's still absolutely 'world class' a quarter of century later, made in Japan.





#### SPOTLIGHT

The Lo-70 is arguably the most complete, holistic Japanese turntable design ever, due to the amazing use of materials in its construction. The sub assembly (the front of which is visible - it has the 'Trio' legend imprinted on it) is made of mahogany. On top of this sits the main plinth, made from Trio's 'ARCB' material – effectively synthetic stone that is acoustically inert and heavy. Underneath lies an aluminium beam that runs from the main bearing to the main tonearm mount, giving a 'closed loop' for information transmission, isolated from external vibrations.

The platter is a massive, massy bronze affair, with an additional stainless steel top disc; the combination of these materials was thought to give the best resonance damping. On top of these sits the LP record, and on top of this two Trio 'disc stabiliser' options come in to play. First is a heavy bronze record clamp, second an outer ring weight that sits around the circumference of the LP. The result is that the record is locked to the platter with tremendous force, without recourse to vacuum stabilisation, used by the likes of Luxman. When this second stabiliser is fitted, you push a button on the outboard power supply, which serves up just a little extra juice to the silent, high torque, quartz-locked direct drive motor. If you don't invoke this extra grunt, Trio said that the motor could struggle to quartz-lock properly, although without it, there's no need for the extra power (which theoretically, if not practically, introduces noise).

The arm is standard, and is itself a stunning bit of kit, with a carbon fibre armtube, no less. Weighing well over 40kg thanks to its extensive use of choice materials, engineered to standards that embarrass the best Mercedes Benz and displaying a design intelligence that takes the breath away, this is without doubt one of the very best made turntables ever made, putting virtually every other superdeck to shame.

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# table talk

Well, here it is... our much vaunted turntable supertest, in which the best 'affordable superdecks' from Acoustic Small, Michell, Origin Live, Nottingham Analogue and Roksan face off. Oh, and there's a twist – because we thought we'd throw in a wild card in the shape of a Martin Bastin Garrard 401! Stewart Wennen and David Price are your hosts.

ead a hi-fi magazine from the pre-digital era, and you'd see a selection of 'record players' (to use the modern vernacular, as 'gramophone' was still a favourite phrase of many) evenly spread from a twenty or so pounds right up to several hundred. There was a smooth and natural progression right up the upgrade ladder, with less and less choice the further you went up.

Now, in these seasoned digital days, vinyl is enjoying something of a renaissance, but the market's all upside down. There's a small smattering of budget decks and a few worthy mid-price machines, but it's only when you get to the  $\pounds1,000$ -plus 'budget superfi' level that you get real choice!

Trouble is, like all other hi-fi sources but even more so, with vinyl there's no such thing as 'the best' – it's more a case of 'the best for me'. High end turntables are an intensely personal pursuit – much like your favourite suit, best shoes, ultimate motorcycle or dream watch (I'll spare you the analogies with the fairer sex...). To this end, we thought we'd put a group of the most recently introduced (and/or revised) vinyl spinners for your pleasure...

Of course, our choice of review candidates will be seen as immensely political, and thus subject to muchos carping, moaning and general disapproval for months to come in the letters pages (keyboards at the ready, guys...) so I might as well get my two cents in first:

Firstly, we didn't do the Linn LP12 because [a] we've covered it in great detail in the past, including its respective differences with one of our references featured here (the Michell GyroDec) [b] it hasn't been revised recently and thus might possibly be due for an update when it reaches its thirty three and a third anniversary later this year(...?)

Second, we did do the Garrard 401 because it's a favourite of ours, and you can purchase a reconditioned one with Bastin plinth for around the same price as the others here. And finally, we chose the Hadcock GH242 tonearm as a reference as it can be moved from deck to deck with consummate ease, thus eliminating any possibility of sample variation in arm or cartridge (Music Maker Mk3).

#### **REFERENCE SYSTEM**

Music Maker 3 pick up cartridge Hadcock GH242 tonearm (with six identical arm bases) Graham Slee Jazz Club phonostage passive preamplifier Crown DC300a power amplifiers (two, bi-amped) ATC SC35M loudspeakers Black Rhodium Polar Samurai DCT loudspeaker cables



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his, lest we forget, was the turntable that felled the Linn Sondek – at least in the minds of the UK hi-fi press of the midnineteen eighties. Until

the original Xerxes. British hi-fi hacks wouldn't even countenance the idea than anything could equal. let alone better, their beloved LP12! The original version was introduced back in 1985, and justifiably became something of a cult design, thanks to its radically different (from the Linn/Thorens/Ariston design paradigm) thinking. The new Xerxes 10 differs from the original in many ways - it may look the same but underneath the rosewood veneer there's a totally different turntable!

The '10 still incorporates the original's triple isolation principle: The main bearing and the arm board have been completely separated from the outer plinth assembly. The armboard, machined from a solid billet of acetyl, is attached to the sub-plinth via absorbent damping material. The sub-plinth in turn is isolated from the outer plinth, which supports the motor assembly. The bottom plinth supports the complete assembly and attempts to isolate the turntable from exterior vibration. The only contact between the motor/ armboard is applied via the precision ground drive belt, which acts as a damping system to the turntable.

The heart of any hi-fi turntable

is in the main bearing assembly. Roksan chose phosphor bronze that has been machined to a true single point contact bearing. The design is presented within a conventional elegant timber case and was the only turntable amongst this group that was supplied with its own removable dust cover. The power supply is again housed in a rather elegant aluminium case, which has three controls on the front panel, comprising the power switch and two buttons for 33 and 45rpm respectively.

#### SOUND QUALITY

As Frank Sinatra's voice drifted across my living room, I was impressed by his silky delivery of the vocal line, but as the Count Basie orchestra got into gear and started to push the song along, I was starting to become distinctly uneasy. The Roksan, although easy to listen to for long periods, seemed to round off transients. I then noticed that John Williams didn't present rock-solid in the middle of the recorded acoustic, the fretwork that was so easily conveyed by all the other turntables seeming slightly out of focus. The next piece of music on the platter was the Supertramp album 'Crime of the Century', a veritable audio assault course if I ever heard one. Slightly unhappy with its style, I found myself replacing the supplied felt mat with the leather mat supplied with the

Acoustic Small, and the difference was marked...

I started the test again and was very impressed by the tweaked Xerxes performance. Frank Sinatra's voice was locked solidly in the image with the Basie orchestra powering along behind him. The John Williams piece was entirely different. The haze around the guitar had disappeared and the delay in the room in which the piece was recorded was extremely evident. Supertramp was much better, although this album was not transcribed with the sense of realism I have come to expect the stereo image that this turntable threw into my living room was not as accurate any of the other machines.

Tonally, the Roksan displayed a distinct feeling of upper midband warmth, and some bass overhang too. This makes the turntable very easy to listen to for extended periods, as music ebbs and flows with a great sense of ease, sometimes giving music an almost ethereal feel. That's the key to Xerxes 10 - it's a fine sounding machine, but with the Hadcock at least, not a particularly neutral one. It's relaxed and liquid, which will endear it to those not wishing to suffer 'analysis paralysis', but others will find it not incisive enough. I liked the new Roksan, but in this company and with this arm/cartridge combination, there would be others I'd prefer.

#### 

ROKSAN XERXES 10 £1.100 **Henley Designs (**)+44 (0)1235 511166 www.henleydesigns.co.uk

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#### NOTTINGHAM ANALOGUE SPACEDECK



om Fletcher's philosophy is that a turntable should be simple to use, easy to set up and should deliver real music into the listening room. Surely enough,

the Spacedeck is a fuss-free turntable; over the months I have found it most amenable. There are no switches on the record deck - to start the turntable a clockwise push on the platter is all that's needed to make platter spin! It is of simple construction, with an outboard motor which drives the platter via a drive belt as per the Michell. The platter support has the ability to support more than one pick up arm, although it is supplied with one armboard to suit the pick up arm that the client has elected to use.

The Spacedeck has no Right Angles anywhere in its design, which is claimed to obviate energy storage. The platter is made from high-grade alloy, which is supported on a piece of high-density fibreboard. Main bearing design was the result of many years of research and development and is a tightly specified assembly using a conical profile at the tip of the shaft. With the supplied lubricant this bearing displayed absolutely no sideways movement at all! There are a number of rubber rings at the periphery of the platter; these are to inhibit the ringing of the assembly. The optional 'Heavy Kit' supplied on the review machine comprises an extra platter (machined from graphite which unlike the substance in pencils does not discolour any thing placed upon it) plus a well machined new central spigot that centralises the extra playing surface.

#### SOUND QUALITY

Along with the Acoustic Small, this has the strongest and most powerful low frequencies of all except the Garrard on test - providing the 'heavy kit' is fitted. The Spacedeck is a deep and capacious sounding design, the stereo image generously portrayed with all instruments in their correct positions. As the name suggests, there's an air of space between the musicians along with a sense of being in the room. The addition of the 'heavy kit' makes it digs deep into the lower registers, yet although very extended the Spacedeck is not as tight as the 401.

The John Williams guitar piece was carried with great pace and

transient impact, his fretwork neither exaggerated nor diminished. This is another key strength of the Spacedeck, which manages to sound faster even than the excellent Origin Live and easily up there with the Michell. Additionally, image projection was extremely wide and presented with precision. Even though this record was a mono recording from the early 1960s, rock solid imaging was the order of the day. The NA has the ability to sound very neutral yet sprightly and commanding with it.

Indeed, the Spacedeck has an uncanny ability to transport the listener to the recording venue, such is its easy, unforced delivery. Its key defining characteristics are space, speed and evenness. It's particularly open, expansive and dimensional, with real rhythmic aplomb. This fast yet neutral audio footprint is addictive; the closest rival in this sense is GyroDec SE, which offers an even more transparent and self effacing sound, but arguably a slightly more mechanical one too, with less weighty bass. As always, you pays your money and takes your choice and as ever, this will be informed by your desired tonearm and cartridge.

#### VERDICT OOO NOTTINGHAM ANALOGUE SPACEDECK £1,250 Nottingham Analogue Studio (C) + 44 (0)1773 762 947

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#### MICHELL GYRODEC SE/HR





he £940 GyroDec SE is the latest evolution of a distinctive belt driven suspended subchassis deck launched in April 1980. Its form was inspired by the

space station in Stanley Kubrick's 2001: A Space Odyssey, and designer John Michell named it thus because of the distinctive gold plated brass weights suspended from the Acrylic platter, and the fact that the exoskeletal subchassis is balanced so the three springs always work at an equal rate. This is achieved by bespoke arm bases, claimed to be available for almost every tonearm ever made, which are not only drilled for optimum arm geometry but optimised for mass too. The idea is that the weight of the arm and the aluminium billet which forms the arm base is exactly 1kg, which is balanced out by permanently attached under slung weights on the two opposing ends of the subchassis. Like many of the design touches on this machine, this is simple, elegant and effective!

The superb inverted main bearing has its own oil feed and centrifugal pump, running fully synthetic Mobil One oil. The DC motor, new last year, is fed by the £350 HR power supply, using Trichord's 'Never Connected' technology, meaning that it's completely isolated from the vagaries of the National Grid! Drive

from the motor is transferred to the hub via precision ground rubber belt(s) - our listening tests confirmed that using a single one works better than two, which is how the deck was once configured. Disappointingly, speed change is effected by physically moving the belt on the pulley - the only controls are a power switch on the front of the HR power supply and a small switch on the top of the motor. Visually arresting, the Gyro is one of the very best finished turntables you'll find at any price - it's a just a shame that this is the 'Spyder Edition' minus those acres of sumptuous clear Perspex! Still, this aforementioned aesthetic delight marginally degrades the sound, so audiophiles should always go for this naked version.

#### **SOUND QUALITY**

As far as suspended subchassis decks go, the GyroDec has a very even, open and powerfully expansive sound. The Sinatra Basie album 'Pennies from Heaven' thundered into my living room with power and grace. Sinatra's voice at the front of the orchestra was rock-solid in its position, giving a stunning rendition of an absolutely amazing orchestra. Tonally, it's a neutral enough deck, highlighting the Hadcock's ever-soslight upper mid-band warmth, making the Gyro an excellent review tool if nothing else! Ten or so years ago, this was the fastest and most fleet-footed of superdecks, with a famously metronomic sense of precision, but by the standards of this group, it wasn't quite as distinguished. Transient attack was undoubtedly very good (faster than the Xerxes, for example), but still not quite as immediate as the super-fast Origin Live.

Another area where the Gyro has traditionally been peerless at the price is soundstaging, and here there was nothing else here that could touch it. It has very strong, positive, confident and expansive left to right staging, making many rivals sound small and shut in. The trouble is that in absolute terms, as the OL showed, it has a slightly distended feeling of depth perspective. Images hang in front of the speakers happily, but behind it's less convincing, as seems to cut off earlier than some rivals, like headlights in the dark on dipped beam. It's not a major point, but the rising standards of the competition are making it an issue when it once wasn't!

Still to my ears, the superlative soundstaging, excellent tonal palette and fine sense of precision make this one of the very best at the price. Factor in its stunning looks and finish, plus sensible upgrade, and even if it's not the very best outright anymore, still makes an extremely convincing case for itself.

#### VERDICT OOOOO

MICHELL GYRODEC SE/HR £1,270 Michell Engineering (C) + 44 (0)20 8953 0771 www.michell-engineering.co.uk

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#### ACOUSTIC SOLID SMALL ROYAL



he Wirth family specialises in building fine transcription turntables from their base in Germany. The Small Royal is a massdamped turntable that is

crafted from aluminium, with all parts built in-house. A large power supply, which incorporates a power switch, supplies the motor with the electrical supply required to drive the motor. The free-standing motor again has a switch on the side and has a stepped pulley for speed change, which is achieved by the owner physically moving the delicate monofilament drive cord to the desired pulley. The blue leather topped platter is of massive construction, machined from a single billet of alloy which is polished to a mirror like surface, as is the rest of the turntable! Fit and finish of this turntable is exemplary.

At the heart is the main bearing that uses a mirror finished ceramic ball that sits atop Teflon thrust plate. Wirth also supplied a weight for clamping the vinyl to the platter, which costs a further £120, and I would recommend that you purchase this at the same time as the turntable. This clamp weight has a circular spirit level incorporated so the chore of levelling the turntable via the three adjustable spikes was made much easier. The mass of this machine is on the high side at 25kg, so make sure that the turntable support will take the strain! The set up guide is extremely basic, although this turntable is very easy to get going - it took me approximately twenty minutes.

#### **SOUND QUALITY**

First record on the turntable was a John Williams guitar piece, which rang out in my living room with all of the musical clues still intact. The Acoustic Small presented itself superbly, well able to convey how JW's breathing became more laboured as the piece went on Next on that kinky platter mat was placed my Sinatra/ Basie album, where this deck served up the awesome dynamic power of a swing band, with huge slabs of bass end along with the subtle piano licks. Indeed, tonally this is a strong and deep sounding deck - a tad heavier than the Roksan and Nottingham Analogue, and running the Gyro and OL very

close. There was one turntable whose bass it could not touch, however... Still, it's not 'bassy' as such – generally it's even and smooth.

Supertramp's nineteen seventies classic, 'Crime of the Century' gave a strong powerful sound with all of the delicately mixed instruments bubbling out with real aplomb. Soundstaging was particularly good, second only to the GyroDec in terms of expansiveness, being quite mastertape-like. Imaging was correctly conveyed with fine proportion, and there was fine depth perspective which was superior to the Gyro, if a whisker behind the OL. It's also very good on transients, if just a little held back by that upper bass warmth which is a touch more apparent than most of the decks in this test. Rhythms aren't the most agile, but there's a sense of 'inevitable progress' to them which sees the song driving along with confidence and poise.

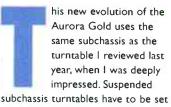
Overall, an extremely capable and musically satisfying deck that's stunningly built and finished, representing excellent value for money.



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#### **ORIGIN LIVE AURORA GOLD 2**





up absolutely level, so the first step is to make sure that the support is true then the deck itself, after which time the suspension bounces unimpeded. This whole process takes about twenty minutes with the Aurora Gold 2 - twenty less than the Michell GyroDec, which is more like assembling a Meccano kit. I'd say it's one of the most visually attractive in the group, and is very nicely finished indeed. The whole unit is a joy to use and reflects Mark Baker's typical attention to detail in engineering.

The main support is crafted from a flat circular plate of alloy into which are bolted two conical rubber feet, at the rear is steel foot of the same section. Placed on the top of this plate is the main bearing and armboard support. This is suspended by a single spring, which is housed in an adjuster section. The motor is an 'ironless' DC type, controlled from the separate speed switching box, offering the usual 33.33 and 45PRM with no belt changing. The platter is made from Acrylic, accurately machined to support the vinyl. The drive from the motor is transferred by a precision belt, that also acts as a mechanical damping unit.

#### **SOUND QUALITY**

First on the platter was the Basie/Sinatra recording, and first impressions were that the record deck produces a very wide stereo image with oodles of front-to-back depth – so good as to make it classleading in this respect. Indeed, it's up to the standards of the Bastin 401 in terms of its expansiveness, and very close to the Gyro whilst offering superior depth. The result is a very commanding, yet natural sounding music making device.

Tonally, the OL is similar to the Gyro, inasmuch as it's a very neutral tool indeed from bottom to top, with no obvious areas of distinction or disaster. Bass instruments were impressive alright, but this wasn't a particular forte of the OL. Compared to the Spacedeck or the Acoustic Small, its low bass was lighter, less impactful and a tad looser too. This means that the Aurora 2 Gold appears to lack the rhythmic drive of the aforementioned decks, although the treble to midrange register was just as smoothly reproduced. In fact,

despite its lack of macho forcefulness, its timing is up with the best (Garrard aside), feeling very precise and finessed – which made for very clean, transparent and natural sound, and beguiling too.

John Williams was up next and his guitar was displayed with his position locked solidly in space with just the right amount of decay as the strings were played. This is nub of what I like about the Aurora Gold 2 - it has a supremely natural, neutral touch. There's no sense of dimensional, dynamic or temporal distortion -it gives the music to you as nature intended. Supertramp's 'Crime of the Century' pounded into my space with consummate ease, no smearing in the deep and wide stereo image; which was almost as wide as the 401 but not quite as deep nor as high. All of the structure of the music was played with drive and precision.

It's an interesting one this – the whole is greater than the sum of the parts. It doesn't do anything with stunning technical virtuosity (you can't let loose with the adjectives), yet it manages to hang what it does do together brilliantly. The result is one of the most convincing and musical machines here – it just works right, time after time.A surprise win then, perhaps?

VERDICT OCTOR ORIGIN LIVE AURORA GOLD 2 £1,470 Origin Live (C + 44 (0)2380 578877 www.originlive.com

APRIL 2005

#### MARTIN BASTIN GARRARD 401



pon its introduction some forty years ago, the Garrard 401 was years ahead of its time, although the (then) contemporary plinth systems were extremely poor, giving variable results which caused it to fall out of fashion for many years. Still, its stunning build was never in doubt - it is as robust as they come, feeling more akin to a piece of heavy industrial equipment than a delicate domestic turntable. Part of the reason for this is the absence of elastic bands - this is a rough, touch idler drive design!

Dr. Martin Bastin completely rebuilds these turntables, remachining the main bearing shaft, which he trues and then grafts a carbide ball bearing on the end. Bearing lubricant is as important as the rebuild of the bearing, and so he supplies an extremely effective oil to lubricate things. Idler drives are arguably the best way to spin a platter, although notoriously susceptible to noise. The Bastin mods are a very effective as a way of reducing this, as the motor sits in its cage on the bottom of the plinth.

Constructed from layers of specially machined plywood, the plinth and is veneered to the customer's specification. The finish of this gigantic machine is good. Of course, Martin Bastin doesn't supply the motor units, so if you're after one you'll have to supply your own – sourced from this magazine's classifieds, audio jumbles or (if you're feeling really lucky) an online auction site! Expect to pay up to £300, and possibly more on top to get it into serviceable condition and/or excellent cosmetically. Martin Bastin will expect you to wait approximately a month for the mods to be done. Obviously, he can arrange fitment of the tonearm of your choice at this time, too.

#### **SOUND QUALITY**

Kowabunga! Through the Bastin 401, the size of the swing band was huge - this turntable certainly transferred the rip-roaring latent power of the Count Basie Orchestra. Here's an extremely big hearted, widescreen performer with massive motive force - the vinyl equivalent of a 5.7 litre Chevy V8! The most obvious thing about the 401 is the bass which is all consuming. Extension was judged to be the most best in the group, and also the tightest. Notes started and stopped with all the thump of sledgehammer. Importantly, however, it wasn't just quantity, but quality too - meaning the very beginning and end of each note was faithfully conveyed. This effect was so obvious that all the other 'moderns' sounded soft and spongy by comparison.

This grip is surely a function of

its idler drive, and it doesn't just stop at the bottom strong on a classical guitar. Right the way up the midband, the Garrard remains extremely crisp. Frank Sinatra's voice was placed slightly to the right of centre and was projected into the middle of my living room. John Williams's flamenco guitar was displayed as a precisely recorded instrument, even though this was a mono recording from early 1960. The fretwork, along with his laboured breathing was the most crisply transcribed amongst this group of turntables. On the Supertramp album there is a section, which contains some railway shunting, and this was frighteningly realistic, showing off the deck's superb transient ability.

Total, outright, comprehensive victory then? No, because the Garrard is a flawed gem. Its treble isn't great - indeed, by the stellar standards of the bass and midband, it's a let down. It lacks incision, extension, air and space. Texturally it's just a tad grainy and coarse. If you're running a mid price arm and cartridge, this simply isn't an issue, but try something super-sensitive and you'd be better off with the Origin Live or Michell. In conclusion then, this is - to my ears - the best deck here by quite some way - it is an extremely charismatic performer, but even so may not suit everybody.

#### VERDICT OOOOE

MARTIN BASTIN GARRARD 401 £1,200 APPROX. Martin Bastin, Stocking Cottage, Cleestanton, Ludlow SY8 3EL [telephone number withheld] "A little champ of price/quality ratio: available at an affordable price, especially for a tube amplifier of more-than-usual power." AUDIO REVIEW Italy, July 2004, Claudio Checchi

"PrimaLuna ProLogue One is now my 'affordable reference amplifier'. With apologies to various British and Italian geniuses, this amplifier has to my ears**no equals at its retail price.**"

HI-FI NEWS and record review, July 2004, Ken Kessler

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MUSIC

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# conclusion

irst things first. As definitive as we'd like to be, we cannot emphasise too strongly that the findings here are informed by both personal preference and the interre-

lation between the decks and the Hadcock tonearm and Music Maker cartridge – so whatever you do, don't dismiss any of these turntables outright! If this sounds we're already casting our own findings into doubt, we'd simply suggest that we're not self-deluded enough to claim that we can speak definitively for everyone, and legislate for every deck's arm/cartridge matching dynamics at a stroke...!

Last came the Roksan Xerxes X – it was a smooth and unfatiguing partner, but not a particularly incisive one, and in this esteemed company it struggled. However, the change effected by the mat swap sort of suggested that we hadn't really got it giving of its best. It may well be that it and unipivots are an unhappy combination? Whatever, we'd advise you not to discount it by any means – listen for yourself with your own arm and cartridge.

Next is the Acoustic Solid Small Royal. This is delicious deck by any standards, and offers a very strong, confident, stable rendition of the music, with all the 'hi-fi bases' covered oh-so competently. The only reason it didn't come higher is the fact that it wasn't quite as foottappingly musical as the others remaining. Still, that finish alone makes it stunning value and with intelligent arm matching, may well be capable of even

greater things.

The Nottingham Analogue Spacedeck is next, but at this level it's more about personal preference than coming out unequivocally for this, the Michell or Origin Live. The NA is obviously more fleet of foot and rhythmically engaging in a way that the high placed Michell can't match, yet it's not quite as redoubtable an all rounder – once again the personal preference and system synergy caveats apply!

The Michell finishes joint third with the Nottingham Analogue; its commanding soundstaging and superb tonal palette with put it ahead with some, but not with others. It's no longer the stand-out candidate at the price, but – ahh – that style and finish! It's a stunning looker, a consummate all round performer and don't forget it can be substantially and inexpensively upgraded too.

The Origin Live comes second

because, with this arm and cartridge and these ears, it was the most natural sounding here – from bottom to top. It's simply very neutral and natural in all areas from soundstaging to timing to dynamics to tonality, yet actually excels in none of these areas. But the fact that it does so much so well makes it the best of the group on points, except...

The Bastin 401 – what a machine! Of course, it's unfair because it's not a new deck, it's a right pain to source and get modified, etc., and the fact that the 401 most likely cost much more than these when new shouldn't go unnoticed either. But we had to throw it in as the wild card, and boy was it wild! Amazing bass, a unique sense of unfettered musicality and total confidence make it special, just don't bother to invest in supertweeters...





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[3] What body material does the Ortofon Rondo Blue use? [a] wood resin [b] jam sponge [c] cheese fondue [d] chocolate gateau

#### [4] What type of stylus does the Rondo feature? [a] Fritz Geiger 70 [b] Willy Loman 80 [c] Gerhard Berger 90 [d] Bela Lugosi 100

April Competition Hi-Fi World Magazine Unit G4 Argo House The Park Business Centre Kilburn Park Rd.

London NW6 5LF

his month's Hi-Fi World competition offers you the chance to win a great way to play vinyl. Anyone who's read this issue and won-

dered what all the fuss is about would soon discover why we're all analogue addicts if they'd heard this cracking combination! It comprises the recently launched Pro-Ject Xpression turntable, which is supplied fitted with Ortofon's latest mid-price moving coil, the Rondo Blue.

The Pro-Ject 2 Xperience is a high quality, mid-price manual turntable with excellent build and striking looks. There's an MDF platter with vinyl playing surface and record clamp, and a main bearing using stainless-steel axle runs on a Teflon bearing plate with a sintered bronze bearing housing. The motor is decoupled from the transparent Acrylic plinth to reduce vibration. and a very high quality Pro-Ject 9c precision pick up is fitted. This uses a conical carbon fibre armtube, which allows adjustment of stylus azimuth despite the fixed headshell, and the bearings are inverted hardened

stainless tips in ABEC7 spec ball races. The Vertical Tracking Angle (VTA) is adjustable, and the RCA phono sockets are gold plated. The Ortofon Rondo Blue is the middle model in the Danish company's new range of mid-price moving coils, effectively replacing the Supreme series. Ortofon has developed a new body material using ground Japanese wood in a resin, giving a lack of resonance and rigidity which, translated to the sound through the speakers, results in low, low colouration and a natural musical sound. It features a nude Fritz Geiger 70 stylus on its aluminium cantilever, a total body weight of 10.5g, a recommended tracking force of 22.5g (we found 2.3g optimum), a recommended load of 10-200 Ohm.

Together, the twosome makes a cracking combination, with a very even and neutral sound, fine bass control, spacious treble and a superbly deep and dimensional midband. The Pro-Ject 2 Xperience is a excellent mid-price package, but really sings with this new Ortofon MC. If you'd like to win them both, then all you have to do is answer the following four easy questions. Send your entries by 31st March 2005 to: **April Competition**, Hi-Fi World magazine, Unit G4, Argo House, The Park Business Centre, Kilburn Park Road, London NW6 5LF.

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#### JANUARY 2005 EXPOSURE 2010S CD PLAYER: Stephen Marr of North Berwick, East Lothian

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#### 4 World Radio History

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# upping the stakes

his is not a straight headto-head test. At £265, the Goldring GR2 is twice the price of the Project Debut 3 (£130) and therefore not a natural competitor. Rather, the purpose of this review is more to find if that extra money buys significant improvements in sound quality.

Improvements have, indeed, been made to both decks and they now, at least on paper, appear to offer stupendous value for money. The latest version of the ever-ready Debut features the Project 1, onepiece aluminium tonearm - a great improvement on the last version. In an effort to improve the style and build, there have also been a number of modifications - including moving the power switch to beneath the base. For £10 extra, there's also a choice of various bright colours. It may not be to everyone's taste, but the blue version that we sampled was beautifully finished and, in my opinion, a welcome relief from the usual sombre matt black!

Not that this hue does the Goldring any harm. The GR2 is based upon the GR1.2 which itself is a Rega P2 derivative. Like the Rega decks, this is a very subtle and unobtrusive design that has stood the test of

Project's Debut 3 and Goldring's GR2 are the latest and greatest versions of favourite budget turntable packages. Dominic Todd reckons they're both great value, but wonders whether the latter is worth its £135 premium over the former...

time perhaps better than any other hi-fi component to date. The best feature with the GR2 is the inclusion of the excellent, £100 Goldring 1012GX cartridge. This MM design sports a Fritz Gyger II 'fine line' stylus. Modifications to the deck itself include a steel rim insert into the MDF platter, which should add mass and, hence improve speed stability, and a 50% larger main bearing to reduce rumble. The Rega based tonearm features a new fixing collar and improved bearings. There are also gold plated phono sockets, although the wire they are attached to is still dreadful - a long term Rega RB weakness. Out of interest, although the finish of the Goldring is now generally much better than that of the Project, the tonearm cable and phono plugs are both of a much higher quality with the Debut 3. Both decks use a solid plinth with isolating feet, meaning that positioning is more crucial than with a suspended design. Ideally, a separate wall shelf should be used with both to get the best results.

#### **SOUND QUALITY**

What first stuck me about the two decks, using Robbie Robertson's 'Hold Back The Dawn' was the sense of fluency that no CD player around

this price could hope to match. Of the two it, unsurprisingly, was the GR2 that was the better. It couldn't match the bass depth of a more expensive suspended deck, but was clearly superior to the Debut 3 which tended to just hint at the lower bass registers. In addition to sounding cohesive, the GR2 also impressed with a broad soundstage and excellent vocal separation. Percussion lacked a little bite, but the treble response was generally smooth, focused and extremely well controlled for a budget turntable. The Debut 3 also impressed with its fine integration and timing, but it couldn't match either the GR2's staging or its treble refinement.

With Billy Joel's 'Angry Young Man', both decks displayed some muddle. That said, given the price, this is hardly of serious concern. More importantly was that both proved thoroughly upbeat and demonstrated timing that would shame most CD players this side of a Naim CD5i. Of the two, it was the GR2, which offered the superior piano timbre, with the Debut proving a little lightweight and lacking in body, alongside. Neither was especially dynamic but the GR2 was especially impressive in that it made the most of the dynamic contrast within its

review

limited range. Percussion was well separated, drums had a fine sense of "attack" and even the bass guitar had a fair sense of body and weight. Best of all, though, was the sense of vibrancy given to the song. The GR2 involved the listener like no CD player could at this price, yet still remained impressively refined throughout. Despite it's price disparity, the Debut 3 proved just as vibrant and fun to listen to. Where the differences were apparent, however, was in terms of

depth of sound and resolution. Here the GR2 quite definitely made a better job of crafting each note, and allowing it the space and decay to sound more natural.

Much of the Goldring's refinement came from the superior cartridge, and nowhere was this more noticeable than with Michelle Shocked's 'God is a Real Estate Developer'. On what can be a testing track, the GR2 proved to be a model of dignity with a wonderfully controlled treble boasting a lack of 'splash' from percussion and excessive sibilance from the main vocals. It wasn't that the Debut 3 was unrefined; it's just that, at least with its standard cartridge, it proved rather spikier in the treble after the GR2. The Goldring also gave the guitar a greater sense of body and a more believable character. As before though, both injected life into the music and through pacey timing and fine separation, both were highly enjoyable to listen to.

Aaron Copland's 'Fanfare for the Common Man' made another advantage of the GR2's cartridge become readily apparent: That of surface noise. Whereas the Debut 3's decent Ortofon OMB 5E isn't especially poor in this respect, it couldn't hope to match the fine Goldring 1012GX whose fine line stylus simply dug deeper and, thus, created less surface noise. Considering the status of the Goldring the dynamic scale was excellent, with a fulsome resonance from the booming kettledrums. Brass was smooth and well defined, if perhaps lacking a little in rasp to give it that final sense of realism. By contrast, the Debut 3 had less impact and instrumental body. It still sounded impressively refined with the brass section, though, despite the extra surface noise spoiling the effect to a degree.

#### CONCLUSION

The Project Debut 3 is superb value for money, just as it's always been! Both the sound and finish are better than ever which, for just £10 over the Debut II, has to be seen as quite some achievement. For less than £150 you will not find another turntable that offers the same level of involvement through snappy timing and decent realism. Yet, as good as it is, the Project simply can't match the GR2. Of course, this is no criticism, as the Goldring is £135 more expensive, and fit the Debut 3 with the same cartridge and the difference almost disappears. Even without the 1012GX, the familiar Rega based deck is still an impressive turntable. Yet, when combined with the Goldring cartridge it gives a level of refinement and focus that simply romps away from any other turntable package below £300. In fact it's a package that's hard to fault in any area, such is its overall competence. Against more expensive suspended decks, it is a bit bass light but. considering the price, that's about it. With superior build guality and finish to the Project, the GR2 simply

#### THE DIGITAL CHALLENGERS

compounds its case. Unless anything better comes along within the next eight months, this has to be the budget turntable of the year.

## VERDICT •••••

With its superb cartridge as standard, the GR2 goes straight to the top of the class. Refined, detailed and a consummate all-rounder

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#### FOR

- class leading refinement
  cohesion, staging and timing
- build and style

#### AGAINST

- lack of real bass

#### VERDICT OOOO£

With a vibrant and musical sound, fine build and a decent cartridge, this is easily the best value entry-level turntable around right now.

#### Henley Designs C +44 (0) 1235 511 166 www.henleydesigns.co.uk

#### FOR

\_265

- timing and involvement
- improved finish
- superb value

#### AGAINST

- treble detail lacking
- bass light
- sass ng

Just as the GR2 rules the roost at the sub-£300 turntable price point, so to does the £250 Cambridge Azur 640C in the CD market. The two products actually have much in common. Given their respective prices, they both offer a remarkably well-rounded sound, and yet manage this without sounding in the least bit bland or boring. Like the Goldring, the Cambridge's build quality and styling is also a cut above the rest. A beautifully crafted remote control that s worthy of a machine costing ten times that of the 640C is simply the icing on the cake. As indomitable as it is at the price, the 640C does still have some rivals that offer a different perspective. The key competition at the £250 mark comes from Sony's SCD-XB790. It can't offer the resolution or outright detail retrieval of the 640C, but it does offer an unusually smooth and beguiling sound that could suit some systems better than the Cambridge. It also offers SACD, which the 640C doesn't. Whether or not you'd be swayed by this depends upon how you judge the future of the format. Sticking with convent onal CD, but at a slightly higher price (£330) is NAD's C542. Like the 640C this is a beautifully balanced player, yet has a sonic style all of its own. Its trump card is holographic soundstaging, which is good enough to eclipse even the Cambridge. A slightly bright treble may not be to everyone's taste, but it rarely becomes stricent. Where it loses out to the cheaper player is in terms of bass control. There's nothing wrong with the depth or quantity, simply that it can sound a little lose, especially after the taut 640C. Overall, I would favour the NAD, but whether it's worth an additional £80 is debatable. Three excellent CD players, then, yet still none can match the sheer cohesion and musical fluency of the GR2...

# vinv demand

The term 'audiophile vinyl' has historically encapsulated a somewhat negative and elitist image of chin-stroking, anally retentive obsessives, with houses full of late seventies Mobile Fidelity Sound Labs jazz rock repressings. Not so, says Paul Rigby...







ell, it's an easy stereotype, isn't it? There's no one more addictive that a vinyl junkie, and none more obsessive than a hi-fi purist, so when you put the two together it's invariably extreme

stuff But audiophile vinyl, like any other premium product, is more than just a fad – it's a badge of quality, a Rolls-Royce of records, something that's a gateway to some of the most enjoyable music you have ever heard. Unfortunately perhaps, the term 'audiophile vinyl' is actually rather nebulous, and can cover a multitude of sins. When you're pressing a record on heavy vinyl of 180gm or heavier, on a virgin vinyl source - that is, vinyl which has not been used before or recycled - you are presented with both a much quieter playing surface and the ability to cut a deeper groove into the vinyl that affords you a greater dynamic range. The resultant, improved sound stage is not just restricted to stereo either, these features allow for a greater depth to a mono soundstage too. If the latter is coupled with access to the original analogue master along with utilisation of analogue machinery to process that information, all the way through to the cutting phase, then there is nothing - repeat nothing - that can sonically or indeed visually, match it.

In fact, Tony Hickmott, owner of the UK audiophile vinyl outfit Pure Pleasure, which has produced audiophile releases

would go further, "...vinyl comes closest to replicating the sound and emotion of

the live concert. Whatever the sound reproducing equipment and format used the objective of a record, I believe, is to get as close to the heart and soul of the music and, by extension, the musician. Music is the expression of all human emotions and audiophile vinyl enables us to experience those whilst in the confines of our living space."

Don't believe that audiophile vinyl is the only declaration of 'doing it right', however. There has always been great and poor sounding vinyl, as there are good and bad sounding CDs today. Even before 180gm vinyl was utilised there were still records pressed on standard 120gm vinyl that were astounding listening experiences. However, with a higher and heavier grade of vinyl, you have a lot more going for

you, in the right direction. It is easier to make a great record under these conditions.

"Back in the heyday of vinyl, the '50s and '60s, vinyl cutting was very much an art." explained Bob Irwin, founder and owner of the US-based audiophile outfit, Sundazed - whose audiophile releases include Bob Dylan and The Byrds. "There were people who cut records magnificently and there were people who didn't. This is why there are collectors who will chase after original pressings such as Columbias or Blue Note Deep Grooves. They are chased because of the superior sonics. Not because different master tapes where used, they probably used the same tapes, but a more experienced engineer tended to take more care and utilise more skill for that first pressing. Someone who regarded the cutting of the lacquer as an art form."

By using a heavier grade vinyl you are able, in theory, to offer a louder groove giving a superior signal to noise ratio, one that is more significant, in music terms. With a heavier piece of virgin vinyl, it is easier for a good engineer to cut a breathtaking performance on record than if you used a standard weight of vinyl.

The creation of a piece of audiophile vinyl is an arduous and painstaking process - if it's done right. Quality vinyl companies such as Pure Pleasure, Sundazed and others such as America's Mobile Fidelity, Classic and Mosaic, Italy's Get

## via Blue Horizon and Chess, "as Ray Charles said, 'The CD, and more so audiophile vinyl it don't got no balls'..."

Back and others will strive for the most important ingredient in creating an audiophile release. That is, to secure the permission and possession of the original master tape, "Bearing in mind that they can be up to fifty years old and may have deteriorated somewhat this is not always easy," adds Hickmott. "To have good contacts with the owner/ archiver/ librarian of the tapes is essential."

Lesser companies will avoid tracking down a master tape because, although the task is ultimately sonically rewarding, finding them is difficult and costly as is processing them.

#### **REMAKING HISTORY**

So how do you create an audiophile vinyl LP? Let's say we want to create Otis Redding's

legendary album 'Otis Blue'. Once the master tape has been secured, there then has to be a conscious decision whether you're going to make that record in mono or stereo, if that recording was originally recorded in both configurations. In some cases you will have a true mono record and a re-channelled stereo record to choose from. In other cases you will have a mono record that offers a superior listening performance when compared to the apparently lacklustre stereo performance of that record. Such as the Otis albums that were issued in both mono and stereo. His mono records are very strong, very deep, a lot of low end. Although they were gritty recordings, this is exactly how they should be. The stereo mixes of those records are contemporary yet odd. The stereo was an after thought. You had the stereotypical, pun intended, case of the entire band in the right channel with Otis on the left. It sounds like Otis is out in the hall and the band's in the next room.

"Once you have the master you then find the earliest original pressing of that record that you possible can, continued Irwin. "In the studio, we will then meticulously A-B reference that master and pressing to make sure that we are noting every subtle EQ change (the proper amount of any given frequency - to tone down a bright recording or to bring up a dull recording), every difference in compression or limiting (both control the dynamic range of the master – to make sure a shout doesn't run off the scale, for example) to nail the sound of that record. Because, nine times out of 10, if you run the master tape and let it fly, it won't sound anything like the original record. Particularly if you ran a Stax-Volt master, for example, as the master comes un-EQ'd and uncompressed. That said, you simply can't strap a compressor on the outputs or guess the EQ as that will also not sound like the original record. It requires a lot of reverse engineering."

To complicate matters, there are normally no engineering notes that come with a tape. The original pressing is normally the only reference you have. Thus, you have to A-B compare, song by song, all by ear. That's another of the differences between a great vinyl company and a slap-dash company...

