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WORLD

BLUE VELVET

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THORENS' NEW TD2030 TURNTABLE TESTED...



- NAD M3 AMPLIFIER
- DENON S-81 STYLE SYSTEM
- MICROSOFT ZUNE MP3 PLAYER
- CAMBRIDGE AUDIO 840C CD PLAYER
- VESTAX PDX2300MKII PRO TURNTABLE
- MOWGAN AUDIO MELLT LOUDSPEAKERS
- OLDE WORLDE: SEQUERRA MODEL I TUNER
- NOTE PRODUCTS PHONOTE PHONOSTAGE
- SME M2-10 & MICHELL TECNOARM TONEARMS
- ORTOFON RONDO BRONZE MOVING COIL CARTRIDGE
- NAIM NAC122X/NAP150X/FLATCAP2X PRE-POWER AMPS

SCOOP

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FEBRUARY 2007



STANDMOUNT 'SPEAKER SUPERTEST:

ACOUSTIC ENERGY AELITE 1, ALR JORDAN CLASSIC 1, B&W DM602 S3, KEF IQ3,
MISSION M60I, MONITOR AUDIO RSI, QUAD 11L2, TANNOY SENSYS DCI & USHER-S520

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"The iQ7s offer an exceptional listening experience."

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"Once again the iQ5s prove too much for the competition. Big, confident, poised sound belies the modest dimensions. KEF's gauntlet is well and truly thrown down."

What Hi-Fi Sound and Vision, 2006

"This latest generation doesn't just add an 'i' before the 'Q'; it is also the proud bearer of some of the best speakers KEF has made ever."

Hi-Fi Choice, UK 2006

All the reviewers seem to agree - Q series, the intelligent choice.



welcome

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As we move into 2007, it's fascinating to think that this latest issue of *Hi-Fi World* has a surprising number of names from yesteryear - thirty years ago or more, in some cases...

Classic brands don't get much bigger than Thorens. As well as selling vast numbers of turntables in the sixties, this company inspired a generation of superdecks in the seventies, and now the company is back in this very market. The striking TD2030 is a high end design with style to match - read all about it on p10.

Then we have our standmount speaker supertest, and lo and behold, the likes of Monitor Audio, KEF, Tannoy, Quad and B&W are to be found - all big selling brands back in 1977. With interesting drive units and clever cabinetry, there's nothing old about their designs though, as we find out on p13.

Naim Audio is another classic badge from 'the decade that style forgot', but now a vibrant company with a tremendously loyal following, its products are more accessible than ever - and the NAC 122x/NAP 150x pre-power amplifier combo shows why. Read all about it on p36.

Then we have a classic Danish cartridge brand - Ortofon's VMS20E moving magnet was probably the most popular serious cartridge on the market this time thirty years ago, and now the company is repeating the formula with moving coils. The Rondo Bronze is destined for success, as we find on p43.

SME is Britain's oldest tonearm brand, dating back to the late fifties, and Michell Engineering has the same status in the turntable market, starting just a few years later. On p46 we put their latest tonearms, the M2-10 and the TecnoArm respectively, up against one another.

On p50 is NAD's M3 power amplifier - this company shot to fame in 1979 with the classic 3020 integrated, but 'New Acoustic Dimension' had been trading since the mid seventies.

Predating this by almost a decade was Cambridge Audio. The brand is very different now, as the shiny new 840C CD player shows on p52, but the value for money stays the same...

So, in a way, it's a case of 'plus c'est la change, plus c'est la meme chose' - the more things change, the more they stay the same. In today's hi-fi market, so many of the names remain. Looked at another way though, I'd say hi-fi has never been better value, nor has there ever been greater choice. I'll drink to that! Happy New Year.



David Price, editor

verdicts



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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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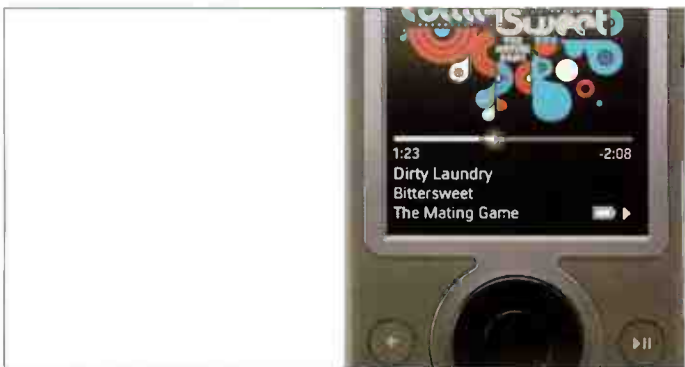
33 Direct live - ultra modern Japanese club classic for under £500.



52 Upsample this - Cambridge Audio's CD player 5400 CD player



50 AD's new hi-fi (CD player) really is a real show stopper



70 Zune-y tunes - Microsoft's brand new iPod rival gets a UK scoop review.



56 Celtic Floor - Monitor Audio's smallest of Malls, looks like a real



10 Blue vinyl - Thorens' new T2020 turntable is a real smoothie

VINYL

THORENS TD2030 10

Adam Smith auditions a super new high end design from this classic marque.

VESTAX PDX2300 MKII PRO 33

Noel Keywood takes this £500 Japanese Direct Drive for a spin.

ORTOFON RONDO BRONZE 43

This sassy £500 moving coil gets the treatment from Noel Keywood.

MICHELL TECNOARM vs. SME M2-10 46

Noel Keywood compares these two very different pickup arms.

DIGITAL

CAMBRIDGE AUDIO 840C 52

This technology-packed silver disc spinner is auditioned by David Price.

AMPLIFIERS

NAIM NAC122X/NAP150X/FLAT-CAP2X 36

Adam Smith pumps up the volume with Naim's excellent entry-level pre-power.

NOTE PRODUCTS PHONOTE 1 40

David Price is charmed by this superb tube phonostage from Graham Tricker.

NAD M3 50

This monster £1,900 integrated gets a damn good thrashing from Adam Smith.

LOUDSPEAKERS

STANDMOUNTER SUPERTEST 13

Noel Keywood and Adam Smith round up the best new sub-£500 standmounting loudspeakers.

SPEAKER STANDS 32

Adam Smith tries two designs from Alphason Designs and Sound Organisation.

MOWGAN AUDIO MELLT 56

Adam Smith gives this charismatic pair of Celtic speakers the treatment.

SYSTEMS

DENON S-81 65

David Price listens in to Denon's sleek new mid price 'style system'.

FEATURES

SHOW TIME 59

Last month's Edinburgh show was attended by roving reporter Sharon Mehlhorn...

COST EFFECTIVE 66

Channa Vithana looks at an upgradeable LP replay system for under £1,000.

OLDE WORLDE 92

Haden Boardman tunes in to Sequerra's legendary Model One tuner.

MANCHESTER PREVIEW 94

Noel Keywood previews the forthcoming Manchester hi-fi show.

DIY SUPPLEMENT

DIY FEATURE PART 4 86

This month Peter Comeau discusses ABRs and TLs in loudspeaker design

WORLD DESIGNSWD PREAMPLIFIER PART 2 90

Peter Comeau explains the design principles of this new preamp.



7 NEWS

words from the front...

27 SOUNDBITES

Adam Smith tries cables from Black Rhodium and The Chord Company.

68 SUBSCRIPTIONS

Ensure your copy every month and save money too!

70 COMPUTER AUDIO

David Price scoops Microsoft's brand new Zune digital audio portable.

73, 75, 77, 79, 81 OPINION

The team get to grips with matters music, hi-fi and life!

82 AUDIOPHILE MUSIC

Paul Rigby rounds up the latest audiophile CD releases.

96 KIT & COMPONENTS

Suppliers of kit and components.

97 MAIL

Ten pages of your views; no small amount of controversy here...

109 COMPETITION

Your chance to win a Marantz SA7001KI Signature and PM7001 KI Signature SACD player/amplifier combination!

118 DIAL-A-DEALER

A comprehensive guide to UK hi-fi retailers.

120 SPECIALIST HI-FI DEALERS

Purveyors of specialist hi-fi services.

122 MEET YOUR MAKER

Who makes what and how to get in touch.

125 CLASSIFIEDS

Three pages of second-hand bargains.

128 NEXT MONTH

What we hope to bring you in the next sizzling issue...

129 ADVERTISERS' INDEX

130 CLASSIC CUTS

Paul Rigby looks at 'The Complete Motown Singles' box set.

THORENS

TD2030



“ Well built and stylish with superb sound quality. The TD2030 is a fine turntable that can be comfortably recommended. ”

Hi-Fi World

VERDICT 



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news

SAMPLED UP!

The new £750 840C CD player marks the zenith of Cambridge Audio's popular Azur stereo separates line up. The company says it promises "unseen levels of performance and engineering excellence at its price point" in the mid-price section of the market. It embraces a raft of proprietary technologies including ATF (Adaptive Time Filtering), which is asynchronous upsampling developed in conjunction with Anagram Technologies of Switzerland. This system intelligently interpolates 16bit/44.1kHz CD data to 24bit/384kHz data, through the use of a 32bit Analog Devices Black Fin DSP (digital signal processor). This in turn feeds two 24bit/384kHz DACs from the same company in dual differential formation. There is also DC servo circuitry with no capacitors in the signal path, two digital inputs allowing upsampling and playback of other sources, and digital outputs allowing the recording of upsampled audio.

[For a full review, turn to p52 - Ed.]

The new Azur 640R is said to be a high performance 7.1 receiver with three input HDMI switching and HD compatible component switching. It has seven 100 watt "audiophile grade" fully discrete amplifiers, kept separate from the processing and input stages, with a "substantial" power supply and an oversize low flux toroidal transformer. HDMI switching allows the latest satellite receivers, DVD players and games consoles to be routed to the TV with full digital video transfer, fully HDCP compatible. There's a wealth of decoding options, including Dolby Digital/EX and DTS/ES/Matrix/Discrete formats in all 5.1, 6.1, and 7.1 variants, Dolby Pro Logic II or IIx and DTS Neo:6 decoding in all 5.1, 6.1 and 7.1 variants, plus DTS 96/24. An analogue stereo direct mode for audiophile stereo sources (pure analogue, no DSP) is fitted, along with an On Screen Display (OSD) and navigator style Azur remote control. Price is a very reasonable £600. For more information, click on www.cambridge-audio.com.



SIGHT AND SOUND

As *Hi-Fi World's* own Patrick Cleasby intimated in his review of Arcam's super DVI37 last month, the company's flagship DVD universal player is just about to be launched. Well it's official - the DVI39 should be in the shops by the time you read this, and as expected features a plethora of features and great attention to detail paid to its sonics.

Indeed, Arcam say that, "it delivers marked improvements in picture quality from DVD and beats almost any competition at any price", no less! It sports "cutting-edge video technology" using the latest generation Zoran Vaddis 888S core processing engine, "broadcast quality" ABT1010 1080p video upscaling technology from Anchor Bay, "broadcast quality" ABT102 video deinterlacer, twin audiophile-grade toroidal transformers, unique Arcam 'Mask of Silence' electro magnetic damping technology and unique Arcam tri-laminate damped SDS (Sound Dead Steel) chassis. It plays DVD-Video, DVD-Audio, CD audio, SACD audio, DiVX video playback, with HDMI digital video/audio output. There's also a CD Direct mode for superior music playback. For more details, click on www.arcam.co.uk or call 01223 203 200.

PRESTIGE NEWS

Tannoy has announced a range of updates to its Prestige range of high end loudspeakers. Having re-evaluated the performance of models throughout the range, Tannoy engineers selected the latest components to introduce several performance enhancing amendments to the crossover designs and signal path devices. The changes will be indicated with SE badged versions, namely the Westminster Royal SE, Canterbury SE, Stirling SE and Turnberry SE. The quality of the components used in the new Westminster Royal SE and Canterbury SE models has been upgraded to the highest standard. Hard wired throughout, the crossovers feature Hovland Musicaps with special Tannoy DMT (differential material technology) isolation sleeve for the HF feed capacitor. High quality ICV Musicaps are used in other areas, with Vishay thick film non inductive resistors throughout, with extensive heatsinking where necessary to provide a stable component temperature for maximum reliability. Very low loss laminated iron core inductors are used on LF, the design ensuring that there is less resistance between the amplifier and driver, resulting in superior bass control. Cable routing has been painstakingly considered "to ensure there is no degradation in sound quality". Similarly, the components have been carefully arranged to avoid any coupling effects. The overall aesthetic of the cabinet design remains unchanged with the exception of updated badges and front baffle trim panels to reflect the 'SE' status. Acrolink 6N copper cable is used throughout, with high purity silver (99.99%) link wires on separate HF crossover board. Round 5-point (bi-wire and ground point) terminal panels have been incorporated on all the upgraded Prestige models. Additionally the Westminster Royal SE and Canterbury SE use high quality WBT connectors to ensure easier connection of substantial loudspeaker cable whilst maintaining complete signal path integrity. For further information, contact Tannoy on +44 (0) 1236 420199 or click on www.tannoy.co.uk.





SLIMLINE TONIC

NAD has a new DVD/CD player in the svelte shape of the £200 T515. With full support for DVD-Video, DivX, and DVD-Audio (2-channel only) and CD, plus MP3, WMA, DTS and Dolby Digital playback decoding, all via the same 24bit, 192kHz DACs. Keeping signal paths short and direct to minimize any interference, the 6x14bit Video DAC running at 108MHz is capable of reproducing images with extremely vivid colours, says NAD. The T515 includes an HDMI with HDCP encryption output, which can transmit encrypted picture data at rates up to 5 gbps second. This allows direct transmission of uncompressed

HD video and audio in a pure digital format.

Standard 480i and 576i (480/576 lines interlaced picture) can be upsampled to resolutions as high as 1080i for use with today's HD projectors and flat panel displays that offer HDMI w/ HDCP inputs. The T515 provides three additional video connections (Composite, S-Video, and Component) aside from HDMI and three audio connection options (Analogue RCA, Digital Coaxial, and Digital Optical-Toslink), ensuring compatibility with all current home cinema equipment. For more information, click on nadelectronics.com.



HEAVY ROCK

"A stunning pairing" is how Boulder describes its new 810 preamplifier and 850 monobloc power amplifiers. Designed and built in Boulder, Colorado, USA, the combination draws on the technology and manufacturing expertise gained with both Boulder's 2000 and 1000 high end amplifier series. The new 800 series maintains Boulder's traditional visual appeal, quality standards and reliability, but brings it to a much greater audience than ever before. Prices are £5,550 for the 810 Series Stereo preamplifier and £7,500 for a pair of 850 Series monobloc power amplifiers. For more information, click on www.boulderamp.com.



ROCKING GOOD NEWS

Lovers of the axe will adore this new Pure Evoke-1XT DAB radio, in full Marshall stack dress! The Evoke-1XT Marshall Edition is the product of three British leading companies: PURE, Marshall Amplification and Planet Rock. This retro Digital Radio echoes the style of what are arguably the world's leading guitar amplifiers. The distinctive white "Marshall" lettering sits on black grill beside the brass-effect control panel that features a fierce red on black display. The radio has an integrated full range hi-fi loudspeaker and features a bass reflex port for enhanced bass performance, alongside a custom designed 3" drive unit and active-filters to provide a natural 'direct-from-the-studio' sound. The EVOKE-1XT Marshall Edition can be upgraded to stereo with the optional XT-1 add-on matching speaker, designed to compliment the radio in everyway. Price is £99.99. For stockists, call 023 92 313090 or click on www.nevadamusic.co.uk

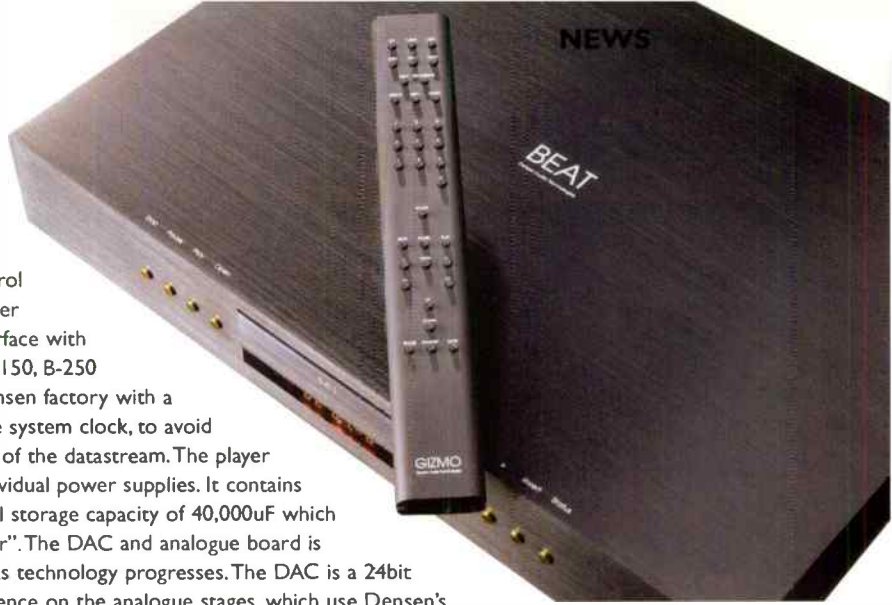


ZERO SUMS

Zero One Audio's new \$2,380 Mercury is a digital audio player that combines the functionality of their T148 CD/HD Transport with a built-in digital-to-analogue converter based on the Ar38 DAC. With the standard 250Gb hard disk drive capacity, up to 380 hours of uncompressed CD audio can be digitally saved. The archived music can be easily accessed via Zero One's proprietary interface software and organised into playlists. The custom software allows users to switch between different oversampling/upsampling rates on the fly (from 16/44.1 up to 24/192), between four different digital filters (from no filter to 'brickwall') and also three different dither settings. The internal DAC is a multibit design with a fully discrete (no opamps), zero-feedback, single-ended, Class A output stage that is DC-coupled (with no capacitors in the signal path). The DAC has its own regulated power supply that is separate from the transport section and uses audio-grade components throughout. The Mercury has a standard (RCA) S/PDIF output with a data transfer rate of up to 24/96 to cater for possible future upgrades by addition of an external DAC. Zero One Audio sells direct to consumers in many countries. For more information, click on www.zerooneaudio.com.

DANE MARK

The brand new £1,000 B-410 is the new 'entry level' CD player from Densen. Following on from the acclaimed B-400+ and B-400XS, it is claimed to surpass them in every way, at a lower price. During the lengthy development phase, a completely new atapi controller was made for control of the CD Drive. Using Densen's own software, the controller not only controls the drive, but also the complete user interface with remote, and display (which now matches Densen's B-110, B-150, B-250 amplifiers, incidentally). The CD Drive is modified at the Densen factory with a clock controller that allows the motherboard to control the system clock, to avoid jitter by using same clock in both sending and receiving end of the datastream. The player uses a large custom-made toroid transformer, with four individual power supplies. It contains four custom-made capacitors, each of 10,000uF, giving a total storage capacity of 40,000uF which Densen says, "would not be out of place in a power amplifier". The DAC and analogue board is separated from the main CPU board, and can be upgraded as technology progresses. The DAC is a 24bit type, mounted under a shielded box to avoid digital interference on the analogue stages, which use Densen's unique non-feedback Class A topology. Sound wise, the B-410 is said to be the result of Densen head honcho Thomas Sillesen's desire to make CD player that will be a benchmark for what can be expected from CD players not only at the price point of the B-410, but also at those much higher. For more information, click on www.densen.dk.



NEW BRONZE AGE

Monitor Audio's Bronze Reference series is the company's new entry-level range. The seven model line up comprises two standmounting speakers, the BR1 and BR2; two floorstanding speakers, the BR5 and BR6; a dual-mode surround speaker, the BR-FX; a dedicated centre-channel speaker, the BR-LCR; and a

150W (RMS) active subwoofer, the BRW-10. In upgrading the well regarded Bronze Series, the company has designed new drivers, crossovers, cabinet construction and finishes to fine-tune the performance of the original range while introducing superior aesthetic appeal. The new C-CAM tweeter has greater sensitivity and an improved response up to 30kHz, while Finite Element Analysis has refined the material specification and operational accuracy of the new MMP bass and mid-range drivers. New Crossovers are also used, with better component quality, and the cabinetry has been changed on the BR5 and BR6 models, which have discrete internal chambers for their bass and bass/mid-range drivers. The new finishes comprise a rich Black Oak and a choice of high quality pearlescent finishes in Walnut or Cherry. Prices start at £149.90 per pair for the BR1s, to £549.90 per pair for the BR6. For more information, contact Monitor Audio Ltd. on +44 (0)1268 740580 or click on www.monitoraudio.co.uk.



T-TIME

REL's all-new T-Series is a three-strong line-up of ultra-high performance yet affordable sub-bass systems. Designed from the ground up, the T-Series brings much of REL's legendary performance to a new price category and opens up the benefits of true sub-bass to a wider audience, the company says. Four years of extensive research and development has resulted in what is claimed to be REL's most accomplished entry-level series to date, boasting class-leading dynamics, ultra-low frequency output and unique aesthetics. John Hunter, REL owner and lead designer on the T-Series, said, "we are extremely proud of the T-Series as the performance exceeds what we could have offered just a few years ago at twice the price." The T-Series is unique at this price point in utilising a sealed cabinet with active/passive driver array. The forward facing active driver supplies direct slam and attack while the downward facing passive generates extended sub-bass output. Retailing at £395 (T-3), £495 (T-2) and £595 (T-1), the T-Series offers fine build and flexible connecting options. It is available now in black ash or cherry composite laminate, both featuring high gloss black lacquered rails. A high-gloss white version may be available in 2007, REL says. For more information, click on www.rel.net.



CLASSIC CHRISTMAS

New from The Cartridge Man is the £1,200 MusicMaker Classic moving magnet cartridge. Ostensibly a tuned up MusicMaker Mk III (itself a modded Grado Signature), it boasts very pure silver (99.99%) coils instead of copper, plus a

raft of other mods including a free Isolator, and new stylus profile. The output is set at a slightly lower level than the MkIII at 4.5mV. Weight is 6.5gms, tracking force 1.6gms. An exchange scheme operates whereby for the price of a rebuild and the old unit, a new unit is given. For more information, contact HiAudio Distribution on 08450 525259 or click on www.hiaudio.co.uk.

