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FEBRUARY 2008

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turntable



EDGAR CD-1
CD player



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APPLE IPOD TOUCH
digital portable

SHELF LIFE

bookshelf loudspeakers
from ALR Jordan, Quad,
Mordaunt Short, Usher
& Acoustic Energy tested

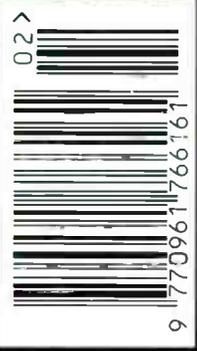


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- > KUDOS CARDEA C10 LOUDSPEAKERS
- > MICHELL TECNOARM vs. ORIGIN LIVE OL1 TONEARMS
- > CAMBRIDGE AUDIO 840A V2 & NAIM NAIT 5i **EXCLUSIVE!**

FEBRUARY 2008



exposure



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EDITOR

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

ASSISTANT EDITOR

Adam Smith
e-mail: editorial@hi-fiworld.co.uk

DESIGN EDITOR

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

PRODUCTION EDITOR

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

ADVERTISING

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

ACCOUNTS

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

PUBLISHER

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

FREE READERS 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

Steven Green, Channa Vithana, Paul Rigby,
David Allcock, Tony Bolton, Peter Comeau,
Patrick Cleasby, Neville Roberts.



As a famous Liverpoolian laureate once sang, "it's another year over, and a new one just begun", and how I wonder what 2008 will have in store...

Looking back at the 'stand out' products of 2007, on the turntable front we've had everything from the beguiling Linn LP12SE to the punchy Revolver Replay. With CD players there's been a wealth of hybrid designs like Astin Trew's powerful new

AT3500. We've seen a raft of Class D power amplifiers such as Trichord's sophisticated D300 monoblocks, and heard a number of striking new loudspeakers from the planar Podium One to the brick outhouse RRR FS100.

What strikes me about this little lot is the sheer diversity of design on display. We have classic products updated for the modern world, modern products using classic technology, totally new designs and unashamedly old fashioned ones done especially well. The brave new world of hi-fi - if I can call it that - is eclectic if it is anything!

With this in mind, I think it's fair to say that the days of homogenous hi-fi are well and truly numbered, and this issue only goes to underline the point. For example, who'd have thought ten years ago that we'd be singing the praises of a Slovakian CD player using a valve power supply and audio output stage (Edgar's CD-1, p10) or reviewing such a stunning example of modern consumer electronics as Apple's new iPod Touch (p44)? Likewise, I wouldn't have expected a hitherto unknown Thai valve amplifier manufacturer like Silk to have beguiled us so (p25), nor would I have thought a pair of loudspeakers as small as Usher's S-520 could make such a big sound (p15).

Then we have the gorgeous Aura Note Music Center (p56) which brings superlative British styling to a skillfully engineered South Korean all-in-one system, while the latest Benchmark DAC-1 USB adds computer connectivity to one of the best digital to analogue converters on the market (p51). Audio Technica's classic eighties AT-OC9 cartridge is back and better than ever (p89), and two of the best variants of Rega's archetypal RB250 tonearm, the Origin Live OLI and Michell TecnoArm face up to one another (p92).

If the amazing mix of products in this issue of Hi-Fi World is anything to go by, this coming year looks to be a vintage one. Enjoy!



testing

To ensure the upmost accuracy in our product reviews, *Hi-Fi World* has extremely comprehensive in-house test facilities, and our test equipment - from big names like Rohde & Schwarz and Hewlett Packard - is amongst the most advanced in the world.

Loudspeakers are measured using a calibrated Bruel & Kjaer microphone feeding a Clio-based computer

analyser, using pulsed and gated sinewaves, in a large room to eliminate the room's influence. Pickup arm vibration is measured with a Bruel & Kjaer accelerometer.

No other UK hi-fi magazine has in-house testing, and none has access to such advanced tests across all types of equipment. That's why you can depend on *Hi-Fi World* reviews.

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verdicts

- OUTSTANDING
- EXCELLENT
- GOOD
- MEDIOCRE
- POOR
- £ VALUE

- simply the best
- extremely capable
- worth auditioning
- unremarkable
- seriously flawed
- keenly priced



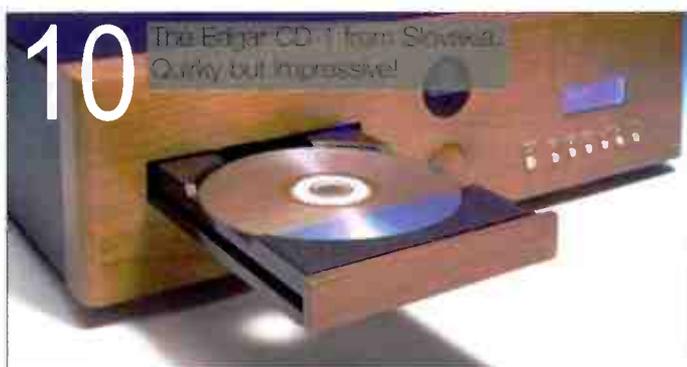
ELECTRONIC MAGAZINE

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

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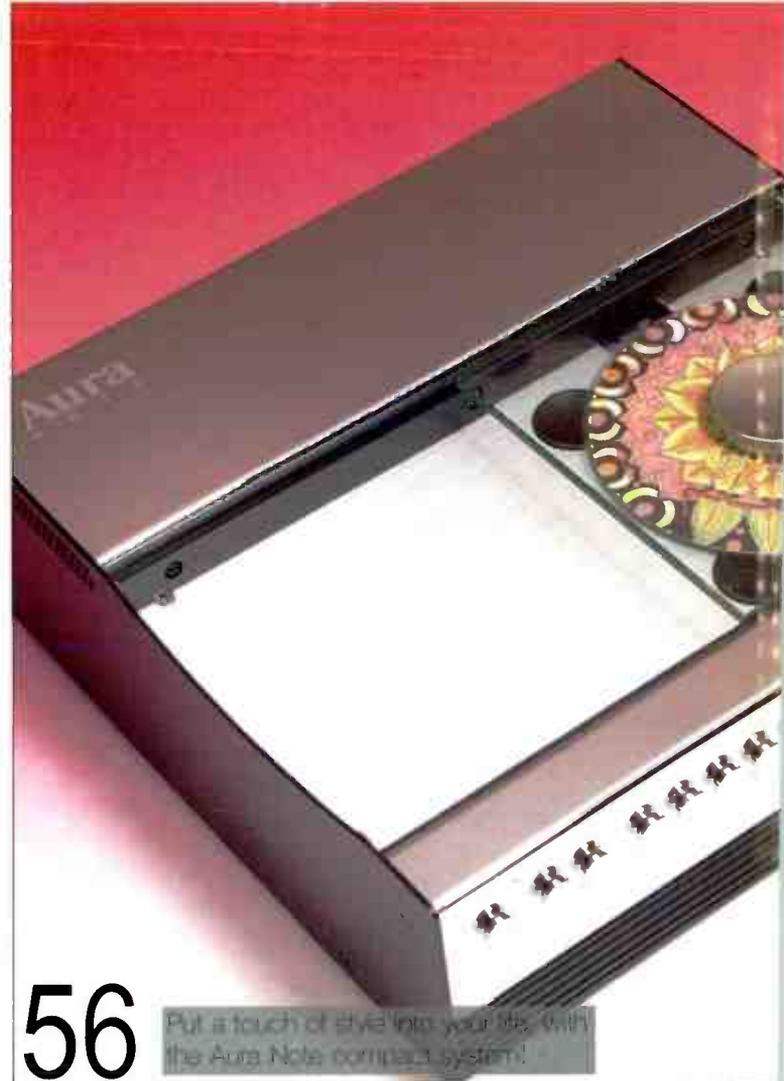
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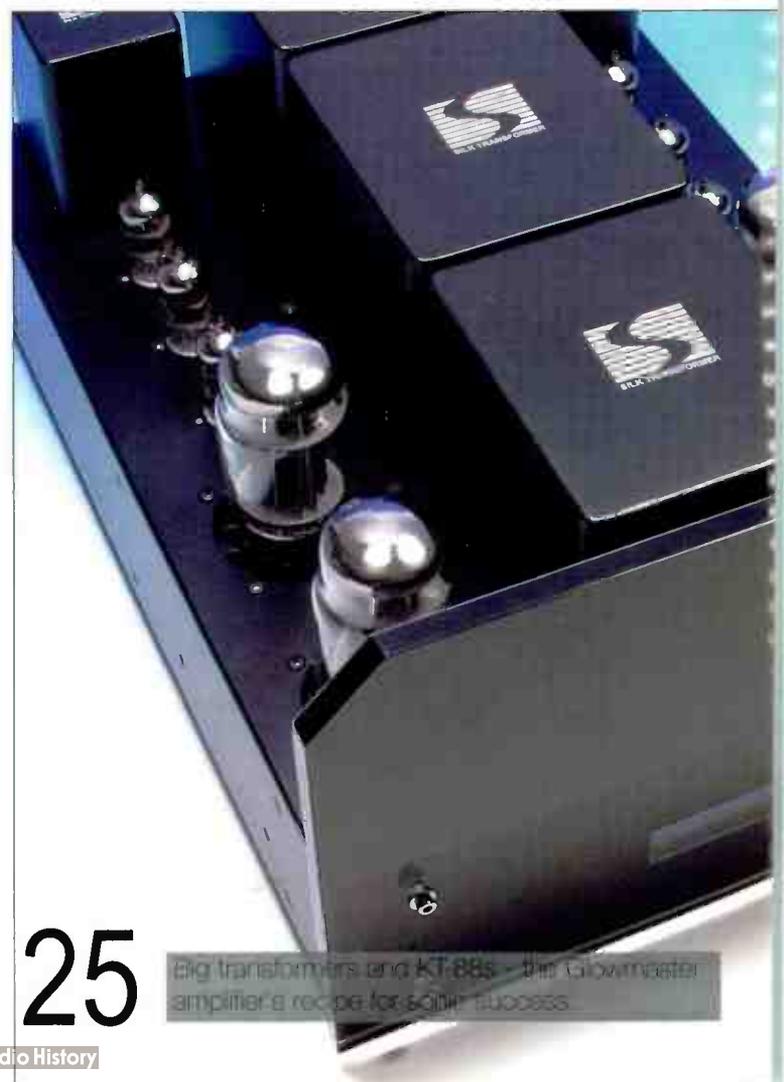
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MISSION SEVENTIES

Mission's new 79 series is described as "a symbiosis of form and function building on over thirty years at the forefront of acoustic design", no less. Said to sport a "significant step forward in enclosure design", the multilayer cabinet construction utilises three different densities of resonance-absorbing particle composite, tuned to damp different frequencies of cabinet resonance. Its latest cone material, 'Parawave', is the result of many years research into the properties of Aramid fibres, using man-made polymers with exceptional tensile strength. Both 79 series floorstanding models, the 794 and 796, feature an asymmetrical single sideways firing bass driver per speaker. This is discreetly housed within the curve of the side wall, close to the floor. The bass drivers can be positioned towards the outside or towards the middle of the room, depending on preference and proximity to the side wall. In smaller spaces, or with side walls closer to the speakers, these auxiliary bass drivers are best turned to the centre to couple directly and improve dynamic attack. Internally, the low profile chassis legs reduce 'through-cone' reflection. The tweeter heatsink wicks heat away from the ferro-fluid cooled voice coil to maintain a constant temperature and reduce thermal compression, and the crossover is directly coupled to the terminals for the shortest, most direct signal path. For more information, click on www.mission.co.uk.



UNIVERSAL

Onkyo are on something of a roll with their AV receivers right now, but the new £600 one-box LS-V501 2.1-channel Universal DVD Receiver/Speaker system shows they haven't taken their hi-fi eye (or ear?) off the ball. Only available in black, it's designed to offer a convenient yet comprehensive home entertainment solution. The HDMI-equipped LS-V501 uses the same AV technologies employed in Onkyo's award winning 2007 range of home cinema receivers, married to an integrated DVD player that will read any DVD, CD, SACD and DVD-Audio disc, with WMA/JPEG/DivX disc compatibility. As well as 2x50W output power, the LV-5501 offers video upscaling to 720p/1080i, playback of DivX format encoded movies as well as full iPod playback compatibility via Onkyo's range of optional dedicated iPod docks. A "top quality" 192kHz/24-bit audio DAC is fitted. The 2.1-channel system is also designed to replay 5.1-channel audio soundtracks via just two supplied satellite speakers and a 100W subwoofer, using Onkyo's Theater Dimensional DSP circuit. For more information, call +44(0)1494 681515 or click on www.onkyo.co.uk.

NEW LOOKS

Linn has two new two-channel hi-fi products just out – the Majik-I integrated amplifier and Majik 140 loudspeakers. For those who value specialist performance but prefer a neater, even more accessible system, Linn's new Majik-I is "an integrated amplifier without peer", Linn says. A combined preamplifier and power amplifier housed in one compact unit, it marries audio circuitry developed from Linn's flagship Klimax Kontrol amplifier with Chakra power amplification that delivers "increased power, reliability and efficiency". It also deploys the company's proprietary hum and buzz-free Switch Mode 'Silent Power' Supply

technology. The Majik 140 floorstanding speaker is a four way affair using Linn's '2K Driver Array' technology – as seen in the company's top designs – "for an evenly dispersed, pitch accurate sound over a wider listening area". There are also a number of upgrade options, from simple biwiring through to a fully Aktiv configuration using eight channels of amplification. Available in a choice of high-grade, real-wood veneer finishes, Linn say that "the timeless design of Majik 140 will enhance any living space". For more information, click on www.linn.co.uk.



CLEAR AS DAY

Transparent Distribution Ltd. has announced that it is now the exclusive UK distributor for both Waterfall and T+A. In the case of the former, it is now bringing in the long awaited replacements for Waterfall's Victoria and Iguascu glass floorstanding loudspeakers. Now known as the Victoria Evo and Iguascu Evo, the same striking design remains but with "entirely new and very much more dynamic" Atohm drive units throughout, says Transparent. At the bottom of each speaker, there's now a discreet passive subwoofer within the newly designed aluminium base.

The latest T+A range focuses on the mid-priced market with some high technology, quality audiophile products. With a 500W digital hybrid amp, high end CD player and a music player capable of streaming data in audiophile quality, the 'E Series' has been designed as a "no-compromise solution to the playback of multiple sources" says Transparent. For more information, click on www.transparentdl.co.uk.



TIN CANS

The same design team that did Denon's high end CD players have now come up with the AH-C551 in-ear phones. Beautifully built from machined aluminium, Denon says the sound and the construction are well above average. Many ear-canal designs use lightweight plastic capsules, in contrast the AH-C551 uses rigid machined aluminium housings that do not resonate. These and the advanced 11mm diaphragm drive units, help the 551s to deliver exceptional clarity, a rich smooth sound with extended top and full-bodied, extended bass, Denon claims. Ear adapters are supplied in three sizes and there's identical high-quality signal cable for right and left channels, with durable and flexible Pure-OFC (Oxygen Free Copper) wire terminated by a gold-plated 3.5mm stereo minijack plug for best contact and long life. Silver and Black finishes are available, and the phones come in a rigid case with an extension cable. For more information, click on www.denon.co.uk or call +44(0)1234 741 200.



PERFECT SOLUTION

Audio Perfection has a new range of tube amplifiers and loudspeakers, to be sold throughout the UK and Europe in 2008. The £1,799 Glowmaster KT88 power amplifier, claimed to be "one of the finest KT88 tube based power amplifiers available at any price" no less, uses a true balanced circuit topology from input right through to the output stage. It boasts 65W per side. Whilst the vast majority of conventional amplifiers have an output impedance of more than 2 ohms and a damping factor of less than 5, says the company, the Glowmaster KT88 boasts an output impedance of 0.7ohm and damping factor of 10.5 – "even conventional amplifiers with 150W output will sound soft, flabby and slow when compared to the Glowmaster KT88". It features "audio grade components throughout", and has both switchable RCA phono (unbalanced) and XLR (balanced) inputs. For more information, call 0845 166 8364 or email info@abs-ely.co.uk.



GREEN MACHINE

With early generations of DAB radios being enormously power-hungry, it's good to know that the latest are considerably less greedy. Indeed, Roberts new £79.95 Gemini 21 promises 150 hours battery life no less, five times more than conventional Digital Radios, and is the first of a range of eco-friendly radios from Roberts that address the issue of the environment. A "stylish portable DAB digital radio, available in sleek sliver with amber backlight or contemporary black with blue backlight", it features stereo speakers as well as separate bass and treble controls. For stockists call +44(0)1709 571722 or visit www.robertsradio.co.uk.



ON THE RAJAR...

New figures from market research company RAJAR show Digital Radio continuing to grow in terms of reach, hours and platform share. Data from the third quarter of 2007 show 28.4% of adults listen to digital radio each week, up from 26.2% in June. The lion's share of this is DAB listening at 15.3% of all adults, up from 13.3% in June. (Adults listening via DTV were up 0.4% and the Internet dropped 0.3% in the same period). Digital now takes 15% of all listening, up from 12.8% in June. DAB digital radio listening is at 8.6%, up from 7% in June. (DTV listening rose by 0.4% and Internet listening by just 0.1%). 21.7% of all adults now live in a DAB household, up from 20.3% in June. Digital radio stations have shown really significant growth with some, like GCap Media's thejazz and BBC 7, each putting on more than 50,000 listeners in the quarter. BBC 6 Music's reach went up by 14,000 from 471,000 in June to 485,000 in September, and BBC7 saw a significant climb in listening figures from 738,000 to 795,000 in the quarter. Says DRDB Chief Executive Ian Dickens, "this is the third quarter in a row where digital radio has seen overall growth in reach, hours and platform share, and the medium is now delivering those all-important listeners to broadcasters who have invested in radio's future. The growth in listening is mirrored by the growth in DAB ownership - more than 5.5 million DAB sets have been sold and we will confidently reach 6.5 million this Christmas. With sustained growth and commitment from broadcasters, DAB is on track to reach 50% household penetration by 2010."

CAMBRIDGE PLAYERS

The 840 series has been pushed to new highs with the announcement of the 840E preamplifier and 840W power amplifier. The former is a high end design using Cambridge Audio's new proprietary Terrapin modules "for unprecedented audio fidelity", while a customisable front panel display means tone settings can be selected and stored by nameable input.

Volume, input and tone are also all controlled by highly sophisticated relay-driven circuits. Eight inputs are offered, two with balanced XLR connections. A sophisticated resistor

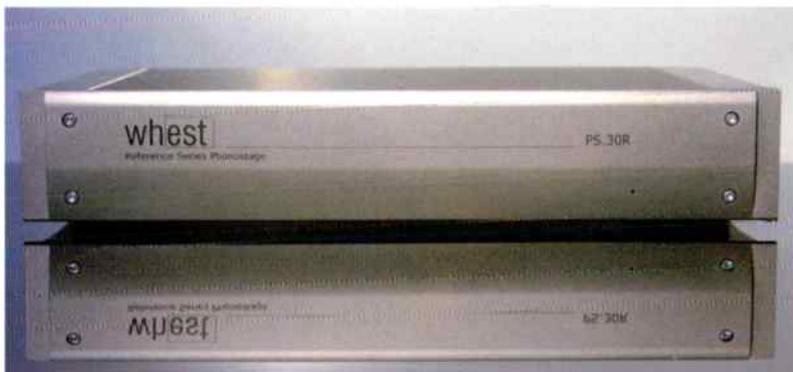
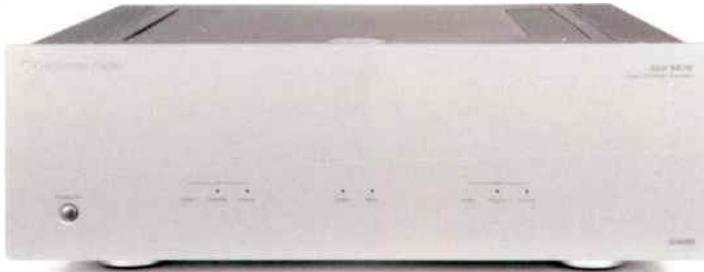
ladder and relay based attenuator for volume (1dB steps) and balance controls allows remarkably accurate volume control with channel balance, the company says. The matching 840W is a high-end power amplifier that uses an evolution of Cambridge Audio's Class XD technology for a highly detailed naturally musical performance. The second generation Class XD is now complemented by a new output stage carefully adjusted to integrate with this

novel technology, revised balanced inputs for lower distortion and noise.

The result is 200W into 8 Ohms or 500W in bridged mono mode.

Both amplifiers feature a solid 7mm aluminium front panel plus a rigid, acoustically dampened chassis, and are available in silver or black. For more information, click on

www.cambridgeaudio.com.



WHESTWORLD

Whest Audio has developed what it describes as "the world's most advanced phonostage under £3,000". Priced at just under £1,500, the direct replacement for the famed PS.20 is a completely scaled down version of the soon to be released MC REF V which sits at the top of the Reference Series of phonostages. Using discrete component technology and a true hybrid RIAA filter stage with multiple on-board voltage regulation, the PS.30R is claimed to surpass the PS.20s performance audibly and technically. See www.whestaudio.co.uk or call [+44 \(0\)20 8978 7047](tel:+44102089787047)



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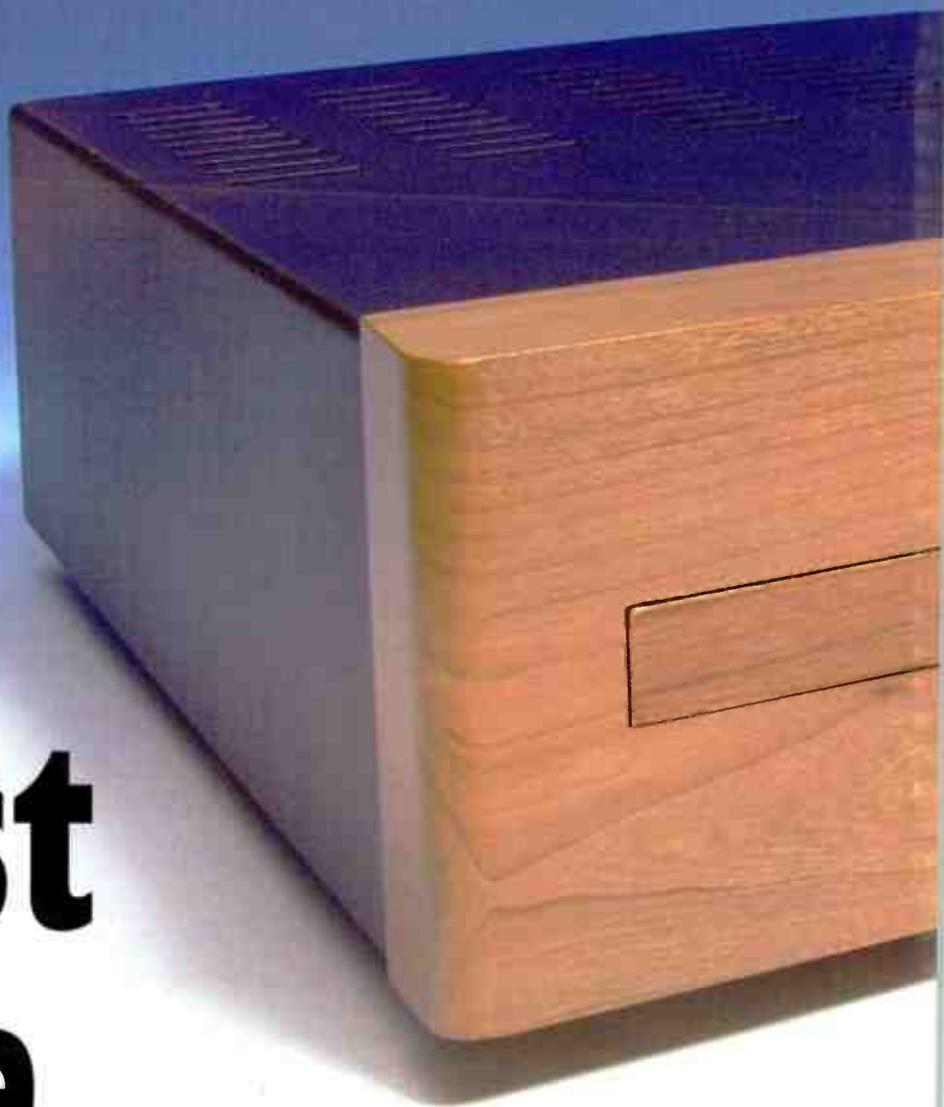
A certain brightly attired young electronics engineer bangs his 6-series Beemer off its end stops on the autobahn en route to Essen, Germany. "If you think that's dangerous," he told *Hi-Fi World*, "you should try spending an evening out with Marantz's PR guy..."

BEE HERE NOW

NAD Electronics' new C515BEE CD player is described as "a highly affordable player with the features and performance of far costlier components". With the C515BEE, the NAD Design

Team has successfully lowered its cost while retaining the features consumers most want, and the proprietary technology to deliver accurate, natural sounding musical performance, the company says. Carefully engineered circuit layouts, multiple regulated low-noise power supply circuits and individual circuit boards ensure the delicate digital audio circuitry is well isolated from motor and display demands, while analogue and digital circuits have their own supplies. The 24 bit/192kHz DACs are chosen for low noise and linearity, while the audio-specific analogue op-amps assure "accurate musical sound". The C515BEE also plays MP3 and WMA files, using the latest decompression algorithms. Available in NAD's Grey or new Titanium finishes, this £165 player is on sale now. For more information, click on nadelectronics.com.





East Life

Slovakia isn't exactly synonymous with serious sounding hi-fi separates, so it's all the more surprising that Edgar's CD-1 is such an impressive CD player, says David Price...

As every hi-fi journalist will tell you, there are some new products which we expect to sound great, and some that we don't. It might sound presumptuous, arrogant even, but earwig on the conversations that hi-fi hacks have with one another in airport departure lounges (*en route* to press trips) or on tables at awards ceremonies, and we all have a view about whether the new Arcam, Onkyo or Meridian is going to be any good, weeks before we actually get to hear it. All the more surprising then, that a totally obscure (in the UK at least) silver disc spinner with no advance hype or fancy PR-ing turns out to be so good...

The Edgar CD-1 is one such machine. Frankly I can't tell you much about this

Slovakian company at all; I see from their website (www.edgar.sk) that they do some tube-based amplifiers and a phono stage in addition to this £1,350 CD player, but – err – that's it. Whatever, the valve buffered CD-1 not only measured very well [see MEASURED PERFORMANCE] but had sonics to match - very strange!

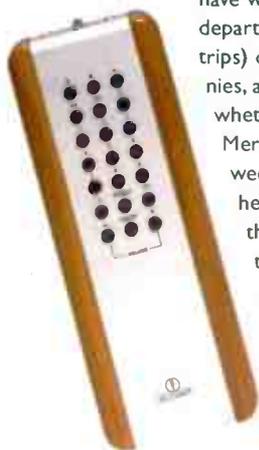
Suffice to say that if a similarly performing machine from a British or Japanese manufacturer had been sent in for review, it would have been billed as the greatest thing since the digital watch by shiny suited public relations types.

What we have here is quite a substantial machine (weighing 9.6kg, measuring 435x122x350mm) with a lovely wood fascia that for some reason reminded me, as a classic car nut, of the dashboard of an early nineteen seventies Triumph Stag. Not for Edgar acres of mahogany

so highly polished that it looks like plastic; this is real, matt varnished teak – or so it looks and feels. Inset into the 'dashboard' is a central (wooden) on-off switch which, when depressed, causes an 'Edgar' logo above to glow blue. To the left is the disc tray, to the right the display – a blue backlit dot-matrix LCD affair which isn't swish looking (despite being described by Edgar as "stylish"!)

but again scores kudos by being not obviously borrowed from some other player. Beneath this is a row of fiddly transport buttons.

Ergonomically, it's a dog's dinner then, but frankly unlike so many modern machines has real charm of its own - using the Edgar is, for some inexplicable reason, a pleasant experience. Funnily enough, this is in spite of the disc tray, which on our review sample occasionally proved unwilling to greet a waiting world





"this should not sound as good as it does..."

and do its solemn job of actually opening. Oh well – we got there in the end. The case is rough; the crackle black finished steel wrap isn't exactly reminiscent of high end Sony machines. Round the back are three sockets – one for power (IEC) and two phono line outs – and that's yer lot. No digital outputs, bus connectors, etc. What this tells me, in my role of the hi-fi magazine equivalent of Lloyd Grossman in 'Through the Keyhole' is that – if nothing else – these guys mean business...

SOUND QUALITY

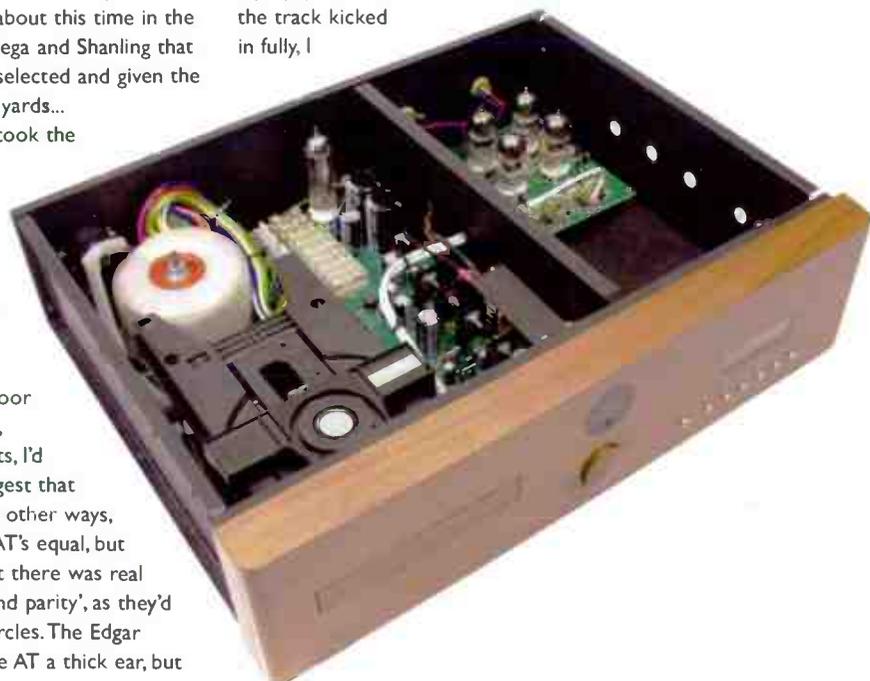
It wasn't the Edgar's Triumph Stag fascia panel that had me volunteering to take it for a spin. Rather the fact that, over the past few months, I've had more £1,000 to £1,500 CD players in my system than most British hi-fi dealers put together. Having done a group test of them, which proclaimed the Astin Trew AT3500 the winner, then gone on to put the AT against rival Rega and Shanling machines (actually slightly more expensive than it) which it by and large dealt a bloody nose, I thought it right that the Edgar came in for similar punishment. The trouble is, the Edgar CD-1 held a different point of view...

Kicking off with The Police's 'Synchronicity II', I was suitably impressed by the reference Astin Trew's rendition, especially with 24/96 upsampling switched in. The soundstage was big and powerful (something of a signature of this machine) and the rhythm taut and engaging, whilst there was that familiar deftness of touch in the way Stewart Copeland's brilliant cymbal work was despatched. Okay, fair enough; it was about this time in the review of the Rega and Shanling that they would be selected and given the proverbial nine yards...

The Edgar took the fight back to Astin Trew however, and came out with a subtly different presentation that was absolutely no poor relation. Indeed, in some respects, I'd tremblingly suggest that it was better. In other ways, it wasn't quite AT's equal, but the point is that there was real 'pound for pound parity', as they'd say in boxing circles. The Edgar couldn't give the AT a thick ear, but

it had it on the ropes every now and again. What you get is a slightly bigger, wider and more expansive sound from left to right (which is already an area where the AT excels), with a sweeter and more finessed treble, a touch more midband detail and a slightly lighter, more sinewy bass.

The opening bars of 'Synchronicity II' sounded fractionally less intense, as if the Edgar wasn't trying quite so hard, but as the track kicked in fully, I



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could hear a cleaner, better delineated electric guitar sound, and a more atmospheric treble. The track didn't quite have the same urgency of the Astin Trew, with less of a sense of Copeland's 'big rock drumming', but seemed a little more controlled without having the cerebral rigour of the Rega Saturn I reviewed a couple of months back.

Moving to some classic disco in the shape of The Bee Gee's 'Night Fever' proved most illuminating. The constant hi-hat running throughout the song sounded sweet on the Astin Trew, and the bass was powerful and satisfyingly fulsome, pushing the song along. Switching to the Edgar showed a fractionally lighter bass, but also that it was slightly more propulsive and crisply defined. It also cast less of a shadow over the midband, making the classic Fender Rhodes keyboard playing glisten from within the mix whereas it had previously been a tad indistinct. Vocals were superb with both players, but there was a touch less nasality to the Edgar and this clarity ran all the way up to the treble, giving a cleaner hi hat sound. Both players gave great renditions of this track, but it was interesting that, whilst the Astin Trew sounded more immediately 'musical' and bouncy, with every bar, the Edgar caught the phrasing of the players better, giving a superior sense of accenting on every first bar of the four bar phrase.

Moving to classical in the shape of Vaughn Williams' 'On Wenlock Edge' (James Gilchrist, Linn Records), this superb but rather stark recording was carried skillfully by the AT3500, with a wide, fulsome sound and superbly textured strings and tenor voice. Switching to the Edgar revealed a fractionally cleaner, more atmospheric sound with marginally superior depth and width. Strings lacked some of the richness of the AT, but they were never as 'surgically' clean as the Rega Saturn, preserving just a touch of warmth from that tube buffer stage. There was a greater sense of being able to hear right into the recording, in contrast to the AT3500 which gave a marginally fuller, and more airbrushed sound.

The Edgar's wonderful clarity

was perhaps most obvious on well recorded piano music, such as in the opening to Al Jarreau's cover of Elton John's 'Your Song'. The reference Astin Trew was superb, but the Edgar revealed just a fraction more

and the lackadaisical disc drawer just this once – and put it down to 'character'. If you're in the market for superlative sound per pound, you may well have just found your dream £1,350 machine.

EDGAR

Founded in May 2000 as an extension of its sister company Elnika, which itself had been making OEM products for just eight years, Edgar is a tube specialist. Its first product was the TP101 integrated amplifier. The debut of the prototype of this product took place in April 1995 in Brno (Czech Republic). UK importer Metropolis Music, says the company's major objective is, "the development and manufacture of high performance audio components, but with high value too".

lustre, the instrument's ringing harmonics glistening out of the mix in a way that made its rival sound congested. The other side of this was that the bass cadences sounded fractionally more lightweight on the Edgar, the Astin Trew giving a little extra heft which made the music subtly more physical.

CONCLUSION

Regular readers will know how fond I've grown of the Astin Trew AT3500 of late, and that hasn't changed listening to the Edgar. However, now we have a genuine alternative, one that does some things ever so slightly better (and others not quite as well). It scores with class leading stage width, midband clarity and treble finesse, and meets and matches its arch rival on bass speed and musicality. A touch more bass heft wouldn't go amiss, but no one ever had everything. Overall then, it's a blinder – and just shouldn't sound quite as good as the price. For this reason, we'll overlook the hand built feel of the thing

REFERENCE SYSTEM

Astin Trew AT3500 CD player
MF Audio Silver Passive Preamplifier
Quad 11-40 power amplifiers
Yamaha NS1000M loudspeakers

VERDICT ●●●●● £

A truly spine-tingling performer, this quirky Slovakian machine offers brilliant musicality allied to exceptional clarity.

EDGAR CD-1 £1,350
Metropolis Music
+44(0)1435 867438
www.metropolis-music.co.uk

- FOR**
- musical cohesion
 - superlative midband detail
 - treble finesse
 - quirky character!

- AGAINST**
- cottage industry build

MEASURED PERFORMANCE

Valve output CD players can sometimes be rather hair-shirt in nature, but this player proved to be quite the opposite. It was tightly engineered, especially in terms of distortion and dynamic range, which are areas where valve players usually display small, if inconsequential, blemishes. The Edgar handled peak level signals far better than usual, distortion measuring a low 0.002% at 0dB, against the 0.3% or so figure that is not uncommon with many other valve players. Output was high at nearly 3V and this is likely related to the fact that noise was lower than usual from the output valves, measuring -100dB IEC A weighted.

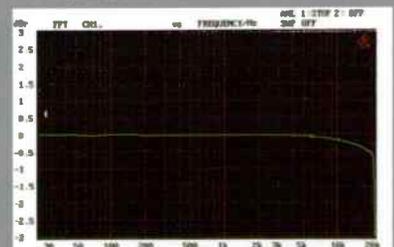
Frequency response was ruler flat from 5Hz up to 10kHz, with only the slightest droop further up of -0.5dB at 20kHz. This is visible in our convolved impulse analysis showing frequency response, and should bode well for removing the top end sting from CD without sacrificing too much treble energy.

The Edgar CD player measured unusually well for a valve output player. It appears that the output valves are high quality, well chosen devices and sound quality should be good as a result. NK

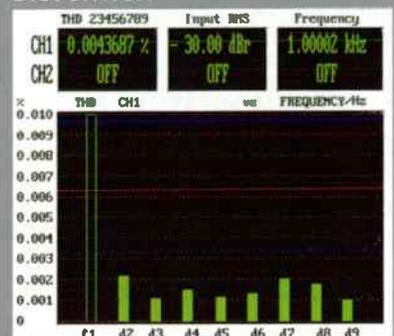
Frequency response (-1dB)
CD 5Hz-21.2kHz

	CD
Distortion	0.002%
0dB	0.0007%
-6dB	0.22%
-60dB	2.6%
-80dB	
Separation (1kHz)	96dB
Noise (IEC A)	-100dB
Dynamic range	109dB
Output (unbal/bal)	2.89V

FREQUENCY RESPONSE



DISTORTION



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Shelf Life

Adam Smith lines up five pairs of standmounting loudspeakers from Acoustic Energy, ALR Jordan, Mordaunt Short, Quad and Usher...

In case you hadn't noticed, the world around us is changing size. In some cases, such as televisions (with plasma panels now up to over one hundred inches) and cars (with today's Land Rover Freelander about the same size as yesterday's Range Rover), things are getting bigger and bulkier. However, in the home, and particularly in terms of home entertainment, things are shrinking rapidly.

For example, if you compare the size of the new Apple iPod Touch reviewed on p44 to my old Technics personal CD player, you could fit three of the former inside the latter but the iPod carries much, much more music. DVD players that were once similar in size to most CD players are now absurdly thin, and various manufacturers are cramming more than one high quality source and a hefty amplifier into a standard-size case.

Nowhere is this more noticeable than in terms of the loudspeakers that turn all these items into music. In-walls, on-walls and thin constructions that sit neatly alongside your television are commonplace these days and, much as Noel and I have been rather smitten by the mighty RRR FS100s I reviewed back in our November issue, it seems we are in a minority. One person I recommended them to responded with words to the effect of, "you'd need an aircraft hanger for those!", and he doesn't seem to be alone in that opinion...

With this being the case, the market for small, affordable yet high performance loudspeakers is more buoyant than ever. If people are prepared to take the time to set them up properly and choose suitable stands and partnering equipment these babies of the loudspeaker world are more than able to hold their own against some of their bigger brethren. (See Noel's feature on p22 if you'd like some advice in this area).

With this in mind, we felt a look at a few choice models was overdue, so we brought in five contenders from Acoustic Energy, ALR Jordan, Mordaunt Short and Quad to line up against our old favourites, the Usher S-520s.



REFERENCE SYSTEM

Pioneer PLC-590/Michell TecnoArm
Ortofon 2M Black cartridge
Trichord Diablo phono stage
Anatek A50R amplifier
Eastern Electric MiniMax CD Player

THE CONTENDERS

Mordaunt Short Avant 902i	£150	p16
Acoustic Energy Neo 1	£199	p17
Quad 9L2	£250	p18
ALR Jordan Entry Si	£265	p19
Usher S-520	£320	p20



MORDAUNT SHORT AVANT 902i £150

The babies of the Mordaunt Short Avant i range, the 902is are a compact yet quite deep design, measuring 290x165x265mm (HxWxD). As per all the loudspeakers in this test the Avants are a two way box, and they employ Mordaunt Short's proprietary 5.25in (130mm) aluminium CPC-coned bass driver allied to a 1in (25mm) aluminium dome tweeter, linked by a simple first order crossover that makes use of dual value parallel (DVP) capacitors for the tweeter. In this setup, two capacitors in parallel are used to make up the value required, thus reducing distortion.

Our supplied review pair was finished in the very smart new Calvados finish, whilst Honey Maple and Black are alternative options. Ported to the rear, the Avant 902is also offer biwiring through two pairs of sturdy bullet type terminals, directly descended from the flagship Performance 6 floorstanders.

SOUND QUALITY

Having heard several other models from the new Avant i range, I had a fair idea of what to expect and was not disappointed. As per their larger brethren, they have real strengths in terms of clarity and detail, and absolutely love it when asked to dig in to the heart of a rhythm. Still, they manage to avoid the harshness of some crisp-sounding budget

designs.

Their top end was sweet, enveloping and clean, with detail in abundance. The tweeter gave real insight to performances, and as a result the soundstage stretched nicely behind the loudspeakers, locating performers with pleasing precision.

The only area I found in which the insightful treble did not work quite so well was with vocalists, where the stark clarity added something of a huskiness to singers such as Norah Jones. It made her sound a little dry and rather too 'breathy'. Instruments were impeccable however, the Avants

coaxing impressive levels of precision from strings and drum strikes, without adding artifice to their nature.

Down the bottom end, the 902is belied their stature by being punchy and dynamic, reaching down impressively deep. Bass lines were confident and fast, with excellent tunefulness when the pace of the material picked up. Whilst not quite as detailed as some in terms of capturing the finer nuances of string details on acoustic basses and bass guitars, the Avants are dynamic performers and remain thoroughly enjoyable at all times and with any material.

MEASURED PERFORMANCE

The Mordaunt Short Avant 902is offer a smooth performance across the frequency range. Largely flat, the only exception to this is in the upper treble which rises up above 10kHz to finish around 6dB up at 20kHz. This is quite a common MS trait and usually adds top end sparkle without the associated harshness that can arise with a poorly designed tweeter.

Down at the bottom end, bass rolls off below 90Hz but is reinforced by the port, tuned to around 60Hz, a fine figure for a compact cabinet. As a result the Avant 902is should offer lots of clarity but with a good punchy low end.

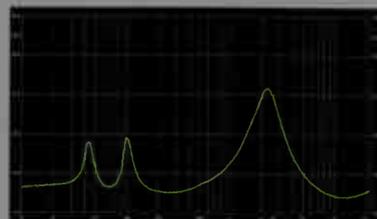
Electrically the Avant 902is are generally well damped but do have an inductive rise at 2kHz. Average measured impedance is 6.9 Ohms, dipping to a minimum of around 4 Ohms, so they do present a 4 Ohm load to an amplifier. Sensitivity is good for a compact cabinet at 85dB. AS

FREQUENCY RESPONSE



Green - driver output
Red - port output

IMPEDANCE



VERDICT ●●●●●
Another storming budget performer from Mordaunt Short, the Avant 902is serve up detail and dynamics aplenty.

MORDAUNT SHORT AVANT 902i £150
Mordaunt Short
+44(0)207 940 2200
www.mordauntshort.com

FOR
- impressive bass agility
- atmospheric nature
- clarity and detail

AGAINST
- vocals rather dry at times



ACOUSTIC ENERGY AEGIS NEO 1 £199

Acoustic Energy have a knack of turning out fine loudspeakers and only making updates as and when they feel necessary. The Evo series is one such update and takes the award-winning Aegis Evo as its starting point. As might be expected from the name, Acoustic Energy make use of neodymium magnets on both the tweeter and bass driver. As neodymium develops a much stronger and more linear magnetic field than the barium or strontium ferrites more commonly used, less material is needed and the motor unit can be made more compact and efficient.

In the Neo 1s, these motor units are used on a 1in (25mm) ring radiator tweeter and a 5.25in (130mm) bass/mid driver with a pressed alloy cone and, unusually these days, a foam surround. Measuring 357x182x237mm (HxWxD), the Neo 1s are available in Black Ash, Light Oak and Walnut and features a single pair of connection terminals.

SOUND QUALITY

The Neo 1s offer an intriguingly similar sound balance to the Mordant Shorts, unusual given the big differences in drive unit material that each uses! As a result, the Aegis Neo 1s have a similar dynamic enthusiasm and clarity, but they add a little extra sweetness and open neutrality across the upper

midband. This time, vocalists were clean and clear, but displayed real transparency without undue dryness. Suddenly Norah Jones sounded emotional, standing out markedly from her backing instruments, with her voice more natural and her vocal inflections flowing better.

The Neo 1s also excelled in soundstage terms, offering impressive levels of projection out into the room. Instruments were expertly defined and laid out with commendable precision, such that it was easy to follow a particular item, but simultaneously melding

everything together into a very impressive whole.

At the low end, the Acoustic Energys offered excellent levels of heft for their cabinet size, adding impressive weight to performances. Although their very bottom end was a little softer than the Avants (although by no means loose or boomy) they really came into their own in terms of detail. Now, acoustic basses had proper body and depth to them, and each note could be heard to emanate from an instrument, rather than just being a rounded slab of bass.

MEASURED PERFORMANCE

The Acoustic Energy Neo 1s offer the sort of flat response that many loudspeaker designers dream about! You can lay a ruler along their trace from 100Hz to 20kHz and they hardly deviate from this line. The only small glitch is around the 3.5kHz crossover frequency but this is very small. As a result the Neo 1s should offer an even performance across the frequency range.

At the bottom end, the AEs roll off at around 90Hz and have a rear-mounted port that reinforces bass down to its tuning frequency of around 55Hz, which should bode well for a solid low end.

Electrically, the Neo 1s are less well damped than some at the bass end, but have an otherwise even electrical measurement, with an average impedance of 7.3 Ohms, dipping to a minimum of around 5 Ohms. As a result, they are not a difficult load to drive, especially when

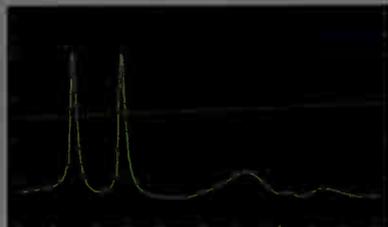
combined with a measured sensitivity of 86dB. AS

FREQUENCY RESPONSE



Green - driver output
Red - port output

IMPEDANCE



VERDICT

A beautifully balanced loudspeaker, the Acoustic Energy Aegis Neo 1s are a most impressive design, offering clarity, detail and emotion.