Once the settings are sorted you then have to take the signal through a complete analogue chain, avoiding all digital platforms and workstations.

OUT NOT There has been a wooldh of starsting audiophile releases over the past year from all aver the world: from Germany's SPV. The Who's Albert Hall' concest on four slabs of visual from Italy. Ger Hart's continued discourse of exercise on roor states of only. Non italy, Gen Next's conditional discovery of paych delic rarities from the late 190s and serily 190s; from the USA's Machine Miller Davis Consultate by 3 \$2 and 10 Provinc, where wavers wormanistic as e and how All and the shirt 

Let's Party With The Meters

Annothing the second ect. Bob Dyten's Live SIGS Chullman De AND AND THE PROPERTY OF Philliarmonic Hall: The Booting Series Volume 6. The production values on this set are simply unguifeent. These slabs of bootinfully produced and maxtured word that source eventarial off sit or steaves po-traying a 12° square plant are each site, sit alongside a magnificant St-pop colour book with planty of superb contemporary photographs. The box is photographs. The box is historichy a thick card worksentation of the work paster. Similar bare set bore and the second se THE REPORT OF A DESCRIPTION OF A DESCRIP Construction and the second se uschios Alexsic Julk, la being

i Claco anii perk free a Tatella Connecto and participation will be a set of the main second set of the set of t is noticeable that spin-off arms of the anajor recent companies unjug relia ng viny). The German wing of Onecesal for example, is about to release 

That's a lot of work. You can't simply dump it onto a hard drive, it has to be done manually - the old fashioned way, "This is where you have an engineer that's worth his salt," explained Irwin. "He won't regard this task as a job but as an art form that's what makes the record shine."

For packaging, you have to decide on that early in the process too. If you're doing a new compilation or an expanded vinyl reissue, then new packaging and art is acceptable. However, if you're doing an exact vinyl reissue of an existing record then that can be a daunting task because printing processes have changed many times over the years. "All our artwork is done in-house," said Irwin. "Again, you have to reverse engineer, find out where the art was done, research colours and so on. Most of the time, the original film for the art is long gone. So you have to restore the original art from an existing album cover. It's an involved process."

Despite vinyl sales hitting rock

bottom during the late nineties, the sales of audiophile vinyl picked up dramatically by the year 2000. It has now reached new heights. Sundazed has declared that unit sales are hitting in excess of 20,000 apiece. In some cases it is finding it difficult to keep up with demand. And that demand is now coming from younger listeners in addition to established vinyl veterans. Releases of Sundazed's The Stooges and MC5, for example, have proved popular partly because the quality of the music, partly because the audiophile release costs a fraction of an original pressing, in today's collectors market, and partly because vinyl now has a whiff of 'retro-cool' about it.

Sundazed's Bob Irwin is extremely upbeat about the future, "I'm very optimistic about it - and I'll take on anyone who isn't!" whilst Pure Pleasure's Tony Hickmott continues to believe that vinyl is the receptacle of the very soul of music, "As Ray Charles said 'The CD, it don't got no balls'".

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#### **FUTURE RELEASES**

To fully detail even immediately forthcoming audiophile releases would fill this feature and more. The quality is on the increase and the number of companies getting in on the act is rising. Highlights include Crosby, Stills & Nash's self-titled release, via Classic, as a 4-disk set cut at 45rpm and, similarly, The Royal Ballet Gala Proformance 45rpm Box Set (8 disk set), from Classic - both are issued on 200gm vinyl. Mosaic are also due to release a 10LP box set. The Complete Miles Davis 63-64 Columbia Recordings, limited to 3000 copies only. Mobile Fidelity is to release John Lennon's 'Mind Games' as a 180gm half-speed release and Germany's Speakers Corner has some Alan Parsons releases due too. Get Back, from Italy, is also currently in the middle of producing a range of 180gm vinyl picture disks featuring a wide variety of artists such as The Ramones, Motorhead, Joy Division, Lou Reed, John Cale and Nico. Of course, not all vinyl releases are of the audiophile category. There are many new, worthy and well produced releases on standard vinyl from a variety of contemporary dance and indie bands, reggae, soul and jazz who ensure that vinyl is part of their release schedule. As I write, new releases are expected on vinyl from Low, Hood, Mars Volta, Hives and St Etienne. To keep in touch with the latest releases, monitor the Internet. Vivante (www.vivante.co.uk) is a good source, as is Diverse Vinyl (www.diversevinyl.com).



#### ON RETAIL

TRIGINAL M STER RECORDING There's a growing amount of specialist audiophile vinyl retailers sprouting up in the UK and abroad which are easily accessible via the internet which stock a wide array of titles. One of which is Vivante. Tim Bright, the warehouse manager for Vivante Productions Ltd., sees a buoyant market for audiophile product, "The future is bright - more titles are available then ever before across a very broad musical spectrum: jazz, rock, classical, country, reggae, pop and more. Our range stretches from Bach to the Beatles and Doc Watson, to Norah Jones, Cassandra Wilson and Dido, we also have great audiophile releases from Miles Davis, Led Zeppelin, Peter Gabriel, Peter Green's Fleetwood Mac and Ella Fitzgerald. The list is endless." Bright believes that vinyl has reached its zenith in terms of technological development and points to a recent trend towards the use of 200g vinyl by some companies instead of 180 vinyl and, "...issuing album titles on 45 rpm rather then 33 rpm." In addition, as important is the fact that the major labels are getting involved in vinyl production (although pressing quality is variable), "...so the range of titles is set to grow even more," asserts Bright. "There are many releases available from the likes of Razorlight, Secret Machines, Keane, Radiohead and Coldplay. So vinyl is not at all an old fogey's thing."

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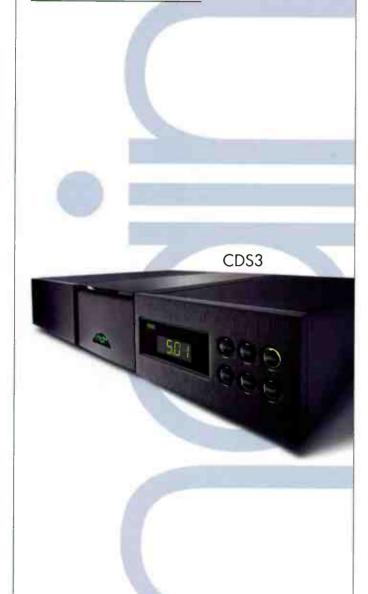
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# rega-lution!

SRM/TECH has been causing quite a stir amongst eBaysavvy audiophiles of late. Its keenly priced and genuinely effective upgrades for Rega and other popular turntables are available either as individual items, or as kits designed to release the true potential of your turntable. John May clicked on...



he 'Ultimate Rega Upgrade Kit' provided by SRM/TECH is an exceptionally comprehensive and sensibly thought-out series of upgrades which retail at a very reasonable £139.95, and should have just about any turntable junkie worth his LP collec-

tion foaming at the mouth!

The kit itself consists of the following items: Two Point Alignment Protractor; Deluxe 20mm Acrylic Platter; 19mm Platter Damping Ring (PDR); Silicon Platter Mat; Adjustable Motor Thrust Bearing kit; Twin Motor Vibration Absorbers (MVA); Main Bearing Damping Ring (BDR); Spindle Support Pad (SSP); Counterweight Resonance Controller (CRC); Pro Cartridge Mounting Kit; Stylus Cleaning Fluid with brush; Ultimate 'Black' Main Bearing Oil; C-Z Contact Cleaner and buds; New Rega Drive Belt... Whew! The Silent Stage Isolation Platform retails separately at £139.95.

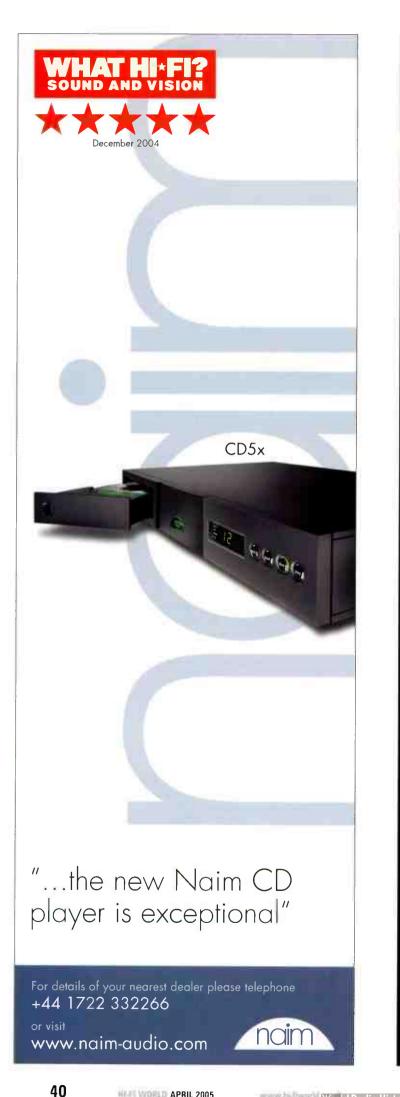
Starting with the smaller items, I first turned to the Contact-Z cleaning fluid. This fluid was originally developed for use in the aerospace industry. I must nail my colours to the mast at this point and admit to a high level of scepticism regarding these 'miracle' fluids. I find in general they're reasonably good at removing light amounts of surface pollution from contacts. The Contact-Z seemed a little better than most in this respect, but no better than a good rub with some isopropyl alcohol or - for more ingrained dirt - that old audiophile's friend, Brasso! Next step was to check cartridge alignment of my Goldring G1042 with the supplied alignment protractor. This device proved very accurate indeed. Likewise with the Pro Cartridge Mounting Kit that contains a high quality set of stainless steel Allen bolts of varying lengths, along with stainless steel nuts and washers. An Allen key and combination spanner completed the line up. The stylus cleaning fluid was effective, but I felt the brush was way too coarse and might - in the long run - damage the delicate tip. The cleaning brush is actually a paintbrush with the stick removed - this item could be improved I feel. Unfortunately I didn't get the chance to test the Counterweight Resonance Controller rings, as my RB250 is fitted with the Michell tonearm modification.

The instructions for the Silent Stage and the other components are exceptionally well written and clear, explaining the setting up of the kit and the design rationale behind it. The four criteria that are mentioned in the instruction leaflet are: [i] isolation of all frequencies of transmitted energy, [ii] must be adjustable for levelling of the equipment without compromising the effectiveness of the platform, [iii] must be 'user-tuneable' to take into account the differing environments in which it will be used and [iv] must look a million dollars! Amusingly, the instructions instruct you to sit down and relax when all is done, and to pour yourself a large whiskey – can't argue with that...

#### SOUND-STAGES

I decided to tackle this review in three stages, starting with the Silent Stage 1 Isolation Platform. This consists of two slabs of polished clear acrylic, 480mm x 400mm x 10mm, with rounded-off edges. Other sizes are available depending on what equipment you intend to use with the Silent Stage. To the lower section are screwed the isolation/vibration-grounding spikes. Mine were gold plated, though black chromium plated versions are also available. To prevent any marks to furniture and consequent barneys with the 'other 'arf' there are a set of four base disc holders which can be used underneath the metal spikes.

Once the spikes are fitted the platform must be levelled. This entails placing four rubber 'tuning' pads in each corner of the base then lowering the top section of the Silent





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World Radio History

Stage onto these. Rebated into the top of the Silent Stage is a bright yellow spirit level. I feel the spirit level mars the appearance of the Silent Stage somewhat. The glue that was used to affix the spirit level into the acrylic is visible through the acrylic surface. Perhaps tighter tolerances between the acrylic and the spirit level would alleviate the need for this glue?

Levelling of the platform is achieved through turning the spikes until the bubble is dead centre of the spirit level. I have mixed feelings about the merits of a spirit level fitted to an equipment platform. All this achieves is levelling of the platform itself. Often due to minor height differences in the turntable's legs, plinth, platter and so forth you will often find the table is still off level. I recommend placing a spirit level on the platter just to doublecheck all is well. Once the level has been set, damping rings are placed over the spikes. These ensure the spikes remain adjusted without any drift, and also reduce the energy that is transmitted into the base

I was interested to see what this platform was capable of. I had been using - to great effect - a marble chopping board (£10) resting on four small rubber feet for isolation, with three Michell Tenderfeet (£12) in place of the stock rubber items on the Rega. This in turn was resting upon an IKEA Corras unit (titter ye not! - this budget wonder is extremely capable, along with the oft-recommended IKEA Lack table). Would the Silent Stage offer an improvement? Judging by the way it handled my Rega P3 I'd say more or less! Vibrations didn't seem as well controlled as the marble support -afingertip lightly resting on the surface of the acrylic whilst playing bassheavy music revealed that much. The vibration control can be subtly tuned by using a combination of different

tuning pads between the two acrylic layers. There are three types: Black -Neoprene, White - Silicon and Cream, which is a secret formulation. I found in my set-up that two Cream pads at the front, and one Neoprene pad at the back worked best with my Rega.

At normal listening levels the platform proved e mphony Number 3 was less obtrusive than it had been before, the performance as a whole better integrated and more convincing. Dynamics were improved, and rock and Jazz music in particular contained more sparkle and life than before. As an aside the platform also worked very well underneath a Naim CDI, bringing a much better sense of focus and rhythmic 'snap' to the music. I feel that the asking price is a little steep for what is in effect two pieces of polished acrylic and four metal spikes!

Next I fitted the new Rega drive belt into place, fitted the acrylic platter, the Silicon Platter Mat and the Platter Damping Ring. I wasn't too impressed with the finish of either of these last two items. The platter mat is an uneven dark-grey, and appears as if it is covered with ingrained talcum powder! Cleaning of the mat didn't seem to make any difference. On the plus side it did seem acoustically inert, which is an ideal surface on which to place an LP. The Platter Damping Ring that is gently fitted to the circumference is made of a synthetic polymer, and like the other rubber rings - is constructed from a thin line of rubber, visibly glued together to form a circle. The acrylic platter looks lovely, but was let down by the unpolished circumference. Of course this is hidden from view when the Platter Damping Ring is fitted, but it would still be nice to have the option of being able to use it sans this item, and having a smooth finish instead of this rough one.



SRM base



Rega on base.



Spirit level



SRM Motor

Fortunately these items sounded far better than they looked. I have heard from other users, who have changed over to acrylic platters, that the musical strands just seemed to fall into place. With the stock glass

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finish is generally to a very high standard...

platter / felt mat music was held in a vice, unable to truly break free and a little 'mushy' sounding. With the SRM/TECH platter et al in place the music was far more transparent and organic, the 'balance' of the sound feeling correct on an instinctive level. The last stage of this upgrade kit consisted of fitting the Motor Thrust Bearing Kit, Motor Vibration Absorbers and PTFE Spindle Support Pad in place. Fitting the vibration absorbing rubber ring over the motor was simple enough. The Motor Thrust bearing is machined from Phosphor Bronze, and is designed to replace any item that may already be attached to the underside of the Philips/ Premotec motor fitted to the Rega. The idea behind this device is to raise the motor spindle up very slightly so that it rides upon a hardened ball bearing, which is inserted into the Motor Thrust Bearing and is sealed-in with a dab of grease followed by a tiny grub screw. A tip here is to add a dab of nail varnish to the grub screw to ensure it remains in the same position over a period of time The reasoning behind this tweak is to dramatically reduce motor noise. The bronze bearing flange fits tightly

around the plastic motor spindle surround, though a dab of super-glue is advised and should be applied with extreme care. You may need to drill a hole in the plastic motor cover to accommodate the height of the thrust bearing.

Moving to the main bearing housing of the Rega, I cleaned this out thoroughly using cotton buds and isopropyl alcohol. SRM/TECH provide a PTFE bearing support pad, about half a millimetre high, and slightly smaller than the width of the bearing spindle, which is aimed again - at lowering noise. This can be inserted into the bearing housing either before the ball bearing, or afterwards. SRM/TECH say it makes little difference how you choose to install it. It should be noted that this pad will raise the platter level slightly, thereby altering the VTA. You may wish to insert a washer underneath the tone-arm to increase its height accordingly. After this was inserted into the housing I inserted a couple of drops of Black Oil down the housings sides, and using a cotton bud applied a thin line of the oil down the length of the bearing spindle. Black Oil is supposed to offer a smoother interface between

bearing and bearing housing than the standard variety. In short, it offers a smoother ride!

#### **HEARING IS BELIEVING**

The lack of surface noise from my upgraded Rega came as a pleasant shock! Daring to turn the volume up high on the lead-in to indicate any nasties, I could only discern the faintest hint of hiss, and hardly any rumble at all! At realistic listening levels surface noise was all but inaudible, leaving only the quality of the pressing itself to dictate the resulting sound quality. Speed stability was vastly improved compared to the stock unit. Music had real pace and an almost CD-like clarity to it, but with all the sonic attributes of a first-class vinyl set-up. Impressive! After a few days listening I decided to check the PTFE Spindle Support Pad, and was surprised to discover that where the ball bearing had been resting against the PTFE an indentation had been worn away in it! This doesn't bode well for its longevity - SRM/TECH could well do with replacing this with a harderwearing version.

The fact that I am still ploughing through my favourite LPs as I write this should speak for itself. That addictive urge to rediscover your entire record collection will certainly be re-kindled after installing these goodies - be prepared for some late night listening sessions! The Silent Stage offers a considerable upgrade to the sound of your Rega, or other equipment, but I feel it's rather overpriced for what it is. There are a few rough edges that need ironing out with these products, but in the main I feel they offer a significant improvement over the standard Rega turntable to warrant a solid Hi-Fi World recommendation.



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  - Silent Stage overpriced

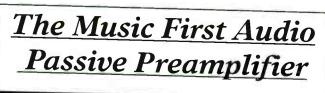
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# blue rondo a la talk

David Price checks out Ortofon's latest range of affordable moving coil cartridges - and visits the factory.

he best cartridge body is no cartridge body – this much we know. There are several, ultra high end designs, such as Dynavector's Te Ketora, which are as naked as the day they were born, untainted by metals, resins or plastics. The trouble is, bodies are there for a purpose - and this is to protect the ultra delicate and sensitive inner mechanism of a moving coil cartridge. Very little in life, except I would imagine, heart bypass surgery, requires as steady a hand to prevent tragic, grief-inducing consequences...

So, as with human beings, the body is there for a purpose. It keeps the inner stuff apart from the outside world, provides useful dirt and shock protection, and even (occasionally) makes things look nice to boot. Question is: which material to use?

Thanks to millions of years of evolution, we humans have pretty effective covering, which satisfies most (if not all) requirements put upon it. Moving coil cartridges have had considerably less time to develop, and people are still experimenting...

The case for metal (invariably aluminium) is strong, inasmuch as it's light and very rigid. If it can be shaped intelligently, then its natural propensity to resonate can be assuaged. Result: decent sound despite itself. Plastic is cheap, and clever formulations (i.e. Pocan) can be conjured up to get round the fact that it's not very rigid and generally gives a vague, nasal sound.

What then of wood? Well, if you're making the odd body in your spare time, it's near ideal. Contrary to the prejudices of the modern world, wood is an extremely advanced 'bio' material which has been in development, by Mother Nature, for many millions of years. The right choice of wood gives you an extremely rigid, light and resonance-free  $\operatorname{body} - \operatorname{which}$  is why it's so popular in marine applications, and even loudspeakers. Indeed - it has the edge on most rival materials in all ways but one. First, it's not possible to get total, unerring acoustic consistency time after time. Second, you can easily fell a tree outside your house, but finding the right wood for the job is a timeconsuming and expensive business. Third, wood carving doesn't lend itself to high volume industrial production processes...

In its new range of mid-price moving coils, Ortofon has developed a new body material using ground Japanese wood in a resin. No, it's not a Koetsu Rosewood then, but it has many of that great cartridge's properties – lack of resonance and rigidity which, translated to the sound through your speakers, results in low, low colouration and a natural musical sound. Or so the theory goes...

As per all Ortofons, you can get different trim levels – the body and transducer are the same, but instead of leather trim and air con, your extra dosh buys you finer styli. The base Rondo Red (£300) sports the cooking Nude Elliptical with aluminium cantilever, this the (£400) Rondo Blue substitutes the rock for a Nude Fritz Geiger 70, and the top Rondo Bronze (£500) gets an FG 80 with tapered aluminium cantilever. All the other vital statistics are the same – 10.5g body, 2-2.5g recommended tracking forces (2.3g optimum), 10200 ohm recommended load and similar-ish compliance.

#### **SOUND QUALITY**

Having spent many hours listening to Ortofons over the years, from the VMS20E II of the seventies to the Kontrapunkt C of last year, I was most interested to see where the Rondo Blue fitted in to the great scheme of things. My first impressions were, what a clean sounding cartridge this is!' Now, if you're familiar with Ortofons, you'll know they're all clean - but this was clean in a way I'd not heard at or near the price. Essentially, listening to a wood resin bodied Ortofon suddenly tells you what's wrong with all the non-wood resin bodied Ortofons, and all other similarly dad moving coils, for that matter. They're oh so clean - amazingly clean. Did I mention they're clean?

If we're honest with ourselves here - the Rondo Blue is not the world's ultimate cartridge, and nor is it meant to be. It's unashamedly a modern, do-it-all, mid-price design. With this in mind, I was befuddled by its lack of obvious character (read: colouration). It's so 'not there', that you're left wondering where it is, and secondly whether all that you can hear is now down to the cantilever and stylus combination. In the case of the MC20W, this is not a bad one, but rather like the world's best turntable running a decent mid-price arm, you can't help wondering how much more amazing it would be if it had that very dream arm. In the case of the Blue, I was aware of the stylus in a way that I rarely am with midprice coils - and was wishing I had the Bronze variant, which is only







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So good is the body, and indeed the generator assembly, on this MC, that what little character the Blue brings to party is the ever-so-slightly fizzy upper midband and treble. Never is it harsh; rather it paints in broad brush strokes, and because the rest of the cartridge is so damn neutral, you can hear its imprecision. That's my criticism of this cartridge (in absolute terms, you understand) it's not finessed enough.

Now, on to the good news - and there's a lot. The Rondo Blue has a strong, even, tight and taut bass

response, with real articulation and grip. It has a wide open midband, with a genuinely panoramic soundstage - the cartridge just seems to dissolve and the recorded acoustic just falls out of the speakers effortlessly with a feeling of total immutability. Voices are strong and accurately etched, and there's a real sense of secure tracking - it feels very secure in the groove - not up to Ortofon Kontrapunkt C standards, but that's the best I've heard in this respect anywhere, ever, at all. Dynamics are also particularly good - and obviously better than the old MC Supreme series. The W simply isn't scared of serving up vast dollops of decibels when it's commanded by the great God of the Groove. You get the sense of an extremely self-effacing, accurate and articulate cartridge.

Now - here's the interesting bit. Compared to the older range Supremes, it seems like the oldsters were singing from inside baked bean cans. They're compressed, clangy and altogether a step further away from the music compared to the Rondos. Compared to my ageing MC30 Supreme, the cheaper Rondo Blue feels dynamic, expansive and even by Danish standards at least - faintly groovy, baby. Ortofons are always going to have that clean, tidy, neutral (did I mention they were clean?) sound - but they're actually beginning to really get in to the groove too, now.

#### VERDICT

Not everyone's cup of tea of course, but if it's the most detailed, neutral and even handed sub-£500 moving coil you seek, then look no more.

ORTOFON RONDO BLUE £400 **Henley Designs** 0+44 (0)1235 511166 www.henleydesigns.co.uk

#### **MEASURED PERFORMANCE**

Even in the days of well developed digital, frequency response of a cartridge like the Ortofon Rondo Blue is no embarrassment. Flat within 1dB limits right up to 20kHz, ignoring the usual rise to arm resonance that enhances low frequencies, it is a picture of accuracy. There were differences between the channels at high frequencies, but they were small. Inner groove losses, shown in the analysis (upper trace), were minimal up to 10kHz, with a small -2dB loss above this frequency. The stylus is exceptional at short wavelengths, so will retrieve detail and avoid dullness right to the end of a record.

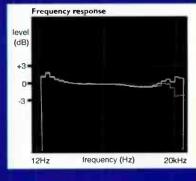
Distortion was low laterally and vertically, the latter because vertical tracking angle was correctly set to 22degrees, our measurements showed. The Ortofon Rondo Blue is a low distortion cartridge by any standard.

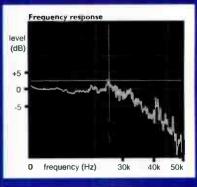
As Moving Coils go, output was high, measuring 750uV into a 40ohm load. This is too low for an MM input but sufficiently high to keep input hiss well suppressed on a typical MC input.

Tracking was excellent at 300Hz and 1kHz, tests of amplitude and acceleration respectively. A square wave test showed some ringing, as usual with MCs, indicative of extended response with discrete structural resonances. A sweep to 50kHz (lower trace) showed the Ortofon Rondo Blue peaks at 25kHz and is only -5dB down at 35kHz, so it has enormous bandwidth.

The new Ortofon Rondo Blue measures superbly in every area. It has virtually no weaknesses, showing just how capable a modern, refined cartridge can be. NK

**Tracking force** 2gms - 2.5gms Weight 7gms Vertical tracking angle 22degrees 20Hz - 20kHz Frequency response **Channel separation** 31dB Tracking ability (300Hz) 85µm lateral vertical 45µm lateral (1kHz) 22cms/sec. Distortion (45µm) 1.1% lateral vertical 1% Output (5cms/sec rms) 0.75mV







#### FON HOME

#### DAVID PRICE MEETS THE MAN BEHIND ORTOFON

I still have my first cartridge, an Ortofon VMS20E, which I purchased in 1981, and even though it's on its second stylus, it still sounds surprisingly good. It's clean, measured, neutral, even and delicate – pretty much like every Ortofon of the 'modern', post SPU-era. Perhaps this is no surprise, as they're all the brainchildren of one man, Per Windfeld.

Per is very much the grandfather of the company now, having been designer knowledge, expertise and indeed personality, is imprinted into every radius and curve

of an Ortofon cartridge. He's an extremely affable, considerate and charming man. Something of a Japan-ophile, he's in love with everything from sushi to ukiyo-e wood block printing. Yet Per is of course very Danish too, which gives him an instinctive feel for detail and design, allied to an internationalism and open-mindedness.

Per's exhaustive approach to transducer engineering, Per's exhaustive approach to transducer engineering, obsessed with the minutiae of everything from the rubber blends used in a cartridge's suspension and the body mould-ing technology to the cantilever material and stylus profile, means that his influence on the Ortofon sound is absolute. His own reference system speaks volumes about his char-acter – Micro Seiki turntables and tonearms, Tandberg amplification, KEF 107 loudspeakers. This is all seriously neutral, dispassionate, analytical fare – and fairly reflects Per Per.

Of course, this comes as no great surprise to anyone who's lived with an Ortofon cartridge. Like Mercedes Benz cars, there's an unerring sense of rightness and consistency about the brand's products. It may not be to everyone's taste, but you know where you are, and where you are is with an exhaustively researched, meticulously engineered phono cartridge; one that sounds as it does because it hasn't been voiced to pander to whim or fashion. Of course, this isn't everyone's cup of tea, and as the 'post-digital' turntable market blossoms, more and more analogue addicts are looking for a little 'character'

The new Rondo series shows this – the company is turning to new and innovative production processes, thoroughly engineered of course, to add life to the famously even and neutral Ortofon sound, The new wood resin-based is obviously more musically engaging than previous models. If you're looking for euphonic colouration, then I'd respecta truly immersive and enchanting musical experience, these are the best affordable Ortofons ever.

# conquering hero?

Latest and greatest in the rapidly expanding Origin Live tonearm range is the flagship Conqueror model. It soon wins David Price's respect...



Rega RB300 complete with superior end stub and better internal wiring. Having used a cooking RB300 for many years on a range of turntables – going right back to an original Rega Planar 3 in 1983, up to my much loved Linn LP12 with Audio Technica AT-OC9 some ten years later – I was little short of gobsmacked by the changes these subtle tweaks made. The Rega RB300 was always a superb tonearm, but suddenly it seemed to be working as nature had always intended.

Somewhat bowled over by the difference the OL mods made, I was very eager to talk to the designer, Mark Baker. I was instantly struck by his incredible eye (and ear) for detail, and the forensic grip on the subject he displayed. Interestingly, Mark wasn't frightened of coming straight out and challenging the accepted wisdom about the popular arm. The RB250, he said, was a superior sounding device, because of its better armtube mounting, and it worked to its best when not tightened to the armboard with maximum force. It doesn't sound so shocking now perhaps, but this was heresy to the champions of 'maximum rigidity' who'd ruled the (flat) earth for the

past twenty years... It was little surprise then

that Mark went on to produce a whole range of arms, culminating in the Illustrious of 2003. This has almost nothing

mechanically in common with the humble RB300, and took his arms to a whole new level. Interestingly, it sounded quite unlike anything I'd previously used. SME Series IVs and Vs remained brilliant in the bass, but the Illustrious was an altogether more subtle, musical and beguiling tool. And yet it was nothing like the previous SME alternatives – the Naim ARO et al – which were also beguiling, and yet also obviously less capable all rounders...

The Illustrious effectively reestablished a middle position in the 'ultimate arm' market, one that the likes of Zeta and Syrinx had hitherto held. The SME V, Linn Ekos and Naim ARO were all extremely charismatic performers – brilliant,

nee stunning, in their ways – yet often downright patchy in other places where they were less able. The OL, by contrast, was a consummate all rounder with a

strong, grippy sound, yet it had wonderful neutrality across the midband, superb soundstaging and (importantly, for me at least) real tonal colour. By this, I don't mean it was 'coloured' in the sense that, arguably, a Hadcock is, but rather than it didn't reduce the colour of a musical performance in the way akin to turning down the colour balance of widescreen TV. The shocking thing is that many, from the SME to the Ekos, do precisely this – and its users simply never notice until they hear a true 'Technicolor' design like the OL.

The Illustrious was, I'd assumed, Mark Baker's ultimate arm, but it seems not, as the Conqueror is the new pretender to this crown. And a striking device it is. Retailing for £2,500, it's a good bit pricier too, but the fit and finish is – as a rule – even better than the Illustrious, which itself has a lovely 'camera' quality about it. I still think that, in this respect, nothing compares to an SME V, and that this arm is also still the most visually striking piece of industrial design of the last twenty years – if ever (although Dynavector DV505 owners would obviously disagree). Yet the Conqueror comes oh-so-close – it doesn't (quite) cost a million dollars, but it sure feels it.

Starting at the bearing housing, it feels similar to the Illustrious, but adds widely spaced, bespoke Origin Live-designed ceramic bearings located in a new high inertia yoke incorporating a newly developed decoupling design. Bias compensation remains the thread and weight system – although it's a tad old hat, there's no sound degrading springs to worry about, unlike the SME Series V. The armtube is the next most

"whatever you play, it just dissolves away..."

obvious change - it's a new stainless steel finished ultra-low resonance slotted design, tapering in several times, which looks (at least) rather like a telescopic radio aerial. The company says it is, "subjected to specialised treatment for complete freedom from brashness and harshness". Wiring is an unspecified 'high grade' type, inside and out, with the addition of Silver Bullet plugs. The new headshell is rigid alloy with torsion webbing, while at the other end is OL's trademark 'structural' counterweight upgrade. Needless to say, Mark Baker claims the highest grade materials are used throughout!

#### **SOUND QUALITY**

What I loved about the Origin Live Illustrious was its easy, even nature – which is most emphatically not to say

that it was in any way soft or slow. This is the crux of the matter as far as I'm concerned, because the Illustrious was a seriously fast device with superb transients, and yet still it managed to sound utterly relaxed and smooth. Contrast this to the SME Series V. which is also as startling as a firecracker in its ability to go from 'off' to 'on' and 'off' again - more so, in truth - yet is somehow mechanical and emotionally aloof with it. What I was hoping from the Conqueror was just an ounce more speed and grip, without in any way going towards 'SME Fivesville'....

Well, this is pretty much what this new OL arm does. It builds on the resounding achievements of the Illustrious and adds small but significantly to its all-round ability. It's emphatically not like listening to a 'new' or 'better' arm, rather – when you go back to the oldster, it sounds precisely that, old and no longer quite on the pace. Yet there's one respect in which I think the Conqueror is not quite as convincing – but more of that later. First, let's hear how and why this is such an uplifting performer!

I started with a popular gauge for any tonearm, Randy Crawford's 'One Day I'll Fly Away', an excellent classic late seventies all analogue recording. The Illustrious handles this with aplomb, with a wonderfully wide and deep recorded acoustic and a delicious rendition of Randy's voice which can sound ever so slightly edgy with the SME Series V tracking suitably 'vivid' cartridges like Ortofon's Kontrapunkt B. The Conqueror brought it to another level. There's no dramatic change, rather the whole recording seems to sound bigger, more natural and less processed. There's a slight widening of that already capacious soundstage, and an obvious deepening too - and the concomitant sense of the speakers being less obviously present. There's a smidgeon more bass control, yet it's not 'technical', but musical, in quality. There's more treble air and space, and a silkier, more natural upper mid.

Move to the clinical perfection of

Kraftwerk's 'Techno Pop' from the seminal 'Electric Café' LP, and this all thrown into sharper relief. The Conqueror simply seems more planted, less troubled by the physical undulations of the groove. There's more information (than the Illustrious) right across the frequency range - tiny inflections which you couldn't quite hear on the cheaper arm become significant elements of both the mix and the song itself. You can certainly point to that tauter, tighter and ever-so-slightly stronger bass and superior treble extension, but in truth where the new OL really shines is communicating the texture the grain - of the voices and instruments. There's simply a subtle, but substantially greater sense of connectedness to the original recording. It's like you've pressed the focus button on your camera.

The SME Series IV (with Russ Andrews cable mod) is redoubtable. bringing an incredibly architectural feel to this track which makes the OL sound less precise, but in truth this is more of a stylistic point there is no more detail from the SME - it's just that because it's so obviously less fluid that you tend to focus in on this strength instead. Move to the jazzy strains of Freeez's 'Caribbean Britain' and this is explicit - the OL is deliciously lilting in its presentation, almost unipivot-like, and romps through the song with an incredible combination of speed and power, yet fluidity and musicality too. And all this time, there's that exquisite, to-die-for tonality that brings this super clean early eighties analogue recording into sharp relief. It's bright and crisp without ever being in any way harsh or strained yet you get to hear the real timbre of the voices, hi-hat cymbals, guitars and keyboards in all their full colour, widescreen splendour.

Downsides? Well, there's one interesting curiosity about the Conqueror's sound that surprises and disappoints – that of surface noise. The Illustrious was (is) stunningly quiet, so much so that even with quite a hissy cartridge like the Ortofon Kontrapunkt B, you're

#### SPECIFICATIONS:

Effective length: 240 mm Overhang:17.24 mm Offset angle: 23 degrees Mounting distance: platter centre to arm hole centre: 223 mm Diameter of mounting hole: 24 - 25 mm Size of base mounting nut: 32mm A/F (across flats) Maximum armboard thickness: 27mm Length of external cable: 1.2m Capacitance: 0.002uF Resistance: 0.002 ohms

#### **REFERENCE SYSTEM:**

aware of even relatively dirty, old, scratchy discs – it just seems to melt

iust not

Michell Orbe turntable SME Series IV tonearm Koetsu Rosewood & Ortofon Kontrapunkt B cartridges Trichord Delphini NC phono stage April Music Stello DP200 preamplifier Quad 909 power amplifier Yamaha NS1000M loudspeakers

through the snap, crackles and pop. The new arm does this too, but to a lesser extent. Of course, it's leagues better than almost anything else I've heard in this respect, but not up to its peerless (in this context) cheaper brother. There's just a slight increase in the noise from studio mixing desks and/or tape hiss which draws attention to itself more than I'd like. Clever matching will eliminate this, such as with a Koetsu Rosewood, but others (Ortofons, and particularly Audio Technicas) may aggravate it.

#### CONCLUSION

Stunning. Space prohibits me from detailing every improvement | spotted over the Illustrious, and every difference I heard against the SME Series IV, but suffice to say that this is one of the very best tonearms yet made by anybody, and more importantly, it's not voiced in a madcap, no-compromise way that prohibits it from pleasing only some of the people some of the time. Rather, the Conqueror is an immensely useable, versatile, realworld tool that works brilliantly no matter what programme material you use or which partnering equipment. The best praise of all is to say that it's a truly 'fit it and forget' design - whatever you play, it just dissolves away...

#### VERBICT

Arguably the very best tonearm yet made – a startlingly capable all rounder with none of the vices or quirks of rival super-arms.

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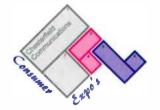
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# stage fight!

Channa Vithana referees this latest affordable phonostage punch-up...

#### **REGA FONO MC £225**

This MC phonostage is fitted into Rega's 'mini' casing that it shares with their headphone amp, and is similar in styling to the full size Rega components. It is well built in the usual Rega tradition with a thick aluminium continuous-sleeve case housing the phonostage board, which slides within it along profiled grooves on the internal walls. Moulded front and flat rear plastic panels cap the case. At the front panel there is a single power switch with integral red LED and extruded Rega logo. At the rear it has phono in/out sockets, ground connection and a power-in socket for the Rega PS1 24v AC external plug-in power supply. Internally it features two 1000µf and eight 2.2µf Samwha capacitors along with two upright extruded heatsinks. It features internally configurable left and right loading and gain DIP switches which enable: input sensitivity (at 150, 300, 460 and 600 $\mu$ V), capacitive loading (at 1000, 2000, 3200 and 4200pF) and resistive loading (at 70, 100, 150 and 400\OM2). It delivered an entirely agreeable high-resolution sound with an extended and tuneful bass with good timing. Listening to 'Midnight Cowboy' the ghostly harmonica didn't have quite the impact in emotional execution as the others, but this did not detract from the Fono's ability with the whole structure of the piece and its innate musicianship. It handled the difficult 'Vertigo' with ease, again producing an excellent standard with plenty of dynamics, grip and resolution. To be extra critical, the Fono

MC sessions revealed a slight lowermid emphasis along with a minute but noticeable dry delivery, however, this will not side-track a really enjoyable, good value phonostage. Excellent.

#### **MONRIO ADN-N £275**

This comes in a basic aluminium fabricated case, which is rounded off at the top edges. Internally there is a nicely laid out circuit board, dual mono with the components doubled up and spaced out accordingly. It is generously specified and features a range of capacitors: two 4700µf, two 2200uf, four 220uf and four I Ouf. The ADN-N also has four internal jumper switches, two per channel. These engage high gain (62dB) or low gain (42.2dB) and MM (47kohm/100pF) or MC (100ohm/1500pF) loadings for your cartridge. Intriguingly, its external 12v AC plug-in transformer is fabricated in Germany and is much heavier than the usual 'made in China' types. It has a glowing blue LED on the front while at the rear it features a powerin socket for the plug-in transformer, an on/off switch, ground connection and very high-quality braced goldplated in/out phono sockets. It measures 150x80x240mm and has a quoted S/N ratio of 74dB for the high gain setting, which I used for the Symphony cartridge. The Monrio had easily the sweetest midrange and treble of the group because with 'Midnight Cowboy' beautifully lyrical with the harmonica melody exhibiting real tangible emotional expression. With a more upbeat track like 'The March Of The Mandarins' the Monrio's timing wasn't quite up there with the

with the others, and the extended violin break in the middle was a little thinner in body. Switching to U2 was quite a shock because I thought (being so sweet and lyrical) the Monrio might struggle, but it loved 'Vertigo', procuring good pace, agility and grip. The Monrio was lighter in the bass than the others, which explains why it had a leaner stance considering the body of individual instruments though it still remained emotional and lyrical. And as such the Monrio can be described as being characterful, having a velvety musical outlook without being soft, cloying or lacking in dynamics, thereby being adept with modern rock music as well as orchestrated pieces.