Blue Velvet

Adam Smith takes Thorens' new stylish, silky sounding TD2030 turntable for a spin...

A rather different beast from the TD350 that we enjoyed last month, the TD2030 marks the current top model in Thorens non-sprung turntable range. The TD2030 is certainly an eye-catcher thanks to its blue Perspex finish, the sides of which appear clear when viewed from straight on, but blue from an angle. I think it looks superb but, if this is too much for you, the TD2010 model has a more standard clear finish; however it is not as well specified as the 2030 here.

Thorens stick to their tried and trusted method of driving the platter via a long belt around its periphery. This is a wise move as it imparts better torque performance than the popular method of driving a small diameter subplatter on which the main platter is placed. In this case, however, the motor is a completely separate unit that stands on its own rubber feet and sits in a cut-out in the plinth. The main unit rests on three spiked metal feet and protectors are thoughtfully supplied to protect more delicate surfaces.

The motor itself is an AC synchronous type with a standalone, electronically regulated power supply, incorporating electronic speed switching. It also features the same two-stage starting procedure as the TD350, which supplies double the torque at half the speed initially for quicker platter startup. Once again this works, and spins the 6.3kg (14lb) platter up to speed in a commendably short time.

The platter itself is a solid and beautifully machined alloy item that is one and a quarter inches (3.2cm) thick and has a good amount of

bitumen damping as it responds to being tapped with a dull 'thunk'. This is topped with a thin felt mat upon which to sit your records and seems to be a less sloppy fit than we experienced with the TD350 last month.

Supplied with the TD2030 is Thorens TP300 arm, basically a Thorens-badged Rega RB300. This is pre-fitted and aligned and so setup is easy. Different arms can, of course, be fitted although changing to one with a different mounting pattern looks to be a tricky proposition as there is no separate armboard that can be swapped! Fit and finish are impeccable and the deck comes with a small dustcover that fits over the platter and arm to keep the spiders off. On the downside, though, the blue tint to the base does tend to reveal fingerprints more than a clear type - I recommend making use of the white cotton gloves that Thorens so thoughtfully supply.

SOUND QUALITY

The family likeness can be heard when listening to the TD2030, as it does bear a strong aural resemblance to the TD350, as might be expected. Bass is weighty, deep and well controlled and has impeccable timing. Although still ultimately lacking the rock-solid low end of an idler or

direct drive unit, the TD2030 can still show many other belt drives I have heard how to crack out a decent bass line. I also felt it had better weight and an improved sense of authority over the TD350. Where it really scores is in the upper bass region, where bass instruments, either acoustic or electric, are superbly precise.

Midrange is clean, clear and detailed and, although still has the underlying slightly 'grey' tonality that is a character of Rega arms, the TP300 arm is definitely a better performer in this respect than the TP250. This helps to make more of the deck, giving vocals real scale and dimension. Donald Fagen's 'Kamakiriad' showed this off particularly well, where the track 'Tomorrow's Girls' positively sparkled. This served as an excellent reminder as to why some of us strange types prefer LP to CD - although not totally impossible, you have to work hard to extract this sort of involvement from a silver disc!

The TD2030 also imparts a superb sense of atmosphere to acoustic material. This was brought





home to me with the help of an old favourite in the form of Eric Clapton's 'Unplugged' album. I could almost swear that I was sat right in the audience and within the right sort of distance to steal his plectrum in between songs. Goldfrapp's 'Felt Mountain', from the days before they went all disco, again showed off the Thorens' mellower side and Alison's breathy vocals were deliciously intimate and husky.

Do not be fooled at this point into thinking that the Thorens is some sort of softie - far from it. The TD2030 is very happy to boogie and a trip down memory lane in the form of Tom Tom Club's twelve inch single 'Genius of Love' brought a suitably funky atmosphere into the *Hi-Fi World* listening room; certain members of the editorial team seemed ready to root around in their wardrobe for a big fluffy shirt to complete the

journey down memory lane back to 1981. At this point I felt it was therefore best to bring things up to date again and so spun Snow Patrol's new album 'Eyes Open'. Here the track 'Set The Fire To The Third Bar' was superb, and the contrasting vocal style between Snow Patrol singer Gary Lightbody and guest vocalist Martha Wainwright was a joy to behold.

CONCLUSION

An interesting departure from the traditional idea

of a suspended subchassis turntable for which they have traditionally been so famous, I feel that Thorens have really hit the nail on the head with the TD2030. Sound quality is superb and it definitely improves on the already impressive TD350 with better bass definition and a wider soundstage.

The TP300 arm is a fine item and a good partner, but I still think that the deck could work even better with a higher spec unit. Thorens also offer the option of an SME arm and I would personally make this a definite consideration if your pocket is deeper to the tune of the extra £600 or so that this is likely to cost. However, as it stands, with sound quality as good as this and the looks on offer, the TD2030 definitely merits inclusion on your sub-£2,000 turntable shopping list.

VERDICT ●●●●●

Well built and stylish with superb sound quality, this is a fine turntable that can be comfortably recommended.

THORENS TD2030-TP300£1895

'A' Audio Marketing

☎ +44 (0) 870 199 3914

www.audiosolutions.com

FOR

- detailed, agile bass
- soundstaging and scale
- styling and finish

AGAINST

- merits an even better arm

MEASURED PERFORMANCE

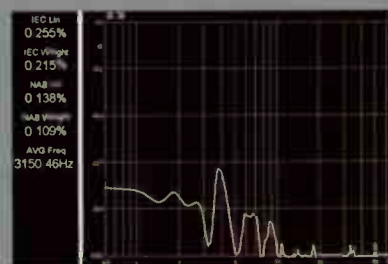
The TD2030 is a classic belt drive in that it has some discrete low rate speed variation components at high-ish level, but it lacks the higher frequency hash that comes from tighter coupled drive systems, especially high torque Direct Drives. So the TD2030 belt system provides fine motor isolation. There's some 4Hz wow which comes from motor pulley eccentricity, our calculations suggest, but this is at a low level and unlikely to be heard. Total Wow & Flutter measured 0.21% DIN weighted, most of it due to the pulley.

There was no measurable rumble, when using a quiet acetate disc. With a DIN vinyl rumble disc we got -67dB weighted via RIAA

correction, which was just disc surface noise.

The Thorens TD2030 measured well. In particular it effectively suppresses high rate speed variations. NK

WOW & FLUTTER



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Ars Aures Loudspeakers



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Digital Integrated Amplifier

CA-S3

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Come and see us at the Bristol Show

Stand Off

Adam Smith shakes down standmounting speakers from Acoustic Energy, ALR Jordan, B&W, KEF, Mission, Monitor Audio, Quad, Tannoy and Usher...

Loudspeakers must surely be the most controversial and misunderstood components found anywhere within a hi-fi system. Nowhere else within a system is there such a disparity between the desire for a big sound and the practicality of having something small and neat enough to ensure domestic harmony. It seems that the amplification and source ends of the hi-fi chain have been appearing in ever-smaller boxes for many years now with no adverse effects on sound quality. However, the small loudspeaker has traditionally been viewed as something of a compromise; the sort of thing that you have to explain to your mates that you didn't really want but had to accept in order to maintain domestic bliss!

Fortunately this has not necessarily been true for a while now. The market bears plenty of smaller loudspeakers that are more than capable of showing a clean pair of heels to their floorstanding brethren and in many ways have a design that benefits greatly from reallocation of the budget. The problem with a £200 floorstander compared to a £200 standmounter, for example, is that more of the funds available for the floorstander will have to go on the cabinet, as it takes more material to build and will require better internal bracing if it is not to wobble and vibrate.

In the distant past, it was usually necessary to buy a larger floorstanding loudspeaker if you wanted anything resembling reasonable bass. Unfortunately, the above mentioned issues of larger cabinets being built to a price meant that whilst there was often a good amount of bass, it had a tendency to be of the rather boxy and bloated variety.

The standmounter obviously has a smaller cabinet, leaving more money for the important bits that go into it. A well designed example offered faster, cleaner and tighter upper bass which more people found they were happier to live with, even if it did dig less deep. Advances in drive unit and crossover design have more recently meant that good bass can be wrung from a small cabinet - anyone who still doubts this should listen to something like Acoustic Energy's £2000 AE1 Mk3 if they need convincing! Whilst it is true that more care needs to be taken with positioning a

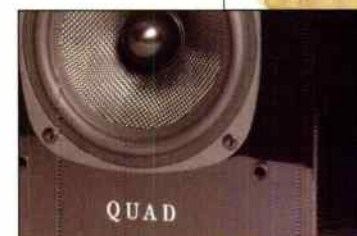
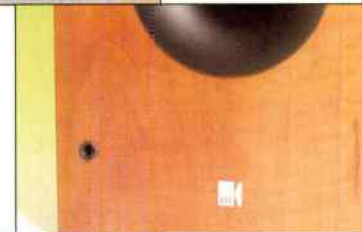
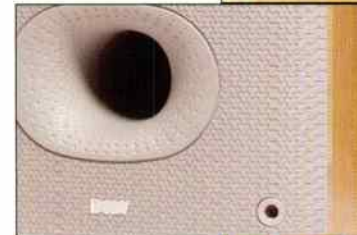
small loudspeaker, and a good quality, heavy pair of partnering stands must be chosen to make the best of them, we have finally reached a point where a small loudspeaker can finally be more than a match for the 'big boys'

A final big help to the small loudspeaker is the increasing social acceptability of that former audiophile swear word - the subwoofer. Purveyors of these beasts have finally cottoned on to the fact that there are people who would like to use them for music and not just for explosions, and so are coming up with designs that are fast and agile enough to keep up with the upper bass of a well designed partnering loudspeaker. This means that nowadays it is possible for a standmounter, accompanied by a subwoofer, to be just as aurally acceptable as it is visually, and should no longer be viewed as a poor relation.

Not every loudspeaker needs a subwoofer to ensure its acceptance. Here at *Hi-Fi World* when we recently reviewed the Usher S-520 loudspeakers we were all absolutely blown away by the performance that they achieved from such a dinky box! With this in mind, and duly fired up, we decided to take a wander through the marketplace and to see what else a similar amount of money would buy us, how they compared to the Ushers, or indeed if things went up in quality if you spent a little more.

After some research we decided on the following contenders to take on the S-520s. In alphabetical order they are the £250 Acoustic Energy Aelite Ones, a late entrant in the form of the brand new £500 ALR Jordan Classic 1s, B&W's £300 DM602 S3s; KEF's £280 iQ3s, Mission's £200 M60i, Monitor Audio RS1s at £350, the new £379 Quad 11L2s and finally Tannoy's £450 Sensys DC1s.

All the units were run in for at least twenty four hours before being measured, and then auditioned atop a pair of £90 Sound Organisation Z1 stands in the *Hi-Fi World* listening room with a variety of fine tunes. The auditioning system comprised the Eastern Electric Minimax CD player and a Pioneer PLC-590 turntable with SME M2-10 arm and Goldring 1042 cartridge through an Eastern Electric Minimax phono stage. The 'juice' was supplied by a Naim Nait Si amplifier.





ACOUSTIC ENERGY AELITE ONE

Acoustic Energy have a history of successful small loudspeaker designs, stretching back to the original Phil Jones-designed AE1 of the 1980s, so they know a little bit about small loudspeakers!

The 'One' is the first model in the Aelite range. Neat and compact, measuring 291x186x231mm (HxWxD) and weighing in at 6kg (13.2lbs), the Aelite Ones are a two-way design utilising a 4.5 in (110mm) lightweight metal alloy bass/mid driver allied to a 1 inch (25mm) soft dome tweeter. The cabinets are attractively sculpted and available in black, cherry or birch wood finishes. Two sets of terminals are provided for biwiring. A rear-ported design, the Aelites are recommended for standmounting close to a rear wall to help reinforce bass output, although foam bungs are supplied in case of any booming as a result of this.

SOUND QUALITY

As suspected from the measured performance, the Aelite Ones are indeed lively and exciting-sounding loudspeakers. Their treble is very well extended and has excellent resolution and detail. Subtle percussive effects, for example, that lurk uncertainly in the background with many speakers were well brought to the fore by the AEs. Fortunately, this did not ever veer into any harshness, the high frequencies remaining composed and clean even with Dance music.

However they also proved more than able to cope with subtle and gentle material when required, so are very versatile.

Allied to this, top end clarity was good, as well as midrange resolution, and there was a superb wide soundstage. The Aelite Ones really do sound bigger than they look, the 50WV of our Naim amplifier were more than able to fill the room. The overall presentation offered by the AEs is forward and dynamic, but this could unfortunately become somewhat too much on occasion.

The measured increase in level from 900Hz to 1.5kHz does serve to give good presence to vocals, bringing them forward with good imagery. However, a voice is less than

smooth than things could become shouty.

In the bass department, the AEs acquitted themselves well with excellent pace, rhythm and detail. With them positioned around eighteen inches (45cm) from the rear wall, good low end weight was achieved.

CONCLUSION

The Acoustic Energy Aelite Ones are a bold and exciting sounding design that take little driving to provide a lively roomful of sound. With even better treble resolution than the Ushers and a tight and tuneful bass, their only downside is a rather over-exuberant midrange that can prove wearing with some material.

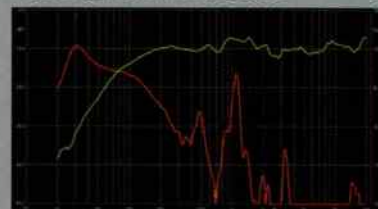
MEASURED PERFORMANCE

The Aelite Ones have a lift in midrange in the 900Hz to 1.5kHz region which should mean that they will have a quite pronounced vocal performance. Treble is extended and still not tailing off at 20kHz, so the Aelite One's overall balance will be quite bright.

Bass roll-off is quite early due to the small cabinet but is reinforced by the port which is tuned to around 30Hz. As this is rear-facing, placement reasonably close to a wall will help to reinforce the low end and should mean that the AEs do not sound as small as they look.

There are no unpleasant surprises lurking in the impedance curve and average impedance worked out at just under 8 Ohms, dipping to a minimum of 6 Ohms. Combined with the good measured sensitivity of 88dB, the Aelite Ones should not pose a problem to any amplifiers, and will work well with as little as 30 Watts. AS

FREQUENCY RESPONSE



Green - driver output
Red - port output

IMPEDANCE



VERDICT

Satisfyingly dynamic and exciting speakers but too forceful at times.

ACOUSTIC ENERGY

AELITE ONE £250

+44 (0)1285 654432

www.acoustic-energy.co.uk

FOR

- value
- treble resolution
- big sound

AGAINST

- forward midrange



ALR JORDAN CLASSIC 1

Surely these cannot be full range 'speakers', you cry? Well, the last time I had anything as small as these sat upon my upturned palm, they were Mordaunt Short Avant Premieres - excellent little units but intended for use with a subwoofer. The ALR Jordan Classic 1s are indeed dinky, measuring just 220x137x190mm (HxWxD) but pack a good deal of careful thought into a small package.

Designed by German loudspeaker supremo Karl-Heinz Fink, the ALRs feature a four inch (100mm) aluminium-coned bass driver and a one inch (25mm) soft dome tweeter. Unusually, they are the only loudspeakers in the test that do not offer the option of biwiring and just have one set of input terminals for connection. UK importer Uberphon sell the matching ES72 stands, which were also supplied to us. These are very sturdy and work well with the Classic 1s.

SOUND QUALITY

It is difficult to believe that such an expansive and encompassing sound can come from such tiny boxes, but it does. The ALRs sound confident and reproduce music with not only good scale, but a certain sense of sophistication. It seems a strange thing to say, but they do actually sound like the most expensive loudspeakers in the test.

Vocal performances were detailed and emotional, and the smooth midrange meant that

acoustic instruments were accurate and life-like. The only downside I found was that, with increasing volume, there was a slight sense of strain, almost as if the little Classic 1s were shouting to be heard. Clearly these are not loudspeakers for headbangers.

Moving onto the treble, I felt this was definitely the ALRs best feature, being sweet, clean and incisive. The 'speakers never missed a trick in terms of detail without ever becoming harsh, even at higher volumes.

As for bass, I was pleasantly surprised to find that they have some! Low output is very commendable for such a small

enclosure and they are nicely detailed with instrumental material. However, once vocals start, this effect does tend to disappear into the background somewhat. Bass junkies should look elsewhere.

CONCLUSION

'Size isn't everything', as the old mantra goes, and this would indeed appear to be true in the case of the Classic 1s. A thoroughly well designed loudspeaker, they do not try to break the laws of physics but use their compact dimensions to best effect. They may not offer much box for your money, then, but more than make up for this in terms of technology and sound.

MEASURED PERFORMANCE

As befits a well designed small loudspeaker, the ALR Jordans measure extremely well. Frequency response is very flat and bass roll off is smooth, aided by ϵ series capacitor in the crossover to limit very low bass output - a common trick in very small loudspeakers to make sure nothing gets unruly when trying to push a small drive unit to its limits.

As expected, ultimate low bass is limited from the Classic 1s, commencing a gentle roll off below 200Hz, which becomes more pronounced at around 80Hz. The ALRs are a sealed design and will benefit from close to wall placement for bass reinforcement.

Averaged measured impedance is high at 12.3 Ohms and minimum looks to be around 7 Ohms; DC Resistance is not measurable due to the series capacitor. The Classic 1s are an easy load but with a low measured

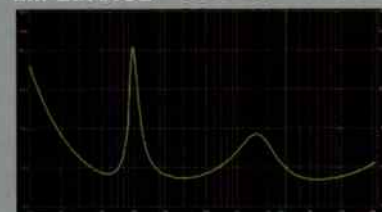
sensitivity of 83dB, will require a good 50 Watts to drive them properly. AS

FREQUENCY RESPONSE



Green - driver output

IMPEDANCE



VERDICT

Ultimately limited by their size, the ALRs are nevertheless highly capable and impressive.

ALR JORDAN CLASSIC 1 £500

Uberphon

+44 (0)1730 261924

www.uberphon.co.uk

FOR

- sweet and detailed treble
- 'grown-up', balanced sound
- intelligently designed

AGAINST

- compressed at high volumes
- limited bass output



B&W DM602 S3

With the B&W DM602 S3s you certainly get a great deal of loudspeaker for your money. They weigh in at 10.5kg (23lbs) and measure 490x236x293mm (HxWxD) - I have a pair of TDL Studio 0.5 floorstanders at home that are only a little bigger! Sadly the downside of their bulk is that they do rather draw attention to their styling which is something of an acquired taste, partly thanks to the pale grey plastic moulded front panel. Still, Noel thinks they look modern and snappy in their styling - each unto their own!

Technically, however, the B&Ws are bang up to date with their seven inch (180mm) woven Kevlar bass/midrange and one inch (25mm) metal dome tweeter. Bass loading is by a front-mounted port that features a dimpled finish at its opening for less air turbulence. Four binding posts at the rear allow for bi-wiring and bi-amping.

SOUND QUALITY

The B&Ws offer up a sound that is as big as they look, and big loudspeakers do produce more bass. So you reap the rewards of their physical size in the bass department; thanks to the combination of good-sized driver and cabinet, bass lines are delivered with excellent weight and depth.

The downside to this is that there is a slight sense of 'boxiness' to the deeper notes and with faster-paced material the DM602 S3s can be a little ponderous.

The midrange is pleasingly free of harshness and comes across as quite neutral, with the exception that the boxiness in the bass seems to carry over somewhat, meaning that some vocalists with deeper voices came across as rather 'chesty'. This is due to box colouration being audible from the front mounted port.

The soundstage offered up by the B&Ws was a real strength, however, being wide and deep and extending well beyond and behind the 'speakers. If you like a good, 'big' sound then the B&Ws could well be the loudspeakers for you, although they have an equal ability to turn from 'iron fist' to 'velvet glove' when required.

As suggested by the measured

performance, treble was strong and detailed, but without being too forward. The DM602 S3s remained clean and composed at all times, with none of the 'spittiness' that can sometimes afflict metal dome tweeters at the budget end of the market.

CONCLUSION

The B&W DM602 S3s are a big loudspeaker, both physically and aurally. They offer a great amount of 'bang for the buck' and turned in a good performance. Although a little uneven around the edges in terms of midband and upper bass boxiness the B&Ws are nonetheless an enjoyable listen and represent good value for money.

MEASURED PERFORMANCE

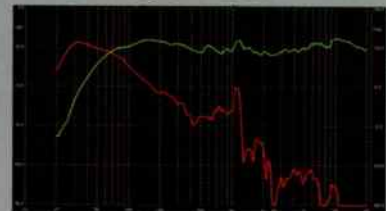
The B&Ws have something of a 'saddle' shape to their frequency response meaning that they will be strongest in the bass and treble regions. As a result, they are likely to sound bright but with good depth.

The treble output rises up to a peak at around 9kHz which will add further presence and then starts to tail off, which will help to ensure there is no harshness from the metal dome tweeter.

Bass output is healthy down to 60Hz or so and further augmented by the port which is tuned to around 30Hz. This is a front-firing unit this time, however, and so will benefit less from proximity to a rear wall.

With a measured sensitivity of 89dB the B&Ws are sensitive but their impedance is nominally 6 Ohms, dipping to a minimum of around 4, so a matching amplifier of 50 Watts or more would be a sensible idea. AS

FREQUENCY RESPONSE



Green - driver output
Red - port output

IMPEDANCE



VERDICT

Big and bold, the B&Ws are a lot of speaker for the money.

B&W DM602 S3 £300

B&W Loudspeakers Ltd.

+44 (0)1903 221800

www.bwspeakers.com

FOR

- treble performance
 - bass depth and scale
 - value
- ### AGAINST
- looks
 - upper bass boxiness



KEF iQ3

The first of two designs in the test that break from the traditional mould of two conventional drive units mounted above each other onto the front baffle, the iQ3s make good use of KEF's Uni-Q driver arrangement that sees the 0.75 inch (19mm) aluminium dome tweeter located in the 'throat' of the six and a half inch (165mm) titanium-coated polymer cone bass driver. This pays real dividends in imaging due to all frequencies emanating from the same spot.

Once again, the KEFs are front-ported and break away from the traditional square box by virtue of their elegantly sculpted cabinets that taper off towards the rear. Of course, not only does this add a different form to the design, but also serves to break up internal standing waves within the cabinet. Compact but deep as a result of the cabinet shape, the KEFs measure 365x220x327mm (HxWxD) and tip the scales at 6.7kg (14.8lbs). They also come with a handbook that features a completely unintelligible troubleshooting section - I feel sorry for anyone who has any installation problems having to try and decipher this!