ACOUSTIC ENERGY AEGIS NEO 1 £199

Acoustic Energy
☎ +44(0)1285 654432
www.acoustic-energy.co.uk

FOR

- soundstaging
- natural presentation
- bass detail
- overall clarity

AGAINST

- slight low end looseness



QUAD 9L2 £250

Spurred on by the success of the 10L2 and the 11L2, which were close to winning our last standmounting loudspeaker group test one year ago, Quad have continued their budget loudspeaker range downwards with the arrival of the diminutive £250 9L2. Second only to the ALR Jordans in terms of compactness, the 9L2s are nonetheless well constructed with a pleasing sturdiness about them. Quad state that they are ideal for replacing the loudspeakers supplied with mini systems, where they'll effect a real improvement.

The 9L2s feature a 4in (100mm) bass driver and a 1in (25mm) soft dome tweeter that uses a neodymium magnet system and aluminium voice coil wire for good power handling and thermal behaviour. These are mated via a crossover that uses audiophile grade components and offers twin pairs of terminals for biwiring. The gloss Black finish on our review sample was stunning, but Quad also offer Rosewood, Cherry, Maple, Birds Eye Maple and Silver, all in piano gloss.

SOUND QUALITY

Most noticeable when switching to the 9L2s was how well they transcend their physical size, offering an impressively 'out of the box' performance with vocals in particular. Unfortunately, although well projected with good definition, voices sounded rather veiled and

coloured, which seemed to rob the emotion from performances. This was not helped by a rather soft treble. Although smooth, the 9L2s lacked insight and thus tended to gloss over the finer nuances of performances. Antonio Forcione's guitar strings, for example, lacked precision on their leading edges and the differentiation between each guitar being played became harder to discern.

Sarah McLachlan's vocals on her 'Surfacing' album reached well out into the room from the Quads, but she sounded strident and rather hoarse, with backing instruments lacking definition in the soundstage around her. It was almost as if the

Quads were projecting a big mass of sound out, but with a muddling of the information contained within.

At the bottom end, the 9L2s were impressive, managing to keep up the illusion of being larger than they are, but adding a pleasing level of rhythm and detail. Confident and punchy, the Quads never felt as if they were struggling to keep up or maintain composure in this area.

The bass line from Nanci Griffith's 'Flyer' sped along with verve and gusto, the 9L2s picking up the individual notes very well, but Nanci's vocals, somewhat edgy at the best of times, were verging on the uncomfortable

MEASURED PERFORMANCE

The Quad 9L2s have a rather uneven nature to their frequency response, most noticeable of which is a large dip of nearly 6dB just above 1kHz - likely to be audible. Other than this, their level lifts above 2kHz, which is where the ear is most sensitive, and so they will have a quite forward balance.

Bass output from the diminutive enclosures drops at around 100Hz and the tiny ports are tuned to around 70Hz so they will not be all that weighty. However, their low end is well damped so they should be quite punchy in the upper bass.

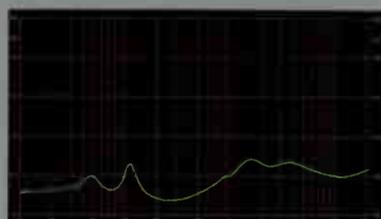
Electrically, the 9L2s are even in their response and offer an average measured impedance of 6.3 Ohms, dipping to a minimum of just below 4 Ohms, so they are a 4 Ohm load. Sensitivity was 84dB, which is respectable for such small boxes and so they should be fine with 40-50 Watts minimum. AS

FREQUENCY RESPONSE



Green - driver output
Red - port output

IMPEDANCE



VERDICT ●●●

Well built minis with an impressively 'large' performance for their size, but can sound uncouth.

QUAD 9L2 £250

International Audio Group

+44(0)845 4580011

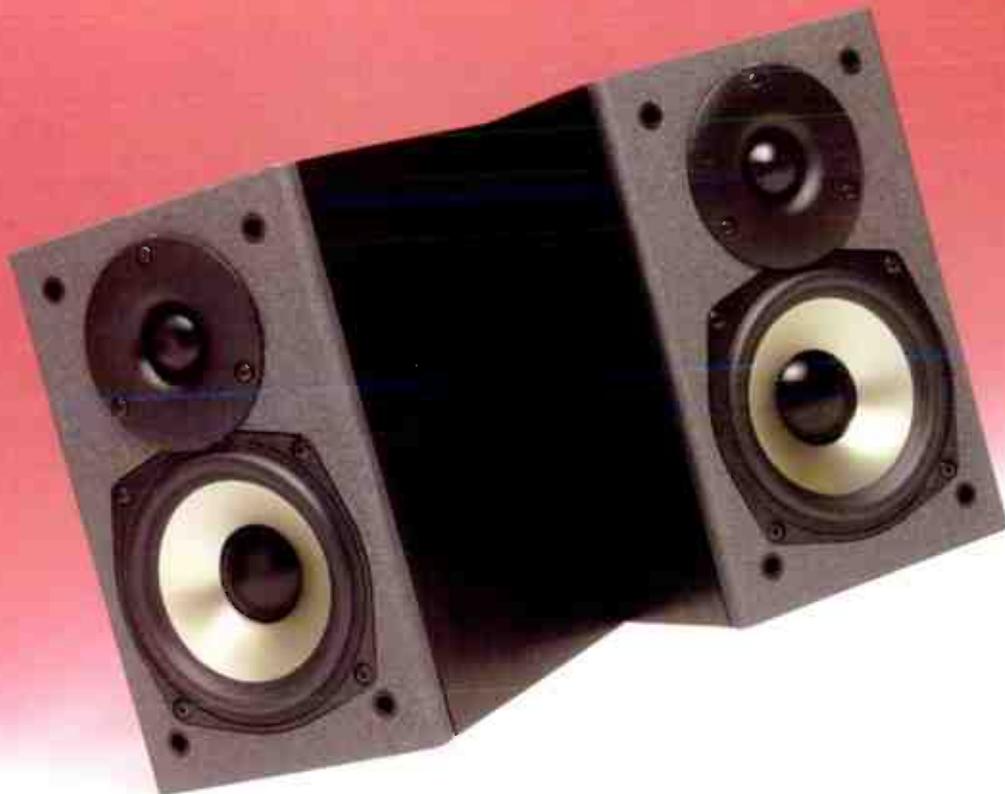
www.quadhi-fi.co.uk

FOR

- impressive soundstage
- good bass weight
- build quality and finish

AGAINST

- midrange definition
- vocal colouration



ALR JORDAN ENTRY Si £265

The smallest units in the test, the ALR Jordan Entry Si are also the entry point for ALR Jordan's base range, which continues with a larger standmounter and two floorstanders. As per all their models, the Entry Si is voiced by German loudspeaker design guru Karl-Heinz Fink and handbuilt at the ALR Jordan factory near Dusseldorf. They also make use of metal-coned drivers designed by Ted Jordan; in the case of the Entry Si this is a 4in (110mm) bass/mid driver loaded by a rear-firing port allied to a 1in (25mm) soft dome tweeter.

The Entry Si measure 215x130x190mm (HxVxD), so they are truly diminutive, but their build quality is impeccable. Only single-wiring is offered, and the Entry Si come in a Black, Beech or Silver colour options with, unusually, a choice of black or blue grilles. ALR Jordan and their UK importer, Uberphon, also offer matching stands, the ES72s, at a cost of £200, and experience of these last year with the Classic 1s suggests they are definitely worth considering to go with your Entry Si loudspeakers.

SOUND QUALITY

Another pair of loudspeakers that really do belie their size, the Entry Sis are a truly accomplished design from ALR Jordan. As with all their loudspeakers I have heard to date, the Entry Sis have a touch of class and sophistication that

you would normally have to spend considerably more to experience from most other manufacturers. Across the midband, the Entry Sis project well into the listening environment and allow material to lay itself out with impeccable accuracy. Although a little constrained in terms of absolute left to right image width, they carry vocalists very well and allow the true nature of instruments to shine through.

At the top end, the ALRs are crisp and clean, although slightly lacking the insight of the Mordaunt Short and Acoustic Energy units. They have a

couth sense of clarity that really makes them a joy to live with but can be a tad restrained when asked to really let rip - not necessarily a bad thing some might say...

Bass-wise, the good old laws of physics do come into play to reveal that the Entry Sis are indeed a little lacking in outright extension terms, but they could not be faulted in terms of upper bass precision and detail and I would certainly not describe them as lightweight. Reggae fiends would be well advised to look for bigger boxes, but everyone else should be pretty well satisfied.

MEASURED PERFORMANCE

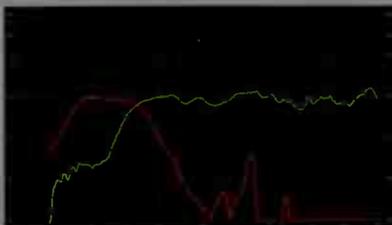
The ALR Jordan Entry Si loudspeakers measure well, as we have come to expect from the company in the past. The frequency response output is even with just a hint of boost in the vocal region and a touch of dip in the 2-5kHz region where the ear is most sensitive - very sensible tuning.

Bass output from the small enclosures is well balanced, with the main driver rolling off at just over 100Hz, to be supported by a small diameter port operating over a wide frequency range down to its tuning frequency of 60Hz or so. The Entry Si will not be a headbanger but should be solid enough at the bottom end.

Electrically, the ALR Jordans have an even output with an average measured impedance of 10.1 Ohms, dipping to a minimum of around 7 Ohms, so they are easy to drive and will work fine on an 8 Ohm output tap. This helps somewhat in terms of their low sensitivity of 82dB, which means they

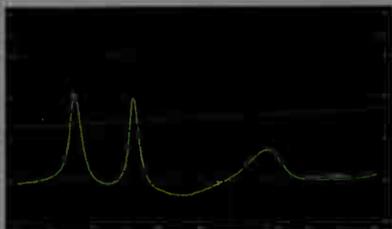
will require at least 50 Watts to really sing. AS

FREQUENCY RESPONSE



Green - driver output
Red - port output

IMPEDANCE



VERDICT ●●●●

A well thought out, polished and enjoyable design that makes the very best of diminutive dimensions.

ALR JORDAN ENTRY Si £265

Uberphon

☎ +44(0)1730 261924

www.uberphon.co.uk

FOR

- composure
- crisp top end
- excellent vocal projection

AGAINST

- rather bass shy
- can be a little restrained



USHER S-520 £320

Something of an old friend here at this magazine, the Usher S-520s are the starting point of the Usher range, one that meanders through the weird (the range-topping D2, featuring two 15in drivers and a big horn) and the wonderful (the rather spiffing new Dancer Beryllium range), covering around twenty nine different models!

The S-520s are compact standmounters measuring 300x180x265mm (HxWxD) and tipping the scales at a healthy 7kg. At their heart is a 5in (130mm) transparent XP-coned bass driver and a 1in (25mm) soft dome tweeter, connected via a crossover that operates at 2kHz and allows for biwiring. An excellent range of finishes is available, including Mahogany Cherry and Golden Cherry woods, plus some striking gloss colours that add to the price, namely White, 'Enzo' Red, 'Gallardo' Yellow, Silver and the rather lovely Black of our review samples.

SOUND QUALITY

It is often with some trepidation that we revisit an old favourite, just in case it turns out that our memories have been playing tricks and we end up thinking, "how ever did we like that?" But from the opening bars of Sarah McLachlan's 'Building a Mystery' I knew I was going to enjoy time with these old friends, and so it proved to be. Quite how Usher have come up with

a compact budget loudspeaker that sounds like something bigger and much more expensive I don't know, but I am delighted that they have.

The S-520s simply take whatever you care to throw at them and immerse you in it completely. Soundstages stretch wide and deep, but also project out into the listening environment like a much larger design. Vocals and instruments sound unfettered and natural, with the Ushers capturing the core essence of whatever they're asked to play.

Across the top end, the soft dome tweeter is crisp and sweet, adding detail and atmosphere but

without obvious artifice. Violins had palpability and emotion without screech and cymbals rang across the performance beautifully.

Even down below, the Ushers excelled, never seeking to stretch more extension than is comfortable from their compact cabinets. All the same, they kick out a punchy, tight and solid low end without the slightest hint of boxiness. Indeed, they capture the essence of different bass instruments with an almost contemptuous ease. All in all, they manage a fine overall result, sounding far bigger than you'd expect from a box of the size, but smooth and engaging too

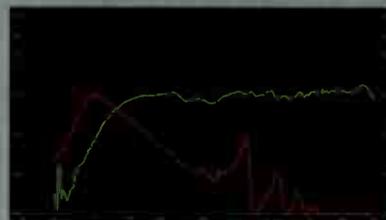
MEASURED PERFORMANCE

Nothing major has changed on the Usher S-520s since we last enjoyed them and they still turn in a very good measured performance. Generally flat across their output bandwidth, which bodes well for an even-handed presentation, there is a little lift at around 15kHz which will add a touch of sparkle to proceedings.

Bass from the small driver rolls down below around 80Hz and is helped out by the port, which has a narrow area of operation centred around 50Hz. Port output is clean, which is best when a front-firing design is utilised, and I would expect the S-520s to be nicely tight and punchy at the low end.

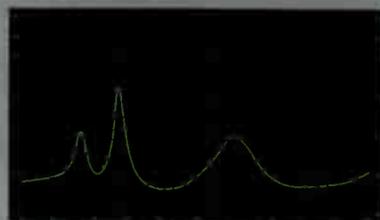
Electrically, the S-520s offer an average measured impedance of 9.1 Ohms, reaching a minimum of around 6 Ohms in the 200-300Hz region. They are not a difficult load to drive and with a respectable sensitivity figure of 84dB, should work well on a wide variety of amplifiers. AS

FREQUENCY RESPONSE



Green - driver output
Red - port output

IMPEDANCE



VERDICT

Captivating and thoroughly capable loudspeakers that still punch well above their weight.

USHER S 520 £320

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FOR

- dynamic nature
- superb scale & composure
- tight and solid bass
- value for money

AGAINST

- still nothing...

So, with another interesting group test completed, it would appear that we audiophiles are in no way being short changed by the miniaturisation of our equipment that I alluded to in the introduction. If these little loudspeakers are anything to go by then one could almost ponder the point of going for anything larger, as all turn in an impressively larger-than-life performance. It appears that the days of small, insignificant loudspeakers making similarly small and insignificant noises are well and truly past - a good thing, say !! But in true, non-PC tradition, we at Hi-Fi World have no truck with that old 'it's not the winning; it's the taking part' silliness, and the important thing is to find out which pair are going to take the chequered flag...

Sadly, the first contender to limp back to the pit lane with an overheated gearbox are the Quad 9L2s. Certainly they are very well made and beautifully finished, and I had high hopes for them after thoroughly enjoying their larger brothers, the 11L2s, last year. Unfortunately, whilst the 9L2s do indeed do a very good impression of much larger boxes, they struggle to pull the details from music and seem to add a noticeable colouration to vocals that makes singers sound rather strange at times. Their uneven frequency response seems to suggest that the 9L2s are not tuned quite as well as they could be and, whilst I would suggest that the little Quads have all the basic ingredients of a successful design (sturdy build, quality driver components etc.), a little more work is needed to really fulfil their potential.

Moving up the leader board we find the ALR Jordans and the Mordaunt Short Avant 902is. Personally I find that it really is impossible to do anything other than admire ALR Jordan loudspeakers as they are all superbly designed by a gentleman who really knows his onions, Karl-Heinz Fink, and I have found their designs nothing less than composed and enjoyable to listen to in the past. The Entry Si is no exception and turns in a very well controlled performance that will add a touch of cultured polish to any system. Where they are rather limited in this company is purely as a result of their size. This curtails bass extension, even in comparison to the other, hardly large, contenders and does mean the ALRs can be a little shy when it comes to really letting their hair down.

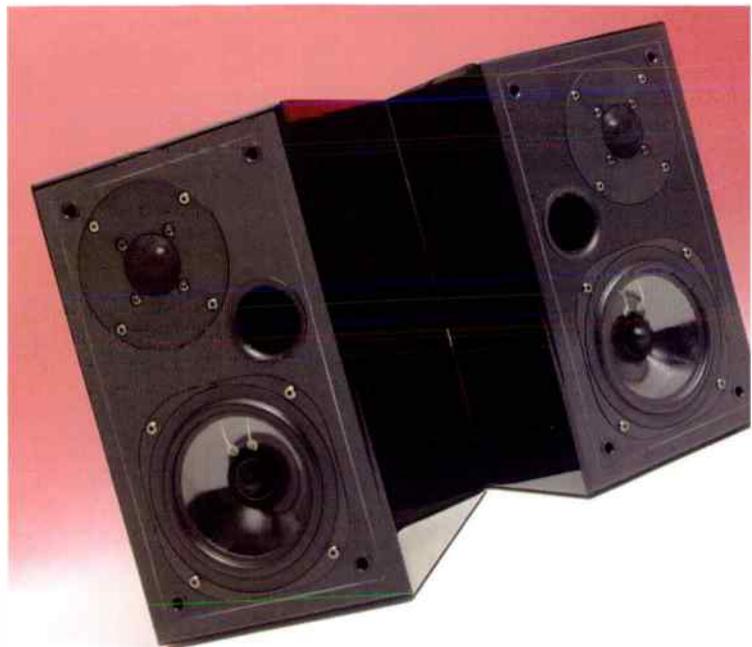
Such shyness is not something

the Mordaunt Short Avant 902is suffer, from however. These loudspeakers are confident, assured and with highly commendable punch for their size. They thrive on detail and will bring absolutely everything out of your recordings that you need to hear. They strike an excellent balance between not sugar-coating any recording deficiencies but at the same time not reducing bad recordings to a complete and utter mess. Where they fall slightly behind, both here and in comparison to their larger brethren, is that they do seem to add something of a sheen to the very top end, making vocalists just that little too husky and breathy at times. They could also do with a touch more bass detail, but still represent astounding value for money at £150.

Very similar in character to the Avants are the Acoustic Energy Aegis Neo 1s. This is something I have noticed before with the pre-'i' Avant 902s and the Aegis Evo 1s and it still holds true here, to my ears at least. This is definitely no bad thing, as the AEs proved to be equally enjoyable but added in a better level of clarity and see-through insight to the top end. This removed the Avant's sheen and gave a clearer window into the music which, along with an impressively capacious soundstage meant the Neo 1s really are very impressive and would be worthy winners.

Sadly for AE, the Usher S-520s weren't having any of it. Despite a recent price increase to £320 these are still absolutely astonishing loudspeakers that basically sound far more expensive and sizeable than they have a right to! From the taut and solid bass, through the composed, detailed and emotive midrange and topping out in a sweet and crisp treble, I really can think of no area to which I can point a finger and complain. They have an even-handed neutrality to them which means they do not favour any type of music over another - they love it all.

Ultimately, the competition is hot on the



heels of the Ushers and there are some very accomplished compact loudspeakers on the market, as this test shows. However, for the time being, the S-520s still maintain their top spot on the podium.

NOEL SAYS -

Usher's S-520s are still a great choice, I feel. What hit me immediately on hearing them again for this review is their superb bass; I have never heard such good quality, nor such depth from a cabinet so small. The bass line opening Angelique Kidjo's 'The Sound of the Drums' strode forth with a liveliness and strength out of all proportion to the S-520s diminutive size: it was difficult to match differences in scale between the two. This is the S-520s most conspicuous strength, a low frequency performance out of all proportion to size and price.

Vocals and instruments seemingly lack any form of intrinsic colour. I found vocals utterly convincing in this respect. Also obvious was superb resolution of the different timbral properties of instruments; the speaker doesn't get in the way with its own sound.

Getting critical - and personal - there are a few details to watch out for. I like a smooth, integrated sound and if I had to live with the S-520s I would break out the soldering iron and pull the tweeter down a bit, for it is just a little 'obvious'. I detected the slight grittiness of crossover distortion in our (otherwise excellent) Anatek A50R, something treble lift emphasises. Swapping in a Naim SuperNait cured this, but the S-520s remained well lit at high frequencies and demand a smooth amplifier.

This effect and, I suspect, the distance of the tweeter from the woofer, made Nigel Kennedy's violin sound a little reedy and divorced from accompanying instruments. To put this into perspective though, most modern loudspeakers fail to handle violin properly.

I noticed too that Jackie Leven's rich vocals seemed a little leaner and drier than I know them, due I suspect to a plateau dip in frequency response from 300Hz-600Hz. Again, this was a small point, and I am being critical.

In identifying small weaknesses I am attempting to give you the full, unexpurgated picture of what to expect from Usher's superb S-520. Loudspeakers costing many times as much are commonly more blemished than this excellent mini. It will do justice to fine partnering equipment and, for the price, gives you some leeway to partner it well. Enjoy. NK

Sizing Up

Small loudspeakers can sound surprisingly large - providing you set them up to get the best from their diminutive dimensions. Noel Keywood explains how...

Baby loudspeakers may represent the budget end of high fidelity, but they do a surprisingly good job all the same. Small cabinets, properly contoured can give wonderful soundstaging. They are also rigid, resonate little and lack the colouration of tall floorstanders, whilst small bass/midrange units give clean vocals. All the same, the breed has drawbacks. Here's how to make the most of those strengths whilst minimising the weaknesses.

POWER AND SENSITIVITY

Contrary to what you might expect small loudspeakers need a lot of power to go loud. You'll see in our group test that a baby loudspeaker like the ALR Jordan has a sensitivity of just 82dB from 1 Watt measured at 1m - and this is low.

The solution is to use a powerful amplifier, or so it might seem. Unfortunately, this is where you start to bump into some immutable laws of physics that frustrate every attempt to overcome them. Wind the volume up playing Slade's 'Merry Christmas Everybody' and that baby loudspeaker will start to sound strained. This is because the bass unit must move air. You'll see the cone manfully covering big distances in its valiant attempt to do so, but this isn't a good way to do it.

What you end up with is a lot of distortion, which is where the strain in the sound comes from. Powerful amplifiers might come small and cheap nowadays, but what seems like a simple, affordable solution carries penalties. You cannot therefore just pump a lot more power into a small loudspeaker without suffering strain and possibly a blown loudspeaker in the longer term. All that power is going into a coil of wire - the voice coil - that heats up like an electric fire. Driven too hard it just burns out... There's no easy way around this. In a nutshell, small loudspeakers

don't like going loud. They are for small rooms and in this context manage well enough.

SIZE MATTERS

Testing loudspeakers shows us there is a considerable performance difference between miniature loudspeakers and medium sized stand mounters, by which I mean models standing around 30cms (12in) high, with a volume of 25 litres or so. They may loom a little larger in the room, but the payback is you get disproportionately more bass, as well as higher sensitivity and better power handling. So if you can, shoehorn larger cabinets into your listening room. Do not be seduced by small size.

If you put large standmounters on wall shelves, the bass is likely to be overpowering, but there is a trick that can overcome this little local difficulty. Most loudspeakers are ported; put a foam bung in the port. This reduces bass level and increases damping. It may just allow a larger cabinet to work satisfactorily on a wall shelf. Look at B&W's 686 loudspeaker



B&W supply a two-part bung to tune bass output of their small 686 loudspeaker; insert bung for wall mounting. Leave it out for stand mounting. If you want to biwire, remove the links, as shown at right. Remove the small plastic plugs too when 4mm plugs are used...

pictured here, supplied with a two part foam bung for trimming bass.

Another approach worth considering I feel, is to use a bass tone control (argh - blasphemy!) to trim back bass. The success of this depends upon the control's trim characteristics. Modern hi-fi amplifiers are a lot better here than those of the not too distant past. Look at

the bass cut introduced by setting the NAD C315BEE bass control to -1. This provides shelf cut below 200Hz without upsetting frequencies higher up - just what's needed. This allows bass to be trimmed back appropriately if a bigger loudspeaker is used close to, or against a wall. This way you get better power handling, less bass distortion and the benefit of higher sensitivity. You will still suffer rear wall interference effects though (see below).

Alternatively, use stand mounting. Put the loudspeakers on temporary stands, initially placed against the wall. Listen to them, then progressively move the stands with speakers out into the room, choosing the position that strikes the best balance between bass level and soundstage quality.

WALL MOUNTING

Really small loudspeakers are usually intended for shelf mounting, as a rear wall aids bass output. It isn't an ideal position; reflections off the rear wall interfere with the forward sound, causing successive cancellations around 300Hz, if distance to the rear wall is around 12 inches for example.

There is no easy way to combat this. Stereo staging is degraded and the sound is not as smooth as possible. But it is the best position for strong bass. In a 12ft long room, for example, the lowest mode is 45Hz and you will drive it most effectively by wall mounting, ending up with a nice deep thud.

If you find wall mounting subjectively acceptable, then ensure the shelf is strong and rigid. B&Q sell suitable cast iron kitchen shelf brackets.

If the loudspeaker has a rear port a few inches will be needed behind it to avoid chuffing sounds. Many small loudspeakers have front ports so they can be placed hard against a wall, the drawback here being that a front port often makes internal cabinet colouration audible.

It isn't uncommon for manufacturers to reduce bass output a little in loudspeakers designed for wall mounting, to reduce possible room boom. In cases like this wall mounting is usually the only option. The handbook invariably makes this clear.

You can use the bass control to trim output to taste, bearing in mind that turning bass up will cause strain and may not work too well.

POSITIONING

Loudspeakers are usually placed 8ft or so apart, at ear height and toed in to point straight at the listener. Common wisdom has it that this is ideal. However, our measurements

show that sometimes loudspeakers are designed to face straight down the room, giving too much treble if pointed directly at the listener. Stereo imaging is a little less sharp when pointed straight ahead, but the listening position is less critical. It's always worth experimenting here; in particular coaxial loudspeakers like Tannoy Dual Concentrics and KEF Uni-Qs usually sound a little better listened to off axis.

If you use stands, fill hollow ones with sand or shot. This makes the stand stable and acoustically inert. It is common to spike a stand into a wooden floor, often through carpet. With bare wood floors you soon end up with what looks like a concerted woodworm attack, these days guaranteed to knock so many grand off anything other than a cowshed that you may consider using Blu-tak as a less damaging alternative. You can also buy small spike 'cups' with indentations on their upper surface to accept and anchor the spike, or you can use a coin under each. The general idea is to ensure the loudspeaker is firmly anchored, as this gives better defined transient attack and cleaner dynamics. Of course, the loudspeaker must sit firmly atop the stand too, so the whole assembly doesn't move. Top spikes are often used for this purpose. Be careful though, as top spikes, as well as floor spikes, can inflict nasty wounds. They are best not used where children are around.

CABLES

Always use dedicated loudspeaker cables. We make up measurement cabling using heavy duty Maplin Oxygen Free Copper (OFC) Shark Wire, silver soldered into quality connectors and it sounds quite hazy against even a budget loudspeaker cable from Chord Company or similar. Good cabling really does help, especially when the cables are long.

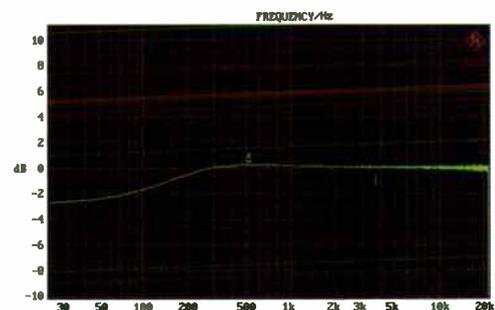
Biwiring helps in long runs too; often the bass conductor comprises many fine strands, whilst treble is carried in a few thicker strands. Most loudspeakers nowadays are designed for biwiring, having removable links. The impedance characteristics of bass and treble crossover sections within the loudspeaker serve to ensure each cable conducts current only over its frequency of operation, which offers benefit to the sound.

Another handy feature of biwireable loudspeakers is that, if they sound too bright, they can be tamed by placing a resistor in series with the treble section, starting out with 1 Ohm and increased in 1 Ohm increments. Buy a pack of five or ten

1 Ohm resistors for this, 1W Carbon Film type.

AMPLIFIER MATCHING

Small loudspeakers are little different to large ones when it comes to amplifier matching. Nowadays some effort is made by most loudspeaker designers to ensure the electrical load presented to an amplifier is reasonably 'friendly' so matching isn't a problem. Transistor amplifiers produce more distortion into 4



Turning bass down to -1 on the NAD315BEE introduces shelf bass cut. This neatly compensates for wall mounting a large-ish loudspeaker, a scheme with many benefits. Stand mounting is always the best choice though.

Ohm than 8 Ohm loudspeakers, but the increase isn't usually great, from something like 0.018% to 0.022% for example - not enough to say that 4 Ohm loudspeakers are a problem.

A majority of modern loudspeakers use 4 Ohm bass units in order to maximise sensitivity. Whilst amplifiers may have an easier time with 8 Ohm loudspeakers, much of their inherent capacity to deliver power, such as a big mains transformer and beefy heatsinks, goes wasted. So on balance it's probably best to choose 4 or 6 Ohm rated loudspeakers, especially when they are small, as it improves sensitivity, and modern amplifiers are designed to cope.

Small loudspeakers are all about getting good sound, usually at a low price, in a small room. It can be done - and very well. Choose your components carefully and spend a little time and cash on extras like stands and cables and you can get a fantastic result, without breaking the bank.



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REFERENCE

Thai Silk

An unassuming 60W power amplifier from Thailand surprises Noel Keywood, with both its novelty and its sound...



Now that valves have become all but a mainstream occupation for small audio companies around the world - especially outside the UK - there are endless variants of design, most of which seem to arrive in our office sooner rather than later! This amplifier, the Silk Glowmaster KT-88, is up amongst the good and the great in my view. It's a fascinating design with more going for it than most - and a king's ransom isn't required before ownership is yours.

Briefly this is a 60 watt stereo power amplifier from Bangkok, Thailand, priced at £1,699. Thailand isn't a place associated with valve amplifiers, nor hi-fi if it comes to that, at least in the Western mind. But the whole Far East region is awash with consumer electronics and the Glowmaster shows an understanding of underlying basics that reflects this, giving me hope that it could just offer a little more than the usual thermionic fare we see so much of nowadays. Happily, it was hope fulfilled!

The Glowmaster is big. It stands 230mm high at the front panel, 320mm wide and a substantial 470mm deep. The weight is 28.5kgs, or 63lbs, which is a two man lift for most of us. Most of it is taken up by a huge transformer set, comprising two output transformers and one mains transformer, flanked by 5H smoothing chokes. The valve complement is three Russian 6N1P double triodes per channel, followed by KT88 Kinkless Tetrodes in push-pull for each channel.

This is a reasonably conventional line up, common nowadays because

the KT88 is a superb 'modern' audio output valve - rugged, with a great sound and not overly expensive at around £22 apiece. You typically get 40 watts from a pair, but here is where the Glowmaster differs from the herd: it squeezes 65W from KT88s by using what is known as 'fixed bias'.

IN THE BALANCE

What I found really interesting is that the Glowmaster is a true all-balanced amplifier, from input to output. There are very few of these around at present, solid-state or valve, but valves lend themselves to the topology and it is an interesting one - one with a future I believe.

In a nutshell, balanced amplifiers cancel certain forms of distortion and noise. The same property exists in balanced connecting cables and it's an idea that works, generally resulting in a more concise sound, free from a slight sense of fuzz and vagueness that, in direct comparison, colours unbalanced connections.

The same benefits are there to be had in amplifiers, but at present amplifiers are unbalanced - except this one. It has a set of balanced inputs, via XLR sockets as usual, and the loudspeaker outputs (i.e. transformer secondary winding) are balanced around ground too, measurement showed. As balanced preamplifiers are as rare as hens teeth, Silk also fit a pair of standard unbalanced phono inputs.

Silk make a variety of balanced preamplifiers but none were available in the UK at the time of this review, so I used an unbalanced, tweaked World Audio Design KLPI. The Silk

preamplifiers are pricey, at £1,600 - £2,100 I was told, but this is less expensive than the fabulous Melody Pure Black 101D, price £3,295. I reviewed in our March 2007 issue.

There's no special difficulty in producing an all-balanced valve preamp so less expensive designs may become available in future. However, there is currently no great demand either, because few power amplifiers or sources are balanced. Some high end Marantz CD players have balanced outputs, and the Aqvox 2Ci phono stage is all-balanced. If you are interested in the idea of running LP balanced, go to <http://www.aqvox.de/phono.html> for a discussion on the subject.

I converted my SME312 some time ago and look forward to running an all-balanced system from input to output, because the more I hear of balanced designs - including this one - the more I believe in the principle. But whatever preamp is used, it needs to have gain because input sensitivity of the Glowmaster KT-88 is low.

There are no front panel controls. The power switch is at rear, which is inconvenient. Switch on is unremarkable - no thumps or thrums - and the display, which shows the bias current for each valve, lights up blue. Our amplifier came direct from Thailand and each valve was matched to its base with removeable



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sticky labels. After plugging them in, the amplifier was left to run for 30 minutes and then bias adjusted, using a small screwdriver. Silk recommend 50mA per valve. Fixed bias amplifiers, where the bias must be adjusted (!), are usually adjusted initially and every few months using a multimeter, which is inconvenient. With this amplifier you can at least see quickly and easily whether bias adjustment is necessary. If it is, then a slow twiddle with a small screwdriver is all that is needed to restore balance in the output stage.

Externally, the Glowmaster KT-88 is a fairly undistinguished design, by Shanling standards anyway. Internally, it is very well built though, part hard wired, part circuit board, all components being of high quality. It did its job quietly and unobtrusively I found. However, the job it does is pretty impressive.

SOUND QUALITY

Initially I wondered where everything had gone with this amplifier. Half of the musicians playing in Santana's 'Yaleo' had walked off for a tea break, or so it seemed. Worse, not only had the performance suddenly lost musicians, there was little apparent treble; the sound was dark, seemingly silent at high frequencies. Having measured the amplifier, I knew it wasn't errant, so I sat back to take in more. And what a fascinating experience it was...

Suddenly, it struck me that I knew exactly what was going on, but I had just never heard the effect in an amplifier before - especially a valve amplifier where everything is much more apparent than a solid-state design. 'Yaleo' as a performance had been cleaned up dramatically, becoming starkly clear, superbly concise, the muddle that passed as complexity expunged. I must admit to feeling a little sense of chagrin here; I should have known better, but then whilst I use a valve amplifier at home by choice, I know only how conventional ones sound and the sort of differences to expect between them. This broke out of the mould; it is a world apart - and mightily impressive.

There was no lack of treble. Strummed guitar at the start of Santana's 'Put Your Lights On' demonstrated this. The guitar's strings had real bite to them, with a gloriously strong harmonic spread. The amplifier simply lacked the fussy background detail that invariably garnishes this track.

Does it lack insight, I asked myself? No, the opposite. I could hear further into Jackie Leven singing 'Boy Trapped In A Man' than I am used to, his delivery to the microphone, the slight echo from the studio and some artificial reverberation. The Glowmaster KT-88 teased it all out, erasing muddle and mess to reveal a stark but full-bodied sound that was gloriously large.

Images on the sound stage were sharply defined from far left to full right, making the start of Steve Earle's 'Waiting On You' a gripping experience as a firmly anchored, powerful kick drum stabbed out in front of me. This was helped by the power and sense of control of the Glowmaster's bass. Here is a valve amplifier without soft bass. It has the dynamic contrast valves are known for, but it exploits it with grip, downward into the bass and low bass regions. Our in-house Spendor S8es were persuaded to do things they had rarely done before on the end of valves.

It wasn't just Rock that fared well. Spinning Tchaikovsky's Symphony No 6 on CD revealed the Royal Philharmonic Orchestra in a wide sweep between the loudspeakers, with horns, strings, woodwind and timpani sounding full bodied and rich in timbre, but clearly positioned in front of me. The Glowmaster KT-88 capitalises on the natural ability of valves to convey the timbral properties of instruments, whilst at the same time uniquely cleaning the muddle from between them, as



it were, to light them smoothly and clearly in space of their own. It was a delight with complex Classical works, as much as it was with Rock.

CONCLUSION

Considering its broad spread of ability, and its uniquely dramatic sound, the Glowmaster KT-88 is quite a package - especially at the price. Whatever way you look at it, as it stands or as the basis of an all-balanced future system, this is a fine amplifier. It has all the punch and power of solid-state, with the superb naturalness of valves. A compelling combination if ever there was one.

VERDICT ●●●●●
Dramatic clarity and superb dynamics make this a class-leading star.

SILK GLOWMASTER KT-88 £1,699
Acoustic Perfection
+44(0)845 1668364
www.sacthailand.com

FOR

- unrivalled clarity
- expressive bass
- wonderful imaging

AGAINST

- large size
- needs regular adjustment
- rear power switch

MEASURED PERFORMANCE

The Glowmaster KT-88 has one output winding, suitable for 4-16 Ohm loudspeakers, the manufacturers Silk say. A single, untapped secondary winding is more tightly coupled than a 4 Ohm tap of an 8 Ohm winding, where half the copper goes unused; World Design transformers use this principle, being optimised for 6 Ohms. Matching to the widely varying impedance of real loudspeakers is better. The Glowmaster KT-88 delivered 66W into 8 Ohms and 64W into 4 Ohms before clipping (overload), into our balanced loads/test equipment.

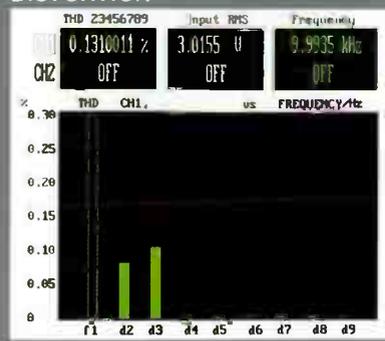
The amplifier isn't a low distortion design, as triangulation (3rd harmonic) creeps in progressively as level increases, the 1% limit being 20 W (8 or 4 Ohms). This isn't due to the transformer cores, as results were identical at 40Hz to those at 1kHz and 10kHz. Distortion was predominantly third harmonic, with no crossover or higher order components at all. The distortion pattern was stable with level and frequency, a good sign. Silk's quoted distortion figures were not met, except at 1W (0.03%), but this isn't especially consequential, due to the stable pattern, absence of high order components and low bass distortion. Results were identical balanced and unbalanced.

Silk claim their balanced transformers are wideband and they proved extraordinary, running cleanly from 4Hz all the way up to an amazing 110kHz (-1dB). Sensitivity was low at 2V and damping factor a normal 3.6.

The Glowmaster KT-88 turns in varying results. It measures well enough though, taking into account dynamic behaviour. NK

Power	65 watts
Frequency response	4Hz-110kHz
Separation	82dB
Noise	-88dB
Distortion	0.12%
Sensitivity	2V
Damping factor	3.6

DISTORTION





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CLEARAUDIO SMART MATRIX CLEANING MACHINE £460

For some people record surface noise is a positive - it has a nostalgic feel that takes folk back the halcyon days of stacking well worn seven inch singles on their Dansette. But for others it's one of the biggest drawbacks of analogue reproduction, being nothing but interference with the music. This problem is not insurmountable however, as there are

various products on the market which claim to remove most - if not all - of those annoying snaps, crackles and pops. Clearaudio Smart Matrix is one such...

The latest and most affordable device in the company's range of four (priced up to £3,159 for the Double Matrix), this machine works on the familiar principle of a record clamped to a slowly rotating turntable, having a cleaning fluid sucked out of its grooves through an arm that has felt pads and a suction slot in it.

The fluid is then deposited in an onboard reservoir to be emptied later. There's nothing new in this technology, but Clearaudio have brought their usual exemplary build standards to a new sector of the market place. The Smart Matrix is a compact unit measuring 400x380x240mm and weighing 13 kg, finished in a pleasant pale grey with an acrylic lid to protect the platter and cleaning arm when not in use. At the front are two switches

- the top one controls the direction of rotation of the platter, and the second switches on the vacuum motor. At the back are the mains IEC socket and a long tube for emptying the used fluid container.

It's easy to use - just apply the cleaning fluid with the brush provided, then vacuum off the residue, hopefully resulting in a clean, and crackle-free groove. Really dirty records may take a couple of applications to remove ingrained dirt. Very effective in use, most of the records came out of the process with a totally silent surface, and those that were damaged still played with far less noise than before. It's not a miracle worker - it won't restore a damaged playing surface, but will bring most vinyl back to a playable condition, easily and effectively. Even new records benefit, gaining a wider, deeper and more detailed soundstage thanks to it hovering out the sound-degrading Mould Release Agent depositing in the grooves during manufacture. The Smart Matrix is well made, easy to use and does an excellent job. **TB** [Contact: www.audioreference.co.uk]

soundbites

CHORD COMPANY SIGNATURE £550/M

Although we at *Hi-Fi World* don't subscribe to the notion that cables are a universal panacea, when you've got the rest of your system right (and that's where you should concentrate your thoughts), getting the right wires can make a big difference to a system's performance. Think of them as not making things sound better, but stopping things sounding worse - superior cables let more of the signal pass without interference and coloration. Chord Company claim their premium priced Signature is special for the way it shields the delicate audio signal from the outside world, and how it preserves all of the micro detailing and low level ambience.

Construction-wise, Chord use a balanced concept with two individual solid-core conductors, silver plated. These are surrounded by no less than three layers of shielding: first a braid claimed to be a "unique" flat braid, second layer a ribbon type

braid, and finally a conventional braid. What marks the Signature out from the norm is these braids are not connected to the superb low mass phono plugs, but electrically 'float' - just the solid core conductors connect to the 'plugs. There is a little ground wire option, which can be fitted to the end of the Signature, and acts as a 'drain'. In a really high end system we have found this does indeed increase the scale of sound, reducing noise even further, but at a very marginal level. To counter this, we've also found that using the ground wire very marginally damps the upper mid, although the effect is subtle and clearly system-dependent.

It's hard not to fall in love with the Chord's smooth and focused sound, which manages to be both on a great scale and highly atmospheric, while still maintaining a precise, beautifully detailed sound stage. Treble details are never forced, unlike some cables that seem to emphasise the upper treble in crude way whilst claiming detail enhancements. Not



so the Signature. Yes, it's expensive at £550 per metre so shouldn't be even considered even in respectable mid-fi systems, but for those wanting a smooth, neutral and self-effacing bit of wire for a high end set-up, there are few better. Only the fact that, currently, there is no balanced version detracts. **HB** [Contact: www.chord.co.uk]



Adam Smith takes a break from audiophile esoterica to live with two DAB/FM/CD mini systems from Marantz and Yamaha...

One for All?

Those unfortunates who have not embraced our hobby generally think audiophiles are a funny lot. From those of us who are fans of those old LP things ("can you still buy them?") to the cable connoisseurs ("but it's just a bit of wire"). I think they think we are a strange bunch by and large, and reserve a certain level of scepticism about our enthusiasm for some strange, unexplained reason.

Of course one of the biggest bugbears has to be the appearance of the equipment. Whilst manufacturers are taking more and more care over the styling of their products, most non hi-fi types still think our precious amps, CD players, turntables and loudspeakers are, mostly, big and ugly. Now, we all cope with this in our main systems but I think even the most hardened audiophile would

concur that something bulky and indecorous really is out of place for that second system for the bedroom, study or dining room.

Fortunately, quite a few manufacturers are seeing it this way too, so we no longer have to suffer something visually and aurally offensive from our local high street fridge/ washing machine/ audio emporium in order to enjoy the radio or a CD whilst busying ourselves with some other task.

The Pure Legato II I reviewed back in our September issue is a fine example of such a compact but fine performing system and, no sooner had the ink dried on the review, than Yamaha announced an updated version of the CRX-M170 system that I mentioned in passing. Consequently I duly sent for one and, when a Marantz CR-601 subsequently landed on the doormat as well, the

scene was set for a test!

Considering the Yamaha first, your £199 buys you a very neat and well specified unit. Measuring 110x210x359mm (HxWxD), the M170 is indeed diminutive, but fairly sturdy at 4.4kg. Inside, Yamaha have fitted an AM/FM and DAB tuner with 10 DAB and 30 AM/FM presets, plus a CD player and an amplifier rated at 25 watts per channel into 6 Ohms. At the rear, you will find suitable aerial socketry for the tuners, plus phono sockets for tape in and out, Aux 1 in and out, and Aux 2 in. There is also a line level output, controlled by the volume control, for a subwoofer. Loudspeaker terminals are decent quality binding posts that also accept 4mm plugs which is very good to see, especially when the £700 DSP-AX861SE surround sound amplifier we reviewed in October doesn't even boast these!

The Yamaha retails on its own for £199, but Yamaha also offer a pair of matching loudspeakers, the NX-E300s, which retail for £119 per pair and come in a very smart piano black finish. Making use of a 4in (110mm) plastic-coned woofer and a 1in (25mm) soft dome tweeter, the NX-E300s come complete with a length of get-you-started basic wire but are also fitted with decent gold plated binding posts, so you can satisfy your inner audiophile with a cable upgrade if you really cannot resist!

Visually slightly larger, at 146x210x336mm (HxVxD), and heavier at 6kg, the Marantz does boast a touch of extra solidity to it, as one might expect from its higher price. Facilities are very similar to the Yamaha, but with 59 DAB presets and 40 on AM/FM. Power output is slightly higher at 30 Watts into 4 Ohms and the CR-601 offers a similar range of connections, although given fancier labels, namely Tape in/out, MD in/out

like 'Building a Mystery' the Marantz seemed to become a little shy once again, with the bass line recessing into the mix somewhat.

Switching to the Yamaha showed no such problems, however. I had previously attributed the rather light bass to the loudspeakers, but the CRX-M170 showed that this was not the case, as it endowed them with punch that made them sound quite a bit larger than they had previously. The Yamaha also smoothed out the rather brash top end of the Marantz and sounded much happier with rockier pieces of music, as well as densely recorded tracks such as Symposium's 'Blue'. This track starts off quietly with a gently strummed electric guitar, before building up to something of a crescendo with each chorus. Through the Marantz this became just a little uncomfortable but the Yamaha remained composed and unflustered.

Where the Marantz did score

was solid and well defined within the soundstage and even had the makings of atmosphere around her - very impressive stuff!