#### CLEARAUDIO BASIC SYMMETRY £540

This sits in the middle of the Clearaudio range and as its name suggests is a "fully symmetrical" design. Although it lacks physically configurable cartridge loading, Clearaudio says it has "automatic adjustment to any kind of connected MC-cartridge load". It measures 102x165x60mm, weighs 1.8kg and is very solidly constructed and finished in attractive brushed silver casework. It is completely sealed with no visible screws and hardwired to its 25v DC plastic external power supply box out of which extends the fixed power lead. Its thick front-plate features a tiny blue LED which glows in a star pattern and is also adorned with crisply engraved logo and model name. At the rear it has Clearaudio's own very high-quality braced and gold-plated 'MPC' in/out phono sockets plus a ground connection. There isn't a power switch - it's designed to be left on continuously. It has a subsonic filter (20Hz) and quoted specifications are decent with

# VERDICT CONTROL CONTRO

#### FOR

- excellent value
   well-built, small
- brilliant sound

#### AGAINST

lower-mid emphasis

#### VERDICT MONRIO ADN-N MONRIO (C) + 44 (0) 1753 652 669 www.monrio.com

#### FOR

- sweetest lyrical sound o great for rock

AGAINST

basic case

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an S/N ratio of >80dB and 0.004% total harmonic distortion (THD). Both 'Midnight Cowboy' and 'The March Of The Mandarins' were dispatched with consummate excellence, with superb resolution. timing and beautiful instrumental shading. The Basic Symmetry has a slightly sweeter balance, not saccharine but noticeable nonetheless. It was less happy with 'Vertigo' not because it isn't suited to rock; rather it is a very discerning hifi instrument. As such when faced with an uneven recording like 'Vertigo', it will dissect the music with surgical precision, every element is there but separated, without say the emotional response from either the Rega or Monrio - simply because of its inherently revealing nature. For this reason I tried Mike & The Mechanics' 'The Living Years' (1988) on 180g which is a well-recorded pop/ rock record and this was entirely agreeable through the Basic Symmetry, being dynamic and of high resolution.

#### NAIM STAGELINE S £205 (+£290/ £515)

This high-quality phonostage can be used with different brands - with suitable 4-pin DIN to phono lead which can be made up by The Chord Company for instance - as well as a dedicated Naim set up. It requires an external power supply (or Naim preamp) for operation. It embodies Naim's superb upgrade philosophy, enabling progress from the following 24vDC power supplies: i-Supply (£85), Flatcap2 (£515), Hi-Cap2 (£925) or even a Supercap (£2775!). It comes in four factory-set options including an MM version, however this designated S type is for low output MC cartridges and is set at 100uV/470ohms. For the MC versions there is a higher specification for the first gain stage which "consists of an input stage with five paralleled, low-noise transistors to achieve the required low noise and high gain". The Stageline S is housed in Naim's bluff and solidly constructed aluminium 57x121x187mm casing which has a continuous outer sleeve that the circuit board

into. The front panel is thick and gently curved, replete with shadow band, which separates it from the main case and is a nice design detail. At the rear it has two DIN sockets for power-in/ signal-out along with a set of very high-quality braced goldplated phono signal-in sockets and ground connection. I tested the Stageline S with two power supplies, the new low cost i-Supply and the more expensive Flatcap2: The i-Supply is at Naim's new entry-level, available in three variants designated h, i and s. Externally it is a

57x12x77mm plastic box weighing in at 900g with a captive mains cable on one end and a fixed 240° 5-pin DIN plug suitable for connection to a Stageline (s) on the other. With additional adapters it can power Naim's Headline2 headphone amp (h) and power/charge an Apple i-Pod (i). It is described as a linear, regulated 24V very low noise supply. The £290 i-Supply Stageline S had the familiar Naim structural discipline with timing and grip alloyed to good resolution. It had a powerful impact with the horns on 'The March Of The Mandarins', What was most interesting though was its complete unflappability. It wasn't as immediately emotional or poetic as some of the others but it wasn't fussy either, handling dynamics very well without ever straining with forceful orchestration swings or a musical break when the tempo changed. The £715 Flatcap2 Stageline S took the disciplined, unflappable efforts of the already good i-Supply and additionally embraced the poetic and emotional delivery of the others in the group to an even higher standard. It did so within the shroud of the famous Naim sound - grip, resolution and timing - so what we have here is an all-round Naim! It was dynamic without resorting to a monochromatic musical stance. Compared to the i-Supply Stageline S, it initially sounded slower but this was not the case as it proved to be broader, deeper and quieter, additionally revealing three dimensional form, texture and body to instrumentation and voices with the timing remaining intact, it was simply letting out more music.

#### CONCLUSION

slides

Of the three lower cost phonostages, the Rega Fono comes first. In the company of the others here, at only £225, it is excellent value and punches way above its weight, letting you enjoy the music without inviting criticism. The Naim i-Supply Stageline S comes second. It has an unflappable and musical quality, which isn't immediately obvious. It will serve a turntable user well, rewarding with an even-handed delivery, and is upgradeable with more sophisticated Naim power supplies offering improved performance when funds allow. The Monrio ADN-N comes third, as it is a little characterful - through an utterly lyrical and sweet sounding presentation. It's not the best looking

phonostage of the group and the case is larger too. But it is enjoyable to listen to and can handle rock music sympathetically with exhilarating aplomb, so if this is your thing, the £275 Monrio will be ideal.

The two costlier phonostages were much harder to place as I thoroughly enjoyed them both, but the Naim Flatcap2 Stageline S at £715 comes first, as you might expect being the most expensive by a good margin. Both Naim components have excellent build allied with discrete and bluff casework design, which exudes quality without having to shout about it. It takes Naim's traditional sound to newer places without sacrificing its past disciplines - the Flatcap2 Stageline S is a great combination working synergistically and can be further upgraded with the Hi-Cap2 and Supercap. The Clearaudio Basic Symmetry at £540 is an exceedingly exacting device for the price as it can extract the maximum from a piece of music, and if it is well recorded it will present stunning musical vistas for the money. However it is not as forgiving of less than perfect recordings. It has excellent build and is beautifully designed, rather jewel-like in-fact, akin to a solid ingot of brushed silver, which will definitely bring pride of ownership.

#### DISCS USED:

John Barry, 'Midnight Cowboy' (1969) John Barry, 'The March Of The Mandarins' (1964) U2, 'Vertigo'

#### **REFERENCE SYSTEM**

Clearaudio Champion Level 1 turntable (£1,365) Clearaudio Unify Tonearm (£695) Clearaudio Symphony MC Cartridge (£665) Eclipse A502 single input Amplifier (£875) Waterfall Victoria TWN speakers (£2,000)

#### VERDICT 🔿 🔵 🔵 🖻

CLEARAUDIO BASIC SYMMETRY CLEARAUDIO ( +44 (0) 1252 702 705 www.clearaudio.de

#### FOR

- jewel-like design
- well built
- excellent sound

#### AGAINST

overly analytical

VERDICT

- discrete understated styling
   superb performance at the
- price
- unflappable ability
- AGAINST

- nothing

# Choked up!



#### With substantial tweaks under the hood, including choke regulation, Musical Fidelity's A5cr pre-power amplifier combination looks a formidable prospect, says Dominic Todd.

hen most manufacturers go about creating pre-power amplifier pairs, they simply take the components out of an integrated and

stick them in two boxes. The Musical Fidelity A5cr pre and power amplifiers are not, you'll be pleased to learn, "most" amplifiers. Although looking very similar in places, they're radically different in so many areas...

Taking the preamplifier first, you'll notice that it looks almost identical to the integrated. In fact, the only differences are shallower heat sinks and a matt black, as opposed to gloss black, lid – a cosmetic alteration shared with the power amp. Otherwise it is as the integrated, which means the same chunky good looks, remote control, single tape loop, four line-level inputs and phono stage. The only difference, here, is that the preamp's phono stage will accept both MC and MM cartridges rather than just MM

Yet it's only when you lift the lid, that the real alterations can be appreciated. There are a few similarities with the integrated, such as the use of the same ALPS volume pot' and some resistors but, otherwise, this is a very different beast. Most striking of all is the new power supply. Initially it appears that the A5cr preamp' uses no fewer than three PSUs. Power, in fact, comes from a compact toroidal mounted on the left hand side panel. The mounting plate is very robust and features a rubber gasket to isolate the supply.

Next we come to the two frame transformers. These provide a fully choke regulated power supply (hence the "cr" designation). As the A5cr preamp' is a dual mono design, it's one transformer per channel. The idea behind this intriguing, and unusual, design is to substantially reduce mains borne interference. Anyone who's heard one of the better mains cleaning devices will testify to the importance of clean mains, and so the effects should be audible.

The styling of the A5cr power amp' is entirely predictable. Nevertheless, when paired with the preamp' it takes on a visual toughness and authority that makes even the butch A5 look a little effete. The combination was also just as well



assembled as the integrated, and more than a match for anything else in its class, to boot.

If anything, the internal changes made to the power amplifier are even more extensive than with the pre'. The A5's large toroidal mains transformer remains, but other aspects of the design are radically different. As with the preamp' there is the same twin transformer, choke regulator. There are also no fewer than twice the number of SAP 15 transistors, taking the total number up to a 'speaker trembling 16. Output capacitors are identical in type but, again, have their number dramatically increased - this time by 50% With such major alterations it comes as a surprise to find that Musical Fidelity quote the power output to be just 5 watts more powerful than the integrated. Of course, a power output of 255 watts is still not to be sniffed at, yet it's only when one looks at the claimed current swing figures that changes start to tell.

Where the A5 claims a still respectable, peak to peak current of 75 Amps, this figure is an astounding (claimed) 200 Amps with the power amp'. That's serious muscle by anyone's standards, and should be enough to drive almost any 'speaker with the utmost of ease.

You wouldn't expect a power amplifier to offer a great deal of features, but the twin, switchable, inputs are handy. There are also double 'speaker outlets which, although not switched, allow for increased system flexibility. What a shame, then, that the A5cr power amplifier offers no facility for monoblocking. No doubt Musical Fidelity would argue that the power output is quite sufficient, but it does cross my mind that such a configuration, should it exist, could well have eclipsed Musical Fidelity's own mighty KW500...

If the technical differences between the pre/power and integrated A5 are noticeable, then they are as nothing compared to the sonic improvements. Listening to an A5 alongside, which I did, it was hard to believe these amps' are related. Fair enough, there were some similarities, but in terms of focus, control and sheer grip, the pre/power A5cr combo was simply in another league. The level of transparency and clarity, as we'll see, was simply stunning.

#### SOUND QUALITY

Starting the listening session off was Shapeshifter's 'Lola's Theme'. It was here where I first became aware of a vocal clarity that simply defies belief for this price of amp'. In fact, it was so taut and pacey that even the rival Naim amp' could do no better, which is saying something. As you'd expect with this sort of power at its disposal, bass was powerful and extended. Yet, it was also exceptionally clean, meaning that, at first, it could almost trick the listener into thinking that the amps were bass light. Further listening, though, merely revealed an absence of the usual cloy that thickens the bass response of many a powerful power amp'. It may be just a

cleaning your favourite record with a miracle cleanser, the pre/power combo stripped off layers of detail with amazing precision. So exceptional was the clarity and resolution that a readjustment of mind set was needed, especially after listening to the refined yet slightly soft A5 integrated - here was the focus and treble stability that the A5 lacked. Yet the really impressive trick that the pre/power managed to pull off was to create an immense level of detail without sounding disjointed or sterile. Although every percussion nuance was finely etched and every guitar riff sliced through the air, the balance wasn't overdone. It might have lacked some of the mellifluous nature of a fine valve or Class-A amp', but it was still highly composed, musical and, above all, foot-tappingly engaging.

With Natasha Bedingfield's 'Size Matters', it became clear that the bass wasn't quite as powerful as something like the mighty CAV A10. Then again, it was superbly controlled, able to sustain high volumes before distortion set in and extremely well integrated. For most systems, with most music, I should think that most people would prefer it this way. As I'd come to expect by now, separation and layering of sound was first-rate and easily up with the best at this price. Likewise, I'd struggle to think of a similarly priced amp' that could match the vocal articulation and projection of the A5cr combo. Considering that this is a highly commercial recording and far from being the most natural, I was impressed that the A5cr didn't ruthlessly expose it, as similarly revealing amps' may well have done.

As Musical Fidelity amps' often do, the A5cr really excelled themselves with Classical music. With Prokofiev's Romeo & Juliet, there was real vitality and a balance that must be hard to beat. On the one hand, the amps' showed an iron fisted dynamic control, that refused to become phased, even at ear-splittingly high volumes. In fact so clean is the MF at high volumes that it's all too easy, as l

"offsetting this remarkable control, is a very fine and delicate touch with lighter passages of music...."

little too revealing and seemingly "forward" for some, but the authority and control over the music can't be denied.

Going back in time to David Bowie's 'Ziggy Stardust' and the effect the A5cr had was startling. Rather like did, to come away with ears ringing, such is the lack of discernable distortion. Offsetting this remarkable control, though, is a very fine and delicate touch with lighter passages of music. Every subtle nuance of the music is carefully drawn out. Each

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#### THE HOWLS

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flutter of a page can clearly be detected and, joy of joys, every instrument sounds wonderfully realistic. Be it brass, woodwind or strings, you can be sure that the A5cr will recreate their individual timbres to an equally impressive standard. At this price, again, it's hard to think of another amplifier that's so evenhanded. Usually, either the brass is too soft, or the strings too harsh, but here, the balance – that word again – is spot on.

Musical Fidelity claim the standard phono stage to be of a high quality, so it was to the MC stage that I next focused my attention. With Coldplay's 'Trouble' I found that the phono stage didn't project the music quite as freely as it had with the line level input, and that a slight softening appeared – especially at lower frequencies. I should imagine that some listeners might be relieved of this, but those used to a Trichord Dino or better, will find the resulting sound a little imprecise. That having been said, it is only an integrated phono stage after all, and so to expect it to compete with separate stages costing in excess of £250 is perhaps unfair. Expect it to sound as

good as Musical Fidelity's own X-LP, though, and you won't be disappointed. Over all, then, vocal resolution was similarly as impressive as before and the softer bass response gave the impression of added depth and even weight. Even without the line levels acerbic bite there was still a very high level of detail retrieval, and the same impression of every note being carefully crafted.

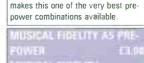
The final disc to hit



the platter was The Divine Comedy's 'Everybody Knows'. Once again, the level of detail within the orchestration was most impressive, and yet the vocals still stood proud from the rest of the mix, and well projected. As with the other songs, there was a real sense of cohesion between the instruments and a lack of obvious nasties at any point along the frequency response. Back this is up with fine timing and stacks of headroom, and the A5cr pre/power combo proved an extremely difficult to fault.

#### CONCLUSION

As you've probably gathered by now, the Musical Fidelity A5cr pre/power is something quite special. In terms of dynamic control and authority the MF is as good as you're going to get at this price. It may not have quite the deepest of bass responses, but it has a pace and urgency that most can't hold a candle to. Even more remarkable then, that this is matched by a similarly class leading resolution and transparency. It's here where the benefits of the choke regulation came to the fore. However, unless you find the A5cr's level of resolution intimidating, a more musically satisfying amp' at this price is hard to find.



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#### FOR

- outstanding resolution
- dynamic control
- fine styling and build

#### AGAINST

- too revealing for some?

#### MEASURED PERFORMANCE

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Producing 220W into Rohms and 200W into Sohms the AS has example prover to tackle any tourispeaker. It's a lot of power, especially for hig fourispeakers that these days are usually constitue too. The boses ton't power theorgh, so exactles the bonefits a big one has over a small one in terms of available current, lower distortion from paralleled entpet transisters and such like.

The A5, like all Musical Fidelity angle produces logligible distortion right across the autio hand, estancing just 0.006% second harmonic at 14kHz our analysis shows for 1W output. At full output, 19kHz, it was little more at 0.012%

Sensitivity was adequate for low output liners and cassitie docks, at 350mV. Name was how separation hig and d.c. officer minimal.

The MM placed stage liss so warp little, running flat from 7Hz to 37kHz. The MC imput did lower a little less extension monophy (SH2-27kHz, Bath stages were quiet and had good overland LP will have placety of locs, fast come flap may occur at times. The AS is a second little good of the St

The AS is a powerflowce with a flue set of opiecs, it measured very well in affective. NK

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Disc MM Frequency response 2Hz-4 Separation 22 Noise -42 Distriction 0.00 Sensitivity 3.50 Granitation 0.00 Frequency cosponse 15Hz-270 Separation 80 Noise -21 Noise 0.00

0.2 level (%) C.1 10k frequency (Hz) 60k

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> Consonance is one of the biggest Chinese names right now. Specialising in highquality hi-fi, its Reference SACD 2.0 SACD player reviewed here is the top two-channel digital player in its range. Channa Vithana listens in...

consonance

onsonance has a house style, centred on gently arched aluminium front plates that adorn its products. The Reference 2.0 uses a 10mm thick heavy-

weight anodised and brushed affair, which extends and frames the regular folded casework behind. Atop the casework are a series of solid cherry wood panels laid across-ways with a slightly arched profile to match flush the top line of the aluminium front plate.

The wood on this player is designed and laid skillfully, lending it an elegant feel. There's also a deeply engraved Consonance and SACD logo carved into two of the wood panels. It would have been a sign of confidence on Consonance's part if they left the logos on the top instead of repeating them on the front panel which makes the styling a little fussy.

The drawer front would have been better matching the matt aluminium of the front plate and without its logos would have looked first-rate. Additionally some wood options, such as light oak or a darker walnut would further the appeal, because cherry is a little too 'polite modern', while a darker hue or different grain would provide more serious, timeless visual formation. The look as a whole though is very easy on the eye, without being extrovert or garish. It has a particularly solid feel to match the looks, without any unsightly fixings, and the finish is generally good too but, for the price, not in the same class as a modern sharp-dressed Marantz SACD player, for instance.

Looking at the details, it has two main control knobs that work by being sturdily spring loaded, with a solid action. The knobs are finished in chrome, offsetting the matt front plate, which for once works well.

Round the back are an IEC power socket, conventional phono outputs and balanced XLR outputs, coaxial/optical digital connections and perforated vents for cooling.

The remote control is made of solid aluminium about the size of a pack of cards and like the control knobs also works well ergonomically, similar to a mobile phone, using a thumb to navigate the buttons. The plastic buttons don't feel like the finest though and are tiny, but I had no problem operating them. The overall finish could be better; it is a little unrefined.

Internally the Consonance features a Sony transport with Burr

Brown DSD 1702 DAC for CD/SACD. The DSD chip is 'the most advanced Sony CXD3068' type which has a crystal oscillator with a claimed '<10ppm super high precision and high stability' and 'jitter value close to zero'.

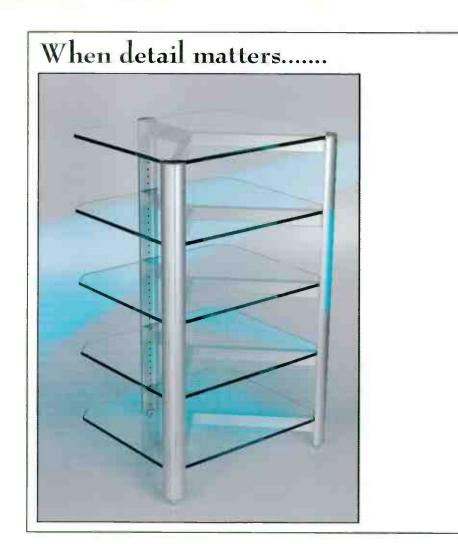
In contrast to this the analogue output is through a Sovtek 6H30 valve, for both RCA and XLR sockets no less. Unlike Shanlings, there's no bypass output.

Consonance include a digital volume control with steps from -30dB to +3dB, making the player suitable for direct connection to a power amp.

#### **SOUND QUALITY**

Four EMI digital remasters by the group Talk Talk were used. These are 1982's 'The Party's Over' and 1984's 'It's My Life' on CD. While 1986's 'Colour Of Spring' and 1988's 'Spirit Of Eden' are on two-channel SACD. In a Darwinian six years Talk Talk went from early, compressed, Linn drum aspirated synth pop to widescreen, austere jazz-rock symphonies that contain manifold sound and vocal compositions which are demanding.

Comparing the Consonance to my reference (for today, at least)











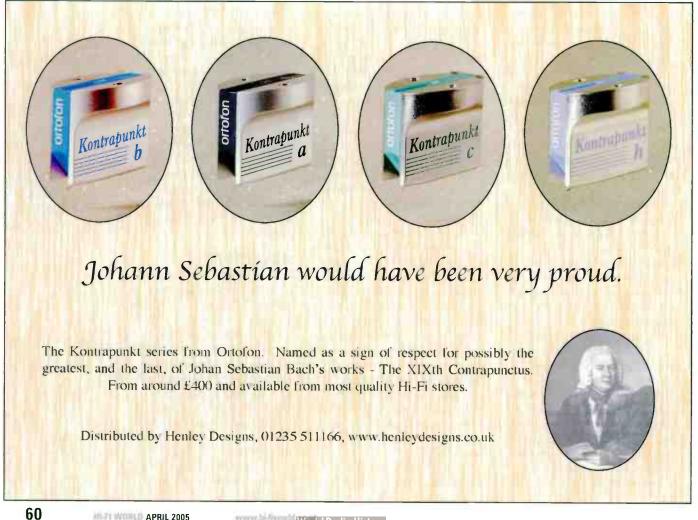




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#### **CLASSIC COMPARISON**

The Consonance easily outclassed the current £899 Denon DV-3910 on both CD and SACD, and so it should at £1,000 more! The classic Naim CD2 (£1,998 when new) had a gutsier structural quality while the Consonance amazed with its treble and mid sophistication, equalling the CD2 in this respect. The Consonance also has an inherently beautiful silken quality matched with a wellsorted and balanced sound, acquitting itself against both rivals. Impressive stuff.

Denon DV3910 was very straightforward. The 3910 prefers to communicate in a slightly forward manner, emphasising rhythmical aspects with immediacy and a bold structure. While the Consonance on the other hand revealed a more complex, deeper and longer lasting delivery. Those expecting an old school, rose tinted sound from the Sovtek valve output stage of the Consonance should look elsewhere; it is sophisticated to a tangibly fine degree.

The Consonance's sound is one of balance and integrity. While not sugary, stodgy or lacking in dynamics, it isn't snappily characterful either, yet still displays a rare silken beauty for a digital player.

On 'Today', from 'The Party's Over', the Consonance rendered the warm and harmonious synths with soul, minimising the generic and compressed early 'New Romantic' leanings. It concentrated on the burgeoning enigma and colour of the group's compositions. What was further exposed compared to the Denon is the plentiful (echo) reverb used on the first two discs around Mark Hollis's vocals. This is no bad thing, as the Consonance always presented Hollis's voice skillfully, revealing his at times fragile intonations that turn to radiant highceilinged epics.

The Denon, however, reproduced a slightly nasal presentation, which is easy to do with a vocal like Hollis's. The title track illustrated the Consonance's adept handling of delicate melodies from the first half, while managing the second half's more saturated oriental structure with an unflappable dexterity, expressing the full body of the crashing synths, being velvety but not over smooth and doing so with authority. With 'It's My Life' the Consonance revealed extra detail with excellent timing, the melodic breaks having real definition this time

compared to the Denon, without the midrange compressing into distortion when certain tracks within this song have been compressed for extra emphasis.

The 'Colour Of

Spring' SACD containing strings, two choirs and electric guitars produced a more complex musical envelope. 'Happiness Is Easy' has Paul Webb's genius bass playing, both subtle and melodic but which can suddenly attack, emphasising a different shift in the song. The Denon displayed these qualities, but without the stunning conviction of the Consonance, which expressed the harmoniously melodic parts and striking extended elements with spine-tingling aplomb. The Consonance also surprises on this song with an eerie rendition of the children's choir, arriving ghost-like to form one the key melodies; it appeared with stealthy subtlety. While the lead guitar melody on 'Life's What You Make It' is normally aggressive, this time however it had body, the Consonance sensitively conveying excellent skill with fast decaying notes,

preventing coloration. The 'Spirit of Eden'

SACD is a masterpiece. Stripped to the bone with only six long-form tracks, it remains a brooding work and probably the most beautiful piece of music 1 own. It is initially a difficult listen compared to the accessibility of its predecessors but with an assured player like the Consonance, it was simply sublime. The composition of 'Spirit Of Eden' is almost exclusively enigmatic, however, esoteric (jazz, rock and classical) sensibilities from the likes of Ornette Coleman, Can and Eric Satie can be discerned. It contains long meandering atmospheric pieces, which the Consonance picked out with a forensic surgeon's skill, whilst adeptly painting them with the craft of an artist.

'Desire' contains low level percussion with a blues chord sequence that suddenly psychedel-



ically explodes, then quietens, while 'Rainbow' has a multi-layered opening with shifting echoing ambient noises and hauntingly affecting vocal delivery by Hollis both of which the Consonance handled with a shimmering beauty.

#### CONCLUSION

This is the most impressive Consonance product we've tried to date. Very often the sonics have been such that it's 'close, but no cigar', but this time however, it warrants critical recommendation. Trouble is, not everyone will be impressed but the somewhat middling finish – something you'd never see even on a £500 Japanese CD player let alone a £2,000 one. If you can live with this, then it's – at the very least – an essential audition.



Consonance's most impressive product to date. On sound quality grounds it's a truly superb player but the finish isn't up there with its Eastern or Western price rivals.

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#### ruk ....

- solid build
  superior balanced sound
- ergonomics

#### AGAINST

- finish mediocre
- SACD/CD only

#### MEASURED PERFORMANCE shows quite -6dB 0.002

Our response analysis shows quite clearly this player has a +0.25dB plateau lift across a wide band from 500Hz downward to low bass frequencies, before rolling down to 0dB at 10Hz and -6dB at 2Hz on SACD, and 4Hz on CD - both test disc limits. Plateau bass lift increases energy and is perceived as extra warmth and weight in the sound, not unwanted with CD. Any more than that used here would be very obvious; this player should sound naturally more full bodied than others.

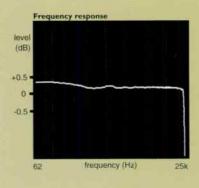
High frequencies are smoothly extended with CD, but with SACD there's a little high frequency lift that has the unfortunate affect of increasing the large quantities of supersonic noise produced by SACD, not especially clever with loudspeakers fitted with super tweeters. The upper limit for SACD was a normal 58kHz (-1dB).

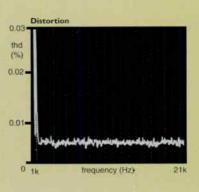
Super tweeters, the upper limit for SACD was a normal 58kHz (-1dB). Distortion levels were a little higher than the best, on CD and SACD, but satisfactory all the same. Output is variable, reaching a maximum of 2,24V.

Tename, reacting a maximum of 2.24V. This player will have its own sound, fulsome and easy enough on the ear. It produces a lot of noise above 20kHz though which with some loudspeakers may not improve the sound. NK

Frequency CD SACD		- 21kH - 58kH
	CD	SACI

-60dB	0.28%	0.2%
	10%	2.5%
-100dB		20%
Separation (1	kHz)	107dB
Noise (IEC A)		-102dB
		108d8
Output		





review

# Filler Berforman

#### A loudspeaker that lives up to its name? That will be Mordaunt Short's new Performance 6 then. Dominic Todd takes the driving seat..

ike many British loudspeaker brands under the ill-fated TGI group (including Epos, Tannoy and Goodmans), the future of Mordaunt Short looked less than certain in the late nineties. Fortunately, Audio Partnership took on the company and has proved a worthy custodian. The early part of their tenure saw the launch of the well rated 900-Series loudspeakers, and some decent sub/sat combos, too. Yet, 500THX-series aside, Mordaunt Short has been lacking a suitable flagship model - until now that is...

Two years ago, Mordaunt Short distribution was handed over to Marantz; giving a wider UK audience for the range than the previous exclusive distributor, Richer Sounds. This extra presence and no doubt, money, has seen a brisk stepping up of pace from budget player to serious cross-range contender. We've already seen the impressive Genie range, now it's time for Mordaunt Short's talented designers to show us what they can do given a clean sheet and relative lack of price constraints.

There are two ways of looking at the Performance 6's £3,500 price: Either it's an awful lot of money for a brand more usually associated with products costing a tenth of that, or it's incredibly good value given the specification involved. I prefer to view it as the latter, especially when one first considers the specification and then actually sees the 'speakers in the flesh.

When I unboxed the Performance 6s, they stood next to Wilson Benesch's striking Curves. There was no doubt about it, beautiful as the Curves are, it was the Performance 6s that drew the eye. Considering the Curves' use carbon fibre enclosures and cost of over £1,500 more, that's no mean feat. What makes the Performance 6 is not just the glossy cabinet finish but also the detail touches. The raised "Mordaunt Short" lettering and fluted spikes, which come in their own cufflink-style case, are typical of the attention shown to detail. The only aesthetic let down for me was the individual driver grilles, which feel very flimsy and, surely on this type of product, are a pointless addition.

Good looks aside, it's the specification that really impresses, even for a 'speaker costing this much. The tweeter is the stand out component, which is why we've dedicated a separate section to it, but the rest of the design is none too shabby either. Multi-curved cabinets are, these days, par for the course. Designers have long since realised that a curved cabinet is better at breaking up standing waves, but not always easy to construct. Mordaunt Short has got around this, and a variety of other technical difficulties, by constructing the cabinet from moulded "structure foam". This may sound rather unusual, but when you consider its properties of stiffness with high internal damping and ease of moulding, it makes a great deal of sense. Different thicknesses and even densities of foam are used, with the layering effect of skins enhancing the damping effect still further.



The shape, of course, improves rigidity and the 'speaker is at its most strong down its rear spine. To this end it made sense to mount the drive units to the rear, rather than the front baffle – another task made easier by the cabinet's construction material. Rubber gaskets at the front seal the drive units and act as further isolators from the front baffle. impressive sounding 'speaker. Such was the level of transparency and sharpness of imaging that there were times when, had I been blindfolded, I would have sworn this to be a panel loudspeaker. With Franz Ferdinand's 'Matinee', for example, the intensity and insight given to the vocal rendition was stunning for a box 'speaker. Every breath and vocal intonation was clearly depicted and sharply presented. Equally impressive

### "Good looks aside, it's the specification that really impresses, even for a 'speaker costing this much"

As you'd expect, the enclosure is extremely light which is one of the reasons MS has fitted a 10kg cast iron base. Other than enhanced stability, this also offers a firm foundation for the, tri-wirable, crossover to be connected to – clever stuff indeed.

The woofers look very similar to those used in the 900-Avant series but are, in fact, heavily revised. The ribbed, aluminium CPC (Continuous Profile Cone) remain, but are attached to the chassis by a new roll surround. The chassis itself is now die-cast and features a far more substantial magnet and improved voice coil. The midrange drive unit is an intriguing design featuring compact, rare earth, stacked double magnets. As is the fashion these days, the chassis is vented or, "open backed", to reduce acoustic impediment or "back pressure". Surrounding the assembly is a heatsink that is there, obviously, to disperse the heat created by the voice coils, and therefore improve power handling.

Despite the disparate use of technologies, or maybe because of it, the whole design hangs together with a great sense of cohesion. The moulded cabinet appeals equally to the touch as to the eye, and the colour contrast between the mercury grey cabinet and silver drive unit strikes a harmonious yet arresting aesthetic to my eyes.

#### SOUND QUALITY

ORDAUNT

Make no mistake, the MS Performance 6 is one very was the guitar. It showed a similarly intense resolution, with a suitably raw feel.

Despite the eagerness of the sound, though, it shouldn't be assumed that this is in any way a harsh "speaker. Granted, it's not as creamy smooth as, say, a typical Dali, but it's in no way overly aggressive either. Bass wasn't as deep as some but considering the cabinet isn't as large as it may first appear, the quantity of bass was fine for me. Pay back also comes

from excellent bass cohesion, super timing and a tautness that could even match some of the better stand mount \*speakers at this price. As you'd expect from a speaker featuring metal drive units, percussion detail was excellent, with firstrate decay and crystalline clarity. With Steely Dan's 'Jack of Speed', I initially found treble balance to be a little forward.With extended listening, though, this didn't intrude, and with the higher frequencies being so well resolved and focused it didn't become tiring to listen to, either. Clearly the advanced tweeter has paid off, as this is one of the most open, yet grain-free metal dome





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### **HIGH LIFE**

There's a great deal of intriguing technology that's gone into the

> Performance 6, but none more so than with the tweeter design. It's a novel approach to an old problem: How to achieve clean high frequency, room-friendly performance from an open-backed (dipole) tweeter. Dipole tweeters usually radiate rearward into a tubular enclosure allowing rear energy from the diaphragm to dissipate into the speaker enclosure or into free air. They tend to offer a very clean operation due to the large air volume present. However, a diaphragm playing into a tube will have a large resonant peak at a frequency related to the tube dimensions. In addition, the rear radiation, if allowed into the room, may be in phase error with the front. This results in difficulty positioning them in the listening environment. The solution to the first problem is to present the rear of the diaphragm with a flat acoustic impedance rather than a highly resonant

one. For the Performance 6 this is achieved with a series of pipes that are all tuned to a series of different frequencies. The fundamental bandwidth of these pipes is wide enough such that they overlap and by the theory of superposition they operate across the entire high frequency range. Effectively, an acoustic high-pass filter is fitted to the back of the diaphragm. The result is a diaphragm that sees a volume that is exactly as large as it needs to be for a specific frequency. The front radiation is therefore very clean and transparent and the load presented to the amplifier is more even with respect to frequency.

The solution to the second problem is to emit the rear radiation from the tweeter in an incoherent fashion. Coherent waves travelling in the same or opposite directions will superimpose in a destructive and constructive fashion. This is the cause of standing waves and comb filtering effects that damage an acoustic image and create un-evenness of frequency response. Waves, which have no phase correlation, will add only in a constructive manner, therefore the answer is to remove the phase information from the rear radiation by emitting different frequencies from a slightly different position and send them in slightly different directions. Energy is released from the rear of the device in a manner similar to a diffuse field. This type of radiation adds positively in all circumstances with the plane-wave field from the front of the tweeter. All the rear exit holes are formed on a logarithmic spiral through the solid aluminium of the Performance tweeter. The whole tweeter assembly is isolated from any residual cabinet vibration through a rubber jacket. This allows the tweeter assembly to operate entirely independently from the rest of the speaker while the high mass of the assembly ensures that it remains at rest while the diaphragm operates without any external forces.

tweeters I've heard in quite some time. Once again, that panel-like transparency was also to the fore. Considering the size of this 'speaker, imaging was superb – easily matching far narrower and more compact designs. Less surprisingly, there was decent height of sound. Given that the treble sits a good 6" higher than a typical floorstander or small speaker on a stand, this is to be expected - though it doesn't prevent it from being yet another characteristic that will remind you of the taller panel 'speakers. Rather than dominating, the bass merely underpinned the music. The fact that it wasn't necessarily obvious, though, I'd see as a beneficial fact rather than a detrimental one. In fact, the cohesive meld of frequencies through the range is something of a Performance 6 art. and highly impressive, again, given the multi-driver configuration.

The noticeable recording hiss that accompanied Ian Shaw's 'Ruby'

were beautifully articulated and soared above the orchestration with grace, body and space. The orchestra, itself, swelled enthusiastically when required yet could also swing with the best of them. Again, what was impressive for this size of 'speaker was the sense of snap and dynamic alertness that is usually the preserve of far smaller 'speakers. Bass over-hang, boom and wallow simply didn't get a look in, no matter how complex the music became.

Good as they are in many respects, one of the Avant 900series major bugbears for me was the CPC's colouration. Whilst they brought out high levels of detail, female vocals, in particular, were often portrayed with a discernable edge. It was therefore with some trepidation that I cued up Annie Lennox's 'Bitter Pill'. Could this be the chink in the Performance 6's otherwise impenetrable armour? Well, in a word, no. It would seem

"Such was the transparency and sharpness of imaging that there were times when, had I been blindfolded, I would have sworn this to be a panel loudspeaker"

indicated that the Performance 6 is a revealing 'speaker that is more inclined to give a 'warts and all' presentation rather than rose-tinted one. It's worth bearing in mind that if you have a source that's a little ragged in any area, especially the treble, then the MS will ruthlessly reveal it. The same goes for dodgy recordings. Nevertheless, in this case a bit of hiss didn't prove intrusive, and was more than offset by the incredible vocal realism. I've seen jazz singer, lan Shaw, live on many occasions, yet I've never heard him reproduced on a hi-fi quite as well as this before. Just like in real life, the dynamic resourcefulness was breath taking, yet reproduced without a hardening of sound that other dynamic sounding 'speakers can portray. The percussion took a suitable back seat, but from what can be a "spiky" recording, remained impressively free from "splash".

It was vocal dexterity that most impressed with Carol Kidd's, 'Big Bad Leroy Brown', too. Kidd's vocals that the series of improvements made to the aluminium cone have once and for all rid it of its less desirable colourations. It's far better damped than before with greater control and less inclined to betray its material of construction. What this meant sonically was that rather than Lennox's vocals sounding metallic and cold, as they have with other MS designs before, they sounded naturally voiced and well balanced.With a far superior vocal timbre, the upside of the CPC drivers could be enjoyed all the more - that of higher levels of detail than average.

Although the Performance 6 could be seen as being a little fussy towards the quality of recording and ancillary equipment, it certainly isn't biased towards any particular music genre. With Classical music, MS's range topper performed just as well as it had done before. It's fair to say that the scale of sound with Holst's 'Jupiter', wasn't quite as expansive as some, but the transient

#### THE EDITOR SAYS:

I've heard various pre-production incarnations of these loudspeakers for well over a year now, and have never been less than impressed. But the final version is better still. Essentially, Mordaunt Short has attempted to wring superfi sound from a box with merely 'high end' pricing - and has resoundingly succeeded. It's a very neutral and revealing product all right, one that demands serious ancillaries, yet is actually less fussy about what it works with, and where, than its esteemed price rivals, I ke Focal-JMLabs Micro Utopia Be (£3500), Quad's ESL-988s (£3,500), KEF's Reference 203 (£3,000)). It is arguably less specialised, yet undeniably less compromised than all of these. Indeed I couldn't put it better than DT - here's an extrem, ly able big box that is second to nothing unless you have no financial constraints put upon your purchase. Mordaunt Short's only real problem here is one of image - in the seventies it had gold-plated high-end British respectability, but the company's seemingly endless series of image (and ownership) changes since have damaged the brand. Here's hoping this is the product that puts it back up where it once was.

out the shortcomings of the metal cones. Rather than sounding metallic at inappropriate times, the music always remains true to source and highly involving. Such honesty comes at a price though. Purchasing a pair of Performance 6s will reveal the characteristics of your other components like few others. You could find it a more expensive experience than the £3,500 you'd originally budgeted for!

With this sort of sound I wouldn't have minded too much if the Mordaunt Shorts had looked like battered crates. Yet, the very technology that goes to making them sound fabulous makes them look

attack meant that there was no lack of excitement or drama. More impressive still was the superb levels of separation between instruments. Even when the orchestration became busy the Performance 6 merely expanded its ever-widening sound stage to accommodate the barrage of instruments with ease. As the 'speakers sonically disappeared, the resulting stage was, yet again, reminiscent of a good panel speaker although, unlike the Quad ESL-988, say, there was real treble extension. In fact, it was the treble's openness that was probably the highlight of the reproduction. Where high frequencies are only hinted at in summary by other brands, the Performance 6's shaped even the very highest notes with the same ease and dexterity as the easier to capture mid-range. The caveat, though, is that should your CD player turn all spiky around this point, then the Mordaunt Shorts aren't going to hide the fact. Accuracy of timbre with all sections of the orchestra you can take as read. Only those who actively prefer the strings to have a little more bloom than is strictly accurate are likely to be disappointed.

#### CONCLUSION

High quality hi-fi is getting cheaper by the month and, if you need further proof of this, then look no further than the Performance 6. Had these 'speakers cost £5,000, I would be still be impressed and rate them highly. At £3,500 they are quite simply a bargain. Admittedly, they're still not most people's idea of cheap, but as a showcase of what can be achieved from a 'speaker that doesn't cost the same as a small car, they are the new "More impressive still was the superblevels of separation between instruments"

paradigm.

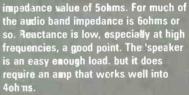
Panel-like staging and imaging combine with a level of cohesion and detail that is simply unbeatable at this price point. Bass may not be the deepest, but it is tuneful, taut and quite deep enough for the average UK sitting room. Furthermore, by fine-tuning the CPC drivers Mordaunt Short have finally ironed fabulous, too. If you can afford them, and the ancillaries to match, they are simply a no-brainer. Editor DP has always told me never to award five globes unless I was about to write out a personal cheque for the product. Trust me, were it not for an imminent house move, I'd be sorely tempted. Recommended with bells on, then...