SOUND QUALITY

As promised by the measured frequency response, the KEFs do indeed offer a very stable presentation across the frequency spectrum. Imaging and soundstaging were excellent, thanks to the Uni-Q driver technology and one

noticeable aspect of their sound, particularly after the lively B&Ws, was that the iQ3s offer a more laid-back presentation. They sounded at their best with more gentle music and suited quieter classical and blues well.

Moving to more upbeat material, the midrange had a tendency to become a little confused - all instruments were present and correct but they felt as if they were being crowded together somewhat. Vocal presentation was rather dry and made some female singers sound as if they needed to clear their throats.

Bass was not as extended as other loudspeakers in the test, but remained taut and tuneful. KEF

have avoided the temptation to add any artificial 'lift' which could make things boomy. Once again though, more pacy music left the lower frequencies rather ponderously.

CONCLUSION

The iQ3s are competent loudspeakers and have a real strength in the form of their superb imaging thanks to the Uni-Q driver technology. This endows them with a uniform performance across the frequency spectrum, one that has no unpleasant aspects lurking ready to pounce. The KEFs are nonetheless happiest with slower and more simple source material, as they tend to become a little congested as pace and complexity increase.

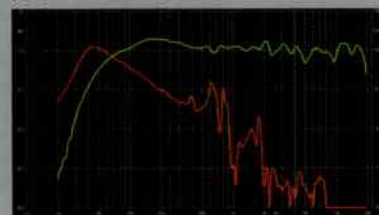
MEASURED PERFORMANCE

The frequency response of the KEF iQ3s is commendably flat and even across the audio bandwidth. They do, however have a generally falling output with increasing frequency, which will minimise harshness. This may prove useful as the treble output is a little uneven.

Bass output starts to tail off at around 60Hz with the port tuned to around 45Hz, meaning that the KEFs will most likely lack the bottom end that is more apparent on some of the other speakers in the test, such as the B&Ws. The port is also forward-firing, lessening the reinforcement impact of close-to-wall placement.

Measured sensitivity was good at 89dB and the impedance curve shows an average value of 5.8 Ohms, with a minimum of 3.5. The KEFs will require an amplifier capable of driving a genuine 4 Ohm load and 50 watts minimum would be advisable. AS

FREQUENCY RESPONSE



Green - driver output
Red - port output

IMPEDANCE



VERDICT

Relaxed and assured-sounding with excellent imagery, the KEFs work best with less complex material.

KEF iQ3 £280

KEF Audio (UK)

+44 (0)1622 672261

www.kef.com

FOR

- imaging
- relaxed sound
- clean, detailed treble
- AGAINST**
- less suited to fast material
- 'dry' vocal presentation

MEGALINE
EUPHONIA
HELICON
MENTOR - 6
PIANO
IKON
CONCEPT
SUBWOOFER



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WorldRadioHistory



MISSION M60i

Another well known manufacturer with a history of competent small models, the Missions under consideration here are the M60is. The base model in Missions M6i range, they retail for £200, making them the cheapest speakers in the test, but you would never know, as they are sturdy and well built. Driver lineup consists of a five inch (130mm) 'Paramid' sandwich-construction bass/ midrange driver above a one inch (25mm) soft dome tweeter. Mission are unusual in their use of this drive unit layout, which they refer to as 'Inverted Driver Geometry', but have championed it for many years, citing its advantages in terms of time alignment compared to the more common woofer-below-tweeter convention. Compact, measuring 305x180x240mm (HxWxD), the M60is are made of two U-shaped sections bonded together for strength and rigidity in order to minimise cabinet vibrations and resultant colouration.

SOUND QUALITY

Vocals are explicitly defined on the M60is and projected well, giving a great sense of depth. However, whilst the audio image appeared to extend far behind the loudspeakers, there did not seem to be much going on in between them. This did not result in a 'hole in the middle' effect as such but I could never get past the fact that it was obvious that I was listening to two 'speakers.

Another unfortunate side effect of the vocal projection was that the Missions could sometimes become rather shouty with less than sympathetic singers. Never truly grating, the M60is nevertheless could not keep up with other speakers in the test in this respect

As mentioned in the Measured Performance section, whilst the figures in the bass end of the frequency range seem very similar to those of the KEFs, the Missions sounded deeper and more authoritative here, but lacked the tunefulness and pace of the iQ3s.

Treble performance of the Missions was probably their best asset, being detailed and clean.

However there was a definite sharpness on sibilants, which was a shame, and marred otherwise commendable high frequency performance. This is most likely due to the rather uneven nature of the tweeter output.

CONCLUSION

Something of a 'not quite', the Missions seem to offer all the right individual ingredients for a good performance but never quite made the most of them. Although bass was deep and treble detailed, the M60is failed to capitalise on these promising strengths and despite their value for money, fall behind the competition here.

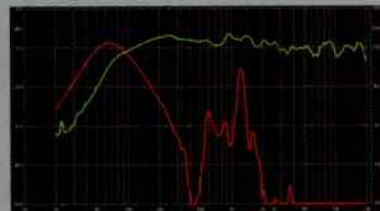
MEASURED PERFORMANCE

The Mission M60is have another generally flat frequency response but it features a gentle downward trend in output as 20kHz approaches. This should endow the M60is with a smooth treble but there is an element of unevenness in the high frequency region which may be noticeable.

Bass starts to drop below 90Hz but is reinforced by the port which operates over a broad spectrum, peaking at 60Hz - a similar figure to the KEFs. However, this time the port is on the rear face and so further low end enforcement can be gained by judicious positioning.

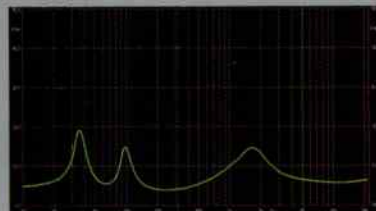
Sensitivity comes in towards the lower end of the figures recorded in this test at 86.5dB and, combined with the measured impedance of 6 Ohms and minimum of 3.8 Ohms, means that the Missions will require a sturdy amplifier of 50 watts or more to be driven properly. AS

FREQUENCY RESPONSE



Green - driver output
Red - port output

IMPEDANCE



VERDICT ●●●£

Well built and good value, but not up to the competition's standards.

MISSION M60i £200

International Audio Group

+44 (0)845 4580011

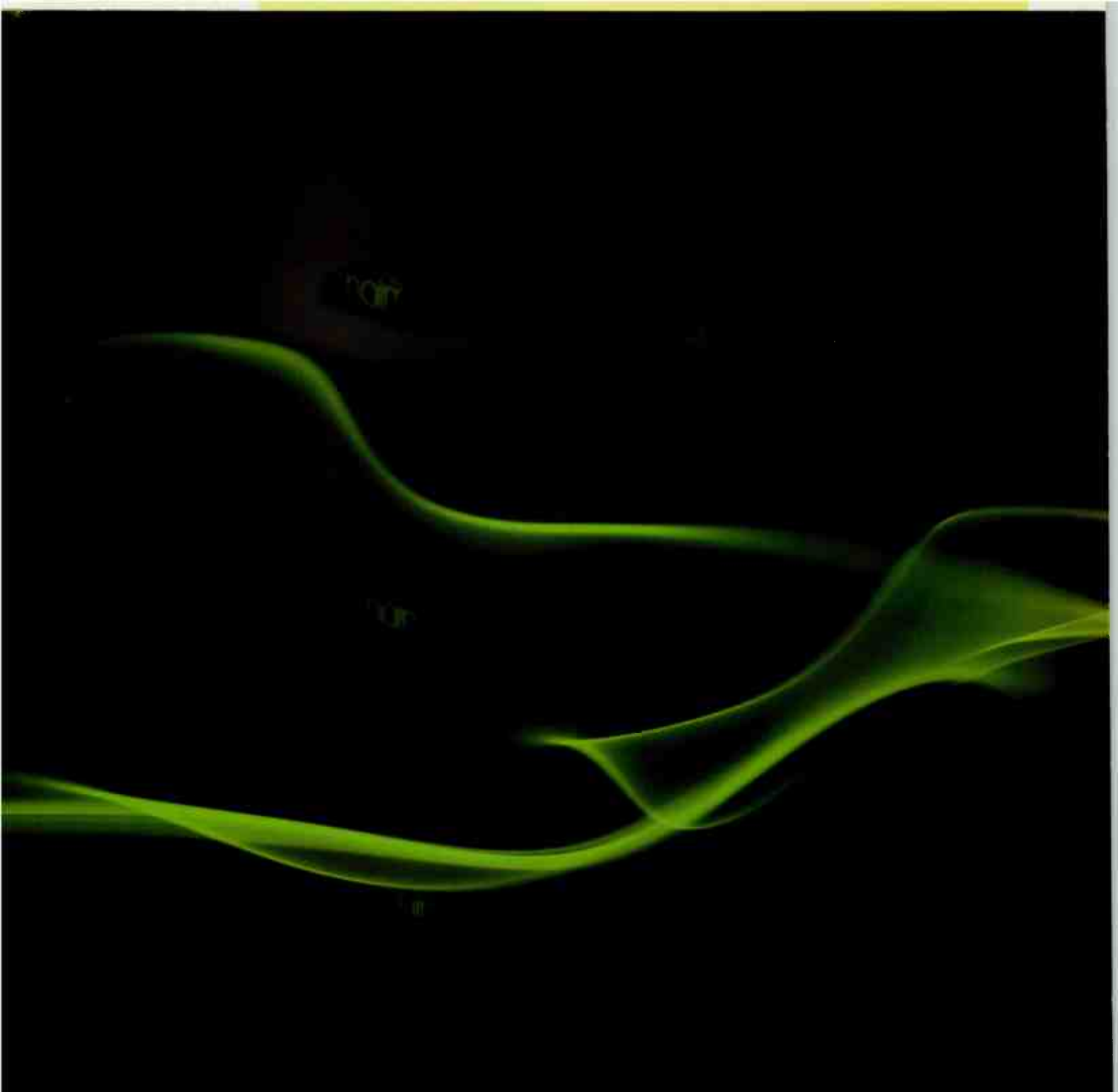
www.mission.co.uk

FOR

- treble detail
- bass depth
- price

AGAINST

- soundstaging
- uneven performance



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world class sound...

NAIM AUDIO LIMITED Southampton Road, Salisbury, England SP1 2LN

World Radio History



TANNOY SENSYS DC1

The Tannoy Sensys DC1s are the only three-way 'speakers under consideration. The drive unit in the top pod is in fact a one inch (25mm) supertweeter that operates from 16kHz up to around 50kHz. The main driver mounted in the cabinet is, of course, a Tannoy Dual Concentric design and consists of a seven inch (175mm) multi-fibre paper cone bass driver with a one inch (25mm) titanium dome tweeter mounted in front of the bass unit.

As with the KEFs, Tannoy have chosen this concentric driver approach in order to optimise imagery thanks to a time-coherent point source from which all frequencies emanate. They are somewhere in the middle of the size range covered by the units in this test, measuring 406x210x292mm (HxWxD), excluding the top pod, and tipping the scales at 8.5kg (18.7lbs).

SOUND QUALITY

As with the KEFs, it was immediately apparent that these chaps know what they are doing with their adherence to the 'point-source' theory, as imaging was excellent from the Tannoy's Dual Concentric drivers. Vocal performances were superb; voices came across with great scale and bags of detail. All in all, the combination of peak-and-dip found in the measured performance not only seems to be something that is being seen more and more, it works well; boosting the range covered by

vocals but attenuating the area that can sound harsh.

Tannoy's other ace up their sleeve, the supertweeter, also works nicely and pays real dividends to the treble performance. High frequencies were detailed and lively and added sparkle to every performance. Unfortunately this could be a little too much at times and could prove wearing in the long term. In addition, some cymbals could occasionally lack their characteristic metallic ring and sounded a little plasticky.

The bass of the Sensys DC1s is equally competent and I suspect aided once more by the supertweeter. On auditioning a standalone Tannoy supertweeter with some conventional 'speakers a couple of

years back, the main effect I felt it had was, bizarrely, to increase bass punch and drive! This would certainly account for the DC1s detailed and fast bass, although this was spoiled somewhat by the fact that they could occasionally be rather 'thumpy' right down the bottom end.

CONCLUSION

The Sensys DC1s are another good choice for imagery fans out there as their combination of Dual Concentric driver and supertweeter gives real soundstaging benefits. Despite a couple of rough edges, the Tannoys are nonetheless very enjoyable and I suspect are well worth the extra money over their non-DC brethren.

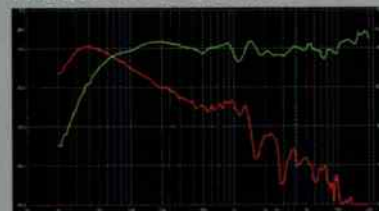
MEASURED PERFORMANCE

Frequency response of the Sensys DC1s is a little more uneven than some of the loudspeakers in the test. This is noticeable in the treble and midrange regions, with the supertweeter adding a rising output up to 20kHz, our frequency response graph shows. This will ensure good high frequency detail.

Bass output is good down to 60Hz and it is reinforced by the 40Hz-tuned, front-firing port.

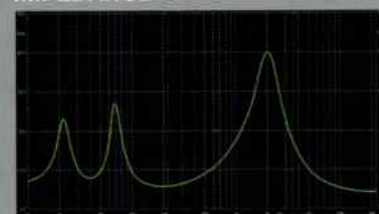
The impedance curve is less flat than the other loudspeakers and the addition of the supertweeter means that minimum impedance is reached at 20kHz, rather than in the midrange region as is more common. Combined with the minimum value of 4.9 Ohms and the measured sensitivity of 86dB means that the Tannoys will work best on the end of an amplifier of at least 50 watts output, that is happy driving a 4 Ohm load. AS

FREQUENCY RESPONSE



Green - driver output
Red - port output

IMPEDANCE



VERDICT

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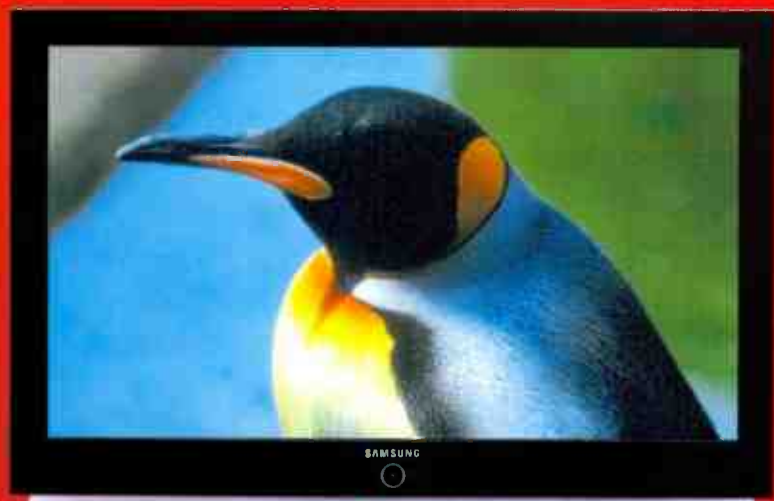
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Stand Firm

Small loudspeakers need serious stands, so Adam Smith took a look at budget designs from Sound Organisation and Alphason Designs...



Sound Organisation Z1

Alphason AG-60c

Whilst small loudspeakers like the items in our Group Test this month are often referred to as 'bookshelf types, placing them on a bookshelf is a bad idea. The more correct designation for them is 'stand mounting' and this refers to the fact that they always sound best atop a pair of proper loudspeaker stands.

The important thing to remember with any loudspeaker is that it will only perform at its best when rigidly mounted and not able to move. Irrespective of the size of the loudspeaker, when the bass driver is moving forwards at speed and the cabinet is not firmly held, then it is free to follow the laws of physics and move backwards. Whilst your small loudspeaker is unlikely to slam itself hard against the wall as a consequence, the effect will be audibly noticeable as a softening of bass and lack of transient 'attack'.

There is also the problem that placing your 'speakers on a wobbly wooden enclosure, propping up a Mill's and Boon collection, will do absolutely no favours for their imagery. It is far better to bring them out and sit them on the stands they deserve. This also allows experiment with placement; the closer they are to the wall, the more their bass will be reinforced. Pulling them out improves

midrange detail and soundstaging at the expense of bass quantity, if not quality. Half an hour spent experimenting will work wonders by allowing the right balance to be achieved.

For our test here, we made use of the Sound Organisation's £100 Z1 stands, which are 55cm high and are about right for most of the candidates, although the B&Vs ideally suit something slightly smaller due to their size, and the ALRs come with the option of their own dedicated 72cm high stands.

We also tried each pair of loudspeakers on Alphason Designs' 60cm AG-60c, also £100, to see what differences this brought about.

Both items are provided with top and bottom spikes to couple the stands to the floor and the speakers to the stands for maximum rigidity. Some people are understandably nervous about 'spiking' the bottoms of their new loudspeakers and four blobs of Blu Tack will do the job equally well. Of course there is always the issue of trying to separate the well-stuck 'speaker from the stand after a few years of use. I have experienced the cabinet wrap giving way before the now hardened Blu Tack, removing four penny-sized pieces of veneer from the loudspeakers. Gentle persuasion is the key here!

As to sound quality, the Z1s confer a useful amount of weight upon the sound, no doubt aided by their solid construction. In general terms, the weightier and more solid the stand, the weightier and more solid the sound will be. Bass lines were clear and detailed and the Z1s seem to impart an essentially neutral character to the sound across the frequency range.

The Alphasons, by contrast, made the midrange of each of the 'speakers more open but sometimes this could become a little ragged. They did, however, add a further punchiness to bass lines, most likely due to their supplied 'Sound Sink' mass loading. This is always a good tweak to consider if your stands have the option, and nothing more exotic than dry builder's sand is required.

In summary, stands should never be overlooked when purchasing small loudspeakers. It is always tricky to suggest exactly how much of your budget should be allocated to them, but certainly £50-£60 will buy some perfectly respectable items, or you can blow over £300 on the likes of a pair of Partington Dreadnought Ultimas if you wish! However, as long as your chosen items are solid and set up so that they are level and stable, your loudspeakers have an excellent chance of working at their best.

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Direct Jive?



Today's Direct Drive turntables are designed for the disco, but what happens when they're used as home hi-fi? Vestax's PDX-2300MkII Pro moves in with Noel Keywood...

Yes - it doesn't look like a hi-fi turntable and - worse - it turns backwards! All the same we know which way we are going at *Hi-Fi World* and have good reasons for taking a peek at it. The Vestax PDX-2300MkII Pro is a modern Direct Drive turntable complete with tonearm for a very reasonable price of around £399. That prices it close to the market leading DJ Direct Drive, Technics SL1210 MkV. If you want a Direct Drive - and before CD arrived they were the cutting edge of high fidelity - only DJ turntables like these are available nowadays. The PDX-2300MkII Pro is as good as it gets - but is it good enough?

For the price, Vestax - a Japanese manufacturer founded in 1977 - manage to cram an extraordinary amount into this turntable. It has two variable speed sliders, coarse and fine. These give +/-50% and +/-10% respectively, or cumulatively +/-60% variance on 33 or 45rpm.

This gives you 75rpm maximum, just a little short of 78rpm, although possibly close enough at -4% slow, should you want to spin shellacs. The big, red readout numerals show the percentage variation selected by the sliders, not actual speed, which may disappoint the more fastidious, and it is difficult to be sure speed is absolutely right, as there is no detent on the fine slider because it obstructs 'scratching' (this has nothing to do with fleas). There is no Quartz Lock either, as on the Technics, or the PDX-2000 with its short scratching arm. How this affects things is covered in the Measured Performance section.

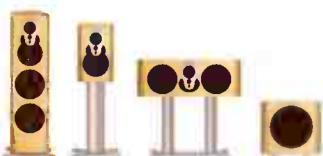
The Reverse button is best covered by a piece of card held on by Gaffer tape if a hi-fi cartridge is fitted! Nearby is a cueing light, something I like as I often hand cue in low light. It gives an intense white light from a modern led; Adam tells me older ones gave a dimmer yellow light; and if you don't like it, it can

be unplugged. Being a Garrard 401 owner I was surprised to find the cue light didn't sync with the strobe marks around the platter, as the LED works from a d.c. supply. The strobe marks appear to stand still at 33rpm only, under illumination from 50Hz A.C. room lighting. It was easy to get them stationary, as the slider has a broad 'on speed' zone, shown as zero percent error.

Other adjustments are available for pitch bending, something as interesting to hi-fi buffs as a Rigonda mp3 player, plus two little adjustment knobs for start and stop rate. This is where things get a little interesting under the hood. Vestax fit a high torque motor capable of very fast start time. Adjusting it for slow start makes the turntable look weak. However, try and stop it when up to speed and it resists with the same force as when fast start is used. So the motor's dynamic torque remains the same - and it is very high - unexpectedly so in fact. My Garrard



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401 will slow a little if I put my finger against its periphery, its strobe shows, but the PDX-2300MkII Pro wasn't going to budge; it remains rock-steady. It speed locks with an iron grip - and this is where it differs from turntables of yesteryear, or even many of today's belt drives. Vestax say: "Speed, torque start/stop time of the high-power DC motor are all controlled by a high speed 32bit CPU that increases the reaction time up to 1/100 seconds." So this is no ordinary turntable, nor a 1970s rehash, because they didn't have 32bit CPUs then!

The moulded plastic plinth isn't as weighty and solid as one would hope, and it sits on four incompressible rubber feet, lacking height adjustment, but this is a budget product by hi-fi standards and it is good enough. The light felt mat is designed to slip, which is a little at odds with high fidelity. It needs a heavy rubber mat at least for hi-fi use, one that damps the platter and grips the record, so I used a Pioneer PLC-590 mat.

The arm is dynamically balanced by an outrigger weight on the arm pillar to minimise rotational forces. Since this is to counteract disco conditions it isn't of much relevance to hi-fi use, unless you have hyperactive children. Height adjustment is provided, together with a pillar with height markings on it, reminiscent of those you can see in the Thames at Richmond. The bearings were friction-free, allowing unobstructed movement in both planes.