On FM the gap was much closer, both units being rather hissy in our Central London office but offering a similar performance to CD. In



Yamaha's optional NX-E300 loudspeakers are well worth considering.

other words, the Marantz was nicely detailed and expressive, but rather splashy, with the Yamaha being more reserved but smoother, and with a tighter low end.

Briefly substituting the Yamaha loudspeakers for my favourite Usher S-520s brought an extra level of detail and sophistication to each unit, whilst maintaining their essential characters. In comparison to these superb units the Yamaha NX-E300s did rather lack body and atmosphere but they are infinitely better than most loudspeakers supplied with these sort of compact systems (see the Pure Legato II review!). If you cannot find the extra £30 for a pair of Mordaunt Short Avant 902is, or find them just too big for your bookshelf, then the NX-E300s are a worthy choice in their own right for £119.

CONCLUSION

All in all, both the Marantz CR-601 and Yamaha CRX-M170 are very fine compact all-in-one systems with impressive performance for their prices. The Marantz definitely scores in imagery and, generally, build quality terms but is let down a little by its rather splashy top end. This can, of course, be managed by judicious loudspeaker matching, and the Marantz remains a very fine unit.

The Yamaha however is an absolute belter. Although lacking the midrange projection of the Marantz, it is cleaner at the top end, punchier down the bottom and, let's face it, £150 cheaper. The optional matching loudspeakers are fine designs in their own right and I personally cannot think of a better all-in-one system for the price.

"we no longer have to suffer something visual and aurally offensive from our local freezer emporium..."

and DVD in. Generally, the CR-601 has the edge in terms of build quality, the only disappointments being the spring clip loudspeaker terminals and the rather flimsy CD loading tray...

SOUND QUALITY

Going for the alphabetical method and firing up the Marantz first, through the Yamaha loudspeakers, it got stuck into CD reproduction with gusto. Carlos Santana's guitar on his 'Supernatural' album soared out of the little Yammies and the CR-601 really put the performance nicely out into the room. Bass extension was limited, as might be expected from the diminutive stature of the loudspeakers, but the rhythm of the track pumped along very nicely. Cornershop's original version of 'Brimful of Asha' was crisp and solid, with backing cymbal strikes vivid, if a little splashy.

The good projection of the Marantz's soundstage really came to the fore with material like Sarah McLachlan's track 'Angel', however. Here, her vocals were rendered with excellent emotion and came right out of the loudspeakers in a way that is quite surprising for a compact all-in-one system. Individual bass notes from the start of the track were solid but, when moving to a pacier track

however, was in terms of midrange projection. Through the Yamaha, both Sarah McLachlan's vocals and Carlos Santana's guitar retreated back into the mix a little. Both were still easily distinguishable and well defined, but the Marantz gave them both that extra level of atmosphere that put you right at the heart of the action.

Switching back to the Marantz and tuning on to DAB stations, the CR-601 performed well. Weaker stations still had the bubbling mud effect so common with DAB, but Virgin Radio came in loud and clear with good atmosphere and detail. Once again, the top end was rather splashy and the rather rough and ready nature of UK DAB served only to exacerbate this problem, but generally the Marantz turned in a pleasing performance.

So, what of the Yamaha? Quite simply, the little CRX-M170 turned in one of the best DAB performances I have heard from any unit at any price, comfortably showing the Videologic DRX-601 tuner that we usually use in the office a clean pair of heels! Virgin Radio came through loud and clear, even through the supplied DAB wire aerial and both music and spoken word were clear and concise. My listening coincided with Leona Graham's afternoon show, and she

VERDICT

Sturdy, well built system with useful features and an impressively smooth, expansive sound.

MARANTZ CR-601 £350

Marantz UK

+44(0)1753 680868

www.marantz.com

FOR

- soundstage
- fine tuner
- build quality

AGAINST

- rather splashy top end

VERDICT

Outstanding little system with splendid performance across all sources. Optional loudspeakers are rather good, too!

YAMAHA CRX-M170 £199

YAMAHA NX-E300 £119

Yamaha Electronics UK Ltd.

+44(0)1923 233166

www.yamaha-uk.com

FOR

- excellent DAB
- crisp top end
- punchy bass
- fine optional speakers

AGAINST

- nothing at the price

A new star is born



Each year the European Imaging & Sound Association (EISA) assembles a panel of expert judges from some of the continent's leading hi-fi press to investigate the world's finest technology.

After rigorous evaluation they return to vote on one product in each category that they believe offers not only exceptional levels of performance but also provides incredible value. This year they chose the Cambridge Audio Azur 840A Class XD integrated amplifier.

"...a genuinely novel approach... a highly sophisticated, efficient and attractive-sounding amplifier" EISA citation



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Twice As Nice

Vita's new R2 DAB/FM table radio takes the marquee into stereo sound. Steve Green listens in...

A new company started by the people behind loudspeaker manufacturers Ruark Acoustics, Vita has become an overnight sensation in the world of DAB portables thanks to their unfailingly high standards of design and build in a world where either would be an achievement. To date, it has been the R1 – a small, single-speaker table radio – that's been getting the headlines, but now the company has a new stereo version, the R2, on sale...

The Vita R2 is available in rich walnut or ivory finishes and, at £220, its main competitor is the highly impressive Roberts MP23 DAB sound system, which I reviewed in the September issue. The R2 is certainly a match in terms of styling, as its minimalist design is aesthetically excellent. One thing to bear in mind, however, is that the radio is 34cm wide, so requires a fair amount of space to be set-aside for it.

Encouragingly, Vita is hoping to offer a DAB+ upgrade for owners of both the R2 and its smaller sibling the R1, and although this would require the units to be returned to Vita so that they can replace the DAB module with one that supports DAB+, this would at least give owners the peace of mind that their radios won't become obsolete a few years down the line.

In terms of features, the R2 concentrates mainly on providing connectivity to other devices, as it sports a 3.5mm auxiliary input on the front of the unit to allow it to be used as a playback device for an MP3 player; there are pairs of phono inputs and outputs on the back of the unit; and there is a headphone socket on the front as well.

Other features include three EQ settings and '3D Sound', which I'll return to later. The R2 also provides an alarm clock and a sleep timer, and has five presets each for DAB and FM. Operation of the radio was easy using the buttons on the radio itself or via the credit card-sized remote control. Unsurprisingly, given its size, the radio is mains-powered only. DAB reception quality was slightly

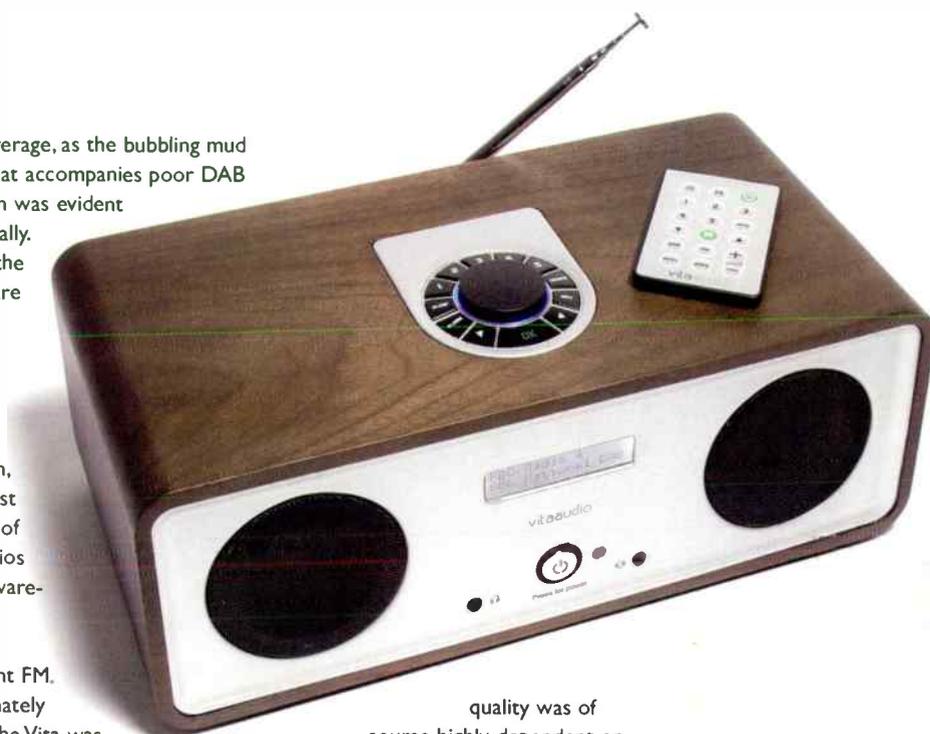
below average, as the bubbling mud sound that accompanies poor DAB reception was evident occasionally. On FM, the Vita is rare in that it uses an analogue chip for FM reception, as the vast majority of DAB radios use software-defined radio to implement FM. Unfortunately though, the Vita was as insensitive on FM as other DAB radios are, and most stations had background hiss.

SOUND QUALITY

The Vita's sound quality was quite simply in a different league to that provided by the vast majority of DAB radios, as the quality of the speakers allowed it to deliver a soundstage that's far closer to the hi-fi ideal than you experience when listening to a typical DAB radio, most of which frankly don't come anywhere close...

When playing back high bit rate MP3 files via the auxiliary input on the front, the Vita produced a highly defined sound, with strong bass and a detailed top end. It was the 3D sound feature that was responsible for transforming the audio from merely being very good to superb, as it added plenty of breadth to the soundstage whilst simultaneously separating the instruments, and vocals shone out in particular. I didn't experience much depth in the soundstage though, and the Roberts MP23, which also has a similar feature, provided a more spacious sound in general. But this shouldn't detract from the fact that listening to the Vita was a thoroughly engaging and entertaining experience.

On DAB, the sound



quality was of course highly dependent on the quality of the radio stations being listened to but, when delivered with audio that had been cleanly encoded, the Vita was mightily impressive. The R2 was also good with the more mediocre-sounding stations, as it managed to squeeze far more detail and life out of the signal than typical DAB radios are able to. On FM, the sonics were very good on the stations that had a strong signal, but unfortunately there was background hiss on most stations due to the insensitivity of the FM receiver, so the overall performance was poor – this has unfortunately become the norm on DAB radios.

Overall, the Vita R2 provides super sound quality and looks stunning. However, the Roberts MP23 only costs £10 more, it provides equally good sound quality, if not slightly better, and it has both a CD player and an SD card slot that supports MP3 playback. So the Roberts provides better value-for-money, but on the other hand Vita wants to offer R2 owners an upgrade path to DAB+. It's a tough call!



VERDICT ●●●●●
Excellent sonics allied to beautiful design and build quality make the Vita an exceptional DAB portable.

VITA R2 £220
Vita Audio
☎ +44 (0)1702 601 410
www.vitaaudio.com

FOR
- superb sound quality
- design
- connectivity

AGAINST
- FM reception quality

Glowing Praise



One Thing Audio-modded Quad ESL-57s replaced Naim NBL speakers...

When I first visited Patrick Bateman (see *Hi-Fi World* February 2005), he had an extraordinary Linn/Naim system featuring the Naim's range-topping NAC 552 preamplifier and NAP 500 power amplifier which together cost over £23,000! Feeding these beasts were a Linn LP12 turntable with Naim ARO tonearm and Koetsu Red cartridge. Finally, attached at the end of these components was a pair of Linn Sara standmount loudspeakers...

Superb sounding as this was, Patrick wasn't quite contented, and duly acquired a beautifully finished pair of Naim NBL floorstanding loudspeakers (about £6,000+ new) and a stunningly designed Brinkmann La Grange turntable and tonearm in place of his trusty Linn Saras and LP12, plus a Groove/ Plus phonostage by Tom Evans. I really liked Patrick's NBLs, as they meshed very nicely with the Naim amplifiers and bestowed wonderful bass clout into the music. Even better though was the addition of Koetsu's Jade Platinum MC cartridge with its diamond cantilever.

As you can imagine from his impressive roster of system components, Patrick is a fairly 'well

sorted' – the combination of a new £7,000 Koetsu Jade Platinum MC and the beautifully crafted Brinkmann La Grange, which I think is one of the finest aesthetically pleasing turntable designs yet (costing about the same as the Koetsu), proving a joy. However, fate was to intervene.

One day a friend, armed with a curious set of devices with glass bottles sticking out of them, popped round to see Patrick. Curious indeed - as Patrick was a dyed-in-the-wool Linn/Naim fanatic! Being an adventurous sort, he asked his friend to insert these quaint looking apparatuses in place of his Naim amplifiers, and things would never be the same again...

The aforementioned valve components transpired to be the Radford SC22 preamplifier and STA25 power amplifier. The STA25 is one of those hi-fi components mentioned in mythical terms, and Patrick could soon hear why. He was instantly smitten with the Radfords, and while he could readily appreciate the Naims for their

Channa Vithana tells the story of a longstanding solid-state devotee who defected to the cause of the thermionic valve...

heeled' music enthusiast, but did manage to get some impressive deals and part exchange offers for his kit along the way. By the end of this frantic bout of upgrading, he thought he had everything pretty much

great strengths, found himself craving what the Radford pair did - especially with opera and classical music. Although quaintly low powered, the Radfords were harmonically richer and more full-bodied, able to reveal the bass and midrange not only with tunefulness and articulation but a great sense of fluidity. In short, he felt the result was closer to the live concerts he attends.

However, Patrick noted that the Radford duo, while wonderful with tone, wasn't quite keeping with the pace on some music. He isolated the preamplifier as the guilty party and set out to find a new partner for the STA25 power amplifier. After buying the Radford duo from his friend for £1,500 second-hand, Patrick was fortunate to come into contact with Mike Solomon of London Sound who is a Radford fanatic. Mike duly serviced the Radford and checked the valves which were dated to around the early seventies, but still in good working order.

So, when I visited Patrick earlier this year, he showed me the somewhat unlikely marriage of a Radford STA25 with Naim NBLs! I raised my eyebrows a little at this odd couple, but it actually sounded extremely clear and free-flowing with a tremendously organic demeanour.

Brinkmann La Grange replaced a Linn LP12/ Naim ARO turntable...



Of course it couldn't quite reach the massive grip and power levels of the Naims, but I could clearly understand Patrick's newfound enchantment with the Radford valve sound. The Radford was able to drive the NBLs rather well actually, turning in a tremendously musical sound without the tell-tale 'bass drift' that I have encountered with some valve amplifiers - where, no matter how wonderfully tuneful they are, the bass ends up flagging behind. Not so with the STA25.

Further peculiarities abounded as he auditioned the solid-state Tom Evans Vibe and valve Border Patrol preamplifiers and was leaning towards the Tom Evans when he remembered that there was a lower-cost US made Canary Audio preamplifier (about £600) which was also left for him to assess. On it went and this valve-powered Canary had the ideal qualities of both the Tom

buying the top four-box monoblock set of CA-903L preamplifiers and matching CA-903P power supplies from Definitive Audio. He managed to acquire them second-hand for around £3,000 as they were former review stock. I wasn't at all surprised when Patrick subsequently traded in his Groove Plus phono stage for an all-valve £2,000 Art Audio Vinyl One which was tuned with selected parts by Definitive Audio for an extra £1,500. Even less of a surprise was when Patrick bought the One Thing Audio Quad ESL 57 electrostatics for around £2,000 (plus dedicated stands) which have found favour with editor DP and publisher NK in this very journal over the past few years.

With the NBLs gone, and the Jade Platinum temporarily missing, due to a rebuild and re-tipping, Patrick had lost a costly Linn/Naim solid-state system but gained a relatively modest all-valve one instead

early eighties electro-pop of 'Say Hello, Wave Goodbye' had superb harmonic qualities in the bass - you could appreciate everything from the acoustic decay of notes to the brilliant sense of dimensionality. The synthesiser parts weren't edgy at all, having clear presence within the mix. 'Memorabilia' displayed excellent timing and wonderfully conveyed purity.

The same was true for 'Showroom Dummies' by Kraftwerk and 'Older' by George Michael. In both cases, there was no hint of a



Denon DL-110 MC is currently on headshell duties as Patrick's Koetsu is rebuilt.

"one day a friend, armed with curious glass bottle-like devices, popped round to see Patrick...".

Evans and Border Patrol designs but none of the perceived drawbacks, such as starkness with the Vibe and forwardness with the Border Patrols.

This duly set Patrick on a Canary odyssey, where he ended up

with a low-cost, red Denon DL-110 MC (£100 approx.) as a stand-in for the Koetsu. With a One Thing Audio 'Widget' attached at the Radford end, which Patrick says improves the sound, Townshend Isolda cables, Naim

Hi-Line interconnect with WBT sockets from pre to power amplifier and Vertex AQ Jaya and Roraima Plus mains treatment and power leads, the system was truly singing, even with the lowly Denon cartridge.

THE LISTENING

When I finally got around to listening in anger to Patrick's new tubular belles, I opted to make life difficult by dispensing with Patrick's usual cultured diet of classical and opera (the traditional staples for valves and ESL 57s) and opting instead for something a little different. Thus we played 'Driftwood' by The Moody Blues which sounded ethereal and epic, akin to Bowie's 'Heroes.' Bob Dylan's 'Knocking On Heaven's Door' was atmospheric and deep while Soft Cell's

sharp, sterile quality, and the music had an out-of-the-box presentation that had to be heard to be believed. Instrumental and vocal resolution was very high indeed; instruments and single keyboard parts were clearly delineated, yet cohesive within the main structure of the music. Donna Summer's 'I Feel Love' was truly hypnotic via this all-valve system, and we simply had to play the long 12-inch version several times. Finally we played the 1967 'Handel Messiah' conducted by Colin Davis and sung by Helen Watts. Here, with the tuned-up ESL 57s, the normally glassy and almost unlistenable recording was revealed with consummate ease, which made Patrick especially happy, as he's a huge fan of Helen Watts.

CONCLUSION

Patrick has managed to improve the sound of his system in his listening room by spending less money, not more, with very healthy trade-ins for his previous, more costly components! This is not the usual route of a hi-fi enthusiast, and 'changing sides' from solid-state to valves is even more significant. This is an important journey to recount here as it isn't necessarily the cost or genre of the hi-fi that makes an upgrade, but sometimes it is simply a matter of slowing down, taking time to reflect on your personal musical passions first and then trying something, however different, that actually works, for you.

Canary CA-903L/CA-903P amplification replaced high end Naim electronics...



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Two Up



Both freshly updated, Cambridge Audio's 840A v2 integrated amplifier takes on Naim's Nait 5i, and David Price is your referee...

Well, I'm sorry but I couldn't resist it. By sheer chance – or happenstance at least – Cambridge Audio announced the first major revision to its flagship 840A at more or less the same time as Naim announced they were further tweaking their long-lived Nait 5i. The result is a v2 (version 2) and an *i* respectively, although the spotters will doubtless be pointing out that the Nait 5 has already reached its *i* derivative, so just to confuse us all, Naim has made the *i* italicised!

Well, I'll spare my innermost thoughts on the nomenclature; suffice to say the ideas that the respective companies' marketing departments managed to think up don't compare favourably with the amount of engineering work gone into the products themselves. Naim Audio in particular should go and stand in the corner for making every sub-editor's life a misery! Anyway, with just £25 difference in price between the two, I couldn't wait to get them plugged in and powered up – and listen to both in anger...

CAMBRIDGE AUDIO 840A V2

The new version 2 of the company's flagship hasn't taken a long time

coming. This is because, shall I say, there are products that Cambridge Audio are "very proud of" and products that Cambridge Audio are, erm, slightly less "very proud of". The original 840A, whilst being an impressive product in some respects, didn't quite have the sonic prowess of the matching 840C CD player for example, which is an absolute barnstormer. With this in mind, it was decided that the 840A was due for an update sooner rather than later.

The original Azur 840A was an interesting design which introduced an entirely new class of amplifier design, namely Class XD. It was a powerful bit of kit at the price, and had a big, confident sound that some felt lacked the human touch. That's what Cambridge Audio engineers have been trying to put back with the new version, employing some "subtle but significant updates", while the second generation Class XD is now complemented by a new output stage carefully adjusted to integrate with this novel technology, revised balanced inputs for lower distortion and noise, and a new more accurate volume control with even lower crosstalk for greater stereo imaging.

This amplifier is most notable for one of its toroidal transformers, which is massive (and commen-

surately heavy), helping the 840 to develop a quoted 120W into 8 Ohms (200W into 4) [see MEASURED PERFORMANCE]. The big transformer powers the power amplifier section and the smaller one the preamp, and the sections are separable. Another standout feature that's retained is the resistor ladder volume control, with gold plated contacts, that's as noisy as a shivering dog in operation; some find this intrusive. Two pairs of high current output transistors per channel are fitted, in a revised configuration. Twin rectifiers and separate transformer taps for dual mono operation of the left and right power amplifiers are also used.

The amplifier has no less than eight inputs, one of which has balanced XLR connections as well as the stock RCA phonos. As ever, these are all nameable and displayed on the 840A's big, backlit front panel. The casing lacks the lavishness of higher end products, and is a little resonant for my tastes. The highly versatile Cambridge features bypassable tone controls, tape record out, a preamp output, and two sets of speaker outputs, all of which are gold-plated. Any input can be set to fixed gain (allowing the 840A to be used for the front channels of a surround-

sound system for instance) and all inputs have individual trimmable gain.

NAIM NAIT 5i

If Cambridge Audio's 840A had a mixed reception in its early days, so too did the original Naim Nait 5 back in 2000 – albeit for different reasons. In the case of the Nait, it was pilloried by Naim diehards for being far too much like the sort of product a normal person might want to buy. Its main crime, as far as I can discern, was the introduction of an altogether more sophisticated sound that would actually work without the customer having to rebuild their entire system around it. The addition of a remote control was also a sign to some that the company was taking sonics less seriously, although the practice was quite different to the theory in this case...

We at *Hi-Fi World* loved it, and observed with interest how the Naim sound was changing. Gone was the brightly lit and ultra-vivid sound that made partnering the early Nait 5 so perilous, and in its place was a far smoother and almost velveteen nature. The 2003 Nait 5i built on this, with surface mount circuitry and a bigger 240VA transformer, along with simplified connectivity options. The new £725 2007 Nait 5i (that's italic) retains the power supply, ALPS Blue volume pot, control processor with its separate transformer winding that sleeps when not in use, plus the same sized (432x301x70mm) aluminium chassis with zinc diecast front panel. It also has all those clever detail touches of the oldster, like the loose fitting mains inlet and input sockets that move – which are designed to sonically decouple the cabling (which transmits lots of airborne and/or ground borne vibration) from the amplifier's circuitry. Naim claim 50W RMS per side [see MEASURED PERFORMANCE].

The new Nait 5i introduces a host of detail changes, the most noticeable of which is the front panel 3.5mm minijack input which automatically switches, giving instant access for iPods (and other music players). Underneath the hood, Naim are more circumspect about the detailed engineering changes that the italic *i* benefits from, preferring to hide their light under a bushel. One obvious change is the new ceramic heatsink material that's claimed to give better efficiency and far lower capacitive coupling of the transistors to chassis – claimed to give a cleaner sound, especially at higher levels. There are also minor circuit changes to lower distortion and improve RF rejection, the company says, plus revised ribbon

cabling to maximise isolation from the circuit boards. Naim have also reduced the overall feedback and improved the RF filtering on the passive preamp stage.

In the flesh, the Naim Nait 5i feels the classier of the two packages – but it's down to the elegant simplicity of the aesthetics rather than superior build. Although it's not particularly hard to use, the 840A v2 is cluttered up with controls that most people (reading this magazine at least) will never use. Still – a house point for the balanced XLR inputs round the back; the DINs on the back of the Naim have less appeal to non-Naim acolytes.

SOUND QUALITY

So, two great British amplifiers face off! The result was an interesting one, and not – I might add – what would have happened when the original versions of both designs met one another. Whereas I'd have predicted a knockout win to the Naim Nait 5i over the Cambridge Audio 840A v1 some eighteen months ago, the

non-italic incarnation, but I have to say they are not of the 'night-and-day' variety as per the Cambridge. With the new Naim we have a touch more clarity, a *soupcou* more subtlety, a fraction more insight and a jot more grip. Imaging seems a little tauter and more accurately located within the recorded acoustic, tonality seems marginally better revealed with more insight into the conditions of the recording and mastering of the music being played. Now I can understand why they italicised the *i*, because the improvements wrought are ones of subtle emphasis! Still, cumulatively they are significant.

Personally, I wouldn't advise current Nait 5i owners to run out and 'upgrade' to the new model (unless you suddenly find yourself having a pressing desire to plug your iPod in via the front panel – something only Patrick Cleasby is ever likely to experience), but nor would I say the changes are on the level of gimmickry – they are not.

The new Nait 5i sounds like the same amplifier, but just a little bit



new version of the 840 has been improved so much that this time it was decided on points – with both bruisers still standing at the final bell...

Kicking off with the Cambridge Audio, I played Steely Dan's 'Black Cow' and sat back intently, with the memory of the old 840 still fresh in my mind. All that tweaking has worked wonders, because here was an amplifier with all the good points of the original there to enjoy, but with its various weaknesses either eliminated or ameliorated so as not to distract. The result was what I'd hoped from the 840 all along – a truly expansive integrated with seemingly endless reserves of power and a confident, muscular sound. I was particularly impressed with its speed; it seems faster than before, whilst the silences between the notes appear quieter. Conversely, it's more dynamic and more animated, better able to impart the sense of a song going somewhere.

Switching to the Nait 5i, and again I thought I could perceive improvements over the previous

happier in its own skin. That's just as well because it had to give of its best to match the new 840 v2, which on 'Black Cow' ran it very close. The wonderfully expansive soundstage of the Cambridge showed the Naim to be a little more closed in, a touch more bunched around the central point between the speakers. Within its smaller soundstage however, the Naim was more precise; the Cambridge sounding more diffuse across a larger space.

More obvious that this were the respective tonal signatures. The Cambridge was lighter and brighter than the Naim, more like Nait 5 of yore, throwing a spotlight onto the upper midband and treble, lifting the smooth Steely Dan track out into the room. The Naim was richer, with an obviously fuller and more pronounced bass line, although it's wrong to call it 'warmer', as it wasn't a classic valve amp style bass bloom but simply a fuller and more physical bassline it served up.

Moving to The Buggles' 'Kid Dynamo', the Cambridge sounded

super fast, picking out all the instruments in the mix with forensic vigour. Switching to the Naim gave a slightly smaller soundstage, a marginally fuller bass and also a better sense of dynamic accenting. The Cambridge had no shortage of power, but seemed a little more reluctant to use it. What little the Naim had, however, was casually and repeatedly enlisted to give the song a greater sense of musical impact. It sounded like Trevor Horn was working harder with his bass playing, and Geoff Downes was being more impactful with his keyboard parts. However, despite being more animated, the Naim didn't achieve this by being brighter or more powerful, but simply by appearing in better control. Still, it wasn't quite as simple as that, as the Cambridge pulled back with a more expansive sound and a sense of ease with which the various instruments in the mix could play along separately. As the song got busy, the Cambridge maintained an architectural sense of scale, whereas the Nait seemed happy to let such details fall by the wayside in its attempt to capture the emotional impact of the song.

Moving to some modern jazz in the shape of Herbie Hancock's 'I Have a Dream' and the respective differences were revealed in their most stark terms. The Cambridge proved more brightly lit, with more finely etched piano timbre, more air and space around the instruments and an airier and more atmospheric overall sound. The Naim sounded a little veiled and rolled off in the upper treble by comparison, losing a little of the ambience of the recording and also the fine texturing of the instruments. However, it also gave the impression of a ringside seat, pulling the listener right into the recording, highlighting

the double bass playing and the dynamic accenting of the musicians and exposing its rival as rather standoffish. Surprisingly though, in this instance I actually preferred the Cambridge, such was its ability to communicate superior instrumental timbre whilst remaining musical; the Naim by comparison was even more engaging yet missing something by failing to convey the recording's ambience as well.

CONCLUSION

Pressed to make a decision, I'd call this a points win to the Naim Nait 5i - but the Cambridge Audio 840A v2 runs it very close. So close in fact that, another listener with another system and different proclivities of the musical and hi-fi varieties would easily plump for the Cambridge. From here the dealers come in; your Naim dealer would offer you a great trade-in price when you came to upgrade, whereas your Cambridge Audio dealer would sell you a new power amplifier to plug into the back of your 840A. Both will make any listener happy, but ultimately the choice comes down to whether you want a purposeful 'plug and play' system (the Naim) or one with myriad inputs and switching options (the Cambridge).

Thumbs aloft for both manufacturers then, and a special pat on the back for Cambridge, for such a dramatic improvement over the original in such a short space of time.

REFERENCE SYSTEM:

Michell GyroDec/TecnoArm/vdH The Frog turntable
 Note Products PhoNote phono stage
 Quad 99 CDP-2 CD player
 Sugden A21SE integrated amplifier
 Yamaha NS1000M loudspeakers

MEASURED PERFORMANCE

NAIM NAIT 5i

Like all good Naims, this one has an excellent power supply that suffers little voltage droop under load, so power output into 4 Ohms is nearly double that into 8 Ohms, measuring 100 watts and 55 watts respectively. Also, like other Naims this one has a low damping factor of 14, which gives bass a slight bloom, although this is loudspeaker dependent.

Unlike many Naims the 5i isn't strongly bandwidth limited, the upper -1dB limit being a relatively high 40kHz, about an octave higher than is usual from this manufacturer. This may well give it a slightly fresher sound, less dark, and easy and more open.

Distortion levels were low right across the audio band, the critical 10kHz, 1 watt figure measuring just 0.007%, a very good result. There will be none of the slight edginess that crossover distortion brings.

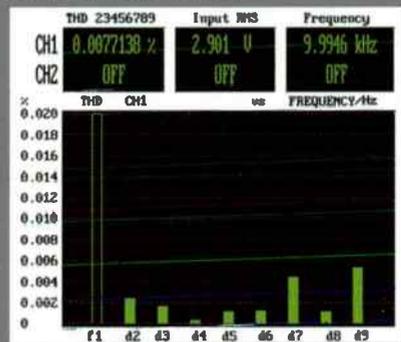
Sensitivity was very high at 180mV, and again this is a Naim trademark. It means the amplifier will match anything, which is especially useful for external phono stages with

low gain, for example.

The 5i turns in a very tidy measured performance all round. It should match smallish tightly damped loudspeakers especially well. NK

Power	55 watts
CD/tuner/aux.	
Frequency response	4Hz-40kHz
Separation	84dB
Noise	-98dB
Distortion	0.006%
Sensitivity	180mV
Damping factor	14

DISTORTION - NAIM



MEASURED PERFORMANCE

CAMBRIDGE AZUR 840A V2

The 840A V2 produced 112 watts into 8 Ohms, output being limited by a novel peak (42V pk) detector that turns volume down (reduces gain) automatically, so serious overload cannot occur. It is calibrated for 8 Ohms and there was some clipping into 4 Ohms, but little. The amplifier delivers 182 watts into 4 Ohms, so it has plenty of power. With a damping factor of 75 the 840A V2 is likely to sound dry and tight in bass delivery, making it well suited to lightly damped loudspeakers.

Distortion was very low in the midband and at high frequencies, measuring just 0.008% at 1 watt and 10kHz into 4 Ohms. This is better than most rivals, if not Cyrus or Musical Fidelity amplifiers.

Stretching from 3Hz up to 100kHz the amplifier has a wide frequency response and will not have the warmth of band limited designs.

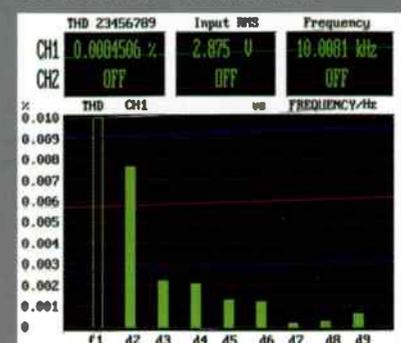
The tone controls work at spectrum extremes only, below 200Hz and above 5kHz, with +/-8dB variation, useful for trimming response without upsetting basic tonal balance. Sensitivity is normal enough via the

unbalanced phono inputs, but low via XLR, measuring 700mV

The Azur 840 V2 measures well in all respects. It should sound clean and punchy. NK

Power	112 watts
CD/tuner/aux.	
Frequency response	3Hz-100kHz
Separation	95dB
Noise	-104dB
Distortion	0.003%
Sensitivity	350mV
Damping factor	75

DISTORTION - CAMBRIDGE



VERDICT ●●●●●
 Highly spacious, detailed and powerful sounding integrated with myriad facilities.

CAMBRIDGE AUDIO 840A V2
 £750
 Cambridge Audio
 ☎ + 44 (0)845 900 1230
 www.cambridgeaudio.com

FOR
 - expansive soundstaging
 - clean power
 - finesse
 - detail

AGAINST
 - cluttered fascia
 - fiddly, noisy volume control

VERDICT ●●●●●
 Unerringly musical and dynamic performer with impressively rich tone. Superb ergonomics and style, too.

NAIM NAIT 5i
 £725
 Naim Audio
 ☎ + 44 (0)1722 332266
 www.naim-audio.com

FOR
 - musicality
 - dynamic accenting
 - strong, animated bass
 - aesthetics & ergonomics

AGAINST
 - stereo width
 - unatmospheric treble



impressed by the floorstanding Kudos Cardea C2 loudspeakers last year, Adam Smith spent some quality time with the smaller but more expensive C10s...

Family Values

It's interesting to spend time listening to different models of loudspeaker by the same manufacturer. Obviously, as the fine tuning and voicing of the final product is usually carried out by the same person or team, there's a good chance that a 'family sound' will evolve across the board. Whether this is a good or bad thing is a conclusion that lies in the ear of the beholder...

Possibly my favourites of the year, the Isophon Cassianos, impressed immensely and I was consequently delighted when the smaller Galileos proved to have the same nature as their bigger and much more expensive, brothers. The same held true for the Mowgan Audio Mabons and Melts, as well as the Usher S520s and Be718s.

Another high point of the aural calendar for me was back in the

it when another model arrived for audition. That moment has finally come, with the arrival into the office of the Cardea C10s.

These are slightly unusual in their relationship to the floorstanding C2s, as they are smaller yet more expensive. The reason for this is that the standmounting C1 and floorstanding C2 make up Kudos's starter range, selling at £1,450 and £1,950 respectively, whilst the ostensibly similar in appearance C10 and C20 make up the higher range models. A new flagship C30 is also on its way, but we'll have to wait a little longer for that one, so I am told by Derek at Kudos.

All the loudspeakers in the range differ in their drive units. Both standmounters use the same bass/mid driver, but this is different to the

"I was impressed by the way the C10s threw images wide and deep..."

Having worked my way through a good few pairs of review loudspeakers over the past year, this has become all the more apparent.

July issue when I was thoroughly impressed by the Kudos Cardea C2 floorstanders and I have been hoping that the wait would be worth

item used in the floorstanders, owing to the difference in cabinet volume. However, the biggest difference is in the tweeters - the C1 and C2 use the excellent SEAS Excel, but the C10 and C20 upgrade this to the 'Crescendo' model in the Excel series - a very advanced unit and one of the dearest on the market today.

In the C10, the two drivers are connected via a simple, low order crossover that uses purpose-made Clarity capacitors and Chord Company cabling. Biwiring is not only available, but also apparently encouraged, as no jumper links to connect the two pairs of terminals for single wiring are supplied. The speakers are compact, measuring 350x200x270mm (HxVxD) and as per the C2s, boast a fit and finish that is superlative. Stylish grilles are provided, and these fix to the cabinets using magnets that attach to the bass/mid driver's screws, so there are no obvious fixing holes visible if you choose not to use them. The cabinets are made from high grade 18mm MDF and finished in a choice of Rosenut, Cherry, Walnut and Sycamore real wood veneers. Kudos also supplied a pair of their £175 \$50 loudspeaker stands and these were used during auditioning.

SOUND QUALITY

All I can say is - what a tweeter! Expensive it may be but the expense is more than justified as the C10s top end is sublime, and even more of an improvement on the already fine C2s in this area. Top end details were impeccably rendered, with hi-hat cymbals having astounding levels of both clarity and perspective. With a drummer that used a large drumkit it was most impressive to hear the way in which the C10s laid the kit out in front of me, making it easy to follow the stick action as it moved. In addition, the responsive tweeter added eye-opening levels of attack to the leading edges of notes - not only could I hear the movements of Antonio Forcione's hand up and down the fretboard of his guitar, I could almost detect the air movement as he did this.

Most tellingly however, the C10s never became artificially hard or harsh. Every now and then, manufacturers engineer in a hefty rise in output to the top end of a loudspeaker in order to increase detail. Whilst this generally works, if the tweeter is less than well behaved then it doesn't take much to make things spitty and unpleasant. This was not the case with the C10s however; their rise in output is mild and they never become anything less than



sweet and composed at the top end - a definite sign of a very fine tweeter.

Across the mid, both vocalists and instruments were allowed plenty of space to breathe and establish themselves within the soundstage. As I have mentioned in the past, I generally prefer big loudspeakers as a result of the capacious imagery they generate, but I was very impressed by the way the C10s threw images wide and deep - they do a very good impression of something much larger. Nanci Griffith's vocals on the title track from her 'Flyer' album were beautifully reproduced, as was Sarah McLachlan's performance of 'Building a Mystery' from her 'Surfacing' CD. The C10s really did push both ladies well beyond the physical boundaries of the cabinets, and their quite different voices soared effortlessly around the room. The only caveat I did have was on the Sarah McLachlan track which starts quietly and then kicks off properly. Here the C10s were, as expected, wonderfully detailed and atmospheric during the intro, but seemed to lack a little body when the main bassline and drum backing started.

Further listening revealed that this was not a fault of the C10's bass end, as this is also very fine indeed. The falling output towards the bottom end does imply that closeness to a wall is a good idea, and I found that around ten to twelve inches struck an ideal balance between bass reinforcement and soundstage depth. Set up in this way, bass lines were clear and well defined, with excellent

levels of detail and rhythmical alacrity. The cabinets are clearly very sturdy as there was no sense of boxiness or wallow. Although the C10s may not fully satisfy reggae or dance music fans in sheer extension terms, their bass notes were very well defined and pleasingly deft.

However, that slight lack of body was still there and, whilst another twenty four hours running in on the end of some pink noise definitely helped things along, bringing a better sense of fullness to the sound, I still felt the C10s were a little reluctant to let rip at times. They were never flat, undynamic or compressed sounding, but could still sometimes seem a little 'shy'.

CONCLUSION

As I pondered earlier, the Cardea C10s do indeed appear to have a Kudos family sound, as they share the clarity, dynamics and detail of the C2s, but add in an extra level of treble sophistication that really lets the music soar. Although their occasional lack of body means that a dynamic sounding amplifier such as the Naim SuperNait would be a wise partner, they have the ability to make some very special noises indeed.

REFERENCE SYSTEM

Avid Volvere Sequel turntable
SME Series V arm
Koetsu Red Signature cartridge
Anatek MC1 phono stage
Naim SuperNait amplifier
Kudos S50 stands

VERDICT

Another fine loudspeaker from Kudos, the Cardea C10s offer a well balanced and incredibly detailed performance.

KUDOS CARDEA C10 £2,450

Kudos Audio

+44(0)845 601 9390

www.kudosaudio.com

FOR

- stunning treble
- soundstaging
- midrange detail
- build quality

AGAINST

- occasional lack of 'body'

MEASURED PERFORMANCE

The Kudos Cardea C10 loudspeakers have a general upwards trend in output level with increasing frequency, meaning that they will benefit from close to wall placement if they are not to sound bass light. Other than this, the response is smooth with no nasties in any areas, and an increase in output above 10kHz which will add atmosphere and treble detail to performances.

At the low end, bass output rolls off below 90Hz, to be reinforced by the port, which is tuned to around 50Hz. The output from the port is clean and the port itself is rear-firing, which will again help to increase bass output near a wall.

Electrically, the C10s are less well damped than some, meaning an amplifier with a modicum of electrical control would be required for optimum performance. What is interesting, however, is the high measured impedance of 12.8 Ohms, which never dipped below 8 Ohms. Kudos have clearly not made the C10s a difficult load in order to increase bass output

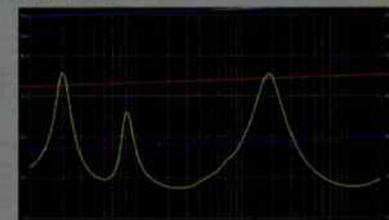
and this, along with their respectable measured sensitivity of 86dB, means that they are an easy load to drive, and will work well with amplifiers of 30 watts upwards. AS

FREQUENCY RESPONSE



Green - driver output
Red - port output

IMPEDANCE



tangent



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MYRYAD RS £230

Myryad has consistently made high quality affordable audiophile electronics, and has been particularly accomplished at tuners. Its unprepossessing designs have consistently won our group tests, thanks to their excellent sonics and easy operation. Now, Myryad has moved into the mass market consumer electronics with the RS ('Radio System'), which is a premium priced compact table radio designed to compete with the likes of Tivoli, Tangent and Vita DAB products.

It's an odd looking little box, but amenable with it. Nineteen seventies Naim aficionados will like the twin NAC42-style knobs dominating the fascia, between which are six preset buttons. The backlit LCD display above is clear and readable, and the central button beneath this switches between the RS's three functions – DAB radio, FM radio and Line In. This latter feature is ostensibly designed for the matching iPod connector. Rather than being a 'dock' as such (i.e. an iPod stand with audio and video outputs behind it), it simply takes audio out of the iPod's generic connector via a cable, along with the control codes, meaning the remote bundled with the RS will work the



iPod directly. This cable is optional – normally £60 but currently on special offer for £30 to purchasers of the little Myryad.

In use the RS works very well, giving surprisingly good sound considering its diminutive dimensions. This is thanks in no small part to the two high quality speakers mounted each side of the unit, and a single 'subwoofer' underneath. Clean and open with no sonic nasties, the RS makes long term listening easier than most rivals. By comparison, the Tivoli and Tangent DAB table radios sound muddy and congested, and

the only thing that can compete is the rather larger Vita R2. The well implemented DAB and FM tuner is the other reason for this, giving clear reception, devoid of any nasties. The Myryad also works well as an iPod speaker via its auxiliary input, and of course you can feed it with any line level source. Overall, it's a very nice bit of kit that will appeal to those who want good sound in a small space. Only its plasticky casing lets the side down, and £60 (or even £30) is a lot to pay for a basic iPod cable – it should come free. [Contact: www.armourhome.co.uk] DP

soundbites

SOUND MECHANICS C8 ISOLATION CONES £130

A new name on the UK audio scene, Sound Mechanics have become well known in the Far East for their range of high end audio tuning accessories, such as these beech isolation cones. They come supplied in their own wooden crate and, on opening the elaborate packaging, look just like a normal wooden cone until you lift them and notice that not only are they heavier than they should be, but are also loaded with a granular material. This is a type of metal filing which has been selected to be non-ferrous and to dissipate energy efficiently - the theory being that the loosely packed particles will vibrate and sink the vibrational energy into heat.

Finish is superb, the high gloss lacquer on the wood suggests as much thought has been put into the finish as the construction. We

tested them under a range of equipment including the Shanling MC-30, the Aesthetix Rhea and Calypso, along with the Shanling SCD-T200 and CD-T300 CD players and Leema Tucana integrated amplifier. The most noticeable effect was heard with the Aesthetix components and the Shanling CD player, the C8s having no audible effect under the MC-30 or Tucana. Compared to some reference Clearlight Audio RDC-2s, the C8s appeared smoother in the high frequencies, giving a more relaxed upper midrange together with more weight in the bass. Female vocals also conveyed additional warmth. In terms of imaging, the RDC-2 cones gave a wider stage, whilst the C8 gave superior depth with slightly improved



delineation.

These won't be to everyone's taste, adding as they do some warmth to the low frequencies which some will find excessive, whilst others will regard it as most welcome. As such, the Sound Mechanics C8s are well worth trying for those who wish to smooth their sound and gain more space and weight in the lower registers. A worthy fine tuning tweak.

[Contact: Select Audio on +44 (0)1900 813064]. DA

Touch Too Much?

PICTURE COURTESY OF APPLE.



Whilst the new Nano and Classic are merely slicker and ever more sophisticated variations on the core iPod theme, the new Apple iPod Touch is arguably the most revolutionary of the breed since the very first some five years back.

At £269 it offers real Wi-Fi functionality and all that implies (i.e. direct access to music buying via iTunes Music Store, and the compulsive new media experience that is YouTube), in a package so sleek and sophisticated that you have to see it to believe it. However, there's a cloud on the horizon – and it also bears an Apple name – the iPhone. The iPod Touch, just in case you haven't heard, has a great deal in common – aside from no phone functionality – and costs the same as the iPhone, although the latter has only 8GB of media storage opposed to the iPod Touch's 16GB...

Both devices are stylish flash memory-based music and video players, and both of course utilise the revolutionary and ridiculously intuitive glass touch-screen interface. They are essentially variants on the same template for the same price, but the Touch obviously lacks the microphone/earpiece, hands-free speakers, SIM card slot and text/voice functionality.

What this allows the Touch to gain compared to the iPhone is a slightly smaller vertical dimension (in

phone-type orientation) and considerably (roughly a third) less thickness. This translates to vital statistics of 110x62x8mm and 120g, meaning it's a truly slender thing of beauty – made all the more attractive by the chromed back panel. It inspires even those who have seen the (not exactly obese) iPhone to remark, "gosh, that's thin", and if you then show them the way the inbuilt accelerometer flips around the screen depending on the attitude of the player, they will really be blown away!

Indeed, it's fair to say that both devices have a considerable 'wow' factor. The touch screen user interface is about as sophisticated – and yet so effortlessly easy to use – as I've seen anywhere, and the general feeling you get when using an iPod Touch is that you'll not find anything as slick anywhere else. Switch over to one of the latest generation of touch screen Samsungs, for example, and it feels like you've just jumped back a decade in the development of the technology...

Importantly, the new iPods are also remarkably robust in terms of software operation as they run the now well-established Apple Macintosh operating system, a virtually uncrashable OS heavily based on Unix. Long-time Microsoft users might find this claim a little optimistic, but if you've been running Mac OS X 10.3 onwards you'll know that it is possible to make computers that don't cut and run with all your data when the mood takes them

Hi-Fi World's resident Podmeister Patrick Cleasby tells the story of his first month with Apple's brand new flagship iPod Touch...