#### **MEASURED PERFORMANCE**

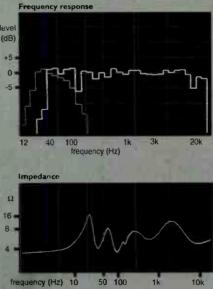
Multi-way loudspeakers with many drive units are quite difficult to get right. Unles test, both frequency response and impedance (especially) tend to undulate. With the Performance 6 Mordaunt Shurt have produced a multi-way with a frequency response to match good two-way designs, our response analysis shows. It is especially smooth across the vital midband, although a small (+1dB or se) lint around 8kHz may well be audible as an occasional brightness or some incision. The Performance 6 will sound quite forward and detailed, as level there's no lower mid-band droop at (dB) all

In line with its size, forward output from the Performance 6 also runs smoothly down to 40Hz, suggesting smooth bass free from lumpiness or boom. As there's just a little (+2dB) plateau emphasis at low frequencies there should be plentiful bass. The port operates at 38Hz but reaches down to 25Hz in large rooms so there will be sufficient to v end weight, but the 'speaker is nearly tuned for a udio band speed and cleanliness, rather than deep sub-sonics which can slow the sound.

Sensitivity was high at 90dB, helped by a low overall measured



The Performance & is a neatly engineered to be accurate yet sound fast. controlled and powerful. It will have a brightly lit balance though. NK



#### verdict 🗧 🗣 🖉 🕲 🔶

Truly redefines the standard at this class, and is good enough to scare those from the class above, too. Superb value for money; a modern classic.

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#### FOR

- superb transparency
- imagining & cohesion - aesthetics, finish
- ucationes, nine

#### AGAINST

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- flimsy driver grilles
- exposes poor ancillaries/recordings
  - aries/record

# Kandy

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# ATC max

The Acoustic Transducer Company was formed in 1974. as a result of Goodmans being acquired by Thorn. Since then, it has become one of the most respected names in loudspeakers, especially in pro audio circles. Stewart Wennen visited the factory to hear for himself...

> ack in the early seventies, the great name of Goodmans was acquired by Thorn Industries, and with it their illustrious Research & Development

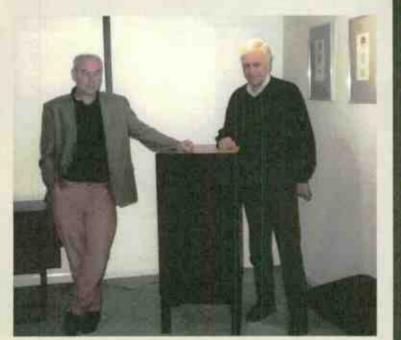
department. It was a sad casualty of the change, and may well have been the death knell for corporate research into drive unit behaviour too.

Billy Woodman had worked at Goodmans for four years in the R&D team during this time, and had a large amount of input into the company's twelve and fifteen inch public address units - designs which in my humble opinion are still amongst the very best available to this day. With such great experience, thus was born ATC.

He nurtured some rather scandalous (to hi-fi enthusiasts) proposals at the time, contending that the frequency band of most importance is between 300Hz and 3kHz The mid band has to be the most accurately reproduced as speech and most of the instruments we listen to are contained within this bandwidth.

His first drive unit was a twelve inch bass unit destined for the professional field. Being a direct descendent of the Goodman's twelve inch and fifteen inch PA drivers, they were extremely accurate and capable of very high sound pressure levels Billy then built his second drive unit, the SM75-1, which was unusual in that it used a dome radiator rather than the usual cone mechanism. This type of construction enabled the drive unit to cover the mid band in its entirety and the phase response was almost unadulterated and was capable of precisely delivering the music to the listener. Both these drive units received the type of care and attention that a newborn child receives, and so all drivers subsequently manufactured by ATC were directly related to them!

Another important point is the use of active amplification for individual drive units. This type of loudspeaker control system has been used for many years by the professional field, although it has become more popular in recent years in domestic audio. Indeed, the hi-fi community has regarded it with





#### LISTERINGTH

LISTERING IN Regular renders will be nonite that I have here every a pair of ATC SCM 35 soul apeakers for ever twelve models. These herebrack-ers are built to de same evoluting standada as the larger SCM 150. Both ables the same evoluting cost although the basis drive and trable one are different. The resulting mound from these two different isoutopeakers is ablest identical with the exception of basis extension, as the SCM 150 every 15 loch these driver and SCM 35 uses a moch multice unit. The mass of multicedenters SCM 35 uses a moch anuflikr unit. The mans of my bootspectanes, is formidable - do not under any disconstances try to move these on your own; always ask accounts to help. The base is an inquest plastic moulded casting into which three spikes are placed, in the twee to the bottom of the cabings. Driver layout follows ATCs trind and trusted method using three drive upits, with errors (see

trind and tracked method using liven diver units, with cracks with gis evident in all aspects of this load pandar; hold spatially accord to one. This applies to the finals of the estimate, crease our hold matter, deve only bold bid totally packing quality. Although partitioning of the SCM 35 is nearly may evalue that their must. They ended up 500 incluse spart 26 incluses from the part wall either side of an old chimmup be used. I have seed many fourt which to use after listance to make piece of reprint to application, with these footlapsulors, and was in any fourt which to use after listance to make piece of reprint and the side of an old chimmup to used piece of reprint and any field of the SCM 35 is nearer in the footlapsulors, and was in any fourt which to use after listance to make piece of reprint any field of the SCM 35 is the piece of reprint any field of the SCM 35 is the piece of application of the piece of application with these footlapsulors. They were the second base of a block of the score of the interpretation of the piece of reprint at the ATC footlap. The remarkable, such as any is the other ATCs the SCM 35 if the particular second is any in the other at the of domination of the maximal applica-tion of piece of the score of allocation of the score of the interpretation of the piece of the piece of the score of the score of the maximal applica-tion of the piece of the score of the score of the score of the score of the transition of the score interpretation of movie - power, size diaption in movie a diabation in reproduction of movie - power, size diaption of the score of the score top.

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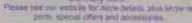


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#### MARING T

The functory stands at the top of an escarpment overlocking the Ginecestershim Downs. Cleaniness is essential in any manufacturing plant along with a well thought out layout. Bob Polley is the Production Director, responsible for the building standards since 1995. His protessional approach is evident in every piece of machinary and the layout of the plant. I was introduced to the two most important ladies at ATC - the chil winders! These components are possible the most volatile in the assembly of high quality loudopeakers as they all have to be absolutely identical. This applies to crossover inductors as well as loadspeaker volce cells - no mean fast as the wire used is reshaped from a circular cross section to a fint section to mable the wire cell gap to be as small as possible. A small gap numbers the cell to receive better magnetic saturation and alds the volce cell to receive better magnetic saturation and alds the volce cell to receive better magnetic saturation and alds the volce cell to receive better magnetic saturation and alds the volce cell to receive better magnetic saturation and alds the volce cell to receive better magnetic saturation and alds the volce cell to receive better magnetic saturation and alds the volce cell to receive better magnetic saturation and alds the volce cell to receive better magnetic saturation and alds the volce cell to receive the size of drive units stacked ready for final testing. Cabinetry gets the same amount of care - Thuve merer seen such a clean machino shap. All the requisites to build ready good cabinets over there in the light operious shap. Final accentely too cabinets were there in the light operious shap. Final accentely too as front monitors with a central loadspeaker andemseth a large projector screen. SCM 70s are used as rear fordapeakers. Attrough differently styled, walking they do not draw attention to themselves.



#### skepticism aplenty.

In my experience, using active amplification systems contribute greatly to the overall quality of any loud speaker system. Although rather expensive, in comparison to passive loudspeakers active control allows the drivers to respond in a much more linear fashion. In the mid seventies, lots of domestic loudspeaker manufactures attempted to produce active systems, from Linn to ARC to Meridian, although few achieved consistent results. ATC offers as an alternative active drive to all of their loud speakers with consistently better results than the passive versions. This consistency of approach has meant that the Acoustic Transducer Company has achieved tremendous popularity in the professional audio sphere indeed there is a good chance that the monitoring for the soundtrack mix on the last movie you watched was achieved using ATC cabinets.

Although these loudspeakers are primarily aimed at the recording

studio market, the para lels between domestic monitors and studio monitors are quite striking - they both have to reproduce music with accuracy, pace, and little or no distortion. As a professional sound engineer I have mixed many pieces of music using ATC studio monitors. As a rule. ATC monitors are no slouches in the transient department and display a very wide and tall stereo image with stacks of stage depth, and most importantly they do not induce listening fatigue. They're superconsistent too, which is a tribute to Billy's production capabilities, and a function of all drivers (except one tweeter) being made in house which is precisely how serious manufacturers like to do it, however much more fraught the process may be.

#### ACOUSTIC TRANSDUCER CDMPANY (C)+44 (0)1285 760561 www.atc.gb.net

#### COMPANY HISTORY

Company founded with the intention of building drive units for use
in the professional sound industry; PA 75-314 12 mch hiss diver-
built

- 1976 SCM 75-1 50 midratign eriver built, SB 75-234 and PA75-234 9 inch drive onits millioutactured
- 1977 PA 100-375 15 inch PArtrive unit was pill into production
- 1978 \$ 50 and \$ 85 complete looslapdaker system introduced to the range
- 1983 DJM studios commissioned ATC to install an extremely large monitoring system; the caddy to the SCM 300A studio monitor-(and this is a very large loud speaker). EC 23 three way electronic crossover, complete with phase correction, launched
- 1985 ATC move i to Strond in Gloucestershire, where they are still to this day...
- 1986 SC VI 50 and SCM 100 passive loudspeaker launched
- 1987 tri-amplification was put into a three way monitor design, finally used with the active SCNI 50 A and SCNI 100 A loudspeaker systems
- 1990 SCM 20 two way domestic monitor introduced
- 1992 SCH 10 mini two way nomestic maintor introduced
- 1994 SCM 20 T floorstanding monitor, a variation on the SCM 20 monitor system
- 1996 SCA 2 pre-mplifier and SPA 150 power amplifier introduced
- 1997 A technical white paper was delivered on Super Linear Magnet Technology: A7 and A7T two way lead speakers for the domestic market liunched
- market Fulleched 1998 SCW 20 SI-TA active tion standing version of the SCM 20 Interched, SCM 10, 1 - Figh power sub-evidence. SCM0.1 12 high player sub-worder and FCU6 multi-channel monitoring system wills introduced for Dolby 5.1 systems. STA2-150 integrated started amplifier introduced to critical acclaim
- 1999 technical peper delivernit to the Aadio Engineering Society by Billy Woodman, 'A Theoretical Analysis of Eddy Current Effects in Louispeaker Motors', which discusses the importance of voice coll behaviour in biodspraker design
- 2000 SCH1+2 in rodernet as mennenting member
- 2003 SCIVI 35 ft or standing monitor introduced

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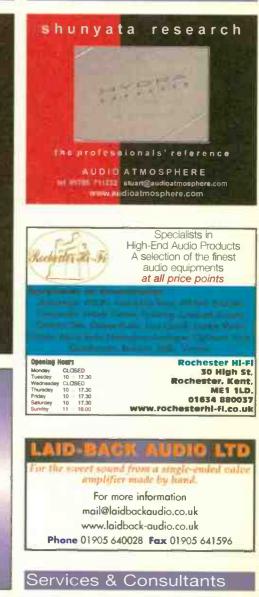


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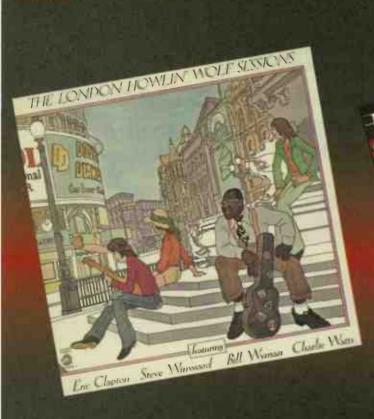
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# VARIOUS ARTISTS

A legendary album, for both good and bad reasons – a famous meeting of an original blues legend, the American, Howlin' Wolf, with his white-boy pretenders: the English gathering of ex-Cream man, Eric Clapton, ex-Traffic star, Steve Winwood and those Rolling Stones stalwarts, Bill Wyman and Charlie Watts plus other guests such as Stones keyboardist lan Stewart, Jeffrey Carp and Chicago great Lafayette Leake plus John Lennon friend and bassist, Klaus Voorman.

The sessions were often fraught with bad feeling, mainly because Wolf was ill (suffering from heart problems and a kidney disorder), old... and angry at the world because of it. Clapton, almost departed on the first day because of the studio tension. Because of that the resulting music sees Wolf performing below par, certainly not up to his, earlier, Chess gems. Yet, while Wolf's hoarse voice doesn't quite have the power it did just a few years earlier, he still sings with conviction and lots of authority. He often 'cries' the blues and, at times, the emotion comes from way down, within himself. The rest of the band then rise to the occasion to still offer any blues fan moments to savour: Also, Bill Wyman and Charlie Watts create a stable rock for each number as a convincing blues rhythm section. As a hidden surprise, Ringo Starr (billed as 'Richie') plays drums

on a good 'I Ain't Superstitious' with a beefy horn arrangement and the band lay down a really tough, powerful version of 'Highway 49'.

imi Hendrix an yorostu

This reissued vinyl is a perfect reproduction of the original from the German-based outfit, Speakers Corner. The vinyl is quiet, allowing the music to shine through, inviting comparisons, for example, between Charlie Watts' detailed, Jazz-like style with Ringo Starr's more powerbased, simplistic rhythms.

# JIMI HENDRIX

A magnificent box set, resulting from the cooperation between Experience Hendrix and Classic Records, this is a 35th Anniversary commemoration of Jimi Hendrix's historic performance at the Woodstock Music and Art Fair in August 1969. Enclosed are three individually packaged 12" white vinyl LPs, each newly remastered from the original analogue master tapes under the watchful eyes and ears of Eddie Kramer – the guy who basically recorded the entire Woodstock event, so he should know...

Also included is a 36-page, large format booklet including lots of photographs, essays and interviews with Eddie Kramer, Mitch Mitchell, Billy Cox and others who help set the scene on that August morning. A bonus 7" vinyl single is also included featuring studio versions of 'Izabella' and 'Message To The Universe' recorded at New York's Hit Factory studios a week following the Woodstock performance. You also get a replica Woodstock ticket and a guitar pick.

The most important ingredient here is the vinyl. The principal problem with vinyl is that, without a suitable vinyl blend, the rest of the music suffers. The most important source for your turntable-based hi-fi is the formulation used by the record label. Poor quality vinyl introduces noise, masking sound dynamics. No system will be able to recover lost music information on that basis.

Cheap vinyl stock is a conglomeration of old vinyl records, melted dowm and re-cycled. Higher graded stock introduces virgin vinyl to the mix. The best stock utilises virgin vinyl – but there are different types and grades. Different labels prefer different vinyl formulae.

his Hendrix box contains vinyl using Classic Records acclaimed QUIEX-SV vinyl. Classic say that records made using Classic Quiex SV are more detailed, have richer harmonics and a more precise soundstage presentation than when pressed on their previous formula. Listening to this set, it is hard to argue against Classic's claims. As a live event there is an understandable loss of fidelicy, yet you gain in artist spontaneity and atmosphere. What musical information is present, however, is present in clear, crystal tones without any veiling or muddying. Of all the format variations of this show, this Classic set is, without doubt, the best on offer.

# MARIE ONIA **MUSIK VON HARMONIA**

For two reasons, this is an intriguing winyl pressing, unlabelled but which appears to be pressed on 140gm vinyl, from major label player. Universal. Firstly, because Universal is releasing vinyl at all and, more cirectly, that it has only been released by an individual terr tory, in this case Universal Germany. The German office is not just releasing German music for a German market, either, more general acts are also Leing covered such as Elvis Costello. This new issue replicates the original release, with it's gatefold format. The cebut Harmonia album is at once a product of their source bands and a fine new twist on them, resulting in music that captures what, for many, is the Krautrock ideal. It's not Kraftwerk's all-synth, clean, clinical pulse, nor Neul's seemingly effortless glide, nor Can's stomping art. world funk. Instead it's at once playful and murky, steady and mechanica, a supergroup of sorts who easily achieves and maintains such a seemingly overstated status by embracing a variety of approaches that work wonders.

The players bring their usual multi-instrumental roles to the fore, ensuring that the end results achieve their own distinct sound - this isn't simply Cluster with Rother's assistance or Rother trying for a solo record with Cluster's backing. For all that, there's a touch more Cluster in the end - the spacier parts on Musik

Von Harmonia have that duo's hushed chill, the electronic percussion of Rother meanwhile avoids his familiar crisp punch using real drums in Neu! outside of the perky 'Dino'. 'Ohrwurm', meanwhile, has a strung-out guitar grind nitely offset by a far more restrained wail in the background, further backed by delicate keyboards and tones.

Universal has done a very creditable job with Harmonia, although the release is not a perfect replica due to tell-tale legal and retail text getting in the away.

Also, due to the lower vinyl weight and, I suspect, a less than prime vinyl mix there is some minor, and it is minor, noise intruding a litt'e on the quiet passages. On the whole, however this is a very welcome reissue of a rare and coveted a'bum.

# **CHARLIE FEATHERS** GET WORT

Mr Rock-a-Billy, Feathers, was an enigma, a man who claimed to have shown Jerry Lee Lewis how to play his 'pumping' style of piano and arranged Elvis" Sun material. He cowrote Elvis's first number one hit, 'I Forgot to Remember to Forget' and spouted off about why music is so poor and the secrets of the Sum sound ad museum for close to four decades. But in this collection, none of that matters. - it does not prove or disprove his claims but certainly testifies that it is possible that what he boasted was true, because the truth is in the grooves. The included

're'eased' material, on this three disc set from Revenant, features all the masters of his singles for Sun, Meteor, King, Kay, Walmay and Holiday Inn. There is something in the grain of Feathers' voice on his issued singles that is off-kilter or off the raivs. It stutters, sputters, spits and stings, while slipping and blurring and rolling through lyrics as if they are dialogue from outer space being dictated to him on the spot. From 1've Been Deceived', 'Defrost Your Heart', with its ghostly, voodoo lyrics to the King 'Can't Hardly Stand It', with its sidewinder guitar to Meteor's 'Get With It' and RCA's 'When You Decide', the effect is the same.

CHARLIE FEATHERS

EXTERIOL RECORDINGS (UNLOW)

GET WITH IT.

But that's not all, this package also includes Sun demos, alternate takes, early home recordings with the likes of Jim Kimborough plus a photo-packed booklet written by Peter Guralrick (Last Train To Memphis, Careless Love), Nick Tosches (Country : The Twisted Roots of Rock 'N' Roll, Unsung Heroes of Rock 'N" Roll : The Birth of Rock in the Wild Years Before Elvis) and Colin Escott (Hank W Iliams: The Biography). The three pieces of clear vinyl all arrive in a slip case package. Mastered on what appears to be 140gm vinyl, the production is wonderfully raw. EQ'd for radio play and for basic radiograms, the top-heavy treble adds to the rawness of the recordings. Nevertheless, the mastering itself puts you right there, almost next to Feathers himself.

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The incredible new Unison Research Performance integrated amplifier on first glance seems like a substantial investment at £5.5 into the until you he is the breathtaking performance - it may then seem like a bit of a barcain the series of the you will be able to form your own op ninne ratilet than until second you for



If you were fortunate enough to read one of the many recent reviews on the Triangle Magellan Concerne you will be aware that this is a very special product include of the model of the second strate with Nick include of UKD who is the UK distributor - we said. We have to have the second strate and azing include and group are We have these on demonstration along with most of the Trans end and Editors Choice are all expressions synonymous with this range of superbly built includes the end of an antipological strategy are

Bel Canto is another manufacture that simply to deline our before a ce expectations of products at a pice coint. Simply put you react to come in, sit down, then prepare to be wowed by the musical type of the emotion is converse.



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# Å"of course, Hollywood isn't much interested in high resolution audio…"



# noel keywood



atching early morning news on TV, a small banner crawled across the bottom of my screen saying cinema audiences are rising steadily. Not a major event I'll

grant you, but an interesting snippet that ties in nicely with what's happening all around us in personal entertainment. People continue to enjoy a night out watching the big screen. Perhaps surprisingly they also continue to enjoy spending a night in doing exactly the same - watching movies on DVD. Globally strong sales in this market are stimulating a boom in related home entertainment products that I'm enjoying immensely and sales figures suggest others are too. Just around the corner lie some great developments...

I can remember a time when cinema audiences were falling, flea pits were closing across Britain and it all seemed over and done with for the big screen. But much has changed - today's multiplexes are bright, clean and attractive. They're also teeming with kids who love the big screen and the great spectacle modern films present. Market reports of audience growth quote a steady 4% rise in attendance over the last decade. This is attributed mostly to the greatly improved quality and variety of today's films, and DVD has slotted into all this with an adeptness that is surprising. It could have threatened audience figures by tempting people to stay indoors; instead it is helping them by getting films out to a wider audience. The cinema attracts the young rather than the old, audience figures show. Figures from the music business corroborate this, showing that - surprisingly - older males are a strong purchasing group for DVD.

However, whilst it's easy and convenient to buy a DVD or hire one for the night, and whilst DVD sales are - or were - booming, that's just part of the story. Also accelerating are camcorder sales, sales of large screens including plasmas and projectors, and video games sales. These technologies open up new avenues of interest and enjoyment. especially in film, but audio quality is affected too. Whilst there's still a way to go here, at the same time tomorrow's standards are being set today and high resolution audio accompanying high resolution video lies ahead. Ultimately, this means recording, storage and replay devices will all be able to cope with multiple channels of 24/192 digital audio, meaning 24bit amplitude resolution and an analogue bandwidth of nominally 100kHz (Okay, so it's actually a little less than 96kHz in practice). This is the standard being set by Blu-Ray and it's a great future for audio.

All the necessary technologies are with us today, especially affordable 24/192 digital convertors. With light signal compression, data rate and storage capacities won't be stretched, especially as the amount of data above 20kHz to be conveyed will often be small, something compression can account for.

What I like about Blu-Ray is the way it puts plentiful capacity into place. We won't be getting 24/192 audio on DVD (or should I say BD, short for Blu-Ray Disc) for some time yet, but at least the ability to carry it into the home is being established. This is a crucial step in building a future where domestic audio quality is not only right up to the highest specification, but so exceeds what is currently being achieved at a professional level we can expect a period of grace from upgrade as programme makers work to catch up.

Audio recording at present is commonly at 24/48 or 24/96 at best, so there's a way to go before 24/192 starts to filter in. For the time being at least plenty of engineers see no reason to improve upon 24/96 which has, it is said, the bandwidth and linearity of a high speed analogue studio tape recorder. A higher sample rate allows greater freedom in anti-alias filtering though. Whether this translates into better audio quality may be open to debate at present, but I doubt it will be when good 24/192 audio starts becoming common.

Of course, Hollywood isn't much interested in high resolution audio. It wants multiple channels and oodles of power, yet I can get as much or more trouser flapping subsonics and volume at home from a REL subwoofer, a 100W per channel surroundsound receiver and the launch sequence from Apollo 13 on DVD. This shows how far home cinema has come in terms of its audio capabilities. There's not much finesse to be talked about here, but the arrival of 24/192 will change all that. Then cinema sound and high fidelity won't be mutually exclusive. We will be able to shake the room with a rocket launch one minute and listen to a string quartet the next, without trade-off.

I-Max is about stunning video quality too and boy, was it ever impressive. At times I found myself saying I'd pay £5,000 - no £10,000 - to have this experience in the home. I wouldn't, because the piggy bank isn't big enough, but I felt it was worth this, especially as 3D is immersive. With high definition video on the way, and high definition video projectors already here, we'll soon be able to approach this quality at home with films bought or hired on DVD's successor, be it HD-DVD or Blu-Ray.

As improved quality drives film, home cinema and high fidelity ahead in the open commercial marketplace, now it is television that is suffering. Mediocre programming and poor transmission quality, with stuttering digital pictures, out-of-sync sound from TV, plus shaky DAB sound quality, has got worse rather than better, overshadow the future. I despair at the closed, regulated world of television and radio. But that's another story. "any modern turntable would eviscerate a similarly priced digital player..."

# david price

t was GK Chesterton who said that journalism is, "literature in a hurry", and while I don't think I'd be precious enough to claim that Hi-Fi World falls into the former category, the "in a hurry" bit is particularly apposite. Everyone here at the mag has had to row in to produce this special issue. A normal month is hectic enough, but when you're dealing with vinyl, things get all the more tricky. If you think that unboxing a CD player, plugging a pair of van den Hul interconnects into a preamp and burning the thing in on 'Repeat' is a chore, try a group turntable test. Fabricating an armboard for an obscure Japanese superdeck last imported in 1979 and battling Denmark's February freeze for the low down to visit the world's favourite cartridge manufacturer is a world away from the world of unapproachable digital, where you plug and play, after you pay. Turntables are hands-on territory where the input of the enthusiast makes all the difference, but the corollary is they take a lot of input. At least, that's the case when you do it properly

Still, we've done it, and despite the stress, grey hairs and raw herring-induced gastric imbalances, I'm feeling more than happy with myself. Listening to vinyl can be challenging enough, but reviewing vast amounts of select hardware (and software) spanning some forty years is something of an achievement, even if I do say so myself...

Why put ourselves out so much, when the easy option was yet another CD player group test? Well, what's the point of being a hi-fi magazine editor if you don't want to do a bit of serious, hard-nosed investigative journalism? When I was but a hi-fi mag reader, I often used to think, "I wonder just how good X is, and why?" Now, as editor of a journal with something of a reputation for serious journalistic enquiry, I have the means to actually get an answer. And get an answer I did! What have I learned? Well, firstly, if you've about one thousand pounds going spare, you can get yourself stunning sound quality. Any of the group test candidates featured in this magazine would eviscerate a similarly priced digital player, DVD-A/ SACD or no DVD-A/SACD. Vinyl is truly the world's highest resolution mass music carrier, and that's more obvious now than it's ever been. Even the Roksan Xerxes X, which for reasons of synergy and set-up, didn't walk this month's group test, is a truly delicious sounding device, and frankly a Musical Fidelity X-RAY v3/Naim CD5i (et al) wouldn't stand a chance.

Taking that as a given – and all analogue addicts surely would – the differences between all the respective models we tested, was quite an eye opener – and here's why: the beginning and end of why any turntable sounds as good (or as bad) as it does is, I believe, down to two key things.

First, its ability to isolate itself from the loudspeakers. What with cartridges being incredibly sensitive measuring instruments and all that, there's little point in making a serious transcription turntable that isn't largely immune to the sound waves coming out of the speakers. Thankfully, we're no longer in the days when a walk across the room would have the needle going skyward, yet it's more subtle than that - serious audiophile decks have to isolate the stylus from the room like the best Jaguar insulates its occupants from the cruel, harsh world of the M6, its potholes and the lorries it speeds past. Without this, it's not worth speaking of.

Second, it has to rotate at the right speed. Now, when I were a lad back in the seventies, turntables were marketed on their magnificently low 'wow & flutter'. At the time, hi-fi journalists pointed out that, actually, this wasn't determined whether a deck sounded good or bad. And they were right, but only half right. Speed stability, down to almost subatomic levels, (if you pardon the mixed metaphor) is something that really does make a difference. The subjective effect is to 'focus' the recorded acoustic - it's the difference between soft focus and perfect focus. And, I'm afraid to say, all of the belt drives we tested in this issue erred – to varying degrees – on the soft side. Contrast this to the Trio Lo-7D (quartz locked direct drive) and Garrard 401 (rim drive), whose bass sounded awesome. Both these started and stopped with the precision of the best modern microscope, but by contrast, all the belters were loose and wobbly.

Now, by CD standards, you'd never spot the difference, because all the 'greatest of the latest' are easily able to despatch digital audio (even at 24/192, l'd say), but swap from what in my humble opinion is the best timing modern belt drive (the Michell GyroDec) to the Trio Lo-7D and it was like dipping your smudged new spectacle lenses in soapy water and polishing until they were spotless. Suddenly, everything came into sharp relief.

Of course, the Trio is an exceptional DD, and almost nothing compares, but it still brought the point back home that belt drive isn't there yet - DC motors and bespoke offboard power supplies or not. In other respects, the belters romped away - they do really sound more musical, but this isn't the whole story - especially when you've just heard one of the best modern turntables (IMHO), the Gyro, get slapped down so comprehensively by a direct drive nearly thirty years its senior, and a rim drive with an additional fifteen years on that. Things have surely got better, but things haven't got comprehensively better - and until we see a new, state-of-the-art direct or rim drive, then so this will remain the case. I fear that modern turntables are belt drive because it's easier to manufacture, not because it's the best solution...

"manufacturers are, from now on, going to have to be cleaner and greener than ever before"

# dominic todd

orget silver and black, this is the year of the green hi-fi. Fortunately, hi-fi is not about to be produced in shades of apple and seaweed, but it will soon have to manufactured with a good deal of extra thought towards the environment. As we'll see later, clean production is only the half the story: manufacturers will also soon have to carry the responsibility for disposing of their

products, too. But more of that later... Environmentally friendly hi-fi is, of course, nothing new. I remember in the early nineties, manufactures made efforts to clean up their act. Factories became more efficient, wood veneers came from sustainable forestry rather than exotic hardwoods, and plastics became CFC-free. Yet, thanks to new European legislation coming into force this year, manufacturers are, from now on, going to have to be cleaner and greener than ever before. There are two legislations that have made the manufacturing industry really sit up and take notice.

First is the 'Restriction of the use of certain Hazardous Substances in electrical and electronic equipment Directive' or RoHS. Essentially, from July 2006 this will ban the use of components using high levels of, amongst other things, lead, cadmium and mercury. Now, anyone who's ever wielded a soldering iron will know that lead is often a major constituent of solder and that, therefore, RoHS could cause a few problems for hi-fi manufacturers. It should also be noted that this doesn't just effect EU built hi-fi, but anything sold on the European market too, meaning that the wave of Chinese built hi-fi coming this way won't be exempt either.

Before we become too concerned over the effects of RoHS as audiophiles, though, it should be noted that these environmentally damaging metals aren't being completely banned from electronics, just limited. In the majority of cases there are also perfectly good alternatives, although we may lose a few favourite components along the way. In short, the effect to the consumer shouldn't result in reduced sound quality or higher prices.

Steeper prices may, however, come as a direct result of the second directive. The Waste Electrical and Electronic Equipment (WEEE - and yes, the jokes have rained down for ages now) Directive was agreed in February 2003. It comes into effect, all being well, this August, and has far reaching consequences for hi-fi manufacturers and, possibly, even retailers. From this summer the disposal of products put on the market after this date is to be financed by the manufacturer, either individually or as a private collective. Although there will be no legal obligation to do so, larger manufactures are expected to set up closed loop systems, which ensures that the product comes back to them. It is also likely that they will handle their reuse, recycling and processing internally. For smaller companies, however, which include most of the hi-fi companies and distributors I spoke to in the UK, private collectives are more likely to be the way forward. As long as they provide evidence of fiscal contribution towards reuse or recycling of their waste products then all is well - they don't have to do it themselves. Nevertheless, whichever system manufacturers and distributors choose, the additional costs are going to be far from insignificant.

Yet, for consumers, there is a double whammy, because it is also expected that retailer costs may also increase. Under the WEEE directive it is likely that retailers will be legally obliged to collect/accept WEEE items should a customer be purchasing a replacement item from them, on a one for one basis. Now, for the high-end hi-fi specialist shops, this is unlikely to be a problem as most units traded in have a second-hand, sell-on value. Those selling the £25 DVD players and £8 personal CD players, though, could be facing more of a problem. If one of these units is brought back, it will no longer be acceptable to simply throw it in the bin, but it will have to be recycled. Sure enough the manufacturer is ultimately responsible for the cost of collection, but the retailer will still have to deal with the logistics of central collection points and unit storage. They may pass this cost on to the manufactures but, either way, the bottom line has to mean higher costs.

For some time now, within Europe as a whole, we've been enjoying lower hi-fi costs. The increasing production of hi-fi in the Far East has, right across the board, meant lower prices that have, in turn, been passed on to the consumer. Whilst I doubt that the RoHS and WEEE directives will have a significant impact upon this, there is going to have to be some give somewhere along the line. If this doesn't come from higher cost to the consumer then other ways will be found to reduce costs, such as cheaper components or cabinet construction. Whilst the idea of cost cutting doesn't fill me with joy, I do feel that something really should be done about the wastefulness of the extreme budget end of our passion. Whilst, high quality and, not necessarily massively expensive, hi-fi is already pretty environmentally friendly - it lasts for years and certainly isn't changed as often as the average home computer - I for one will be glad to see pressure put upon the existence of the £7.99 portable CD player. I'd wager that many of these reach the landfill before their warranty has even expired and, for the good of us, that can't be a good thing.

# "we do not see things as they are, we see things as we are..."



# ljk setright



he tale is told of previously unvisited natives on a Micronesian island who were unable to see a passing ship because they had no concept of such things and were mentally unable to identify some-

thing that they could not understand. It brings to mind an astute Talmudic dictum: 'we do not see things as they are, we see them as we are'.

Reluctant though I am to step into the murky waters of psychoacoustics, where facts are obscured and opinions generate the most hazardous of undercurrents, I suspect that our hearing is even more selfdependent than our sight: we do not hear things as they are but as we want them to be.

Fifty (or was it sixty?) years ago I could persuade myself that, by turning the volume of a cheap and simple little domestic radio as low as remained audible, I could hear all the detail of a musical performance as nearly free of distortion and imbalance as could be imagined or desired. It was not a matter of never having attended a live concert – I had become very familiar with the leading London orchestras while yet a schoolboy – but perhaps of not at that time being able to afford to attend another. It was the radio or nothing, and the radio at normal volume levels sounded like a biscuit tin.

Are we not all like that, filtering reality through a web of established beliefs and prejudices? Our perceptions are adjusted by our subjective feelings, by our experience and by our needs. When we think we are hearing reality, we may not be hearing it at all; we may be constructing an artificial substitute in our heads, a substitute that is more attractive and better worth hearing.At one time I even gave up playing the clarinet for a while, because I was beginning to listen not to what I was doing but to an ideal performance that was inside my head. When that happens, it is dangerous to continue – and I wonder whether that was really what prompted the late Artie Shaw, most wondrous of all performers on that instrument, to stop his search for perfection by simply stopping playing, when he was still only 44 years old?

He lived to more than twice that age, but there was no going back. The way of the hi-fi addict is made easier for him: some upgrade or other is always feasible, some change or addition that will bring him to a new realisation of what is real and a fresh position from which to judge what is good.

Once I visited a dealer who was not one of your tweaky fellows who only allow one pair of speakers into the listening room at a time: he had every loudspeaker in the shop connected to a comparator, and delighted in switching from one to another in rapid succession. The source was a tape recording of applause, and it was utterly discommoding to hear it sound so differently from one pair of transducers to the next. After the first three I could not have chosen which was best, but I had a feeling that on the available evidence none could be right. Perhaps the recording itself was to blame, merely creating a version of white noise, whereas in real applause you can hear the difference in frequency and zeal of clapping between the politely critical folk in the boxes and the uninhibited ravers in the gallery.

Nevertheless the trial was a valuable lesson for me: never since have I been able to fool myself into thinking that any loudspeaker was telling me the truth. One chooses instead on a basis of what one wants and expects to hear.

Or is the criterion really what one wants not to hear? I am prompted to this alternative by the behaviour of the Setright cat. This pernickety creature, previously noted in these pages as an accomplished murderer of Isobariks, had already amassed a good deal of experience in listening to music, by radio and by LP, when I first brought a CD player into my home. As soon as a CD began to sound, the cat would quietly get up and leave the room.

He relented when I introduced the new Philips Bitstream machine, and is today quite content (as indeed am I) with my Karik, but clearly the early 14- and 16-bit systems produced effects which offended his ears. As we were saying earlier, each of us has ways of filtering reality through a web of established beliefs and prejudices. Our perceptions are adjusted by our subjective feelings, by our experience, by our habits and by our needs – and even if the significant factors are of an artistic rather than a technical kind, they may still be effective.

If this be so, how can one accept the judgements of others? I know a chap who only listens to small-band jazz and baroque chamber music; can I trust a word he says about hi-fi equipment? Another critic listens to rock all the time and is utterly confused or intensely bored by classical music of any sort; are his reviews reliable or even relevant? One must in the end rely on oneself, seek the satisfaction of one's own ears or prejudices. The cat may walk out, your spouse may walk out – but only you hear your way.



# patrick cleasby



hich lossy codec do you listen to the most? Hardcore DVD addicts might listen to a hell of a lot of Dolby Digital, and possibly even a fair smat-

tering of DTS. Heavy-use portable listeners might be hearing large amounts of MP3, AAC or even Vorbis Ogg. But if you think about it, you may be listening to more MPEG-1 Layer 2 audio than anything else. (Just thank the gods of happenstance that we never arrived at European DVDs having MP2 audio and no Dolby...).

Although this could be in the guise of DAB radio programming, (let's not get into all the arguments over the paucity of quality to be found there right now), if you're a digital television watcher you're almost constantly listening to MP2 audio, whether it be via Sky satellite or Freeview terrestrial.

The reason I mention this is as an extension of last month's drift into the world of video, and the passing mention of how audio quality considerations are often given scant regard sitting alongside the allconsuming monster that is our love of video. Audio is always the poor relation.

Announcements since last month have only served to enforce the messages of CES. If Bill Gates says 2005 is the year of High Definition video, then so does Steve Jobs, and he has a much more direct involvement in the HD production chain. The latest Apple moves will further ignite interest in HD video production, and technology is moving at such a pace that for perhaps the first time ever, wide scale adoption of a new paradigm could be driven by the consumer, rather than the pros. Sure, HD production for broadcast does happen, particularly in the States, but only at the high-end, with cameras still costing as much as some very luxurious cars.

High Definition video is here at consumer level, right here, right now. Our old friends Sony, in conjunction with JVC and Canon have put a consumer format out there which has the convenience and affordability of using current DV tape stock, but which can, at best, deliver images of true HD resolution. This format is called HDV. What Apple have done, in announcing the new version of its iLife suite of programs, (specifically iMovie HD), which can now work with the HDV stream, is make every Mac owner a potential HD video editor. All it is going to take is added iDVD support for the next generation high density writable discs discussed last month, and there is a clear path for getting those home movies of junior playing on your HD capable plasma from a home-authored HD-DVD or Blu-Ray disk. All of this will happen this year. Who needs pro gear anymore?

So why does this merit mention here, and why did I kick off by going on about MP22 Well, yet again, audio considerations have been compromised due to the need to shoehorn a hell of a lot of data into a limited stream. HDV achieves its trick of getting those high resolution images onto good old DV tape by making two key economies. One is that the video is lossily encoded as an MPEG2 transport stream, but more importantly for us the audio is MP2, albeit at a higher than digital TV bitrate. However, this does feel like a retrograde step - after all, we had the possibility of 16/48 PCM on mini DV. Where once you could run mixing desk stereo into a DVCAM camera and have a convenient stereo backup, nowadays you would have the dubious merits of a lossily encoded equivalent. How ironic is it that we could soon be making high definition discs in our own home but the ability to have high resolution PCM baby gurgles has been lost!

opinion

In reality this probably matters very little to most people. The HDV trick, enabling HD shooting at DV levels of cost has certainly got the video industry excited. The levels of interest at the Sony stands and presentations at the recent Video Forum at Earl's Court were skyhigh, but one can't help feeling that something has been lost when we are no longer trying to immortalise our moments and our music in the best quality humanly possible.

The next worry becomes how scrupulous the music industry is going to be when it gets around to realising that it can sell us all our music DVDs again, but this time with a sticker saying HD on the cover. A music business acquaintance of mine hazarded a guess that eighty percent of the product the industry produces could end up being Standard Definition masters 'uprezzed' to HD as a marketing ploy. How could anyone be so cynical? Let's wait and see, but always remember that newer is not necessarily better. Caveat Emptor once again!

# PROBABLY THE BEST DIV KITS IN THE WORLD

# World Audio design tel: 01245 450 651

# SINGLE-ENDED PURITY

Our Parallel Single Ended (PSE) power amplifiers offer ultimate sound quality. Each monobloc has two beautfully linear 300B directly heated triodes in its output stage, producing 20 watts into an 8 ohm load. At the front of the circuit we there is a 6AU6 pentode, followed by an ECC82 as the driver valve. This design uses a 5U4 rectifier valve in the power supply, in combination with a 10H choke, giving an extremely quiet supply. Both mains and output transformers are built on high quality E/I pattern cores.

Feedback can be switched in or out whilst running, using a rear panel switch. Complex layered and sectioned output transformers give full output and

low distortion across the audio band even without feedback, making such an option possible.

This is one of the few amplifiers in the world so good it will work without feedback - and no feedback is the preference of most buyers. It gives a spacious, relaxed and fluid sound quite unlike that of solid-state amps, all of which use feedback to correct deficiencies.