This is a pretty standard hi-fi arm design from the 1970s era, with an effective length of 220mm and an overhang of 15mm, which together give a path across the record surface that minimises tracking distortion, unlike the short, straight DJing arms used nowadays. Tracking force is applied by a spring, so it stays dynamically stable. There is no bias force system at all, which will reduce the tracking limit a little. And there's no cue lift either, so you have to hand cue. The headshell is a lightweight

removable type with screw collar, another 1970s throwback.

SOUND QUALITY

This deck, I thought to myself when listening to it, is perfectly suited to the disco. It has fantastic timing and really clean, driving bass imbued with sledgehammer power. That isn't to say the arm has much low frequency insight, but you wouldn't know it unless you had lived with a Michell TecnoArm. Otherwise the bass performance of the Vestax all but took my breath away, using a Goldring 1012GX cartridge. What better a test than a bevy of 12in 45rpm Goldfrapp singles with the metronomic timing of a drum machine: all of them had me pinned to the settee, the extended sledgehammer intro of 'NUMBER 1' in particular hitting me solidly in the chest with breathtaking physicality through a Naim Nait Si amplifier hooked up to Spendor S8s.

The sense of speed was enhanced by a brightly lit and slightly unruly midrange that added a sense of incision to the sound. The trade off here was a distinct lack of smoothness; the arm is no SME.

I got similar results from more mainstream musical material; the Vestax sorted out the temporal threads nicely, was composed yet forceful in its handling of large scale events, had dry deep bass that almost took my breath away, but lacked finesse in the mid-band and

seemed almost spitty in the treble. All this was with a heavy rubber mat. I wanted to use an ADC magnesium headshell too but the spiders in the loft have stolen it.

CONCLUSION

Fitted with a good headshell and mat, the PDX-2300MkII Pro is fine for hi-fi use. It is no smoothie, although a better headshell would be an improvement here. It is visceral and fun however, as well as easy to use if you don't mind hand cueing, and I do not. For the price it's a good package if you want a robust all-in-one turntable suitable for a moving magnet cartridge like Goldring's 1012GX.



VERDICT

Inexpensive, robust direct drive that's good enough for hi-fi use, but coarse.

PDX 2300MkII PRO £399

VESTAX

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www.vestax.com

FOR

- bass solidity
- timing
- robustness

AGAINST

- no cue platform or anti-skate

MEASURED PERFORMANCE

Using a 3150Hz DIN 45 545 test disc the PDX-2300MkII Pro exhibited a speed drift band of 3150-3156Hz on our spectrum analyser. This was identical to a 1970s Pioneer PLC-590 Direct Drive set quartz locked, showing the Vestax gives a identical performance in terms of basic speed accuracy and drift. Variation comes from test conditions not the turntable. So the PDX-2300MkII Pro is speed-accurate and very stable in drift terms.

Wow and flutter levels were a bit higher than possible, measuring 0.09% DIN/IEC weighted, due to discrete components at 1.2Hz, 4.5Hz and 9Hz variation rate, as you can see in our analysis. These were not present from the old Pioneer, which manages 0.06%. All the same, performance was good.

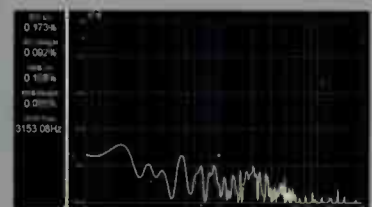
Rumble testing showed there was none measurable.

Vibration analysis of the tone arm with a B&K accelerometer shows a large arm tube peak at 280Hz, where acceleration reached a high 0.5g. There was a lot of output at very high frequencies too, not shown in this analysis. So the arm is about as expected: neither as clean as an SME nor as stiff as a TecnoArm, but not too

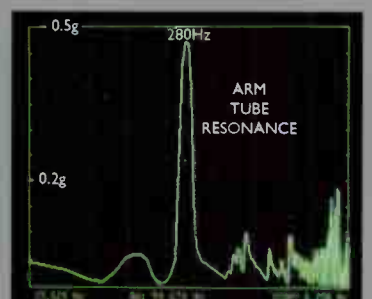
bad either.

The Vestax measures well and is fine for hi-fi use, even if it isn't the last word, as you might expect at the price. NK

WOW & FLUTTER

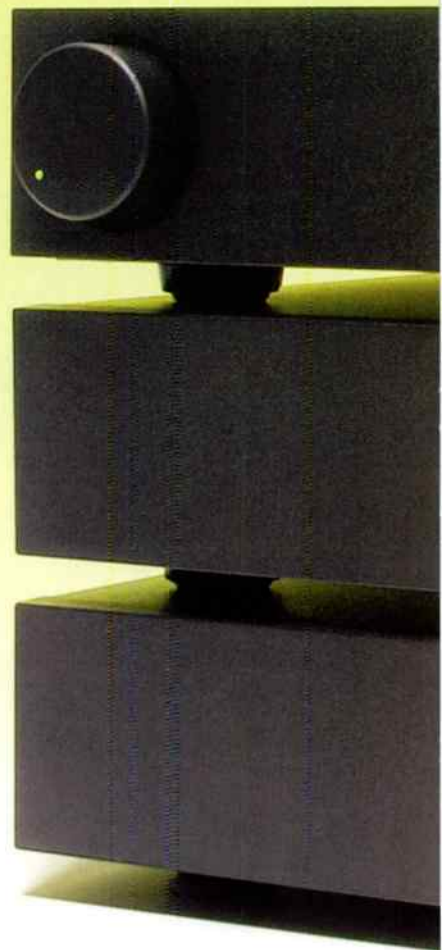


ARM VIBRATION



Boxing Clever

The Naim Nait 5i is a great budget amplifier, and Naim's high end 'Classic' series of preamplifiers and power amplifiers are equally accomplished. But what of the NAC 122x/NAP 150x, which sits halfway between the two. Adam Smith listens in, and dons a FlatCap 2x in the process...



It's a long way from the entry level Nait 5i integrated amplifier to the multi-thousand pound big Naim pre-power amp combos, and so the new NAC 122x/ NAP 150x/ FlatCap2x is designed to sit neatly in-between. It exists to offer Naim devotees a stepping stone between the two price extremes, but this is not an easy job, as it must be demonstrably better than the Nait, but not too good, lest richer Naim buyers be put off shelling out for the big guns...

The change from integrated amplifier to separate pre/power design has long been seen to be a major step on the audio ladder, and one of the prime exponents of the multi-box theory for many years has been Naim Audio. In fact, the Salisbury company has been a master of the upgrade path, arguably doing it better than all others. Such is the way the products are demonstrated by dealers, that virtually every new Naim is sold with the purchaser already knowing what he needs to buy next, before he walks out of the shop door!

The princely sum of £1,575 buys you a NAC 122x preamplifier and NAP 150x stereo power amplifier, almost twice as much as the Nait 5i from which these two spring. Put crudely, they are that very integrated amplifier, split into two boxes with

separate power supplies. One of Naim Audio's favourite party tricks at shows is introducing one of their optional power supplies to the equation, such as the Flat-Cap 2x, and watching as people's jaws drop. In this case, its £550 price premium isn't as shocking, but it still takes the system up to a hefty £2,125.

In standard guise, the NAC 122x preamp takes its power from the NAP 150x power amp via the four pin DIN connectors common to both items, which also carry the audio signals between the two units. The NAC 122x has six line level inputs, one of which can be configured as a unity gain item for use in an A/V system, and also has additional output sockets as well as the standard item, which are intended for use with active subwoofers.

The NAP 150x is a 50W per channel design but, as always with Naim amplifiers, the power rating is conservative and it will work happily into difficult loads, including electrostatics, punching well above its apparent weight. The combo is supplied with a Naim Narcom 3 remote handset which features amplifier, CD player and tuner controls, as well as one of the slowest responding volume control adjustments I have ever encountered!

The Flat-Cap 2x upgrade unit is a dedicated power supply unit for the

preamp. Two separate outputs are isolated from each other, even down to having their own windings on the mains transformer. Consequently, the Flat-Cap 2x will power not only the 122x preamp but also a second unit such as Naim's Stageline phono stage or the analogue section of a CD5x Compact Disc player, for example.

SOUND QUALITY

Initially, I started off listening to the NAC 122x/NAP 150x combo without the Flat-Cap 2x upgrade. Connected like this got things off to a good start, the Scissor Sisters 'Don't Feel Like Dancin' delivered with great gusto and excellent pace, the Naims really digging into the soul of the track to extract every last beat. Timing was superb and the dynamics of the track leapt out of the speakers in a quite spectacular manner. Fortunately the rest of the musical spectrum was equally well represented, with the midrange being open and detailed, and treble incisive and clean.

Moving to the latest 180gm vinyl pressing of Phil Collins 'Hello I Must Be Going', the opening bars of 'I Don't Care Any More' came across with real punch and weight, and the rough edge of Phil's vocals had a pleasing rasp to them.

Slowing things down a little with the track 'Still Pretending' from Tift



Merritt's 2004 album 'Tambourine' showed that the Naims were more than just powerhouses; they served up Tift's heartfelt vocals with real emotion and feeling. There was never quite the sense of intimacy and scale that a good valve amplifier will reveal on a track like this, but then few transistor designs can manage this, and the Naims never felt lacking in this respect. My only concern so far here was that the bass guitar, which provides a solid and melodic underpinning to the track, seemed a little blurred with each successive note not clearly defined from its predecessor.

So far so good, then, but at this point I paused the listening session to power up and insert the Flat-Cap 2x into the equation, to see how things changed. This being duly completed, I would say to anyone who doubts the effectiveness of an additional box that apparently has nothing directly to do with the audio signal, you need to listen to this! Cueing up the Scissor Sisters again it was astonishing how much extra detail was coming through, particularly in the bass

region, and the whole soundstage seemed to double in size. Replaying Tift Merritt showed that the bass guitar appeared to have been re-strung and was now much tighter and more detailed.

Finally, after all this rocking

excitement, I was overcome with a sudden mood of mellowness, and decided to spin the new Nat King Cole 180gm pressing 'After Midnight'.

NOEL SAYS

Naims do have a universality about their sound that suits just about any system. This combo confidently powered any loudspeakers we hooked up - and boy do we hook up a lot here! We have learnt to rely on Naim's ability to cope, always providing a sound with good bass heft, an enveloping midband and strong treble. It is this combination of properties that makes the NAC 122x and NAP150x bigger bodied and faster too than most price competitors. As a valve aficionado I find the Naims interestingly warm and full-bodied, with great bass resolution. Hooking up a valve preamp or two beneficially extended midband depth and sweetened treble in both cases though. There's a lot of potential here to experiment with presentational changes, another plus point available with this combo, but not the simpler Nait 5i integrated. NK



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DAVID SAYS:

I first heard this little lot at the Gothenburg show a few months back, where Naim's Doug Graham was diligently pressing buttons and plugging/unplugging cables in front of a very civilised Swedish audience. We first heard the Nait 5i, then the new 122x/150x, and then the latter with a Flat-Cap 2x. As each new component was introduced, the audience's polite Scandinavian faces showed mild surprise at the scale of improvement. There was also one more present that seemed more than a little impressed – mine.

When Dominic Todd auditioned the old NAC112x/NAP150x back in March 2005, he was more than convinced that it was worth the extra over the stock Nait 5i integrated. Well, the modded 122x pre-amp reinforces this further, bringing even more focus and control to the combo, for just £100 more than the previous combo. We have not had the chance to compare the new and old incarnations of the Flat-Cap, but suffice to say it is still a very worthwhile upgrade.

Naim's favourite party piece, on show dems, dealer dems and press dems alike, is to start with whatever product they have, play one minute of music, then stop and plug in an external power supply. Naim has long believed that the quality of the power supply is crucial to an amplifier's performance, especially that of the preamp. They are right, and this is easily demonstrable. The Flat-Cap 2x adds extra incision to the performance and improves upon the already good resolution.

The only thing that prevents me from recommending the Flat-Cap 2x is that for £925 you can buy the full blown Hi-Cap, which uses a half-sized version of the superior 2-series casing, boasts improved vibration resistance and a dirty great toroidal transformer and smoothing capacitors that make the Flat-Cap 2x look weedy by comparison. Suffice to say, it further transforms the sound, and you can always use it for your other Naim boxes too. This is the genius of Naim's upgrade path, which is brilliantly versatile, but also its downfall. You can end up spending a lot of money, and still wanting more, because the dealer just happened to slip on your favourite piece of music on the next model up, just before you left the showroom!

Should you decide to stick with the NAP150x, but go for a higher grade preamp, then you might want to consider the NAC 202 (£1,400) or even the NAC 282 (£2,830). The NAC 202 features precision matched rotary potentiometers with precious metal wipers. It also benefits from the more substantial 2-series casing, and is upgradeable still further by the NAPSC power supply which controls the digital and control sections of the amp separately from the audio side. With the NAC 282, this is included as standard. There are also further upgrades to component quality and separate listen and record, source selectors. Combined with a Hi-Cap power supply it's a formidable preamp, and sees off many more expensive competitors.

If you'd prefer to stick with the NAC 122x, but upgrade the power amp, then you've got the choice, realistically, of either the NAP 200 (£1,385) or NAP 250 (£2,315). The Nap 200 has, once again, that better quality, anti-vibration, casing and a useful power hike to 70 watts. The NAP 250 raises the stakes considerably by not simply boosting the power output to 80 watts, but by also using the same 007 transistors as used in the fearfully expensive NAP 500. Even though it's changed much over the 27 years of its life, the NAP 250 is still something of a classic and, like the NAC 282, still a formidable competitor.

The real question then, is how does the NAC122x/NAP150x stand in the great Naim upgrade scheme of things? I'd say it is a big improvement over the Nait 5i. It brings real focus and grip that the integrated, however superb at the price, cannot muster. It is not quite a NAC202/NAP200, but gives a more affordable way into Naim pre-powers that otherwise would not be there.

On its own terms, the combo is surely the best transistor pre-power at the price – if you like the Naim sound. This means that if grip, dynamics and current driving float your boat, then nothing compares to this. In the real world, this is very important, and as Adam remarked, it is no surprise that we keep coming back to this combo when our lovely valve amplifiers fall over and die at the first sight of a tricky loudspeaker load. DP

Here the Naim combo proved that it can chill with the best of them and gave a lovely lush presentation to Nat's trio and their guest musicians. Willie Smith's alto sax on the track 'Just You, Just Me' sat perfectly in the soundstage amongst the backing instruments, and I could almost shut my eyes and imagine myself in the thick of it in a smoky jazz club. In the immortal words of The Fast Show, "niiiiice!"

CONCLUSION

There is often the temptation to overlook an entry-level item in any manufacturer's range as a cheapened version of one of their better products and not as a worthy product in its own right. This is a big mistake and aptly proven by the Naim combo here. Whilst

it is true that the NAC 122x/NAP 150x combination has a traditionally transistor presentation that may not be a valve fan's

cup of Earl Grey, it is never harsh or hard but always detailed and composed, and gives consistent results with a wide range of partnering equipment. The Naims offer very good performance across a great spectrum of music genres. Add their current delivery capabilities and consequent compatibility with a good variety of loudspeakers, and you have a winning combination. The addition of the optional Flat-Cap 2x power supply upgrade takes performance up another level and is well worth spending the extra £550 on.

As a final thought, the NAC 122x/NAP 150x/Flat-Cap 2x combo has now been residing in the *Hi-Fi World* offices for a couple of months and we only recently realised that we have developed an automatic tendency to reach straight for them whenever a new item arrives for auditioning. So if you're seeking an improvement over your present integrated amplifier's capabilities, this Naim combo fits the bill perfectly.

MUSIC

Scissor Sisters 'Ta Dah' (2006)
Phil Collins 'Hello, I Must Be Going' (1982)
Tift Merritt 'Tambourine' (2004)
Nat King Cole and his Trio 'After Midnight' (1956)



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AGAINST

- not the most emotional
- sluggish remote control!

MEASURED PERFORMANCE

The NAP150X develops 55W per channel, and 81W into 4ohms, much the same as the integrated Nait 5i. Like the Nait it produces little distortion in the midband, measuring 0.004%. This rises a little at high frequencies, to 0.02% with a few odd order harmonics due to crossover. Some second harmonic appeared at higher output, at high frequencies, taking distortion up to a worst case value of 0.05% - a relatively low value. So the NAP150X is a relatively low distortion amplifier.

Frequency response has been curtailed to 20kHz (-1dB), low enough to ensure the NAC122X and NAP150X combo sound smooth to the point of warm. The low frequency -1dB limit was 11Hz, higher than that of the 5i.

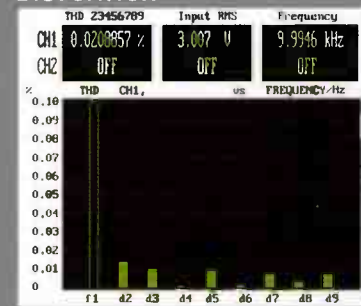
Sensitivity was very high at 63mV for full output. This is way above anything else and means with CD volume must be wound right down. Like the 5i, the 150X power amplifier has a relatively low damping factor of 15, a feature of Naims. Output d.c. offset was

low on both channels.

For its size, the power available from this combo is low, but it measures well in all areas. NK

Power	55watts
CD/tuner/aux.	
Frequency response	11Hz-19.5kHz
Separation	88dB
Noise	-80dB
Distortion	0.02%
Sensitivity	63mV

DISTORTION





Note Perfect

David Price finds Note Products' cult PhoNote valve phono stage quite superb - unsurprising considering it's from the fair hand of one Mr. Graham Tricker...

Regular readers will know all about Graham Tricker's exploits at GT Audio. He's perhaps most famous for his restoration work on Leak Troughline tuners, but he has been making single-ended triode amplifiers for about ten years now. One day, a conversation with Peter Empson at Noteworthy Audio concluded that the quality of "what passed for a good phono stage these days" was far from ideal, he told *Hi-Fi World*.

Graham added that, "I have felt for a number of years that audiophiles have been short-changed and this is quite evident when you take a modern valve amp and compare it with an amp made fifty years ago. Okay, aesthetics may have improved but sound quality most certainly hasn't. Compare this with the automotive industry, with a fifty year old car and one made today and there simply is no contest. Here technology has been put to good use, unlike in audio where technology has been used to make products cheaper and look good".

He did some research and calculated that, "a really good phono stage" could be made for less than £2,000, and the deal was done to make this for Peter to sell through his shop in Aylesbury. The GT Audio version, the Tron Seven, is also now exported to many countries around the globe, and is most popular in the US and Germany. It is identical in internal design, with the exception of two passive components in the power supply and two in the audio

circuit, all of which "measure exactly the same".

Graham describes the PhoNote as, "a very clever design". He wanted to use entirely British and EU parts for its construction. The circuit in the PhoNote/Tron Seven is new. "As in all my amplifiers the circuit is very simple, signal paths are kept very short, component quality is very high and construction quality (which can account for up to 20% performance gains) is also very high. A lot of care and attention has gone into minimising noise levels inside the amplifier – hence the special mains transformer enclosure and the induction shield, which separates the power supply from the audio circuit", Graham added.

Where possible, he uses new old stock valves, but these are getting increasingly harder to obtain, and are also going up in price all the time. The voltage gain stages use two 12AX7s, one per channel and the low impedance output stage uses a single 12AU7. Valve makes are Philips, Sovtek or US JAN types. Obviously audiophiles can freely change these valves for their preferred types, however low noise versions must be used, he insists. All the transformers are made exclusively for this amplifier. Signal cabling is silver with PTFE insulation, from an aviation industry supplier.

Both MM and MC versions are available, and the MC version can be specified for medium gain MCs (i.e. 0.4mV – 0.9mV) or low gain (i.e. 0.2mV - 0.4mV). Passive RIAA equalisation is employed along with zero

global feedback ensuring an ultra low noise circuit design. Different MC cartridge loadings can be provided to accommodate for specific cartridges but each unit comes preset to work with 90% of today's cartridges, says Graham.

The key point here is that the PhoNote inductively loads the cartridge instead of resistance loading as most manufacturers do it (i.e. with a cheap resistor). Inductive loading has a number of advantages over resistance loading, such as the cartridge working better into an inductive load than a resistive load, as no signal is lost across the load resistor. The chassis is a non-ferrous Aluminium case with internal induction shielding between power supply and audio circuit, with silver plated RCA phono connections and a ground lift switch behind.

SOUND QUALITY

Having spent a long time with Whest Audio's solid-state PS.20/MsU.20, which I still think is the best £1,000 phono stage around in many respects – it was fascinating to go back to a tube design again.

Well, the PhoNote is everything I loved about my old World Audio Design KLP-PI tubular belle, and more, but without its pitfalls. For those who've never had the pleasure of a tube stage, let me explain that it's not all blissful musicality - some are noisy, others unreliable, others prone to hum, others pitifully low in gain. The PhoNote is none of these. It just got on with the job with the efficiency and cool analysis of the

PHONOTE

Whest, but also brought the joy of tubes too.

As valve phonostages go, it is neutral. There's none of the rich 'gloop' you get from the admittedly much more affordable EAR 834P, which warms everything up regardless of whether it needs it. Compared to the excellent Eastern Electric MiniMax Phono, again considerably less expensive, it has a good deal more detail, bite and bass grip, plus lots more musical insight – yet retains its lovely musical flow. Put against the Whest, it is less detailed, but a good deal less analytical too and what it loses in absolute information retrieval, it more than makes up for in musicality. Best of all, it doesn't sound transitory, which may be stating the blooming obvious, but the PhoNote is the one to convince, if anything is, that valves and vinyl are one of nature's sublime partnerships.

The key defining characteristic of the PhoNote, even when it's cold, is the stereo imaging. It paints big bold pictures, hanging voices and instruments in space with consummate confidence - this is not one to make vinyl sound weak or anaemic. The Bee Gees 'Spirits Having Flown' showcased analogue at its best – wonderful recording quality, not a trace of digi-titis in sight, and a vast sprawling soundstage soaring beyond the already imposing physical presence of my reference Quad 989 loudspeakers.

Next, you notice the lavish textural quality of the recording - the Gibb brothers' breathy vocals (thankfully not falsetto for this track), the gently strummed guitars and softly struck tablas and tom toms, the delicate oboe and Cor Anglais playing. Then the song builds to a crescendo and the Moog bass synthesiser comes in to add power. It's all there in glorious Technicolor through the

PhoNote, and – shock horror – it sounds like real instruments being played by real musicians, not an immaculate facsimile thereof, as per the Whest.