[Although they can still lock up for no apparent reason! - AS] Both iPods have out-of-the-box support for the Safari browser (now available for PCs, for those yet to see sense and switch!) and a distinct, full screen YouTube viewer running via your own wireless network, or whatever you can find out and about in town.

At the time of its announcement along with the other new iPods, the Touch stole a slight march against the then current US iPhone. It shipped with a version of iTunes that, for the first time, permitted iTunes Music Store tracks to be purchased and downloaded on the move. Early shipping iPod Touches went out bearing software level 1.1 to permit the iTMS functionality. Unfortunately, in much of the commentary that follows, consideration of software levels is paramount in order to assess how far you want to go in the use of your device (the question for geeks like me is 'to hack (into it) or not to hack?') should you purchase one...

The iPhone firmware was soon to be enhanced to add mobile iTunes store access, and for those who purchase O2 contracted UK iPhones, you will be buying a machine that is supplied at the harder-to-crack 1.1.2 software level. So buy your Touch while there are still units shipped at 1.1.1 (or lower)!



PICTURE COURTESY OF APPLE.

PICTURE COURTESY OF APPLE.

INTO TOUCH

The official shipping date for the Touch anywhere in the world was the 29th September. This was roughly a month after its announcement. In reality it had begun to shift via US Apple stores in the weeks preceding the launch date. By the time it reached these shores, on schedule, it was already known that early production runs of the device were subject to a visibly inferior screen presentation for video – both against later-produced Touches, and the already circulating iPhones.

So the fierce UK early adopter was warned to try to avoid 'Week 37' produced units. This information was/is discernible as the production week constitutes digits 4 and 5 of the device's serial number. Additionally, box art was reputedly switched between Corinne Bailey Rae (week 37) and Macy Gray (week 38)!

The happy news is that I concur with those who have found that the issue (bizarre inverse-video blacks) was remedied in the 1.1.1 software that was available to download as soon as you got your Touch home. (Non-broadband users beware - OS downloads are over 100MB!)

The first impulse when firing up an iPod Touch is rarely to get straight into its music functionality. That wireless ability enables you to evaluate the impeccable two-fingered zoom technique in Safari which enables any standard webpage to be zoomed into with a gesture, rapidly rendered to the highest graphical standards. YouTube looks great in H264 quality, and you are soon browsing the iTunes Music Store...

SOUND QUALITY

With so much extra functionality, it's not surprising that the iPod Touch can't quite match the sonic standards of the Classic reviewed last month. It's not far off, meaning it's not half bad – there's a lot of detail and a very clean, noise-free sense to the sound with a decent amount of volume coming out of the headphone socket, although the Touch sounds more cerebral than both the iPod Classic and its numerous rivals. The headline news, then, is that ye olde 2.0 music enthusiasts should stick with the 'minimalist' iPod variant. Hires enthusiasts will be happy to know that the iPod Touch plays 24/48 Apple Lossless with ease, and sounds nearly as good as on the Classic, but it doesn't have the 'wow, that's better' factor of the disk-based machine. Still, given all the other wonders the Touch brings, it is acceptable. You should audition both

before purchase though. The Touch would suit those who like upfront presentations, with the Classic having a more natural, languid bass tone. The iPhone sounds very similar to the Touch – not surprising as, when you connect a Touch to Mac OS X before 10.4.10, it tells you your 'iPhone' is not compatible. They are basically the same chassis, different body. However, the iPhone is louder than the Touch and a little more abrasive in tone.

CONCLUSION

In every respect except sound, Apple's new iPod Touch is surely the ultimate expression of the iPod concept – featuring as it does serious amounts of memory, massive functionality and a user interface that deserves a Design Council Award. It also has superb iTunes and iTunes Music Store compatibility, making buying, storing, organising and transferring music a breeze. Even in stock form you have wireless Internet, YouTube access and PDA-type functionality, while the tweekers will end up with an iPhone less the Phoney bits. A superlative bit of kit then, with only one flaw – its sonics don't quite match the dizzyingly high standards elsewhere. The sound really isn't bad – it's just not as good as, for example, a Sony MiniDisc portable of ten years ago, and it damn well should be! The reason lies not in Apple's choice of the AAC codec (which can give excellent results), but in the DAC and analogue output stage, which just don't quite cut it yet...

HACKING

I waited an entire month before attempting to free up the Touch from its Apple-imposed software constraints. It's patently ridiculous, and contrary to the roots of Apple, for them to prevent the free and open development of programs for the Touch, or for that matter the iPhone. And so it's primarily a point of principle to retain the device at a level of firmware (currently 1.1.1) where it is still possible to take advantage of the endeavours of the iPhone/Touch 'jailbreaking' (i.e. hacking) community. Most of their efforts concentrate on the games or general productivity side of the equation, rather than music-specific endeavours (although with a cracked iPhone it is possible to give yourself a touch-driven mini electronic drum panel, if little else musical!) Suffice to say, pointing the Touch browser at jailbreakme.com, followed by the use of the slightly more computery iJailbreak left me with a Touch quite happy to install and run any developer's efforts – along with the original iPhone Mail, Maps, Notes and Stocks applications...

We are at an interim stage with these currently free, proof-of-concept developments. In February Steve Jobs and Apple will release an official Software Development Kit and many of the same developers may wind up monetising this early research. In the meantime we can enjoy the results of their pilot efforts for free, and in the safe knowledge that their install and software update routines work flawlessly (thanks to the safety of OS X and their skill). Also, at least on a more music-oriented iPod Touch, you are less likely to have sensitive personal data vulnerable to malign attack than you would be if you cracked your iPhone and installed some dubious applications.



MUSIC BUYING

It's rare for me to buy compressed music from the iTunes Music Store - strictly unavailable-elsewhere session track only. Being a 'physical media' kind of guy, anything available on CD will be bought on CD, thank you very much. Happily though, for the purposes of this experiment, I had recently become obsessed with Ed Harcourt's recent 'hits' compilation, and discovering that his twenty four track obscurities compilation was also exclusively available in 256kbps iTunes Plus DRM-free AAC for £7.99 was too hard to resist. Downloading at a relative's house on a bog-standard BT HomeHub setup took a mere thirty minutes, and the sound was marvellous, the sleeve art looked great, and the iTunes option to pull mobile device-purchased tracks 'back to the mothership' (i.e. my main computer) worked like a charm. But beware the bill you may end up with from downloading obscurities while waiting for a train!

VERDICT ●●●●£

In most respects a dreamboat for gadget-obsessed mobile music listeners, Apple's iPod Touch still doesn't quite cut the sonic mustard.

APPLE IPOD TOUCH 16GB £269

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FOR

- impeccable design
- sublime user interface
- hackability

AGAINST

- only average sound
- early flaws
- not open out of the box



Not everyone will love the distinctively punchy sound of ATC's SCM19 loudspeakers, but they managed to floor David Price...

Knock Out!

The depressing thing about modern loudspeakers is that they all sound the same. Okay, I exaggerate, but with a new generation of CAD-jockey designers, modern cone materials and (often) Chinese manufacture (in one of relatively few Shenzhen factories), then there's a tendency for new designs to get ever more homogenous. Rarely do you see new products as diverse as the Quad ESL-57 and Tannoy Westminster enter the market these days...

The upside of this is that the general standard of speakers is improving; the days of truly awful

designs are pretty much behind us now. It's getting harder to do bad boxes (although some still seem to manage it) and not only this they're getting generally cheaper and more amenable to partnering amplification.

In this world, ATC are something of an anachronism. Unlike many, the company doesn't fight it out tooth and claw in the budget hi-fi market, preferring to make infrequent model range changes which are often close variations on the same formula that's kept the company ticking over healthily since 1974. The company has allied itself to studio monitors, and from this springs everything.

This, as we shall see is both a good

and a bad thing depending on your tastes, but what you can be certain of is that ATC speakers are nothing if not interesting – indeed in today's homogenous climate you could even call them eccentric.

The SCM19s you see before you look and feel more like something from the early eighties. Large standmounters (with a 19 litre internal volume, as the name suggests) with wide front baffles, they seem more like Epos ES-14 rivals than a product of 2008. Indeed, were you to warp back to 1978, you'd still think they looked contemporary rather than futuristic – such are their soberly styled cherry wood veneered

cabinets and old school drive unit design.

In fact, at £1,500 these 'Studio Control Monitors' are very much ATC's affordable, mass-market boxes, designed to give a taste of the company without paying the prices that much of the rest of the range command. Featuring the new 'Super Linear' version of the mid/bass unit found in the old SCM12, the 150mm unit has a massively heavy 9kg motor assembly – contributing to much of the box's hefty 16kg weight. This is partnered to a new ATC-designed and made 25mm soft dome tweeter with Neodymium magnet, crossing over at 2.8kHz. The chunky 440x223x315mm cabinets are nicely finished, but very much in an old fashioned way.

ATC quote a sensitivity of 85dB and power handling of 50 to 300 Watts [see MEASURED PERFORMANCE], which brings me to the next relatively unusual facet of the SCM19s – the fact that they're infinite baffle, devoid of a hole drilled in the middle of cabinet! As far as my own personal tastes go, this can only be a good thing. I'm aware that I'm not universally supported in my assertion that ported cabinets are fundamentally compromised, but I'm sticking to it – and none of my favourite box loudspeakers come with holes in them. Again, this follows the theme of willful contrariness that ATC display, and I like them all the more for it.

The result of relatively small boxes unaided by a bass port is that they're not an easy drive. As any speaker designer knows, venting the cabinet to the outside world noticeably increases the amount of volume a loudspeaker will give for a given power input level, and/or makes it easier to drive at the same volume. This makes partnering more of an issue; unlike Revolver's Music 3s, for example, you can't stick these on the end of a Leak Stereo 20 and expect flare-flapping volume levels and/or rock-solid bass. With this in mind, my usual tube amplification was unceremoniously ejected from my listening room and NuForce Reference 9SE power amplifiers wheeled in.

SOUND QUALITY

After no small amount of fettleing with cables (I found Chord Odyssey 2 worked very well) and stands (likewise classic nineteen seventies Linn Sara frame-type stands) pushed close to a rear wall, I finally managed to get the SCM19s working in a way I'd expected them to. Kicking off with Steely Dan's 'Aja', I was struck by their obviously different sound

– they are not your usual ported narrow baffle, glass fibre coned modern standmounter, not by a long way. Instead of a tight, bright, brittle and relentlessly incisive sound with excellent imaging you get with most moderns, I got a surprisingly fulsome, widescreen presentation that was clean and fairly smooth.

The sort of sound they make is quite 'retro' in some respects; reminding me of Spondor BC1s and Rogers LS5/9s. It's big, punchy and clean in the way that classic monitors speakers used to be. Snare drum pan rolls on 'Aja' sounded mightily rich and weighty, and given a decent amount of watts into them proved

"great rock loudspeakers, they love powerful, punchy music..."

very punchy; suitably aspirated the SCM19s don't compress dynamics as much as many rivals. Likewise, they proved highly jaunty - able to press on with the song's rhythm and impart the sense that it was really going somewhere.

Modern electronic dance music in the shape of New Order's 'World' again enjoyed a thunderous rendition, these speakers refusing to get bogged down in the complex parts of the song like so many others do. In this sense, they remind me of a good pair of big three-way floorstanders, which coincidentally is ATC's forte. On the end of a powerful amplifier, these are big, physical speakers that assert their presence in the room and are unafraid to shift air. Rival standmounters, even considerably more expensive ones such as Sonus Faber's Cremona Auditors, sound like they're trying to squeeze a quart out of a pint pot by comparison.

Proof positive of this was the Fun Lovin Criminals' 'Scooby Snacks', where the ATCs were a riot; I adored their size, power and punch. They seemed utterly unfazed by high volumes, dynamic contrasts and the need to shift large amounts of air. They remained consummately enjoyable, celebrating the firm bass guitar underpinning the song and capturing the kick drum in a brilliantly lifelike way. This heft helped some recordings, such as Curtis Mayfield's 'Love Me' gain some much needed warmth and fullness to the sound. Again, the likes of Focal's Micro Utopia Be can make this song seem positively anaemic.

Their midband proved coloured, in a curious way. By this I mean that there was a good deal of clarity, a large amount of space between

instruments and a generally open and expansive sound, but tonally it was nevertheless rather nasal and uneven. For example, the sax solo on Steely Dan's 'Deacon Blues' was prone to shouting out at me, in contrast to Donald Fagen's vocals which if anything sounded a tad recessed. Likewise, the Walter Becker's superb electric guitar work could occasionally jump out and bite.

Things also seemed a tad too dry; the ATCs lack the vivid tonal contrasts of some other loudspeakers, preferring to tar every recording with the same brush. For example, New Order's 'World', a dramatically different sounding album

recorded two decades after Steely Dan's 'Aja' could – according to the ATCs – easily have come out of the same studio.

Moving to classical music – always a stern test of any loudspeaker – I got very mixed results. A London Records recording of English Chamber Orchestra playing Bach's 5th Brandenburg Concerto (Benjamin Britten conducting) saw the ATCs giving a powerful rendition, with strong timing and nice instrumental timbre. But still they couldn't match Yamaha's substantially cheaper Soavo 2 for transparency, sounding muddled and slightly out on a limb, once again imbuing the recorded acoustic with their own flavour.

Indeed, I found the ATC SCM19s to have a number of inherent paradoxes. They do sound 'clean' in that classic BBC monitor way, but



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COMPANY HISTORY

- 1974 Acoustic Transducer Compay founded to make drive units for use in the professional sound industry; PA 75-314 12 inch bass driver built.
- 1976 SCM 75-1 50 midrange driver built, SB 75-234 and PA75-234 9 inch drive units manufactured.
- 1977 PA 100-375 15 inch PA drive unit was put into production.
- 1978 S 50 and S 85 loudspeaker systems introduced.
- 1983 DJM studios commissioned ATC to install a giant monitoring system; the precursor to the SCM 300 A studio monitor. EC 23 three-way electronic crossover launched.
- 1985 ATC moved to current factory in Stroud, Gloucestershire.
- 1986 SCM 50 and SCM 100 passive loudspeaker launched.
- 1987 tri-amplification was put into a three-way monitor design, finally used with the active SCM 50 A and SCM 100 A loudspeakers.
- 1990 SCM 20 two-way domestic monitor introduced.
- 1992 SCM 10 mini two-way domestic monitor introduced.
- 1994 SCM 20 T floorstanding monitor, a variation on the SCM 20 monitor system.
- 1996 SCA 2 preamplifier and SPA 150 power amplifier introduced.
- 1997 A technical white paper was delivered on Super Linear Magnet Technology; A7 and A7T two-way loudspeakers for the domestic market launched.
- 1998 SCM 20 SL-TA active floorstanding version of the SCM 20 launched; SCM 10. 1/15 high power subwoofer, SCM0.1/12 high power subwoofer and MCU6 multichannel monitoring system was introduced for Dolby 5.1 systems. S1A2-150 integrated stereo amplifier introduced to critical acclaim.
- 1999 Technical paper delivered to the Audio Engineering Society by Billy Woodman, 'A Theoretical Analysis of Eddy Current Effects in Loudspeaker Motors', which discusses the importance of voice coil behaviour in loudspeaker design.
- 2000 SCM 12 introduced as a domestic monitor.
- 2003 SCM 35 floorstanding monitor introduced.
- 2007 SCM 7, SCM 11, SCM 19 and SCM40 launched.

imprint their own tonality on every recording, which shows they aren't neutral. Then there's the bass, which times in a way that only a sealed box speaker can (by which I mean that it's not a half a bar behind the midband, afflicted by the huffing and puffing of the port as it tries to equalise the air pressure with the outside world as fast as it possibly can), but still these speakers sound slower than some thanks (I suspect) to that heavy, tacky, rubbery mid/bass cone material.

Finally it was hard to reconcile the wide, expansive nature of the speakers – and the way they fill even quite largish listening rooms – with the fairly diffuse image placement that they showed throughout the listening period.

CONCLUSION

Having just gone into great detail about what I perceive to be the various weaknesses of these loudspeakers, I have to say that I've rarely heard such enjoyably flawed designs. I know for a fact that both Adam and Noel don't share my enthusiasm for the ATC SCM19s, and I can see (and hear) why, but still I personally couldn't help liking them for the good things they do. They

are great rock speakers; they love powerful, punchy music in the same way that PA speakers thrive when they've got a killer amplifier pushing large amounts of Watts into them. As the Americans would say, "so sue me!" No loudspeaker is truly neutral, and ultimately it's down to what kind of compromise best suits you – and these, for all their flaws, float my boat.

REFERENCE SYSTEM

Marantz CD63 KI DP CD player
MF Audio Silver Passive Preamplifier
NuForce Reference 9SE monoblocks
Yamaha NS1000M loudspeakers

If you're a hard rocking, high volume, solid-state sort of guy (or girl), then you'd do well to audition them – but if not, leave well alone!

MEASURED PERFORMANCE

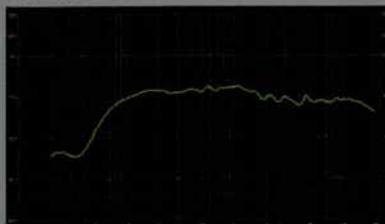
The ATC SCM19s have a generally even trend to their output across the frequency range, but one that does drop noticeably in level by around 3dB between 1kHz and 2kHz, with a further treble rolloff above 15kHz. As a result, the SCM19s will not sound bright but the slight lift around the 800Hz-1kHz region is likely to add prominence to vocals, so they could have quite a forward nature in the midband.

Bass rolloff commences below around 80Hz and there is no port loading to the cabinet, so the SCM19s' bass may well be lighter in low end terms than might be expected from their size, however judicious placement will help here.

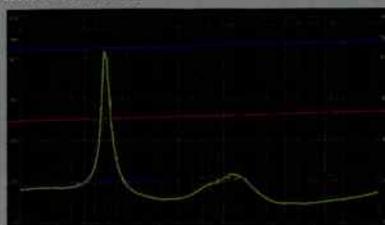
Electrically the SCM19s exhibit a relatively flat measurement, with the exception of a large resonant peak to the bass driver. Average impedance measured 6.9 Ohms, dipping to a minimum of around 4.5 Ohms, so they do present a genuine 4 Ohm load to an

amplifier, and will need around 50W or so for optimal performance due to their low sensitivity of 83dB. AS

FREQUENCY RESPONSE



IMPEDANCE



VERDICT ●●●£

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FOR

- commanding nature
- dynamic contrasting
- taut bass
- robust build

AGAINST

- nasal midband
- occasional forwardness
- mediocre imaging
- veiled treble
- hard to drive



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Bench Press

One of the most acclaimed digital-to-analogue converters of late has been Benchmark's DAC1. Now available in USB form, David Price gave the new version a work out...

Strange that in 2007, it's actually quite hard to buy a decent hi-fi digital to analogue converter. One might understand why the demand for CD transports was tailing off – with the explosion in DVD and latterly hard disk-based digital sources, but with Freeview boxes and network music players aplenty it's not exactly as if we're running out of things to plug in to the humble old DAC...

Still, some twenty years after standalone digital to analogue converters hit the hi-fi scene (remember Arcam's Black Box or Audio Alchemy's Digital Decoding Engine anyone?), you can count the number of good DACs on the fingers of one hand. Indeed, most of those on sale come via the pro audio side, where they're more into usable tools than the vagaries of audiophile fashion.

Enter Benchmark's DAC1 USB. Lest we forget, the original, non-USB version has proved something of a hit with hi-fi folk, thanks to what's universally agreed to be excellent sound and a useful feature set. Now the Universal Serial Bus equipped model is on sale, adding true USB plug and play compatibility with PCs and Macs. Don't panic, those of you who are computer audio averse – you don't have to use it this way; it still functions as a standard audio design if you so wish...

The unit's pro audio origins give

it an interesting feature set that you won't find on cooking hi-fi designs. There are balanced XLR outputs to go with the RCA phono line outs, and the latter can be switched between fixed and variable output. The front panel mounted knob is actually a volume control for when the latter option is selected (by a small switch on the back panel). Interestingly, even when using the fixed out, the unit has adjustable trim pads, letting you fine-tune channel balance. This, according to the manufacturer, is for use with active pro monitor speakers.

Digital inputs are via TOSLINK optical, coaxial (via BNC, an adaptor is provided for those who don't have BNC leads), XLR and of course USB. These are all rear mounted, whereas

the front panel has two 6.3mm (i.e. 'quarter inch') headphone outputs – yes, as well as having a variable out the Benchmark is also a headphone amplifier. Some in the hi-fi fraternity will find this a welcome 'free gift', others will not think it matters one jot, but you can bet it's an essential feature in pro audio applications. The single front switch toggles between the four digital inputs, which are represented by blue LEDs that flash if they haven't locked onto a digital signal.

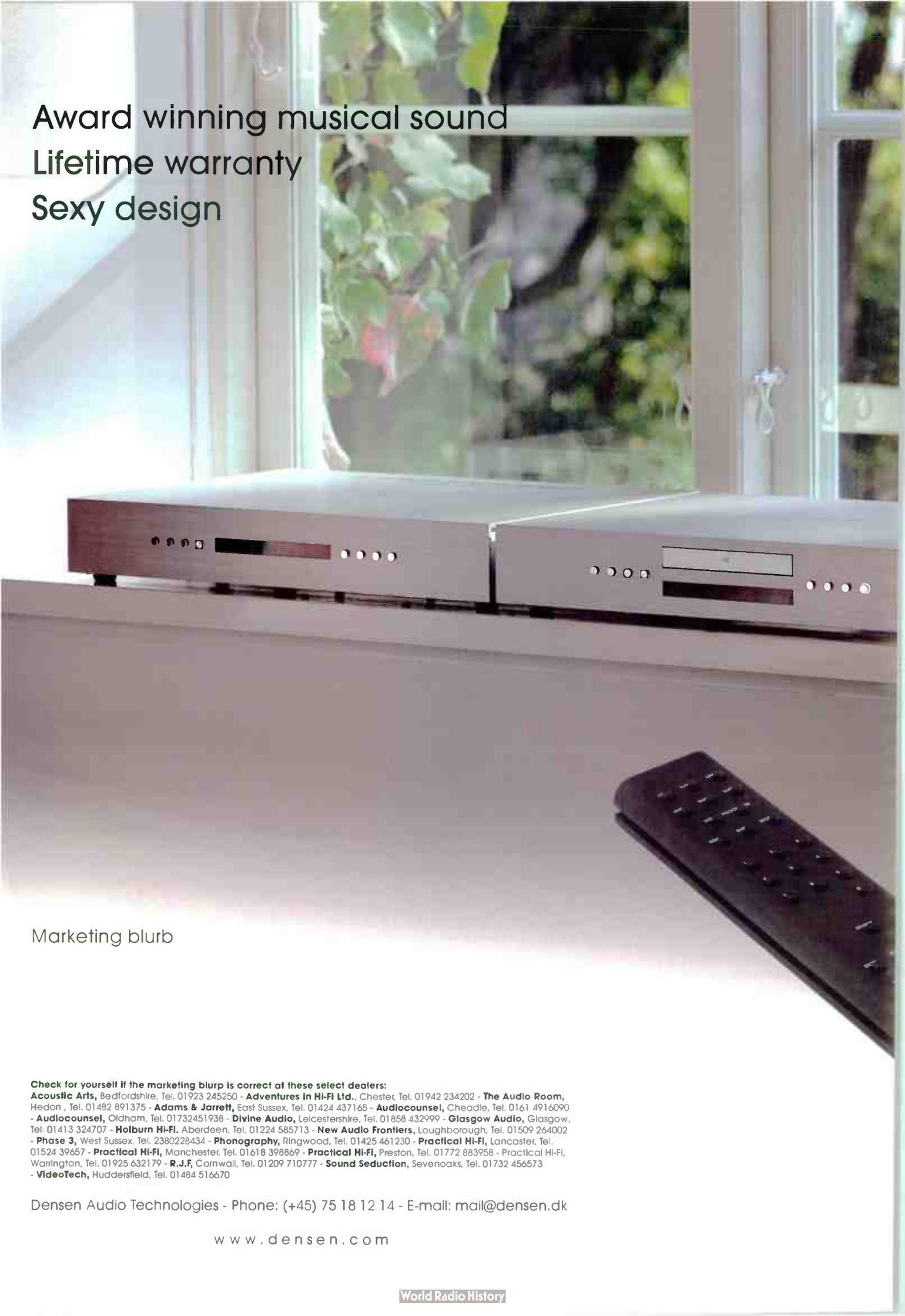
The DAC1 USB works at

sampling frequencies of 32kHz, 44.1kHz, 48kHz, 88.2kHz, 96kHz, 176.4kHz, and 192kHz, with up to 24bit resolution. There's no manual control of this, and disappointingly no LEDs to indicate what exactly is going into the machine. The company's bump makes much play of its UltraLock technology, which is designed to suppress jitter and thus make choice of transport less critical. As you'd expect, the Benchmark is a generally very well built machine, reminding us all that pro audio kit inhabits a different world. It comes in a choice of black or silver, with optional rack mounting handles. The volume control and input selector feel great, but the rear mounted RCA phono sockets aren't as rugged feeling as I'd hoped.

"the digital equivalent of open reel tape..."

Pulling the lid off reveals yet more user-configurable options, such as a jumper giving a 10dB gain reduction for sensitive headphones, and the ability to mute the machine's line outputs when headphones are plugged in. It's neatly assembled with mostly surface mount componentry on a single PCB, plus a largish toroidal transformer with big reservoir capacitors. An Analog Devices AD1896 sample rate converter is fitted, feeding an Analog Devices AD1853 multibit sigma-delta stereo D-A converter chip which

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is driven directly from the reference crystal oscillator and feeds three NE5532 op-amps per channel.

SOUND QUALITY

Retailing for £1,000 in the UK, this DAC will live or die (in the hi-fi market at least) by how it compares to sub-£2,000 CD players. And if it can't upgrade your average £1,000 machine, then it's not really worth consideration. With this in mind, I duly wheeled in my current fave rave mid-price machine, the Astin Trew AT3500, and also put it against the superb Edgar CD-1 reviewed on p10 too (which incidentally doesn't have a digital output, so it was useful purely as a benchmark, if you'll pardon the pun). The fixed output was used for the bulk of the listening, as was the BNC coaxial digital in.

Hooked up to the excellent, tube buffered Astin Trew, the Benchmark DAC1 USB was an interesting alternative. In absolute terms it did improve upon the AT3500, and also gave quite a different experience too. As you'd expect from a piece of 'studio gear', this DAC had less obvious character than the AT. With all due respect to the latter, it has been 'voiced' to sound full, euphonic even, and this it does very successfully. The DAC1 USB is an altogether more neutral tool, but unlike some so-called 'neutral' machines doesn't sound analytical or sterile. Quite the reverse...

On first hearing the Benchmark play 4her0's 'Morning Child', its bass is the most impressive facet of the machine. It is a big, strong and confident sounding DAC, so much so that it's almost like adding another octave compared to some budget CD players. But still its bass isn't as bulbous as the Astin Trew, being a touch tauter, obviously grippier and more musically cohesive.

The midband really impressed me, unwrapping a lot of detail on The Police's 'Synchronicity 2' that the AT simply glossed over. Likewise, a switch to The Bee Gees' 'Night Fever' had the recording positively bristling

with information that simply hadn't been there before. It lit up the four walls of the studio, let the respective instruments in the mix sparkle in a space of their very own and gave a sense of three dimensionality that you normally only hear from super-expensive DACs like the Chord DAC64. The Benchmark proved very neutral and open, and yet quite commanding low down.

Up at the opposite end of the spectrum, again it impressed mightily. The hi-hats on 'Night Fever' could sound a little splashy via the Astin Trew, but moving to the Benchmark DAC had them far better resolved, with more insight and yet more finesse too. Indeed, there was a spacier sound to the song which didn't just manifest itself in the treble, as the DAC1 USB threw out a considerably wider recorded acoustic. The already capacious Astin Trew suddenly seemed a bit crowded between the speakers, whereas the Benchmark pushed wide left and right, and moved the image a little further back, hanging things more confidently out at the listener when required.

It was a deeply impressive performance; only putting it up against my reference Marantz CD63KI DP showed the Benchmark's 'matter of fact' nature. Whereas the tricked-up Marantz bristled with life, bashing The Doors' 'Riders on the Storm' out like its life depended on it, the Benchmark (now driven by the Marantz) seemed a tad less emotionally involved with the proceedings. It sounded superb, but was a touch more 'hi-fi', giving a wider soundstage than the CD63 and a more spacious treble, but slightly lacking in passion. In a sense, this may be no bad thing though - the Benchmark DAC1 USB is the digital equivalent of open reel tape; it's very right without imprinting its own character on the proceedings.

The USB input worked flawlessly, but if you want serious sound from your computer you've got to make sure it's set up properly. That means setting variously Windows Media Player or Apple's Audio MIDI Setup application to work at maximum bit depth and sample rate, and

turning all your silly system sounds off. This done, the DAC effectively turns your computer into a high quality digital source - I found it played Apple Lossless files from my iTunes about 97% as well as it did the original disc via the Astin Trew. This is saying something as the AT3500 is certainly no slouch as a transport, what with its Trichord-developed clocking system.

The headphone outputs were an unexpected bonus, giving excellent sound through a pair of Sennheiser HD650s, and the variable output level worked well. True, it didn't match my reference MF Audio Passive Preamp but wasn't too far off, making things sound fractionally more diffuse and less dynamic compared to one of the best passive preamps I've ever heard. Obviously then, with middling preamps, it should prove a worthwhile feature.

CONCLUSION

A truly excellent DAC, my remarks about its 'dispassionate' sound aren't so much a criticism as an observation. Many will like the no-fuss way it just plays music, with remarkable insight into the original recording. I'd suggest it would make an excellent upgrade to most sub-£2,000 machines, especially older ones, as well as being a wonderful way of getting your DVD player, DAB, computer and Sky box to sound better too. My only criticism is simply that many may not require the USB connectivity, in which case the cooking Benchmark DAC-1 represents even better value at around £750.

REFERENCE SYSTEM
 Astin Trew AT3500 CD
 Marantz CD63KI DP CD
 Edgar CD-1 CD player
 MF Audio Passive Pre
 Quad 11-40 amplifiers
 Yamaha NS1000M speakers

VERDICT ●●●●●
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 - facilities

AGAINST
 - nothing at the price

MEASURED PERFORMANCE

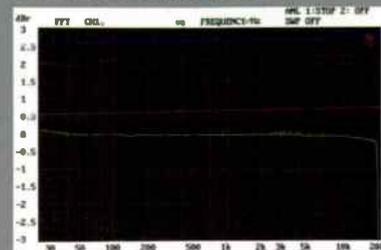
With a pair of conventional unbalanced outputs (phono sockets) giving 2.9V with output set to maximum, this convertor delivers above the usual 2V Philips standard. Unusually, the balanced (XLR) output delivered less, 1.87V, but was also variable. Performance was identical in terms of distortion and frequency response between the two, our response analysis showing a characteristic smoothly extended up to 20.7kHz (-1dB), limited by the usual brick wall anti-alias filtering. The slight roll down above 10kHz (-0.2dB at 20kHz) should ensure this DAC is not spitty or glassy in its treble.

Distortion was relatively low at all music levels although, at -60dB and lower, high order distortion harmonics became obvious. All the same, results were good enough for the DAC to turn in a 111dB EIAJ dynamic range value, which is very high.

The Benchmark turned in a neat set of measured performance results. It should sound clean and well balanced. NK

Frequency response (-1dB) 2Hz-20.7kHz	
Distortion 0dB	0.0004%
-6dB	0.0005%
-60dB	0.23%
-80dB	2.7%
Separation (1kHz)	116dB
Noise (IEC A)	-116dB
Dynamic range	111dB
Output (unbal/bal)	2.9/1.87V

FREQUENCY RESPONSE



**WIN REVOLVER'S
SUPER NEW
REPLAY
TURNTABLE
WORTH £1,500
IN THIS MONTH'S
GREAT GIVEAWAY!**



January's *Hi-Fi World* gave both thumbs up to Revolver's fantastic new premium turntable, and now here's your chance to win one! Here's what Adam Smith said...

"The Replay features a split plinth design – a marble base is allied to a polyester resin sub-plinth, supported on three chrome-plated towers. The belt drives the periphery of the platter, also made of polyester resin, and this is supported on a single point bearing of very fine tolerance. A nice feature is that push-button speed selection with indicator LEDs has been added. The tonearm is sourced from Jelco in Japan, who have over thirty years of experience in arm design, making the Sumiko MMT and FT3, along with the Audioquest PT9. The SA-250ST fitted to the Replay is a straight design with fixed headshell. Tracking force is applied via a simple calibrated counterweight and bias via a spring-loaded dial. The arm is comprehensively adjustable,

and you can fine-tune cueing height and even arm rest height with the right size allen keys, which are supplied. Both arm and deck are superbly finished and the overall unit is surprisingly compact, measuring 440mm wide by 360mm deep. Thanks in no small part to that marble base, however, the Replay weighs 23kg and so a sturdy support is mandatory.

The most noticeable aspect of the Revolver is its bass, which is very impressive. It has a low end that not only goes low, but is tight, well-controlled and rhythmical. Clearly the drive system has been well designed and the taut drive belt confers excellent stability to the platter, allowing it to power through highly modulated grooves without missing a beat. The Replay added in a magnificent sense of timing and pace to the low end. Moving on to dance, and the deck never faltered once and remained composed at all times. Switching to Antonio Forcione, the Replay really came into its own. Strings were superbly vivid with the

delightfully precise leading edges that I had heard previously. However, the composure and hint of warmth across the midband added a lovely fluidity to the guitars, cello and acoustic bass giving them an inspiring palpability and basically making them sound incredibly real. Once again, each instrument remained superbly delineated, but the Revolver was able to meld them all together into an impressively musical whole. The Replay is a very well engineered turntable unit that offers an excellent presentation from top to toe. The taut timing of the turntable combines well with the flowing nature imparted on the sound by the arm, and the whole deck gels incredibly well across the frequency spectrum. Revolver may have been away from the vinyl game for over fifteen years, but the Replay shows that they certainly have not lost their touch - welcome back!"

If you'd like a chance to win this superb turntable, all you have to do is answer the following four easy questions. Send your entries on a postcard by 31st January to:
February 2008 Competition, Hi-Fi World Magazine, Unit G4, Argo House, The Park Business Centre, Kilburn Park Road, London, NW6 5LF.

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- ONLY ONE ENTRY PER HOUSEHOLD
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- PURCHASE OF THE MAGAZINE IS NOT A PRE-CONDITION OF ENTRY
- NO CORRESPONDENCE WILL BE ENTERED INTO
- THE EDITOR'S DECISION IS FINAL
- NO EMPLOYEES OF AUDIO PUBLISHING LIMITED, OR OF ANY COMPANIES ASSOCIATED WITH THE PRODUCTION OR DISTRIBUTION OF THE PRIZES, MAY ENTER

QUESTIONS

[1] from what is the Replay's base made?

- [a] Corian
- [b] glass
- [c] marble
- [d] MDF

[2] Which company makes the tonearm?

- [a] Rega
- [b] Jelco
- [c] Pro-ject
- [d] ADC

[3] What's the most noticeable aspect of the sound?

- [a] midband
- [b] bass
- [c] stereo imaging
- [d] smoothness

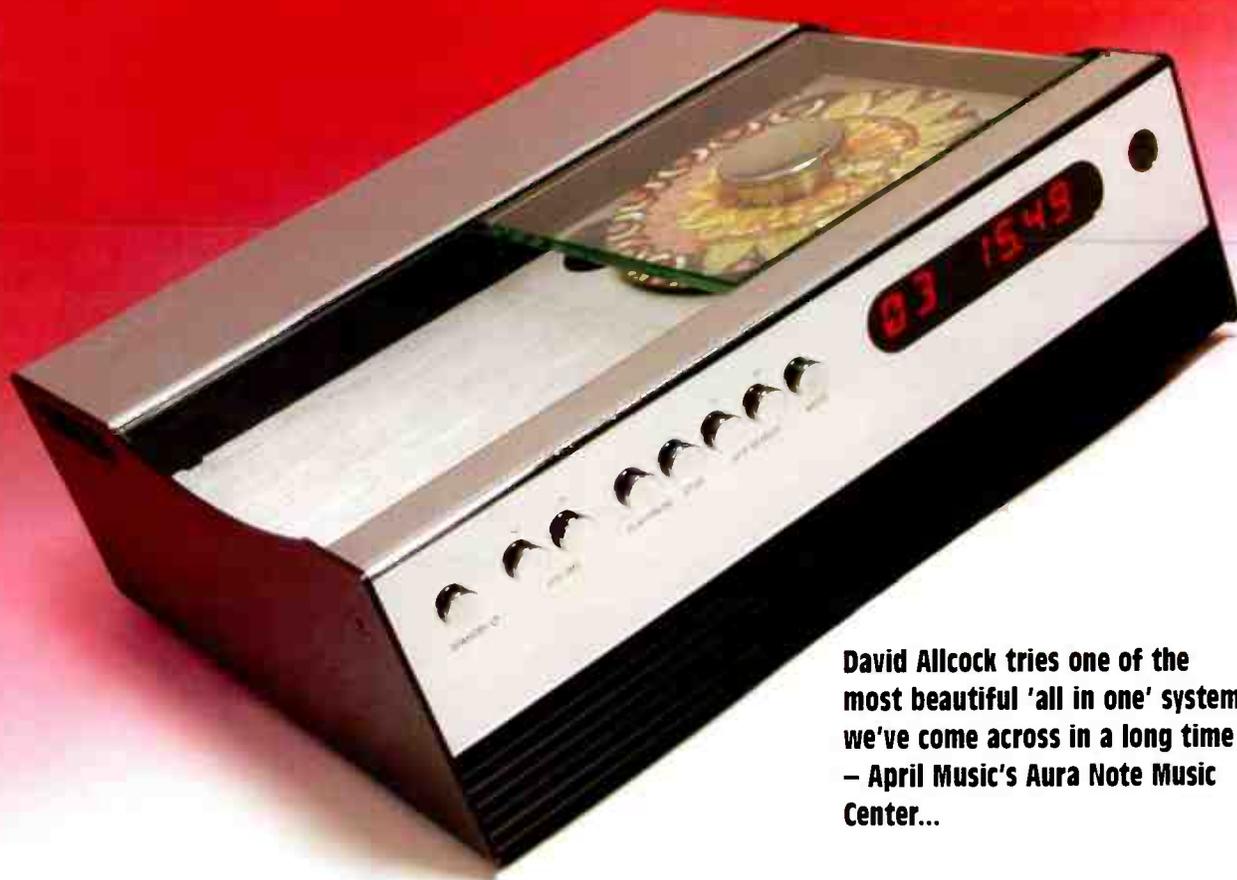
[4] How long have Revolver been away from 'the vinyl game'?

- [a] 10 years
- [b] over 15 years
- [d] 20 years
- [c] under 30 years

February Competition
Hi-Fi World Magazine
Unit G4 Argo House
The Park Business Centre
Kilburn Park Rd.
London NW6 5LF

entries will be accepted on a postcard only

**NOVEMBER 2007 LEEMA XEN WINNERS:
P Cater of Daventry, North Hants. and K. Ringer of Torquay, Devon**



David Allcock tries one of the most beautiful 'all in one' systems we've come across in a long time – April Music's Aura Note Music Center...

Grand Central Station

Whilst Aura may be a new name to most, some will remember its parent company April Music. Creators of the superb Russ Andrews DAC-1 and HP-1 headphone amp (reviewed recently) and the people behind Stello mid-price separates, they've done some very interesting products of late. A Seoul-based South Korean company, they're forging a place of their very own that's quite distinct from neighbouring Japanese and Chinese design idioms. In the case of the Aura Note, they've enlisted the help of English design guru Kenneth Grange [see box] to do the styling and ergonomics - something which as we shall see has borne fruit, so much so that it puts Aura, their new 'lifestyle' division, up with the likes of Bang and Olufsen, which is no small feat.

Currently the Aura range has only a single product, the Note Music Center. This combines a CD player, AM/FM tuner, 50W single-ended push/pull power amp with a line input and a pair of USB inputs for MP3 players and PCs (and Macs). Naturally it is fully remote controlled, requiring just a pair of loudspeakers to give a full system. The Note is housed in a very compact chassis measuring only 278x84x278mm and weighs 7kg, and is a joy to look at and live with.

One reason for this is the top loading disc mechanism, which uses a heavy, magnetic puck, similar to the Shanling SCD-T200 and CD-T300 players, but with a glass cover which slides along a channel in the top plate. The front panel is dominated by a large red LED display which reminded me of the display on the early piano key JVC video recorders in both clarity and brightness - personally I

prefer this to the newer blue LEDs seen on most products today. To the left of this display are eight buttons with a very positive action, from left to right these are: standby, volume down/up, play/pause, stop, rewind and forward search buttons, and finally mode, which switches source between CD, tuner, auxiliary stereo inputs, PC and USB.

The PC input on the back panel differs from the USB input on the side in that it makes the Note appear as another sound device on your PC and will accept the sound from any media player application. The USB on the side panel will access both USB memory sticks and USB hard drives directly and playback, MP3, WMA and OGG files at bitrates up to 192kbps.

The Note can also record from PC or tuner directly to memory stick at 128kbps in MP3 format, a function I've not seen before on any

audio device. The supplied remote is a 55x85mm credit card device only 7mm thick but housing 24 buttons with a remarkable 160degree usable angle, allowing it to work almost anywhere in the room. I gave the Note a range of speakers, including my Martin Logan Vantage, PMC GB-1 and Wafer-2, along with Leema Xone and Xavier.

SOUND QUALITY

For a so-called 'lifestyle' unit, the Aura Note sounds quite unusual, with an overall sound balance that is – if anything - slightly on the warm side of completely neutral, with the extra richness and warmth being concentrated in the upper bass/ lower midrange. This was especially welcome on my reference PMC Wafer-2 speakers, where the extra lift in the lower registers gave vocals and guitars a little more body and presence on the sound stage.

Although the Aura Note's bass doesn't plumb the subterranean depths that the Brystons can achieve, it is extended and well controlled, keeping the bass drivers in the Leema Xone and GB-1 on the leash without any problem. I was especially impressed with the pace of 'Me and My Imagination' from Sophie Ellis Bextor's 'Trip The Light Fantastic'.

I am happy to report that the Note knows a lot more about communicating the energy and pace of a track than many far more expensive systems I've heard. Although the upper bass is warm, it doesn't colour the rest of the midrange or impede transparency, articulation and clarity – all of which are very good. Vocals are of particular note - the intelligibility of Betsi Miller on 'Heaven Give me Words' from Propaganda showing how the Note is more than capable of revealing the subtleties of her phrasing and emphasis amongst a track which is very densely mixed and complex. High frequencies are very clean and detailed; 'Your Wildlife' can be a minefield with cymbals, tambourine plus various samples, this can easily turn into a high frequency haze, yet the Note managed to keep all of this separated and very clean, with each instrument's contribution to the overall mix easy to hear and differentiate with exaggeration or undue emphasis. I was very surprised at the resolution available, and in this respect I would suggest it even surpasses the remarkable Shanling MC-30 I reviewed a few months ago.

Soundstaging is very good, and is more likely to be constrained by the recording or speakers than the Note's own ability. Through the

PMC GB-1's I was surprised at the Note's ability to completely fill the lower third of my listening room with soundstage and even manage to breach the physical boundaries of the room, placing instruments sonically beyond the room boundaries, yet these instruments were solidly rooted in space, and whilst the layering was not as good as I hear from the likes of the Leema Tucana or my Aesthetix / Bryston combination with these speakers, this is still an excellent performance for such a modest component.

The biggest difference that appeared between the Shanling and the Note was with dynamics, the quoted 50W of the Note giving grander scale and power. This player could track large dynamic shifts far faster than expected, generating real drama and energy in the music which the Shanling could struggle with. For example, I felt the Note captured Jean Michell Jarre's 'Aero' in a far more exciting and visceral manner than the MC-30, though conversely I felt that the single-ended topology of the MC-30 was able to track microdynamic changes slightly more sympathetically.

I'm happy to report that the included tuner proved very usable. Whilst I didn't find it as sensitive as the one in the MC-30, it was still capable of providing a very solid soundstage, with voices on Radio 4 being especially convincing, really bringing the studio into the listening room. Music, although obviously compromised through the aggressive broadcast compression system, was very enjoyable, with a sound balance just a hint warmer than the MC-30. The side-mounted USB port for MP3 playback worked well, scanning a 4GB memory stick holding around 400 MP3s in under thirty seconds. I did feel the limit of only decoding MP3s up to 192kbps to be rather restrictive, although the sound proved good, sonically fairly similar to the CD in tonal balance, though obviously dynamics, soundstaging and resolution were far inferior due to the bit rates I was forced to use.

The rear mounted USB port for PCs, however, was a much better proposition. I spent several hours listening to music, both uncompressed WAV files and lossless FLAC, played back on my laptop from my server. I can honestly say that recordings which I had on CD and on the server were almost impossible to distinguish, with the CDs having just a touch more air and space around them, but this functionality turns the Note into an incredibly useful system, and I can imagine a system with the likes of a Mac Mini as the client streaming

from a server or playing back from its internal drive making a very compact streaming solution at very low cost. Using this as a means of playback gave me dynamics and sound balance which was so similar to the internal CD transport as to be uncanny, and far surpassing almost any computer sound card I've heard to date.



GRAND DESIGNS

It's an unusual step for a consumer electronics company to commission a famous industrial designer to fashion their hi-fi, but this is just what April Music have done with the Aura Note. Kenneth Grange, cofounder and long-standing partner of Pentagram, was brought in, to spectacular effect. Born in London in 1929, he worked as an engineering draughtsman with the Royal Engineers, and then in 1958 founded Kenneth Grange Design. He went on to 'pen' the National High Speed Train, Kodak Instamatic Camera, Wilkinson shavers and Parker fountain pens, as well as undertake much work for Japanese customers, and even style the latest London taxi. Kenneth Grange has received a number of important awards, including the Duke of Edinburgh's Prize for Elegant Design, the Design Council Award and the Master of Faculty of Royal Designers for Industry. He has obtained honorary doctorates from the Royal College of Art (1985), DeMontfort University (1998) and through the Prince Philip Designers' Prize (2001). In 1984, he was awarded a CBE. DP

CONCLUSION

A tremendously impressive all-in-one system at the price, the Aura Note scores on everything from styling, ergonomics and build to sonics, versatility and sheer pride of ownership. Matched to an excellent pair of loudspeakers (such as the Revolver Music 3s, for example), this gives a smooth and enjoyable hi-fi sound without the hassle of mix'n'match separates. The computer connectivity is another bonus – especially the USB input. Sonically dynamic and with an expansive soundstage and bundles of detail, it can teach some more expensive components a few lessons in conveying the energy and pace of music, as well as beating them in the style stakes. Highly recommended.