By operating linearly in feedbackless, pure Class A, single-ended mode these

300B monoblocs are as pure as it gets - and sound quality reflects the fact. Fast, clean and clear in their presentation, at the same time their purity of sound is easy on the ear.

The kit is totally hard-wired; it does not use circuit boards. We can supply without valves, or with the superb Tesla 300Bs, Russian 5U4s and European 6AU6s & ECC82. Our 300B PSE kit bears an affordable price of £895.00 (UK price) excluding valves. Each monobloc weighs 23kgs (50lbs). External dimensions with valves: 25cm(w) x 38cm(d) x 22cm(h) per monobloc.

### PUSH-PULL POWER

For more power, we also offer 300B in Push-Pull (PP) form . The 300B PP monobloc shares the same look and chassis as the 300B PSE monobloc. The 300B PP kit has been created for those who prefer a bit more power. With a pair of 300Bs in push-pull configuration providing 26 watts output, they will drive most modern loudspeakers to perfection. Andy Grove's design is totally feedbackless, using a 6AU6 pentode as the input valve and a 5687 as the phase splitter. The power supply uses a Russian 5U4 for rectification. The kit is constructed by hard wiring, so some experience is required. 300B PSE owners do have the option to buy the conversion klt for £250.00 to turn their monoblocs to push-pull status. Each monobloc weighs 23kg.

300B PSE MONOBLOC KIT £1197 per pair 300B PP MONOBLOC KIT £1197 p	er nair
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The PRE-II is a high quality valve pre-amplifier that will drive any power amplifier. It has a gain of x5 which, with CD, enables it to deliver a large IOV output swing. To keep the amount of active amplification low, this pre-amp uniquely uses a line drive transformer to deliver a pure signal to the power amplifier. There are six inputs, a tape monitor and two sets of output sockets. It is powered by the external PSU-II power supply. The volume control uses high quality Alps Blue potentiometer which, with our solid, turned brass, chromed knob, gives a quality feel rarely encountered these days.

PHONO-II is a dedicated valve phono stage for MM cartridges, with MC input transformers an option. By using all-d.c. supplies from PSU-II and a case in which there is no power supply, PHONO II is hum free, something that is difficult to achieve with valves. With accurate RIAA equalisation right down to 10Hz (-3dB) PHONO II gives a wonderfully pure, dimensional sound from LP, possessing a sense of life and dynamism quite different to solid-state preamps.

Finally, PSU-II is a power supply unit that feeds both the PRE-II and PHONO-II. Keeping the power supply separate removes hum, often the bane of valves.

Power Supply Unit (PSU-II)	£205.00
Pre-amplifier (PRE-II)	£215.00
Phono Stage (PHONO-II)	£110.00
Moving coil step-up transformer	<b>£77</b> .00



# Series II modular pre-amp kit

82 HI-FI WORLD APRIL 2005



# World Audio www.worldaudiodesign.com design tel: 01245 450 651

Kel84 is an affordable, integrated valve amplifier for those who want to enjoy the valve sound, but from a simple, easy to build kit. It uses inexpensive EL84 output valves, known for their sweet sound, in conventional push-pull arrangement to provide 15 watts into an 8 ohm load. The output transformers are our own quality Ultra Linear design. Up front, the circuit employs an ECF80 input/phase splitter valve, which contribues to Kel84's extremely smooth sound.

The amplifier has very low hum and for simplicity it is built on a printed circuit board. A strong steel chassis is fronted by a 3mm anodised front panel and attractive brushed aluminium effect knobs. There are five line level inputs, plus one monitor input, with a tape output included, all controlled from the front panel.

At the rear is a mains switch/IEC power input, earth post, phono sockets, and 4mm bannana sockets for loudspeakers. The Kel84 will highlight all the intricacies and depth of detail in your favourite recordings whilst retaining a warmth and fullness that is almost exclusive to pure valve amps and is rare at this price point.

Kel84 weighs 10kg. External dimensions with valves are  $300mm(w) \times 270mm(d) \times 150mm(h)$ . Single input version also available at £285.

# KELB4 VALVE INTEGRATED AMPLIFIER KIT



Our 6550 series amplifiers are built around the rugged 6550 beam tetrode that's popular in America. This valve is widely available at a good price. Producing no less than 40 watts into an 8 ohm load.(available in a 4 ohm version if required) our 6550 is a power house, since valve watts always sound louder than transistor or watts!

The difference between our 6550 and most others is that we use valve rectification (5U4) and a choke pi filter, for a power supply that is quiet and free from solid-state hardness. This is a true high-end design from Andy Grove, hard wired. It is a cut above the many other 6550s, with enough power to drive most loudspeakers, including insensitive electrostatics for example. 6550 combines high



power with a top-end smoothness of sound, yet doesn't cost the earth to run, as the valves are inexpensive and have a long life.

The amplifier weighs 19kg. Dimensions are  $390mm(w) \times 330mm(d) \times 190mm(h)$  with valves, or 220mm(h) with cage.

**KIT6550** - An integrated amplifier with line inputs and volume control. Accepts CD, tuner, tape etc., but not LP.

**KAT6550** - A power amplifier for use with a separate pre-amp. Paired with PRE II and PHONO II (+PSU II), can provide LP reproduction.

# RITESSO VALVE INTEGRATED AMPLIFIER KIT £615 KATESSO VALVE POWER AMPLIFIER KIT

The Headphone II amplifier is a beautifully simple design using Mullard ECL83 valves, a triode and power pentode housed in the same envelope. It works directly from any source, be it CD, tape, tuner etc., or from an amplifier's tape out or pre-amp out sockets. The circuit uses high specification E/I output transformers that will drive any headphone load from 16 ohms to over 300 ohms depending on how the secondaries are wired up.

The Headphone II is a pure Class A single-ended design with the power pentode wired up in triode configuration for added sonic purity, and it is as quiet as a mouse. Treble has the crispness of the best solid-state, but with the tonal resolution and delicacy associated with valves. Bass is punchy and controlled without becoming artificial.

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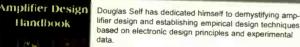
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As all the kits are capable of producing high voltages they require diligence and extreme care to build salely. Read the safety instructions thoroughly before construction. You must be able to solder to a reasonable stand and be able to read a circuit diagram. The KEL84 and series II kits are generally the most straightforward to construct as they utilise PCBs. None of the kits are suitable for children to build without total supervision.

If you are in any doubt about your ability to build one of our kits... give us a call! We'll give you straightforward, honest advice to enable you to pick a kit to suit your pocket and ability. We hail from an electronics background and have test-built every kit we sell. If you need help during assembly or just want to double check something... give us a call! fiven you've done all the cold checks it won't fire up... give us a call! Around 95% of the calls we take for non-runners can be sorted in very little time with our guidance. We don't charge you extra for any of these calls, it's part of the package and at normal call cost. We do our best to cover normal working hours Monday to Friday but we're not a huge company so please be patient. If you get our answering service we're probably helping another customer and will contact you as soon as we are able. If you are one of the few that we can't get working you may send us the kit at your cost both ways and we will fix it for a reasonable cost based on workshop time. If we find it to be a faulty part (ie we agree it was defective when originally despatched) we'll bear the cost. If you've damaged it by poor construction or negligence then we'll charge you for the parts you damaged, fair enough? Before you buy an inferior kit take your time to find out what's included in the price. Before you buy an inferior kit find out how it sounds.

# How to find us...

Personal callers are welcome to collect their purchases in person or visit our Demo Room but please phone ahead especially if making a long journey as we can't always be there to greet you.

# By Car

Directions from the M25 London Orbital: Exit the M25 at junction 28 signposted Brentwood and Chelmsford. Take the A12 north bound heading Chelmsford and Colchester. Exit the A12 at the turning marked A414 Chelmsford and Harlow then at the Widford roundabout take the 1st exit heading Harlow A414. At the roundabout head right towards Writtle. At the T junction head right then left at the crossroads next to the Cock and Bell pub. When you see the village green to your left, take the next left and park up on the road adjacent to the green (near the Inn on the Green). Cross the road you just arrived on and locate Rumsey Row between the chemist and "Which-Craft' WAD are located in the last unit on the right. If you have GPS. set it to "the Green" Writtle.

# By Rail

The train journey from London, Liverpool Street station to Chelmsford takes about 40 minutes, with 3-4 trains running per hour. You can then get a taxi or catch a bus (numbers 45A & 45C) to Writtle Village Green where you will find Rumsey Row between the chemist and 'Which-Craft'. WAD are located at the far end in the last unit on the right.

### By Air

London Stansted, London's third airport, is only a 35 minute drive from Writtle with cheap flights to many EU destinations. Heathrow and Gatwick are also easily accessible via the M25 (90 minute drive).



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# diy supplement APRIL 2005

No.82

# EDITOR

Mike Ballance tel/fax +44 (0) 8707 065 162 diveditor@hi-fiworld.co.uk e-mail:

# DESIGN EDITOR

Faiza Chu	nara
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 Mehl	horn
9.00am - 3.0	0pm
tel:	+44 (0) 20 8841 8892
fax:	+44 (0) 20 8841 9144
e-mail:	accounts@hi-fiworld.co.uk

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www.worldaudiodesign.com +44 (0) 1245 450 651 tel: e-mail: sales@worldaudiodesign.com

# 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@webscribe.co.uk

### WRITERS

Ed Swift Albert Lee Neville Roberts

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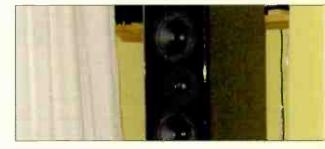
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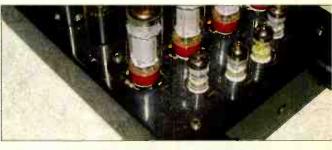
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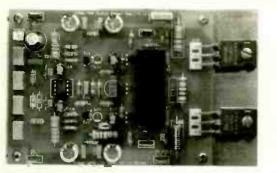


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# **CIY NEWS** The Black Gate mystery

Unprecedentedly Perfect Electrolytic Capacitor



Rumour has been circulating for some months now that production is to cease of the almost-legendary Black Gate capacitor. This indeed is a horror story, if it's true.

Black Gates are the stuff of audio legend at its best. With an enigmatic name and from an obscure source in a far off land, they are as shrouded in mystery as it is possible to be. Japanese in origin, this makes information harder to obtain and the truth less penetrable, deepening the mystery surrounding the fate of the Black Gate. Web sites are abuzz with speculation and chatter, but it is just that – and often off the mark.

Black Gate capacitors are electrolytics with an unusually low ESR (equivalent series resistance). Jelmax's own description in Jap-lish is as good as they get: "BlackGate shows an excellent characteristics, beyond the conventional comprehension, in various aspects. It has realized the Transcendence Electron Transfer in electrolyte between the two electric poles. It enables to make unbelievable breakthroughs from the various limits of conventional type electrolytic capacitors based on Ion Transfer. For example, harmonic distortion noise is reduced to 1/1000, coverage of frequency is expanded 100,000 times (10GHz range) wider and life-time of the capacitor is extended almost 10 times and more." How could you not believe a description like this?

Black Gates have been recognized as superb for audio around the world, so the (audio) world is agog at their apparent demise. Are these crown jewels of audio really going to pass into history, just as their fame spreads out of the realms of the DIY world into mainstream manufacturing?

Reading the runes suggests the situation may be a little more complex and perhaps less certain at present. Developed by Jelmax (www.blackgate.jp), they are manufactured by Rubycon, a volume capacitor manufacturer. Volume in Japan means "You place order for 10,000 now or we not speak" (yep, I've tried it!). It seems unlikely Jelmax could have been moving quantities like this, especially as the BlackGate is barely known about by conventional hi-fi manufacturers.

Although marked as Rubycon Black Gate, it appears to have been manufactured under license by them and no more. As Rubycon now make no mention of this capacitor on their site (www.rubycon.co.jp) it's likely that they have ceased OEM manufacture. We have been told the "factory is refusing to continue production by April 2005. Jelmax will do best to continue the production, but at present we do not know continue or discontinue". A subsequent message, dated 12th Feb 2005, then informed us "BG capacitors are still continued to produce". Does this mean by Rubycon, until April 2005, or by a new subcontractor? Are we really about to lose Transcendence Electron Transfer in electrolyte between the two electric poles? That's a horror story.





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# Flying High

# Ed Swift shows how you really can build your own transmission line speakers!



he Ariel, designed by Lynn Olson, first came to my attention when I was searching the web for an efficient speaker that might match a low pow-

ered SET amp. The proclaimed 93dB efficiency and the transmission line design seemed to be what I was looking for so I decided to have a go. The design has seen a number of modifications and improvements and this description relates to the Mk6c version.

The design is basically a twin transmission line layout with the d'Appolito format. The speakers are not small, standing 4 feet tall and 13 inches deep, but when it comes to sound and efficiency like this, size is not something one immediately wants to compromise. Or weight for that matter, each unit weighs in at 35 kg. The two transmission lines dictate that this project requires a degree of application and it is therefore hoped that this article will not only give an insight into construction, but also help in deciding whether the necessary tools and skills are available at the outset.

# THE PLANS

The plan is readily available on Lynn Olson's website (see links), or indeed on a number of enthusiastic constructors sites where there are numerous articles relating to tweaks and improvement tips. The original plans are shown with imperial dimensions. It is worth stating that if you prefer to work in metric then it is advisable to do the whole conversion from step one, and then double checking that its complete. If one or two dimensions are missed then revisiting the conversion exercise may lead to the need for Prozac.

# **TOOLS AND SKILLS**

The complex nature of the cabinets dictates that precision is crucial. For this reason the minimum set of tools will be a table saw (with precise cross-cut capability), a good router, a construct these speakers can be summed up simply as the ability to cut wood exactly square and to precise lengths. In addition to the woodworking skills there is a requirement for some very simple soldering.

# MATERIALS

All the materials are fully described on the plan and consist of one full sheet (8ftx4ft) each of 3/4 inch MDF and 3/4 inch birch ply and approximately 6 feet of  $7 \times 1/2$  inch cedar or pine. These materials have been chosen for their acoustic characteristics, so variations may change the sound. Crossover components are as per the circuit diagram - and as good as can be afforded. Finally, one bag of genuine long hair wool and one square yard of genuine wool felt for the panel damping will be needed. The wool felt used here was the old fashioned 1/2 inch carpet underlay.

# BUILDING

Now to it! Getting acquainted with the plan seemed like a good idea, so some time was spent asking 'how', before any wood was cut. Wise move as it turned out. It was obvious from the outset that templates were needed to achieve mirror like precision between opposite panels of

"The skill required to construct these speakers can be summed up simply as the ability to cut woo exactly square and to precise lengths."

vernier gauge and a clean work bench of at least 4 feet by 2 feet. If the table saw does not have a precise cross-cut fence then a large capacity mitre saw of 8 to 12 inches wide is a must. Access to a spindle moulder is useful, albeit only for one simple but crucial task. The skill required to the boxes. So templates were made from 3/8 inch ply. One for the sides (can be routed from either side to achieve mirror image), one for the front panel inside, one for the rear panel inside, and one for the front panel outside (to accommodate the driver and tweeter rebates, allowing

# with an Ariel 6

the units to sit flush with the front of the cabinet).

Once satisfied that the templates were exact, the panels were cut on the table saw and matched for length and square. The side panels are one thickness of MDF but the front and back are composite MDF and ply to achieve the necessary accustic damping. The front and back panels can be laminated before or after routing for the internal partitioning, but it's likely this choice will be driven by preference for manipulating light or heavy panels.

Once laminated, the front and back panels are pretty heavy. One trick learned from experience was that cable routing is dependent on where the speaker terminals and crossovers are located. In the example speakers it was decided to locate the crossovers in the unused space at the top of the cabinets and the binding posts 3/4 of the way down the back panel. If these locations are chosen then a cable channel should be routed up the back panel in the middle of the lamination. Failure to remember this before laminating could be frustrating.

Having cut and checked all the panels, the next stage is to route all the rebates for the internal partitioning. The templates will were made with PVA. Assembly was then a matter of inserting 1, 2 or 3 internal partition pieces at a time. Before gluing the partition pieces in place, they were positioned and the other side panel laid on top to ensure a good fit. Once lined up, the partition pieces were glued into the side that was lying on the work bench with the unglued side placed on top while the glue cured.

The internal partition pieces can be rebated or but-jointed to each other. If but-jointing (as in this case) the jointing obviously has to be precise. The angle of the joints varies between 30 and 75 degrees. To address this problem an adjustable mitre jig was designed/constructed to allow the joints to be cut with the router. An annotated construction drawing of this box can be supplied on request.

When all internal pieces had been glued to the side/back lying on the work bench, the driver wiring, the felt damping, and the long haired wool were added. The wool was placed loosely in the transmission line as per designers recommendation, taking care not to place any in the bottom labyrinth. To prevent the wool from dropping down into the line a piece of nylon stocking can be glued into place, at the start of the labyrinth. At this point the remaining

# haven't measured them yet ...

obviously have been cut to suit whichever guide bush has been chosen for the task. If using a cutter with the same dimension as the internal partitioning ( 3/4 inch or 18mm) then this job is straightforward, albeit tedious. Depth of cut is not specified but the units shown here were 1/4 inch or 6mm which seems to give a quality of build generally referred to as 'bomb proof'.

Now for the interesting bit, the internal partitioning. Method of construction will be entirely down to individual preference as there will always be nine ways to build some Ariels. The method adopted here (which I can guarantee works) was to lay one side panel on the workbench and glue the back panel to it, waiting for it to cure. All joints side can be glued onto the back and internal partitioning. It is recommended that the front panel is placed in position unglued while the side is curing.

Finally, the front panel can be glued in place, not forgetting to drill the bolt holes for the drivers and fitting the captive nuts behind. It has been said that drivers can be screwed into cabinets but, having gone to these lengths to construct the cabinets, anybody screwing drivers to them will be certifiably insane.

The crossovers can be built to personal preference. In this case the circuit was built from 2.5mm mains wire on drilled Veroboard as shown in the photograph. The units were securely located and wired into the



Imposing but elegant!



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empty space at the top of the cabinet before the top was glued into place.

As mentioned in the tools requirements it is useful to have access to a spindle moulder. The final requirement is to cut a 1 1/4 inch radius corner into the sides of the front panel. This is not cosmetic as the imaging will be severely impaired

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### One side assembled.

without it. This job can be achieved with the router, but be warned, the cutter will cost in excess of £80. A lot of money for one job.

# RESULTS

Initial switch on was an apprehensive,

tops had not been glued in place at this point. Polarity and phase problems resolved, the test was resumed. The units were left playing for an hour before any listening was done.

The results were extremely disappointing with no real imaging, no coherence or space between instruments, and generally just a muddy wall of sound. At this point the amp was changed for an integrated WAD 6550. The sound brightened up but the overall effect was little changed. This situation remained for 4 or 5 days and then the speakers were disconnected and the cabinets finished and packed off for lacquering. Despondency was in the air. This result just did not tally with the glowing reports of the American audience. I began to think there may be a genetic difference, maybe they have different ears in America

On return from lacquering, the heavy duty spikes were fitted and the speakers were hooked up again and left running for a few hours. Wow! the change was earth shattering. Now, I'm pretty sure that lacquer doesn't have sonic qualities, so it may be the spikes, whatever, the transformation seemed magical. For the last 18 months I have been listening predominantly to ER electrostatics and Tannoy studio monitors, in equal measure. With this in mind I must confess I found it impossible not to



The crossover.

nervous affair, and a spare 40 watt Aria amp was used just in case there were problems. There were! Two minutes listening revealed that the wiring needed to be double checked. It is enormously gratifying that the

compare. The overall feeling of the Ariels is somewhere in between, but definitely erring towards the electrostatic sound.

In trying to quantify the sound I thought I'd try and be methodical

and listen through a range of genres, from acoustic to heavy classical, passing through blues, jazz and rock en-route. On the acoustic side I repeatedly played the likes of Cat Stevens, Nick Drake, John Martin and Van Morrison. The Ariels excelled here, the stage was precise and the space and distinction between instruments was as good as I've heard. Over the course of 3 weeks the detail improved markedly, to the point where studio noises became visible, and, because they were a novelty, slightly distracting. The overall feeling here was one of truth, the sound being transparent and very easy to listen to. Moving on I tried Stan Getz, Miles Davis and Jack Bruce. Again, the Ariels seemed to be in their element here.

On the heavier side of things I used a mixed bag ranging from Led Zeppelin and Mendelssohn to Bruch and the Rolling Stones. Results were consistently competent and very engaging, although no particular tracks stood out. The bass, which is more pronounced than I'm used to was worthy of note, being visible and very tuneful, although in truth I'm not sure whether it could be described as 'controlled'. Certainly the full orchestral stage was well defined.

I haven't measured them yet, simply because I didn't want my initial euphoria to be psychologically stomped on by the possibility of a bad graph (apologies to NK).

Bizarrely, it was cheaper to buy the Danish Vifa and Scan Speak units from the US, even with import duty and transport costs added. I thought the trade barriers were down in Europe!

In summary I have found these speakers to be extremely musical and engaging and a sublime match for the WAD 6550. If you are at all interested in building

this project and want to hear for yourselves, the units will be on show in the World Audio showroom for the next few months.

### COSTS

The total cost of parts was £700 Drivers and hf units - £400 **Crossover and terminal parts - £100 Timber and filling - £100** Lacquer - £100

# LINKS AND ACKNOWLEDGEMENT

For details of the cabinet design and crossover diagrams Lynn Olson's website is: www.nutshellhifi.com/Ariel.html

For any prospective builders requiring details of the adjustable mitre jig mentioned in the text, please drop me a line at edswift@vitalstates.co.uk

# Acknowledgement

Many thanks to Dave Tuplin of T&G Motors in Alford for a superb job of lacquering the speakers.

# The ProLogue One AABB Upgrade



the splendid £800 ProLogue One by Dominic Todd in the August 2004 issue of Hi-Fi World magazine, I was delighted to hear from Herman van den Dungen that he had just produced an upgrade for this amplifier. Herman is the man behind the Ah! brand that gave us the amazing Njoe Tjoeb 4000 valve CD player and he is now designing and marketing valve amplifiers under the name of

PrimaLuna. They are available from Absolute Sounds in London (020 8971 3909). The ProLogue One is the first of the range to be produced

# Making the Good even Better. Neville Roberts investigates.

drivers feeding a pair of EL34s running in Class AB push-pull mode to deliver the 35W output. The quality of finish of the amplifier is very high. Herman achieves this level of quality by having them built in China.

The power supply uses solid state rectification, but employs a smoothing choke. The only printed circuit board used is for the fixed bias components. This is the board that will be replaced by the Adaptive AutoBias Board, or AABB. The upgrade consists of replacing the fixed bias board with this board. However, before attacking the ProLogue One with my soldering iron, I connected the amplifier into my system and settled down for some listening tests with the unmodified unit.

My initial reactions were most favourable. With no signal and my ear close to the bass unit of my somewhat inefficient transmission line loudspeakers, I could detect no hum whatsoever - quite a feat for a valve amplifier! Starting off with some baroque music, the amplifier had the distinctive 'valve' sound with a warm but clear top end. At normal listening levels, the strings sounded melodic and flowing with no

# "My initial reactions were most favourable"

and Dominic scored it as 'Excellent' and also good value for money. However, he did indicate that it had a few shortcomings and I was hopeful that some of these would be addressed by the upgrade.

The amplifier is as heavy as you would expect with quality transformers, weighing in at 35.5lb. The valve line up consists of Electroharmonix 12AX7 and 12AU7 harshness. Image placement was very good indeed, although there was not the depth to the sound that I was used to.

Moving on to a full orchestra, the bass drum in the opening section of Stravinsky's The Firebird Suite was clearly there, although it did seem a little uncontrolled. Pulling out all the stops with the infamous Telarc digital recording of Tchaikovsky's 1812 Overture, the live cannon certainly packed a punch, but the clamouring of the bells in the conclusion made me feel that the amplifier was having a little difficulty in keeping up with all that was going on!

On the lighter side, Thelma Houston's vocals in the Sheffield Labs direct-to-disk recording "I've Got the Music in Me" had a presence that was quite captivating and the bass was very well extended, but here again it tended to be a bit muddy if you turned the wick up.

All in all, it is a very good sounding amplifier, perhaps best suited to either rock music or small musical ensembles and for the price, it is very hard to beat.

# THE ADAPTIVE AUTOBIAS SYSTEM

For valve output stages, either fixed bias or self bias (auto bias) is used. Fixed bias is used in the original ProLogue One as it is efficient and has minimal effect on the signal. Selfbias requires a large capacitor to bypass the cathode resistor and this arrangement has the potential to affect audio quality more than fixed bias and also tends to waste power. However, fixed bias has problems too as the circuitry is unable to track the valves' changing characteristics over time. It can also exhibit non-linear behaviour under standard conditions, adding distortions and unwanted signals to the audio signal.

In an effort to get rid of these drawbacks with Fixed Bias, Marcel and his team have developed the Adaptive AutoBias system. The system is inherently linear and presents no reactive load to the valve circuitry whatsoever. It is also completely stable under all normal temperature and voltage conditions. They have achieved this by employing high quality parts throughout the circuitry that have precisely defined



Beautiful design revealed when the cage is removed.

temperature coefficients.

The other problem to overcome is that a fixed bias system does not compensate for the valve's tendency to use the audio signal as an extra bias voltage, especially at high levels and low frequencies. The fixed bias, as the name implies, keeps on injecting a fixed voltage upon which the audio signal rides. This can result in moments of impoverishing the valves, pinching them off slightly, producing instances of rapidly elevating crossover distortion and compression, bringing a certain harshness to the sound. This could be the cause of the criticisms I found with the unmodified ProLogue One.

The Adaptive AutoBias system avoids these problems by reading the audio signal and making infinitesimal adjustments to the bias voltage which, Marcel claims, results in far superior valve behaviour and dramatically reduces distortion levels by more than half. So much for the theory, but will it work in practice?

# **INSTALLING THE AABB**

Figure 5 shows the upgrade parts that Herman sent me from Holland. Everything needed was in the kit of parts, including a pair of resistors and heat-shrinkable tubing to enable a small modification to the global feedback network to be made and four resistors fitted to the ends of each wire going to the EL34s to improve stability and reduce HF distortion. Plugging in my trusty soldering iron, I set to work on the ProLogue One. Firstly, the power supply capacitors were checked with my multimeter to ensure they were completely discharged; otherwise a 100ohm, 9W resistor applied across the terminals does the job far less painfully and more effectively than my fingers! Now the original fixed bias board could be removed. This entailed unsoldering 8 wires from the valve sockets, two power supply wires from the board and removing the two screws that held the board

# in place.

Now it was time to fit the new AABB. This was a bit more fiddly as it involved cutting, stripping and re-routing leads from the power supply to accommodate the new board - 7 connections in all. The board could then be screwed in place and finally the 12 wires from the AABB had to be connected to the appropriate valve

Finally, the global feedback network was removed from its original location, to allow the additional resistor to be installed in its place. The feedback network was then re-installed closer to the valve by wiring it directly onto the valve base. That completed the installation of the upgrade.

socket pins.

The upgrade board needs initial adjustment. All that is required is to connect a multimeter set to the 2VDC range to pin 8 (the cathode) of one of the EL34s and switch on. As the amplifier warms up, the voltage should start to slowly rise to about 0.6V, then drop to around 0.2V and finally settle on 0.35V. If the voltage is too low, the potentiometer should be adjusted to set the final voltage to 0.35V. The remaining three valves can be checked to see if they behave in the same way to ensure that the board has been wired in correctly. No further adjustment of the potentiometer should be required.

It is interesting to note the behaviour of the circuit when checking the remaining valves as this entails switching off the amplifier, moving the multimeter to the next valve's cathode and switching on again. Since the amplifier has already warmed up and given that solid-state rectifiers have been used in the power supply, one would normally expect the output valves to conduct fully for an instant at switch-on, with a fixed bias design. This would shorten the life of the valves. However, the AABB includes circuitry to compensate for this and when power is re-applied, the voltage (from the residual charge stored in the power supply capacitors) drops to zero for a couple of seconds, before slowly rising as before. All clever stuff!

# LISTENING TESTS

Now it was time to settle down to do some serious listening tests. I was

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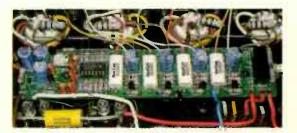
hoping to hear improvements, such as greater clarity and tightness of bass and a reduction of harshness. I was not disappointed: the improvement was nothing short of amazing! The overall difference with the AABB installed is considerable, and almost unbelievable when you take into consideration that it was the same amplifier, but biased more intelligently.

The strings positively sparkled with clarity and had lost the harshness that I had previously detected at higher volumes. Baroque music now sounds cleaner and clearer. As for the bass, it was still tuneful, but was much more controlled and tight. My recording of the 1812 Overture with live cannon was breathtaking and the clamouring of the bells in the conclusion was clear and uncluttered - no problem for this amplifier now! The bass drum had clearly been tightened up in the opening section of the Stravinsky. One criticism I had of the unmodified amplifier was that it seemed to have difficulty in coping with the complex sound of a full orchestra. The AABB had solved that problem completely. Organ music sounds superb - totally clear with clean bass registers and a transparent top end. The vocals of Thelma Houston were so much clearer, even at high volumes, and did not sound boxed in as they did previously.

The AABB will add about £100 to the cost of the ProLogue One. I would say that, at £900, this is even better value than the original ProLogue One at £800. It is beautifully made and looks splendid, especially with the valve cover removed (who would want to keep them covered anyway?)



The unmodified inside of the ProLogue One.



The finished upgrade.

# hooping the hoop

Neville Roberts shows you an extremely cost-effective way to clamp your valves.

purred on by recommendations from a friend and the advert in the DIY News section of DIY Supplement 80, I decided to fit some Tube Rings on the driver valves of my WAD 300B PSE. Very successful indeed and a worthwhile investment, but to equip all the valves in my hi-fi system would need some significant additional investment. There are some different makes available from other suppliers, but at a similar cost. I had already used rubber 'O' rings as a low cost alternative in my valve CD player, but the rubber had hardened over time and ended up lying ineffectively at the base of the valves. I therefore decided to see if I could make something more resilient of my own.

The purpose of fitting some sort of clamp on a valve is to reduce the effect of externally-induced vibrations on the delicate electrode structure within a valve. What I needed was something that would stay clamped to the outside of a valve, given that they get hot, and

# "the most noticeable effect was in the top end"

provide the necessary dampening effect.

I noticed that the most common valves used in preamplifiers and the driver stages of power amplifiers (such as the ECC83, etc.) have a diameter about 19mm. What I was looking for was something that was designed to fit that size. During a visit to a local DIY supplier, I noticed packs of pipe clips for fixing 22mm diameter pipes to walls. Could these be made to clip over a valve and stay in place? The answer was 'Yes' and a packet of clips was duly purchased, together with a small packet of white over-hardening modelling compound from a hobby shop and the 'Tube Hoop' was born! The total cost of these items was about £3, which included enough clips to make 15 hoops.

# TUBE HOOP MANUFACTURE

After some experimenting, I came up with the following procedure. First, take a piece of modelling compound and plug the screw hole that is used to fix the clamp to a wall. Make sure that the compound stands proud on the inside of the clip as the pressure exerted by the compound when it has hardened keeps the clip firmly located on the valve during the temperature excursions. Incidentally, I successfully clamped a hoop to a 6AU6 valve that has a smaller diameter of about 16mm, but adding a little more compound to the inside of the clamp.

Next, pre-heat an oven to around 265°F (130°C) and heat the clip for half an hour, as recommended by the modelling compound manufacturers. This will harden the compound, but also soften the pipe clip. In order to ensure the clip fits snugly around the valve, you will need to squeeze the clip together while it is cooling off. For this purpose, I made a clamp from a short length of garden wire that I twisted to the appropriate shape with a pair of pliers.

When cool, the clip is removed from the clamp and the bracket part is removed with a junior hacksaw. Finally, the rough edge is filed smooth with a file and some sandpaper to achieve the finished hoop.

# LISTENING TESTS

So how do the hoops sound? Well, as with the other systems, there was noticeably more detail and clarity to the sound. The bass was slightly



The raw materials.



Hoops fitted to ECC83s in the Phono II.

tighter, but the most noticeable effect was in the top end, taking away any residual harshness from violins. Image placement was also improved.

On the down side, it has to be said that they don't look as great as the commercially made offerings, but they are a splendid way of testing the effectiveness on the exposed valves before committing funds to the professionally made devices. Of course, this doesn't matter for the valves hidden away inside preamplifiers and the like.

These hoops definitely work and at a cost of  $\pounds 3$  for 15, they have to be worth a try.

# **VALVE AMPLIFIERS BY MORGAN JONES** Valve mplifiers

# **REVIEWED BY MIKE BALLANCE**

ith more than 600 pages to read, this book is indeed a tour de force. Armed with a soldering iron, some valves and other components you will, like me, be wanting to have a working amplifier before the end of the day.

However, I have discovered that designing valve amplifiers is very much an exercise in compromise. Morgan Jones writes about the triode as a small signal amplifier, giving a lot of information that makes you want to use triodes - just like the various WAD designs - and then describes the Miller Effect which is a capacitance inside the valve that can severely limit the high frequency response of a triode amplifier.

He moves on to the pentode which I remember was the standard signal amplifier in many Mullard circuits that I saw in the 1960s when I was using valve circuits for radio transmitters. But the author asks, "So why don't we use them all the time?" and then proceeds to explain why the pentode has a noise problem. Perhaps in the 1960s noise at that level was not considered a problem. But for hi-fi use, any respectable transistor amplifier can be quiet as a mouse these days. Some can produce no noise with your ear against the speaker and the volume control at maximum. This is a very difficult requirement for valve amplifiers to meet and it becomes clear that the pentode just can't compete in this area, no matter what you do with the surrounding circuit components.

Some valve amps reviewed in this magazine have been praised for their lack of background noise. I'll bet they don't have a pentode input stage! So this book is all about compromises and in case you're wondering, Morgan Jones suggests that a cascade of triodes gives the advantages of a pentode with the low noise of a triode. Well that's good enough for me.

Starting at the beginning, Jones gives some theory but wisely

explains that this is the minimum necessary to be able to design your own circuits, given the manufacturers data for the various valve types. To this I would add that if you want to design your own valve amp, start by looking at the valve types used by other manufacturers, and the published WAD designs. There are good reasons why these particular valves are used from among the many

thousands of types made. One reason is almost certainly that for a number of years, valve equipment has been thrown away and most of those valve types are simply no longer available. A mere handful are being made today, some by recently opened, or re-opened, factories. In practice the valve types that should be considered are possibly limited to the ECC81/2/3 series and 6922 for small signal amplifiers together with the EL84, EL34 and KT88/6550 series for power output. For these you will need the data sheets and www.mif.pg.gda.pl/homepages/frank/ is my favourite place to get them. Download the curves, scale them to fit a full sheet of paper and print out as many copies as you need. You will need many copies, together with a pencil, rubber and ruler.

Following chapters cover distortion, types of valve and other components too. Remember that the range of resistors and capacitors suitable for high voltages has also decreased over recent years and, as with valve types, the best choices from an audiophile point of view are almost certainly those newly manufactured by companies who are in the valve business. Paper-in-oil capacitors are an example of a product that on the one hand are best avoided if the source is an old radio (they might have dried up) but on the other hand are among the

# best

you can get if the source is brand new supply. The world of valves is exciting with new manufacturers making such traditional components, but with the highest quality standards in mind - much higher quality than achieved, or even desired, from older valve amps.

Don't be misled into thinking that valve amps are 'yesterday's designs'. Remember that transistor amp noise specs are being approached by some of today's valve amps with measurement figures that would have amazed Harold Leak.

Everything you could want is covered in this book, but you will need to invest the time to read it all the way through first. Work your way through all the examples in this book and you will get to know enough about valves to be able to choose the set of compromises that you prefer and come up with your own world-beating amplifier design. You can be sure that is what I am already doing.

VALVE AMPLIFIERS BY MORGAN JONES. Published by Newnes, Elsevior Third edition 2003, reprinted 2004. SBN 0 7506 56941 Available from WAD

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# Letter of the Month

# ITHINK THEREFORE IAM

I am a self-confessed twenty year old audiophile from Lancashire. I have been reading your publication religiously for a good few years now, and I must say that I very much admire and enjoy your somewhat uniquely objective approach to the industry (particularly your apparent lack of prejudice between old or new, expensive or inexpensive, fashionable or unfashionable, etc.). I am currently on a year's holiday in Australia, so I am always one or two issues behind the UK, so forgive the delay, but I would like to make a few comments regarding your recent mp3 'Supertest'.

Being a child of the eighties, I was brought up on CD and solid state. I did, however, recently buy a Pro-ject Debut and find vinyl (even at that level) quite distinct (if not wholly better) than CD on a much more expensive Musical Fidelity player. Unlike probably 95% of my age peers I have never downloaded a track in my life (even though I'm into computers) and don't plan to in the near future. If something is worth listening to, then it's worth buying on a physical recorded medium that comes with a booklet, packaging and pride of ownership (IMHO). If it turns out to be no good then you only have yourself to blame and you're only down a tenner or so.

Here's the thing: I was forced to purchase something to carry all my 400 CDs on when I came to Australia, and after seriously considering on iPod, I accidentally came across iRiver on Amazon (December '03) and bought the iHP-140 on a whim. My decision was made for a number of primarily audiophile reasons: Direct digital and analogue recording, Wave and Ogg playback, optical out (for HT amps and recording to MiniDisc), line out on the unit itself, the file manager file system and, most importantly, plug-and-play on any windows PC.

When I received the unit, it took me two weeks to get 1,300 of my favourite tracks into .wav files on my laptop, transfer them across and sort them manually using File Manager. I concede, it is no iTunes equivalent in terms of ease of use/transfer, but after that initial period, who cares? And I'll tell you what: plug it into a pair of Sennheiser PX-200s and compare it to 320kbps AAC on (my brother's) 3G iPod and the iRiver very clearly sounds fuller, more detailed, more dynamic and simply more 'alive'. The battery even lasts a decent 16 hours.

I actually work in a retail outlet in Cairns, Australia, that stocks the new

cantly prejudiced towards Apple products (I am no opponent, and I must say that I also hate Windows). I have no problem with the iPod: it's a brilliant, beautiful product, and it's brilliantly marketed (Bose anyone?). But I have my doubts as to whether, in this instance, your reviewers are giving the opposition a fair stab at the game. I think Dominic Todd might have the right idea. Perhaps you feel that if you undermine the iPod, you may upset many of your pundits who are also obsessively part of the iPod generation? Maybe it's just me, but your typical and



iRiver 300 - better than an iPod?

iRiver H300 series (better than the iHP 100 series in some ways, worse in others). When customers come in with their i-pods looking for new, expensive headphones (think Sennheiser or Grado), I always ask them to try the iRiver as well, and they almost always look wholly disappointed that they can't get those results on their i-pod. I find the same to be true when playing the two into a high-end setup through their line-outs.

As much as I respect all your reviewers, I can't help thinking that Patrick Cleasby is somewhat signifiadmirable neutrality might just be failing you on this one. In all other regards, yours is an excellent magazine. many thanks, Alex Ashworth

Out of necessity, and for historical reasons, we use both PCs and Macs at Hi-Fi World. Generally, we see the merits of both and don't exercise the sort of fanaticism seen elsewhere for one or t'other. In particular I run a PC for all the music software, cards, drives and general audio thingies available. For this purpose it must be a "vanilla" build, to represent a typical, modern machine. I also run a Mac, which is smooth, silent and fast and great to work on. Publishing is traditionally the preserve of Macs, whilst most business software, like Sage, runs on PCs only, hence our agnosticism at this end.

The iRiver range of portable players get a lot of praise, but they run MP3, WMA or OGG, like most PC based devices. AAC from the MPEG group is, I am told, an expensive license to buy, so on budget players for Windows PCs it's rarely seen. Microsoft make the point openly that WMA and WMV etc are cheaper to license than anything from the dreaded European 'Motion Picture Expert Group', Fraunhofer Institute and tub thumping Karl-Heinz Brandenburg, inventor of MP3 and its successor, AAC. Whilst MP3 is now an "exchange" format, AAC is increasingly being seen as the way ahead for broadcasters (in Europe at least) and best for video soundtrack. Apple has aligned itself with this camp. Microsoft of course would rather we all used WMA, WMV etc and the Windows Media player.