A Deutsche Grammophon pressing of Beethoven's Pastoral Symphony (Dresdner Philharmonic/Herbert Kegel) showcased the PhoNote's fantastic scale and perspective. Considerably more three dimensional than the Eastern Electric MiniMax I had on hand as a reference, it delivered a hugely capacious soundstage, with instruments locked in space with immaculate precision. Again the texture of the strings was a joy to behold.

Dynamically, this Graham Tricker design is a star. It is wonderful with old disco 45s, as Imagination's 'Flashback' proved. The classic early eighties Swain and Jolley sound came flooding forth through the Quads with wonderful exuberance, and a massive kick drum sound (yes, really – through the Quads of all things!) that would freeze any CD buyer at twenty paces. Fantastically tight as tube stages go (not quite up there with the Whest in terms of attack transients, but oh-so-close), and with wonderfully dynamic articulation, this track proved a hoot.

CONCLUSION

Aside perhaps from the Connoisseur at about eight times the price, this is the best phonostage I've heard in many respects. It boasts wonderful musicality and an excellent

'technical' performance (in terms of detail, dynamics, extension, etc.), plus impressively low noise too. It comfortably outperforms both the Whest solid-stater and Eastern Electric tuber, offering real and

REFERENCE SYSTEM

- Michell GyroDec/TecnoArm/vdH The Frog turntable
- Whest Audio PS20/MSU20 phonostage
- Eastern Electric MiniMax phonostage
- MF Audio Passive Magnetic Preamplifier (copper)
- World Audio Design K5881 (modified) power amp
- Quad 989 loudspeakers

obvious rewards for the extra outlay. My only criticisms are that it's about as visually appealing as an industrial fuse box, and has a slightly resonant casing too, so careful placement and liberal use of Foculpods works wonders. Still, all is forgiven when you listen – it's enough to make you want to get the Troughline out again!

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MEASURED PERFORMANCE

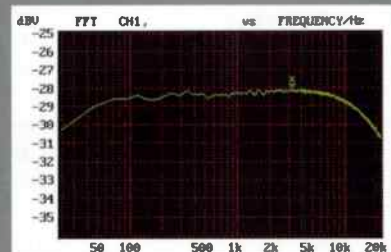
The stage we reviewed matches low output moving coil cartridges by using input transformers. Our MC version had very high gain, x2473 no less, and low noise referred back to the input (equivalent input noise) of just 0.06uV. This is as good as it gets. The gain is meant for high quality, low output cartridges, but because output overload is very high, so high-ish output Ortofons can be used too. For example, 0.5mV from an Ortofon will give 1.2V output from the Phonote, way below its massive 26V output overload ceiling. Distortion was low at 0.12%, pure second harmonic which will have no sonic impact.

Equalisation was perfectly accurate across the audio band, but treble rolls down above 15kHz (-1dB) and bass below 40Hz, because a warp filter is used. This rolls down low frequency gain - always a good idea - to -3dB at 18Hz and -11dB at 5Hz, to suppress

warp signals. The Phonote measured very well in all areas. It is perfect for high quality moving coil cartridges. NK

Frequency response	40Hz-15kHz
Separation	66dB
Noise (e.i.n., A wtd.)	0.06uV
Distortion	0.13%
Gain	x2473
Overload	11mV in / 26V out

FREQUENCY RESPONSE



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10 AUDIO REVIEW

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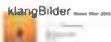
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Dancing King

The Rondo Bronze is one of the funkiest sounding Ortofon moving coil cartridges yet made, says Noel Keywood...

One of hi-fi's more awkward questions is how much should you spend on a moving coil (MC) cartridge to get the sort of performance they are famous for? Budget models are usually a let down, sounding either sterile or uncouth. Since a good modern moving magnet cartridge can give a great sound, there's no point in taking on the difficulties of an MC unless there's a clear advantage. In the past I felt Ortofon's Supremes - the MC10, 20 and 30 - were a suitable entry point. Well, they've been replaced by the Rondo Red, Blue and Bronze, the latter which you see here...

When the Supremes were introduced many years ago I listened to all three. The least expensive MC10 was a little edgy, but energetic and sufficiently open sounding to be worth having. The top MC30 was arguably over-smooth, whilst the MC20 was a good compromise between the two. The new £499 Rondo Bronze replaces the MC30 and is top of the new trio. The Blue is around £100 less and the Red £200 less, being available for £299 or thereabouts. The questions I had for the Bronze were many. Would it be faster and more grippy than its predecessor, and would it convey the advantages of the breed clearly? As I use a Kontrapunkt b I was also interested to know how close the Rondo Bronze would get.

At a practical level the Rondos are easy enough to fit, but note the Bronze weighs in at 10.5gms - and this is heavy. I put it into a Michel TecnoArm and had to use the larger of its two weights. Otherwise, with conventional body dimensions it will fit any arm, although the rear pins are a tight fit in my SME 312 headshell. Also, the body has two blind tapped holes for the fixing screws and they accept only short screws, so if you have a preferred type, like stainless steel hex bolts, test your hacksaw for sharpness.

Aside from an updated new motor unit, what really sets the Rondos apart from the previous Supremes is the 'resin' body. Gone is the resonant, ringing metal body and in its place comes a rather attractive and certainly distinctive looking compound plastic shell. This can surely only be a good thing, as the best cartridge body is no body at all (but this is impractical, for most people, as it becomes a terrible dust trap), and the second best is surely a non-metallic, non-resonant affair such as that fitted to the Rondos.

Where they do follow in the footsteps of the Supremes is in the choice of cantilevers and styli. The Bronze uses a tapered aluminium cantilever, where the Blue and Red have to settle for non-tapered types. At the sharp end is a Fritz Geiger profile diamond stylus with an 80um major radius, hence the FG80 designation. Our measurements show quite clearly that it suffers almost no inner groove tracing loss and

"you get a presentation that is technically near perfect..."

the Rondo's measured frequency response is comparable to that of CD, staying within 0.5dB limits across the audio band - but it reaches far higher than 20kHz, unlike CD of course. Cartridges like this then effectively match or surpass CD in performance, so it is no surprise that their sound can be dramatic at times - or it should be if the cartridge is a good one.

SOUND QUALITY

There are no tracking issues with the Bronze; it always sounds secure, having that confident air of a cartridge not about to lose its grip.

Like any good Ortofon the Bronze provides a carefully structured and almost academically correct sense of basic tonal balance. This is not a cartridge that's particularly characterful, and in this sense it is not unlike the Kontrapunkt b I use. Old hands may prefer something with a bit more character, which is not to say colouration. However, I quite liked its sense of correctness; I am not a fan of cartridges with conspicuous



frequency extremes or euphonic colour. The Bronze comes over as incredibly well ordered and tidy in the way it arranges and portrays instruments across the sound stage. Add in a strong dynamic that is, at the same time, very well controlled and you get a presentation that is technically near perfect.

Like any good moving coil you get a broad, open sound stage with a delicious sense of see through clarity and here the Bronze is streets ahead moving magnet designs. It thrusts singers and instruments forward with an almost stark clarity; there was more presence than ever with



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SECOND THOUGHTS

Having met Ortofon's charming designer Per Winfield at the company's Danish factory a couple of years ago, and heard a pre-production Rondo Bronze (then, provisionally called an 'MC30 Wood'), my first comment to him was that it was too good. At the time I was running a Kontrapunkt b (£750), and hearing that the Bronze was going to be sub-£500 I thought, "oh dear, how are they going to sell any Kontrapunkts, then?" What then happened was that I took one back and lived with it, and in many ways I still feel the same – the Bronze is a little too close to the Kontra b for comfort in many areas, but the one redeeming factor that the more expensive MC has is its, as Noel puts it, "joie de vivre". The Rondo Bronze is a tad more matter of fact than its more expensive, more emotive and more engaging stablemate. By comparison, it sounds a little tidy, but when you put it against the old MC30 Supreme (some £200 pricier, five years ago), the Rondo is a veritable boogie wonderland. That's the brilliance of this thing; it is so darned good as an all rounder that it almost suffers from the accusation of being characterless. It isn't, actually, and really lets you get into the music without drawing attention to itself.

The ultimate accolade is perhaps this – after I unbolted the Rondo Bronze to send off for Measured Performance, I moved directly to a Koetsu Rosewood Signature, reputedly one of the best cartridges in the world (with some justification). Well, the interesting thing is that in some ways, the Ortofon embarrassed the Koetsu. It certainly is a better tracker, and has better fine detailing and an almost mastertape-like stability. The Koetsu is more gushingly emotional, but so it damn well should be for an extra £1,100! The great thing about the Rondo Bronze is that it's just about attainable for those who'd otherwise go for a Denon DL103R (cough!), yet it is good enough to substitute for a £1,500 cartridge, to permit the buyer to allocate funds elsewhere (i.e. SME IV instead of Michell TecnoArm). It really is a brilliant do-it-all cartridge, and I'd be surprised if it didn't win the Awards 2007 gong. The downside is that it makes the Rondo Blue and Red look a little redundant – effectively, if you spend £200 more than the Rondo Red you're getting an affordable audiophile moving coil, instead of just a very good budget one. Not difficult to justify the extra expense, in my opinion! DP

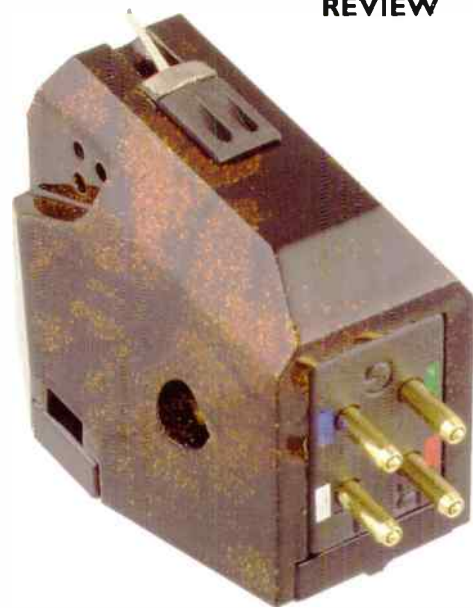
Phil Collins singing 'I Don't Care Any More'. His voice was strongly etched and full bodied, so forward as to be almost frightening. The Bronze delivers an 'in your lap' sound that I suspect will have many listeners gasping. The strength of projection behind Goldfrapp's 'Lovely To CU' shaded what I get from the CD version and here the Bronze showed just how advanced it is as a transducer; sixteen-bit PCM from the 1970s isn't in this league at all. It also displayed enormous ability to extract the huge low frequency content from the synth. on this track, keeping a firm grip on the beat whilst highlighting its sinuous progression. Ortofon's have no problem with delivering strong bass dynamics, albeit with more grip and control than rivals, and in this area the Bronze was no different.

The stylus showed its mettle constantly, cymbals always having a gentle but clear presence in the Zuton's 'Valerie'. There's a small tendency for the upper midrange and treble to sound a little hard edged and mechanical at times, against the Kontrapunkt at least, although some of this came from the Michell TecnoArm, as the cartridge sounded darker and smoother, if less forceful, through my twelve-inch SME312 arm and the M2-10 I review in

this issue. The Kontrapunkt B gives finer inner detailing too, but then it costs considerably more.

CONCLUSION

The new Rondo Bronze is more than an entry-level moving coil cartridge, I found. In terms of sophistication it



is quite a height up the evolutionary tree as MCs go. It offers a tightly ordered and impressively dynamic sound that can be breathtaking. The only reservation some may have is that it is short of *joie de vivre*, or emotion, a criticism that came up from Adam and is echoed by David. Arguing against perfection because it is too perfect is always a little difficult though. What you get is a near-perfect picture, if one a little short of the finest details; what you don't get is a Degas. Fantastic at the price in every way I feel, but of course you do need a decent arm, turntable and - especially - preamp if you are to get the most from it, as always with top quality moving coils.

MEASURED PERFORMANCE

Frequency response of the Bronze was even flatter than usual from Ortofon, running from 40Hz up to 20kHz within tight 1dB limits. On outer grooves the cartridge was only -0.4dB down at 20kHz, meaning it is accurate as a CD, insofar as LP measurements can ever be so tightly controlled of course. All the same, you can see here a cartridge that is almost ruler-flat across the most important parts of the audio band, quite an achievement by Ortofon, but in line with what you get nowadays from modern generators. Inner groove losses were minimal too, so the sound balance will remain consistent across a disc, from outer to inner grooves.

Tracking ability was first class. The Bronze cleared all low frequency cuts and just got through the highest midband level of 25cms/sec.

Vertical tracking angle measured 25 degrees, close to the ideal of 22 degrees. Distortion levels were low, but separation was also low at 23dB, as is common with Ortofon's. Luckily, this doesn't adversely affect sound.

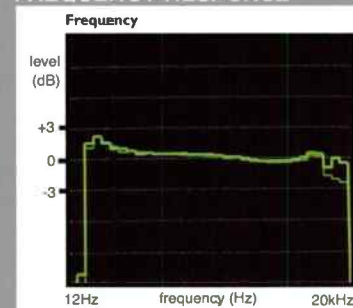
Output was reasonable at 0.5mV from 3.54cms/sec, or 0.7mV at 5cms/sec rms - quite a healthy level. Ortofon moving coils usually have plenty of


output, making hiss less noticeable.

The Rondo Bronze, like all Ortofon's, measures superbly. It is 'CD accurate'. NK

Tracking force	2.2gms
Weight	10.5gms
Vertical tracking angle	25degrees
Frequency response	40Hz - 20kHz
Channel separation	23dB
Tracking ability (300Hz)	
lateral	90µm
vertical	45µm
lateral (1kHz)	25cms/sec.
Distortion (45µm)	
lateral	1.1%
vertical	3.5%
Output (5cms/sec rms)	0.7mV

FREQUENCY RESPONSE



VERDICT 
Superlative performance at the price, thanks to superb detail, insight and poise. A landmark moving coil bargain.

ORTOFON RONDO BRONZE £500
Henley Designs
☎ + 44 (0)1235 511166
www.henleydesigns.co.uk

FOR
- superb tracking
- exemplary detail retrieval
- vivid dynamics

AGAINST
- nothing at the price



Arms Race

Thanks to differing design and materials technology, no two tonearms are created equal. The way they're built, and with what, radically influences subjective sound quality - as Noel Keywood and Adam Smith's comparison of Michell's TecnoArm and SME's M2-10 shows...

Anyone who's run more than a few pickup cartridges in their time will know that many work better with some tonearms than others. This is no random accident, but a result of the mechanical match between the moving magnet or 'coil' used and the arm's particular characteristics. Put simply, each type of tonearm sings its very own song...

This explains, in part at least, the quite polarised opinions people have about different types of arm - which in truth is more a result about how successful a particular arm's sonic signature marries with the cartridge they use.

There are certainly 'schools' of sound. The classic SME sound - long before the great Series V (and variants) arrived - was open, spacious, relaxed and musical. The Rega sound was always more tonally grey, tighter and more analytical, but better

detailed across the midband.

In this feature, we've put each school's greatest exponent against one another. In one corner we have the new £657 SME M2-10, a lightly reworked 3009S2, and in the other the £429 Michell TecnoArm, which is ostensibly a Rega RB250 with some clever tweaks. Sure enough, cartridges do sound appreciably different in either, so which to choose?

CONSTRUCTION TIME

To minimise their sonic signature, all modern tonearms are designed to be structurally rigid, mechanically detuned or damped so no one part rings like a bell. All the same, no matter how hard designers try, pickup arms still exhibit complex vibrational behaviour that influences the sound of any cartridge bolted into them. Arms have 'a sound'; they are not inert. So, to get serious insight into this phenomenon, we

measured the vibrational signature of these arms, as well as listening to them.

There are numerous differences in construction between SME's M Series range and Rega variants such as the TecnoArm tested here. Most obvious is the SME's parallel sided, stainless steel arm tube. This is the main distinguishing feature between the M Series and the next models up, the 309/10/12 Series with tapered arm tubes. Tapered tubes are more rigid and, being structurally asymmetric have dispersed resonant modes, so they don't ring like a bell as parallel sided tubes tend to do. Garrard combated this problem in their 1964 Lab 80 Series turntable by using a sandwich of wood and aluminium for the arm 'tube'. It was the introduction of Rega's renowned RB300 cast, tapered arm tube that suppressed the phenomenon in a lighter assembly and, in doing so, showed how much better resolved

low frequencies could sound. Michell use the same casting in their TecnoArm, but drill it with wave dispersal holes on the underside, damp it internally and add a rigidly coupled heavy tungsten counterweight. So the TecnoArm is, at heart, an advanced design.

With their M2-10 arm, SME damp their parallel sided tube internally, to suppress ringing. At the sharp end is a light but strong magnesium headshell, attached by SME's preferred collar clamp. This allows cartridge tilt (azimuth) adjustment. The headshell can be removed for easy cartridge fitment. Strengthening ridges down either side make for a rigid upper platform that contributes to the good midband qualities of this arm. Real purists can leave the finger lift off, as it is a separate item.

In the TecnoArm a purer, if less practicable constructional approach is used than the SME. The headshell is cast as part of the arm tube, eliminating the joint between the two. The headshell cannot be removed as a result, nor can it be adjusted for azimuth. The fingerlift is permanently fixed as it is cast in, but it is well designed, being rigid and asymmetric. Cartridge fitment and alignment is more difficult in the TecnoArm

SME employ precision ball races at the hub to allow free movement in all planes, and so do Michell. Both arms work well in this respect. The SME arm pillar, as always, moves on an adjustable base plate to minimise tracking angle error using a supplied protractor. By removing this from the headshell the cartridge, once fixed, does not then have to be

moved. By ensuring it lies parallel with the headshell reference face, a major source of tracking error - misalignment in the headshell - is removed, minimising distortion.

The Michell takes the traditional approach to cartridge alignment in that it has a single, fixed arm mounting point at its rear, and combines this with elongated cartridge fitting slots in the headshell. These permit the cartridge to be moved forward or backward in order to set correct overhang and minimise tracking error. Some care is required to ensure that the cartridge remains parallel during this setup.

Arm pillar height can also be set, again using a firm clamping system, in order to get the arm parallel to the disc surface. The TecnoArm uses a fixed pillar that is easier to fit. Those who like to experiment can lower the pillars to reduce a cartridge's Vertical Tracking Angle (as well as its stylus rake angle) and see if it improves things a little. With all SMEs this is an easy and quick adjustment to make, and it remains so with the M2-10.

Also adjustable is SME cueing height, using a very small hex key. This is fiddly, as is getting the special washer over the bias pulley support, but then fitting an SME is easy if you know how, but a head scratcher if you've never done it before, so most people leave it to their dealer.

Having said that, the reason SME arms are renowned is not only their quality of engineering but also their fine camera finish. The M2-10 is as lovely an item as you'll ever own in this respect and it contributes much to the satisfaction of ownership SME

owners will always have. However, Michell finish their arm very well too, and it feels rigid in use.

The rear counterweight of both arms is made from tungsten, a dense metal. It carries a tracking force scale on the SME, but these days you can use a modern electronic stylus pressure gauge that costs typically £60 or so from Origin Live or Roksan. The TecnoArm is best adjusted with such a gauge as well.

Bias force is set using a simple slider attached to a spring on the TecnoArm. On the SME anti-skate (bias) runs from 0.5-2.5gms in 0.25gm steps, adjusted by moving the fine filament that suspends the bias weight along a notched arm. This is another fiddly operation, but it is only done once.

SME and Michell supply a high quality signal lead terminated at both ends by phono plugs. The M2-10 arm has phono sockets at the base of the pillar, rather than a DIN socket. The screens are not connected to earth at any point within the arm or pillar, so although in unbalanced format, it would be possible to wire up a fully balanced connection cable using, typically, mic. cable where the twin inner cores went to a phono plug and the screen to the metalwork. The other end would be terminated by an XLR plug as usual.

SOUNDING OUT

Both arms have lowish effective mass. With the M2-10 this is 9.6gms and Michell quote an effective mass of around 10gms - very similar. Once upon a time these figures would have made both arms suited to highly compliant cartridges, but such things



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Reference Speaker Cable			3995	4895	
Set of 4 Bi-wiring Jumpers			299		
Reference Power Cord 1.0 metre minimum					2499

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SuperConductor FX	165	195	205	225
SC-3	345	375	345	395
Aluminata	1195	1295	1195	1295

premium cables

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NEW! SC-3 Interconnect (RCA or XLR)	695	795			
NEW! SC-3 Speaker wire			1899	2099	
SC-1 (Bi-Wire)			699	799	
SC-2 Petite (Single run)			449	499	
Set of 4 Bi-wiring Jumpers			85		
The Kaptovator AC Power Cord					995

superconductor cables

JPSlabs Cables Prices shown in £	0.5m pair	1.0m pair	6-ft pair (-1.8m)	8-ft pair (-2.4m)	2m
The SC fx Interconnect (RCA)	219	259			
(fully balanced)	299	349			
SC fx 8i-wire cable			399	439	
The Analog AC Power Cord					279
The Digital AC Power Cord					279
Power AC+ for amplifiers					379

entry level cables

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The ultra interconnect (fully balanced)	89	99			
Ultra Speaker Cable (Bi-Wire set)	n/a	159	139	159	
The 6PA-2 AC Power Cord					139



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No tonearm is inert - like loudspeaker drivers, they all have a sound. To measure both tonearms' complex vibrational behaviour, we used an accelerometer...

hardly exist nowadays. Ironically, the one compliant cartridge we did put into the SME - a Shure M97xE - did not suit it! But this wasn't a mechanical mismatch, so much as a tonal one; the Shure's somewhat old fashioned warm midband, caused by generator droop, wasn't enhanced one little bit by the SME's polite yet neutral midband behaviour.

By way of contrast Michell's TecnoArm lit the upper midband and treble, whilst at the same time improving bass resolution which, otherwise, was less than superb. And here we get an interesting glimpse of the character, or 'sound', of both arms, one that held across a wide range of cartridges we used, in order to find how they behaved generally. We also get a warning about cartridge matching. The traditional method of matching effective mass to cartridge compliance ignores the significant impact an arm's sonic signature has upon cartridge sound quality, so it isn't very clever.