VERDICT ●●●●●
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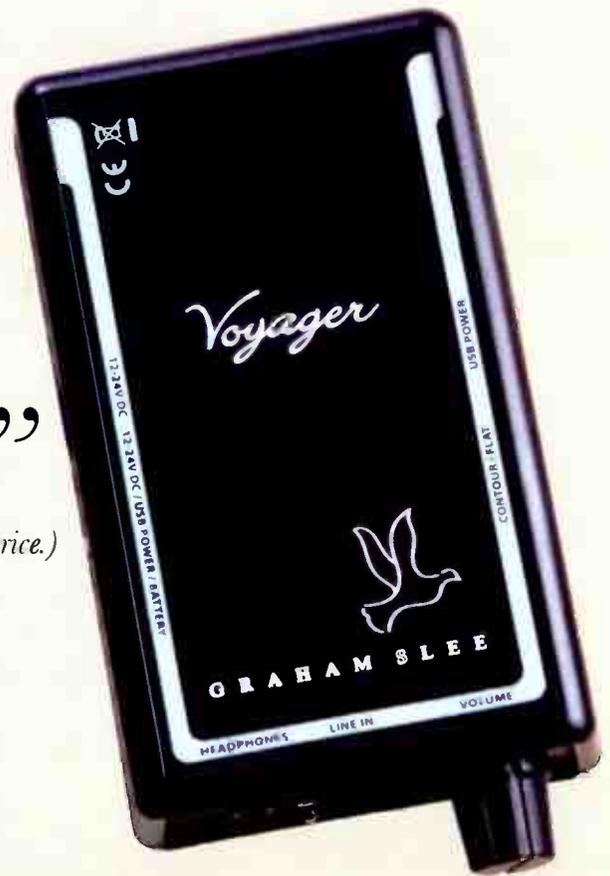


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SANDISK SANSAS CLIP 2GB £40

Just a few years ago, a 2GB flash memory-based MP3 player was a thing of science fiction – with most machines providing one fifth of that. Such is the plummeting cost of computer hardware that it's now possible to buy a product such as this

for under £40, and it's no surprise that the manufacturer just happens to be one of the world's leading chip-based memory suppliers. Indeed, so successful has Sandisk been at portable music players that, in the US, it is second only to Apple.

The new Sansa Clip is its latest iPod Shuffle rival, and looks set to take a sizeable bite out of Apple sales.

Best described as resembling a full sized iPod that has shrunk in the wash, the Clip is barely bigger than a box of Ship matches, but retains the familiar older iPod architecture: a display at the top, a control at the bottom and not much more besides. On the player's opposite face, there's a detachable belt clip, hence its name. Although a little larger than its arch rival, Creative's Zen Stone, it has more memory, a battery that lasts four times as long (at 13 hours) and a bigger, more readable OLED display. It comes in a variety of hues,

including black, red, pink, and blue.

The four-way control pad is easy to use, although not up to Apple iPod Nano standards, and it connects to any computer via a side-mounted standard mini USB port. It features a built-in mic for voice recording (in WAV format), an FM tuner and adjustable sound equaliser. Moving music to and fro is easy – just drag and drop via Mac or PC. The sound is surprisingly good at the price – easily the equal of the latest iPods – it is punchy and powerful especially when used with Sennheiser MX-550 headphones (£20). The downside is that it only supports MP3, WMA (unprotected/protected) and Audible files – which is a pain to those with a big iTunes library of AAC music. Brilliant value for money, this little portable gives sparkling sound, extensive storage and plenty of facilities at a beer money price. Only the plasticky casing detracts, but you can't have everything for forty pounds. **DP** [Contact: Sandisk +44 (0)207 365 4193 www.sandisk.com]

soundbites



SILVERMANN LABS CLARITY 2 £350

The importance of the mains supply on a hi-fi system's sound cannot be underestimated. Clean power is fundamental to the optimal working of electronics, but a shortage of wall sockets means that many audiophiles are forced to use mains distribution blocks. These are one of hi-fi's deadly sins, causing the sound to suffer terribly. UK-based Silvermann Labs' new Clarity 2 distribution block is designed to solve the problem, and comes in four and six socket variants, with the latter costing £350. An aluminium housing makes

it exceptionally robust, and its high quality socketry comes in a star-wired configuration (i.e. in parallel) to ensure no inter-socket contamination. The wiring uses nine separate silver-plated copper conductors, as used in the Clarity 2 mains leads, and feeds a standard IEC mains inlet. This means you'll need to buy an additional mains lead, such as the Silvermann Clarity 3 IEC mains cable used in this review (£150/1.2m) or retain one of your existing mains leads. The company also offers "Professional Demagnetisation" for an extra £5 and/or Caig Deoxit Gold Plug and Socket Cleaning for the same premium.

The complete Silvermann six-way mains block and lead is expensive at £500 then, but justifies its price with excellent sonic results. Compared to basic mains distribution blocks, it brings a massive increase in smoothness to the sound, but not at the expense of detail, which suddenly bristles out of an inky-black background. The upper midband benefits particularly, with a marked

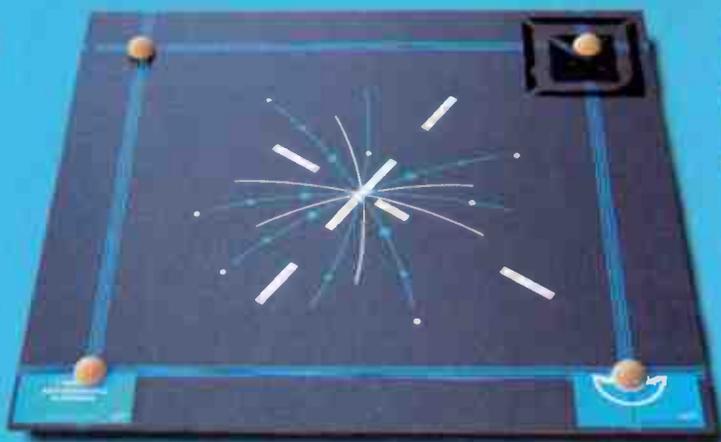
reduction in grain, while the treble gets more air and space, and the bass tightens up and sounds stronger and more dynamic. Most impressive of all in the context of the review system though, was the stereo soundstaging, which became far more confident, bringing the loudspeakers out of themselves. An excellent product then, but being expensive is best used with mid-price to high end systems, where its talents can really be heard. **DP** [Contact: Silvermann Laboratories +44 (0)8707 747 480 www.silvermann.co.uk]



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Dyna-mite

KEF's new Picoforte
One iPod dock does a
lot in a small space,
says David Price...

With the Apple iPod's not inconspicuous sales success, there's plenty of incentive for a company like KEF to put their wide experience in grown-up speakers to good use by making a partnering audio product. Massive potential sales aside, the fact that most existing iPod docking systems are so poor is all the more reason for KEF to dip its corporate toe into this pond.

Enter the Picoforte - not for KEF a cheap piece of plastic rubbish, cynically overpriced and overmarketed. Rather, it's very much a high quality KEF product in miniature. The system is beautifully finished, with only the likes of Eclipse's TD307II PA, costing just a few pounds short of £400, able to compete. Each component is milled from diecast zinc and finished in either high gloss black or white. This stands in contrast to the usual dire plastic mouldings you find in so many other iPod partners.

The system comprises separate dock and amplifier modules, plus a pair of matching miniature loudspeakers. It looks and feels very nice altogether, especially if the various wires are dressed carefully. The dock connects to the power amplifier, which has miniature spring clip speaker terminals, as do the speakers, which makes connecting the whole system up a matter of five minutes. When you've plugged in the DC power input from the mains adaptor, it's simply a case of slotting in your iPod. KEF supply a range of dock connectors, but I never bother with these things and found my 3G iPod Nano went straight in without a fuss. This done, the whole system is controllable from the supplied card remote - and don't lose it because the controls aren't duplicated on the unit itself! There's also a 3.5mm minijack input for owners of other MP3 players, MiniDisc portables, et al.

The bundled speakers are



downsized versions of KEF's KHT series 'eggs', and are a textbook example of how to do a miniature transducer. The cabinets are metal, meaning at 1kg apiece they're weighty and fairly inert (their very shape contributing to the latter). Measuring just 160mm high and featuring a 75mm Uni-Q mid/bass driver with 9mm aluminium tweeter inset, power handling is said to be 25W per side. The amplifier sports an optional subwoofer connection, and there's an S-Video connection so a screen can be used to display song titles or even play movies (if your iPod allows).

SOUND QUALITY

Obviously, the sonic results depend very much on how the speakers are positioned - they seemed happiest very close to a wall, Blu-Tacked to whatever they were sitting on. Suitably set up and run in, the Picoforte gave an impressively room filling sound that was bristling with detail. Fed from a 3G Apple iPod Nano running 320kbps AAC, it proved surprisingly couch at the price, with just a little liveliness coming from those metal dome tweeters. This diminished as the system was run in, and also was ameliorated by playing lossless files (i.e. uncompressed) with their smoother top end. Even substituting speaker cables helped; although I doubt many will use the Black

Rhodium Tango that I tried the KEF speakers with!

Warmed through and run in, this made a very companionable little system, good enough to give satisfying sound from my iPod along with very easy access - the remote worked well. It went decently loud (enough for small bedrooms, studies, etc.) and importantly even at maximum volume it didn't fall apart, showing no obvious signs of distress. Although obviously bass-light (KEF quote 90Hz to 30kHz frequency response), it unlocked music in quite a professional way - attack transients were fast, dynamics impressive and there was no sense of anything in the system struggling.

CONCLUSION

On reflection, I'd have liked to have tried the matching subwoofer, as I suspect this would really fill the sound out and take the Picoforte up to a new level. My only criticism of this system is simply the fact that it's a direct price rival for the Harman Kardon Go & Play, which is an altogether ballsier and punchier performer able to push out significantly higher sound levels. Still, even it cannot match the KEF Picoforte's clarity and detail, and the latter has the benefit of separate, detachable speakers which may really come into their own in some rooms. A truly impressive product, well worth a listen.

REFERENCE SYSTEM
 Apple iPod Nano 8GB 3G
 Harman Kardon Go & Play

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The Reel Thing



Sony TC-377:
affordable open reel

It's hard these days to remember how important Compact Cassettes once were to every music fan, but there was a time when instead of slotting an optical disc into a computer and pressing the 'copy' button on Easy CD Creator, people actually took the time to *record* music in real time to make compilations or archive

copies! All the more befuddling then to remember that cassette was actually seen as the soft option – for serious audiophiles only reel to reel was good enough...

Although cassette lacked reel to reel's high frequency extension, image width and pitch stability, it was convenience that most buyers looked for and most open reel decks were about as easy to use as a cinema film projector. As such, early seventies audiophiles still considered the smart money to be on open reel, but by the middle of that decade companies like Nakamichi and Yamaha were doing much to make the erstwhile Dictaphone format acceptable to audiophiles. At last, cassette could be easy to

Neville Roberts remembers the golden age of open reel recording...

use and sound good too...

As a response to the onslaught from cassette, by the mid-seventies a number of Japanese tape recorder specialists had come up with open reels that were far easier to use and more room-friendly than the behemoths the world was used to, and we saw the short but sweet spectre of affordable, user-friendly open reel recorders that offered the format's high fidelity without tears.

Whereas the *de rigeur* audiophile open reel recorder of the day, Revox's A77, came with 10.5 inch NAB spools and worked at 7 1/2 or 15 inches per second, Akai's 4000DS took the smaller 7" reels and spun at 3 3/4 and 7 1/2 ips, making it considerably easier and cheaper to use. In mark II form, between 1976 and 1978, it was open reel's fierce last stand against the onslaught from a format that ran at 1 7/8 ips and had tape only half as wide, screwed into cheap plastic shell.

The 4000 was a great piece of affordable audiophile kit – making a virtue of money saving simplicity by using a brass sleeve fitted over the capstan to change the tape speed. A separate switch changed the equalisation settings to suit the 3 3/4 IPS and 7 1/2 ips speeds. Its success was down to being so well finessed for a budget machine – lest we forget it was the successor to the 4000DS (1972-1976) which in turn was a successor to the 4000D (1970-1972), with several improvements. The formula was rugged construction beyond that of its competitors, together with good recording and playback quality due to the separate record and playback 1 micron gap heads.

The Akai was not without its quirks, however. When playing in the upright position, one was forced to use the push-on rubber reel retainers to prevent the spools from falling off. After a while, the rubber retainers had a habit of popping off the spindle of their own accord, which was rather disconcerting when one was

relaxing while listening to a piece of music!

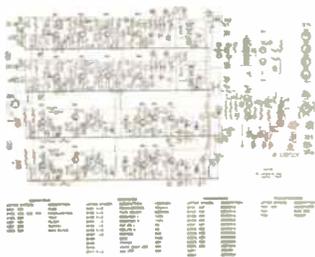
More serious was the fact that there was a noticeable reduction in the quality of music recorded on the Akai, even when using low-noise tape recorded at 7 1/2 ips. Of course, there was no Dolby noise reduction, so a little tape hiss was always evident, but the Akai was also a little bass light and 'thin-sounding'. It was time to move on and the Akai found itself losing sales to the (then) brand new Sony TC-377...

In the nineteen seventies, Sony sold more open reel decks than any other manufacturer, and the 377 showed why. The "Three Head Stereo Tape recorder" was fitted with Sony's Ferrite & Ferrite heads and was produced between 1972 and 1977. It had a pretty good specification for the price, considering that it was one of the Sony 'entry level' hi-fi separates, and its superiority over the Akai ensured that it was the last truly big selling open reel the world saw. Sony followed it with the TC-378 in 1977 and the TC-399, which was in production from 1978 to 1983, but by which time the game was over and open reel retrenched back to the recording and broadcast studios from whence it came...

For the more affluent enthusiast, there were plenty of models to choose from. For example, the TC-558, which was produced from 1973 to 1976, featured solenoid controls (instead of mechanical



How we used to live: wiring & electric motors instead of op-amps inside the TC-377!



In the 1970s, every self-respecting owner's manual had a circuit diagram...



Akai's ubiquitous 4000DS; the tape recording equivalent of the Ford Cortina



Sony's sleek TC-399 replaced the '377 in 1978...



The TC-755 was Sony's first truly high end machine.



Sony TC-766 was a corporate two fingered salute to the likes of Revox.

levers) and six heads to enable full auto-reverse operation. However, to allow for the larger 10" reels, you had to upgrade to the TC-755, TC-756 or TC-758 machines. These also had solenoid controls, but featured dual capstan drive to keep the tape tension constant across the heads. Additionally, the TC-756 supported speeds up to 15 ips.

At the top end of the spectrum was Sony's TC-765 that was introduced in 1976 and manufactured until 1982. This machine offered superb sound quality for a quarter-track, 7 1/2 ips machine – with a price tag to match! Moving to the TC-766 offered the audiophile 30 ips and half-track stereo (unidirectional operation) for the ultimate in sound quality.

Sony seemed to have it made, until a little-known rival company called Nakamichi, also from Tokyo, started to challenge their supremacy. Nakamichi was founded in 1948 and by the 1950s, it had developed one of the first open reel tape recorders in Japan under the Magic Tone label. It went on to develop and market its own tape recorder in 1957 called the Fidela 3-head Open Reel Stereo Tape Deck. When Philips introduced the world to the cassette, Nakamichi applied its experience to this new medium and by 1973 it was producing stereo cassette decks with such high quality reproduction that they provided a serious challenge to the open reel machine – if you could afford them! The Nakamichi 700 and 1000 machines with their three heads and dual capstan drive were regarded as two of the finest cassette recorders made in the mid-seventies, but few audiophiles could own them as the model numbers were derived from the price tag!

Nakamichi responded to the potential demand by releasing more economical two-head models such as the Nakamichi 500 and 600, and by the early nineties eighties, the open reel recorder was truly a 'legacy format'. The golden age of tape recording was over, and the race was on to make ever cheaper, better cassette decks. This would last another ten years, with 1988 being Compact Cassette's best ever year in the UK. Five years later, sales were in freefall and the world was acquainting itself with two so-called replacement formats, Digital Compact Cassette and MiniDisc. Tape had run out.

BUYING

Due to the popularity of the TC-377, there are still many to be found and they can often be seen on web-based auction sites as well as in shops that specialise in vintage hi-fi, for between £100 and £150 depending on condition. Spare drive belts are readily available, too and cost around £20 for a set. Prospective purchasers should check the state of the tape heads as these could be very expensive to replace if worn. Visually, there should be no grooves on the heads along the tape path. A noticeable lack of treble could be caused by poor head alignment. This is easily corrected by using an alignment tape to first set the playback head and then a blank tape to calibrate the recording head against the playback head.

SONY TC-377 UNPLUGGED

This entry level open reel's mission in life was to be an easy to use all-purpose tape deck, so Sony opted to angle the front panel to make it very accessible. Indeed, its cleverly designed walnut-veneered cabinet lets the deck be operated in either a sloping horizontal position or a reclined vertical position. By removing four screws, the machine can be withdrawn from the cabinet, rotated through 180 degrees and refitted. Incidentally, the reel spindles are fitted with a twist-locking device to hold the reels in place when the unit is used vertically – no rubber retainers to fly around the room! Another delight was that, in common with other Japanese equipment of the period, the instruction manual supplied with the unit included a circuit diagram!

Like the rival Akai 4000DSII, the Sony was fitted with separate record and playback heads and circuitry, which allowed for nearly simultaneous playback and recording. There is a slight delay determined by the tape speed and the physical separation of the heads. At 7 1/2 ips and the 1 1/4" separation between the heads, you get a delay of 167mS when switching between tape and source input for A/B tests – certainly close enough to monitor what is coming off the tape and take any necessary action while recording.

For a relatively modest increase in cost in comparison to the Akai, there was a huge step-change in performance with the Sony. On paper, the Sony claimed a 20Hz to 25KHz ± 3 dB frequency response using low noise tape, which is similar to that quoted for the Akai. However, the Sony claimed better than 55dB signal-to-noise ratio; an improvement of 5dB on the Akai.

The Sony is clearly superior to the Akai in terms of sound quality, having a fuller range with no tendency to bass lightness. On A/B testing, it is hard to tell which is the source and which is tape, the only clue being the slight increase in background hiss. Noise, of course, was the bugbear of all analogue systems and for this reason many used an offboard Dolby noise reduction system. Although Dolby was almost essential for cassette systems, many purists argued that the reduction in hiss comes at a cost of increased distortion and as such was best left out. In practice, set up for good tape such as Maxell UDXLI and running at 7 1/2 ips, the Sony TC-377 is still capable of genuinely palatable results today, and represents a great buy for those wishing to explore the weird and wonderful world of retro reel to reel. Analogue recording, free from the harsh realities of digital, yields an effortless smoothness, depth and open character to the sound.



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"I have a reputation of being something of a Blue Cross shelter for unwanted hi-fi..."



adam smith

Well, the port bottle has run dry, the mince pies are gone, even the cat has begun to turn his nose up at left-over turkey and my belt appears to require tightening by two notches less than it did a week or so ago. Strange - I can only assume I left it in a pair of trousers that went into the washing machine and it's shrunk, but I don't recall this...

Consequently, whilst my good lady wife has had to return to work in between Christmas and New Year, I am left on my own to ponder whether I ought to go for a healthy walk through the fields or just slump in front of another James Bond/ Great Escape/White Christmas film and open another tin of Christmas biscuits. Whilst the latter is far more appealing, my conscience is telling me that what I really ought to be doing is hauling my post-Christmas bulk up the stairs to my storage room and working through some of those classic pieces of hi-fi equipment that have 'mysteriously appeared' in the house in the past twelve months.

You see, I have a reputation of being something of a Blue Cross shelter for unwanted hi-fi. I just cannot bear to see anything remotely salvageable head to the skip when it can be resurrected and passed on to a lucky new owner or, at the very least, used for parts. As a result, I presently have around eight turntables, five amplifiers, three CD players and a couple of tuners awaiting some attention and really ought to be getting on with them. The trouble with it is that most of them will inevitably need a spot of repair or restoration work and possibly the odd new component here and there. The items that need

nothing more than a good clean and a squirt of switch cleaner are rather few and far between, sadly.

As a result, in addition to the queue of 'patients in the surgery' I also have one or two upgrade/tweak plans for the main components in my reference system and, frankly I'm getting a bit bogged down by it all - there are not enough hours in the day! I did have the very best intentions of getting all the inconsequential items repaired and re-homed, leaving me free to concentrate long term on my main system. However, this assumed that the incoming flow of equipment would stop, which it hasn't. Mind you this is partly my fault, as my virtually empty storage area was promptly filled again after making an early morning trip to Essex a couple of months back and returning with no less than thirty one pieces of gear in the car boot. [Uggghhh! - Ed.] Will I ever learn?

Things become even worse at this time of year. In the same way that the rate of unwanted cats and dogs always increases after the festive season thanks to people who have made ill-advised or just downright selfish choices, so that shiny new piece of technology pushes aside the old reliable (or unreliable!) and starts it on the journey to my waiting clutches.

So, with this in mind, I have decided to resurrect tradition I gave up long ago and make a few New Year's resolutions. Having dismally failed in the past to eat more healthily/drink less, I don't hold out much hope for keeping them, but here goes anyway...

(1) I will stop buying old, large loudspeakers. Small is definitely beautiful these days; as modern houses seemingly shrink in size

by the day, the market for big old 'bangers' as Noel likes to call them, is becoming less and less. In the same way that the modern car struggles to fit in the modern garage, so does the modern lounge doorway struggle to accept the likes of old Leaks, JBLs and Goodmans larger output - there is a lesson to be learnt here.

(2) I shall cost out potential repairs before committing myself to them. When something is apart on the bench, the fault has been found and the RS catalogue yields the relevant part, it is all too tempting to dive straight in and go ahead. The problem is, I'm sure I'm not the only one to have experienced the following -

- purchase price = £2 from dump
- cost of parts = £25
- time spent fixing = 3 hours
- sale price = £20. Damn!

(3) I do not need to buy every secondhand turntable I see. Some are worth saving but some really are not. Even if avoiding the money-wasting scenario in number (2), sometimes it's just easier to find a £30 secondhand Pioneer PL-12D for a friend than trying to resurrect some long-forgotten piece of vinyl-spinning weirdness with the build integrity of an Austin Princess.

(4) I really, really will get that pile of equipment sorted out by the end of January. No, make that February. Actually, maybe March would be more realistic...

So, there we are, I have filled my afternoon with good intentions, although, still not fixed any of that equipment - oops! Anyway, it has now started raining so that walk has fallen out of favour and, according to the TV guide, it's nearly time for Star Trek. I'm going off to put the kettle on and find that box of biscuits I mentioned earlier. Happy New Year! ●

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"it wouldn't surprise me if future radio goes down the gimmicky video route..."



steven green

Although one of the reasons DAB+ was designed in the first place was due to French radio broadcasters being so vehemently opposed to using the old DAB system, France has now decided to adopt DMB (Digital Multimedia Broadcasting) for its digital radio system rather than DAB+.

The reasons given are that it will allow the broadcast of pictures, interactive graphics or low bit rate video alongside audio, to make radio more appealing. They said that increased choice isn't something that consumers are interested in. In reality, the broadcasters lobbied in favour of DMB and against DAB+ to limit the amount of competition their stations will face on digital radio; DAB+ can carry around a third more stations than DMB, due to it being about 35% more efficient, and transmitting visual data – especially video – alongside radio stations consumes a significant amount of capacity, which further reduces the number of stations that can be carried.

What I can't understand about the French government's decision, though, is why – despite what the big broadcasters wanted – they didn't adopt DAB+ *as well as* DMB? The smaller French radio stations wanted to use DAB+, and radio stations using the DAB+ and DMB formats can transmit alongside one another on the same multiplex. Also, pictures or interactive graphics (but not video) can be transmitted alongside DAB+ radio stations as well.

So the obvious solution would have been to adopt both DMB and DAB+, and then allow the individual radio stations to make up their own minds about which system to use – DMB for stations that want

to transmit video alongside their stations, and the rest could use DAB+ to take advantage of its higher efficiency. Lest we forget, there's already a precedent for France going it alone when adopting broadcasting standards, because they chose to use the French-designed SECAM analogue TV system in the 1960s instead of falling into line with the rest of Europe and adopting the PAL system. So perhaps they just wanted to keep up their tradition of being difficult?

One thing that the French decision has in common with the adoption of DAB in the UK is that the losers are the radio listeners, because the audio quality will be significantly lower than it could otherwise have been. For example, for the same amount of multiplex capacity being consumed, a radio station using DMB would have an audio bit rate of 59kbps, whereas on DAB+ the audio bit rate would be 80kbps (both systems use the AAC+ audio codec), and an increase in bit rate level by about one third would lead to a significant improvement in audio quality.

The reason for the difference in bit rate level of more than 21kbps is down to all channels on DMB having to include a video stream, because DMB was designed (in South Korea) to carry mobile TV channels. Of this 21kbps, the video stream would have a bit rate of 2kbps (which would consist of a simple still image being transmitted every few seconds), and the remaining 19kbps is used to synchronise the video with the audio. But still images and interactive graphics don't need to be accurately synchronised with the audio, so in these cases the 19kbps of synchronisation data is completely wasted capacity that could have been used to

improve the audio quality.

It should be said, however, that the AAC+ bit rate levels the French broadcasters have been using on their DMB trials so far will mean that the audio quality will be much better than that provided on DAB in the UK so far, so they deserve some credit for that! You also have to admire their nerve for launching DMB, because there's now a relatively long list of countries that are planning to use DAB+, whereas no country other than France has shown any interest in using DMB for digital radio so far.

What effect the French decision will have on the European digital radio market will depend on how many countries choose to follow France's lead. If a lot of countries adopt DMB then I think it's likely that all digital radios sold in Europe would end up supporting it so that receivers can operate across Europe. The downside of that, however, would be that consumers in countries such as the UK that are planning to use DAB+ would have to pay the additional licensing costs involved with supporting DMB for functionality that they will only benefit from when visiting countries that use DMB – for example there is a licensing cost incurred for the use of the MPEG-4 H.264 video codec on DMB.

Personally, I'd like to see no other countries adopting DMB and the French broadcasters and government ending up with some much-deserved egg on their faces for selfishly expecting everyone else to dance to the beat of their drum. Unfortunately, it wouldn't surprise me if radio does go down the gimmicky video route, but if that does happen then, in my opinion, video will finally have mortally injured the radio star. ●

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"without cassette, we would have lost an entire swathe of creative talent during the 1970s..."



paul rigby

One of the albums reviewed in the last issue's vinyl column was the post-punk electronica band Cultural Amnesia's 'Press My Hungry Button', via Vinyl On Demand. Mention was made during the review that the musical source for the release was the dear old cassette tape, created over 1980-1983. Of course, the popular use of the Compact Cassette as a mastering source is very much a 'time and a place' medium and resulted from the revolutionary philosophy, initiated by the Punk movement of the Do It Yourself ethic. Artists, at this time, realised that they no longer had to rely on corporate support to back their endeavours. Technological advancement held the key. Fanzine editors were liberated by the popularisation of the photocopier and wannabe record label executives and bands made good friends with the cassette tape.

Now that bands of yore are reaping the benefit of the sage old advice "never throw your masters away" and are re-releasing their old songs, demos and alternate versions to the delight of their ageing fans, the contemporary bands themselves are having to come to terms with the fact that their precious sources are not the best. They are quirky, to say the least, but also – as any Nakamichi cassette deck owner will testify – retain an enormous amount of hidden potential.

As with many bands of the period, Cultural Amnesia's entire output resides on cassette. They, like many other cult outfits, never had a contract and never recorded in a company studio, "indeed we never recorded in any kind of dedicated

studio. We were literally 'home tapers', although our recording equipment did progress from ghetto blasters to a four-track", said band member Gerard Greenway.

The band archive has been kept carefully by fellow band member Ben Norland, in a common cassette case. "There are perhaps forty or fifty tapes, containing around 130 pieces of music," said Greenway, "until we got the four-track we were indiscriminate about what tapes we used. Many of them were second-hand. So some of the tapes are well over twenty-five years old. Given this, they have held up remarkably well. There have been one or two hairy splicing operations but, on the whole, any failure of tape quality is as likely to be due to the condition of the tape at the time of recording as to deterioration since."

However, because the source varies so much in quality and, due to its cheap and cheerful construction, because it can be processed in so many different ways, how a mastering engineer, in this case the band themselves, tackle the source material requires skills of a broad and varied nature. On this album alone for example, the band had to adopt three completely different methods of mastering.

Firstly, as Greenway describes, some "material was recorded originally as straight stereo in one take. In this case I did very little work. Tried to cut a little noise; topped and tailed the track; equalised the left and right pan if necessary. If the track had no natural stereo 'feel' to it at all I sometimes mixed in a very low level 'false' stereo signal – if it seemed to improve the feel of things. Often the track was just too bright – our material was originally heard as third-generation tape copies after all, so I

often had to dull things down a little across the whole mix."

The next variant of mastering occurred because some music was recorded, "originally as two separate tracks with full stereo separation – tracks made with our Tensai Rhythmster two-track machine. In this case we would have originally arranged and recorded the two takes in such a way as to try and create an impression of a more 'normal' stereo mix. I was able to process the two takes separately – equalising the levels a bit if needed and, depending on the nature of the specific track, I softened the stereo effect, by panning the two tracks back a little".

Finally, for the material recorded originally as a four-track master on a Fostex 250, "all four tracks could be worked on separately. This meant I could put a light compression on the vocals (something those songs had always needed) and cut out large amounts of hiss when nothing was playing on a given track. Many of our four-track songs had to be mixed 'on the fly' and I had quite a lot of notes about this (plus what I'd retained in my memory) so I was able to automate and refine all of that mixing."

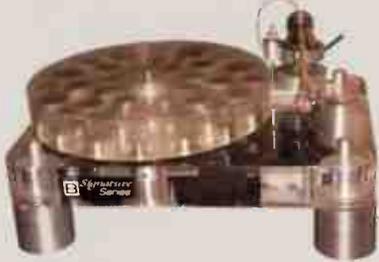
As many an advocate of liberty has found to their cost, even in revolutions, there is a price to pay. In this case, the lack of professional facilities results in an unpredictability in the quality and the form of the original source which triggers many a headache and requires time intensive work to get source music up to scratch. In this case however, it was well worth it and, in fairness to the humble cassette tape, without that source, we would have lost an entire swathe of creative talent during the late 1970s and early 1980s. ●

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"don't "mis-underestimate" the power of synergy!"



david price

As Noddy Holder can be frequently heard saying at this time of year, "it's Christmas"! And what better time to sit down, relax and enjoy one of life's high pleasures? The trouble is that my annual week of intensive music listening (the television is *persona non grata* in my household) is normally greeted by something in my system going bang; just in time to spoil a Xmas party I'm throwing...

This year however, my system decided to have its annual fit of pique an entire month early, and it's thrown me into a whirl. As any denizen of the readers' letters section will know, Noel, Adam and I blather on about synergy until we're blue in the face, constantly underlining the importance of the concept. That's because we get to try very expensive kit which routinely turns in quite poor sound, not necessarily because it's bad but because it doesn't match up to what it's being used with. Conversely, we often hear systems that are surprisingly cheap but sing their little hearts out.

Well, by early November, a number of component substitutions to my system seemed to have really hit the spot. It made for a stunning sound, which a certain visiting Japan-based cartridge designer declared to be "the best sounding system I've ever heard in this country" - a double-edged compliment if I've ever heard one!

My early November roster looked like this: Technics SL1200/Audio Origami RB250/Lyra Titan turntable, Note Products Phonote tube phono stage, Sugden IA-4 Class A transistor amplifier and Yamaha NS1000M loudspeakers, running Black Rhodium Tango loudspeaker cable and Missing Link mains cables. Seriously powerful, ultra clean and detailed yet

jaw-droppingly musical and vast in scale, for me it was a joy. The system did what it did brilliantly, and what it did was what I wanted it to do - but then disaster struck...

The Sugden amplifier went up in smoke like Cheech and Chong. Upon switch-on one morning, there was a curious smell of burning, and by the time I could get over to my equipment rack it looked set to do the electronic equivalent of singing "Goodnight Vienna". I switched it off pronto, and returned it to Sugden for surgery. This was traumatic enough, but then I got that sinking feeling - what am I going to do to replace it? This is the sort of empty, hopeless sensation you have when your car's windscreen wipers pack up half way up the M1 on a rainy February night.

I realised how I'd fettle my system around one component, because when I wheeled in my reference NuForce Ref 9SE power amps (used with a reference MF Audio Passive Preamp) they just didn't float my boat. In the past, with other ancillaries such as my Michell GyroDec, they've sounded great. Then in came a pair of Quad II-40 monoblocks, and instead of sounding over smooth as per the NuForces, these valve amps were actually a tad coarse and hard. The world was upside down.

I lived with this system for a week, finding it difficult to put up with an acerbic upper mid that had me thinking that NS1000Ms were forward speakers after all. I cleaned the system's contacts, put the Quads on FoculPods and switched from Black Rhodium to Clearer Audio interconnects - all of which calmed things down - but still the kit didn't quite have its 'mojo working'. Aside from that chrome-plated upper mid, making vocals from the lovely Ms K. Bush sound shrill, I was wondering

why I had a hole in the middle of my stereo soundstage - almost as if I should be moving the two speakers together more after years of having them positioned so successfully.

The answer came in two packages. First, a Silverman mains distribution block and several matching interconnects, costing around a third of my existing mains cable 'loom' from Missing Link and Black Rhodium, went in. Well, as the phrase has it, my gob was well and truly smacked - that 'hole' in the soundstage disappeared - the Yams imaging boldly and confidently into the room again - and the edginess was all but gone. It was amazing, and all the more so because I have absolutely no idea why - I can merely observe the difference, rather than explain why.

Second was a substitution: the two Quad II-40 monoblocks were replaced by a single Icon Audio 300B valve integrated. After half an hour of warming through, my system sounded braver, ballsier and bassier - with a towering snare drum sound on Kate Bush's 'Moving'. It lacked a little of the forensic detail of the Quads, but more than made up for it with a 'swagger' that only a 300B valve amp can deliver. Considering it came in from the cold with no miles under its belt, into a totally 'alien' system set up for other amplification, I think it did rather well.

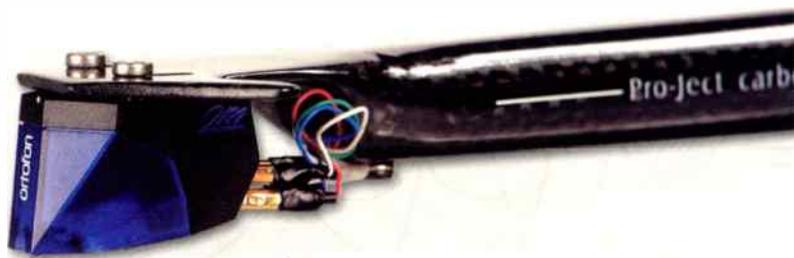
To borrow a phrase from a certain American president famous for his licentious use of the English language, don't "mis-underestimate" the power of synergy. It is so critical, yet so much of a black art. I hope the Sugden reappears on my doorstep, because I just didn't think we were ready to part. But in the meantime, I've found a new 'paramour' which makes me feel weak at the knees - and that's not just down to its 28kg kerb weight! ●

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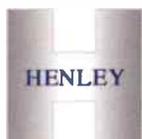
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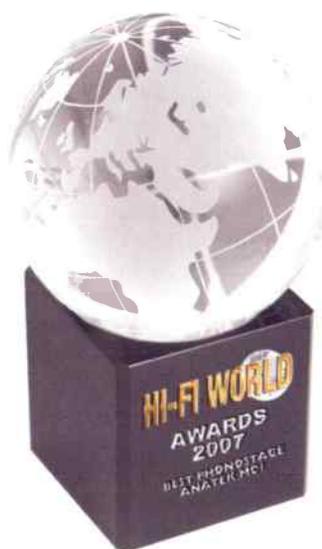


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"new high quality vinyl pressings recently reintroduced me to Led Zeppelin's epic performances..."



noel keyword

Of all the famous bands I never saw, Led Zeppelin were the biggest. They were just too big for me to even contemplate seeing – attracting oceans of people to vast venues and using P.A. stacks the size of a house. I'd see people playing instruments so far away they could have been swatting flies, I thought to myself. If you can't recognise their faces, then you could just as well be at a Punch and Judy show, ignoring the racket from a dodgy P.A. system. I had the LPs and a live concert wasn't going to sound any better.

All the same, it was great to read the enthusiastic reviews of their recent come-back concert at the O2 arena and I wondered whether I should have put my name down in the ticket lottery, seeing that Kate Moss hadn't invited me. The reviews reminded me that once upon a time Rock music had the power to be great and Led Zeppelin were amongst the greatest, a band so spectacular that they shook the world with a music that out-heaved everything. It possessed a power and drama that has never been equalled, nor perhaps approached.

Even now I spin Led Zeppelin albums with trepidation; some performances are just too moving to be heard as background music. Not many, admittedly; the Sex Pistols being amongst the few others I'd place as wide awake listening only.

What made me happy about the enthusiastic newspaper reviews was that people still can and do enjoy music like this, even if it isn't being made any more. Its greatness hasn't waned over time, shrinking in comparison to more polished and carefully crafted modern day songs, sung by people perhaps more in

charge of their senses (or perhaps not!).

Whatever, great bands gave us all good reason to buy the music in a form that could be conveniently played over and over again, often to the consternation of a generation determinedly in love with Bert Kaempfert. That was before CD cast its sterile hand over recorded music, when a Led Zeppelin LP was something to be enjoyed and treasured, not for future collectors value or any such notion too improbable to conjure up at the time, but for the sheer pleasure it brought.

Another reason I may not have gone to a Led Zeppelin mega-event was because the original LPs, which I still have, did a great job. I think I was using a Shure M75 back then, in a Garrard AP76, through my own home-built Mullard valve amplifier, feeding Leak Sandwich loudspeakers, although a pair of Braun electrostatics and various Wharfedales also passed through my portals during that era. None of it was fantastic, grotty wiring and connectors being one limitation, along with generally poor componentry, Mullard valves excepted!

All the same, some semblance of balance was achieved in the signal chain, and it wasn't burdened by gratuitous electronic excess. There were few amplifying devices, no tone controls and little to add anything overtly nasty to the sound. Transistor amplifiers had hit the market, but their severe crossover distortion brought a sound that even then, in relatively uncritical times, was recognised as coarse and lacking in refinement. So my simple hi-fi system, limited by today's standards, still fared well enough to get the power and emotion from tracks like 'Since I've Been Loving You'. I saw no

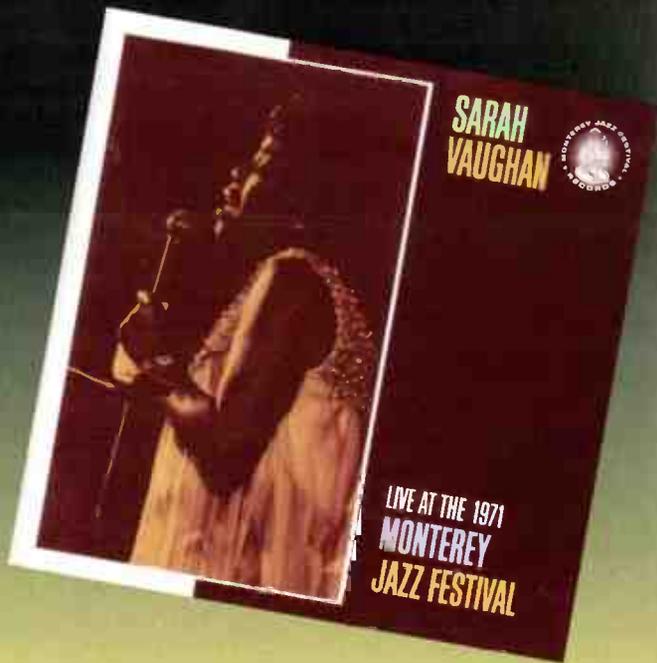
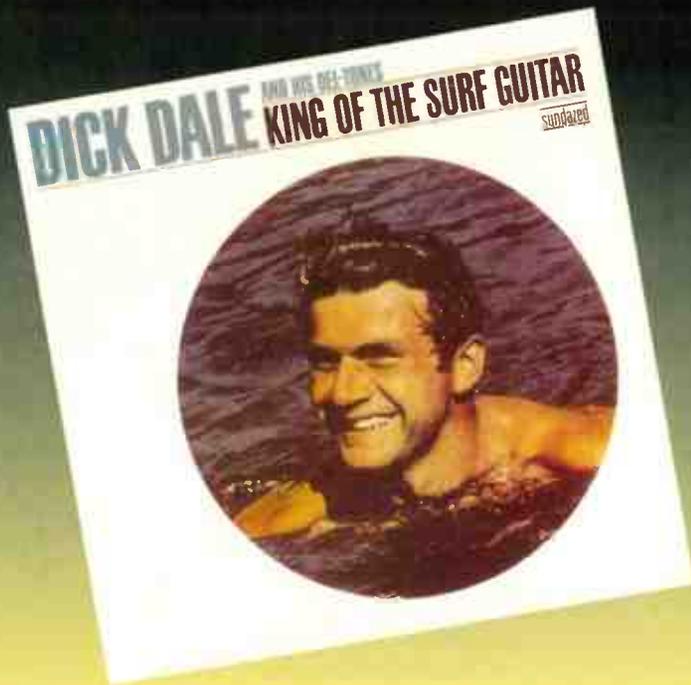
reason to be trampled underfoot by thousands of heavy metal fans, then be pumelled by a P.A. stack for a couple of hours until my ears rang, when better was to be had at home.

I could never have imagined, back then in an altogether different world, that this music would enter a brave new digital world that would devalue it. I bought the 'perfect' CDs to replace my well worn LPs, played something that was inexplicably diminished and never went back. Better to live with fond memories than to suffer the torture inflicted by poor digital, which only served to make me question my original enjoyment.

Then, as we all know - but I don't fully understand - something happened: the vinyl market began a revival that isn't, it seems, a short term blip. Led Zeppelin's early LPs appeared, all but unannounced, pressed in new heavyweight vinyl. Armed with an altogether higher tech. modern hi-fi system, these new high quality pressings recently reintroduced me to those epic performances.

Whilst I have quietly restocked my vinyl arsenal with such old classics, fearing it may be my last chance, I still tend to mentally categorise such music as 'the past'. I'm not encouraged when my young son asks me to play Hendrix so he knows what it is like, then shouts "Okay, I've heard it" after the first few bars. Yes, there's romance in the past, but no future it seems!

All the more surprising then that classic Led Zeppelin from the late 1960s should be so widely appreciated today. Unlike Bert Kaempfert, their music hasn't gone out of fashion. If they tour again I still won't be there, for fear of being speared by a zimmer frame this time around - and also because now I have the 180gm vinyl. ●



DICK DALE AND HIS DEL-TONES

King Of The Surf Guitar
Sundazed/Capitol

Dick Dale invented the genre of surf guitar - in fact this is how The Beach Boys evolved, adding vocal harmonies to a sound that was largely occupied by instrumental outfits, including Dale. Dale's skill was right up there with the best guitarists of any generation. In fact, Jimi Hendrix learned much from him and was undoubtedly influenced by Dale's talent. It is also true that Dale was way ahead of his time in both style and technique. This may have had something to do with his family background. His exposure to his Polish and Lebanese roots encouraged him to introduce Eastern chord structures into his guitar playing.

Often called the godfather of heavy metal, Dale even helped to push the very essence of guitar technology. His work with Fender, for example, helped them to improve amplification for guitars. He scared many manufacturers half to death because of the ferocity of his guitar playing - often snapping even the heaviest of guitar strings and completely destroying dozens of guitar picks as they were ground into dust. Dale also introduced many (then) weird effects into his presentation - reverb, for example, was one of his trademark tools.

This album was Dale's second and his first for Capitol Records.

Released in 1963, it was also his best album for the label, in which Dale plays and occasionally sings - he wasn't the best vocalist but he doesn't do too bad here. '(Ghost) Riders in the Sky', and 'Mexico' are full of energy and power, displaying Dale at his unstoppable best. The album is full of emotion - you really get the impression that he puts his heart and soul into his art. If you enjoy and appreciate guitar genius, then do yourself a favour and grab this album along with other Dale reissues on Sundazed: 'Mr. Eliminator', 'Checkered Flag' and 'Summer Surf'.

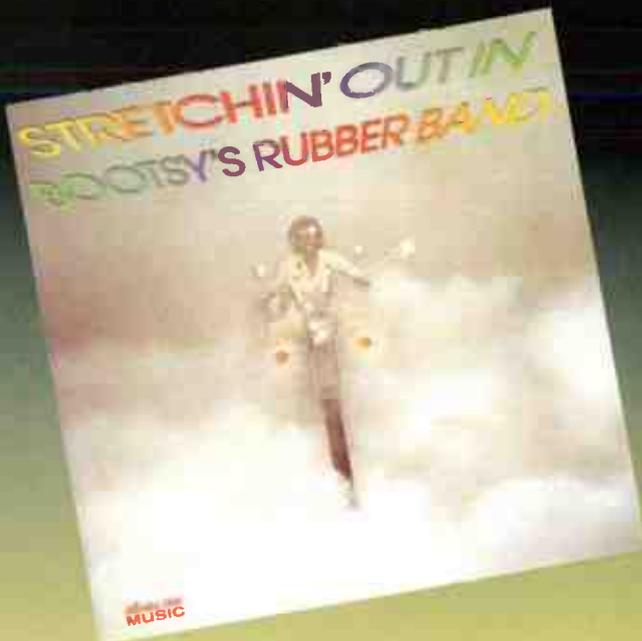
SARAH VAUGHAN
Live At The 1971 Monterey Jazz Festival
MJF/Concord

Chronologically, it's a world record event for a jazz festival - running since 1958 at the same venue, one hundred miles south of San Francisco. Now we've reached the fiftieth year of the Monterey Jazz Festival, Concord has helped the Festival chaps form a record label to enable the organisers to raid the vaults and release a series of concerts from 1958 to the present.