To date I have to say that, personally, I prefer AAC. Anytime I use a Microsoft compression format, like WMV the other day for a video'd press conference, I get a shock: it's dreadful. I binned it and turned DV into MPEG 2 instead. Microsoft claim they are improving quality, etc., but their main interest is achieving the lowest bit rate possible, because commercially this makes most sense...

Then there are licensing issues. With i-tunes you get a prenegotiated usage license (FairPlay) that's easy to understand. With Microsoft, DRM file protection comes from the vendor. Again, very commercial, but a nightmare for users who are expected to read all the differing terms and conditions before payment and downloading of a tune. If you don't and you misuse then, technically, you can be sued.

I have had vigorous discussions with both the IFPI and Patents Office about this nonsense recently. They just will not accept that fair usage rights should be set for purchasers. At present Europe, within a 2001 Directive, has adopted the stringent British view that Rights of Sale are the sole preserve of the vendor. No wonder then that if you download WMA from an OD2 site you are quite likely to infringe the vendor's rights. Safer methinks to read FairPlay and download AAC from i-tunes. Great price, smooth service, good AAC sound and less for the IFPI to complain about.

So whilst the iRivers are great players, if only they could play AAC and download from iTunes we would have the best of all worlds. Since this wouldn't do iPod sales any good, I suspect pigs are likelier to fly! **NK** 

Thanks for a very perceptive letter, Alex – aside from the clumsy Bose allusion. Methinks almost you're spot bloody on. When I was sub-editing Patrick Cleasby's group test of HD digital music portables, I could sense some distress in his writing. Of course, the iPod was the best, wasn't it? But it wasn't – quite. And I think this is what he was intimating in his conclusion. His geek-boy instincts told him the iRiver is damn capable and cool – but his Cult of Mac world view told him that surely the iPod had to win – hence the conflict.

I take your point absolutely about the result: if you applied Hi-Fi World's traditional hair-shirt purist philosophy, the iRiver might just have got it by a whisker.

But... hang on... Apple computers are stunning, as is the software; and at least twenty years ahead of lesser platforms in so many respects, so how could the iPod not win?

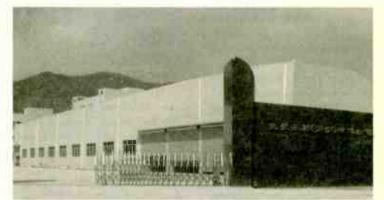
Doh! I think I'll go and grow vegetables in Wales, and watch Reginald Perrin reruns... DP

# THE CAMPAIGN FOR REAL STEREO

After reading several issues and taking a step back, it seems to me that there are two major shifts happening in started between Blu Ray and HD-DVD. I am fortunate enough not to have been able to invest a large portion of money on a spinner of either (my own choice would have been SACD, as I have Pink Floyd's 'Dark Side Of The Moon' remaster) format, and have stayed with a mega-budget DVD/CD player (Asda's own award winner at £30, thanks). However, I think a lot of people who have forked out are going to be peeved, to say the least. Whatever the sonic merits of either format, expensive players and tiny catalogues have kept both as specialist machines. leaving people wishing that had they known all along they woulkd have spent the same budget on a dedicated 16bit spinner, or, better yet on upgrading their vinvl blaver.

Surely the events of the past four years will put a lot of the essential first technology buyers off, having had their fingers burnt, making a new format launch that much harder, no matter how much better the new formats may claim to be? I like stereo (and hate it being called 2 channel!) and even now will probably buy a record or the CD version of music in the future. My own hi-fi budget will be focused on a secondhand mid quality CD spinner when my amp situation is sorted.

Oddly enough, part of this resistance of mine started when I heard my first ever piece of surround music, which was Mike Oldfield's 'Tubular Bells' in a demo at a hi-fi show in London four shows ago. I heard about thirty minutes of it altogether and the surround effect was dazzling and the audio quality breathtaking. In fact it was so good that i could hear every twitch and wobble of the then budding Oldfield's music and it sounded almost demo-like in quality. I listened to my '70's copy when i got home and,



This is where Wharfedale ended up - in China! Yes, it's an International Audio Group factory, near Hong Kong.

mainstream audio (apart from the welcome return of popular vinyl reproduction). First, it seems that the format war between SACD and DVD-A is going to be put aside and a new one thankfully, it sounded as good as ever, but that impression stayed with me. So, I will keep stereo, thank you very much and until the winner of the new format war puts both CD and vinyl out of

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HI-FI WORLD APRIL 2005

production for good, will skip it...

The other thing which you yourselves have brought to light is the 'all things Chinese' direction of audio manufacture. I remember the 70's 'made in Japan' revolution and maybe at the time, British wasn't best, but now, even the higher quality companies seem to be beginning to shift production overseas to save money. What concerns me is that a lot of people who are fans of certain margues may be fans because of a certain standard of build quality they know is tried and tested and even some 'made in Britain' patriotism. I think it needs to be asked "why make this change?" Aren't current standards good enough? Chinese stuff is obviously well made from your reviews, but the distance, literally, from maker and buyer could erode personal loyalty, even put people off.

It seems to me that the combined effects of the two aforementioned issues could bring a lot of trouble to us all. On the other hand, it may be a boon, but all of our experience of committee/ economist led, rather than consumer driven standards, shows otherwise, with exceptions, of course.

It's been a long mutter, but not without merit I think. The various opinions of your staff columns and reviews are often more than the sum of their parts and I hope this continues for many years, prompting me to fire off missives galore! Paul Clewlow.

Hi Paul - well, what a surprise? The CE industry shoots itself in the foot once again. Shurely shome mishtake? The point is that these guys have to go where their technology takes them - whether or not it's of real, tangible benefit to us the consumers. I've been impressed with some hi res stuff I've heard, but I have to say that SACD's early rush to multichannel completely confused the issue. Those of us who wanted stunning audio quality had invested lots of money in our stereo systems over a great many years, so the last thing we wanted to do was to rip it up and start again, complete with two rear channel speakers, a centre and a sub. Those interested in multichannel may have come to it via home theatre, and so aren't so interested in the alleged superior fidelity SACD or DVD-A brings - the 5.1 thing is what floats their boat. The result is that as is often the case - the industry doesn't know who it's really selling to. Is it Arthur or Martha? Does it want the stereophiles or the surround sound punters? It would say both, but in a great many cases, these two buying constituencies

aren't the same – in fact, they're often diametrically opposed.

The Chinese hi-fi issue is an interesting one. It's so not like 'made in Japan'! In the seventies, the Japanese went mass market, and raised the game with universally good build quality and excellent reliability, allied to a degree of user friendliness and miniaturisation. China currently makes lowest-common denominator £90 DVD players en masse - which is what most of the world sees and what you'll find in certain rival mags – yet it also has a small but thriving specialist scene with brands such as Shanling, MeiXing, Original, etc., selling to enthusiasts who appreciate its quirky character. Japan Inc. always tried to incorporate these two extremes into one brand - the result was that you could buy a decent Sony HMK-55 music centre in 1978 for £200, and at the same time the 'specialist division' of Sony could sell you a stunning high end V-FET TAE-7B/ TA-N7B prepower for £1,200. No Chinese company offers this diversity - their industry is simply too nascent, too young right now - but watch this space... Right now, much of UK Hi-Fi plc is migrating to China - and you have to say it makes (short term) economic sense, but I for one would never want to buy a Jaguar made in Shenzen (or Halewood, for that matter), so they'd better be very, very careful. Some of us really are prepared to pay for 'made in Britain'.

I'm looking forward to Blu-Ray and high definition everything. DVD was a great replacement for VHS, but not thought through properly for anything else. I trust Philips and Sony will be a lot better than the Japanese committee that cobbled up DVD, turning what should have been a horse into a camel.

The growing industrial might of China is extraordinary. Furiously hard workers, they have overcome quality problems in a decade and now turn out top notch goods. But then this is because British and U.S. companies in particular migrated their production out there some time ago, on the basis that quality was maintained. The



British audio engineer hard at work in the Far East.

Chinese have been eager to meet Western standards, or even surpass them to improve sales and image. With hi-fi products there's often an engineer on-site to maintain quality control. NK

# **NOEL'S TUBE PARTY**

The problem is this - my system comprises Michell GyroDec with Tecno Arm, Dynavector 10x2, two Musical Fidelity A3.2 power amps biamped and a Creek P43 pre amp. I would like to change the preamp because I find it a little lifeless. I have considered the WAD modular design and will fix an audition date. I have a budget of about £700 to spend. I do like the valve sound and the WAD items seem to fit the bill. If there is a better transistor pre out there in that price range, new or used, and you can recommend it, I will be happy to audition it. I look forward to your recommendations! Russell Curniffe.

Hi Russell.When I first heard an allvalve phono stage, the Audio Innovations P2, I was stunned by how



Audio Innovations P2 valve phono stage - radical and innovative.

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very different it was to all that I had heard before, meaning solid-state of course. Endless depth and dimensionality, with a natural flow to music that makes solid-state seem sterile and mechanical, as well as flat. Back in 1996 a valve phono stage was a rarity. They're not too common today either because hum is almost impossible to eradicate unless the power supply is separate, and no valve is quiet enough for MC, so a quality input transformer is necessary. Hiss with MM is low enough, especially since today's cartridges usually have plenty of output, thanks to stronger magnets.

World Audio Design subsequently produced the KLPPI all valve preamp with phono stage, which I now use. Getting phono into the compact casework was difficult though. Today it has been superseded by Pre-II, Phono-II and PSU-II. With DC heaters and external PSU there's absolutely no hum with Phono-II, even when you whack up the volume to maximum. An MC transformer is available as an option. With a kit like this you can fine tune subjectively using specialist audio components - resistors, capacitors and volume controls etc - a popular route to getting a product perfectly honed to your tastes and unmatched by anything commercially available. Go to the

www.worldaudiodesign.co.uk Bulletin Board to read vastly more about tuning tips from the experts on this forum. I find it fascinating and educational, because there are always new parts, strictly for audio, appearing around the world and the Bulletin Boarders seem to know where and when - almost before it happens! They also have fully worked solutions for every audio problem too it seems - amazing.

There are plenty of good solidstate phono stages out there too of course, with imperceptible hiss even on MC. The Analogue Devices AD797 integrated circuit is one example of what is possible nowadays from solid-state in terms of noise and distortion. We rate the Trichord Dino and Delphini highly, but QED, Creek and Musical Fidelity all have attractive products.

In my experience solid-state sounds quite different from valve and it isn't easy to compare the two, but of course modern solid-state phono stages are quiet, highly accurate in equalisation and small, so both types have strengths. I am biased of course; valve designs engineered properly float my boat and World Audio Design is a spin-off from Hi-Fi World so, to paraphrase Mandy Rice-Davies, "I would like it, wouldn't I". **NK** 

# NICE AND EASY DOES IT

I'm at a loss to know how to fix my system. Each year I spend about £2k on upgrade kit but it still sounds unmusical. I like to listen to jazz, classical, both vinyl and CDs, but my system is so exhausting to listen to that now I can only manage about fifteen minutes at a time. I want a nice gentle musical system where I can sit and enjoy a classical guitar concerto or jazz albums hour after hour... each evening. I have a dedicated hi-fi room I I feet x 13 feet.

My system is: GyroDec and QC PSU, Naim tuner, Arcam FMJ CD 33, World Audio Pre-II, Phono-II and selfbuilt power amps: Arcam Delta 290 (in power amp mode) and Delta 290P running as mono-blocks e.g. only using one channel. I find that bi-amping brings out a lot more detail but makes I don't think it's time for the tip yet Ted - and they're dangerous places in any case. Methinks you just don't get along with current presentation, which is often hard on the ear tinny and mechanical. You don't mention what cartridge you are using in the GyroDec, but as long as it isn't an Audio Technica OC-9 there shouldn't be problems here. Good MMs are the Shure V15VxMR and Goldring 1042.

I see a good showing from Arcam in your set-up and understand why. Sadly, although always easy on the ear, Arcam can also be a little ho-hum at times ("bland" is too strong a term). The Delta power amps I would put in this category and, as you say, the FMJ CD33 isn't "convincing", although it is good. Bit of a head-scratcher, this. Especially since their new AVR300 surround-sound receiver is so darn good, but I suspect surround-sound isn't for you.



Unison Research S6 or Audio Research VSi55.

the sound un-musical. Speakers are Wilmslow Audio Phoenix self-built from kit. I still have my previous Mission 753s but I found the tweeter too tinny. The Phoenix speakers fixed the tinny problem, but now I have very thin mid and bass. Interconnects: Ixos I 002 Gamma throughout. Speaker cable: QED Silver anniversary

Even my wife tells me to take the lot to the tip and start again, just to stop me moaning. But that seems a bit drastic and even then I'll probably end up buying the wrong kit. I guess the system is "out of balance". I've got around £3k to spend (more if necessary). I think the Gyro and Naim tuner are okay, but I'm not totally convinced about the FMJ CD33 (last year's upgrade). Any help would be appreciated! **Ted** 

I cannot think of one "easy going" solid-state amp that is at the same time revealing and dynamic. You may be surprised to learn that the latest Naim NAP200 power amplifier is approaching this goal quite a surprise from Naim. I was very impressed by it, so you might consider a listen. Otherwise, forget solid-state and go to valves. The Unison Research S6 is well engineered and sounds good, or for more welly, if a little less finesse ('cos it uses 6550s) try the Audio Research VSi55. An Audio Note Soro is the ultimate in sweetness, but you will need big, sensitive floorstanders here. And of course, finally and with my "he would say that, wouldn't he" hat on again (but no shame!), don't forget World Audio Design and KIT6550. The big advantage of this

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amp is its massive Russian 5U4 valve rectifiers, feeding proper PI filters (none of this big capacitor malarkey). They banish all vestige of solid-state edginess, give controlled power-up and are also fantastically reliable, unlike GZ34s and such like.

So much for the amplification. I haven't heard the Wilmslow Audio Phoenix loudspeakers so I can't comment on what you are hearing, but I understand your comments about the Mission 753s. It's a shame, as they are, or were, fine loudspeakers, but with a balance that can be "challenging", to use an http://werple.net.au/~kiewavly/audio/. html. If the link does not work, just type into your browser, "leak valve power amplifiers schematic diagrams" and the relevant address should come up on your search page. I know that it is becoming more difficult to obtain information on classic equipment, and there is usually a fee to be paid for this vital information. This site delivers the data for free as they say their interest is in helping people to restore vintage equipment. I think this will help you in your search. Good Luck!

HB



Leak TL12 - worth reading the manual for...

appropriate euphemism. Since you are a DIY'er and the Missions are unused, why not try putting a network across the tweeter to roll down treble. A four ohm limiting resistor with at least 4uF in series is a good starting point. If this makes them too dull, reduce the capacitor value incrementally to 2uF, then 1uF etc; if they are still too bright increase up to 10uF, if possible. Otherwise, you need a small-ish loudspeaker for your room and Mordaunt Short 912s or KEF Q4s may just suit.

I agree that the Gyro and Naim are fine. Consider also changing to Van den Hul carbon based cables, especially for the loudspeakers. Expensive I know, but with little of the hardness and glare of metal cables, especially silver. NK

# LEAK CIRCUITS

Please can you tell me where I can find a source for Leak Power amplifier manuals, either reprint or copy? Simon Smith.

Here is the link for all of Harold Leak's circuits. This site not only covers the schematic diagrams for Leak valve amplification, it also covers most of the products that the leak factory ever built! This is the Kiewa Valley Audio, Australia, site, good for Lowther, Leak and Tannoy. It is linked I believe to Stephen Spicer and his book on Harold Leak "Firsts in High Fidelity". It is a very thoroughly researched book on the man and the company, as well as the products, worth getting if you are an aficionado. **NK** 

# **ON THE TUBE**

Since some of the readers of Hi-Fi World are interested in modifying gear 1 thought they may be interested in the following. In Autumn 2004 1 purchased a Pro-Ject Tube Box phono pre-amplifier which I have been pleased with. My only complaint is the slightly curtailed high frequencies, as though some of the leading edge sounds of instruments were being lost. Comparisons with a very old PS Audio PSIII phono pre-amp of the early 1980s (uses fairly high voltage supply rails and not a chip in site) showed up a definite lack of speed and attack, which I think is a pity because I like the overall warm sound balance and large soundstage the Tube Box can create.

I have been an electronics engineer and hi-fi enthusiast for many years so I took the case off and had a look at the components being used. I was somewhat surprised to find, at this price level, Texas TL072 dual op amps in the circuit, which although competent are not up to the standards of some of the more recent designs from Burr Brown and Analog Devices.

I don't have a circuit diagram but with some simple tracing with a meter I found one of the op-amps within each chip is used as a unity gain buffer stage directly connecting to the output sockets, dictating the whole sound character of the unit. I think the other op-amp within each chip is used for part of the RIAA filter network, but I can't be certain of this.

For anybody who has good soldering skills and doesn't mind invalidating any guarantee period remaining, its dynamic capabilities can be enhanced by replacing the TL072 with the Analog Devices AD823 which has a very good reputation for excellent sound quality. Checking the Analog Devices website, the higher slew rate and lower settling times (directly relating to how well a chip will respond to fast audio transients) comfortably exceed the specification of the TL072 and this correlates with my tests.

If any reader does proceed, the best method of removing the TL072 is to cut

Hadcock unipivots: one-way love?

all the pins as close to the body of the chip as possible with quality tapered PCB cutters. Since the board has tracks both sides just using solder braid or a solder sucker alone is unlikely to help you remove the chip. Once all the pins have been cut you can remove them individually with a pair of tweezers whilst using a soldering iron with fine tip on the relevant track on the PCB, it is important that the holes are clear of solder debris and you don't damage the plated through holes on the PCB. I highly recommend using good quality IC sockets, rather than directly soldering the new chips in, as this also allows experimentation in the future and there is less likely of damage to the new chips when being soldered. Inspect the new soldering with a magnifier for damage to tracks or shorts between pins.

My system is fairly modest, being a Michell TecnoDec/Rega arm and Goldring 1006 cartridge feeding the Linn Classik via the Tube Box and for A-B comparisons using Grado SR60's, I had to convince myself that the new chip was performing any better so I replaced the left channel only with the AD823, leaving the right channel with the old TL072. Once I had found some suitable records which contained percussive elements placed centrally within the sound stage I made direct comparisons, swapping the headphones round regularly to make sure any slight in balance of frequency response of the ears didn't play any part. It was obvious with each track played the AD823 was easily out performing the TL072. Cymbals, drums, cello and violins, etc. all had extra detail and it was also adding a new delicacy to the upper midrange without loosing the warm organic quality that the valves offer. Record after record was the same.

I have now been running the modified Tube Box for a number of weeks using both my Grados and B&W 601s and it sounds excellent, especially on some of my old heavy weight Japanese vinyl imports, but sounding equally good on classical or modern vocal/synth LP's like Massive Attack's Protection.

For people in the UK good quality IC sockets, tools and the AD823s (2 required) can be purchased from the RS Components website. Alternatives to the AD823s are the Burr Brown OPA2604 and OPA2132, each of which have slightly different audio characteristics, but I'd stick with the AD823.

The modified Tube Box still doesn't have the 'attack' of my 20+ year old PSIII but I prefer it for the overall tonal balance, delicacy of the upper midrange and that lovely warmth those tubes bring. I suspect the Tube Box could be further improved by swapping out the tubes fitted (seem to be somewhat noisy) and trying something like the old Mullards. with regards,

lan Walker.

I don't have a circuit either Ian, but I can make a few good guesses here, based on normal audio design practice. Tubes are too noisy for MC, so I'd guess one chip provides x10 gain, unequalised, for the MC input, feeding directly into the equalised MM tube section, comprising two ECC83s (twin triodes).

Tubes also don't make good line drivers, so your output buffer is a unity (voltage) gain line driver. I would guess it was fed by a tube cathode follower of around 300ohms output Z. Using a short, low capacitance cable you might even be able to bypass the line driver entirely, feeding tube output directly into amplifier input, which is often the track of a 10k volume pot., so there are no loading problems. A blocking capacitor must be used of course, since there will be d.c. on the line otherwise.

If the ECC83s are noisy, meaning crackly rather than hissy, then they do need replacing. These days original Mullards are rare and expensive (£60+ apiece or so), but you can get selected low noise and microphony Ei Elites, or more expensive Svetlanas. You will find valves can sound quite different from each other, and it is worth getting something good in this critical role and with your critical ears. Happy listening!

# **UNI-VERSAL LOVE**

A couple of months ago, I bought a Thorens TD125 Mk II without arm. And inspired by your magazine, I have now ordered a Hadcock 242 Integra that I need to fit the turntable. I have no doubt that I need a Music Maker III cartridge for this arm, but I simply can not ask my girlfriend for the funds for that one right now!

So even though I know that in the end it would be cheaper to buy the Music Maker right away, it is not an option. I therefore need a temporary cartridge. I actually have got a Benz-Micro MC fitted to my Pro-ject I Xpression, and I could transfer that, and sell the Pro-ject without a cartridge.



MA GR60 – brilliant partner to MF's A5 Power

Alternatively, I could buy a fairly cheap one as a temporary cartridge for around  $\pounds$ 100. I have thought of the following:

Grado Prestige Gold, Grado Prestige Silver, Goldring 1006, Denon DL-160. Have you any idea which of these cartridges will fit my Thorens/ Hadcock best? I know there is no Ortofon even though I am a Dane, but they are not quite competitive in that price range, right?

I can tell you, that my current system contains of an Audio Analogue Puccini SE amplifier, Vienna Acoustics Mozart speakers, Arcam CD82 CD player. The speaker cables are Chord Odyssey 2. I will be using the phono preamp (MM/MC) in the Audio Analogue. But how would you prioritise the next upgrade - the Music Maker or a Graham Slee Era Gold/Trichord Dino phono preamp first? Finally, I am very fond of my Puccini SE (even though Dominic Todd just lowered the value of that one in your December issue), but I might change it for another amplifier that suit the Mozarts better. I thought of a valve-amplifier, or something that sounds like a valve-amplifier e.g. Exposure 3010.1 like a BIG soundstage, a beautiful midrange. I listen to all kinds of music. If you can help me, at least with the cartridge question, I will be grateful. Morten Boldsen Denmark

Simple, of that list get a Goldring 1006. It's been quietly improved almost up to 1042 standards our measurements show, yet it costs very little. It's too good to be true almost. I've said much about valve amps in an earlier reply. You may also like to consider a Musical Fidelity kw500 for a BIG soundstage. **NK** 

# **NEXT TUBE STOP**

I wish to thank Noel for encouraging the use a valve phono stages in a recent issue. I recently added Project's Tube Box SE to my RPM6/BPS EVO III/Musical Fidelity A300, Martin Logan Aeon-I setup. It's my first experience with anything valve, and what a fabulous experience it is. There was a gritty, mechanical edge to the sound that isn't there anymore. Could you be so kind as to recommend a mail order/internet source for passages of Beethoven's 6th. I note in the review the addition to the power amp inputs of a couple of resistors solved the problem, could I request a little more detail on this? There will be many people needing this modification I am sure! Many thanks and congratulations on such a wide-ranging magazine.

Stephen Bell.

# TRANSISTOR WITHOUT TEARS

I am a long time reader of your magazine, and as many people have done, traded and upgraded my hi-fi system over the years. I currently have a Meridian 508.24 CD, Audio Analogue Bellini preamp, a pair of Cambridge



# Audiolab / TAGMcLaren power amplifiers - neine danke!

purchasing a Base SPOI isolation platform? None of the dealers I've contacted in these parts (southern California) have heard of it. Bernard Gibbes

My pleasure Bernard. I'm sure you will be interested in the previous letter about the Tube Box. For Base tables, go to

www.audiophilebase.com. Or phone: +44 (0)1892 619319, or (mobile) +44 (0)7715 763777, or e-mail sales@audiophilebase.com Hope this helps. **NK** 

# **CHASING MING DA**

I was very interested in the review of the Ming Da MC-7 in the January issue. When I saw one advertised on eBay that was actually in this country, not needing to be shipped from Hong Kong, I grabbed it. Three days later I'm listening to it. The build quality is remarkably good, the use of the side panel for phono sockets bizarre and the Chinese valves need to be quickly replaced by superior stock: result a very good pre. that pulls human voice out of the mix and stands it in front of you, dead centre. You really would have to spend a lot of money to better this! It loses none of the detail my Musical Fidelity XA-1 (used just as a pre) provided, but presents things in a far more robust, musically cohesive and smooth manner. However, I too have a small buzz that John May experienced that disappears whilst playing rock or jazz, but can be heard in the quieter

A250 monoblocs and SD Acoustics SD5 speakers. Unusual combo I know, but it has worked for me so far - I've always liked SD Acoustics ribbon tweeters on a number of their speakers. However, the monoblocs are long in the tooth (at least 15 years), and the preamp is good, but to a budget. I borrowed a Quad 909, Musical Fidelity A300CR and a Naim NAP180 power amp and tried them all, but felt that the Quad and the MF offered little improvement. The Naim was everything Naims are meant to be, but that was a fair chunk of money for only a small improvement Am I at a point where I need to spend huge sums of money to improve the sound (i.e. improvements in tonal quality, speed, timing etc)? As I also do a lot of reference listening on Sennheiser HD580 phones, would I be better just buying a headphone amp, and leaving the rest as is? I listen to all kinds of music, so specifically going for a valve amp to suit classical/jazz music or a dreadnought for rock music just seems to compromise the other end of the spectrum of music. Grateful for any thoughts or advice. Ed Davis

Hi Ed – simple; step one is a Musical Fidelity A5 Power (£1,500) – lots of very clean and surprisingly musical watts from one of MF's best ever power providers. It's so smooth yet so subtle that you could call it 'transistor without tears'.

Next, MF Audio Passive Pre (£1,500) – the best preamp I've yet heard, say no more. Together, this represents one and a half years of your life, but I rather doubt you'll be spending your next year's budget on hi-fi, but CDs instead! I don't know the SD5s, but have a hunch that if you ever do get upgrade-itis, then it's the MS Performance 6 (£3,500) or Monitor GR60 (£2.295) loudspeakers that you'll be investing in for this specific pre-power combo. Frankly, this sort of system, allowing for personal preferences of course, is as near as dammit the best way to listen to 16bit. As for your headphone requirements, a far cheaper (but more limited) way to cheer you up would be to buy a Musical Fidelity X-CANS v3, cryo-freeze the tube inside, and purchase a pair of Stefan AudioArt leads for the Sennheisers... DP

# SCHIZO-ACOUSTICS

I had my first real hi-fi system when I was 16. It was a Naim Nait 1 amplifier with Linn Nexus speaker. I was happy. I personally chose the combination. It sounded to me as the amp and speakers were made for each other. That was more than twenty years ago. I changed to many other systems, not just for upgrading, but for the love of changing, not in a quest for the ultimate gear but to taste the differences. I had Shindo Labs, Conrad-Johnson, Linn, Naim, Audiolabs, Krell and other brands all considered hi-fi heaven. The last was a Hovland HP 100 with Radia and Wilson Audio. Everything was good, or great, but everything after a while showed its unreality or made me wanting more or not accepting what was missing. The more perfect it was getting, the less I could accept of what was missing.

In the end I put back together a system that I bought for my second house, but that for one reason or another I never used. It was a Tag Maclaren PA20r preamp with the mono amplifiers. I connected it to my Wilson Sophia or to my Spendor SP100 loudspeakers and prepared for nothing. The sound was nothing to get excited about, but it was calm and not real. But neither were the other expensive monsters. There was no nice tonality or rhythm, but in their combination of characteristics what was missing - a lot seemed less relevant. Everything else l had before was better, but it was like their greatness exposed that was missing. Since I read you are not so fond of Audiolab pre and monoblocs, from which Tag McLaren are strictly derived, I thought about writing to you to comfort the other readers that I do like them, even though they are not good. Is it a case of psycho acoustic or schizoacoustic? <u>M.M</u>.

(Jeremy Paxman voice) Hmmmm, yes... So you like Audiolab/ TAGMcLaren power amplifiers? We pray for you in your darkness.**DP** 

# LPs ON WAVE

Your 'anti-computer audio' reader John Clark may (or possibly may not) be interested to learn that I have recently found excellent results transcribing my jazz LPs to 24bit Wave files using Diamond Cut DCArt Millennium Software via my STA Media 7.1 sound/card/box then writing to high specification stereo on DVD audio discs using Discwelder Bronze. One problem appears to be that although I can record in 24bit Wave files the Millennium software won't allow me to edit in this format. Have I got this wrong, or is it a limitation with this software? I don't want to upgrade to Adobe Audition unless I have to.

I noted your reply to Ken Perry in last month's issue. Like Ken I have a valued Mission 774 tonearm, coupled to a Thorens TD I 60 Super. My Audio Technica moving coil (AT32E) is no longer in production so when it comes to replacing/upgrading it I wondered whether there was a moving coil cartridge that might be considered as a good match for the Mission arm? Aidan Kelly

Hi Aidan – our resident 24bit boffin (guess who: Patrick Cleasby) is currently rewiring his Apple Mac G5 with cryogenically frozen silver plated copper wire (or some such) in a desperate bid for greater processing speeds and is thus not available for comment, but as soon as he catches a ride back from the planet Geek, I shall canvass his opinion on this matter. As for your MC, I'd counsel the Ortofon MC Kontrapunkt B (my ultimate – ahem – 'affordable MC'), although to be brutally frank as your deck/arm combo stands right now, you'd not notice much less if you went for the cheaper MC20W, which is a crackingly good cartridge for the money. **DP** 

# **MAKING A POINT**

I was determined to try a unipivot tonearm on my S4 turntable after Simon Yorke told me that it would sound much better than my SME V. Of course, I think he meant his own unipivot... However, I decided to try the Incognito wired Hadcock GH242 a matter of slightly turning the low slung counterweight to achieve correct azimuth. I did this in three planes across the platter with the reflection from an upside down CD, then rechecked the VTF.

The first cartridge I tried in the Hadcock was the Grasshopper IV. Immediately I noticed a smoothness and how detailed and airy the sound was. I was really enjoying the detail in the bass range. The SME V in comparison had a brighter top end and was more potent in its bass range. Alas, this was short lived after five LPs



HFW's most vociferous CD lover and DP in agreement shocker!

Integra. The Incognito wire is "not" a continuous run from cartridge tags to phono plugs as on the Rega arm. Instead, it uses a plug and socket arrangement so that you can detach the arm tube.

The stainless steel arm tube has an effective length of 243.8mm (9.60") and the 1.2 metre Incognito arm lead is non detachable. I drilled out the threads in the headshell and ordered an SME adapter plate. The arm has to be set back a little farther than the norm because of its longer effective length. This is no trouble if your arm board is cut for an SME as you can use the adapter plate, otherwise you will have to cut a new arm board.

Setting up the arm was fiddly, but fun. Once everything was set up it was



MF X-RAY v3 - good things come in small packages ...

because when I got up to flip the record I broke off the bleeding cantilever, Arghhh!

The only other cartridge I had at the time was a Shure M95 ED. Again, the sound was much better in the Hadcock, smooth, more detailed, more air around instruments. So the Shure stayed in the Hadcock for about 4 months.

Whilst deciding what to do about the Grasshopper, I outbid someone on eBay for a Fidelity Research FR-I MK3F. This one checked out okay I mounted the FR in the SME V first because the FR needs a rigid tonearm to sound its best, or so I've been told. Well, it sounded pretty dammed good, it had nice detail, the bass was well defined, if still a little potent for my liking, and just a little bright at the top end, so I loaded it down but this made the bass even more potent so I left it as it was.

Then I tried the FR in the Hadcock with the original 28 ohms resistive load. Once again, I noticed that smoothness, with relaxed sounding highs, excellent detail, lots of air, textured bass, in a nutshell "musical". The Hadcock at times reminds me of a good air bearing tonearm, or a good tube amp, I love it.

Here's my system: Simon York S4 turntable, Bent Audio MU step up transformers, Cary PH 301 phono stage, Cary 94L pre-amp. and Cary 300B SE monoblocs driving Cary/Montana SP 301 loudspeakers. Badfinger Thanks Badfinger. I'm surprised that, with a name like yours, you managed to set up a unipivot at all... I know that despite my eight 'good' fingers, l still end up with the Koetsu on the carpet at the other end of the room, with the dog chewing my Allen bolts... (Hadcock users will hear my cry). Anyway, just for your titillation, l shall be trying a new Naim ARO on my GyroDec very soon and reporting back. And then there's the whole of parallel tracking to get into - coming soon, after I've pulled all these MC25FL cantilevers out of my toes... DP

# **GOOD DIGITAL?**

I have a problem that I am sure you guys come across all too often, though I'm probably not going to like the answer. I have what I feel is a very musically rewarding system (though I would like a bit more lower end sometimes). The system comprises the evergreen Sugden A2 I a, Rega P25 with a Goldring cartridge and Nordost cables Hmmm... what do you mean by 'analogue-like?' Do you mean warm and full and beguiling? In which case, go for the Shanling CDT100 (make sure you get the UK sourced 3DAcoustics version). Or do you mean rhythmically engrossing and dynamically true? If so, go for the Naim CD5i. If you're after a great working compromise, I'd counsel the new Musical Fidelity A5CD - but you'll have to pay another £500 for the privilege. If you want a slightly smoother and more analogue sound compared to the MF, at the expense of some incision, go for the Exposure 3010 (£1,200). The MF X-RAY v3 is the value for money choice at £899 it has a very, very clean and even and open sound, but you'll find the A5CD adds scale and depth (and a £600 hole in your pocket). As an aside, I'm currently using the X-RAY v3 as a transport with the STELLO DP-200 DAC/ preamp (£1,495) and it's a brilliant combination - it's not as musical as the Marantz KI DP but



Fantastic styling and sound from Shanling CDT100

running to Sonus Faber Concertinos (I have a relatively small listening room). Not a big budget system, but one I find clearer, more musical and less fatiguing than most others I listen to at the price.

My problem is I need a good digital source. I have tried several players so far, but found them all, well, too digital. You guys have hit the nail on the head, describing it as thin and brittle. I have tried an Arcam CD73, a player I know that you often recommend. Very detailed, though I didn't like what it did to voices and in the end I just couldn't listen to it, and went back to vinyl.

I also tried a Marantz universal player, the DV 2600, but found it was warm, though not very detailed. Surely there is something around the £700-£1,000 that has a bit of both and is more analogue like? I have around 200 CDs at the moment I wish to revive (much of which you can't get on Vinyl). I was thinking of Sugden's CD21, Musical Fidelity X-Ray v3 or a Shanling CDT 100. Any suggestions? Andy offers real architectural scale and detail/ insight. You could do far, far worse than trying this with your existing player... DP

# YOU WOULDN'T LET IT LIE...

Got a quick question. After the article in the June 2004 edition, NK suggested the Marantz CD63 KI DP was a multibit player. I see from the reviews of the 63 KIS back in the mid-90s that the DACI filter was an NPC bitstream originally. So - did Ken change the DAC in the modification - if so, for what? The reason this intrigues me is that in a moment of late summer madness I bought a secondhand hand CD63 KIS and bunged it off to Marantz for the rebuild! Your CD lover from Liverpool just had to find out for herself! Well, it returned on 4th January looking gorgeous and sounding simply wonderful! However hard I try to "evaluate" it as hi-fi (and it really does tick all the boxes) I just sink into the music every time. Warmly gorgeous in romantic slow movements, but swift and

very agile in the complex rhythms of Bartok and Stravinsky, it's a dream of a player for classical. So thanks to you and KI for offering and publicising the mod. Why not invite the happy few who have one to write in with their reflections, and publish a special letters page later this year?

Yours Very Musically, Jayne Lee Wilson Liverpool

Thanks Jayne - no, NK was wrong, it's still Bitstream! It does sound gorgeous doesn't it? After all my ranting about vinyl, I have to admit I'm listening to CD most of the time right now (it sure beats every DVD-A and SACD player I've heard in terms of musicality, too). I'm glad I'm not hallucinating the sound, as it's one of the most exquisite digital thingies I've ever heard! We'll do the KI DP page sometime soon. Cheers, **DP** 

Whoops, did I say that? NK

# **ECSTATIC**

Thanks for that great review you did on the Audio Research VSi55/ Quad ESL57 combination. I've now purchased them after auditioning on the strength of the review and it is a fabulous pairing. What speaker cables did you use? I have a Michell Gyro/OL RB300, AT OC9 and Michell ISO front end. The rest of the cabling in Nordost Blue Heaven. I am considering either more Nordost Blue Heaven or Transparent Wave cabling. Many thanks for any help. Keep reviewing the good stuff and recommending good and interesting music.

# Doug McClure

Hi Doug – in a word, Chord Odyssey 2: I'm now using Signature at twice the bloody price and it's better still. There are some damn fine wires out there, but the top Chord stuff is proving extremely, consistently, capable in every application I use it in. **DP** 

# DISINTEGRATION

I have been the proud owner of a Dual 505 turntable for many years. I would really have liked to stay that way but I fear disaster has struck. The cartridge has all but disintegrated. I lost one channel from the output and on investigating found that a solder joint had come adrift, further investigation showed that one of the fine wires from the coil was also loose. I am not an expert on the electronics of hi-fi, although I know what I like. Is there a British supplier who might help me get back to working order? I am not even sure which parts

World Radio History

are replaceable, having never had a moment's trouble from the system until now. regards Geoff Lewis

I seem to recall Dual fitted an Ortofon OM10 to the 505. These are still available from Henley Designs, who handle Ortofon, for just £35. They are based in Didcot, Oxfordshire OX11 7HR and can be phoned at 01235 511 166, or go to www.henleydesigns.co.uk. You could alternatively fit a 510 or even a better 520. They'll bring your Dual back into life. **NK** 

# **IN THE PINK**

I was most interested to read Bryan's letter in the December issue, where he liked the sound of his system yet wondered about upgrading his turntable. Like Brian, I too own a Pink Triangle LPT that has served me well since 1991. Unlike most PT products, this deck is very well built and it gives every indication of rotating for decades to come.

Like Bryan, I am basically very happy with the sound of the deck so it was with some interest that you thought it could be a tad off the pace. of the current crop, like the Roksan Radius 5 and GyroDec SE for example? I suspect that this might show that the biggest advances in recent years have been in arms and cartridges rather than motor units, but I might be wrong!

It would help the likes of Bryan and me to decide whether an upgrade would be worth investigating. I could of course simply take my deck along to a dealer to do this. I have no such inclination at the moment, but I do have an open mind, and such a test would make interesting reading for the thousands of Linn Axis, LPT, Radius, Manticore Mantra etc owners out here! Alan Warren

Yes Alan, we'll do this. But I have to say that this issue – with all its vinyl content - has beaten me into submission. Whereas the other mags can simply unbox a CD player, plug it in and write the review, this month we've been fighting Hadcocks, wrestling with independently sprung subchassis decks, fiddling with alignment protractors, slipping on our spirit levels and bending cantilevers all hours of the day and night. So please bear with us – we'll do your retro eighties superdeck shootout sometime – but in the



Pink Triangle LPT with outboard supply - a great turntable.

When I bought my deck I thought it bettered the GyroDec of the day. In recent years I have made significant improvements through the Origin Live modifications to my Rega RB300 arm and again when fitting a Dynavector DV-I0X5 cartridge in place of a Corus Black. The motor unit was good enough to clearly show these improvements.

But any motor unit has limitations, right? So this brings us back to Bryan's letter. I appreciate that it is difficult for you to test turntables which are no longer made, but would it be possible for you to assemble a selection of classic mid-range decks from the 80s and 90s and pit them against the best meantime I hope this month's group test (and associated reviews) provide you with information and inspiration... To cut a long story short, the latest crop of £1,000 turntables are quite superb – and obviously better than equivalently priced designs that came before by quite a margin – but as we've found - the cost-no-object designs from the sixties and seventies are better still. Makes you think, doesn't it...? DP

# HARD DRIVE

Hi,

I currently have various sources going

through my Technics SUA900 Mk I I amp driving a pair of home made speaker units. Each speaker stands nearly 5' tall, weighs a ton and is built from 25mm MDF and internally braced in three places, and contains three Tannoy 609 Mk I I 8" dual concentric drive units.

I'm currently upgrading the guts of the internal wiring of the speakers to Kimber &TC and upgrading all the Xovers too to Kimber caps and air cored inductors etc.

After this I'm going to do something about the amp. I like my sound analytical and 'straight out the studio' sound. My main sources are an ArcamDelta 170 transport going through an Audiolab 8000 Dac, an early Technics SV-DA10 DAT player also going through the Audiolab DAC and a Nakamichi CR7E.