We put a wide variety of moving magnet and moving coil cartridges in both arms, each mounted on a Pioneer PLC-590 Direct Drive. Surprisingly, it was only the Shure that, subjectively, worked in one but not the other. Otherwise, both handled moving coils and moving magnets with similar ability.

Generally, the TecnoArm consistently displayed all those qualities that first distinguished the Rega

RB300, namely superbly strong, yet expressive sounding bass; fine nuances and bass layering were all well revealed. This made the TecnoArm adept, for example, at picking out the rich timbral qualities of a drum, the initial impact of stick against skin followed by its low frequency power, whilst at the same time identifying plucked double bass as a another instrument spatially separated, its contribution clear and unsullied. SME's M2-10 was less able in this department, like arms of yore in fact. That is not to say it lacked bass; both Adam and I actually felt the M2-10 had quite strong bass, it

just was not particularly expressive. Across the bass and upper bass regions the TecnoArm was clearly ahead of the two.

Subjective performance got a little contentious above this point and here the whole difficulty of trying to pin down arm 'sound quality' got interesting. The SME M2-10 has a clear, silky smooth and gentle midband that is seemingly lucid and uncoloured. I felt it has quite a dark upper midband; there is no zing as bedevilled the lightweight headshells of yesteryear. Treble sounded clear and uncoloured, but then the rigid, well damped magnesium headshell is likely to have most affect on this region and it is a well crafted component in terms of structural rigidity. We measured the arms after listening to them and were pleased to see our subjective findings were explained by their vibrational behaviour.

The TecnoArm does seem to inject a sharpness to leading edges by some mechanism, possibly in

its silver cabling. It remains cohesive, however, and both bright and speedy. Assistant Ed. Adam feels it shows the slightly uneven or coarse quality of the RB300 in the midband, however, and was less keen on this area of its sonic signature, along with its 'lack of emotional involvement' as he puts it. We both agreed Shure's M97xE definitely needed the TecnoArm to 'speed it up', as well as improve its bass resolution. Otherwise, Adam preferred the SME M2-10 for its open midband whilst I was attracted to the TecnoArm by its wonderful low end resolution, if not by its sharpness and the small sense of some midband imperfection. But then it isn't very expensive as dedicated pickup arms go. SME do, of course, make one-piece arms in the Series IV and V - but at more than three times the price of the TecnoArm.

Which to choose? Adam consistently preferred the £626 SME M2-10 with all cartridges except the Shure M97xE. I wasn't quite so sure, feeling Michell's £429 TecnoArm was very strong all round, except for the slightly bright, hard edge that sometimes added spitch to sibilance - something I found less than alluring.

In the end, because of their differing natures what you choose must come down to personal taste. SME's M2-10 is sonically svelte, if lacking the sheer verve of the TecnoArm, which is dramatic. They sing different songs.

VERDICT ●●●●£
Controlled, dynamic sound with fine bass resolution, but brightly lit midband.

MICHELL TECNOARM £429
Michell Engineering, Herts.
☎+44 (0)208 953 0771
www.michell-engineering.co.uk

FOR
- superb bass quality
- fast and vivid
- fine build

AGAINST
- midband lacks smoothness

VERDICT ●●●●●
Smooth, clear sound that is polished in every area except bass quality.

SME M2-10 £657.37
SME Ltd, Steyning, Sussex
☎+44 (0)1903 814321
www.sme.ltd.uk

FOR
- smooth midrange
- spacious sound
- quality of finish

AGAINST
- mediocre bass quality

MEASURED PERFORMANCE

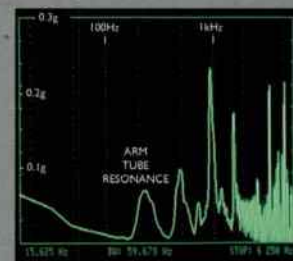
Analysis of the SME M2-10 headshell vibrational behaviour showed it has a strong main arm tube mode at 180Hz that came in at 0.12g, higher than that of Michell's TecnoArm. The latter has two arm tube modes, one at 220Hz and another at 500Hz, both at lower amplitude than the SME. So the TecnoArm has better control at low frequencies, as we heard in listening tests, due to its greater rigidity and better distributed modal pattern.

Matters changed in the midband however. Here, the TecnoArm has a significant peak at 900Hz that at 0.24g reached 0.58mm/sec velocity. This put the headshell mode -35dB below LP groove velocity, whilst the SME managed -39dB. The SME M2-10 looks quieter above 1kHz generally too. I suspect this is as much to do with the greater rigidity of the TecnoArm causing it to suffer quite a few narrow but strong modes.

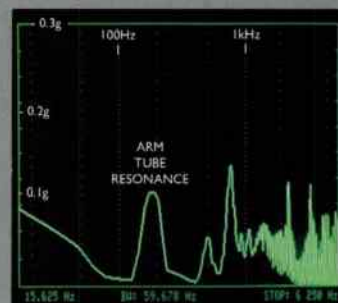
We measured both arms with various cartridges and at various points in their structures but the published graphs, showing the affect of vertical modulation of 32mm/sec groove velocity at 1kHz, with the accelerometer at the end of the headshell

and a Goldring 1012 fitted, are fairly representative of what was happening generally. Measurement suggests that the TecnoArm is indeed stiffer and better controlled at low frequencies, but the SME M2-10 is 'quieter' across the midband and treble. NK

MICHELL TECNOARM



SME M2-10





Power, Mad

NAD's massive new M3 integrated amplifier powerhouse proved more than up to corrupting Adam Smith, absolutely...

The name NAD has been synonymous with good quality budget audio equipment for many a year. From their original classic 3020 amplifier of the late 1970s through to its latest incarnation, the C325BEE, and encompassing a wide variety of matching tuners, CD players and cassette decks along the way (not forgetting the infamous 5120 turntable either!), NAD have always been more than able to make bargain items that performed far better than their price tags would suggest.

However, they are recently becoming well known for more expensive units, and the M3 amplifier here gets about as far away as you can from a basic twenty watt starter amplifier. Weighing in at 23.5kg and measuring 435x135x386mm (WxHxD) the M3 is a real heavyweight - and not just in the physical sense. Power output comes in at a specified 180 Watts and our measurements show that this is conservative, as it topped 200 Watts on test without breaking into a sweat.

No less impressive is the feature count that NAD have packed into the M3. How do seven inputs, (one balanced), two separate zone outputs with their own remote controls; separate outputs for powering an active subwoofer, complete with variable low pass filter settings and defeatable tone controls with 'spectral tilt' options sound?

Equally impressive are the audiophile features squeezed in as well, including reed relays for input selection; arrays of 1% resistors controlled by digital switching for volume control, and extensive use of surface mount devices to minimise signal paths on the PCB.

Undoubtedly, the M3 appears worth its £1,900 asking price on features alone, but as we all know, "it don't mean a thing if it ain't got that swing" so listening duly commenced. Sources included an Eastern Electric Minimax Compact Disc player and Pioneer PLC-590/SME M2-10/Ortofon Rondo Bronze turntable set up through an Eastern Electric Minimax phono stage. The loudspeakers cowering nervously on

the ends of the cables from the M3 were our Sendor S8es.

SOUND QUALITY

Expecting to be pinned back against the sofa in our listening room, I started off with some classic rock courtesy of Steve Earle's 'Copperhead Road'. Peeling myself off said sofa and readjusting the volume slightly I could not fail to be impressed by the sheer impact of the M3. If your system is lacking in scale and sounding a bit lifeless then, believe me, this amplifier will well and truly shake it awake!

Bass was very impressive. The high damping factor of the M3's output stage brings even the most wobbly speakers firmly into line and delivers rock solid low frequencies. Detail was excellent and this had the expected effect on rhythm, delivering it with punch, verve and style.

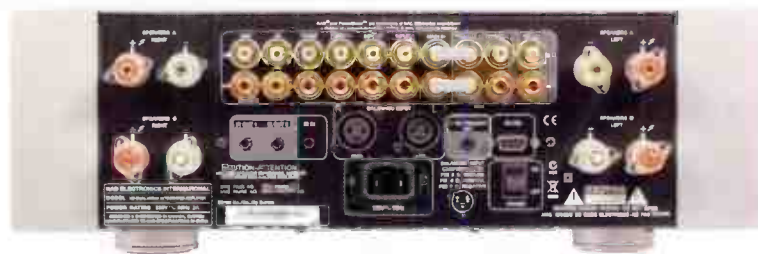
Midrange was equally impressive, being open and well defined. Soundstages were wide and stable, presenting both singers and orchestras in a very favourable light and not missing any subtle nuance of



a recording. Vocals were detailed but had an underlying hardness to them - some singers almost sounded as if they were in something of a bad mood and were forcing out their words with venom. Spinning Holst's 'Planets Suite', however, showed that the dynamic range of the M3 was as wide as you could ever need, and it whispered sweetly on the more *pianissimo* sections, whilst delivering the full force of the orchestra once they hit their stride.

At the top end of the spectrum, the treble was detailed and clear, but is very definitely quite forward with a slightly metallic 'sheen' to it. Whilst this worked wonders in extracting detail and background subtleties from all sorts of musical material, it did mean that some instruments, particularly the likes of pianos and violins, could sound 'processed'. The M3 is definitely solid-state; thermionic aficionados may not be too impressed! That said, it never becomes harsh or unpleasant and it has all the control and grip many prefer. This is no soft, woolly or warm sounding amp; it is brisk and fast.

This was amply demonstrated by the Corrs track 'Only When I Sleep' which I keep tucked away on one of my test compilations. The production of this track is... well, the nicest way to describe it is 'enthusiastic' and it can be almost painful on less forgiving equipment. I was wondering if the M3's forward nature would lead to an hideous aural assault, but I was pleasantly surprised to find out this was not the case. Whilst the strident



nature of the track was obvious, the M3 actually did an excellent job of cleaning it up and sorting its usual mid and high frequency blur into some sort of order.

CONCLUSION

It is hard not to like the NAD M3. It certainly represents superb value for money purely in terms of bulk and features - and it is impeccably built. It does not disappoint when you start using it as it really is an absolute powerhouse! It has the ability to drive any loudspeaker you can think of to serious levels and yet it can be subtle and sensible when required.

Obviously, its characteristic sound will not be to everyone's liking as it has a lively presentation and does add a slight sheen to treble. However, this can be minimised by careful loudspeaker and source matching. With its excellent range of connections and features, the M3 will slot into

many a system and inject a breath of fresh air into it. Power corrupts, so they say, and I for one am more than happy to be led astray by NAD's M3!

RECOMMENDATION

Bold and powerful, the NAD M3 is a technical *tour de force*, with sound to match.

NAD M3 £1,899

Lenbrook UK
 ☎ +44 (0)1908 319360
 www.nadelectronics.com

- FOR**
- power
 - build
 - feature count
- AGAINST**
- artificial treble

MEASURED PERFORMANCE

The M3 is very powerful, producing 200W into 8 Ohms and 380W into 4 Ohms - large amounts of power by any standards and arguably more than most systems will ever need. If this is to be used, for high volumes in a big room, say, in a house with distant neighbours, then a high power handling loudspeaker will be needed. If you are expecting a tight, controlled sound, then this amplifier's high damping factor of 88 probably says more about this than high power: expect dry but strong bass. In fact, current limiting circuits start to operate at around 9 Amps and we had to use short sine bursts to be sure the M3 could deliver 380W into 4 Ohms. Few loudspeakers go lower than 4 Ohms anywhere in their impedance curve by the way.

Distortion levels were low at all power and frequencies, into both 8 and 4 Ohm loads. Our analysis shows second and third order distortion harmonics dominate, suggesting there will be no audible sign of roughness in the sound. The M3 is not a dull sounding amplifier by any means though and full output to 102kHz may help explain this. At low frequencies it reaches down to 3Hz (-1dB).

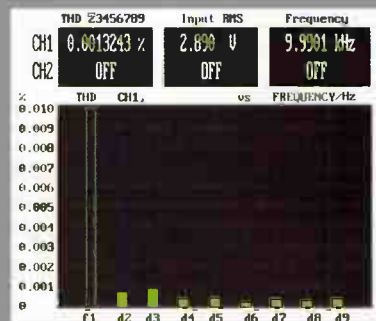
Input noise is low, partly because

sensitivity is low too, measuring 440mV. This means low output devices, like external phono stage with limited gain, will demand a lot of volume is used.

NAD's M3 is a power house with a great set of performance figures. Expect a dry, clean and lively sound. NK

Power	200watts
CD/tuner/aux.	
Frequency response	3Hz-102kHz
Separation	95dB
Noise	dB
Distortion	0.002%
Sensitivity	440mV
d.c. offset	1.2mV/2mV
Damping factor	88

DISTORTION





High Numbers

With state-of-the-art upsampling technology, Cambridge Audio's brand new 840C CD player promises to polish rough-and-ready sixteen bit into something altogether more finessed. Does it deliver? David Price decides...

Cambridge Audio have been busy. Until recently, they only offered a very worthy range of budget separates, namely the 540 and 640 amplifiers and CD players, which offered great sound per pound for under £250. Well, it's a long way from there to here. At £750, the new 840C is well and truly entering mid-fi territory, and finding itself up against a range of worthy competitors, from Audiolab's £600 8000CD to Naim's £825 CD5i.

Taking Azur upmarket is risky. Any good marketing man will tell you it's easier to go the other way quite frankly, and so the 840C has to really make an impression, in sight and in sound. It's not a bad looking machine, but lacks the visual drama of some rivals – even the clean, classic lines of the Audiolab 8000C somehow seem more striking. Still, it's big and built chunky. Again however, the slimmer Audiolab feels more solid, and its steel wrap case feels less resonant

than the 840C's – ringing less when you rap it with your knuckles. The thick 7mm aluminium front panel is nice, as are the extruded side panels. The display is wonderfully informative, with all sorts of legends scattered around it, but lacks clarity and does look a bit over the top, like Japanese players of the late eighties. Again, for me, the Audiolab's better.

This machine has been a long time in the making. Journalists have been aware of its existence for over a year now, and the original press release is dated 'January 2006'. There's a lot inside to get right, and indeed the 840C embraces a raft of proprietary technologies including ATF (Adaptive Time Filtering), asynchronous upsampling technology developed in conjunction with Anagram Technologies of Switzerland. This system intelligently interpolates 16bit/44.1kHz CD data to 24bit/384kHz data, through the use of a 32-bit Analog Devices Black Fin DSP (digital signal processor). The

idea is that if the original sixteen bit data is 'guesstimated' up to 24/384, it can be processed in its entirety by the two 24bit/384kHz DACs (also from Analog Devices) in dual differential formation, which duly gives the benefit of a much smoother and more linear conversion back to analogue, with none of the upper midband and high end distortions associated with stock 16/44. We've found upsampling does work, sort of, although as always it's down to the implementation as much as the theory.

Of course, upsampling isn't unique, but a 384kHz sampling frequency is unusual, and Cambridge Audio says that unlike other products based on standard sample rate converters, which effectively just draw a straight line 'between the dots', the 840C employs a process that involves "a proprietary polynomial curve fitting algorithm which ensures that the interpolated data smoothly fits between the



"It is rather akin to the legendary LP12, sumptuous and smooth but never less than beguiling..."

original data points", no less! It isn't really for us to comment on respective data interpolation algorithms – its success (or otherwise) will out in the listening. Each Analogue Devices AD1955 DAC handles a single stereo channel, operating fully in differential mode. Fully differential anti-aliasing filters based on a Bessel linear phase topology follow these.

Around the back, there are more sockets than you'd see in an average CD player. Both unbalanced RCA and balanced XLR outputs are fitted (the latter a nice touch), and two digital inputs are also provided which allow the upsampling and playback of other sources via the Azur 840C. In addition, a digital output can allow bit-for-bit data or upsampled data at 48, 96 or 192 kHz to be recorded by a suitable device, or indeed connection to an external DAC. There's also a Control Bus In/Out, an IR emitter in connection and an RS232 port are provided for easy multi-room connectivity.

In look, in feel and in features then, the new 840C is a nice, big, mid-price machine. It scores highly on features (we love the DAC inputs), well on build and reasonably on styling. The remote control is the stock Cambridge Audio fare, which I'm happy to say is superb, as anyone who's ever used one will know. In the hotly contested middle market, it more or less pushes all the right buttons here, but how it sounds is really what's going to make it sink or swim...

SOUND QUALITY

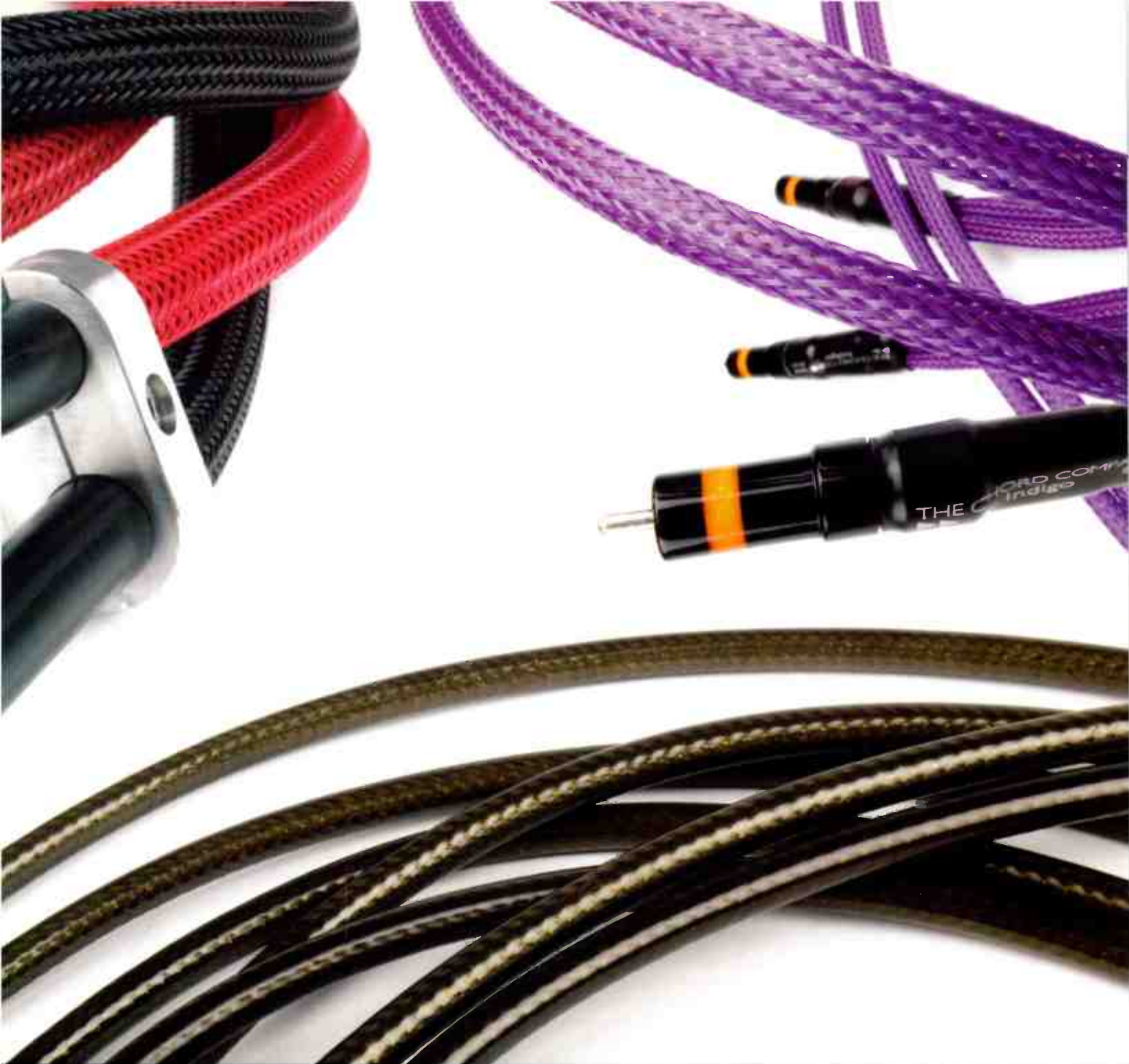
Right now, there are several very competitive mid-price designs around, the two most mainstream being the aforementioned Audiolab 8000CD and the Marantz SA7001 KI Signature. The former errs towards a clean, trim, analytical sound in the extreme, and sports fantastic timing. The latter is an altogether warmer and more mellifluous proposition, soft in the bass but smooth and on the sweet side of neutral.

The Cambridge Audio 840 finds

itself sitting neatly between the two. It is fractionally on the warm side, but not quite as much as the Marantz. It is tighter in the bass than the Marantz, but is looser than the Audiolab. It is better defined in the midband and treble than the Marantz, but not quite as incisive as the Audiolab. Some ears may find both 8000CD and SA7001KI Signature too polarised (i.e. hard and soft respectively) in some ways, whereas the 840C offers - in a sense - the best of both worlds.

Going back to basics, the





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Cambridge is a very big hearted and expansive sounding machine, with real physical presence in the way it makes music. It has real confidence and assuredness, yet its iron punch is delivered through a velvet glove. As previously stated, its tonal footprint is slightly warm and silky, but it's not excessively sugary. Indeed, put against the Audiolab, the 840C sounds far more natural. The 8000CD is so tonally stark it is almost glassy across the upper midband – icy, even. The 840C heats things up a notch or two, making for a far more listenable 'Technicolor' sound.

Arguably its greatest attribute is the vast soundstage it conjures up, with huge horizons left and right. The Audiolab sounds constrained by comparison, with all elements of the mix hemmed in to the centre of the speakers. Air's 'All I Need' showed the Cambridge to be a little less detailed and incisive, but the warmer, fuller sound allied to some lovely lilting rhythms actually made the machine appear the more musical of the two. Rhythmically, the Audiolab is metronomic – its timing on hi hats, for example, is tremendously clear cut, but a little robotic.

The Cambridge proved slightly more laid back, yet more lilting. Indeed, in a strange way, it is rather akin to the legendary Linn LP12 turntable in the way it sounds; sumptuous and smooth yet never less that beguiling in the way it gets into the groove. By comparison, the Audiolab had a narrower soundstage and sounded more 'transistory' - tighter, tauter, more explicitly detailed with sharper attack transients. Yet it was less euphonic, tonally grey and didn't seduce like the Cambridge.