The company actually has a resource of more than 1,600 master tapes at its disposal. By anyone's standards this is a major resource. With around 2,000 hours of material from some of the world's principal artists to choose from, this new series of CD albums could be

the beginning of a major record catalogue. Especially so as these performances have never been heard before. Better still, the money made in selling these CDs will not be lining the pockets of some top record executive with a mistress and three Rolls Royces to feed, it will be used to finance year-round jazz education programs around the world.

This Sarah Vaughan release features an array of top talent backing her including Roy Eldridge and Clark Terry (trumpet), Zoot Sims and Eddie 'Lockjaw' Davis (tenor sax) and Benny Carter (alto sax). Introduced by Norman Grantz, Vaughan, who was forty seven at the time, sings without that abandon and power of her youth but her voice is still in good condition and her interpretive powers are immense, right from the off with 'I Remember You'. There's a good vibe in the audience during the concert with Vaughan in a playful mood; even flirting with a member of the audience who it appears presents Vaughan with a present of some sort! The CD ends with a stupendous jam session that spans over fourteen minutes and never really looks like ending - in fact the band take up the encore for another minute and a half! A great night. Look out for other CDs in the Monterey Jazz Festival range from Louis Armstrong (from 1958), Dizzy Gillespie (from 1965) and a 'Highlights Volume 1' (1958-Present).



BOOTSY COLLINS
Stretchin' Out In Bootsy's Rubber Band
 Collector's Choice/Warners

Bootsy Collins has worked with legends of soul and funk. Specifically, forming his first group, the Pacesetters, in 1968, they joined with James Brown and, from 1969 to 1971 acted as Brown's backing group, changing their name to the J.B's. In 1972, Collins left to join George Clinton's Parliament. Gaining valuable experience in both music and presentation – and, boy, did this pair of legendary entertainers have something to say on that score – Collins created a new outfit, the Rubber Band in 1976, complete with outlandish clothes and a Space Bass (a rhinestone asterisk-shaped guitar). In that year, Collins signed to Warners and launched his singles career with a hit taken from this album - 'Stretchin' Out (In a Rubber Band)'. This solo album is full to the brim with funky grooves. In fact, the album was actually co-produced with George Clinton, hence the evident influence of Funkadelic and Parliament on the disk. However, don't think that this is just a Clinton clone album with Collins stuck, in all his shining finery, on the cover.

Collins exhibits his own personality and direction. In fact, in the later Funkadelic and Parliament years, Collins himself was having an influence on Clinton's creative direction. "That's what got Warners

interested in me," said Collins, "when they saw I was not only part of the band, I was a writer on pretty much all the songs and the same thing with the Rubber Band records." The album itself is not deep, not conceptual and not a work of art – it's fun. As Collins said, "You just jump on the back seat and see what happens. And that's what made it fun and exciting. There wasn't a formula. You did it and you'd see what happens." All of Collins' albums in this nineteen seventies era are well worth listening to. However, this particular release is the jewel in the sparkly crown. Look out for other releases in this series including 'This Boot Is Made For Fonk-N', 'The One Giveth, The Count Taketh Away' and 'Ultra Wave'.

JOHN LENNON
Imagine
 Parlophone

Lennon fans should keep a look out for the new ten-album John Lennon reissue series featuring the albums: 'Live Peace In Toronto 1969', 'Plastic Ono Band', 'Sometime In New York', 'Mind Games', 'Walls And Bridges', 'Rock 'n' Roll', 'Shaved Fish', 'Double Fantasy', and 'Milk and Honey'. All of the albums have been issued as miniature vinyl records, in a replica sleeve as seen on the original release. That means that, as on 'Sometime In New York', the package replicates the gatefold sleeve where appropriate. The tenth album in the list is, of course, 'Imagine', his last great album

and the record which was issued before 'Sometime In New York' - a poorly received release that was the beginning of a creative downturn and the beginning of Lennon's infamous "lost weekend" in which he womanised and drank himself silly in the company of the likes of Harry Nilson, David Bowie and Keith Moon.

Arguably his best solo album, 'Imagine' was a calming affair, after the raw project that was 'Plastic Ono Band' (which involved works derived from Primal Scream Therapy). However, it definitely had its moments. Apart from the momentous title track, produced by Phil Spector, 'Jealous Guy' revealed Lennon to be a little more uncertain of life than his brash exterior let on whilst 'How Do You Sleep' was an all-out attack on Paul McCartney, his life-long friend and former bandmate, who Lennon never quite forgave for announcing the end of The Beatles. As a contrast, 'How?' and 'Crippled Inside' felt like an artist who had slumped, all anger, fire and anguish gone. Thus 'Imagine' felt like Lennon's most balanced album and one that address all of his emotions.

Sonically, it's a murky affair - Yoko Ono has full control over the masters and how they are mixed, even Mobile Fidelity, sticklers for 'doing the right thing', were under Ono orders when they produced their vinyl versions. As for these CD issues? In a word, satisfactory – but the best that's currently out there...

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Now we are getting somewhere, and it starts to all make sense when we look at panel loudspeakers like the Quad Electrostatic where the baffle width clearly isn't over 2 metres! By increasing just one dimension, say height, and allowing the speaker to couple to the floor and, possibly, the side wall, strong bass output can be achieved to satisfy even the organ enthusiast!

I'm not going to claim that you'll achieve the same bass power in the room from an open baffle speaker as you can from, say, a transmission line speaker of similar overall dimensions. As my wife pointed out when hearing the reproduction of a Bach organ work on the radio "organ music sounds better in a church where you can feel the power of the low notes".

I know what she means. That ability to really move the air, so that it has visceral as well as audible impact, is something lacking in most hi-fi systems, box speakers or not. But you do need large speakers to really make it happen.

THE BOX IS MISSING!

So, considering that most people like small speakers in their living rooms, what is the point of pursuing the open baffle? I'll tell you – it is that the box is missing!

Despite the best intentions of the loudspeaker designer in providing bracing, damping, internal absorption, adding a port, a horn or a quarter wave pipe, there is no getting away from the fact that putting a box behind a speaker just encourages resonance.

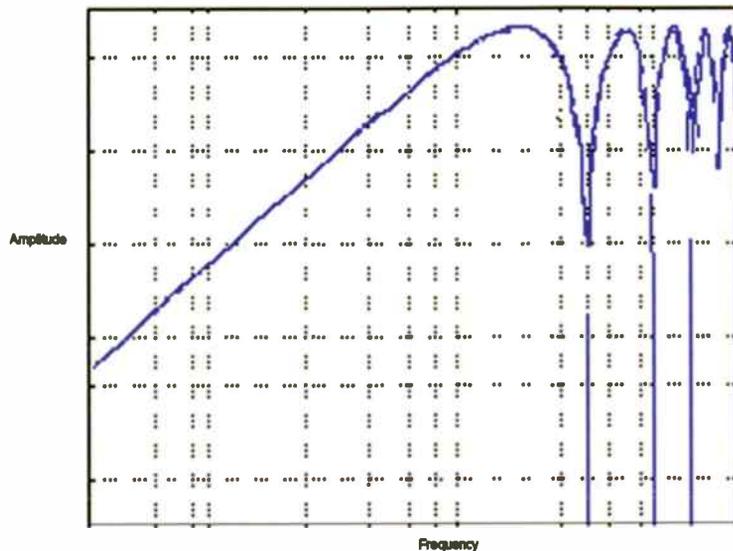
<u>Baffle diameter (m)</u>	<u>Cut off Fc</u>	<u>Peak Fp</u>
1.72	66	200
1.5	70	225
1.43	80	240
1.15	100	300
0.57	200	600
0.43	267	800

This table shows the relationship between baffle diameter (in metres) and the cut off frequency Fc. Below this frequency output will fall by 6dB per octave until the driver resonance is reached when the slope changes to 18dB per octave. For a circular baffle there will also be a peak where front and rear radiation become coincident, shown here as Fp. There will also be further peaks at multiples of Fp which is why, in general, circular baffles should be avoided!

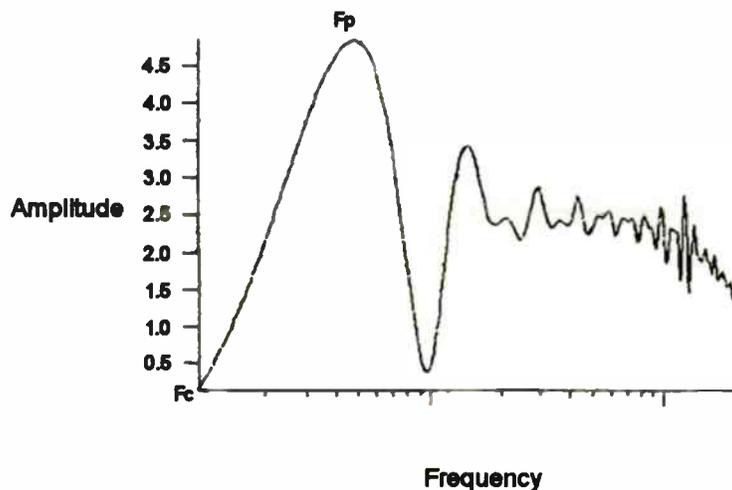
Now most of us grow up hearing these box resonances from every loudspeaker we listen to. So we are used to it. In fact I formulated a theory many years ago that we are so used to hearing box resonances

that the sound seems 'wrong' when you take them away.

That might partially explain why panel speakers are often described as 'thin' or 'lightweight' by some listeners on first hearing an electro-



Theoretical plot of driver response on a circular baffle. Note that peaks occur at Fp and its multiples.



Plot of 100mm driver on a 300mm circular baffle showing the relationship between F_c , F_p and the midrange power level. Circular baffles are to be avoided!

static. But when you talk to panel loudspeaker adherents they will be the first to describe box speakers as sounding plummy and coloured.

Is there somewhere in between? Would it be possible to have one's cake and eat it? At one point in my youth I was exposed to the sound from Gilbert Briggs Wharfedale SFB3. This Sand Filled Baffle loudspeaker with its three drive units gave the same impression of bass power as its ported competitors but without their lumpy, ill defined bass and coloured midrange. Clearly the open baffle system can be made to work.

Our first problem when looking at how to design an open baffle speaker is that of drive units. Nearly every single drive unit manufactured commercially today is destined to end up in a box of one sort or another, so it is hardly surprising that drive units from all the major manufacturers are developed to make the most of an enclosure, usually a ported one.

In Briggs day this wasn't so. With little conception of the exact science behind the relationship between compliance, mass, damping and Helmholtz resonance, drive unit designers of the '40s to '50s made sure that their units would produce good power at low frequencies without falling to bits on an open baffle. Hardly surprising, then, that they were suited to unreasonably large enclosures, whether ported or closed box types, if you wanted to maintain their bass characteristics.

But there is one area of the industry where bass drive units still have to be stable in open, or semi-open, cabinets just like the table radios of old – the Guitar industry! When it comes to guitar combo cabs you can still see ten or twelve inch monster drive units in virtually

open back cabinets pounded to near destruction on stage by rivetingly hard transients.

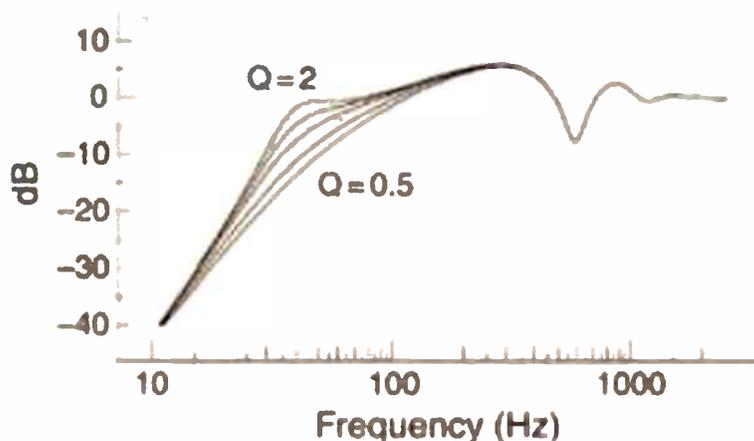
Of course, in the main, these units are not suitable for hi-fi use. The ideals of low distortion and vanishingly small levels of colouration are not foremost in the minds of guitar speaker designers! Occasionally, however, one finds a gem amongst drivers made for the Pro-Audio market and, when you do,

as there would be in an enclosure. If you are considering adding bass equalisation to extend the response of your driver, then its excursion limits become more critical as you ask the driver to do more work as the frequency is lowered.

Next we need to look at the Q_{ts} of the driver which is defined by its moving mass, the springiness of the suspension and the electrical damping from its magnetic system. Again, for a speaker in an enclosure, we would normally select a $Q > 0.3$ for a closed box speaker and a $Q < 0.5$ for a reflex design.

For an Open Baffle speaker using a passive crossover we actually require a driver with a high Q_{ts} . A $Q_{ts} > 0.77$ will mean that the amplifier will find it easier to drive the speaker as the frequency becomes closer to the system resonance. By careful choice of resonant frequency we can use this to extend the response below the baffle cut off frequency.

Finally the search for low F_s , the frequency of fundamental resonance of the driver, goes out of the window. The only reason we look for a low F_s in a driver destined for use in an enclosure is because we know full well that the resonant frequency



Effect of driver Q_{ts} on LF response. As Q_{ts} is increased, so is bass output towards the driver free air resonance. A Q_{ts} of around 1 is acceptable for an open baffle bass unit.

it is usually no problem adapting it to an open baffle speaker.

CHOOSING A BASS DRIVER

So what, exactly, are we looking for from a driver that makes it suitable for our Open Baffle? The first of our interests is excursion, particularly excursion through a linear operating region. The reason this is so important is that there is no restoring force on the diaphragm

will be raised considerably, in many cases doubled, by the reactance of the air in the enclosure. Thus, for a bass reflex or closed box speaker we normally look for an F_s of 30Hz or lower to achieve a system resonance, once the driver is in the box, of below 60Hz.

Our Open Baffle, however, is not going to influence the driver resonance in this way. So we can choose a driver F_s knowing full well



Goodmans Axiom 150 dating from the late 1950s is typical of large bass drivers of its day (dust cap and whizzer cone removed in this example). These were ideally suited to large, aperiodic, cabinets and Goodmans marketed one of the first commercial aperiodic vents!



Compare to a modern Eminence ProAudio driver – not too much difference?

that this is going to be close to our final system Fs. Figures in the 40-60Hz region will do just fine.

So what we have outlined is a drive unit that doesn't normally exist – good linearity with controlled excursion, high Qts, and a relatively high Fs, oh, and high sensitivity too!

That's why drivers designed for Pro-Audio use suddenly start to look attractive. We can start investigating the 12in (30cm) and 15in (38cm) drivers that would normally need a whopping big enclosure in order to achieve any bass extension. Initially these drivers look so wrong for hi-fi – lightweight paper cones, folded 'accordion' surrounds, limited Xmax – but remember, we don't need these drivers to do the same job as if they were in an enclosure.

Roll surrounds allow big excursions, necessary in a reflex loudspeaker to handle the considerable cone movement. Similarly the huge cone excursions, defined as Xmax, necessary for smaller diaphragm speakers just are not required with a 30cm cone or above. For the small movements of the cone

the folded surround, which provides a good restoring force, starts to look like a good idea.

Of course these driver features are exactly what you will see in speakers dating back to the 1940s and '50s. We're not reinventing the wheel here! That doesn't make them any less relevant in a modern

loudspeaker system. We just have to choose the engineering of the rest of the speaker carefully.

WHAT ABOUT FULL RANGE?

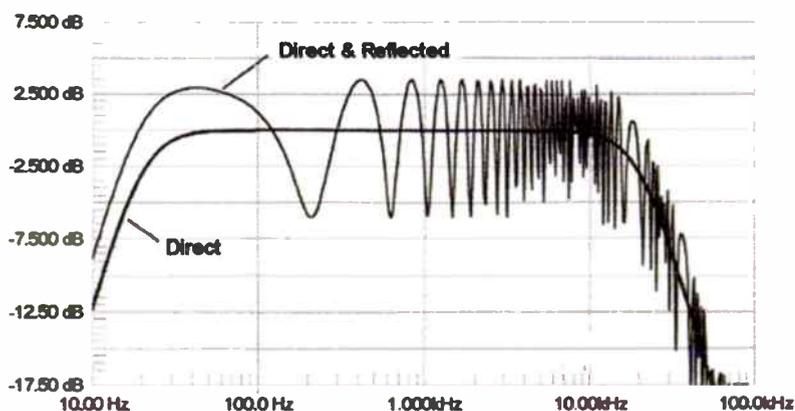
At this stage, up crops the usual interested parties from the 'full range driver' fraternity. Yes, many of the features I have described do accord with the smaller full range drivers too. But, as many DIY speaker experimenters have found out, the small diameter Fostex just don't produce 'real' bass when the music asks them to. Yes, you can stuff them into quarter wave resonators to 'enhance' what little bass output they have, but on an Open Baffle they just cannot move enough air on their own.

Augment a full range unit with a big bass driver, however, and you can have your cake and eat it! There's another reason for running the two units together and this has to do with the ideal position for the drivers on our Open Baffle.

Go back to the beginning of this piece and you'll see that I mentioned how the floor, and possibly side wall, comes into our baffle design when we put the speakers in a real room. It doesn't take a nuclear scientist to see that, if we put the bass driver close to the floor, the baffle is naturally extended by the floor. This leaves a three sided baffle and, by putting the driver close to the floor, the vertical dimension of the baffle is increased.

Now that doesn't mean that you can put the driver bang against the bottom edge. You do have to consider the floor reflection which, if it occurs too high in frequency, will notch out the upper bass response of the driver. As a compromise, however, this position for our drive unit has considerable gains and few detractions. Except one.

If you want the driver to be full range, the last place you should



Plots of driver mounted low on baffle, in proximity to floor, showing cancellation and reinforcement effects between direct and reflected sound.

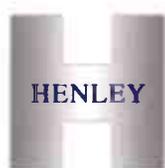
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Wharfedale SFB3 rear view. Note cutouts in side 'wings' to reduce resonance and bracing to improve stability. As expected the bass unit is positioned closer to the floor boundary and the midrange unit higher up. A cone treble unit, on its own baffle, points upwards at the rear!

consider is close to the floor. Various reasons crop up as we start to consider the pros and cons, the most obvious of which is that the driver is not at ear level. Full range drivers have relatively poor dispersion at high frequencies and really do demand that they are positioned somewhere around ear level for a seated listener. Next, remember that the floor reflection is going to occur somewhere in the midrange – there's no avoiding it – so the further away from the floor the better. If you have carpet on the floor under your speaker, and who doesn't these days, then this will have a considerable damping effect on the mid and high frequency output of any drive unit near it.

All of which points towards a two-way or three-way speaker. We can position the bass unit where it gains most benefit from the baffle and floor extension, leaving the mid/treble to be housed where it/they ought to be.

THE PERILS OF HAVING WINGS

There's only a couple more aspects that we have to consider before embarking on the final design of our

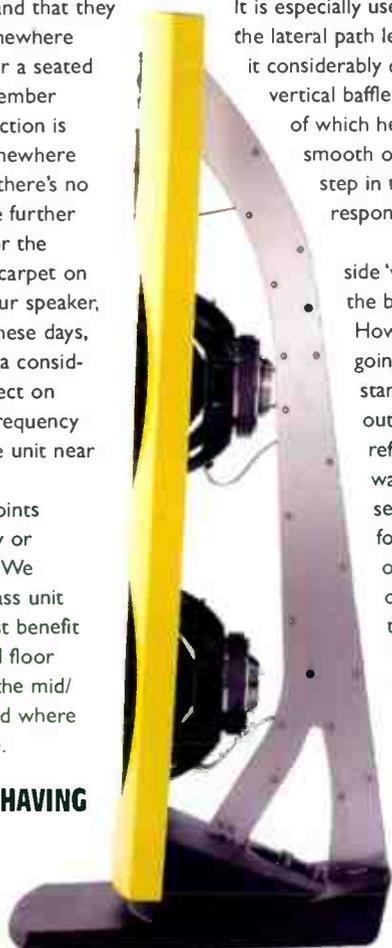
Open Baffle. One is should we have 'wings' folding back from the sides of the baffle? The simple answer to this one is 'yes' with a proviso.

Folding back the sides of the baffle obviously extends the baffle and helps lower the cut off frequency.

It is especially useful for increasing the lateral path length and making it considerably different to the vertical baffle dimension, all of which helps to 'blur' and smooth out the baffle step in the frequency response.

In addition these side 'wings' increase the baffle's stability.

How else are you going to keep it standing up? Watch out, however, for the reflective standing waves that are set up by these folded sides. Think of it in terms of a box with the rear panel missing. What you will hear, with deep 'wings' is a hollow, resonant honky nature to the midrange that is really very unpleasant, especially on vocals and piano. You would be better off putting the



A modern take on the open baffle loudspeaker - Jamo's flagship R909.



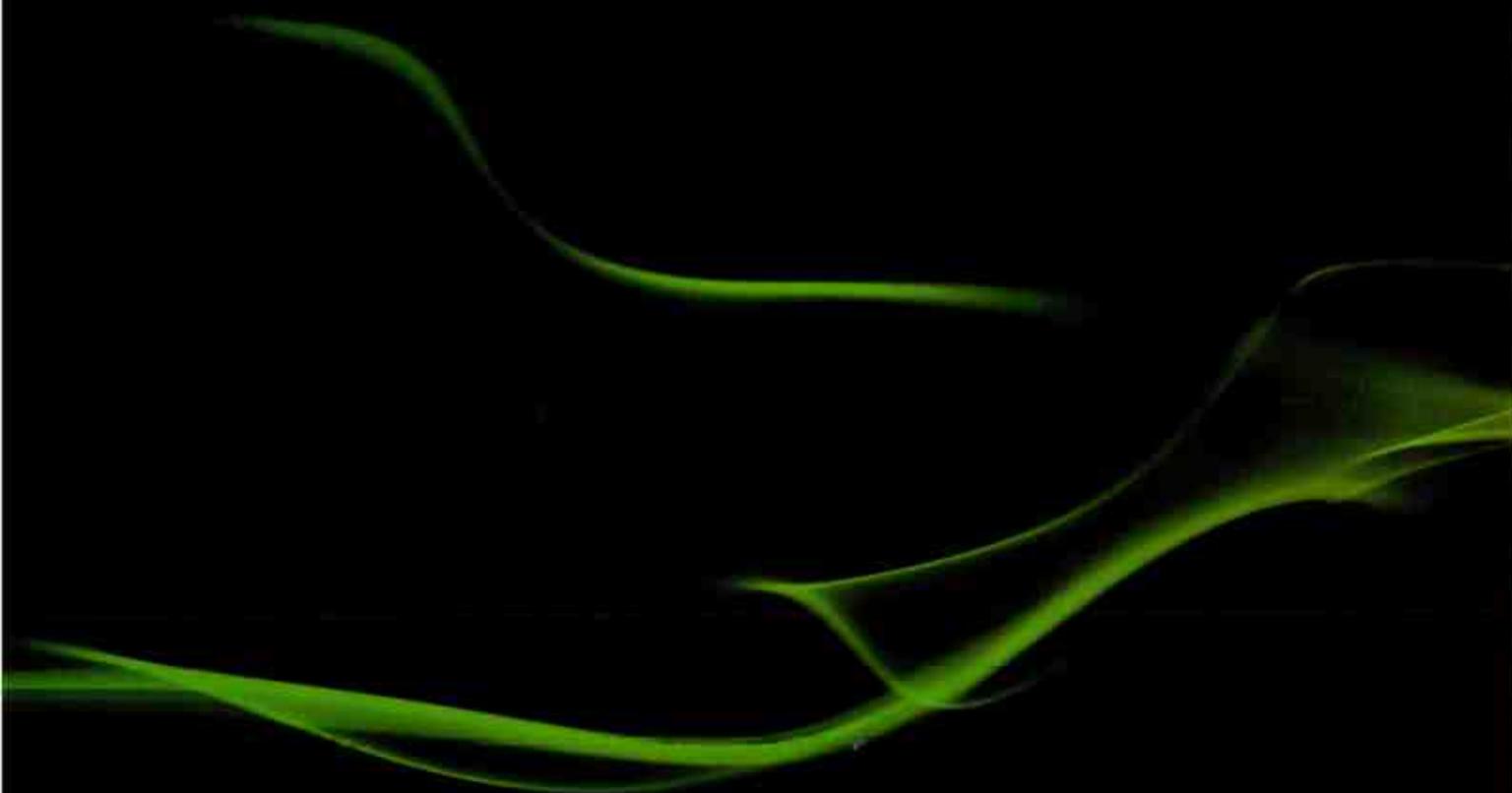
Celestion's SL6000 subwoofer, seen here beneath an SL600, had no cabinet and reached low, but needed an electrical equalisation network.

drivers in a box rather than have deep side wings – at least then you could include some interior absorbent to reduce the effects of the resonance.

So keep the side folds shallow and taper them so that any standing waves don't occur at just one or two audibly obvious frequencies. The attraction of tapering the 'wings' in a two-way system is that the bass unit receives the maximum benefit from the extended baffle while the midrange unit, which 'sees' the narrower section of the taper, is more 'open' and so suffers less reflection.

I'm off now to choose some suitable drive units and, as this coincides with the Christmas break, I'll be back in the first quarter of 2008 with our first Open Baffle design kit.

Happy New Year!



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CAMBRIDGE AUDIO TT50 86

Adam Smith auditions a brand new 'big name' budget turntable...

AUDIO TECHNICA AT-OC9MLII 89

Hearing this reworked classic cartridge is "deja vu all over again" for Adam Smith!

MICHELL TECNOARM VS. ORIGIN LIVE OLI 92

Adam Smith pits these two budget tonearm bestsellers against one another.

PURE SOUND P10 96

Noel Keywood is beguiled by this surprisingly affordable new tube phono stage.

HEEPS OF FUN

Out now on 180gm vinyl is a re-release of Uriah Heep's album, 'Sweet Freedom' which saw the band's debut on their new record label Warners, after leaving Mercury. Whilst still retaining their trademark heavy metal sounds, this album signified a change in direction in which the outfit added some acoustic downtempo moments and even a little funk. The album has been issued by Earmark, a collaboration between the UK label Sanctuary (which owns the masters) and Get Back from Italy (which does the mastering).



THE KALEIDOSCOPE

New from Sundazed, The Kaleidoscope's 1967 debut release, 'Side Trips' is probably the most eclectic release of that year from any artist. Each of the band members are multi-instrumentalists providing a sound which mixes string sounds with Beatles vibes and Eastern influences giving the listener a stew of rock and world music. A young David Lindley is at the helm of the band and his later mix of roots and rock is certainly present, but there's also a more relaxed approach going on as well.



A COMPLETE SHAMBLES

Pete Doherty is back with a new album, 'Shotters Nation' that (considering his performances in and around the media) is surprisingly tight, packed with good songs and awash with inventive lyrics. Look out for folk guitar legend, Bert Jansch, who guests on the track, 'The Lost Art Of Murder'. Out now on Parlophone.



PACK OF 3

Pure Pleasure has released three attractive yet diverse records on 180gm vinyl. 'Leadbelly' by Leadbelly or Huddie Leadbetter, as he was known, was famous for his adaptations or creations of an array of folk songs, including 'Goodnight, Irene', 'Rock Island Line' and 'Cotton Fields', all seen on this release. Many people assume his was a blues muse but he did more to influence folk heroes such as Woody Guthrie and Pete Seeger. Speaking of folk heroes, the label has also released the seminal Vanguard release, Joan Baez's self-titled album. 'Joan Baez', the album, was a breath of fresh air on the folk scene – as was Baez herself – and this release conveys Baez's purity and clarity. All tracks are traditional and include 'Silver Dagger', 'John Riley' and 'Fare Thee Well'. Moving on to the blues and T-Bone Walker's 'Sings The Blues'. One of the all-time great blues guitarists, Walker's career began in the 1940s. He's influenced just about every major guitar blues artist since then including B.B. King. This compilation, from Walker's excellent stint at the Imperial label, includes 'Blue Mood' and 'Cold Cold Feeling'.



TWO FROM GUERSSEN

Direct from Spain come two more unusual releases. The first, from Yves & Serge & Victor, is a French folk release, 'Cagibi' that was released in 1975. In fact, it was recorded in an apartment on a 2-track tape recorder. The band then released just three hundred original copies. The lads didn't even have enough money to afford a printed cover, so it was left white and then given away to friends and family. Immensely appealing, the vocal has a direct influence from Neil Young and Crazy Horse as well as Crosby, Stills & Nash. Fire's 'En El Nom Del Pare', on the other hand, is a freakbeat compilation. Fans of the Beatles-backed Apple record label should take note because Fire was almost signed by the company but three demos were ultimately rejected (included here) and another was turned down by Paul McCartney as "lacking punch". That track is also featured along with alternate takes from the band's ultra-rare album, 'The Magic Shoemaker', a psyche-prog crossover.



WHAT'S MY NAIM?

Published by Naim, these two releases by guitar wizard Antonio Forcione look for influence towards Italian folk music and Pat Metheny, as well as Brazilian, Spanish and Cuban music. Apparently, prior to recording his first album, 'Touch Wood', Forcione worked with his accompanying musicians and stage tested the music for two years. 'Heartplay', on the other hand, pairs Forcione with the veteran jazz bassist, Charlie Haden. They're a complimentary match - Haden supplies bare, yet melodic, lines alongside Forcione's acoustic work that gives the pair an edge.





Cambridge Audio are another manufacturer dipping a tentative toe into the swirling waters of vinyl replay for the first time. Adam Smith takes a listen to their new TT50...

Taking a punt

It is often said that "curiosity killed the cat" and, although our very own moggy is very much still alive and kicking, I know that he has had one or two nasty surprises when he has blundered headlong into a situation with inadvisable haste!

The same is true within the audio industry. There have been innumerable bandwagons over the past thirty years or so, as technological and fashion fads come and go. Many manufacturers prefer to sit back and see how these pan out before committing themselves to one or another...

One of the formats that has been the cause of a certain amount of cautiousness in the past few years is, of course, vinyl. As regular readers know, we're all big fans here and have been championing it for longer than we care to remember. Our perseverance has paid off and even we have been surprised by the resurgence in interest in vinyl,

as well as the number of manufacturers who have either restarted turntable manufacturing, like Revolver, or started making decks for the very first time, like Creek with the forthcoming Wyndor turntable. To this list we can now add Cambridge Audio.

I remember from my days of working for Audio Partnership that their staff suggestion scheme for new products and ideas was always very active. At the time of the Azur 540P and 640P phono stages launch, one of my colleagues got in before me to suggest a matching turntable. The response at the time was one of cautiousness but it appears that even Cambridge are convinced of the strengths of vinyl now, and so the Cambridge turntable has finally arrived.

Of course, another problem that a company like Cambridge faces is that, when you are best known for high quality equipment at a reasonable price, the cost of

designing and developing a unit totally in-house means that the finished article is likely to carry a high price tag - as an example, the aforementioned Creek is rumoured to be selling for around £2,000. Clearly the answer is to join forces with a manufacturer who already has considerable experience of budget turntable manufacture - and who better than Pro-Ject?

However, it would be wrong to assume that the TT50 is a just a rebadged standard Pro-Ject deck; the boffins at Cambridge Audio have done their part too and, whilst the TT50 may resemble one or two of the models in the Pro-Ject range, it is actually a unique beast.

The first aspect that is most noticeable is the platter. The TT50 sports a proprietary elastomer-coated acrylic item, which Cambridge say "gives an acoustic impedance matched to the record for maximum detail retrieval coupled to extremely low resonance". As a result, no

platter mat is required.

Secondly, the TT50 uses a new arm design, boasting its very own Cambridge logo on top of the bearing housing - very cute! This uses a one-piece arm and headshell setup with a separate finger lift that is supplied, bolted to the top surface. It can be removed if wished.

The bias compensation system is also new and is magnetically operated - a system which is finding favour for both its ease of setup (unlike a thread-and-weight system) and its more consistent operation across the record (unlike a spring-based system).

The rest of the deck is standard good quality fare. An isolated synchronous AC motor running from a 16VAC step-down transformer features a two step pulley for 33 and 45 rpm and drives the sub-platter via a belt. Speed is changed by removing the platter and manually moving the belt on the motor pulley - a not uncommon but laborious method often used on budget turntables.

The deck is supplied prefitted with an Audio Technica AT-95E cartridge all set up and ready to go - all you need to do on unpacking is fit the counterweight, balance the arm, set the bias and connect up to your amplifier using the interconnects of your choice to the rear gold plated phono output sockets. Finished in a stylish gloss black, the TT50 comes with a Perspex lid and is compact, with a footprint of just 415x320mm.

SOUND QUALITY

Firing up the TT50 led to good first impressions. The sound was clean and fulsomely presented, with decent top end clarity, if imbued with a rather 'wispy' quality, and a pleasingly

"the TT50 proved itself to be more than adept at picking out the minutiae of Antonio Forcione's stringwork".

weighty bottom end. Bass rhythms were tight and pacy but somewhat lacking in detail in terms of bass string movement and feel. Across the mid, vocalists were clear and distinct, with good instrument clarity, but the sound was resolutely locked in between the loudspeakers. All in all, eminently listenable and enjoyable, but a storming £350 turntable? I needed further convincing...

However, years of playing with far too many turntables, arms and cartridges led me to conclude that I was really listening to the AT-95E. Now, don't get me wrong, this is a bargain at around £22, but I felt the TT50 could happily take on something better. Consequently, it was off with the toolbox lid, out with the AT-95E and in with an Ortofon 2M Blue.

Now this was more like it! If we were a television show, I would instruct the producer to cut to a time-lapse sequence of a flower opening at this point, because this is exactly what the TT50 did - it positively blossomed. Suddenly the sound leapt forth from the loudspeakers and spread itself around the room with very impressive precision. The variety of instruments working away in the background of Grace Jones' instrumental version of 'Slave to the Rhythm' zipped around the soundstage and at one point I looked over my shoulder to hear what the noise behind me was, only to find it was an electric guitar being played on the LP...

Eleanor McEvoy's vocals on her 'Yola' album now projected beautifully out of the loudspeakers via the TT50 and I could have sworn she was right in front of me on the track 'The Rain Falls' - certainly I was captivated by her love life woes that this track describes.

At the bottom end, bass went deeper and became even more solid but layers of detail appeared and the TT50 proved itself to be more than

adept at picking out the minutiae of Antonio Forcione's stringwork on his 'Touch Wood' album. Similarly, Chris Layhe's intricate bass lines on the Icicle Works' 'Blind' LP were expertly rendered.

Across the treble, that wispieness noted earlier was gone and the rather soft, hissy, whooshy noises from the background of Deacon Blue's 'When Will You (Make my Telephone Ring)' suddenly metamorphosed into cymbals. The Cambridge brought details out into the mix very nicely without any hardness, but I still felt that the TT50 lacked the last ounce of crispness from the very top end. As a result, some more forceful mixes were a little more restrained than usual - no bad thing in some ways, but they lacked their usual incisiveness.

CONCLUSION

As a package, the Cambridge TT50 is a fine turntable that is easy to set up and start using and offers a very pleasant presentation. However, upgrade the supplied cartridge and it moves onto a different level, suddenly gaining detail, clarity, perspective and some of the best soundstaging I have heard from any sub-£500 turntable. Another fine Cambridge product, then, but do allow an extra £100 or so for the cartridge upgrade.

VERDICT

Fine sounding, user-friendly introduction to vinyl that's good enough to move up a gear with a cartridge upgrade.

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FOR

- soundstaging
- detailing
- plug and play design

AGAINST

- treble could be crisper
- supplied cartridge limiting

MEASURED PERFORMANCE

The Cambridge Audio TT50 turned in a very respectable wow and flutter figure of 0.094%, which is fine for a modestly priced belt drive deck. The graph shows more information in the flutter region (above 4Hz) than would be expected from a dearer design and this reflects the lower cost bearing and motor. However, the wow component was obviously low, showing that the machining of the drive items is of high quality.

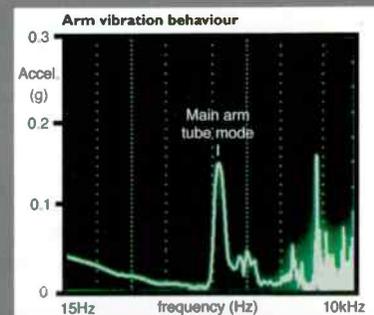
Speed stability was very good over a period of a few hours but the 3150Hz test tone was measured as 3175Hz, which means the deck is running around 0.7% fast - a little on the high side.

The Cambridge's arm also measures well, with a moderate but narrow main armtube peak showing a relatively undamped nature, but one that is well controlled. The upper reaches of the trace were also well controlled, suggesting that the Cambridge's headshell is not too lively.

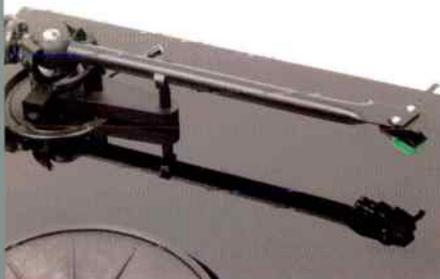
All in all, the Cambridge TT50 measures well; it should offer a stable

and solid sound and should not be overly fussy with regard to partnering cartridges. AS

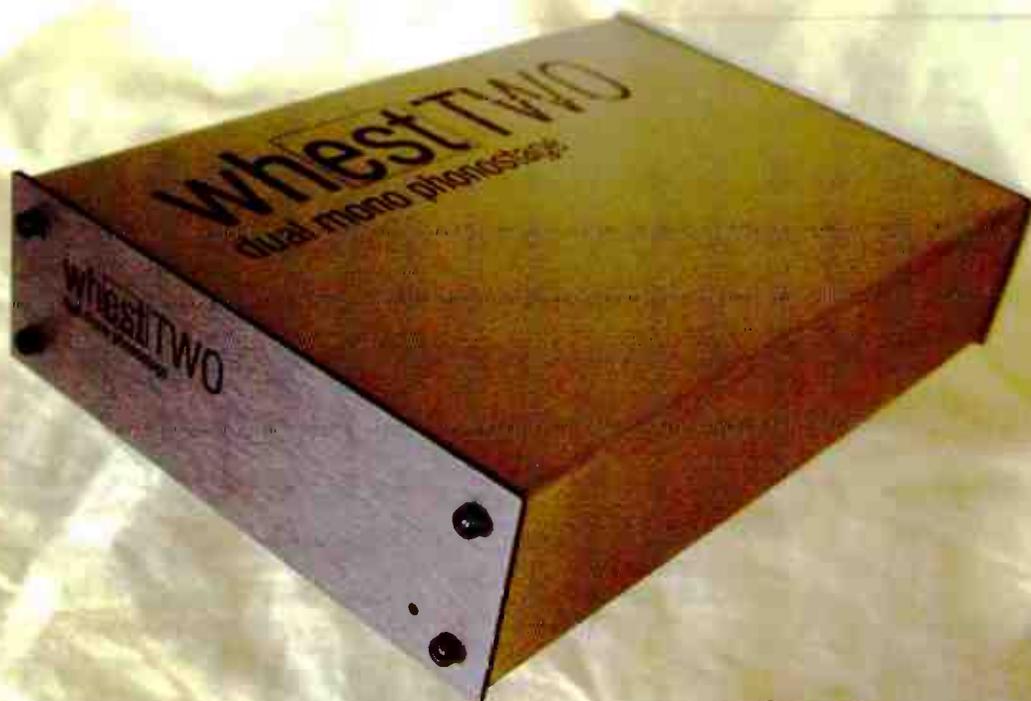
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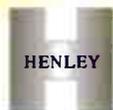
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Micro Magic

In production long enough to gain 'classic' status, the latest version of Audio Technica's twenty year old moving coil flagship, the AT-OC9MLII, now sports a MicroLine stylus. Adam Smith listens in...

As a keen student of hi-fi of all ages, it is often interesting for me to discover the components that have quietly survived for far longer than might be expected, and it is equally interesting to see how many of these relate to vinyl replay...

In our May 2007 issue, we looked at the venerable Nagaoka MPI I cartridge; the Dual CS505-4 staged a reappearance in our July 2007 issue, only to cause raised eyebrows when it was discovered that it had never gone out of production. Similarly, looking through the websites of people like Shure, Denon and Audio Technica you will find model numbers like M92E, M-97xE, DLI03 and AT-95E, all belonging to cartridges that have given listening pleasure to more than one generation of vinyl enthusiast.

I suppose that, given vinyl is considered to be a minority interest to many, there will always be manufacturers who follow a certain element of "if it ain't broke, don't fix it", especially if they have diversified their product portfolios in other areas. Denon are obviously famous for their electronics and home cinema components and Shure are a big player in the headphone and microphone arena, but both keep their classic cartridge ranges ticking over. Only last year, we enquired of Shure about the possibility of a new version of the V-15 cartridge, but were met with something of a disinterested shrug. However, with brand new cartridge ranges like the Ortofon 2Ms and the Goldring 2000 series, it appears that there is life in the old vinyl dog yet - there's still time for a rethink, chaps!

What of Audio Technica? Their

situation is rather more interesting as, if you take a peek at their UK site, you will see the aforementioned AT-95 (now in AT-95EBL configuration), along with some other old friends like the AT-110E and the good old AT-440MLa. However, with a bit of careful guesswork navigating their Japanese site (my Japanese is non-existent!) you will find that, over there, they sell a range of thirteen MM cartridges, five high quality SME-fit headshells and the latest 'Illa' version of the AT1503 professional tonearm.

Find the MC cartridge section and you have a choice of nine different models, including the AT-F3II, and Mono, 'R', Prestige and

Anniversary variants of the good old AT-33. Fortunately, cutting off my impending foot-stamping tantrum about how unfair this all is, AT have at least thrown us something of a bone in the form of the AT-OC9MLII. Interestingly, this does not appear on the Japanese site, although the physical appearance and specifications of their 'ART-2000' model look astoundingly similar...

However, this is not just a fine design that is marching on proudly unchanged, but a genuinely updated product. The original AT-OC9 dates from the mid nineteen eighties and served as AT's flagship until the

arrival of the ART-1. However, with the discontinuation of the latter, the OC9 resumed its position at the top of the tree and its MLII makeover has ensured that it has remained more than competitive.

The original OC9 sported a gold-plated beryllium cantilever with a Nude Square Shank elliptical stylus, along with PC-OCC coil windings and samarium cobalt magnet. The MLII version now adds in a gold plated, solid boron cantilever and a MicroLine stylus - impressive stuff.

"Audio Technica have taken a fine cartridge and updated it to superb effect..."

As a long-standing user of an original OC9 until it succumbed to the sheer number of groove miles I put under its stylus, I was very keen to find out how the new oldie performed, especially as, to date, I have yet to settle on a suitable replacement that offers its dynamic qualities at the right price...

SOUND QUALITY

From the first bars of music, I realised that the spirit of my old friend was well and truly still in place, but that the recent stylus makeover has definitely shifted the OC9's performance up a gear or two. The



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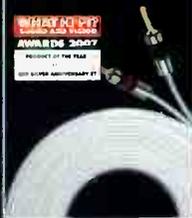
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Thanks to Dave Cawley of Sound Hi-Fi for supplying our review sample. Sound Hi-Fi can be contacted on +44(0)1803 833366 or at www.soundhifi.com. See also their AT-OC9 website at www.at-oc9ml.co.uk.

REFERENCE SYSTEM

Garrard 301 turntable
Cardas rewired Alphason HR-100S arm
Quantum Electronics 102/207 amplifiers
Modded Ferrograph S1 loudspeakers

dynamics and verve of the original are still there in spades, but the MLI upgrades now add a lovely touch of sophistication that was somewhat lacking in the original at times.

The rise in output level towards the top end of the frequency range is, as with most MCs that measure this way, noticeable but this is never accompanied by any harshness or spittiness. Yes, this is quite a bright cartridge but at the same time it manages to be sweet and beguiling at the top end and, as such, is ideal for adding a touch of sparkle to a smoother sounding system.

Set up in the SME M2-10 on our Pioneer PLC-590 in the *Hi-Fi World* listening room, the OC9MLII proved an interesting counterpoint to the Ortofon Rondo Bronze that usually resides there. The Rondo is wonderfully smooth and sophisticated, with a plush sense of maturity to its presentation, but it can have a tendency to lack the last level of excitement, especially in a smooth arm like the M2-10. The AT really kicked things up a gear here, pulling rhythms to the fore and digging superbly deep into the mix of whatever was passing beneath its stylus. One aspect I did notice however, was a slight softness to the bass which I did not remember from its predecessor. I suspected that this was down to the SME and so decided that this was as good a time as any to take the AT for a trip to the countryside - destination Smith Towers!

Bolted into an Alphason HR-100S on my Garrard 301, the AT-OC9MLII really got into its stride. Bass was now tight, deep and incredibly dynamic with impressive detailing. Spinning a few dance twelve inch singles showed that the AT loves a good beat and grips a fast bass line

with the tenacity of a bloodhound. Moving to Grace Jones's instrumental version of 'Slave to the Rhythm', the OC9MLII pulled every aspect of the intricately layered percussion from the depths of the track to present it with commensurate precision. Again, the track swung along with real pace and verve and the cartridge's crisp top end added real feeling to cymbals and hi hats.

Across the midband, the OC9MLII proved equally adept at marrying the upper and lower ends of the spectrum. Antonio Forcione's guitar and Charlie Haden's bass interplayed superbly on their recent release, 'Heartplay'. Leading edges of strings were crisp and solid, with each note decaying with notable precision. Vocalists were flattered by the AT in addition, as it has the ability to lock them firmly into position within the soundstage and reveal every subtle nuance of their performance. Listening to Nick Drake singing 'Northern Sky' left me with a lump in my throat, as the OC9MLII picked up on every inflection from within his emotional performance.

So, the AT-OC9MLII is revealing, crisp and detailed but, as I had suspected, this will not flatter poor recordings; if it's there, the AT will tell you. Playing a couple of recent seven inch chart single purchases on coloured vinyl, which are a bit rough at the best of times, showed that the AT did nothing to gloss over the rather coarse midrange and top end - this is a cartridge that tells you like it is, warts and all!