Can you advise, taking into consideration that I've been told by the person who built the speakers for me that they can sometimes go down as low as 2 or 4 ohms to drive, what amps should I be looking at to give a good, , driving sound into such loads? Thanks in advance.

Jonathan Doupe Southport

Heavens, home brew loudspeakers that reach down to 20hms are not the sort of load solid-state amps are designed for. Four ohms is about the lowest it is wise to go, although if the impedance dips lower over a reasonably narrow portion of the frequency band it is unlikely to cause much harm unless you run near to full output over any period.

There are a number issues to consider here. First is whether the speakers will provoke the protection circuits of an accompanying amplifier. Best to go for a big amp designed to push current in order to avoid this.

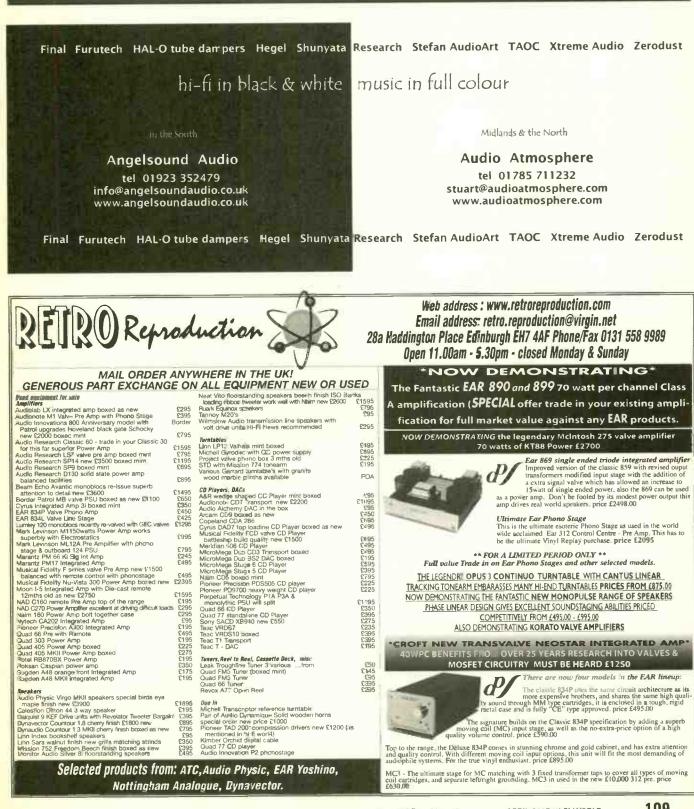
Secondly, distortion rises as a result of low impedance. You see, it means the output stage has to push a lot more current and with most amplifiers this can easily double the distortion produced. Again, you need a powerhouse with multiple paralleled output transistors.

Finally, pushing current means generating heat, which again upsets an amps thermal equilibrium.

Best to choose an amp able to deliver heavy output. I would suggest a Myryad MI 120, Musical Fidelity A5 or the Roksan Caspian M Series power amps. Don't forget also that any valve amp with a 4ohm tap will handle low loads without difficulty. Check out the Audio Research range. **NK** 

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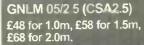
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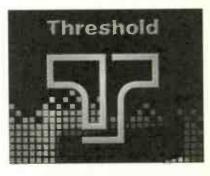
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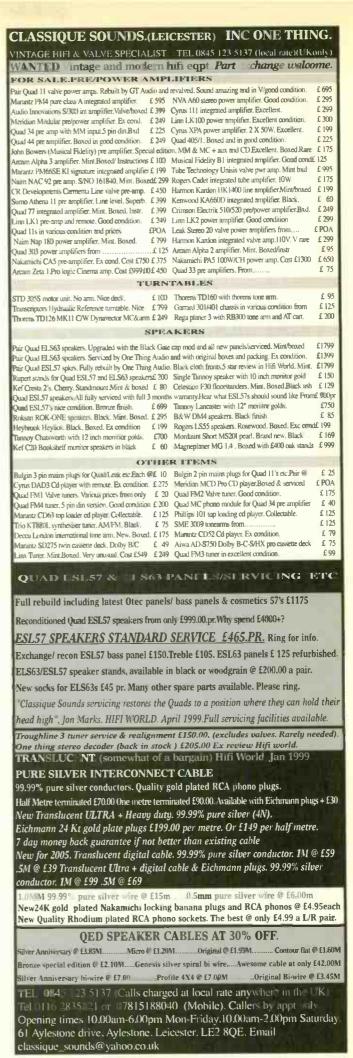
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MPLIFIERS Aerician 605 Mono Blocks ncarteck DIRK Integrated Amp dvantage Integrated Amp	£895 £40 £1495	Pink Triangle Turntable with Superb Zeta Tone Arm Dynavector DV20X (as new) (retails £395)	4250 £625 £285 £595	Ex demo (were £17995) Shunyata Anes interconnects 1m pair (ex demo, Retails £850) Shunyata Anes interconnects 2m pair (ex demo, Retails £1275) Vpi Aries turntable with cartridge fitted (as new, Retails £1800) Zyk Arey 2X cryogenic cooper coils (as new, Retails £1500)	£16995 £450 £675 £995

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# TURNTABLES & CD PLAYERS

To a large extent I suspect that there are some systems that really suit vinyl and some that are happier with CD, in the same way that some speakers work best with valve amps and others prefer solid state. I remember that when I first tried out the Infinity Prelude MTS Towers, it wasn't until I played vinyl on them that I decided to keep them, so if anyone has the money and the space for a great speaker give us a ring. I refer to this because there isn't much new to write about this month, and I happen to be in the middle of various cartridge and hence turntable tests. I always find it amusing that so many people go on about vinyl, but I seldom find that I significantly enjoy music more on vinyl than on CD. My main interest is in being able to play records that I can't get on CD, or don't wish to duplicate. A recent review of a £9000 DAC, concluded that it came close to analogue, but I have heard it and it doesn't come any closer than my £1400 AVI Integrated CD player, which I still use after many years, and it never fails to impress. Others can initially sound more impressive, but finally are not as enjoyable. If any readers have views on any of the above I would be glad to hear from you (icvhifi@yahoo.co.uk), but in the interim, I'll carry on with the tests, and report findings another time.

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or email world@2ndh

# 

Like to audition a number of different decks in one place? Want to hear a new cartridge for yourself before you buy? Never found anywhere interested enough to do it for you?

#### turntableworld has selected items from:

rld Radio History

**Audio Technica** Clearaudio Dynavector Goldring Grado **Graham Slee Projects** G F C Hadcock Lyra **Michell Engineering** Moth **Nottingham Analogue Origin Live** Ortofon Project SME Sumiko **Transfiguration Trichord Research** Wilson Benesch

#### ...all on dem right now!

Plus our own range of accessories including a great wall shelf with twin level acrylic platform and two superb digital stylus pressure gauges from just £29!!!

#### We can also offer:

Home dems by arrangement Full set up in your home - whatever the deck Free loan of company anorak when you're feeling lonely Free amateur counselling for CD lovers With part exchange upgrades continuing to be our speciality, you'll also have access to the widest range of used items in the UK - many from manufacturers you'd half forgotten existed, and still supported by our in house warranty of course.

#### Here's a selection of current stock...

emist	Brogi phono stage and Forseti p/s - vgc, superb flexible stage
ason	Sonata/Alcaeus/HR100MCS - ex, black ash
ason	Sonato - good, light ash
ason	Xenon - ex, trimmed down HR100
olab	8000PPA phono stage - , vgc, flexible stage, rare
on	Sterling - ex, valve phono stage
on	834P - fair, mm/mc switchable version
d	Phono stoge - ex, stunning
k	OBH8 - ex, mm stoge
	301/SME 3009 - ex, block sandwich plinth
ard	401 · vgc motor unit
ard	TT2/BasikLVV - ex boxed
brook	Troika - vgc, boxed
	LP12/Lingo/IttokLVIII/Asaka - nr mint, rasenut, baxed
	LP12/Armageddon/Ara - nr mint, black, baxed
	LP12/Lingo/Ekos - ex, black, boxed
	LP12/Valhalla/LVX - vgc, b ock
	LP12/Armageddon/RB300 - vgc, black
	Basik, LVX - vgc, black
	Axis, Basik plus - vgc, black
	Ittak 12" - ex, black, apparently one of only 20 made
2	DM101/Datum - ex, bargain LP12 challenger
ell	(Transcriptors) Reference hydraulic - ex, fluid arm
vell	Gyrodec/QC - ex, boxed, armiess
vell	Gyradec/RB300 -ex, brand new arm
vell	Orbe/RB300 - ex/ex, boxed
nell	Orbe/Wilson Benesch Act 2 - ex, smoked
nell	Focus One/Focus arm - ex,
rio	AND-N · mm/mc phonastage
ion	774 - ex, fab 80s tonearm
A	The Source - ax, mahogony
in Live	RB300 - ex, early black stub and weight, full wiring mod
ssey	RP1-XG - ex, the prettiest arm ever?
Triongle	PT1 original - vgc, boxed
Triongle	LPT/RB250/Reson- ex/ex,
Bct	Classic - vgc, cherrywood plinth, borgain
	Planor 2/RB250 - ex/ex
2	Planar 3/RB300 vgc/ex
	Planar 78/RB250/Mono Cart - ex/ex
3	
1	RQ970 - ex, phono stage Xerxes/Tabriz Zi - ex, black
kan	
an	Xerxes/RB300 - ex, black
ens	TD160b - ex, c/w Mission 774
nshend	Elite Rock Mk2/Excalibur - ex, no optional extras
scriptors	Skeleton/Vestigal - ex/ex
ion Benesch	Act/Act 2 - the best ever? Rare as an

Alche Alpha Alpha Audii EaR Chorel Garr Heyb Linn Linn Linn Linn Linn Linn Linn Mich Mich Mich Mon Mich Mon Mich Mon Pink Pink

Rega Rega Rotel Roks Roks Thorn Town Trans Wils

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 $399^{\circ}$  779,  $299^{\circ}$   $449^{\circ}$   $299^{\circ}$   $299^{\circ}$   $299^{\circ}$   $79^{\circ}$   $199^{\circ}$   $199^{\circ}$   $279^{\circ}$   $129^{\circ}$   $279^{\circ}$   $129^{\circ}$   $429^{\circ}$   $329^{\circ}$   $129^{\circ}$   $249^{\circ}$   $249^{\circ}$  249

# PROBABLY THE BEST DIV KITS IN THE WORLD

# World Audio design tel: 01245 450 651

#### SINGLE-ENDED PURITY

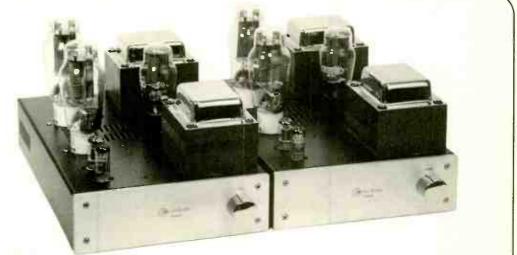
Our Parallel Single Ended (PSE) power amplifiers offer ultimate sound quality. Each monobloc has two beautfully linear 300B directly heated triodes in its output stage, producing 20 watts into an 8 ohm load. At the front of the circuit we there is a 6AU6 pentode, followed by an ECC82 as the driver valve. This design uses a 5U4 rectifier valve in the power supply, in combination with a 10H choke, giving an extremely quiet supply. Both mains and output transformers are built on high quality E/I pattern cores.

Feedback can be switched in or out whilst running, using a rear panel switch. Complex layered and sectioned output transformers give full output and

low distortion across the audio band even without feedback, making such an option possible.

This is one of the few amplifiers in the world so good it will work without feedback - and no feedback is the preference of most buyers. It gives a spacious, relaxed and fluid sound quite unlike that of solid-state amps, all of which use feedback to correct deficiencies.

By operating linearly in feedbackless, pure Class A. single-ended mode these



300B monoblocs are as pure as it gets - and sound quality reflects the fact. Fast, clean and clear in their presentation, at the same time their purity of sound is easy on the ear.

The kit is totally hard-wired; it does not use circuit boards. We can supply without valves, or with the superb Tesla 300Bs, Russian 5U4s and European 6AU6s & ECC82. Our 300B PSE kit bears an affordable price of £895.00 (UK price) excluding valves. Each monobloc weighs 23kgs (50lbs). External dimensions with valves:  $25cm(w) \times 38cm(d) \times 22cm(h)$  per monobloc.

per pair

#### PUSH-PULL POWER

For more power, we also offer 300B in Push-Pull (PP) form . The 300B PP monobloc shares the same look and chassis as the 300B PSE monobloc. The 300B PP kit has been created for those who prefer a bit more power. With a pair of 300Bs in push-pull configuration providing 26 watts output, they will drive most modern loudspeakers to perfection. Andy Grove's design is totally feedbackless, using a 6AU6 pentode as the input valve and a 5687 as the phase splitter. The power supply uses a Russian 5U4 for rectification. The klt is constructed by hard wiring, so some experience is required. 300B PSE owners do have the option to buy the conversion kit for £250.00 to turn their monoblocs to push-pull status. Each monobloc weighs 23kg.

**300B PSE MONOBLOC KIT** 

£1197 per pair

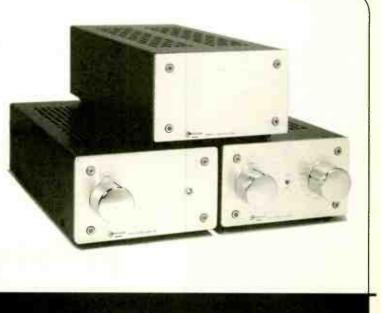
300B PP MONOBLOC KIT

The PRE-II is a high quality valve pre-amplifier that will drive any power amplifier. It has a gain of x5 which, with CD, enables it to deliver a large 10V output swing. To keep the amount of active amplification low, this pre-amp uniquely uses a line drive transformer to deliver a pure signal to the power amplifier. There are six inputs, a tape monitor and two sets of output sockets. It is powered by the external PSU-II power supply. The volume control uses high quality Alps Blue potentiometer which, with our solid, turned brass, chromed knob, gives a quality feel rarely encountered these days.

**PHONO-II** is a dedicated valve phono stage for MM cartridges, with MC input transformers an option. By using all-d.c. supplies from PSU-II and a case in which there is no power supply, PHONO II Is hum free, something that Is difficult to achieve with valves. With accurate RIAA equalisation right down to 10Hz (-3dB) PHONO II gives a wonderfully pure, dimensional sound from LP, possessing a sense of life and dynamism quite different to solid-state preamps.

Finally, PSU-II is a power supply unit that feeds both the PRE-II and PHONO-II. Keeping the power supply separate removes hum, often the bane of valves.

Power Supply Unit (PSU-II)	£205.00
Pre-amplifier (PRE-II)	£215.00
Phono Stage (PHONO-II)	£110.00
Moving coil step-up transformer	£77.00



#### SERIES II MODULAR PRE-AMP KIT

118 HI-FI WORLD APRIL 2005

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## PROBABLY THE BEST DIY KITS IN THE WORLD

### World Audio design tel: 01245 450 651

Kel84 is an affordable, integrated valve amplifier for those who want to enjoy the valve sound, but from a simple, easy to build kit. It uses inexpensive EL84 output valves, known for their sweet sound, in conventional push-pull arrangement to provide 15 watts into an 8 ohm load. The output transformers are our own quality Ultra Linear design. Up front, the circuit employs an ECF80 input/phase splitter valve, which contribues to Kel84's extremely smooth sound.

The amplifier has very low hum and for simplicity it is built on a printed circuit board. A strong steel chassis is fronted by a 3mm anodised front panel and attractive brushed aluminium effect knobs. There are five line level inputs, plus one monitor input, with a tape output included, all controlled from the front panel.

At the rear is a mains switch/IEC power input, earth post, phono sockets, and 4mm bannana sockets for loudspeakers. The Kel84 will highlight all the intricacies and depth of detail in your favourite recordings whilst retaining a warmth and fullness that is almost exclusive to pure valve amps and is rare at this price point.

Kel84 weighs 10kg. External dimensions with valves are 300mm(w) x 270mm(d) x 150mm(h). Single input version also available at £285.

#### KEL84 VALVE INTEGRATED AMPLIFIER KIT



wad



Our 6550 series amplifiers are built around the rugged 6550 beam tetrode that's popular in America. This valve is widely available at a good price. Producing no less than 40 watts into an 8 ohm load.(available in a 4 ohm version if required) our 6550 is a power house, since valve watts always sound louder than transistor watts!

The difference between our 6550 and most others is that we use valve rectification (5U4) and a choke pi filter, for a power supply that is quiet and free from solid-state hardness. This is a true high-end design from Andy Grove, hard wired. It is a cut above the many other 6550s, with enough power to drive most loudspeakers, including insensitive electrostatics for example. 6550 combines high power with a top-end smoothness of sound, yet doesn't cost the earth to run, as the valves are inexpensive and have a long life.

The amplifier weights 19kg. Dimensions are  $390mm(w) \times 330mm(d) \times 190mm(h)$  with valves. or 220mm(h) with cage.

KIT6550 - An integrated amplifier with line inputs and volume control. Accepts CD. tuner, tape etc., but not LP.

KAT6550 - A power amplifier for use with a separate pre-amp. Paired with PRE II and PHONO II (+PSU II), can provide LP reproduction.

### KIT6550 VALVE INTEGRATED AMPLIFIER KIT $\pounds 615$ KAT6550 VALVE POWER AMPLIFIER KIT $\pounds 580$

The Headphone II amplifier is a beautifully simple design using Mullard ECL83 valves, a triode and power pentode housed in the same envelope. It works directly from any source, be it CD, tape, tuner etc., or from an amplifier's tape out or pre-amp out sockets. The circuit uses high specification E/I output transformers that will drive any headphone load from 16 ohms to over 300 ohms depending on how the secondaries are wired up.

The Headphone II is a pure Class A single-ended design with the power pentode wired up in triode configuration for added sonic purity, and it is as quiet as a mouse. Treble has the crispness of the best solid-state, but with the tonal resolution and delicacy associated with valves. Bass is punchy and controlled without becoming artificial.

External dimensions 270mm wide, 275mm deep and 85mm high



HEADPHONE II

www.hi-fiworld.co.uk World Radio History

APRIL 2005 HI-FI WORLD

Hi-Fi World writers have extensive audio industry experience - from designing the best valve amplifiers, engineering bespoke pro audio installations and mastering digital discs to classic and modern hi-fi retailing. No other magazine has such a diverse wealth of editorial talent. No other magazine is able to combine the new and the old, the classic and the modern, the affordable and the expensive, the raw and the cooked, with such authority:

#### DAVID PRICE

A passion for music from an early age got DP ooked on hi-fi. His writing career began in 990 with Netw Musical Express, and after writing for Hi-Fi World he joined the Doors team at The Sunday Times, and now edits the Home Entertainment section of The Month alongside this magazine. A compulsive record collector, vinyl is David's favourite tipple, and he's crazy about elassic audio too - as his encyclopaedic knowledge of lapanese high end attests.



#### NOEL KEYWOOD

A leading technical journalist, his rigorous reviewing - informed by empirical measurements - has made an indelible impression on the UK hi-fi scene. After editing *Hi-Fi Answers* in the 1970s and contributing to *The Flat Response* and *Hi-Fi Review* in the 1980s, Noet went on to launch *Hi-Fi World* in 1990. His challenging approach has famously seen him expose digital audio's technical failings, and champion the cause of his beloved valve amplifiers and high sensitivity loudspeakers.

#### DOMINIC TODD

Working in hi-fi retailing since 1991 - at all levels including sales, management, purchasing, training and marketing - has given DT a forensic knowledge of modern audio and video equipment. Living at the 'coal-face' makes him brilliantly placed to comment on what kit works best and why, and to explain the politics behind it.

#### HADEN BOARDMAN

His knowledge of classic kit is almost unmatched - doubtless helped by him getting bitten by the hi-fi bug at the tender age of 9! Haden's tastes are very much of the 'valves and vinyl' ilk, his system displaying a wetter of British names from the 1960s to go with his 1980s Marantz CD spinner. He's also a keen kit builder, and is not afraid to wield a soldering iron in the noble cause of superior sound.

#### PATRICK CLEASBY

After a stellar career in IT. Patrick's love of music drew him to the field of multichannel music mastering, which is now his vocation. His exhaustive knowledge of digital audio and surround sound theory and practice makes him perfectly placed to assess the latest DVD-Audio and SACD hardware and software alike.

#### STEWART WENNEN

A professional audio engineer since the 1970s. SW is still constantly amazed by the poor quality of kit that some manufacturers foist upon the buying public - but is also delighted when he finds a bargain. His redoubtable experience of designing and building his own turntables, electronics and loudspeakers through the years makes him an ideal *HFW* scribe, along with his obsession with music.

#### LJK SETRIGHT

A man whose reputation precedes him, LJKS has had a long and brilliantly distinguished writing career. Most famous for his quarter century of contributions to *CAR* magazine, he has also had over one hundred books published. A gifted, classically trained musician, his passion for hi-fi comes from an enduring love of music. A keen Radio 3 listener, LJKS's Linn Sondek turntable comes second only to his beloved Kremlinn tuner in his affections.

#### WHAT IS HI-FI WORLD?

An *independent* hi-fi magazine of fourteen years standing, founded by Noel Keywood - one of the UK's leading technical hi-fi writers.

#### WHY IS HI-FI WORLD SPECIAL?

Almost all hi-fi and home entertainment magazines are owned by large media corporations that publish anything that makes money, be it caravan, computer or mobile phone titles. But we're different! As the only magazine published by Audio Publishing Ltd., a small *independent* specialist publisher, hi-fi isn't just a business for us, it's a way of life.

#### WHAT IS HI-FI WORLD'S PHILOSOPHY?

We are the only real world audiophile magazine you can buy. No matter whether something costs 20p or £20,000, we'll tell you if it's worth having - and why. Being independent, we can write what we like, and we do. If it's recommended in these pages, it's because we've lived with it - and rate it. If we don't, then we'll not gloss over the fact for reasons of commercial gain.

We don't print reviews of bad equipment - what's the point? So everything inside these pages is interesting or excellent, and usually both. Yet still we don't pretend everything is fantastic. Not even the best equipment is right for everyone - which is why go to great lengths to explain the respective strengths and weaknesses of each bit of kit. We don't knock stuff, we say why it will work in some systems and why it won't in others - so you can make your own mind up.

Unlike some titles, we don't delude ourselves that we're the ultimate authority on everything, but the huge experience of our team ensures that we're invariably pretty close to the mark. Importantly, we back our subjective findings with technical measurements - which ensures that everything we review is a representative sample, and that we know what ancillaries are best.

We don't pretend that every new product is better than its predecessor. We're happy to recommend classic hi-fi when it's better than modern stuff. This doesn't help our advertising revenues, but it gets you closer to getting a superb sounding system for the lowest possible price.

#### WHAT'S THE HI-FI WORLD SOUND?

Go into your local high street electronics emporium, and you'll hear no end of cheap, forward, hard and showy sound bits of audio kit. As we listen to music hour after hour every day, we're not into this. We go for hi-fi - at any price that has the ability to communicate what the musicians are trying to say. This means it must be rhythmically engaging and dynamically expressive - but must also be able to recreate a believable soundstage and a wide and varied range of tonal colours. We don't like a hard sound, nor do we enjoy the soft. It's got to be open and organic. Interestingly, there is kit at all price levels that offers this quality - although it often takes some finding. So we're happy to recommend anything from an old, long-discontinued £30 amplifier to a brand new pair of £6,000 loudspeakers - if they sound right!











# MIDLAND AUDIO XCHANGE

The Old Chapel Forge Lane Belbroughton Worcestershire DY9 9TD

t. 01562 731100 f. 01562 730228

e-mail. sales@midlandaudiox-change.co.uk web .www.midlandaudiox-change.co.uk

#### Ex-demo and second hand items

	Was	Now			
Digital			Loudspeakers		
Densen Beat400+ x-demo	1295	979	ATC Active 10 SL x-demo	1650	1999
Accuphase DP77V CD/SACD player x-demo	7600	4999	ATC Active 20 SL x-demo	3250	2399
Audio Note CDT Zero/DAC Zero 2 box valve S/H	998	499	ATC SCM7 Cherry x-demo	499	375
Audio Research CD3 S/H	5490	2999	KEF Q75 Black S/H	N/A	199
	5999	2995	JM Lab Micro Utopia Anigre with Stands S/H	3999	1699
dCS Delius 24/192 DAC Non Firewire S/H	9500	4500	Mordant Short 902 S/H	249	99
dCS Elgar+ DSD 1394 Version S/H			Martin Logan CLSII Anniversary Electrostatics		
dCS Purcell DSD 1394 Upsampler	4999	1999	7 months Old S/H	6700	4295
dCS Verdi SACD/CD Transport S/H	9000	4995		875	499
Mark Levinson No31.5 Transport S/H	9999	4999	Naim Audio Intro Black Ash S/H	7500	5799
Mark Levinson No360s DAC S/H	7500	2999	Peak Consult Incognito Rosewood x-demo		
Meridian G08 CD S/H	2250	1899	Rega ELA Cherry X-demo	749	579
Primare V10 CD/DVD Player x-demo	795	499	Verity Parsifal Encore Black lacquer x-demo	14000	8799
Theta Generation V Balanced S/H	6290	2299			
Theta Pro Basic II DAC with Oscom/Balanced S/H	2990	1195	Cables and Accessories		
Theta Flo Basic il DAO With Oscom/Balanced on t	2000				
			Cardas Neutral Reference 1m RCA-BNC S/H	550	375
Analogue			BCD Mains cable 1.5m S/H	144	75
	305	500		599	375
Clearaudio Unify Unipivot Tonearm New&Boxed	795	599	BCD Amplifier Stand S/H	319	159
Clearaudio Accurate MC x-demo	2800	1699	Madrigal MDC 2 1m Fatboy Digital cable new boxed		
Clearaudio Victory MC New&Boxed	1030	699	Madrigal MDC1 1mAES/EBU 110ohm Digital Cable new boxed	4.20	199
Dynavector XX2 MC Cartridge 100hrs S/H	950	679	Sennheiser HD600 S/H	279	119
Heed Quazar 2 box MC/MM Phono stage new	550	395	Siltech SQ58G3 2x4m Balanced Interconnect x-demo	2370	1499
Kuzma Stabi/Stogi S Turntable New& Boxed	N/A	1399	Spectral MI-330 15ft Interconnect RCA-RCAx-demo	800	499
	1075	499	Spectral MI-750 15ft Interconnect RCA-RCAx-demo	1400	799
Linn LP12 Cirkus/Black Ash S/H		479	Spectral MI-330 3ft Interconnect RCA-RCAS/H	625	399
Linn LVII Tonearm S/H	N/A		Transparent Music Link Super 1m RCAS/H	599	299
Linn Clyde MC Cartridge S/H	500	249	Transparent Music Link Super Int ROAS/H	2499	1249
Lehmann Audio Black Cube SE New& Boxed	650	449	Transparent Balanced Music Link Ultra 20ft S/H	2499	1249
Naim Aro Tonearm S/H	1400	850			
Trichord Research Delphini 4 box phono stage S/H	1999	1399	Tuners & Tape decks, power supplies		
Triplannar Series VI Tonearm S/H	3500	1999			
Rega research P25 Rosewood S/H	625	449	Magnum Dynalab FT-R Remote Switcher for		
Roksan Cognescenti Xerxes XPS3/Tabrizi/MC25FL S/H		795	FT101A/Etude (new & boxed)	450	279
Roksan Cognescenti Aerkes AF 35/ rabitz/MC25/ E 5/H	3840	2799	Magnum Dynalab MD106T 4 months old	3600	2999
SME20/2 turntable without arm 6 months old S/H			Rega radio 3 Silver X-demo	398	279
Systemdeck X II900 /RB250 S/H	N/A	250	Regaratio 5 Silver A-demo	000	215
Preamplifiers			Suppliers and installers of High		
			Quality Audio Systems		
Audio Analogue Bellini Remote Preamplifier X-demo	625	499	47 Laboratory • J M Labs		
Hoyland HP100MC Preamplifier S/H	5495	2999	47 Eaboratory • J M Labs		
Naim NAC102/K s/n125*** Preamplifier S/H	1089	549	Accuphase Krell		
Primare PRE30 x-demo	1200	799	ATC 🔮 Kuzma		
Spectral DMC12 Preamplifier S/H	4200	1999	Audio Physic 💄 Lavardin		
Spectral DMC 30s Preamplifier S/H	6950	4999	Audio Research   Martin Logan		
Rega Cursa Preamplifier Black x-demo	598	429	Avalon Accoustics Michell		
Rega Cursa Freampliner Black Ademo	550	42.0	Avid • Nagra		
Amplifiers			bel canto 💲 Primare		
			Benz Micro 🍨 ProAc		
Audio Analogue Corelli Stereo Power Amplifier X-demo	695	479	Cardas 👗 Rega		
Audio Analogue Donizetti Mono Power Amplifiers X-dem	101050	729	Clearaudio Siltech		
Audio Research D100.2 Solid State Power Amplifier S/H	3995	1799	Conrad Johnson 🌷 Sonus Faber		
Audio Research VT200 MkII Valve Power Amplifier S/H	9998	6999			
Krell FPB 700cx Class A stereo Power Amplifier S/H	14989	8995	dCS Spectral		
Naim NAP180 S/H	1189	599	Densen Nordost		
	1200	879	DNM/Reson Sugden		
Primare A30.2 Poweramplifier x-demo	1500	995	Electrocompaniet Transparent Audio		
Primare A30.1 Integrated x-demo			Finite Elemente 📍 Verity Audio		
Primare SPA20 Multi channel x-demo	2000	1299	Graaf Wadia		
Red Rose Sprit Integrated x-demo	1000	649	Glaar e vyaula		
Rega Maia Power amplifier Black x-demo	548	399			
Spectral DMA100s Amplifier S/H	4295	2250			



Midland Audio X-change are looking for Audio Research, Krell , Mark Levinson , Naim Audio ,Dcs,Wadia.