My Japanese pressing of Al Jarreau's 'Summertime' was another fascinating listen. The Cambridge loved this exquisitely recorded and pressed silver disc and served up a beautifully wide soundstage which my reference Quad electrostatics made sound something akin to a smokey jazz club. It showcased this player's sublime tonality – it is truly

believable. You could really get into the texture of each instrument (it's quite valve-like in this respect), and there was a lovely tonality to the mute trumpet, which sounded raspy but real. The player conveyed the real sense of atmosphere in the piece, and also the effortless but technically brilliant playing of the session musicians. Treble was clean and open, the midband deep and wide and tall, the bass full but tight. Switching back to the Audiolab showed how the Cambridge was losing just a trace of transients down fractionally. The 8000C was certainly better on capturing the lightning leading edges of the classical guitar, for example. Again, in other respects, again the 840C made its rival sound glassy and shut in.

Running the gamut of my expanding CD collection forced me to conclude that this is an extremely capable silver disc spinner - at the price, I think there is little to touch it. It is hard to fault, and I think any legitimate criticisms can be excused at this price point. For example, the Eera DLI reviewed last month at approximately three times the price added better depth, dimensionality and an uncanny 'seamlessness' to the sound (something more common with vinyl), but the Cambridge still wasn't disgraced in any way. Conversely, Naim's CD5x adds a bit of bass grip and more explicit dynamic accenting, but really isn't particularly

more engaging a listen – so 'liquid' is the Cambridge's rhythmic nature.

CONCLUSION

One of the best sounding sub-£1,000 designs, the Cambridge Audio 840C has a lot going for it, and the solid build, crisp modern styling, excellent remote and state-of-the-art upsampling DAC functionality hardly make it a less attractive buying proposition. A truly special machine that's thoroughly recommended.

REFERENCE SYSTEM

- Audiolab 8000C CD player
- Marantz SA-7001KI Signature SACD player
- MF Audio Passive Magnetic Preamp (copper)
- World Audio Design K5881 (modified) power amp
- Quad 989 loudspeakers
- Black Rhodium interconnects/cables

VERDICT ●●●●●

Sumptuous, musical sound, fine build and a welter of facilities make this a superb mid-price machine.

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FOR
 - silky, liquid sound
 - excellent feature set
 - DAC functionality

AGAINST
 - cluttered display

MEASURED PERFORMANCE

The Azur 840C was distinctive in many areas, signalling that inside it is different. Frequency response via a convolved impulse analysis clearly shows an unusually sharp high frequency filter cut off, giving deep attenuation to aliasing components. The in-band response is unusually flat from 2Hz all the way up to 20.8kHz, except for a small +0.25dB plateau lift below 100Hz or so. Whilst this isn't enough to give perceptible bass lift, it is enough to ensure the 840C will not sound light or lean; I would expect a solid bass end delivery. There was no difference between balanced and unbalanced outputs.

Distortion levels were as low as I have ever measured; this is an ultra low distortion player. Not surprisingly it has a very wide EIAJ dynamic range value of 112dB. Balanced output was marginally better, managing 0.00015% at 0dB (full output) for example.

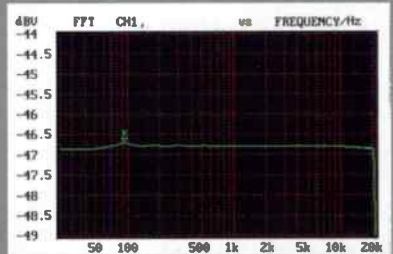
There was some programme-related jitter on the digital output, measuring 40pS at low frequencies. Better is possible nowadays.

The Azur 840C measured exceptionally well on its analogue outputs, looking different from the herd. NK

Frequency response (-1dB)
 CD 2Hz - 20.8kHz

Distortion (unbalanced)	
0dB	0.0002%
-6dB	0.0003%
-60dB	0.004%
-80dB	4.2%
-80dB dithered	1.4%
Separation (1kHz) 128dB	
Noise (IEC A) -113dB	
Dynamic range (EIAJ) 112dB	
Output (Bal.) 2.16V (3.75V)	

FREQUENCY RESPONSE



DISTORTION



Storm Force



Named after the Celtic god of lightning, Mowgan Audio's Mellt loudspeakers promise power aplenty, says Adam Smith...

When it comes to naming their products, it makes a refreshing change to stumble across a manufacturer who has the creativity to break away from the XYZ123 mould and give their new creation a moniker that sets it apart from the crowd a bit. Scotland's Mowgan Audio are one such manufacturer and, not only have they taken their name from the Celtic god of light, harmony, music, liberation and unity, they have taken this a step further and chosen other suitable Celtic deities as names for their, currently four-strong range, namely Artio, Mellt, Mabon and Ogma.

Although their name is not currently widely known, this could well be up for change if the reaction of our intrepid roving reporter, Sharon, at the Edinburgh Hi-Fi Show at the end of October was anything to go by. She returned with glowing praise for the noises being made in the Mowgan room and demanded we obtain a pair for review! Seeing the sense of not arguing with a determined lady, we duly present the Mellts, which are the second model up Mowgan's present hierarchy above the standmounting Artio, and their most affordable floorstander.

Mellt was apparently the god of lightning and Mowgan Audio have chosen a cunning analogy here, as they are keen to make much of the Mellt's transient response and fast sound. Your £2,549 buys you a compact and neat two and a half way loudspeaker with impeccable fit and finish. Driver complement is a soft dome one inch (25mm) tweeter and two seven inch (180mm) bass/midrange units. According to my ruler these appear to be closer to six inches across their active area of operation but, having worked in

the loudspeaker industry, I know only too well that there are a huge number of approved ways of measuring driver diameters, so I shall let it pass for now!

With the Mellts duly installed and run in, I was ready to commence listening. Would they instill me with a sense of inner peace and harmony, or smite my ears with aural lightning bolts? More importantly, would dreadful things happen if I tried playing Black Sabbath or Marilyn Manson? I was keen to find out...

SOUND QUALITY

I chose Jeff Buckley's 'Grace' as the first album into the CD player, but resisted the temptation to head straight for the track 'Hallelujah' and instead picked 'So Real'. This appeared to be a good choice as Jeff's vocals were truly superb - large and detailed with every subtle distinction faithfully reproduced. I was also pleased to hear that Mowgan Audio's claims of fast bass for the Mellts had substance, as the bass line for the track was deep, detailed and punchy.

Keen to explore this further, I moved the pace up somewhat with the unusually named 'Flight of the Cosmic Hippo' from Bela Fleck. This track has some astonishingly deep and forceful low end action, courtesy of Victor Wooten's mastery of the fretless bass guitar. With the right subwoofer this track can blow light bulbs, and I know because I have done it! The Mellts absolutely lapped it up but, although I felt that the leading edges of the bass notes and their pace more than lived up to Mowgan Audio's claims, there was a sense that the trailing edges of the notes were little lost in the urgency to keep up the pace. This did mean that when it came to the bass detail, although it was there, it was a case of having to listen out for it, rather than it

being immediately obvious.

A quick blast of Holst's Planets Suite revealed that the Mellts suit classical material very well. Along with good instrument separation and fine scale, they have an excellent ability to keep up with the faster moments of Jupiter and yet go quiet when needed. In some loudspeakers, differences in scale like this have an unfortunate tendency to come across well on the loud passages and then go dull and quiet on the soft parts or vice versa, and this has you continually reaching for the volume control. The Mellts do not suffer in this way.

So, on something of a roll, I was a little surprised to then stumble upon a bigger weakness with my next choice of music. This happened to be the Celine Dion track 'I'm Alive' - her

"many will find the Mellts exactly what they've been looking for..."

voice is something of an acquired taste (and I haven't), but her vocal style can show up midrange oddities in a loudspeaker very well. Suffice it to say that a minute or so into the track I found myself reaching for the volume control as the Mellts were just too forceful and Miss Dion was causing my ears distress. Looking at the measurements, there is a rise in midrange output at just over 1kHz and whilst this will help to bring out vocals generally, if the voice in question is quite strident anyway then it will tip over into unpleasantness - exactly what I found.

Moving back to a more normal voice (sorry Celine) 'Give It Up to Love' from the Mighty Sam McClain went into the CD player and things again picked up. A well recorded and emotional performance anyway, the Mellts really shone in terms of depth, presence and detail and added a whole new dimension to the song. The smooth yet detailed treble offered by the soft dome tweeter meant that nothing was overlooked but equally, there was no trace of high frequency harshness. Was Sam sat right in front of me? With my eyes shut I could certainly have believed it.

CONCLUSION

Loudspeakers from small companies who promise great things can often result in severe disappointment for us poor souls who have to listen to

NOEL SAYS:

My eyes alighted on Mowgan's proprietary drive units straight away. A flick with the finger nail revealed a nice clean, bright but quite well damped sound. Which told me two things: they design their own drivers - quite an advanced thing to do (and one that brings very specific benefits) and they have found a good cone material. Another suggestion is that they know a lot about loudspeaker engineering. Not unsurprisingly, the Mellts measured well.

They sound clean, uncoloured, fast and have deep bass. They also sound very well integrated, due to a long wavelength crossover point at 1.5kHz. You get a spry modern sound with fine balance in all areas; these are sophisticated loudspeakers. But they could sound sharp at times, which is almost certainly due to that peak we talk about elsewhere. And I felt there was a certain lack of insight at low frequencies. All the same, they have a conspicuous transparency and clarity that is impressive, plus a balanced delivery that is accurate and right on pace. NK

them and then try and be diplomatic to the designers. Fortunately Mowgan Audio have come up with a pair of loudspeakers that are thoroughly competent and enjoyable to listen

this kind is not uncommon in plastic-based bass/midrange drivers and it is to Mowgan Audio's credit that it is generally well tamed. Whilst being picky, I would also add that the bass is indeed fast and deep, but at the expense of a little detail.

These concerns aside, however, I personally enjoyed the Mellt loudspeakers and found their presentation very satisfying. I am sure that once Mowgan Audio's name becomes better known, there are many audiophiles out there who will find the Mellts are exactly the sort of loudspeaker that they have been looking for. A present from the gods perhaps?

MUSIC

- Jeff Buckley, 'Grace' (1994)
- Bela Fleck and the Flecktones, 'Flight of the Cosmic Hippo' (1991)
- Holst, 'The Planets'
- Celine Dion, 'A New Day Has Come' (2002)
- Mighty Sam McClain, 'Give it Up to Love' (2001)

MEASURED PERFORMANCE

The Mellts have a gentle lift in response just above 1kHz which will serve to intensify vocals and add presence to midrange instrument detail. The treble output is smooth and even up to 16kHz or so before starting to gently roll off. The Mowgans should therefore have a good, even treble without any harshness.

Bass output from the main drivers is consistent and strong down to 60Hz, and then further augmented by the rear-firing port which is tuned to 40Hz. Together with the solid cabinet, the Mellts should have good bass weight which can be further boosted by placement close to a wall.

Average impedance comes in at 5.9 Ohms, dipping to a minimum of 4, meaning that the Mellts will require an amplifier that has genuine 4 Ohm drive capability. Measured sensitivity is good, however, at 90dB and 50 watts should see them working nicely. AS

FREQUENCY RESPONSE



Green - driver output
Red - port output

IMPEDANCE



VERDICT

Well designed and enjoyable loudspeaker, with a few midrange idiosyncrasies that necessitate careful auditioning before purchase.

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Show Time

The weekend of the 28th and 29th October saw the hosting of the annual **Scottish High Fidelity Show**. Having despatched our roving reporter Sharon Mehlhorn, we in the editorial team then realised that it was hosted at no less than the lovely Marriott Dalmahoy hotel. Needless to say, we are already fighting over who goes next time! However, in the meantime, here are the highlights from this year...

Mike Jewitt of Revolver with roving reporter Sharon Mehlhorn. The company were treating those north of the border to the aural delights of the new £5,000 Cygnis loudspeakers. More highly favourable comments were heard and we think Revolver have a winner on their hands.



Ecosse-Audiostone were making pleasing sounds in their room, thanks to Audiopax amplifiers, including the £12,899 per pair 88Mk2 monoblocks - newly unveiled in Europe. The impressive looking loudspeakers are the new Audiopax Ref150s which retail at £10,739. Sharon assures us they were "fantastic"!

Mowgan Audio were demonstrating their Artio standmounting and Mellit floorstanding loudspeakers in their room. It is thanks to this demonstration that the Mellits are featured in this issue, as Sharon thought they were superb. We feel sure we'll all be hearing a great deal more from this Scottish company.



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HiAudio were flying the vinyl flag courtesy of an Acoustic Solid turntable fitted with no less than two arms from Hadcock and The Cartridge Man. Rumour has it that they will be squeezing three on at January's Manchester show!



Stamford Audio were demonstrating a fine-sounding system that included the £999 Black Cat phono stage and the £150 Hercules PSU upgrade for the Linn Sondek. They also took the opportunity to scatter lots of vinyl around their room - a very nice marketing touch, we thought!



Loud and Clear were living up to their name with their demonstration system that featured some serious Naim electronics including the range-topping £14,000 CD 555 Compact Disc player. Loudspeakers were the rather fabulous £6,500 Totem Winds





RPM 10



On demonstration at:

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- Bishops Stortford - The Audiofile
- Eastbourne - Audio T
- East Grinstead - Audio Designs
- Edgebaston - Music Matters
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Something of an unexpected surprise, Eastern Electric has launched a welter of very impressive tube-based separates over the past year.

From the decent Philips CD12 mech to the fine build and tube output stage, this player has been engineered properly - and it sounds like it too.

Sonically it is almost beyond criticism at this price. Superbly engineered, it offers beautiful results from LP.

The Minimax Phono has a wonderful textural and an expansive palette of tonal colours, which come allied to a seductive rhythmic spirit and wonderful air and space. The result is big, bouncy and beguiling in equal measure. £1,099 is a lot of money for a phono stage, but the Eastern Electric is worth every penny.



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PHONOSTAGE WINNER:
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(MM/MC)

Shadow's extremely helpful New Year Resolutions List...

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3. If you are a Shadow Audio customer, post a comment about Shadow on their web site.
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5. Find the stunning new 4-page adverts in all the major hi-fi magazines.
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Micromega Aria, black, ex HiFi Choice review model (£2150)	£1595
Naim CDX with NAXPS power supply, good condition, boxed	£1900
Audio Research CD3 MK I, silver, mint, boxed fantastic bargain (£4750)	£1995
Arcam Diva 93t, silver, exc cond, boxed, manual, r/c, 1 yr old, (£1000)	£595
Musical Fidelity DM25 DAC + Transport, only a few months old (£4000)	£2995
Musical Fidelity KW SACD player, boxed, factory sealed box (£4000)	£1995
AVI Lab Series CD, current spec, boxed, unmarked condition (£1499)	£1195
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Shanling CDT300 Omega Drive, exc-dem, immaculate cond (£4000)	£2995
Resolution Audio Opus 21, 2 box cd player, boxed, black/silver (£2950)	£2295
Marantz SA-1151, mint, 6mths old, champagne finish, boxed (£1999)	£1395
Musical Fidelity TriVista 21 DAC, exc cond, manual, boxed (£1400)	£695
Unison Research Unico Valve output CD, only 3mths old, latest ver (£1250)	£895
AMPLIFIERS	
Exposure 23 Pre Amp, mint, boxed, remote (£1400)	£795
Exposure 28 Power Amp, mint, boxed (£1400)	£795
Bryston 4B-SST Power Amp, 2 months old, like new, 300wpc (£2750)	£2249
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Qiniu A1.0x, ex What HiFi review model, boxed in immac cond (£300)	£230
Qiniu A-8000 MK II, ex HiFi World review model, boxed as new (£1295)	£895
Parasound A21 Power Amp, immac condition, silver, only 1yr old (£1500)	£895
Musical Fidelity A308 pre-amp, immaculate, boxed, manual (£1999)	£995
Musical Fidelity A5 Int, 250wpc, 6 months old, boxed, as new (£1499)	£995
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Bryston B-100 SST Int amp, unmarked condition, boxed (£2750)	£1995
Bryston B60 SST Integrated, excellent condition, silver, boxed (£1600)	£495
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Chord CPA2800 pre-amp+phono stage, £2800 new, in black, immac	£1395
GamuT D200 Power Amp, silver, immac condition, boxed (£3200)	£1695
Bel Canto Evo 2i Integrated, boxed, mint cond (£2800)	£1695
Arcam FMJ Pre, good cond, boxed, manual, remote, only 1 year old! (£1200)	£795
Arcam FMJ P35 Power Amp, good cond, boxed, manual (£850)	£595
Jungson JA-88D Int, pure class A, Hi-Fi World 5 globe winner, ex-dem (£899)	£749
AVI Lab Series Power Amp, imma, less than 1yr old, boxed (£1650)	£995
Eastern Electric M520 Int, What Hi-Fi 5 star review, 4 mths old (£1539)	£1095
Eastern Electric Minimax Pre, ex-dem, mint condition, boxed (£769)	£649
Naim NAC 102 Pre Amp, good condition, boxed, serial no. 142xxx	£550
Naim NAP 250 Power Amp, good condition, boxed, serial no. 304xx	£949
AudioNet Pre 1 G2, silver with blue display, mint, box, remote (£2100)	£1495
Krell PAM 5 pre amp + phono stage, exc cond, legendary perf (£2000)	£549
Manley Labs Neo Classic 300b Monoblocks, 25wpc, mint! Sensational! (£5895)	£3995
Cyrus Pre X V5, immac cond, only 5 mths old!, one prev owner (£1000)	£749
Primaluna Prologue 5 Power Amp, EL-34 valves, 35 wpc, mint (£950)	£695
Nagra PSA Power Amp, very rare, only 6 months old!, immac, stunning	£3595
Audionet Sam V2 Integrated, silver, boxed, exc cond (£2400)	£1195
ATC SLA2-150 Int amp, black, mint con....as good as brand new (£2400)	£1895
Shanling SP-80C Monoblocks, excellent, gold legs, fully boxed (£2000)	£1295
Unison Research Unico Line, only 3 months old!, boxed, manual (£950)	£749
Unison Research Unico SE Int amp, mint cond, boxed, manual (£1375)	£795
Bow Walrus Power Amp, boxed, exc cond, 150wpc (£3995)	£1995
Bow Warlock Pre, boxed, exc cond, fully balanced, r/c (£3495)	£1695
Pass Labs X1 Pre Amp, mint, less than 1yr old!, sep power supply (£4700)	£3795
LOUDSPEAKERS	
Hyperion 938, gloss black finish, immac cond, very low hours (£3750)	£2895
Quad 989, Vintage finish, only 6 months old, boxed, mint cond (£5000)	£3795
Acoustic Energy AE1 Classic, ex-display, never been played, fully boxed (£845)	£650
Acoustic Energy 1 MkIII, B stock, slight mark to front right corner (£1995)	£1295
Wilson Benesch Arc, silver stands and side cheeks, immac cond (£2600)	£1795
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Ref 3a De Capo-i, redwood finish, superb cond, boxed (£2500)	£1695
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JAS Audio Supertweeters, Review pair, sound awesome! (£649)	£595
Audio Physic Tempo 4, cherry, exd model, immaculate condition. (£2199)	£1699
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Trichord Diablo phono stage, exc cond, only 9mths old, boxed (£750)	£495
Wilson Benesch Full Circle, boxed as new, exc cond (£2100)	£1495
Tom Evans Groove Plus phono stage, boxed, mint cond (£3600)	£2395
Eastern Electric Minimax Phonostage, ex d, mint, boxed (£1099)	£895
VPI Scout inc JMW-9 tonearm, immac cond, boxed, very little usage (£1650)	£1195
VPI Super Scoutmaster Signature, ex-display, boxed, mint (£4995)	£4250
MISC	
Nordost Blue Heaven Speaker Cable, ex dem, 4m pair, bi wire (£489)	£349
IsoTek GII Minibus, silver front, current spec, immac cond (£545)	£395
Naim Hi-Cap power supply, good condition, serial no. 304xx, superb upgrade	£550
IsoTek Mainline filtered mains cable, excellent condition (£200)	£95
IsoTek Mainline digital filtered mains cable, exc condition (£225)	£110
Hovland Reference Speaker Cable, exdem, boxed, 8ft pair, single wired (£1200)	£795
MIT S2iC Interconnect, 1.5m, mint condition, boxed as new (£450)	£225
MIT Shotgun S2s speaker cable, 4.6m pair, mint, boxed as new (£1000)	£495
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Nordost Thor, ex dem, immaculate condition, boxed, Valhalla wired (£1600)	£1195
IsoTek Titan mains conditioner, few months old, boxed (£1500)	£1095
Nordost Valhalla Speaker Cable, 3m per side, bi wire with z-plugs (£5700)	£3995



Look Smart

Denon's S-81DAB 'Smart Series' mini system is certainly the belle of the ball, but is it too clever by half? David Price decides...

If you've ever been to Japan, it will come as no surprise to learn that small "mini-compo" (miniature component) systems hold undue sway on the audio market. Space is at premium because real estate costs a bomb (yes, even more than here), and often there simply isn't room for vast, sprawling hi-fi separates systems in people's houses. The upshot is that premium small systems - where sound quality really does count - are big sellers.

Denon's £600 S-81DAB is basically a CD player (with MP3/WMA support), a DAB/RDS FM/AM radio, and 50W amplifier in a single, sleek (380x97x265mm, 4.1kg) box. Woven into this is a sophisticated remote control system complete with clock and timer, plus a range of connectivity options. The box, available in silver or black, is pressed steel, with an aluminium fascia. The matching remote is plastic, but is a quality item with strangely good navigation - everything from the Linn Classik to the Onkyo CS-515 should take note of this.

Set-up is easy, as you'd expect. It's a case of plugging the power lead in, and the speakers. These come with neatly colour coded wires, but the spring-clip connectors are a concession to convenience that many audiophiles could do without. Still, if you do replace the cables with high quality stuff like Black Rhodium's Tango, you can always buy

it untermated and just cut the ends down to fit - strongly recommended from a sonic point of view.

The compact (150x269x190mm, 3.1kg) speakers were designed by a "leading European team and then tuned by Denon UK engineers to fit UK tastes". The results are surprisingly good as these things go, but for absolute performance, it would be worth deploying a pair of Revolver R45is, which go loud with the Denon's modest power output and really turn it into a proper hi-fi. They sport 12cm woofers and 2.5cm soft-dome tweeters. Antimagnetic design metal powder has been mixed in the speaker cabinet walls to damp vibration.