CONCLUSION

In upgrading the OC9 to 'MLII' status, Audio Technica have taken a fine cartridge and updated it to superb effect. The new stylus and cantilever dig absolutely everything out of the grooves and the OC9MLII offers the result up with precision, pace, and impressive levels of detail.

Excelling in dynamic terms, the AT blends a pleasingly well lit treble to surprising top end sweetness, never becoming harsh or suffering unduly from surface noise emphasis. It is exactly what the doctor ordered if you need a bit of excitement and pizzazz put back into your vinyl and I can think of no other cartridge to touch it at the price.

VERDICT ●●●●● £
Superbly dynamic and detailed, Audio Technica have brought an already fine cartridge bang up to date.

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AT-OC9MLII £270
Audio Technica UK
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www.audio-technica.com

FOR

- dynamic nature
- detailing
- bright yet smooth treble
- musicality

AGAINST

- unsympathetic to poor recordings

MEASURED PERFORMANCE

Our frequency response analysis shows Audio Technica's OC-9MLII possesses the treble peak common to moving coil cartridges. Output starts to rise above 8kHz, peaking at +4dB. This is fairly typical and usually gives a glassy edge to LPs with strong treble energy. Other factors determine how influential this might be, and here the OC-9 looks promising. It produces remarkably little distortion, around three times less than most laterally and vertically, the latter due to a low vertical tracking angle of 20 degrees (22 degrees is ideal). This reduces the magnification of distortion that is an unfortunate drawback of treble emphasis.

The OC-9's MicroLine stylus tip reads inner grooves with exceptional ability, suffering almost no loss and precision scanning of this magnitude may well also contribute to exceptionally good data retrieval. All the same, where there is distortion in the groove, geometric or due to damage, any cartridge with a treble peak will make it more noticeable.

Tracking ability was very good at low frequencies and good in the midband too, although not up to Goldring and Ortofon standards (nor Nagaoka if it comes to that!).

Unsurprisingly, there are few coil turns in the generator, so output is low at 470uV and so is impedance; Audio Technica consequently recommend

a 20 Ohm load. The OC-9 will need a good head amp, and a transformer input is likely to perform best. This will be a fast sounding design, likely clean and with excellent detail retrieval. It will not flatter LPs with strong treble, though. NK

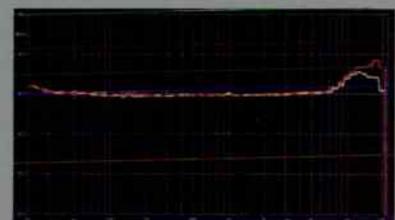
Tracking force	1.25-1.75gms
Weight	8gms
Vertical tracking angle	20 degrees
Frequency response	20Hz - 12kHz
Channel separation	29dB

Tracking ability (300Hz)	
lateral	90µm
vertical	45µm
lateral (1kHz)	23cms/sec.

Distortion (45µm)	
lateral	0.35%
vertical	0.6%

Output (5cms/sec rms)	0.47mV
-----------------------	--------

FREQUENCY RESPONSE



Red - outer grooves
White - inner grooves

Fire Arms

Nothing less than the battle of the budget super arms, the latest version of Origin Live's highly acclaimed OL1 tonearm duels with Michell's best-selling TecnoArm a, and Adam Smith is your referee...



The Michell TecnoArm - an all-in-one package of comprehensive modifications.

do not think even Rega would have foreseen just what a seminal product they were unleashing on the world back in August 1983 when they released the RB300. I cannot help wondering if Roy Gandy himself realised that it would still be the basis of many, many turntables in 2007! On their website, Rega claim that you will see a picture of a Rega-based arm every month in every hi-fi magazine across the globe, and I can quite believe this. Forming the basis of OEM arms from the likes of Moth, Audio Note and Goldring, and found as standard fitment on a huge variety of decks from across the globe, the RB300 and its RB250 derivative has penetrated the budget vinyl market like little else.

The reason for its success was that, in a world that had been dominated by rather similar S-shaped designs over the previous ten years or so, the RB300 was a breath of fresh air, with its simple yet utterly effective design. It may have lacked the shiny finish, dangling weights and sheer showiness of its forebears, but it got on with business in a way that proved a revelation. Naturally, and spurred on by Rega's higher

performance variants, it wasn't long before a few handy individuals started having a poke round with a view to tweaking it a bit...

One of the first to see the Rega's potential was Mark Baker of Origin Live, who has been upgrading them for many years now. He personally prefers the RB250 variant, arguing its simpler design has a better bearing mount and is unsullied by the RB300's internal tracking force spring. He, along with various others now, offers a whole host of changes, from rewiring, through bearing upgrades to complete re-machining of the arm tube. However, the first company to offer a totally modified version as a complete package was Michell with the TecnoArm a, and with this in mind Mark now offers a complete package to rival the much-liked Michell.

To turn the RB250 into a TecnoArm, Michell put it through quite a rigorous process. Firstly, the plastic rear end stub is dispensed with and the beautiful TecnoWeight is fitted, offering improved rigidity at the rear of the arm, and easier tracking force setting. The arm tube itself is bead-blasted and perforated with a series of holes

on its underside, which reduce the effective mass and "help to disperse structural resonances" according to Michell. Internally, the arm tube is damped and rewired with silver litz cable, in an uninterrupted run from cartridge tags to phono plugs. Finally, Michell include their VTA adjuster, which overcomes one of the main weaknesses of the RB250 and 300, namely lack of easy arm height adjustment, and allows this to be set correctly over a decent range without resorting to washers and the like.

Origin Live offer an equally enticing range of upgrades, although these are still built up in a "menu" so you can choose which ones you like. Going for the full monty will cost you £444, however, so this prices the fully modded OL1 head-on with the £440 TecnoArm. The full set of mods encompasses, firstly, a structural modification that features a new end stub and counterweight and costs £75, although this is not adjustable on a screw thread, unlike the TecnoWeight. This means that a tracking force gauge must be used and, as the weight is not a snug fit on the spindle due to Mark's preference for non-rigid coupling, this makes

setting tracking force something of a chore. Next is the removal of the black powder coating on the arm, together with the machining of a pair of slots into the armtube and a good polish (£85) which "enables faster energy transmission and prevents the arm being over damped". Finally, there are internal and external rewires with high grade copper litz cable (£70 each) and the fitment of high conductivity, high performance

"the Origin Live is sweet and crisp, with fine definition and detail retrieval..."

aluminium phono plugs (£20). Add in the £124 cost of an unmodified OLI arm to start with, and you have your £444 cost.

For auditioning purposes, each arm was fitted, in turn, to our Pioneer PLC-590 turntable and fitted with an Ortofon 2M Black cartridge.

SOUND QUALITY

Cueing up the OLI first, I was impressed by the way in which Origin Live have kept the original character of the RB250, but given it considerably more polish and sophistication. Across the top end, the OLI is truly sweet and crisp with fine definition and detail retrieval. Each string pluck on Antonio Forcione's 'Touch Wood' LP was very clearly delineated, and the OLI picked up on the interplay between instruments with great precision. This album uses several different acoustic guitars playing

together and sometimes they can be a little tricky to distinguish, but the OLI had no difficulty at all.

Also striking was the superb width of the soundstage. The Origin Live sent the backing effects from Deacon Blue's 'Dignity', which zip back and forth across the soundstage, to the extremes of the room with impressive verve. Equally, Diana Krall and her backing band were spread out well on her 'Christmas Songs'

album, although the OL seemed less keen to project her out into the room, and somewhat glossed over the breathy inflections of her rather wonderful voice.

At the bottom end, the OLI retains the RB250's accomplished bass performance, and adds in a very welcome extra dose of detail for good measure. The bass line from Maxi Priest's 'Suzie - You Are' zipped along with fantastic pace, giving the sound a nicely dynamic flavour. Where the OLI failed to work for me, however, was in that it still did little to alleviate what I consider to be the main failing of the stock Rega RB250, namely that I find it a touch unemotional as a performer. As with the original on many previous occasions, I found myself sitting and enjoying the OLI's performance, but found my attention wandering...

With this fresh in my mind, I swapped over to the TecnoArm and repeated the listening process, with interesting results. Firstly, the Michell takes the dynamics of the RB250 and OLI and builds on them to bring forth a dramatic change in the arm's character. Now I had no trouble concentrating



The TecnoArm comes complete with Michell's TecnoWeight.



Origin Live's counterweight modification is simpler, but just as effective.

on the music and the TecnoArm pulled me into each performance with alacrity. Diana Krall now projected beautifully into the room and, although the TecnoArm could not match the Origin Live for left to right image width, the depth of soundstage set up by the Michell meant that I was placed right into the performance.

Bass seemed to go a fraction deeper with the Michell but, most notably, it really dug into the heart of rhythms and pulled every last nuance from them. Maxi Priest bounded along with real zeal, his bass lines being held in a grip of iron. Most pleasingly, there was no sterility now,



Mark Baker's fully modified Origin Live OL1 now boasts a similarly large range of changes.

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	Arcam DVA AVR300 AV Receiver.....£495.00	KEF HTC515 Super Stand.....£209.00	Panasonic DMRE95M DVD/HDD Recorder.....£369.00
	Boston Micro Sub Woofer.....£75.00	KEF HTC516 Super Stand.....£209.00	Panasonic DMRE95M DVD/HDD Recorder.....£369.00
	Denon DV3300 DVD Player.....£399.00	KEF HTC517 Super Stand.....£209.00	Panasonic DMRE95M DVD/HDD Recorder.....£369.00
	Denon DVD3910 DVD Player.....£399.00	KEF HTC518 Super Stand.....£209.00	Panasonic DMRE95M DVD/HDD Recorder.....£369.00
	Fujitsu P42HHA40 Plasma Monitor.....£1,499.00	KEF HTC519 Super Stand.....£209.00	Panasonic DMRE95M DVD/HDD Recorder.....£369.00
	Harman Kardon The Bridge iPod Dock.....£49.00	KEF HTC520 Super Stand.....£209.00	Panasonic DMRE95M DVD/HDD Recorder.....£369.00
	Harman Kardon TC1000 Universal Remote Control.....£59.00	KEF HTC521 Super Stand.....£209.00	Panasonic DMRE95M DVD/HDD Recorder.....£369.00
	Arcam FMJ T31 Tuner.....£175.00	KEF HTC522 Super Stand.....£209.00	Panasonic DMRE95M DVD/HDD Recorder.....£369.00
	Arcam DVA DV79 DVD Player.....£495.00	KEF HTC523 Super Stand.....£209.00	Panasonic DMRE95M DVD/HDD Recorder.....£369.00
	Arcam DVA AVR250 AV Receiver.....£495.00	KEF HTC524 Super Stand.....£209.00	Panasonic DMRE95M DVD/HDD Recorder.....£369.00
	Arcam DVA DV79 DVD Player.....£495.00	KEF HTC525 Super Stand.....£209.00	Panasonic DMRE95M DVD/HDD Recorder.....£369.00
	Arcam DVA AVR300 AV Receiver.....£495.00	KEF HTC526 Super Stand.....£209.00	Panasonic DMRE95M DVD/HDD Recorder.....£369.00
	Boston Micro Sub Woofer.....£75.00	KEF HTC527 Super Stand.....£209.00	Panasonic DMRE95M DVD/HDD Recorder.....£369.00
	Denon DV3300 DVD Player.....£399.00	KEF HTC528 Super Stand.....£209.00	Panasonic DMRE95M DVD/HDD Recorder.....£369.00
	Denon DVD3910 DVD Player.....£399.00	KEF HTC529 Super Stand.....£209.00	Panasonic DMRE95M DVD/HDD Recorder.....£369.00
	Fujitsu P42HHA40 Plasma Monitor.....£1,499.00	KEF HTC530 Super Stand.....£209.00	Panasonic DMRE95M DVD/HDD Recorder.....£369.00
	Harman Kardon The Bridge iPod Dock.....£49.00	KEF HTC531 Super Stand.....£209.00	Panasonic DMRE95M DVD/HDD Recorder.....£369.00
	Harman Kardon TC1000 Universal Remote Control.....£59.00	KEF HTC532 Super Stand.....£209.00	Panasonic DMRE95M DVD/HDD Recorder.....£369.00
	Arcam FMJ T31 Tuner.....£175.00	KEF HTC533 Super Stand.....£209.00	Panasonic DMRE95M DVD/HDD Recorder.....£369.00
	Arcam DVA DV79 DVD Player.....£495.00	KEF HTC534 Super Stand.....£209.00	Panasonic DMRE95M DVD/HDD Recorder.....£369.00
	Arcam DVA AVR250 AV Receiver.....£495.00	KEF HTC535 Super Stand.....£209.00	Panasonic DMRE95M DVD/HDD Recorder.....£369.00
	Arcam DVA DV79 DVD Player.....£495.00	KEF HTC536 Super Stand.....£209.00	Panasonic DMRE95M DVD/HDD Recorder.....£369.00
	Arcam DVA AVR300 AV Receiver.....£495.00	KEF HTC537 Super Stand.....£209.00	Panasonic DMRE95M DVD/HDD Recorder.....£369.00
	Boston Micro Sub Woofer.....£75.00	KEF HTC538 Super Stand.....£209.00	Panasonic DMRE95M DVD/HDD Recorder.....£369.00
	Denon DV3300 DVD Player.....£399.00	KEF HTC539 Super Stand.....£209.00	Panasonic DMRE95M DVD/HDD Recorder.....£369.00
	Denon DVD3910 DVD Player.....£399.00	KEF HTC540 Super Stand.....£209.00	Panasonic DMRE95M DVD/HDD Recorder.....£369.00
	Fujitsu P42HHA40 Plasma Monitor.....£1,499.00	KEF HTC541 Super Stand.....£209.00	Panasonic DMRE95M DVD/HDD Recorder.....£369.00
	Harman Kardon The Bridge iPod Dock.....£49.00	KEF HTC542 Super Stand.....£209.00	Panasonic DMRE95M DVD/HDD Recorder.....£369.00
	Harman Kardon TC1000 Universal Remote Control.....£59.00	KEF HTC543 Super Stand.....£209.00	Panasonic DMRE95M DVD/HDD Recorder.....£369.00
	Arcam FMJ T31 Tuner.....£175.00	KEF HTC544 Super Stand.....£209.00	Panasonic DMRE95M DVD/HDD Recorder.....£369.00
	Arcam DVA DV79 DVD Player.....£495.00	KEF HTC545 Super Stand.....£209.00	Panasonic DMRE95M DVD/HDD Recorder.....£369.00
	Arcam DVA AVR250 AV Receiver.....£495.00	KEF HTC546 Super Stand.....£209.00	Panasonic DMRE95M DVD/HDD Recorder.....£369.00
	Arcam DVA DV79 DVD Player.....£495.00	KEF HTC547 Super Stand.....£209.00	Panasonic DMRE95M DVD/HDD Recorder.....£369.00
	Arcam DVA AVR300 AV Receiver.....£495.00	KEF HTC548 Super Stand.....£209.00	Panasonic DMRE95M DVD/HDD Recorder.....£369.00
	Boston Micro Sub Woofer.....£75.00	KEF HTC549 Super Stand.....£209.00	Panasonic DMRE95M DVD/HDD Recorder.....£369.00
	Denon DV3300 DVD Player.....£399.00	KEF HTC550 Super Stand.....£209.00	Panasonic DMRE95M DVD/HDD Recorder.....£369.00
	Denon DVD3910 DVD Player.....£399.00	KEF HTC551 Super Stand.....£209.00	Panasonic DMRE95M DVD/HDD Recorder.....£369.00
	Fujitsu P42HHA40 Plasma Monitor.....£1,499.00	KEF HTC552 Super Stand.....£209.00	Panasonic DMRE95M DVD/HDD Recorder.....£369.00
	Harman Kardon The Bridge iPod Dock.....£49.00	KEF HTC553 Super Stand.....£209.00	Panasonic DMRE95M DVD/HDD Recorder.....£369.00
	Harman Kardon TC1000 Universal Remote Control.....£59.00	KEF HTC554 Super Stand.....£209.00	Panasonic DMRE95M DVD/HDD Recorder.....£369.00
	Arcam FMJ T31 Tuner.....£175.00	KEF HTC555 Super Stand.....£209.00	Panasonic DMRE95M DVD/HDD Recorder.....£369.00
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	Fujitsu P42HHA40 Plasma Monitor.....£1,499.00	KEF HTC563 Super Stand.....£209.00	Panasonic DMRE95M DVD/HDD Recorder.....£369.00
	Harman Kardon The Bridge iPod Dock.....£49.00	KEF HTC564 Super Stand.....£209.00	Panasonic DMRE95M DVD/HDD Recorder.....£369.00
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	Arcam FMJ T31 Tuner.....£175.00	KEF HTC566 Super Stand.....£209.00	Panasonic DMRE95M DVD/HDD Recorder.....£369.00
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	Arcam DVA AVR250 AV Receiver.....£495.00	KEF HTC568 Super Stand.....£209.00	Panasonic DMRE95M DVD/HDD Recorder.....£369.00
	Arcam DVA DV79 DVD Player.....£495.00	KEF HTC569 Super Stand.....£209.00	Panasonic DMRE95M DVD/HDD Recorder.....£369.00
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	Arcam DVA DV79 DVD Player.....£495.00	KEF HTC578 Super Stand.....£209.00	Panasonic DMRE95M DVD/HDD Recorder.....£369.00
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	Arcam DVA DV79 DVD Player.....£495.00	KEF HTC580 Super Stand.....£209.00	Panasonic DMRE95M DVD/HDD Recorder.....£369.00
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	Denon DV3300 DVD Player.....£399.00	KEF HTC583 Super Stand.....£209.00	Panasonic DMRE95M DVD/HDD Recorder.....£369.00
	Denon DVD3910 DVD Player.....£399.00	KEF HTC584 Super Stand.....£209.00	Panasonic DMRE95M DVD/HDD Recorder.....£369.00
	Fujitsu P42HHA40 Plasma Monitor.....£		



Under-arm detail showing the different approaches to arm tube modification taken by Michell (top) and Origin Live (bottom).

as the TecnoArm was really taking whatever was playing and making sure it was captured properly.

Across the top end, the Michell has a supreme level of clarity and insight, one that conferred real precision to the leading edges of Antonio Forcione's guitar strings, but one that could occasionally tip over into stridency. Spinning 'Mr. Blue Sky' from a rather well-played original

1977 copy of ELO's 'Out of the Blue' showed that the Michell did nothing to disguise the rather edgy nature of the pressing, becoming rather too harsh at times, whereas the OLI just got on with the job of extracting the music without any unpleasantness. I have heard this before from the TecnoArm and would attribute it to its silver internal wiring. With careful system matching it is unlikely to be a problem

"the Michell's stage depth meant I was placed right at the heart of the performance..."

[indeed, I suspect it's been voiced this way to match the slightly warm sounding GyroDec turntable - Ed.] and it is certainly less noticeable with a smooth and composed cartridge like the 2M Black. It is definitely something prospective purchasers should be aware of, however.

CONCLUSION

Both the fully modified Origin Live OLI and the Michell TecnoArm show just what potential can be released from the basic Rega RB250 design, but in intriguingly different ways. The OLI keeps the Rega's essential nature but seems to amplify its innate character whilst simultaneously polishing the rough edges off to result in a sophisticated and nicely controlled performance.

The TecnoArm, however, changes the Rega's performance dramatically and turns it into a different beast. Dynamic, forthright and detailed, for me the TecnoArm is only really let down by its top end, which can become rather sharp at times. If you like the basic Rega and want a more sophisticated version of what it does well, go for the Origin Live OLI. However, if you want an arm that effectively bridges the gap between the budget Regas and the likes of the SMEs of the world, then the TecnoArm is the one to go for.

REFERENCE SYSTEM

Pioneer PLC-590 turntable
Ortofon 2M Black cartridge
Trichord Diablo phono stage
Anatek A50R amplifier
Spendor S8e and Kudos C10 loudspeakers

VERDICT ●●●●

This highly polished performer keeps the essential character of the Rega but adds serious sophistication.

ORIGIN LIVE OL1 (FULLY MODDED) £444
Origin Live
☎ +44(0)23 8057 8877
www.originlive.com

FOR

- image width
- sweet top end
- consistent performer

AGAINST

- emotionally uninvolving

VERDICT ●●●●£

Highly dynamic and exciting performer with great bass resolution and an impressive soundstage.

MICHELL TECNOARM £440
Michell Engineering
☎ +44(0)208 953 0771
www.michell-engineering.co.uk

FOR

- bass
- soundstage depth
- dynamic nature
- build quality

AGAINST

- top end can be sharp

MEASURED PERFORMANCE

Comparison of both the fully modified Origin Live OL1 and the Michell TecnoArm to an original and unmodified Rega RB250 proved interesting. The original has a sharp main arm tube resonant peak of over 0.3g, showing that it is relatively undamped, together with a quite lively headshell, which means that the RB250 should have its own characteristic sound, which indeed it does.

The fully modified OL1 does not actually look hugely different in measurement terms. The main arm tube mode has dropped in

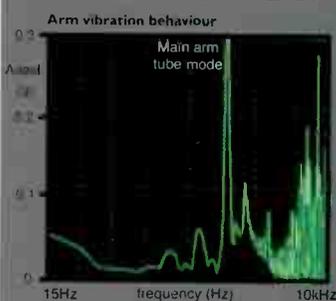
amplitude to below 0.3g, showing that the applied modifications have reduced the ringing of the tube somewhat, and dropped the main arm tube mode in frequency slightly. The headshell's behaviour shows an increase in overall energy, which may add more to the top end, but I would expect the overall character of the arm to be similar to the RB250. In this case, the wiring changes are likely to have the largest perceived effect on the sound.

The TecnoArm, on the other hand, looks rather different. The

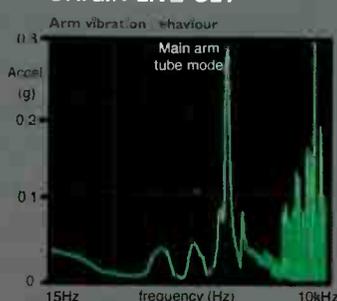
drilling of the arm tube has dropped the main arm tube mode further in frequency but also made the main peak much lower in level (just over 0.1g). The peak is also broader, showing the effects of the damping applied to the inside of the arm tube. This should bode well for the arm's performance in the lower midrange and upper bass.

The headshell's level of vibrational energy seems less overall but there are a couple of larger peaks which may well add an edginess to the treble with some cartridges. AS

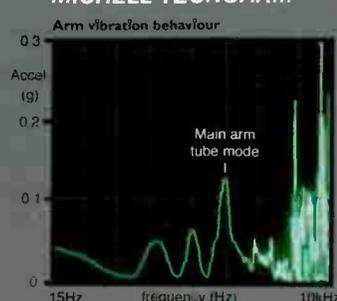
STANDARD REGA RB250



ORIGIN LIVE OL1



MICHELL TECNOARM



Pure & Simple



There's nothing like a purpose-designed valve phono stage, says Noel Keywood...

This phono stage was stolen from our office with indecent haste. I made off into the night with it, padding through Maida Vale's quiet side streets with a certain amount of determination, because I know what I like and I guessed that I would like the P10. It had to be spirited away before anyone else realised what lay inside the anonymous cardboard box and committed the heinous felony of spiriting it away before me. [Such behaviour with tasty tube products is depressingly familiar to we who work with Noel... Ed.]

I can't claim to be in any great need of a phono stage as they are not exactly uncommon at present, outnumbered only by Polish plumbers from my perspective. But a good one is a delight if you spin LPs (Polish plumbers are no use at this), giving an expansive and alluring sound that eludes conventional phono stages, by which I mean solid-state of course. So I was keen to get the P10 home and into my system, where an SME312 arm, Goldring 1042 and Ortofon 2M Black cartridges awaited.

My interest and confidence in this slightly anonymous looking

design came from the fact that it is from the man who brought us the broadly admired Audio Innovations P2 phono stage - Guy Sergeant. The P10 is a lot simpler than the P2 and better still, I'm sure you'll agree, commensurately less expensive. Way back in our February 1996 edition the impressive P2 cost £749 for the basic Moving Magnet cartridge version; the P10 reviewed here, MM version, is priced at a bargain £399.95.

Nowadays, that's not a whole lot of cash for a good phono stage, especially with valves instead of silicon chips inside. So what we are looking at here, potentially, is a high-end design at a low end price, for valve phono stages commonly start at £1,000 and go upward...

The original P2 was a sizeable

"what we are looking at is a high end design at a low end price..."

beast with a mesh cover to release the heat produced by a valve stabilised power supply. This is the classy way of doing it; we

unanimously felt our own World Audio Design (now World Design) valve amplifiers sounded best with valve power supplies, but such supplies are bulky and expensive. For this reason the P10 uses a compact solid-state power supply, but that is only to be expected at the price and - designed properly - it should hamper performance little. This simplification allows the P10 to be lightweight and reasonably compact too, the case measuring 330mm deep and 220mm wide.

One of the delights of valves is that at heart they can sit within fairly simple circuits - and this is the best way to use them I feel, as it minimises component colouration. Not for me complex solid-state bias, switching and display circuitry, an approach that, from Aesthetix for example, results

in an onboard computer in a phono stage - a bizarre fusion of ideas and technologies if ever there was one.

Simplicity well handled brings

only benefit with valves and the P10 exploits this fact well, physically and audibly. You get no baffling options, like those adorning the £550 Audiolab 8000PPA I reviewed last month. The rear panel carries a pair of solid gold plated phono input sockets alongside similar output sockets. It also carries an earth lift switch to break hum loops (this does not affect mains safety earthing) and an IEC mains input. The front panel carries a rotary on/off switch that, when on, lights a small blue LED. The case is sturdy, constructed from thick gauge folded steel. Inside, an aluminium tray carries two valves, 6992 and 12AX7 double triodes. With the P10 you simply connect up inputs and outputs and switch on - that's it!

What are the drawbacks to this simplicity? Almost none. On offer is an absolutely standard $\times 100$ gain, something of a benchmark value for Moving Magnet cartridges. It's sufficient to provide a match to most amplifiers, but volume will have to be turned up after playing CD. Input impedance is a standard 47k Ohms of course.

I had the P10 connected up and switched on within minutes of arriving home. It runs silently, having a d.c. heater supply to eliminate hum. Whilst valves are slightly noisier than transistors on paper, they are not in practice because MM cartridges generate more noise than both, being the dominant noise source (this is not the case with moving coils).

SOUND QUALITY

Hustled into use shortly after the Quad and Audiolab units I reviewed last month, with just the briefest spell in between with my resident Eastern Electric MiniMax, I was able to get a handle on the P10's sound quickly - and my haste in lifting it from the office was justified. I could tell from listening alone that the P10 is super accurate tonally; in other words it is accurately equalised. Every LP was played with perfect equanimity, the P10 favouring neither the bright, like Cat Steven's 'Teaser and the Firecat', nor the dull, like Creedence Clearwater Revival's 'Suzie Q' (45rpm recut).

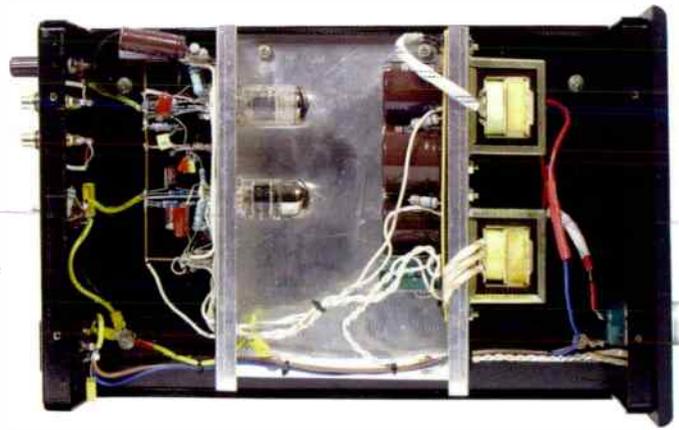
Spinning 'Tuesday's Dead' from 'Teaser and the Firecat' outlined the P10's basic properties clearly enough: hand drums sounded firm and taut, nicely supporting the speedy pace of the percussion work on this track. The timbral properties of the drums, the slap of hand against skin and the resonance of their bodies, uncoloured by the mechanical patina and compression of dynamics that

plagues solid-state, was delightful. This stage's almost stark clarity struck me, not as sterility but an absence of vagueness or hash. It's what you get when using high quality components, but few of them - a distinct benefit of simple, valve based hi-fi. Strummed guitar was vibrant, and again fast-paced. The melodic bass line sounded strong yet wonderfully controlled. Images had firm structure, not soft outline, nor was there any hint of the slightly syrupy presentation that valves can give. Quite the opposite: the P10 offers the apparent tidiness that solid-state seemingly achieves, but without its colouration, shaky outline and dynamic restraint.

It airbrushes nothing, nor does it hint at what may be: the laconic start of 'Willie and the Poorboys' was simply yet solidly portrayed, building steadily into a rock solid rendition underpinned by firm bass line, impactful drums, rim shots being hit forcefully hard-right and Fogerty's gritty vocals firmly anchored at centre. There was no equivocation here; I loved the stark, clean but forceful delivery. The engaging nature of this atmospheric early Creedence Clearwater Revival recording was beautifully revealed. What lay within the LP's grooves - in this case a recent 45rpm re-cut on 200gm vinyl - had an unusual solidity that had me hooked. I fancy the P10 painted a larger and more expansive picture than I am used to, individual musicians being better described, all within the venue's surrounding acoustic. This imparted a sense of a believable reality from these relatively unprocessed nineteen sixties studio recordings.

CONCLUSION

The Pure Sound was more cohesive than the Eastern Electric MiniMax I normally use, and I felt it was faster paced also. It knitted musicians and instruments into a wonderfully cohesive whole, perhaps the biggest contrast betwixt it and the MiniMax. That still leaves the MiniMax with its lovely tonality and MC input of course,



an option not yet ready with the P10, but for anyone not interested in running a moving coil cartridge, this preamp is the best choice I have yet to hear. In conjunction with an Ortofon 2M Black it had me reaching for LP after LP in night long sessions. It's a product that is very right, one that draws you into the music. It easily outguns all competition and is, for moving magnet cartridges, a no-brainer in my view. Not only do you get one of the best MM phono stages around, it comes at what is a nonsensically low price for a top end product. Get one - but watch out that someone doesn't commit a heinous felony upon you by carrying it away into the night...



VERDICT

Powerful, transparent sound makes this an exceptional phono stage.

PURE SOUND P10 £399.95

Pure Sound

+44 (0)1822 612449

www.puresound.info

FOR

- superb fidelity
- taut bass
- ease of use

AGAINST

- MM only
- appearance

MEASURED PERFORMANCE

This valve phono stage offers $\times 100$ gain for moving magnet cartridges, which is about the minimum required for satisfactory matching to most amplifiers. Volume will have to be turned right up on amplifiers of 400mV or so sensitivity, all the same. Maximum acceptable input measured a high 150mV and was in fact set by output non-linearity, 1% distortion at 15V out in this case. The P10 actually swung 70V out under test and was good for more, but I feared for the test equipment.

Frequency response was flat down to 200Hz, with a gentle slope down below this frequency, as our analysis shows. The lower limit was 30Hz (-1dB) and output was -3dB down at warp frequencies (5Hz) so there is some slight reduction in warp signals, but audible bass will be little affected. By best modern standards the P10 is very accurately equalised.

Input noise was not as low as is possible from solid-state stages, but at 0.47uV it was still below the Johnson

noise from cartridges. Hiss will not be audible, except possibly with very low output MM cartridges, which are rare. Distortion was low at 0.06% and purely innocuous second harmonic in nature.

The P10 turns in an impeccable measured performance. It will sound clean and accurate. NK

Frequency response (-1dB)	30Hz-43kHz
Separation	71dB
Noise (e.i.n., A wtd.)	0.47uV
Distortion (10mV in, 1kHz)	0.06%
Gain	$\times 100$
Overload	150mV in/15V out

FREQUENCY RESPONSE



DIY Valve Amplifier Parts - Valves, Capacitors, Connectors, Hardware



We stock a full range of valves (tubes) from famous manufacturers. The list below is a selection of favourites. If you don't see what you want - please ring or e-mail. We are happy to match valves on request.

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Letter of the Month

TO THE NEXT GENERATION

It doesn't matter which way you look at it, if you have ten things and you take away even a fraction of them you have less. It's simple mathematics: $10 - 1 = 9$. Therefore, if you take some information from an original analogue audio file you end up with lower quality. We are now being set up for another format change and the Big Five (record companies) are telling us the Compact Disc is obsolete. This new technology for music would be DVD-A, SACD or some such other format. Watch for some sort of SCMS (Serial Copy Management System) or digital watermarking.

This new technology format, not necessarily the best, will be promoted with vigour and the CD will be rapidly killed off in an attempt to resell their music catalogues yet again. The Big Five may request a special levy on such media as they did with tape, hard drives, memory cards, blank CDs, etc. instead of dealing with the internet situation.

The younger generation has been brought up on computers with cheap audio editing software, which is often free. We have been informed (well, brainwashed) that MP3, WAV and CDA formats provide good music quality. Most of us think we have the best quality home reproduction equipment, but in reality the sound being produced is somewhat lacking. Constant listening with the device of choice, the MP3 player with ear buds at high volume levels must certainly have had an adverse effect on a generations hearing.

However, there is hope on the horizon. Thankfully a segment of the younger generation are getting it and are not being fooled by the corporate propaganda and are slowly educating themselves to what good sound actually sounds like. Analogue, vinyl and valves are back in and manufacturers abound and valve preamplifiers and power amplifiers are making a major comeback. Unlike solid-state technology, tubes don't clip the signal in the same way when over driven and tube clipping



Portal Space Records - pressing vinyl again thanks to EMi's old machinery.

is less intrusive. The development I am still trying to get my head round is by a company called AOpen - a major computer manufacturer - who has a line of motherboards with a valve for the audio stage!

There is also a resurgence in tape recorders, turntables, valve amplifiers and vinyl, by the inspired young generation. There is definitely a new wave of kids who just like that vintage feel and quality of sound of older music and recordings; vinyl is cool again. Some of these people have realised and heard for themselves the great quality, bandwidth and dynamic range that previously they did not know existed. Companies like Tascam and Otari will build 2, 4 and even multi-track 1in and 2in machines to order. Tape is now being manufactured by Quantegy Recording Solutions (formerly Ampex) and RMGI in the Netherlands is now the largest open reel tape manufacturer in the world and is manufacturing BASF equivalent tape.

Equally, manufacturers are popping up all over the world with the demand for new releases on vinyl by major

recording artist and groups. One manufacturer of note is Portal Space Records UK. Since their inception in 2001, they have established themselves as leading manufacturers of quality record pressings. As the inheritors of EMi's equipment, knowledge and experience, their roots go back to the very origins of disc record.

However, the music itself is another matter. Today we have Adobe Audition, Pro Tools and other such digital audio programs, with the tradition seeming to be "we'll fix it in editing"... From the home studio to the parents who think their little girl is the next Celine and pay for studio session after session, the engineer filters, enhances using reverb, echo and numerous Digital Signal Processors (DSP) in an attempt to get the pitch and key close.

This has allowed for the mediocre and even the really bad singer and musician with little skill or talent to move to the next level. We have all watched the great 'talent' on the audition for the Idol series and it is no wonder Mr. Cowell has the occasional fit

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Yamaha RXV1700 AV Receiver	£449.00
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and states the obvious! If you still don't believe me, listen to *Love Generation* by Bob Sinclair, vocals by Gary Pine. One must suspect that the vocals were recorded in a different studio to that of the music track. Sounds like two different keys to my ears. It was released on the Defected Label, what an irony.

One development I found particularly interesting recently, was UK band Radiohead releasing their 7th album, 'In Rainbows', straight to the Internet. It could be downloaded from their website and fans could choose to pay whatever they wanted, 15p, £15 or even for free. The album was available on the 10th October and by the 14th October more than 1 million copies had been downloaded with the fans paying an average of £4 each. This translates to over £5 million with every penny going to the band. Last year CD sales dropped 35% but, to the artists and groups that are signed to a label (the Big 5) a CD does not provide much revenue. It is the merchandising and the tour that makes the money. Prince gave away his last CD and then sold out 20 concerts. Aging crooner Cliff Richard is 'doing a Radiohead' by releasing his new album digitally for a flexible price.

So this could be the start of a trend for music distribution and it is very interesting that even with the fact that the album can be downloaded free, fans paid an average of four pounds, congratulations to the younger generation!

We seem to be going backwards in quality even though we are told to the contrary. Where have the AAD, DDD symbols on CDs gone? The new young audiophiles that still have good hearing are our best hope to not only find what good sound is but demand that good sound be produced and supplied on high quality media. We need to request, no demand, this and show our disdain at the cash register. I will not yet dispose of my LPs, 45s collection and turntable just yet...

I hope this has provided some areas of thought and encourages some of you to experiment and listen and then appreciate what good quality music can sound like. To the next generation of audiophiles we may be the old generation but if we only know one thing, it is what good sounding music should really be. Give it try.

Richard Preece

Some interesting thoughts there, Richard, and you've certainly resurrected an old question of mine, as I also wondered where the AAD/ADD/DDD markings on CDs, that indicated whether the disc had been recorded, edited and dubbed in digital or analogue, quietly disappeared to; I can remember my excitement at finding out that I had bought my

first 'DDD' (Enya's 'Watermark'). I suppose that the assumption was that, as technology progressed, everything automatically became 'DDD' and so it no longer needed to be stated, but with the resurgence in analogue, valves and mastertape this may no longer be the case. I think we should be told, if only to give those audio snobs another chance to announce that they sneer on any discs that aren't DDD (and believe me, this used to happen!) **AS**

CABLE CONTROVERSIES

Are you aware of the controversy in the U.S.A. re 'high end' cables? If not, have a look at James Randi's (the American skeptic) site: www.randi.org - much of the original stuff has gone already, but the continuing saga is there at FLASH: BLAKE WITHDRAWS / Read more, and SWIFT 10/12.2007 / Read more. Someone from Stereophile mag appears to be involved, and it involves the testing of speaker cables. It would be interesting to hear World's comments on all this, as the controversy over audible (or not) differences between cables seems to have spilt out of the cosy world of audiophiles, and is being exposed to the tender mercy of a wider, more skeptical audience.

Les Wies

Yes - "only in America" as they say. In a nutshell, sceptic James Randi is offering - or appears to be offering - \$1,000,000 to anyone who can hear a difference between loudspeaker cables in controlled listening tests. Stereophile reviewer Michael Fremer took up the challenge - or tried to. The challenge collapsed in a torrent of name-calling and counter accusations. Michael provided us with the lurid details, which follow.

Whilst such a comparison seems straightforward enough, in fact it isn't. Double blind listening tests usually take place under circumstances that aren't conducive to relaxed listening. This is a crucial difficulty; methodology needs to be discussed and agreed upon beforehand, as it affects the validity of the process and the outcome of course. In this case, the challenge collapsed because a participating cable company were not happy with the conditions set by James Randi, who then promptly claimed victory when they pulled out.

It's a test that would require careful prior planning by more than one - perhaps three - people aware of all the difficulties, technical and psychological. I have to say, having run such tests myself, and participated in them.

We all feel good cables do affect sound quality, for the better



DISCBOX

THIS CONSISTS OF THE NEW ALBUM, *IN RAINBOWS*, ON CD AND ON 2 X 12 INCH HEAVYWEIGHT VINYL RECORDS. A SECOND, ENHANCED CD CONTAINS MORE NEW SONGS, ALONG WITH DIGITAL PHOTOGRAPHS AND ARTWORK. THE DISCBOX ALSO INCLUDES ARTWORK AND LYRIC BOOKLETS. ALL ARE ENCASED IN A HARDBACK BOOK AND SLIPCASE.

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DISCBOXES ARE BEING MADE TO ORDER AND ARE PRICED AT £40.00 INCLUDING POSTAGE.

Radiohead's *In Rainbows* album was available free for download until 10th December, 2007. The download album is also available on CD and Vinyl, with artwork. It's a great way to expose your music to a wide audience, encouraging people to buy a form more lasting and durable than a download.

when compared to basic wire, or even budget OFC heavy gauge Shark loudspeaker wire of the sort Maplin sells. Differences are perhaps small, but significant all the same. By small, I mean they may not be judged significant by a casual listener, but they are to anyone who listens intently with a system of reasonably high quality. What constitutes good value is where it all gets a little contentious. We are happy to review "affordable" cables.

Technically, I find the subject of cables interesting, if disconcerting. But as always, trying to relate measured differences, such as they are, to sound quality is difficult. With cables in particular there are some horrible unknowns and variables, such as the RF environment and degree of pickup (move a DAB aerial a few inches and the signal can disappear/appear, and a cable can act like this), contact resistance variation as well as possible diodic behaviour, and how the cable reacts with source and load. Cables can also be microphonic, and they may carry earth currents such as power supply buzz. It's quite a horrible subject - and I haven't covered issues such as the magnetic field and the electrostatic field which pass through the dielectric and may possibly be affected by it (or possibly not! I am sure there are some quite deep understandings of conduction



James Randi Educational Foundation

an educational resource on the paranormal, pseudoscientific, and the supernatural

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The Latest on PEAR Challenge Refusal.

The News
 Written by James Randi
 Monday, 22 October 2007

A frantic objection was apparently hastily posted just now by Pear Cable, desperately trying to fend off the hail of criticism they've received by withdrawing their product from the proposed JREF test.

James Randi describes loudspeaker cable sound quality differences as a Paranormal experience. One million dollars is on offer if you can prove otherwise.

and electricity that can be invoked here).

At the end of the day, we all choose to use good cables on this magazine, if not ludicrously priced ones, and we believe they make a difference. Also, in a case such as my own where I like and often use Van den Hul Royal Jades, for example, there is some broad consensus about their sound (very smooth, but soft), suggesting that they do have a sound and that it isn't a random property. Whether you will like it or not is entirely a different matter, being down to your system and your taste. Some dealers are prepared to loan out cables and this surely is the best way to find whether any differences

good sound.

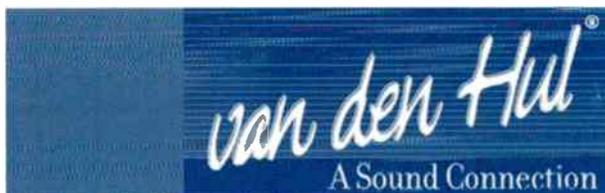
Now over to scuzzy bits about who said what to whom! **NK**

Michael Fremer says - I believe cables can make an easily audible difference and I was prepared to test that under double blind conditions. There are many sceptics outside of the audiophile world, which is understandable. That there are so many within it, I find incomprehensible, based on years of listening. I talk to disc mastering guys and recording engineers all the time and most of them easily hear cable differences.

I emailed Randi and told him I accepted his challenge. I did, however, insist that the word "paranormal" be removed from this particular challenge because there's nothing "paranormal" in my world about hearing cable differences. Mr. Randi suggested a number of reasons for performing a 'dry run' before signing on the challenge dotted line, the most compelling of which is that the challenger ends up paying all testing expenses! Since the test specified Pear Anjou cables, which I'd never heard, I emailed the company and asked to borrow a set.

Pear got cold feet and backed out. I didn't! The morning after Pear informed Mr. Randi, his website headlined Pear's pullout and he disgustedly told his acolytes that he knew the "blowhard" Fremer would never take the challenge and that the matter was closed and that it was time to move on to the next challenger! This, after telling me in a private email that he'd consider allowing me to use my reference Tara Labs Omega speaker cable. but that he had to run it by his "advisors".

Talk about "sleight of hand." Randi had used Pear's pull out as a cover for his own, and judging by the vitriolic follow-ups posted by his cultists, he'd gotten away with blaming both Pear and me. Mr. Randi is more interested in mocking people



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The external dimensions are: 16.5 mm. wide and 6.0 mm. thick.

A cable with a sound, says Noel - Van den Hul cable Royal Jade Hybrid.

are meaningful to you.

I suspect most Hi-FiWorld readers will find this debate a little irrelevant. But I think most of us know people for whom the differences a cable makes would be inconsequential. To them it is all snake oil, but not to someone with a keen ear for music and a love of

and things he doesn't understand than in getting at any kind of truth.
MF

SMOOTH GROOVES

Hi, I have built up my system over the last ten years, ending up with Nottingham Analogue SpaceDeck with SME 309 and Sumiko Blue point Evo III feeding a Graham Slee 2 SE phono stage. My CD player is a Cambridge Audio 640C v2. These feed a Prima-Luna 2 and Sonus Faber Cremona Auditor speakers on their dedicated stands. All of the equipment resides on a Solid Tech stand, uses Russ Andrews mains distribution block/mains cables, Van Den Hul D-102 III Hybrid interconnects and Hitachi speaker cables.

The record playing front end was chosen after exhaustive listening, both as regards the turntable, arm and cartridge; these I am extremely pleased with and have no desire to change. However, the CD player is sharp, bass-light and pretty unpleasant to listen to (at any volume). This, I feel, has been exacerbated by the room in which the system is used (this is a large room (56 square metres) with a tiled floor. I am trying to damp the room using rugs, furniture, book cases etc.), I would appreciate your thoughts?

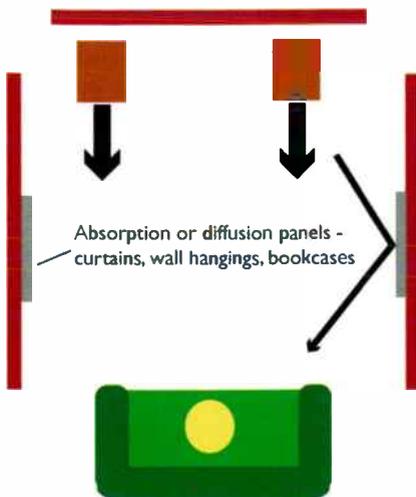
The obvious suggestion is that I need a better, smoother CD player; any suggestions would be appreciated (although it must be black). I have heard the Audio Research CD3 II via my current amp and speaker set-up and loved it, however this is way outside my budget. I would be looking between £600 and £2,500, a wide range but basically looking for something that sounds like the Audio Research on the cheap!

Secondly, I am interested in changing the interconnects and speaker cables, the runs need to be only 2-3m in length. Could you make suggestions as my equipment is in France (I commute each weekend) and I therefore find it difficult to keep taking cables backwards and forwards. Is there any advantage in having the same interconnects and speaker cables? Again, budget is flexible up to £500 or so.