2ndhandhifi	<b>next month:</b> audio cooking tips from Smurf, Mike Dixon and Luke Mc Skywalker	turntableworld!
The widest selection of used hifi in the North	or email world@hitisound.co.uk	Like to audition a number of different decks in one place?
Adcom         GCD 575 - Decert US machine, medicing emps available         19-9           Arcan         Alpha I. mmin, mendicing emps available         99           Audiolab         8000 Far. mmin, mendicing         99           Audiolab         8000 Far. mmin, mendicing         99           Audiolab         8000 Far. str., boared         399           Cambridge Audio         Discmogic/Docrogoic: est, nice combo for peanuts         199           Cambridge Audio         Discmogic/Docrogoic: est, nice combo for peanuts         429           DPA         Refinisorace: due in         6all           Kennood         CD-DSP - str., clear out jumdeer lide, remote, stanning         149           Marantz         CD-0SP - str., clear out jumdeer lide, remote, stanning         149           Marantz         CD-0SP - str., clear out jumdeer lide, remote, stanning         149           Marantz         CD-0SP - str., clear out jumdeer lide, remote, stanning         149           Marantz         CD-0SP - str., clear out jumdeer lide, remote, stanning         149           Marantz         CD-0S - str., remote, certificate, borgain         149           Marantz         CD-0S - str., remote, remote, borgain         199           Marantz         CD-0S - str., remote, remote, borgain         199           Marantz	01352 541888	Love to compare a modified tonearm with the original on the same deck? Want to hear a new cartridge for yourself before you buy?
Audiolob         8000 Transport and DAC         779           Audionate         1 k DAC - ex, boxed         399           Cambridge Audio         Discrogic/Dacrogic - ex, nice combo for peanuls         199           Cyrus         DAD3024 - rr mint, boxed, renote         429           DPA         Renoissance - due in         Coll	30b Larchfield st, Darlington, DL3 7TE	Never found anywhere interested enough to do it for you?
DPUS Development of the second s	punositiid	turntableworld has selected items from:
Maranitz CD60 * ex, conset rolling cost neoryweight 199 Maranitz CD60 * ex, remote 69 Maranitz CD63 Ki Sig • nr mint, remote, certificate, borgain 199		Audio Technica
Meridian 200 transport and matching dac - ex, superb combination 449 Meridian 208 - ex, with built in preamp stage and 209 remote 379		Clearaudio Dynavector
Merofian 200 transport - sk, Tirchard mod, succelleni 349 Micromega Stage I - sk, smooth sound on a budget 179 Micromega T-drive and T-gar - sky, sweet sounding player from top French firm 249 Micromega T-drive and T-gar - sky, cremote, superbis sound, E1000s new 799		Goldring
Micromego Tidrive and Tidor - vgc, remole, superb sound, £1000s new 799 Micromego Tido - vg, the ultimater Micromego 4449 Micromego Optic - nr mint, budget intro to the delights of Micromego 129 Musicol Fidelity X Act - nr mint boxed		Grado
Noim CD - black, nr mint, boxed, remote, borgoint 249 Noim CD5 - nr mint boxed, remote, borgoint 249 Noim CD - nr mint, boxed broken, cD players 379		Graham Slee Projects G F C Hadcock
NVA The Transporent Statement' vpc, crated, ultimote NVA 1749 Pioneer PDS703 -nr mint, stoleb plater machine 149 Primare D20 - nr mint, remote strunning (amp ovalable too) 399 Quad 77 ex, remote		Lyra
Quad 0/ • ex, sweet sounding player, much better than 66 499 Quad 99CDP • tr mint howert remote 709		Michell Engineering
Rotel RDD980/RDP980 - nr mint transport and doc very more with remote 449		Moth
Sony CDPX3000E5 - nr mint, baxed well reviewed toplooder 299		Nottingham Analogue Origin Live
Adcom         GTP500II Preliner and CFA34SilPower - borgaint         399           AMC         2445 ex, well reviewed wrighty poweramp         199           Arcom         P75 ex dispky, remote, silver         199           Audio Analogue         P75 ex dispky, remote, silver         199           Audio Analogue         Poccini SE - nr minf, well reviewed integrated         370           Audiobe         expm00002 - ex, block         220		Ortofon
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Audion Silver Knight - Stuning boxed very emonoblacks 1199 Creek 4330 - ex, was Stereophile Budget component of the Year 199 Grimson 510/520 - ex, boxed bottery pre lovely comba		Transfiguration
Creek 4330 - ex, vorä Stereophile "Budget component of the Year' 1990 Grimson 510/520 - ex, boxed bottety pre ) powerk combo Grinson POA400 - roit - ex, block, boxed 420 Exposure X - integrating monotoriot, sr. ord superb Exposure X - integrating monotoriot, sr. ord, block Grinson Rordon - Mo5.5, r. mr. ord, 19 - vgc, boxed 399 Horman Kardon - PMo5.5, r. mr. ord, 19 - vgc, boxed 119		Trichord Research
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en Sonato / Alcoeus/HR 100MCS - ex, block ash sonato - sonato - good, light ash sonato - good, light ash bab 8000PA phono stage - yog, fiesible stage, rare Sterling - ex, valve phono stage 834P - fair, mm/mc switchable version Phono stage - ex, stunning OHB - ex, mm/mc switchable version Phono stage - ex, stunning OHB - ex, more stage d 301/SME 3009 - ax, block sondwich plinth d 01 - yeq motor unit first, per motor unit phono stage - ex, stunning OHB - ex, more stage IP12/Lingo/Ital/IVIX - ex, boxed IP12/Lingo/Ital/IVIX - ex, boxed IP12/Lingo/Res00 - yeg, block IP12/Lingo/Res00 - ex, boxed, armless Gyrader/Res00 - ex, boxed, armless Gyrader/Res00 - ex, boxed, armless Gyrader/Res00 - ex, boxed IP12/bins Benesch Act 2 - ex, sunked Focus One/Focus arm - Che/Res100 - ex/ex, boxed IP12/Rosikity - yeg, block Res00 - ex, boxed, armless Gyrader/Res00 - ex, boxed Che/Res00 - ex/ex, back AND-N - mm/mc phonostage 774 - ex, blo 80s toneorm The Source - ex, mohogony we RB300 - ex, ex/b block tub and weight, full wring mod RP1-XG - ex, the pretitest arm ever? Planar 78/RB300 - wg, block areas/RB300 - wg, block Narres/RB300 - wg, block	ist	Bragi phono stage and Forseti p/s - vac, superb flexible stage
<ul> <li>Sonato - good, light ash</li> <li>Sonato - good, light ash</li> <li>Sonato - good, light ash</li> <li>B000PPA phono stage -, ege, flexible stage, rare</li> <li>Sterling - ex, valve phono stage</li> <li>834P - fair, mm/mc switchable version</li> <li>Phono stage - ex, submitchable version</li> <li>Phono stage - ex, submitchable version</li> <li>OBHB - ex, mm stage</li> <li>301/SME 3009 - ex, short sondwich plinth</li> <li>401 - vgc motor unit</li> <li>172/BasikIVV - ex, boaxed</li> <li>TrayBasikIVV - ex, boaxed</li> <li>IP12/Lingo/Resolve - kash</li> <li>IP12/Lingo/Res</li></ul>	on	Sonata/Alcaeus/HR100MCS - ex. black ash
<ul> <li>Xenon - ex, trimmed down HR100</li> <li>8000PPA phono stoge - ycg, Reible stoge, rore Sterling - ex, valve phono stoge</li> <li>83.4P - forr, mm/mc switchable version</li> <li>Phono stoge - ex, stunning</li> <li>OHB - ex, mm/mc switchable version</li> <li>All - ycg motor unit</li> <li>All - ycg, boxed</li> <li>IP12/Armogeddon/Aro - nr mint, toleck, boxed</li> <li>IP12/Armogeddon/Aro - nr mint, rosenut, boxed</li> <li>IP12/Armogeddon/R8300 - ycg, block</li> <li>IP12/Armogeddon/R8300 - ycg, block</li> <li>IP12/Armogeddon/R8300 - ycg, block</li> <li>IP12/Armogeddon/Aro - nr mint, block, boxed</li> <li>IP12/Armogeddon/R8300 - ycg, block</li> <li>IP12/Armogeddon/R8300 - wcg, block</li> <li>IP12/Armogeddon/R8300 - wcg, block</li> <li>IP12/Armogeddon/R8300 - wcg, block</li> <li>IP14 briging bls - ycg, block</li> <li>AND-N - mm/mc phenostage</li> <li>T74 - ex, blo 80s toneorm</li> <li>The Source - ex, mohogony</li> <li>IP1 briging - ycg, block</li> <li>IP17 briging - ycg, block</li> <li>IP17 briging - ycg, block</li> <li>IP17 Briging - ycg, block</li> <li>IP18250/Reson - mc/ex,</li> <li>Rib 900 - ycg / ex</li> <li>Planar 78/R8250 - wc / ex</li> <li>Planar 78/R8250 - wc / ex</li> <li>Planar 78/R8250 - wc / ex</li> <li>Rib 900 -</li></ul>	Dri	Sonata - acod, light ash
<ul> <li>B000PPA phono stage -, vgc, flexible stage, rare Sterling - ex, valve phono stage</li> <li>834P - fair, mm/mc witchable version</li> <li>Phono stage - ex, stunke phono stage</li> <li>301/5ME 3009 - ex, stunke phono value</li> <li>301/5ME 3009 - ex, stunke phono value</li> <li>401 - vgc motor unit</li> <li>401 - vgc motor unit</li> <li>112/BasilkVV - ex, boaxed</li> <li>112/Lingo/Resolve - kas, stunke based</li> <li>112/Lingo/Resolve - kas, based</li></ul>	on	Xenon - ex. trimmed down HR100
<ul> <li>Sterling - ex, valve phono stage - 834P - for; mm/mc switchable version Phono stage - ex, stunning OHB - ex, mm stage</li> <li>301/SME 3009 - ex, black sondwich plinth 401 - vgc, houzed Troita - vgc, houzed</li> <li>IP12/Lingo/Ekos - ex, biotak baxed</li> <li>IP12/Lingo/Ekos - ex, black, baxed</li> <li>IP12/Lingo/Ekos - ex, black</li> <li>IP12/Larmagetdan/Ato - nr mint, black, boxed</li> <li>IP12/Larmagetdan/RB300 - vgc, black</li> <li>IP12/Larmagetdan/RB300 - vgc, black</li> <li>IP12/Larmagetdan/RB300 - vgc, black</li> <li>IP12/Larmagetdan/RB300 - vgc, black</li> <li>IP12/Larmagetdan/SB300 - ex, black</li> <li>Ibak, IDX - vgc, vgc, vgc, vgc, vgc, vgc, vgc, vgc,</li></ul>	ab	8000PPA phono stoge - voc flexible stoge rare
<ul> <li>834P - fair, mm/mc switchable version</li> <li>Phono stoge - ex, stunning</li> <li>OBHB - ex, mm stoge</li> <li>301/SME 3009 - ex, stondwich plinth</li> <li>401 - vgc motor unit</li> <li>172/BasilkVV - ex, boaxed</li> <li>Tra/BasilkVV - ex, boaxed</li> <li>IP12/Lingo/Reison - mint, rosenut, boxed</li> <li>IP12/Lingo/Reison - ex, boaxed</li> <li>Gyroder/RB300 - ex, ex, boaxed</li> <li>ADU-N - mm/mc phanostage</li> <li>774 - ex, tob 805 toneorm</li> <li>Classic - ex, chalogony</li> <li>IP1XG - ex, the prefisst orme ever?</li> <li>PIIAG - ex, chalogony</li> <li>IP1XG - ex, toba 805 toneorm</li> <li>RB300 - ex, early black stub and weight, full writing mod</li> <li>RP1XG - ex, toba 805 toneorm</li> <li>PIAG - ex, chalogony</li> <li>IP1XG - ex, the prefisst orme ever?</li> <li>PIAG - ex, chalogony</li> <li>IP1XG - ex, the prefisst orme ever?</li> <li>PIAG - ex, chalogony</li> <li>IP1XG - ex, the prefisst orme ever?</li> <li>PIAG - ex, chalogony</li> <li>IP1XG - ex, the prefisst orme ever?</li> <li>PIAG - ex, chalogony</li> <li>IP1XG - ex, the prefisst orme ever?</li> <li>PIAG - ex, chalogony or ex/ex</li> <li>Reison 78/RB300 - ex/ex</li> <li>Reison 78/RB300 - ex, ex/ex</li> <li>Reison 78/RB300 - ex, ex/ex</li> <li>Reison 78/RB300 - ex, ex optional extros</li> <li>Skeleton/Vestigal - ex/ex</li> </ul>		Sterling : ex. valve phono stage
Phono stoge - ex, stunning OHB - ex, firm stoge H 301/SME 3009 - ex, jock sondwich plinth 401 - vgc, housed Troita, vgc, housed IP12/Lingo/Ikas/LVVII/Asalka - nr mint, rosenut, boxed IP12/Lingo/Ikas/LVVII/Asalka - nr mint, rosenut, boxed IP12/Lingo/Ikas/LVVII/Asalka - nr mint, rosenut, boxed IP12/Lingo/Ikas/LVVII/Asalka - nr mint, black, boxed IP12/Lingo/Ikas/ housed IP12/Lingo/Ikas/ housed IP12/Lingo/Ikas/ boxed IP12/Lingo/Ikas/ boxed Orde/RiJ00 - ex, boxed, armless Gyrader/RIJ00 - ex, boxed Orbe/RiJon Benesch Act 2 - ex, sunoked Focus One/Focus arm - ex, ANDU-N - mm/mc phanostage 774 - ex, iba 80s toneorm - The Source - ex, mohogany Live RIJ300 - ex, che bac dener P11 original - vgc, boxed IP12/Singe1- vgc, boxed RIJ12/Singe1- vgc, boxed - P10 original - vgc, boxed - P10 o		834P - fair, mm/mc switchable version
<ul> <li>OBHB - Ex, mm stoge</li> <li>301/SME 3009 - ex, block sondwich plinth</li> <li>401 - vgc motor unit</li> <li>172/Basi/KIV - ex, boxed</li> <li>172/Basi/KIV - ex, boxed</li> <li>112/Kasi/KIV - ex, boxed</li> <li>112/Lingo/Kaska - nr mint, rosenut, bo</li></ul>		
<ul> <li>301/SME 3009 - ex, black sondwich plinth</li> <li>401 - veg, hoaved</li> <li>172/BasikIVV - ex, back</li> <li>172/BasikIVV - ex, back</li> <li>182/Lingo/ItaoLVIII/Asolka - nr mint, rosenut, baced</li> <li>182/Lingo/ItaoLVIII/N - vgc, black</li> <li>182/Larnogetdan/R8300 - vgc, black</li> <li>180 L2" - ex, black, based</li> <li>1912/Larnogetdan/R8300 - vgc, black</li> <li>1912/Larnogetdan/R8300 - vgc, black</li> <li>1912/Larnogetdan/R8300 - vgc, black</li> <li>1912/Lingo/ItaoL - ex, fluid arm</li> <li>Gyrader (R8300 - ex, based armless</li> <li>Gyrader (R8300 - ex, based</li> <li>Orbe/R8300 - ex, che baced armless</li> <li>Gyrader (Ac - ex, hub add weight, bull wiring mod</li> <li>R8300 - ex, cheb bach and weight, bull wiring mod</li> <li>R8300 - ex, che pretiest arm ever?</li> <li>Classic - vgc, cherrywead plinth, bargain</li> <li>Pinanar 3/R8300 - vgc / black</li> <li>Arens/R8300 - vgc, black</li> <li>Arens/R8300 - vgc, black</li> <li>Arens/R8300 - vgc, based</li> <li>Dinanar 3/R8300 - vgc/ex</li> <li>Pinanar 3/R8300 - vgc/e</li></ul>		
d 401 - vgc motor unit ok 172/BajkLVV ex, boxed Tr2/BajkLVV ex, boxed 172/BajkLVV ex, boxed 172/BajkLVV ex, boxed 1912/Lingo/Laska - nr. mint, rosenut, boxed 1912/Lingo/Laska - nr. mint, block, boxed 1912/Lingo/Laska - nr. block, boxed 1912/Lingo/Laska - nr. mint, block, boxed 1912/Lingo/Laska - nr. block, boxed 1912/Lingo/Laska - nr. block, boxed 1912/Lingo/Laska - nr. mint, block, boxed 1912/Lingo/Laska - nr. mint, block, boxed 1912/Lingo/Laska - nr. mint, block, boxed 1912/Laska - nr. block, boxed 1912/Laska - nr. block, block 1912/Laska - nr. block - nr. potional extros 1915/Laska - nr. block - nr. potional extros	4	301/SME 3009 - ex block sandwich olinth
ok ITZ/BasikIV- ex, boxed Troita- yc, boxed IP12/Lingo/Ihak/WII/Asoka - nr mint, rasenut, boxed IP12/Lingo/Ihak/WII/Asoka - nr mint, rasenut, boxed IP12/Mangeddon/Ara - nr mint, rasenut, boxed IP12/Mangeddon/Ara - nr mint, boxed, boxed IP12/Mangeddon/B300 - vgc, black IP12/Mangeddon/B300 - vgc, black Imak 12* ex, black, apparently one of only 20 mode DM10/Ibatum - ex, borgain IP12 challenger (Transcriptors) Reference hydraulic - ex, fluid arm Gyroder (AC - ex, boxed, armliss Gyroder (AC - ex, boxed) - ex, fluid arm Gyroder (AC - ex, boxed) - ex, stanked Focus One/Focus arm - ex, AND-N - mm/mc phanostage 774 - ex, tho B0t stancorm The Source - ex, mohogan P11 orginal - vgc, boxed Mangel MB300 - ex, cheryrevead plinth, bull wiring mod RP1-XG - ex, the pretinest arm ever? P10 orginal - vgc, boxed P10 orginal - vgc, boxed P10 orginal - vgc, boxed MB300 - ex, cheryrevead plinth, bargain P10 orginal - vgc, boxed MB300 - ex, cheryrevead plinth, bargain P10 orginal - vgc, boxed MB300 - ex, cheryrevead plinth, bargain P10 orginal - vgc, boxed MB300 - ex, cheryrevead plinth, bargain P10 orginal - vgc, boxed Manar 78/RB300 - vgc /ex P10 orginal - vgc, black Xerxes/RB300 - ex, black Xerxes/RB300 - ex, black Xerxes/RB300 - ex, black Xerxes/RB300 - ex, cheryrevead Steletan/Vestigal - ex, cher	d l	401 - vnc motor unit
Troita - vgc, boxed IP12/Lingo/Link/WII/Asaka - nr mint, rosenut, boxed IP12/Lingo/Linko/WIAsaka - nr mint, rosenut, boxed IP12/Lingo/Linko - wyc, black IP12/Lingo/Linko - vgc, back Gyradec/VE/Linko - vgc, back Gyradec/VE/Linko - vgc, back IP12/Linko - vgc/ex Planar 78/R8230/ wgc/ex Rigio Zirakes/Linko - vgc/ex Rigion - 73/R8230/ wgc/ex Neres/Linko - vgc/ex Neres/Linko - vgc/ex Skeletan/Vestigal - wgc/ex	ok	TT2/BosikIVV - ex boxed
<ul> <li>IP12/Lingo/Ihok/Will/Asoka - nr mint, rosenut, boxed</li> <li>IP12/Lingo/Ibox - exr, init, block, boxed</li> <li>IP12/Kingo/Ibox - exr, iblock, boxed</li> <li>IP12/Kingo/Ibox - exr, iblock, boxed</li> <li>IP12/Kingo/Ibox - exr, iblock, boxed</li> <li>IP12/Amogeddon/R8300 - vgc, block</li> <li>Bavis, IVX - vgc, block</li> <li>Bavis, IVX - vgc, block</li> <li>Bavis, IVX - vgc, block</li> <li>Ibix / Bavis, B</li></ul>		Troika - yac boyed
<ul> <li>IP12/Armogeddon/Aro - nr mint, block, boxed</li> <li>IP12/Imgo/Exo - ex, block, boxed</li> <li>IP12/Imgo/Exo - ex, block, boxed</li> <li>IP12/Armogeddon/R8300 - vgc, block</li> <li>Basik, LVX - vgc, block</li> <li>Ibok 12" - ex, block, apporently one of only 20 made</li> <li>DM101/Datum - ex, bargain IP12 challenger</li> <li>(Transcriptors) Reference hydraulic - ex, fluid arm</li> <li>Gyrader/R8300 - ex/sex, based</li> <li>Orbe/R8300 - ex/sex, boxed</li> <li>Orbe/R900 - ex/sex, boxed</li> <li>Classic - vgc, cherrywood plinth, bargain</li> <li>Planar 3/R8300 - vgc/sex</li> <li>Planar 78/R8250/Mono Cart - ex/sex</li> <li>R0970 - ex, plack</li> <li>Xeres/T88300 - vgc, block</li> <li>Xeres/R8300 - vgc/sex</li> <li>Block</li> <li>Tb160b - ex, c/w Mission 774</li> <li>Tb160b - ex, c/w mission 774</li> <li>Tb160b - ex, c/w ex</li> </ul>		IP12/Linco/Ittok/VIII/Asaka - pr. mint. raceput. hored
LP12/Lingo/Ekos - ex, black, baxed LP12/Valhal/VX - vgc, black Bavik, UX - vgc, black Bavik, UX - vgc, black Bavik, UX - vgc, black Ithol 12 - ex, black poprently one of only 20 mode DM101/Datum - ex, bargain LP12 challenger (Transcriptors) Reference hydrouik - ex, fluid arm Gyrader/RB300 - ex, baxed, armless Gyrader/RB300 - ex, baxed, armless Gyrader/RB300 - ex, baxed, armless Gyrader/RB300 - ex, baxed, armless Gyrader/Rase Focus One/Focus arm - ex, AND-N - mm/mc phanostage 774 - ex, fluid 80 to tanearm The Source - ex, mahagany RB300 - ex, ently black sub and weight, blil wiring mod RP1-KG - ex, the pretiest arm ever? Planar 2/RB250/Reson - ex/ex Planar 2/RB250/Reson - ex/ex Planar 2/RB250/Reson - ex/ex RG970 - ex, plack Xerees/Tabiat Z1 - ex, black Xerees/RB300 - vgc/ex RE300 - ex, c/w Missian 774 TD160b - ex, c/w lack		1P12/Armoneddon/Aro - nr mint black boxed
LP12/Varinogedan/R8300 - vgc, black LP12/Armogedan/R8300 - vgc, black Basik, LVX - vgc, black Basik, LVX - vgc, black Htab 12" - ex, black, apporently one of only 20 made DM101/Datum - ex, barggin IP12 challenger (Transcriptors) Reterence hydroulic - ex, fluid arm Gyradec/R8300 - ex, bargan LP12 challenger (Transcriptors) Reterence hydroulic - ex, fluid arm Gyradec/R8300 - ex, bargan LP12 challenger Orbe/R8100 - ex, bargan LP12 challenger Orbe/R8100 - ex, bargan LP12 challenger Gyradec/R6200 - ex, based Orbe/R8100 - ex, bargan LP12 challenger Tr4 - ex, flaid 80s tanearm The Source - ex, mahagam, R13/C1 - ex, flaid 80s tanearm The Source - ex, mahagam, R13/C1 - ex, flaid 80s tanearm The Source - ex, mahagam, R13/C1 - ex, flaid 80s tanearm The Source - ex, mahagam, R13/C1 - ex, flaid 80s/R12, based Planar 27/R82300 - ex/ex, Planar 78/R82300 - ex/ex R0970 - ex, planch stage Xerxes/TR8300 - ex, black Xerxes/R8300 - ex, black TD160b - ex, c/w Missian 774 TD160b - ex, c/w Stage		IP12/Linco/Ekor and black based
LP12/Armogeddan/R8300 - vgc, black Basik, IVX - vgc, black Axis, Basik plus - vgc, black IHdw 12" - ex, black appornethy one of only 20 mode DM101/Datum - ex, bargain LP12 challenger (Transcriptors) Reference hydraulic - ex, fluid arm Cyradec/R8300 - ex/ex, based Orbe/R8300 - ex/ex, based Orbe/R8300 - ex/ex, based Orbe/R9100 - ex/ex, based Orbe/R9100 - ex/ex, based Orbe/R9100 - ex/ex, based Orbe/R9100 - ex/ex, based Paces One/Facus arm - ex, AND-N - mm/mc phanostage 774 - ex, fluid 805 tonearm The Source - ex, mahagany R8300 - ex, early black tub and weight, full wiring mod RP1-XG - ex, the pretiest arm ever? Planar 2/R8250/Reson - ex/ex R03970 - ex, phono stage Xerres/T80300 - ex, black Xerres/R8300 - ex, black Xerres/R8300 - ex, black Xerres/R8300 - ex, black Xerres/R8300 - ex, no optional extras Skeletan/Vestigal - ex, cox		IPI2/Valhalla/IV/ . wat black
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(Transcriptors) Reference hydroutic - ex, fluid arm Gyradec/R20: ex, boxed armless Gyradec/R8300 - ex, brand new arm Orbe/R8300 - ex, brand new arm Orbe/R8300 - ex, brand new arm Orbe/R8300 - ex, brand new arm AND: N - mm/mc phanostege 774 - ex, flub 80s toneorm The Source - ex, mohogony twe R8300 - ex, early black twb and weight, full wiring mod RP1-XG - ex, the pretinest arm ever? R10 - rgindi - vgc, boxed P10 original - vgc, boxed P10 rgindi - vgc, boxed Classic - vgc, therrywood plinith, bargain Planar 3/R8300 - vgc/ex Planar 78/R8300 - ex, black Xerxes/T88300 - ex, black Xerxes/R8300 - ex, black Xerxes/R8300 - ex, check TD 160b - ex, c/w Mission 774 - TD 160b - ex, foncor 174 trass		DM101 /Datum - an haragin 1912 shall a set
Gyrodec/(QC) ex, boxed, armless Gyrodec/(R8)300 - ex/cran new arm Orbe/R8)300 - ex/ex, boxed Orbe/R4)500 - ex/ex, boxed Orbe/R4)500 - ex/ex, boxed Focus One/focus arm - ex, AND-N - mm/mc phanostage 774 - ex, iba 80s toneorm The Source - ex, iba 60s toneorm The Source - ex, iba 60s toneorm The Source - ex, iba and weight, full wiring mod RP1-XG - ex, the pretiest arm ever? P1 - original - vgc, boxed LP7/R8250/Reson- ex/ex, Classic - vgc, chernywood plinth, bargain Planar 2/R8230 - ex/ex Planar 2/R8230 - ex/ex RG970 - ex, phono stage Xerres/T68300 - cyc, cherny T0 160b - ex, c/w Missian 774 T0 160b - ex, c/w Missian 774 T0 160b - ex, c/w Missian 774		(Transcriptors) Palarence hudeoutic an Rud and
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A RP1-XG - ex, the pretiest arm ever?           Ingle         RP1-XG - ex, the pretiest arm ever?           Ingle         PT1 original - vgc, based           UPT/RB250/Reson-ex/ex,         EVERXPWood plinth, bargain           Planar 2/RB250 - ex/ex         Planar 2/RB250 - ex/ex           Planar 78/RB250/Mano Cart - ex/ex         RG970 - ex, phono stage           Xerxes/TB1300 - ex, black         Xerxes/RB300 - vgc / ex           TD160b - ex, c/w Missian 774         TD160b - ex, c/w Missian 774           TD160b - ex, c/w Missian 774         Skelson/Vestigal - ex/ex           steres/RB300 - ex, hade         Elite Rock Mk2/Excalibur - ex, no optional extras	i	PR200
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Planar 3/88.300 - vgc/ex Planar 78/R8250/Mano Cart - ex/ex RC970 - ex, phano single Xerxes/R8300 - ex, black TD160b - ex, c/w Missian 774 md Elite Rock Mk2/Excalibur - ex, no optional axtras Skeletan/Vestigal - ex/ex		Classic · vgc, cherrywood plinth, bargain
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Xerxes/Tabriz Zi - ex, black Xerxes/RB300 - ex, black TD160b - ex, c/w Mission 774 nd Elite Rock Mk2/Excalibur - ex, no optional extras Skeleton/Vestigal - ex, c/ex,		Planar 78/RB250/Mono Cart - ex/ex
Xerxes/RB300 - ex, black TD 160b - ex, c/w Missian 774 end Elite Rock Mk2/Excelibur - ex, no optional extras Skeleton/Vestigal - ex/ex		RQ970 · ex, phono stage
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nd Elite Rock Mk2/Excalibur - ex, no optional extras ptors Skeleton/Vestigal - ex/ex		Xerxes/RB300 - ex, black
ptors Skeleton/Vestigal - ex/ex		ID160b · ex, c/w Mission 774
Benesch Skeleton/Vestigal - ex/ex. Benesch A3/Act 2 - the best ever? Rare as		Elite Rock Mk2/Excalibur - ex, no optional extras
Benesch Allt/Act 2 - the best ever? Rare as a		Skeleton/Vestigal ex/ex
	Benesch	All/Act 2 - the best ever? Rare as
	_	

 $\begin{array}{c} 3990\\ 7790\\ 2090\\ 1990\\ 1990\\ 1990\\ 1990\\ 2990\\ 2990\\ 1990\\ 2990\\ 2990\\ 2990\\ 2990\\ 2990\\ 1990\\ 2790\\ 1990\\ 2490\\ 9970\\ 1199\\ 2490\\ 9970\\ 2490\\ 9970\\ 1390\\ 2490\\ 3970\\ 1390\\ 1300\\$ 

# private ads

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MARK LEVINSON 32

Reference Preamp with Phono Modules £9,000. Price negotiable, consider Partex. for 28 or 280. Comes with Manual Cartons Warranty. Collection/Delivery negotiable. Tel: 01709 532 839 (Apr)

MARK LEVINSON 37 CD Transport and 360S DAC £5,500. Price Includes JPS SC2 AES Cable And JPS Mains Cables. Manuals, Gloves Collection/Delivery negotiable. Tel: 01709 532 839 (Apr)

AUDIO RESEARCH LS9 preamp, boxed, remote, mint, £850 ono. Tel: 01782 397 971 (Staffs) (Apr)

WANTED: SHARP GF-777 4 band stereo radio cassette recorder, double cassette deck Ghettoblaster from the 1980's. Must be in excellent/mint condition, not damaged, unmarked and fully operational. Offering £550. Telephone evenings 01865 378 578 or Email: fiskallen@aol.com (Apr)

WANTED: OLD British valve amplifiers working or not. Output valves, old arms and cartridges or anything interesting or unusual from the 1950's or 1960's. Large pair of speakers or drivers. Tel: 01726 812 966 (May)

BORDER PATROL Amplifier just recently upgraded to S10 specification. Dual mono power supplies Weston Electric 300B valves absolutely mint condition. £6000+ new, £4000 ono. Tel: 01208 872316 (Cornwall) (May) ETYMOTIC ER4-P Earphones used once, 2 year warranty £175. Nakamichi 582 Cassette recorder recently serviced, new replay head with manuals £150. Quad ESL57 speakers black grills £400. Quad 11 Amps, 22 stereo preamp, Quad FM tuner with stereo Multiplex £700. Wanted Naim NAC82. Tel: John 07702 406825 (Suffolk) (Apr)

TURNTABLES WANTED Please. Systemdek IIXE any condition with or without tonearm + Linn LP12 any condition early model preferred. Also wanted lttock tonearm late model preferred. Could collect. Tel: 0114 233 5413 (Apr)

PIEGA P4L MkII floorstanding Swiss metal speakers £750 (£1650 new) AVI 2000 MP preamp £350. Rotel 991 power amp £250. Chord Chorus interconnect 1m £75. Tel: 0117 302 6534 (May)

KEF REFERENCE 3.2 speakers in absolutely mint condition. Black ash finish. Includes manuals and original packing boxes. £1600 or very nearest offer. Tel: 01689 829 106 or Mobile: 07977 283 726 (Apr)

REL STENTOR II sub-woofer in absolutely mint condition. Black ash finish. Includes manuals and original packing box. £1500 or very nearest offer. Tel: 01689 829 106, Mobile 07977 283 726 (Apr)

NAIM CDX excellent condition, boxed, £1350 ono. Naim XPS as new condition, boxed £1150 ono. Sell both for £2300 ovno. Tel: 01492 516 875 (Apr) WAD KAT6550, many upgrades, great sound £450. Linn Kabers upgraded by Linn, excellent condition £450. Linn LK I/Dirak good order £160. Rogers Cadet MkIII integrated good original condition £80. Tel: 01865 881 582 (Oxford) (Apr)

JUST BUILT, pair Noel Keywood KLS9's to specification. 93H x 38D x 25W(cms) (see Hi-Fi World Supplement No.28). Well damped bass, goes very low. Superb!. Need painting. Buyer to collect. £250. Tel: Pete 0115 975 4070 (Nottingham) (Apr)

WANTED: ROGERS, Kef, Spendor or similar, one pair of BBC LS3/5A speakers. Private buyer. Tel: 01394 388399 (May)

C.R. DEVELOPMENTS Romulus valve amplifier cost £1300, £500. Marantz CD17MkIII CD player £400. Mordaunt Short MS20i pearl speakers £50. Spendor Prelude speakers £60. Tel: 01205 750 314 (Apr)

ELAC JET 310 CLi ribbon speakers. Well reviewed in excellent condition £395 (£750). Tel: 0116 241 5435 (Leicestershire) (Apr)

QUAD 989 electrostatic speakers. Perfect. Hardly used. Best offer. Tel: 07802 757576 (Apr)

WANTED: AUDIO Innovations Alto CD player in excellent condition. Also consider matching Alto amp (not remote control version). Tel: 07811 195327 (day), 01935 432417 evenings) (Apr) SHANLING SP80 valve monobloc power amplifiers. UK spec, remote, volume, mint, boxed, (£2000), accept £1250. Wanted: Good quality turntable + arm. Celestion 5000 ribbon speakers £95. Tel: 01604 584630 or 07808 096684 (Apr)

AUDIO NOTE Soro SE amp. Excellent. Boxed with manual, £895. 2x5m bi-wired Audio Note AN-L speaker cable £175. Pair of Atacama SE28 speaker stands, £25. Tel: 023 8071 0853 (Apr)

SUGDEN A21A amplifier £600. Sugden AZ1A power amp £600. Both £1100, mint condition. Nordost Blue Heaven speaker cable, five metres biwire £250 boxed. Tel: 0161 226 6125 or 07961 427 777 (Apr)

KLIPSCH HERESY II (see World Standards). Under one year old. Mint, boxed £700 ono. Audio Innovations Series 500 integrated, fair condition, boxed, £450 ono. Tel: 079290 41741 evenings (Devon/Dorset) (Apr)

QUAD FM3 tuner, working ok, plus matching 33 preamp and 303 power amplifier. Preamp in need of servicing. £200 ono the lot, will split, buyer collects. Tel: 0116 254 4946 (Apr)

DBS7 SPEAKERS, sound better than some £2000 speakers. Kenwood AV receiver KRV8040. Mordaunt Short rear speakers with wall brackets, Jamo centre speaker. £500 the lot. Tel: 01507 443 018 (Apr)



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Eva Cassidy	Time After Time	<b>£TBC</b>	
Feeder	Pushing The Senses	<b>£</b> TBC	
Fred Simon	Remember The River (Naim Audio)	£16.90	
Little Barrie	Move On So Easy	<b>£</b> TBC	
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Fruup	Modern Masquerades (Earmark)	£15.90	
Jimi Hendrix	Band Of Gypsies (Classic Recs 140/200g)	<b>£TBC</b>	
Link Wray	Jack The Ripper (Mono - Sundazed)	<b>£TBC</b>	
Mary Black	No Frontiers	<b>£TBC</b>	
Noel Redding	The Experience Sessions (Classic Recs)	<b>£TBC</b>	
Patricia Barber	Café Blue (3LP Set 45 rpm) Mob.Fidelity	<b>£TBC</b>	
Ray Chartes	Porgy & Bess (Classic Records 200g)	<b>£TBC</b>	
Sarah Mclachlan	Mirrorball (Classic Records)	<b>£</b> TBC	
Sonny Boy Williamson	The Real Folk Blues (Speakers Corner)	£19.90	
Spirit	Model Shop (1968 - Sundazed)	£16.90	
The Who	Who's Next (Classic Records 200g)	£26.90	

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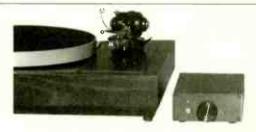
If you are the proud owner of any Rega tonearm, you are now in the enviable position to transform it's performance into the league of super arms with our modifications. The OL structural modification at  $\pm 75$  will enable your Rega to perform at a level exceeding that of some arms costing over  $\pm 1000$ !! High performance rewiring with high grade litz wire is also offered at an additional  $\pm 70$  and external rewiring is also  $\pm 70$  further increasing the performance.

"I have to say the Rega modifications turn this humble arm into a real giant killer. Gone is the rather grey, sterile sound of the cooking Rega. Instead, tonal colour is fresh, dynamics have great speed and impact, and the sound stage is huge."

HI-FI WORLD ON STRUCTURAL MODIFICATION

Structural modification awarded 5 star rating by

Structural Modification - £75 Internal Rewiring - £70 External Rewiring - £70 High conductivity phono plugs £20 Slotted arm tube - £85 If you do not have an arm we can supply the OL1 arm (manufactured by Rega) £124



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Standard dc Motor Kit - £199ORIGIN LIVEAdvanced dc Motor Kit - £339Tel/Fax: +44 02380 578877Ultra dc Motor Kit - £570E-mail: info@originlive.comUpgrade Transformer - £175www.originlive.com

Arm modifications normally returned within 1 - 3 days

# private ads

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NAD 414 FM/AM tuner as new £70.02 digital music player £50. Kimber REL sub cable 2.5m £60. Cambridge Audio Design power cable un-terminated 2x5ft £40. Tel: 01772 315 723 (Apr)

QUAD 66 CD £250. Quad 34 £200. FM4 (DIN) v.g.c. £200. All serviced by Quad, boxed. Quad IIL new 2005 rosewood unused £340. Tel: John 01322 528 632 after 6pm (Dartford, Kent) (Apr)

LINN NAIRN Hi-Fi LP12 turntable, Naim pre-amp, Nairn NAXO crossover, Nairn 250 power amps interconnecting cables. Linn speakers, Pioneer tuner, BXI cassette deck, offers. Tel: 0121 353 3019 (Apr)

NAIM SALE, CD2 CD player, SBL loudspeakers (cherry), QLN Projekt equipment rack (cherry). All equipment purchased new from Grahams HI-FI in December 1997. Mint condition, very low usage, boxed with manuals. For prices please ring Mark 01708 224 319 (Essex) or 07813 332301 (mobile) (Apr)

HARBETH HLI Mk4 monitors £125 ono. Rogers Studio 3, looks like LS3/5A, sounds better! £175 ono. YBA1 preamp/poweramp, excellent. Reluctant sale. £1000 no offers. Tel: 01773 826 170 (Apr)

TDL STUDIO I with stands, black, v.g.c. £275. Tel: 0141 639 6924 before 9.00pm (Apr)

LEAK STEREO 20 rebuilt excellent original condition £350. Mission PCM 7000 CD player with remote v.g.c. All in perfect working order £60. Tel: Steve 01707 259 561 evenings/weekends (Herts) (Apr)

MERIDIAN 5000 DSP rosewood speakers (24/96) Your chance to own these fantastic digital speakers with built-in power amplifiers. Complete with manuals, MSR remote, cables and original boxes. £2800. Tel: 01793 815 349 (Swindon) (Apr)

AUDIONOTE OTO SE phono. £825. Thorens 125II custom plinth cover AT1100 arm £285. Nakamichi 582 cassette boxed manual serviced £190. Sony TC377 reel cover £90. Tel: 01522 820 179 (Lincs) (Apr)

MUSICAL FIDELITY A3 24bit CD player, silver trim, manual, box, remote, excellent condition, £450. Ortofon MC25E low use £130. IPM Minims £40. Tel: 0131 664 5433 evenings (Edinburgh) (May)

LEAK STEREO 20 (Croft) £550. Akai 4000D £60, and 4000DS2 £90 (R2R). Celestion Ditton 44's £135. Ruark Sabres, stands, £140. Nytech 252 pretuner £50. Most boxed and mint. Tel: 01722 334 694 (Apr)

NAIM 82 pre amp S-128673, just serviced by Naim with 180 power amp S-135869. Boxed and mint. Russ Andrews Super Mains Purifier (£350) £150. Tel: 01825 722936 (Apr)

#### NAD 3020 Amplifier £70. NAD C370 £170. NAD 402

FM tuner £50. Rotel RC870BX pre-amp £80. Rotel RQ870BX pre-amp £80. Leak Stereo 70 and Stereofetic, Teak cased £50. Atacama SE16 stands £30. Pairs: B&W DMB02 S2 loudspeakers £100.Wharfedale 3010W12 loudspeaker chassis £30. Wharfedale QS800 crossovers (boxed) £30. Celestion CO 3k crossovers (£20). Coles 4001k super tweeters £30. Buyer collects or Post extra. Tel: 01444 413 782 (Mid-Sussex) (Apr)

AUDIO RESEARCH amplifiers, SPI0 £2000, M300's £2500, VT150 S.E. £4500, Krell KMA100 £1800, C.A.T. SLI £1100. Croft Epoch Elite £395. Kef Reference 107 speakers £495. Naim S.B.L. speakers £495. Tel: 0191 281 0260 (Apr)

AMATEUR AUDIO Workshop, complete. 500 assorted valves, testgear, hifi, repairs, spares, leads, service manuals, Hi-Fi News, shelving units. Selling due to ill health. Highest fair offer. Details 01582 727 199 (Luton) (Apr)

LEAK STEREO Twenty, bronze, original appearance, electronics rebuilt with quality components. Matched 'Tesla' output valves. Prefer inspection - collection or carraige at cost. £425 ono. Tel: 01704 563 178 after 6pm. Mobile 07960 931169 daytime (Southport, Lancs) (Apr)

QUAD 989 electrostatic speakers. Perfect. Hardly used. Best offer. Tel: 07802 757576 (Apr)

AUDIOMAGIC ST1s £1500. Neat Ultimatum Centre £1800. Neat Ultimatum MF9s £7000. 3x Bryston 7Bs £5000. Bryston 14B £3000. TAG AV32 £1000. Resolution Opus 21 £1800. Pioneer 50" HDMI Plasma £2700. Tel: 01423 566 916 evenings only (Apr)

WANTED: GOLDRING Lenco GL88 turntables. I need two of them but will buy as single decks. Plinths not required or pick up arms, but must be in fairly good condition. Tel: 01253 724321 or Email: stewartwen@yahoo.co.uk (Apr)

PAIR MISSION Argonauts (huge, superb sound, infinite baffle, horn tweeter) £225, Sansui AU101 (classic, slightly modified) £20, Aiwa ADF410 cassette deck £15, Technics twin cassette deck £15. (boxed). Tel: 01424 830 084 or Email: peter\_molyneux@hotmail.com (Apr)

AUDIOLAB 8000P £350, 8000A (black) £250, 8000A (grey) £120, Marantz CD52SE CD player £50, Technics SLP277A CD (bitstream) £20 (all boxed) Sony tuner ST-SE700 RDS £35 (no box). Tel: 01424 830 084 or Email: peter\_molyneux@hotmail.com (Apr)

JUST BUILT, pair Noel Keywood KLS9's to specification. 93H x 38D x 25W(cms) (see Hi-Fi World Supplement No.28). Well damped bass, goes very low. Superb!. Need painting. Buyer to collect. £250. Tel: Pete 0115 975 4070 (Nottingham) (Apr)



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AMAZING CABLES! Solid silver interconnects from £110, with air/teflon insulation and WBT plugs. Silver speaker and mains cables from £250. Fantastic performance, refund guarantee. Tel: 0115 982 5772 after 7pm, or Email: bob@skydivers.co.uk (|un) HAVE A.N award winning CD/SACD player upgrade from Vacuum State Electronics installed in your player by us. We also install upgrades developed by ourselves in CD players, DAC's, Tuners and amplifiers. something SOLID speaker stands and racks available from us. Chevin Audio Developments, www.chevir.Audio.co.uk Tel: 01332 833158 (Apr)

AUDIOFILE OBJECTIVE for New, XDisplay and Pre-Owned Hi-Fi. Musical Fidelity, Roksan, Project, Marantz, NAD, Myryad, Castle, Neat, Revolver. Others available. 16 Allen House, The Maltings, Sawbridgeworth, Herts, CM21 9JX. Tel: 01279 724 024 Hi-Fi Purchased (Jun) AUDIOREPUBLIC, 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. (Apr)

REVOX PR99 HS £750, C221£550, B760 £700, B710 £500, A77 £180, Studer A810 VU £1500, B67 VU £950, A807 VU £1200, A80 VU £1500, A710 £500, A725 £450, Uher RM4200 £250. Amcron PB-One. Tel: 01246 275 479 (Apr)

NAIM. BUY, Sell, Cash, P/xchange. Systems, part systems, amps, preamps, CD, tuners, power supplies, speakers, Sondeks, Isobarics, Mana etc. Tel: 01382 819 732

#### WANTED - EARLY HI-FI LOUDSPEAKERS

Tannoy, Lowther, Parmeko, Voigt, Vitavox, RCA WE etc TURNTABLES Garrard, BBC301, EMT SME, Ortofon, Decca, etc. VALVE AMPLIFIERS AEI, EMI, Leak, Rogers, PYE Quad, WE etc CLEAR CRYSTAL SYSTEMS John Petrie-Baker Tel: 020 7328 9275

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www.dhaen.co.uk/amps.htm Email: amps@dhaen.co.uk (Apr)

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#### **TURBOCHARGING YOUR REGA ARM**

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HI-FI WORLD

If you are the proud owner of any Rega tonearm, you are now in the enviable position to transform it's performance into the league of super arms with our modifications. The OL structural modification at £75 will enable your Rega to perform at a level exceeding that of some arms costing over £1000!! High performance rewiring with high grade litz wire is also offered at an additional £70 and external rewiring is also £70 further increasing the performance.

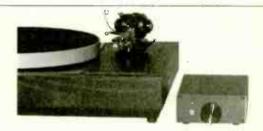
"I have to say the Rega modifications turn this humble arm into a real giant killer. Gone is the rather grey, sterile sound of the cooking Rega. Instead, tonal colour is fresh, dynamics have great speed and impact, and the sound stage is huge.

HI-FI WORLD ON STRUCTURAL MODIFICATION

Structural modification awarded 5 star rating by WHAT HI-FI?

\*\*\* Structural Modification - £75 Internal Rewiring - £70 External Rewiring - £70 High conductivity phono plugs £20 Slotted arm tube - £85 If you do not have an arm we can supply the OL1 arm (manufactured by Rega) £124

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Standard dc Motor Kit - £199 Advanced dc Motor Kit - £339 Ultra dc Motor Kit - £570 Upgrade Transformer - £175

**ORIGIN LIVE** Tel/Fax: +44 02380 578877 E-mail. info@originlive.com

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# **PORCUPINE TREE**DEADWING 2005

ot on the heels of Porcupine Tree's major label debut 'In Absentia' from a couple of years ago, (in case you hadn't noticed, my vote for best

surround title of 2004 bar none), here is the follow up, and the unremitting onslaught of quality prog-metal continues. 'In Absentia' and 'Deadwing' form a musically and thematically matching pair much as the preceding brace ('Stupid Dream' and 'Lightbulb Sun') did.

The consistency comes from the re-steadying of the line up as the replacement of drummer Chris Maitland with technoflash supremo Gavin Harrison (notably a frequent collaborator with Level 42, Peter Blegvad and 21st Century Schizoid Band guitar whiz Jakko Jakszyk) becomes less of a novelty and more a key part of the band's sound. Harrison's muscular yet fluent parts ideally complement the continuing heavy direction of PT leader Steven Wilson's guitar parts.

Much like its predecessor, 'Deadwing' is haunted by the spectre of the influence of Rush on the adolescent Wilson, along with many other prog bands, but still has the distinctive PT feel. The opening title track exhibits one of those taut mid-to-late eighties strafing Alex Lifeson patent rhythm parts, and the wickedly-titled 'Meliotron Scratch' (don't you love those working titles which stick?), has a mid-section with a very early Rush sounding guitar. Elsewhere Wilson is allowed to exercise (exorcise?) his eighties prog leanings by inviting eighties Crim man Adrian Belew to guest with characteristic second guitar solo (Wilson's first is a blinder too) on 'Deadwing' itself. The track also features the ferocious Opeth/ Meshuggah-derived bouts of extreme metal riffing beloved by IA devotees, along with some quite exquisite double bass drum technique from Harrison. Lead-off single 'Shallow' is an unsurprisingly riff-led monster which should go down well in the American market. The English Wilson whimsy is introduced to the ravening horde as delicate interstices. Not so much quiet/loud as effete/brutal. The ensuing 'Lazarus' veers more to the former with its cascading piano arpeggios and pretty vocals. Then we're back to the darkness with the scary 'Halo' - insinuating treated vocals, more Lone Rhino guitar squalls and some Rush-like bonkers time signature stuff.

Again like the previous title there are heavy echoes (geddit?!) of the Pink Floyd sound here, particularly on the epic 'Arriving Somewhere But Not Here', with Richard Barbieri contributing lush organ and mellotron parts as well as his trademark subtle synth beds. The ghost of Yes is also present in the outro vocals of 'Mellotron Scratch'. Bassman Colin Edwin once again supplies his hypnotic, angular and repetitive Wal bass parts and thus the whole will feel comfortably familiar to the well-versed PT cognoscenti.

Wilson knows how to commune with his rabid following (obscure and hard-to-find PT and related releases go for obscenely large sums on eBay), and his carefully dropped web utterances on what to expect have not been wide of the mark here – while there is much adherence to

the joy of the well-turned riff, there is also more contemplative material on this album. Indeed Wilson harks back to the more brooding 'Lightbulb Sun' album with the inclusion of a rerecorded version of one of that album's standout tracks, second single 'shesmovedon'. This version differs little, but inevitably heavies up the ante. Wilson is so shrewd with the marketing side that it wouldn't surprise me if this was included to hook the major label period converts back to the last two (excellent) indie albums, the rights to which Lava/Atlantic have acquired, with reissues due this year (hopefully to feature the promised SW self-done 5.1 mixes) likely to put the mockers on the trade in highly priced Snapper issues and eastern European counterfeits.

When I interviewed him about the surround release of 'In Absentia' I tried really hard to convince SW of the merits of tracking in 24/96, but like many he resisted in favour of the greater number of tracks permitted by staying at 24/48. He did however concede that the newer Apogee A/D converters produced an audibly better sound, and indeed the end stereo result is superb, with much less of the grainy cymbal sound found on IA.

At the time of writing I have yet to hear the surround incarnation of this wonderfully individual record, and the experience of listening to this albeit excellent dithered stereo version merely feels like the hors d'oeuvres for the real meal. Watch this space for an assessment of what will no doubt be a strong candidate for surround album of the year 2005, come this year's end... **PC** 

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HI-FI WORLD APRIL 2005