Lastly, the equipment support I use (via Walrus in London) is superb and very well priced. The improvement in the sound this has made is quite significant. Also it looks smart and even the wife likes it! I would recommend you had a look at this as there seems little choice at this end of the market.

John Speight

Hi John. It sounds like you need a more 'analogue' sounding CD player. First to mind comes the wonderful Chord Blu DAC, but at around £2,800 this is just outside your budget I suspect, unless you can get



Absorb reflections using curtain or a wallhanging, or diffuse them with a bookcase, placed where you can see the loudspeakers in a mirror, as higher frequencies act as rays of light.

one second-hand.

Valve output players usually sound fuller bodied, more spacious and less sharp than most. Here you could try our old fave, the Eastern Electric Minimax, price around £1,000. This month I measured and had a quick listen to the Edgar CD1 and was very impressed. You can read our review in this issue. However, it is quite forward, as is the AstinTrew AT3500CD (£1,150) and Vincent CD-S6 MkII (£999). All are impressive and worth auditioning. Another very strong contender with a quite amazing presentation is the Tube Technology Fusion64. It uses a Watts Transient Aligned filter, like the Chord Blu and has a lush sound that will likely appeal to you.

Cables are something of a personal matter I feel. I use Chord interconnects and Van den Hul



Astin Trew AT3500CD - "the smoothest, warmest and fullest sounding mid-price machine around" says David Price.

loudspeaker cables, but then my system is an ever changing curiosity buffeted by the necessities of reviewing.

Your room is large enough to be well damped at low frequencies, as a large volume of air has lower Q than a small one - and you can hear this as firm bass. All the main modes should be well below the audio band too, so I presume your room works well at

low frequencies.

Considering higher frequencies, which act as rays of light, wall reflections can be absorbed using curtain or a rug/carpet used as a wall hanging. An alternative is to diffuse the energy by the irregular surface presented by books in a bookcase, or by custom diffusers. It is possible to cover diffusers, which can be a little ugly, with a light patterned cloth. Diffusion results in a livelier sounding environment than absorption.

If you have a long windows, as I do, then consider floor to ceiling curtains over a full wall length. This provides a massive amount of absorption at higher frequencies, as a hand clap will demonstrate, although it needs to be balanced with an absorption panel on the opposite wall for symmetrical conditions. This is what I have in one listening room and it makes for a very peaceful environment when the curtains are drawn, but you will need sturdy rails and draw cords as the weight of material is great.

A tile floor needs covering with a sumptuous carpet, at least between you and the loudspeakers. As both carpet and curtains can be chosen for visual effect, acoustic treatment carefully applied can make a room look stunning as well as pleasant to be in, especially at night with the curtains drawn. **NK**

Hi John - I would counsel the Astin Trew AT3500; I've heard it against practically every sub-£1,500 CD player on the market in the past few months and it's definitely the smoothest, warmest and fullest sounding mid-price machine around. I take on board what Noel says about it being 'forward', but I think he means relative to the likes of the far

it might be moving in the wrong direction. Still, it's a glorious sounding machine and able to mix it with the likes of Rega's superb Saturn with ease. **DP**

SHANLING SYNERGY

I have a quick query for you - a friend has a Shanling STP-80 amplifier and he is wondering if the RRR FS100 speakers will work with it, without a lot of messing around. Let me know if you need any other information.

Thank you.

Christine Seymour

In pure sound terms the combination should be pretty successful. The Big RRRs are sensitive and have a very healthy bass output, which is often useful for augmenting valve amplifiers, which can sometimes be a little soft down the very low end. As it happens, the Shanling is not one of these but I would expect good results from the combo. My only caveat would be that the RRRs are quite a difficult load to drive, dipping down to a minimum of around 3 Ohms over quite a wide frequency range. Whilst the Shanling should cope with this, it might start to complain if you try to run it at high volumes over an extended period, as it does only have 30 watts.

If this is a concern, and you'd like a similar sort of sound to the Shanling but with more welly, then do consider the Vincent SV-236 at £999 as it offers a fine valve preamp but a healthy 100W output from its solid state power amp section. **AS**

You might be interested to know I am currently using my World Audio Design 300B valve amplifier, output 28 watts, with the RRR FS100s and they work very nicely together. The RRRs have solid, deep but well damped bass that really is very impressive. This is a good, big'un at a great price that gives results you won't easily hear elsewhere. My only reservation is a certain lack of finesse across the upper midband, but you do get detail in your lap. For anyone who really wants to hear it all, in technicolour, these loudspeakers have few competitors. **NK**

BACK TO BLACK

I have been an avid reader of your fine publication for many years and would welcome your advice, please. During a major refit of our living room in 1999 I decided to sell all my vinyl and my Linn Sondek LP12 with Akito arm and Goldring 1042 cartridge. A definite tragedy, looking back, but after hearing the latest Linn Sondek LP12SE at this year's Bristol Show I have decided to



RRR FS100s - OK with valve amps., providing they have a 4 Ohm output.

return to vinyl.

My system currently comprises an Eastern Electric MiniMax CD player, Musical Fidelity Tri Vista 21DAC, Sony E770ES DAB/FM Tuner. These feed into a Musical Fidelity A3.2 amplifier. The amplifier has, as I understand it, a reasonable magnetic cartridge input which will do for starters. My loudspeakers are Dynaudio 1.3 Mk2s mounted on purpose-made Tallis rigid stands made by EF Designs. Leads are Russ Andrews D60 digital cable, Nordost Valhalla interconnects and Soniclink A300 loudspeaker leads. The system is installed on an Apollo rack with the loudspeakers firing down the length of a room approximately 7x4m. I find the sound very well balanced and fluid, and very valve-like with the MiniMax.

My proposal is to purchase the new Rega P3 turntable, possibly at the

Bristol Show next year, but I shall keep my options open. I am uncertain about the choice of cartridge but am inclined towards the Goldring 1042. By this time I hope to have a minimum collection of 25 LPs - am I on the right lines?

John Belcher

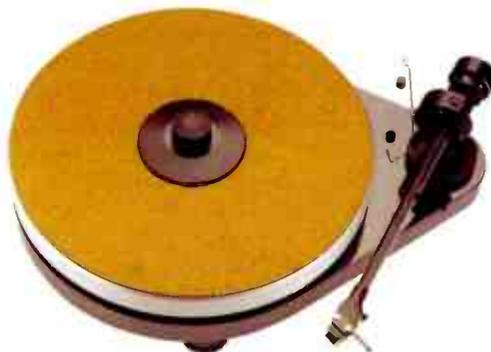
Yes, John, I would say you are. If you're happy to spend more than the likes of an entry-level Pro-Ject Debut III or similar then the Rega is one of the automatic choices at the price. A new P3-24 is around £400 and adding a Goldring 1042 will relieve you of around £570 in all, excluding any discounts you get from buying at a show. This combination will work very well and sound very fine, but a possible alternative to consider is the Pro-Ject RPM 5, which can be bought bundled with an Ortofon 2M Red cartridge for around £450, leaving you money to upgrade to the Goldring if you prefer.

As to cartridges, the 1042 is a fine choice and still has the sweetest sub-£200 MM treble you're ever likely to hear. Do also consider the

but if you like the fluid, valve-like sound of the MiniMax CD player, and you also obviously already know and like the 1042, then I suspect it is your best bet.

Finally, we wouldn't be Hi-Fi World if we didn't suggest something a bit left-field, so how about a Technics SL1210 if you don't mind a spot of DIY? You can pick up one of these for around £340 if you look hard enough; add in £40 for an Origin Live armboard and £125 for a Rega RB250 and you can still sneak the 1042's younger brother, the 1006GX, into the £570 target. Food for thought... **AS**

Indeed - and the modified Technics outperforms the Rega P3 by a significant margin (with dramatically superior bass power, definition and overall dynamics), although it's a bit fiddly as mods go and really only for those who enjoy a challenge. If you're not up for an evening of serious twiddling, the Rega P3 is an excellent 'plug and play' solution. Best site it on an Audiophile Furniture Base SP01



Project RPM 5, which can be bought bundled with an Ortofon 2M Red cartridge for around £450, is a good choice says Adam.

£200 Ortofon 2M Bronze if you'd like a bit more pizzazz and insight or the £160 Goldring 2400 for a touch more midrange emotion and detail,

platform, where it really sings, and use a Michell Tecno Weight counter-weight mod to get it to give of its best. **DP**

Billy Vee
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Dynatron turntable with Goldring Lenco GL75 deck...

DYNATRON DISCOVERED

I am prompted to write to you on seeing the mention of 'Dynatron' in the Letter of the Month from the January issue of Hi-Fi World. I recently acquired some items of Dynatron equipment from the local newspaper for the princely sum of £50, namely a Goldring Lenco GL75 turntable, a tuner/amp and pair of floorstanding loudspeakers - all 1970s vintage and in immaculate condition. I purchased these with the intention of selling them on. Instead, I have kept them and, in doing so, they have changed the way I regard the whole hi-fi scene forever!

After replacing the GL75's arm pivot bearings and brake pad, and fitting decent connectors to the back of both the decks and speakers, I gave a coat of wax polish to the craftsman-built cabinets. At this point, I still entertained no ideas about keeping them, until I thought it a wise idea to substitute both the loudspeakers and turntable in my system to check that they worked, and to see how they sounded. That was around 8pm one evening in August and they are still there; I never fail to be delighted with them, both aesthetically and sonically.

I had heard the name Dynatron, but up until that point I had regarded them as a maker of music centres that looked nice, were average in their sonic abilities and were favoured by the Queen. Yet when you dismantle them, that is exactly what they should be. The loudspeakers, for example, are constructed from 5/8in teak veneer 'Contiboard' - no internal bracing, the Goodmans drive units just screwed to the back of the chipboard sub-baffle. There was also no crossover to speak of, just one electrolytic capacitor and, before I fitted binding posts to the back panel, a length of 3A mains wire extending from their back panels. Yet they sound sublime, as does a 38 year old rim drive turntable fitted with the original Goldring G800 cartridge which now has a replacement conical stylus (you can't get the 'E' or 'SE' any more).

I can't explain why this is, I just know that it is! After decades of listening

to the equipment I now just listen to the music, night after night, without longing to replace this and upgrade that. Now I just buy what it's all about - music - in the format of vinyl albums and concert tickets, and one hi-fi magazine - yours, as it's the only one that contains any sense. Those purveyors of dubious accessories can stick their overpriced snake oils where the sun doesn't shine as far as I'm concerned - I've consigned all mine to the dustbin!

As a result, my system now consists of the Goldring Lenco GL75/Goldring G800 turntable through a Trichord Dino phono stage, Arcam Alpha CD player, Pure DAB/FM tuner, Audiolab 8000S amplifier and the Dynatron/Goodmans loudspeakers with Cable Talk interconnects. I did also audition the Dynatron 'Ether' tuner/amp which sounds very good and has a great tuner section, but the Audiolab definitely has the edge.

Those Dynatron components have made me realise what a load of utter rubbish is talked about hi-fi and how easy it is to be taken in by the snake oil merchants. There are individuals out there, and I know as I've met some of them, whose collection of recorded music consists of three LPs and two CDs - all test discs! They have no musical benchmark whatsoever because they have never attended a live performance in their lives, yet have thousands upon thousands of pounds worth of esoteric equipment, most of which you will never have heard of. Incidentally, from last month's letters, I believe it is the mysterious Mr. B who needs to get a life, not yourselves...

John Taylor

Ah yes, Dynatron is another name I know only too well and I have to say I always thought they were something of a funny one. Although ostensibly purveyors of all in one systems, music centres and the like, their equipment always seemed to be very well made and use good quality constituent parts - perhaps Her Majesty insisted on nothing less! Certainly their record playing systems used Garrard or Goldring Lenco turntable units (not a BSR in sight, thank goodness) along with sturdy cassette mechanisms and, as you have found, good quality drive units in the loudspeakers.

Now, all this old wood stuff may be unfashionable, but the main thing is that you are happy with your purchases and, I have to say that £50 really isn't a lot for such an auditory revelation - well done! It never ceases to amaze me how some older equipment, whilst ostensibly doing things 'wrong' can still be utterly enjoyable to listen to. Peter Comeau

and I were chatting this very morning about the original Leak Sandwich loudspeakers with their three inch cone 'tweeter' and how they may be a bit too laid back at times, and rather soft down the bottom end, but they are just so nice to listen to that such analysis seems perfunctory and we should just get on with listening to the music they make, and enjoying them. As my dear, departed grandfather would have put it, they have a "lovely tone"! However, at the risk of sounding like a snake oil merchant I hope you won't mind me suggesting a couple of ways in which you might gain even more enjoyment from your recent purchases.



...a well made Dynatron tuner/amplifier...

Regarding the Goldring Lenco, I am certainly a fan and, after years of being overshadowed by the Garrard 301 and 401, I feel sure these are highly likely to be one of the next 'big things' - have a look at <http://www.lenco-lovers.com/forum/> for much discussion of these fine machines and some truly jaw-dropping projects and modifications. Although still not quite up to 301/401 standards, in my opinion, they are very high quality units, very well made and using high quality parts in thoughtfully designed configurations. Their range could be split into two broad ranges - the light platter and heavy platter models.



...and some Goodmans-based Dynatron loudspeakers. Reader John Taylor picked this little lot up for £50 and is very impressed.



Original Leak Sandwich loudspeakers - an old 'speaker with a dull sound, says Noel! You may like them, however, as Peter and Adam do. Later Leak loudspeakers were much improved.

Apart from the obvious differences, the heavy platter models (which included the GL60, GL70, GL75 and GL78, as well as the standalone 88 and 99 motor units) also featured a higher quality main bearing and generally a metal-based idler wheel rather than the plastic of the cheaper designs. Once again, Dynatron are showing their quality by their use of one of the higher performance decks.

The arm on the GL75 is generally considered to be its weakest point with, as you have found, those bearing 'V-blocks' inevitably requiring replacement. However, with this done, the arm can turn in a quite decent performance, within the confines of its high mass design.

Although the good old G800 series was the inevitable partner for the deck back in the day, you should find an improvement will be brought about by an upgrade to an Audio Technica AT-95E (£25) or AT-110E (£30). You may be unsurprised to hear that I actually have a GL75 in my collection at the moment; recently acquired, it is running sweetly but has completely shot arm bearings, so once I have replaced these I may even try a £60 Ortofon 2M Red to see how it sounds.

From one classic name to another and Goodmans. I'm glad you like the speakers as well. I'm not quite sure exactly what their rather er...solid front 'grilles' (if wooden front panels with slots cut in can be referred to as such!) are doing to the sound, but I suspect that if you were to find yourself a friendly woodworker who would make you a new enclosure to the same dimensions, but from heftier material that would allow you to use a fine cloth grille, you would release even

more of their potential. While you're at it, I would also replace that single crossover capacitor with a nice shiny new, good quality one, as it is bound to have dried out somewhat over the years.

I also know exactly what you mean about the 'audiophiles' who have the very latest equipment and half a dozen demonstration discs and we like to think that all Hi-Fi World readers reserve a healthy disregard for such audio types. As we like to remind people as often as we can, a hi-fi is a means to an end, namely the reproduction of the cassettes, CDs or LPs that you load onto or into it - all too often it is easy to forget this and it never hurts to be reminded now and then. As to those 'snake oil' merchants you refer to, do at least consider that the world would be a duller place without them! **AS**

MATERIAL WORLD

I am writing regarding January's "Letter of the Month" by Martin Eatough. The Yamaha NS200Ms do actually have Titanium (- carbide) tweeters and mid-range speakers ("squawkers"). Beryllium domes were only used in the NS1000 (X, M versions, but not MM version), the NS2000, FX-3 and the NSX-10000 as far as I know.

Regards

Fred Schuetz

Thankyou for the update, Fred. Titanium is still a pretty advanced material and I would imagine that they are still fine loudspeakers, even if not quite up to the standards of the mighty NS1000Ms. I give you less thanks for bringing up the FX-3, however, as this brings back sad memories of the pair of FX-1s I was offered a few years back that needed a spot of woofer re-foaming. Sadly I was informed, in no uncertain terms, that their size was incompatible with our one-bedroomed house at the time. Mind you, I'm not entirely sure they would have fitted in my car, either...**AS**

LESS OF A MUDDLE

I would like to thank you replying to my letter in the October issue, and for the thoughts you had with regard to my system. The first thing I did after reading your response, was to remove the Velleman preamp. Not being able to afford your suggested items (always pay your parking tickets before the bailiffs arrive), I opted for a Prometheus TVC until I could afford a Music First or the Melody preamp. This change made an incredible difference to the sound: I suddenly had better defined treble, a much clearer midrange and the bass was so much better, I could remove the

subwoofer, which in turn removed the dullness from the sound.

I also considered your choices of phono preamp and was considering looking at both the Anatek and Minimax. Unfortunately, due to lack of funds, I decided to get my old soldering iron out and build the WDPhono 3. This really made a real difference to the presentation of the sound. I have gone from just listening to actually listening and feeling the emotion in the music. The sound is much closer to reality; as an example when a guitar player pulls the string before its released, I swear I can feel that tension building, whereas before this never existed. All this improvement for under a grand. If I had not had your advice I would have spent the money on larger speakers and a newer subwoofer!

I know my system is far from perfect, but right now that is not as important as it was two months ago. The system now gives me pleasure, I can come home with what may seem like the weight of the world on my shoulders, and for an hour or two, just by putting a needle on a plastic disc get transported to a different place and time. To improve the quality of that experience, is almost always justified.

However, can I be a real pain and ask for a little further advice, please? I intend to change my speakers next year. I heard the JM Labs Micro Utopia Be at the hi-fi show in September (my first show ever) and they really sounded nice, they were playing soft music so I don't know what they sound like with Jazz or Reggae and soul music - do you think they would they make a good match for my amplifier, or what speakers would you suggest to get a more realistic sound than the B&W 704s? I really like the 704s but sometimes you cannot really hear where the music is coming from. I have also heard that replacing all of my cables to a single type makes a drastic improvement in the sound, is this true?

Danny

Hmmm... thanks for your kind words Danny, but it doesn't seem like you've heeded the all-important point - which is what we always say in the letters section. Random selection of components won't bring hi-fi heaven - you need to identify what you want and why. In your case, you're proposing substituting a pair of mid-price floorstanders for a pair of high end standmounters. Errr, why? It seems to be simply because you heard the Focals, as they're now called, at a hi-fi show playing some music you don't normally listen to... doh!

The problem you have, apparently poor soundstaging, is a function of what's going into your



Focal JM Lab Micro Utopia Be - good, but an acquired taste says Noel. Think again, says David.

B&Ws as much as what's coming out. Given you now have a decent preamplifier and excellent amplifier, I think some serious attention to setting up is needed. First, make sure all your contacts are clean; use Kontak to do every plug and socket with a pipecleaner. Make sure your source, preamp and power amp are properly isolated from their supports; put them on FoculPods, Isonodes or similar. Then toe your B&Ws in by 5 degrees or so, and make sure the floorspikes are securely fixed to the underside of the speakers, and then locked hard into the floor. Then go around the allen bolts on their front baffles, tightening them as much as you reasonably can with an allen key. This done, you should notice a substantial improvement in focus, and better imaging too.

Next is to fine-tune with cables; it is not necessarily true that they sound better when all used from one manufacturer, but at least you've got some consistency that way. Still, having played around with them for many years (sorry - "conducted scientific experiments"), I'd counsel a set of Chord Odyssey 2 speaker cables. These are an excellent starting point, giving a fine all round sound with fine focus and grip. In the case of interconnects, I'd suggest Black Rhodium's Polar Opera DCT between pre and power amp; a tight, clean, smooth cable but silky too. All this done, you're in a far better position to decide whether you need new speakers or not - write in again then! **DP**

Focal loudspeakers have adherents and detractors in equal measure it seems to me. Generalising, they sound fast and detailed, but neither sweet nor relaxed. The JM Labs Micro Utopia Be is a neat performer, that's for sure, but whether you will like it at home over a long period is something I would not like to predict.

It is worth listening to closely though, and your McIntosh MC275 is likely to be a good match subjectively. I suggest you contact a Focal dealer to see if you can get a demo. **NK**

ROLL WITH IT

I own a Pathos Logos amp. and have been very pleased with its performance. I've had it for two years now and lately I've noticed one of the valves is not glowing as brightly as the other one. I am also convinced the amp has lost a little of the warm sound and a few of my well listened-to favourites are a little ragged around the edges. Now when I say a little I mean a little. I was wondering if you could offer a suggestion for better replacement valves, an upgrade if you will. Or do I stick with what the manufacturers have put in?

I don't mind spending the cash if its a better sound. I tried Mullard military NOS (New Old Stock) but one was duff



Electro-Harmonix 6922 valve from Russia, a good starting point.

and so I couldn't make a comment on their sound (I did receive a refund) Is there any value in tube rolling a hybrid amp when the valves are only on the pre amp?

Ron Ferris

Yes, definitely Ron. Internal electrode support structures and materials can differ markedly, some tubes being less microphonic than others, for example. Electro-Harmonix are a good budget choice at £10 each and it may be best to start here. Having got used to them, you might then try something a little more esoteric. The ECC88 has a reputation for being low noise, but microphonic. NOS may not be the best bet here. I would be tempted to try a good modern version where, I am told, microphony has been reduced. **NK**

SIMPLY SPEAKING

A Naim dealer a fair distance from me has offered me a pair of used Credo

loudspeakers [bass from 35Hz, medium sized floorstanding ported 2-way]. My amp is a flat-capped Nait 5. My room is sparse, with a wood floor, some rugs etc. and is 3m x 5m x 2.5m with an off-shoot galley kitchen. My existing speakers are Epos M12.2, in other words, less sensitive standmounters. Is it worth arranging an audition? Would the Credos simply be too big for my room?

Chris Moorhouse

Hi Chris - as you know, we ended up speaking on the phone about this, so I'm publishing your letter, and the advice I gave you, simply for readers' reference purposes...

Why do you want the Credos? So many upgrade queries are seemingly random questions without rhyme nor reason. In this case, the dealer has some he wants to unload, and you're a great opportunity for him to do it!

As per our chat, you're right to suspect that your Naim Nait 3 might be struggling at high levels with your Eposes, and indeed moving to the slightly more sensitive Credos would bring slightly more volume. However, if you're going to go to the trouble of changing your speakers, why not invest in something that will really sing with your Nait? In my experience, Revolver loudspeakers work superbly with Naim power amps, with a strongly rhythmic sound, tremendous pace and dynamics and a sense of musical joie de vivre that Naim lovers treasure above all else. Furthermore, they're super-efficient, so they'll go very loud with your amp's modest output power and not strain it at high levels - it's a great synergistic match. Best of all, a second-hand pair of R45s should come in at well under £500. **DP**



Revolver R45s are a good choice with a Naim Nait 5, says David.

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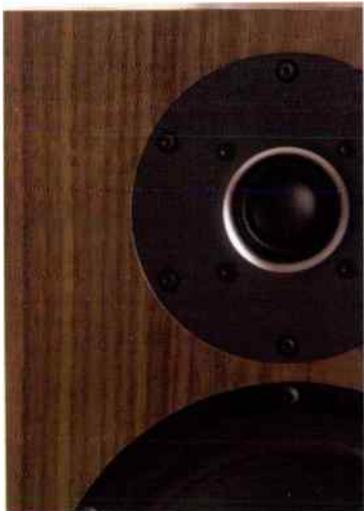
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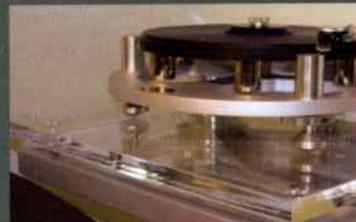
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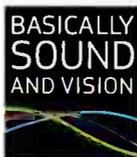
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Is this the future.?



Last time I referred to a new AVI active system (ADM9's - see www.avihifi.com), and said I would report on it, once I had time to evaluate it. If the way it is selling is anything to go by, it has to be good!. Certainly, now having had time to evaluate it, I have to say it would be difficult to beat for the money, a mere £1000, plus whatever you wish to feed it with, say around £400 for a Mac mini computer, or similar cost for a CD/DVD player. A complete system for under £1500, as you also need a connection from source to digital input on the speaker, and possibly a phono/phono lead if wanting to also input an analogue signal. Obviously, being a small speaker the ADM9's won't produce deep bass, but AVI now have their new matching sub-woofer with 10" bass driver, which can be added for an extra £750. Considering the speaker cable I use on my top system costs more than this system, it has to be the bargain of the year!

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REVOX H208 remote control, for H2 CD, H5 Amplifier, H6 FM tuner, H207 IR-Transceiver, H209 Subcontroller, unused, boxed, £30, Dunlop Systemdek Transcription turntable, original model, Rega R200 tone-arm, £150. 020 8366 2647

GARRARD 401 deck, SME3009 S11 arm, Shure M75ED cartridge, housed in an SME 2000 plinth system. East Yorkshire. £450, Tel 01482 666774

AMPLIFIERS AND NuVista tube pre-amp, complete with a spare set of nuvista valves. Perfect condition and boxed, sell for £2250. tele-01604 584630.

MARANTZ CD 63 MKII K1 Special Edition, highly desirable, £180. Marantz ST-57 stereo tuner, £50. Tannoy 636 floor standing dual concentric speakers, black, £80. All excellent condition including manuals etc. Hertford 01992 589315.

B&W CDM INT cherrywood speakers. Excellent condition. £250. Tel: 01257230398 or 07971350833

ARCAM 8 Delta 90.2 Intergrated Stereo amplifier £50. Arcam Delta70.2 Compact Disc player £50. Arcam Delta Black Box Digital Audio Interface £50. Arcam delta 80 AM/FM Stereo Tuner £50. Email: snagaitis@hotmail.co.uk or call on 07971350833

DENSEN B300 power amp 100 watts (£1000) £550. Densen B100 integrated amp (£700) £350. Atlas Elektra interconnects, Target R2 speaker stands (£400) £175. Tel: 07973 189 538 (London)

PAIR WILLIAMS Hart 100 wpc monobloc amps with control unit. Good phono stage, vgc £800. Voyd three motor turntable, vgc, £600. Tel: 01977 620 558

QUAD 99 pre amp and remote, ESL63's P.O.A. Wharfedale Dentons £40. Kef Cresta 3's cherry floorstanders £150. Arcam Alpha One £100. Meridian 596 P.O.A. P/X? Wanted: IMF's & AR Classic 60. Colchester 01206 510 392 or 07880 983 630 Jim

THORENS TD160 BC MkII, Hadcock 228 Super. Ortofon M20's. Boxed. £225. Marantz CD60SE £70. A&R A60 amp £60. Rotel 965BX discrete CD £100. All one owner. Excellent condition. Tel: 01722 334 694

ROTEL RC-06 pre-amp £140. Teac R-H300 cassette deck £50. Flying Calf 24-bit DAC £95. Tel: 01524 848 621 (Lancaster)

KEF 104AB Reference loudspeakers in excellent condition. boxed with instruction manual. £130.00 Tel: 01924272104.

MARTIN LOGAN 'Sequel 2' hybrid electrostatic loudspeakers. Six feet tall with ten inch bass. Fantastic sound. Excellent condition. Circumstances force sale. True high end quality. Only £995. Tel: 07853 498 379 (Brighton)

WANTED: GRADIENT Sub woofers for Quad ESL57. Any condition. Tel: 01344 776 445

(SONAB) T.A. Delta 50 speakers £50. Sony ST88 tuner £25. Accuphase E202 amplifier £350. Technics SLP777 CD £60. Ruark Epilogue speakers £75. Marantz PM6010SE KI amp £140. Tel: 01708 457 691.

MISSION 752F rosewood speakers £225 ono. Marantz 6000 KI Sig CD player £250. Rotel RA 05 amplifier £290. TCI Viper interconnects £20. DNM speaker cable £6.50 sq yd. Tel: 01582 724 414

VOYD VALDI turntable. Excellent condition. No arm. £400 ono. Naim Nait 5i £480. Graham Slee Reflex Gold, new £650 sell for £450 ono. Audio Innovations P.I £100. Tel: 07747 753 007

NAIM NAIT 2, chrome bumpered 1988, excellent condition and sound, £250 ono. Rega Planet CD player, modified by Terry at Rega, stunning sound, good condition, £250 ono. Tel: 01743 466 093.

AVO AMP characteristic meter Mk4. Philips reel to reel, 3 motors, 3 heads, 3 speeds, 4 track, plus stereo. Very good condition. Sony belt turntable, Ortofon cartridge. What offers? Tel: Stanley 07951 553 091

SPENDOR CLASSIC Series SP2/3E speakers, rosewood, £650 ono. (Currently £1750). Suitable Acoustic Energy mass loaded stands available, £200. (£600 new). Unison Research 'Unico' hybrid valve/mosfet integrated amplifier, 75w/ch, £525 ono. Tel: 023 8073 8935

QUAD II valve amplifiers x2. Recent KT66 fitted, nice original condition with book and leads £475. Leak TL 25+ amplifiers x2. Nice condition. Any trial, £650. Tel: 01246 810 851.

QUAD IIL, Birds Eye, low hours, slight marks hence £100. Denon TU260LII, mint, £50. Sony JE640 minidisc Type-R, mint, manuals, 50+ discs, cleaner, £50. All boxes, remotes, accessories. Tel: 01355 248 467

KEF PSW 2010 subwoofer £100. Yamaha receiver RXV630 RDS £100. Kef HTS 2001 speaker £25. VDH The First interconnect £90. Marantz CD 6000 OSE KI Signature CD player £220. Tel: 01323 461 432.

NAKAMICHI CASSETTE Deck 2, excellent condition £70. Target loudspeaker stands, sand filled, 20" Model HJ20 £25. Both items plus postage. Tel: 01306 887 554

78 RPM TURNTABLE, Project Debut II with modification pulley for 78 and 33 1/3, with fresh belt and new cartridge + 78 stylus. £147. You 'collect'. Tel: 07710 828 286 Brighton anytime.

WANTED FOR spares or repair faulty or non working Quad 34 or 44 preamplifiers. Contact Mike on 01758 613790.

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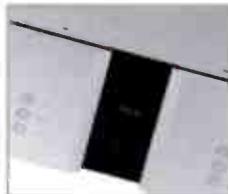
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ARCAM DIVA DV88 as new black complete. HDCD and multiregion DVD. Little used - owned from new with packing/receipt. £320
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charliestumpy
@blueyonder.co.uk

WANTED: HI-FI WORLD magazine May 2002 issue. Excellent price paid - fully negotiable. Phone day - 0207 389 2849. eve 0208 394 2586 - Andrew.

DYNACO MkIII 60 Watt monoblocs (pair) in superb, unmodified condition with peerless sound. £595 collected from St Neots, Cambridgeshire. Audition & inspection welcome. Telephone 01480 210510 or email keith_g@dsl.pipex.com

WANTED: MICHELL Orca Preamp and power supply. Tel: 07971858361 or email: clb@wsbc.myzen.co.uk

ROCK Mk2 T/T, Rega 300, Roksan corus black, Anex p/s £750.00 ono, Arion Talos triode p-p amp 10wpc £750 ono, DPA bigger bit DAC £200.00 ono. Tel 07967887290
kevin.adams
@southshropshire.gov.uk

NAIM AUDIO Nap 72 Preamp £300, Hicap £300 (olive), SBL Speakers Black Ash inc. P/Crossovers £500. All mint condition/boxed. Upgrade forces sale. Tel 07970 078653(Workshop)

WANTED FOR spares or repair faulty or non working Quad 34 or 44 preamplifiers. Contact Mike on 01758 613790.

GARRARD 401, renovated and excellent mechanically and cosmetics. SME plinth, internally reinforced. Superb. £395. SME 3012 mark II arm. Aluminium armtube, metal bearings. Immaculate. £445, original handbooks etc. 01424 203192.

WANTED B&W 800 matrix speakers, good condition. Phone 003531 2954076

VINYL LP'S Wanted: Rock: Folk: Jazz: Soul: Reggae: Blues: Classical: Memorabilia. Must be in Excellent condition. www.tantrel.com
tantrel@bigfoot.com
0845 0941997

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peter@seams.co.uk

TEAC Hi-Fi H500i system 6 components. Stereo Amplifier, CD Record/Rewrite Deck, CD Player, AM/FM/RDS Radio/Tuner, Minidisk, Cassette Deck. All remotes & manuals. Superb. As new £1150. 0121 246 1341

KEF Q35.2 Q15.2 light cherry and Q95c centre graphite speakers. Great for AV and Music. Immaculate condition, original boxes and manuals. £250 including Atacama stands. Tel: 01684 772985 (Gloucestershire)

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QUAD 44/405, Arcam CD 72, Kef 104aB. All used regularly. Quad FM3 tuner and Technics SL110 with SME 3009 series II unused for 15 years. £ Sensible offers for the lot. brian.dreaves@btinternet.com

C R DEVELOPMENTS 'Romulus' tube amp. immaculate £875. KSL3 floor standing speakers, superb sound £375. Quad 22 + monoblocks fully checked & in original boxes £875 Chesterfield 01246 238593

SPEAKER RECONING, DIY Refoam Kits, Diaphragms, Hard to find Speaker Parts, Crossovers, Altec, Tannoy, JBL, Electro-Voice, EAW, Mackie recone kits. The Speaker Exchange Tampa, FL USA
www.speakerex.com

AUDIOLAB 8000SX power amplifier, late model, £300. Marantz CD6000KI CD player, black £200. Monitor Audio B4 speakers £150. Atacama EquinoxAV stand, 3 shelves £200 email tillistone@tiscali.co.uk or tel: 07941 716860 (Bath)

GOOD HOME sought Tag McLaren 60i RV power amp with PA20R pre amp. also Isotek mini sub mains filter, Cyrus CD7Q with PSX-R power supply, JA Michell deck all mint. bmv@waitrose.com

ROTEL RC870 x2 RB870 power amps ex £200. Talk Electronics Atorm amp £150. Thorens 160B SME 3009 £160. Axiom 300 £70. Pioneer DV09 cost £2200 bargain £350 Sussex 07999784728

FOR SALE: Highly modified Marantz CD67 Sounds like £1500+ player. Awsome detail & dynamics, very musical analog sound. Reclocked, discrete output stage, Black Gate Capacitors, Upgraded Power Supplies. leeo.thomo@tiscali.co.uk

MATCHED PAIR of KEF C95 speakers in immaculate condition. Floor standing. Teak finish. Beautiful sound but must sell as moving to smaller house. £120 ono. Tel: 01842 862979. E.mail: lands@onetel.com

GUIDELINES FOR BUYING AND SELLING SECOND-HAND EQUIPMENT

FOR THE BUYER

1. Not everyone is honest - Buyer Beware!
2. Don't send cash!
3. Accept no verbal guarantees.
4. Have you heard the item or something similar? If not, why do you want it?
5. Don't pretend to have knowledge - it's your fingers that will get burnt!
6. Is it working? If not, why not? Can it be repaired and if so is it worth it?
7. Has it been modified and, if so, have notes been kept?
8. Was it any good in the first place?
9. Don't send cash!
10. If you are in the slightest doubt, arrange an audition (see point 5) If it's too far, wait for another time.
11. Either buy it or don't: vendors are excusably impatient with 'consultation' exercises.
12. Don't send cash!

FOR THE SELLER

1. Not everyone is honest - Seller Beware!
2. Make no verbal guarantees.
3. Even 'nearly new' is still second-hand. If the manufacturer's guarantee is no longer in force, your price should reflect this.
4. There is very little intrinsic value in second-hand hi-fi; it's only worth what someone will pay for it.
5. The best guide to pricing is last month's Classifieds: that a 'classic' was worth £xxx a year or two ago is no guide. Values fall as well as rise.
6. Amateur second-hand dealing is not a big money game: you win some, you lose some.
7. Be prompt with despatch. If in doubt about buyer's bona-fides, either wash out the deal or send C.O.D.
8. There will always be time-wasters; be tolerant within reason!

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www.choice-hifi.com
tel: 020 8392 1959 mob: 07768 720456
info@choice-hifi.com

WDKEL84 Valve Amplifier Kit

"The quality that can be gleaned from this amp is a fine introduction to the joys of the valve sound"

The WDKEL84 features a pair of EL84 valves in Push Pull configuration per channel, providing two channels each 18 Watts into an 8 Ohm load. Described by users as a 'Giant Killer' this kit is available as a 5 input integrated amplifier with ALPS volume control.

WDKEL84 kit £449

WDKEL84 built & tested £599



WD88VA Valve Amplifier Kit

"It proved itself to be an engaging valve amplifier that measured well and sounded superb. Quite simply it plays music, and plays it extremely well."

Adam Smith, Hi-Fi World Dec 06

Often described as a 'sweet sounding' valve, our implementation of the KT88 makes sure that it is driven to its ultimate performance. Available as a 35W stereo power amplifier with single input volume control, or as a relay switched integrated with five inputs.

WD88VA Integrated Amp kit £949

WD88VA built & tested £1249



WDHD3 Headphone Valve Amplifier Kit

"Headphone 3 is a single-ended design with the power pentode wired up in triode configuration for added purity and is as quiet as a mouse"

A beautifully simple stereo headphone amplifier design using Mullard ECL83 valves. It works directly from any source. The circuit uses twin high specification E/I output transformers that can be wired to drive any headphones between 16 to 300 Ohms.

WDHD3S kit £349

WDHD3S built & tested £479



WDPre3 Modular Preamplifier System

"So there we have it, a pre-amplifier capable of driving any load and maintaining its linearity no matter what cables or partnering equipment you prefer to use."

This 5 input line level preamp is essentially an SE triode power amplifier in concept. WDPre3 uses an ECC82 double triode arranged as input voltage amplifier and power output amplifier stages, the latter driving oversize 20:1 output transformers.

WDPre3 kit £369

WDPre3 built & tested £494



WDPhono3S MM/MC preamplifier

"...only a few designs meet the requirements of tonal accuracy and maximum retrieval of musical detail."

Twin input preamp with MM and MC relay switched inputs, passive RIAA equalisation and wide bandwidth MC step-up transformers.

WDPhono3S kit £399

WDPhono3S built & tested £524



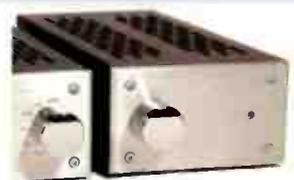
WDPSU3 Power Supply

Can be used to power either WDPre3 or WDPhono3 units individually or together.

High performance choke power supply with separate HT and Heater feeds for both WDPre3 and WDPhono3 preamplifiers.

WDPSU3 kit £199

WDPSU3 built & tested £299



TRANSPARENT REFERENCE
Digital cable, 1m, XLR, £280.
Nordost Valhalla intercon-
nects, 0.6m, XLR, boxed. £750.
Other Valhalla cables available.
Placette Active preamp, £1300.
Tel: 020 8661 5329. email:
zhuo_deng@hotmail.com

AUDIO NOTE AZ-Two floor
standing loudspeakers black
300.00. DNM Reson I turn-
table with stand 400.00 ono all
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OPTIMUM PREMIER hi-fi
stand. Glass & Stainless Steel. 7
shelves can be built up to suit
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at £2350. 'Best valve amp
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Pentacolumn loudspeakers,
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external electronic crossovers.
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B&W CDM INT cherrywood
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tion. £250. Tel: 01257230398 or
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near mint, with remote control,
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condition. £36 for all three
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accepted.
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REVOX H208 remote control,
for H2 CD, H5 Amplifier, H6
FM tuner, H207 IR-Transceiver,
H209 Subcontroller, unused,
boxed, £30, Dunlop Systemdek
Transcription turntable, origi-
nal model, Rega R200 tone-
arm, £150. 020 8366 2647

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584630.

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Special Edition, highly desir-
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floor standing dual concentric
speakers, black, £80. All excel-
lent condition including manu-
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B100 integrated amp (£700)
£350. Atlas Elektra intercon-
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(£400) £175. Tel: 07973 189
538 (London)

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monobloc amps with control
unit. Good phono stage. vgc
£800. Voyd three motor turn-
table, vgc, £600. Tel: 01977 620
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(Brighton)

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p/p Essex 01268 415 017

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When a classic goes 'poof' your troubles have just started, but there may be a good ending. Replacing failing parts can improve the sound, so here is a short listing of all those companies who specialise in getting a classic up and running again after its deposited a small ring of soot on your ceiling!

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ESL-57s restored, rebuilt, fully
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Quad valves amps etc.
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classique_sounds@yahoo.co.uk
www.flashbacksales.co.uk/classique

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(Graham Tricker, Bucks)
Leak Troughline specialists. Also
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radios and amplifiers restored,
repaired.
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TECHNICAL LAND GENERAL
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664534

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restoration and repair. Also Epos
and TDL loudspeakers.
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Email: paul
@bowersandwilkins.co.uk
www.bowersandwilkins.co.uk

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Phillips, Bristol.
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www.octave-aw.co.uk

LORICRAFT AUDIO
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Bucks)
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www.garrard501.com

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Specialist cartridge re-tipping
service and repairs. High quality
special cartridges.
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NEXT MONTH

As we emerge blinking into the new year, March's Hi-Fi World is full of the joys of Spring – and we'll be sampling a host of brand new blossoms which have only just flowered! As you'd expect from this magazine, we'll have a weird and wonderful range of products for your perusal, from the long-awaited Quad 11-80 valve monoblocks to the brand new MF Audio Passive Reference preamplifier. The superb Accoustic Arts CDP-2 gets an exclusive review, and the World team assemble three superb affordable audiophile systems. Here's a sneak preview of what we hope to bring you:



KEF XQ10 LOUDSPEAKER
SOTA COMET TURNTABLE
PROJECT GENIE TURNTABLE
NAIM SUPERLINE PHONO STAGE
ICON AUDIO VALVE PHONO STAGE
ACCUSTIC ARTS CDP-2 CD PLAYER
QUAD 11-80 VALVE MONOBLOCK
VELODYNE MICROVEE SUBWOOFER
AMPHION PRIO 520 LOUDSPEAKER
REVOLVER MUSIC 5 LOUDSPEAKER
AUDIO PRO MONDIAL LOUDSPEAKER
WHARFEDALE OPUS 2 M1 LOUDSPEAKER
MYSTERE IA11 VALVE INTEGRATED AMPLIFIER (PICTURE)
VIENNA ACOUSTICS HADYN GRAND LOUDSPEAKER
LOUDSPEAKER DESIGN MILESTONES FEATURE
MF AUDIO REFERENCE PASSIVE PREAMPLIFIER
OLDE WORLDE: MICHELL HYDRAULIC REFERENCE TURNTABLE
NAD C455, YAMAHA TX-761DAB & CAMBRIDGE AUDIO 640T V2 TUNER

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MARCH 2008 ISSUE - 3RD JANUARY 2008

APRIL 2008 ISSUE - 5TH FEBRUARY 2008

CHILD IS FATHER TO THE MAN

BLOOD, SWEAT & TEARS
1967



"this release was unique, powerful and daring..."

A multi talented and overlooked figure in rock, Al Kooper evolved from his Blues Project outfit to co-found Blood Sweat & Tears. With this album, Kooper scooped up a heap of psychedelia, a bucket full of R&B and even pinches of classical arrangements mixed with an experimental essence that has meant that this debut album by the band has often defied classification, confused the critics and even befuddled Kooper's fellow band members. To such an extent that, realising that they were not going to extract hits, receive fame or lots of money from the record's release, later sacked Al Kooper and sent him on his way.

In the short term and monetarily, it was the right thing to do because the band's next, self-titled, album was multi-award winning and presented a hatful of hits. In the long term, sacking Kooper was definitely the wrong thing to do because the band quickly burned out and became a puffed up 'circuit' outfit, endlessly punching out their hits to order, leaving any credibility at the door. This release was unique, powerful and daring: from the psychedelic reworking of Tim Buckley's 'Morning Glory', through the soul-drenched strength of 'I'll Love You More Than You'll Ever Know' to the wacked out classical adventure of 'Overture'.

Now lovingly re-released by German specialists Speakers Corner, 'Child is Father to the Man' is significant for, if no one else, the MD of the company, Kai Seemann. "I have been listening to this album since

my early teens, it's one of my Desert Island Discs." So why wait until now to release a much loved album? It appears the fault for that lies at Sony's door...

"I was in negotiation with Sony for this album for two or three years. Like EMI and Warner, they are not really interested. Our request creates a lot of extra work for them and the subsequent profit does not cover that extra work, in Sony's eyes. We press only 1,200 vinyl copies initially, which isn't of significant interest to the major labels. Also, we don't accept a standard, flat CD-ROM source copy of the project's master tape, we need analogue tape copies. The latter are difficult to create, the process is expensive and administratively, it involves 'special orders' which are out of Sony's normal order system. Because no one is producing LPs on a regular basis, this is done parallel to their normal computerised system. However, if you have someone in the organisation who takes a personal interest and is passionate about vinyl then that helps. We have one such person in Universal, another in BMG. Hence, when I heard that BMG had bought Sony Music I was very happy."

Then, as if by magic, the two to three year negotiations were suddenly resolved, almost overnight. Because of the rarity value of the master tapes, Sony/BMG will not ship an original master. Hence, Speakers Corner has to send a new reel of master tape to Sony/BMG. The latter then transfers a flat copy to

the new tape. That copy is returned to Speakers Corner for processing. Master tape itself is a moot point as no one now manufactures it – there is a world shortage. Before production ceased, Kai Seemann bought a quantity of both BASF and Quantegy master tapes, to stock up, which he reckons, will last him for around fifteen years. Unfortunately, he cannot re-use his masters. He is a victim of his own perfection. Seemann actually sticks a piece of blank master tape in between each track to minimise the pre-echo effect, which you often hear during the pause between tracks. This means his tapes are 'one shot' reels.

In addition, when transferring tape, because Seemann demands that the transfer occurs at high speed to maintain sound quality, one album will require at least three master reels. If an album has been the subject of remixes or other reworkings, then Seemann will demand copies of all the studio tapes. This means that he might receive nine or more reels of master tape for a single album, all taken from his precious, depleting, stockpile.

However, the result is a superb reissue, worthy of the original itself – surely a result of being processed through an all-analogue chain. The standard CD version is still currently available but it goes without saying that this release is definitely the one to go for if you're a vinyl buff or have access to a turntable. Even if you don't – here's the perfect excuse to go and buy one! **PR**

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