As you'd expect, facilities are generous - the most interesting being the front panel iPod port, via a dedicated cable that comes with the S81DAB (the remote can then be used to control the iPod). There's also a front panel mini jack for any line level source. The S-81DAB plays MP3 and WMA audio files stored on CD-R or CD-RW discs, with names of files, artists, and tracks shown on the deep blue two-line fluorescent display. There's an optical digital output around the back, should you wish to use a separate power amplifier or digital recorder. The S-81DAB includes an 'Everyday Timer' that automatically turns on and off the power at a preset time each day, and also a 'Sleep Timer'.

Contrary to what the 'stylish' appearance might suggest, Denon have actually made an effort with the sonics. It's quite listenable indeed, and pretty much up to the levels of the Cambridge Audio 540C, 640T and 540A, for example, which is a very nice sounding entry-level separates system, and the speakers don't disgrace it - although ultimately they are the limiting factor.

Essentially, it's a clean solid-state sounding system, with a spry, crisp treble, an open and intelligible midband with plenty of detail, and a taut bass. The aforementioned Cambridge separates system is warmer, without a doubt, but the Denon is in no way hard sounding. Indeed, its sins are those of omission, with a slightly hazy, opaque midband. The Denon works well on most types of music, sounding couch and composed with classical, decently tuneful and rhythmic with jazz and punchy with pop, although it falls down when trying to reproduce large orchestral music or powerful, layered progressive rock. Here though, it's the speakers that hold it back - move to Revolver R16s, for example, and the Denon really gets into the groove.

It's hard to criticise this system's sonics at the price. It isn't the very best way to spend £600 sonically, but it makes a fine fist of what it's asked to play, is tuneable and versatile, as well as being genuinely nice to live with. That looks good to me!

VERDICT ●●●●£

Capable sonic performance makes this a very well judged blend of size, style and sound.

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FOR

- clean, open sound
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- nothing at the price

Sound Values

Channa Vithana looks at an affordable vinyl replay system for under £1,000...



I have wanted to compile a low cost, high performance sub-£1,000 system for ages. Things started to fall into place with the five globe rated £250 NAD 325BEE integrated amplifier (see HFW, p60, August 2006). Here was a great seven input, remote-controlled budget integrated (with iPod/MP3 connectivity) that had a free flowing and well rounded sound which was



consistently musical. Measured by *Hi-Fi World*; the test bench revealed an excellent 84 watts into 8ohms (compared to the NAD-rated 50W/8ohms) and 144W/4ohms, with Noel concluding that, "the NAD 325 BEE measures very well. It is obviously carefully engineered all round". In practice, I found the NAD was able to drive a pair of demanding £2,995 Spondor S9e loudspeakers brilliantly without effort. So it is an amplifier that can handle and survive a few loudspeaker upgrades. It measures 435x100x290mm, weighs 8kg and is also available in an attractive silver finish.

With such a big heart, the system needs a great brain (or source, even) so I have chosen the Goldring GR2

turntable, also five globe rated, (see HFW, April 2005, p32) and it comes with a Rega-based tonearm and superb Goldring 1012GX MM cartridge for £265. (Separately a Rega RB250 tonearm would cost £124 while a 1012GX costs £100, which makes the GR2 stunningly good value). One minor criticism of the GR2 in the original review was that, "against more expensive decks, it is a bit bass light". Consequently, I knew the NAD, with its well defined and tuneful bass delivery, would brilliantly complement the Goldring. The GR2 measures 450x370x120mm and the review sample was finished in an attractive white with matching platter (there is also a black version).

The phonostage choice was easy; the moving magnet Cambridge Audio Azur 540P at £40. Don't be fooled by its low cost, as I have used this phonostage fronting my high end £3,740 Origin Live reference turntable with complete confidence. It is a great phonostage - it ran a £700 Cyrus Phono X pretty close in sound quality considering the vast price differential (see HFW, p54 October 2005)! The strength of the 540P is its powerful, clean and free flowing sound quality - so it is an ideal link between the Goldring and the NAD. The 540P measures 46x215x133mm and weighs 800g, it is attractively finished in silver with excellent build-quality.

The final piece of the puzzle is a pair of £350 ALR Jordan Entry M loudspeakers. I wanted to address the one slight area where the NAD could be improved, and I just knew

the ALRs would do the job. While some of prolific designer Karl-Heinz Fink's work involves just the engineering side (like the Q Acoustics range of speakers), other projects such as ALR Jordan require him to both engineer and voice the product. Thus I knew the Entry Ms were going to provide outstanding tempo, phrasing and rhythm to give that final polish to the NAD and the Goldring. I could have chosen the diminutive £250 Monitor Audio Radius 90 (which do the same thing) and saved



£100 but they are limited in larger rooms.

The Entry M employs a 25mm coated fabric dome tweeter with neodymium magnet, and a magnetically shielded 160mm aluminium-cone mid/bass driver, based on a Ted Jordan design, is specified. The cabinet is made from 19mm wood composite with 30mm reinforcements, and a 22mm rebated, attractively finished, front baffle for extra stiffness. The crossover is a phase-optimised Linkwitz Riley design with auto-transformer. I have chosen the ALR loudspeaker cable, priced at a very reasonable £1.75 per metre because it matches the cable used internally. The company says it is formed from 2x 2.5mm diameter copper multi-strand cable. The Entry M measures 203x350x290mm,



weighs 6.7kg and is available in beech, black or silver finishes. The claimed specification is: 45Hz-28kHz, 6ohm impedance and 90dB sensitivity.

SOUND QUALITY

When this little lot was suitably set up and warmed through, I was very pleasantly surprised at the insight it offered into the music playing. This system cuts right into the heart of the recording, with every instrument retaining its identity. Along with the excellent instrumental separation, this made for a thoroughly engaging musical performance. Trumpet, flute and bassoon from the Scarlatti section of the Karl Haas/London Baroque Ensemble 1958 recording had excellent definition, instrumental separation and body. The sound was not sterile or lacking any lyrical quality, because the phrasing of each instrument was first rate – as good as I have heard in LP or CD systems at more than twice the cost.

With 'Be Still My Beating Heart' from Sting's 'Nothing Like The Sun' LP, the recording sounded expansive and had very high resolution. Every element, from the outstanding



production to the different instruments to Sting's vocals, was immaculately reproduced. I could easily follow the bass lines which flowed serenely, yet were entirely musically intelligible. The sound was vibrant and communicative with excellent instrumental and vocal separation that enabled a clear cut musical insight. The vocals of Terence Trent D'Arby had superb definition, phrasing and timbre. The lilting melodies of 'Sign Your Name' were outstanding through this system, and the melancholic, longing vocals

"this low cost, high quality system unties the enigma of musical budget hi-fi..."

and sophisticated instrumental arrangements were beautifully expressed. Music was powerful and timbrally enticing, and accordingly the ability of this system to combine precision tempos and rhythms with timbre and spatiality was superb at the price.

Better still, I found that even better results could be extracted with a few choice upgrades [see UPGRADES]. A combination of high quality components such as these, regardless of how inexpensive, can always get more teased out of them with some judicious tweaking. Overall, the system made for an extremely enjoyable way to listen to music, and showed you don't have to throw vast amounts of money at the problem of decent music reproduction.

CONCLUSION

This sub-£1,000 system works because it is synergistically matched. Although the individual components are already accomplished, it is as a combination that they are outstanding for the cost of £915.50 – not a bad return for a turntable, tonearm, cartridge, phonostage, amplifier, loudspeakers and matching loudspeaker cable!

As such, all the music excelled, from the 1958 Scarlatti classical piece, to the 1987 jazz and funk pop of Sting and Terence Trent D'Arby, plus the industrially-aspirated heavy-rock of Marilyn Manson. With all the

music there was spatiality, excellent instrumental and vocal separation, plus outstanding tempo, rhythm and melodies which enabled a precise yet free-flowing sound. Better still, this system can be carefully further upgraded when funds permit – or you could just leave it be. Either way, with plenty of inputs (including iPod connectivity), this low cost, high quality combination, as standard, confidently unties the enigma of musical and future-proofed budget hi-fi.

EASY FIT UPGRADES

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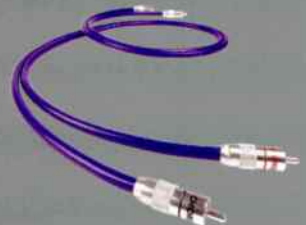
The £67.99 Michell Tecnoweight is an upgrade for the standard Rega counterweight to the rear of the tonearm. Installation is very simple and once fitted; 'The Beautiful People' from the Marilyn Manson LP had an obvious reduction in background noise, which allowed more music to be revealed. There was a finer spatiality to the reproduction of the vocals and discernibly less grain evident on the huge rock crescendos. Instrumental and vocal intelligibility was excellent with a clean, deep and high resolution sound overall. Cymbals were purer and cleaner without a hint of a messy, splashy quality in comparison to the standard Rega counterweight, and the guitars had clarity and body also. Bass lines in particular became fuller and weightier without becoming bloated. You can use a standard-issue Ortofon Stylus Balance for about £6 to set the recommended cartridge tracking weight of 1.7gm for the Goldring 1012GX or a digital unit (see HFW, p60 November 2006). With the finely crafted Tecnoweight, the Rega tonearm can later be superbly exploited within turntables like the £760 Funk Vector or the £575 Michell TecnoDec (see HFW, March 2006, p10 and p18), if upgrading.



CHORD COMPANY CHAMELEON SILVER PLUS £119

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The second upgrade I can recommend is the £119 Chord Company Chameleon Silver Plus interconnect, to replace a typical 'bell-wire' one, between the 540P phonostage and the NAD amplifier. It is made of four sets of stranded silver-plated conductors (twisted along the length of the cable), with a high-quality Teflon dielectric, a silver-plated shield and a royal blue outer jacket. Though almost three times the price of the 540P, it is nonetheless a high performance device that can withstand many future upgrades – I have used it in both my reference systems costing between £830 - £15,000! Even in this budget system, when the Chord interconnect was implemented, it skillfully opened out the sound, revealing a powerful, high resolution delivery of instruments and vocals on the Scarlatti and Terence Trent D'Arby recordings.



MUSIC

Karl Haas/London Baroque Ensemble, 'Albinoni. Tartini. Pergolesi. Vivaldi. Scarlatti. (Collector Series)' (1958)
Sting, 'Nothing Like The Sun' (1987)
Terence Trent D'Arby, 'Introducing The Hardline...' (1987)
Marilyn Manson, 'Lest We Forget...The Best Of' (2004)

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NAD 325BEE	£250
NAD Electronics ☎ +44 (0)1908 319 360 www.lenbrook.co.uk	
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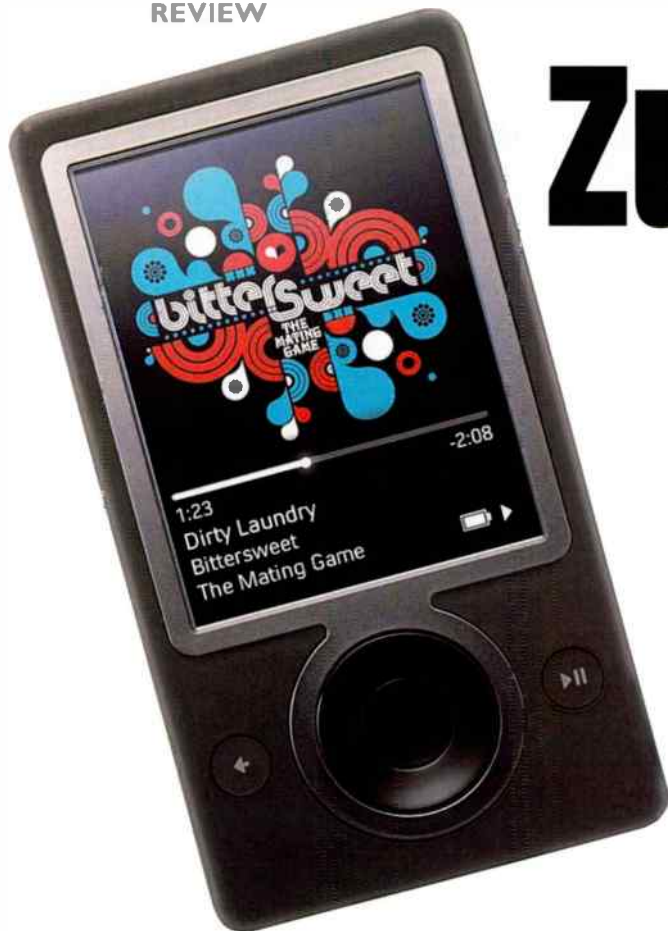
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Zune Bug?

Microsoft's much-vaunted iPod rival is finally on sale (in the US, at least), and the company hopes it proves as addictive as the Apple. David Price gets an exclusive chance to try out the brand new Zune for size...

When the world's most famous mega corporation gets involved with consumer audio electronics, it means something to the hi-fi world. Just as Apple's iPod has transformed the way no less than 70 million people listen to their music (at a guess, that's probably more than the sale of every hi-fi separate ever made, put together), so Microsoft wants a piece of the action. Whilst the Zune retails for \$249 Stateside (about £130 at today's exchange rate), the sheer potential volume of sales is worth billions. In the US in 2006, Apple's 75.6% market share brought it sales worth \$7.67 billion, no less.

It's these numbers that have brought Bill Gates and his mates (about 230 engineers were reputedly on this project – more than the average luxury car launch) to the party. The result is a little box that holds around 7,500 songs on its 30GB hard disk, and plays music ripped from CD or downloaded from an iTunes-style store. Its real party piece, however, is the facility to “beam your beats” – to send tracks from one Zune to another via the built-in Wi-Fi functionality. Clever stuff, but will it be enough?

The Zune has three key hurdles ahead. The iPod's a mighty slice of industrial design, whose good looks cause customers to go all dewy-eyed. Then there's the runaway success of

iTunes Music Store, which has done to legal downloads what Napster once did to illegal ones – make them easy, accessible and fun. Finally there's the PlaysForSure enigma. Before it wanted a slice of the hardware pie, Microsoft went into partnership with a range of names such as Napster, MTV (Urge) and Yahoo (Music Unlimited) to provide legally downloadable music under this banner – but amazingly, the Zune won't play it. In its first week on sale, the PlaysForSure-compatible players outsold the Zune – so now Microsoft is effectively competing with itself!

THE ZUNE UNPLUGGED

Even the most ardent iPod hater would surely admit that the Apple is a neat bit of kit. The shiny white (or black) front, exquisite stainless steel back and fiendishly clever click wheel create a real sense of occasion, both to look at and to use. Unfortunately though, the Zune is the visual and tactile equivalent of Christmas without sherry and mince pies. Its sea of dull matt plastic can only be a direct response to the iPod's biggest flaw – its ‘scratch on sight’ shell. True, it won't age prematurely like the Apple, but it already looks distinctly middle aged the moment it emerges from the box. Neither does it feel nice – there's a dash of rubber in the plastic, giving it the sensation of warm dead flesh to the touch. Its portly dimensions don't help either – its vital statistics are 112x61x15mm and 159g against the Apple iPod 30Gig's 104x62x11mm and 136g. The result is that while the latter feels like an exquisite piece of ‘techno jewellery’, the Zune seems more akin to an eighties brick-like television remote control.

It gets worse when you use it. Anyone who's ever had an iPod learns to love its ‘click wheel’ system of selecting tracks. The Zune apes the central round buttons, but adds two more – making it far slower and

more fiddly to operate; it has neither the finesse nor the functionality – a real shame. ‘Cool hand Cleasby’, *Hi-Fi World's* resident iPod expert, can scroll through 30 Gigabytes worth of music on his in a matter of seconds, and then – click-click-click – he's playing his track. The equivalent search action on the Zune is an altogether more cumbersome affair, taking more clicking and fiddling on those nasty cheap plastic buttons. Still, it pulls back in other ways, not least the screen. Big, bright, sharp and colourful, eyeing the iPod feels like looking through a letterbox by comparison. Better still, the deeper you get into the menus, the more the background zooms in – a clever visual trick.

The bundled software is surprisingly good, offering a nice colourful environment in which to manage your music library and browse tracks at the online store,



and every time you plug in the Zune via the supplied USB 2.0 connection, it synchronises with your music library automatically, if you want. The Zune also charges via USB, taking a couple of hours to fill itself with juice and another twelve to empty (an hour or two less than its rival), but switching the Wi-Fi on reduces this slightly, and watching video takes it right down to four. The software rips in WMA (192kbps max), MP3 (320kbps CBR) and WMA Lossless,

although – interestingly the Zune does play AAC, more of which later...

The Zune has some clever tricks up its sleeve. The built in RDS FM radio is nice, but it's real piece de resistance is its Wi-Fi capability. These means you can send tracks to other Zune users in close proximity, whereupon they can play them three times, but only within three days of receiving them. The system works well [see WIRELESS WORLD], but whether it represents a real advantage over the iPod in practical terms remains to be seen. And if this is proven to be the case, you can bet the next generation of iPod will have this functionality...

SOUND QUALITY

If the Apple has the Microsoft on the ropes in looks, style, size, weight, usability, software and sex appeal, then the Zune stands up



and thumps the iPod back in the sonic stakes. But it's not quite this simple. The Zune, you see, sounds better than the iPod 30GB by quite a margin, but for reasons I'll go into in a minute, few Zune-rs are ever likely to find out.

Load a 192kbps WMA or 320kbps MP3 into it, and it sounds good, providing you junk the supplied headphones of course (it goes without saying, buy a pair of Sennheiser MX-550s). It is big, beefy, powerful and confident in its delivery. You could call it the digital audio portable equivalent of a Harley Davidson motorcycle – its big-bore motor gives a lazy, effortless quality. Bass is strong and uncompressed. Switch to an iPod on 320kbps MP3 and you get an altogether cleaner, more antiseptic sound, without that thumping bass and sense of ease when called upon to go louder on transients. Indeed, you could almost call the iPod 'weedy' by comparison. Still, the Zune doesn't have it all its

own way, because when both are playing the same 320kbps MP3, the iPod is marginally better detailed, smoother up top and less splashy – the trouble is, it has nowhere near as much 'oomph' or get up and go. In the final analysis, the Zune is more musical.

Worse still for the iPod, when you load the Zune with AACs recorded on Apple's iTunes software (with its excellent MP3 and AAC codec), the Zune truly flies. Of course, the Zune software doesn't rip AACs, but if the files are on the PC, the bundled software will find them – and you can then squirt them down to the Zune, which then plays them with relish. Running 320kbps CBR AAC files (the best quality compressed option from iTunes), the Microsoft player suddenly becomes super smooth, very couth and detailed – as well being punchy and powerful. It really is a nice noise – bass is strong and taut, midband spacious, atmospheric, clean and detailed and treble extended and open. By comparison, the iPod playing the very same files sounds shut-in, sat-upon and breathless.

CONCLUSION

Microsoft's new Zune sounds fantastic, and shows the iPod's greatest weakness for what it really is. As Patrick Cleasby observed in his Buyer's Guide in December 2006, Apple's baby is getting less and less good in the sonic stakes. I hope the arrival of the Zune will put the cat amongst the pigeons, so to speak. Unfortunately though for Microsoft, I do not think their new baby is strong enough to deliver a mortal blow to the world's reigning digital audio portable champion. It's stronger in a couple of areas, but these alone don't knock the polycarbonate prince out for the count. It's also nice to "beam your beats" to fellow Zuners - but whether this is going to be the social revolution Microsoft would like to think remains to be seen. Indeed, all it takes is for the next generation iPod to sport a bigger (front panel sized?) screen, beefier amp and Wi-Fi, and the Zune is on the ropes – and you can bet Apple's working on these at this very moment. In the meantime, the iPod's superb control system and superior iTunes integration make it an altogether more effortless experience, and cooler looking too. Only more storage, better controls and slicker software will give Microsoft any chance of squeezing the Apple until its pips squeak.

RIGHTS AND WRONGS

A couple of years back, Microsoft wanted to make legally downloadable music as accessible as it could, so it came up with the PlaysForSure DRM (digital rights management) system. This is now up and running with Napster, MTV and Yahoo music portals, but amazingly the Zune equivalent, the 'Marketplace' doesn't use it! Instead, the Zune has a completely new system, with tracks purchased 'a la carte' for 79 cents each using Microsoft 'points' (as used with Xbox Live), which can be bought in \$5 increments. This works just like iTunes Music Store, so the tracks can be ripped to CD and kept as long as you like. Or there's the 'all you can eat' Zune Pass, which lets you download unlimited tracks for a fixed fee, and play them for a fixed time, after which they're gone – unless you renew your Zune Pass. By and large, the system works as seamlessly as the iTunes Music Store, because 'Marketplace' store is an integral part of the Zune software, but right now the implementation is poor - searching isn't easy and the choice isn't great - bizarrely, songs currently unavailable for download are listed! Microsoft says there are 2 million tracks, but even big nineties rock bands like REM are nowhere to be found. If the choice of content broadens, the iTunes Music Store will have to start worrying, but that may take some time.

WIRELESS WORLD

The Zune's unique selling point is its facility to 'beam your beats'. Imagine that you see a friend on the train, also using his or her Zune. You can select a song, press 'send' and the Zune then looks for all other 'receiving' Zunes in the area. It displays a list, you scroll down to your friend, press 'send' and the song arrives on their Zune about ten seconds later, for free. They can then listen to it three times in the next three days, after which it goes 'dead' and they can't access it. It's a brilliant idea, but whether it's going to revolutionise music as we know it is debatable – especially if the Zune can't do better than about 20% of the market (when there will be so few Zunes around to 'beam their beats', that the facility won't be of much use). For your information, in its first week on sale in the States, it scraped just 9% of the market share. So we're remaining 'agnostic' on this one – the system works well, and is a nice way to get your friends into new music (and vice versa), but whether it's going to send shockwaves around the music listening world is another matter...

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- UK launch date to be confirmed

VERDICT

Excellent sound and interesting Wi-Fi functionality, but let down by styling, feel, controls and file format restrictions.

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MBL 111 RC



'Dieses ist nicht ein Dalek aus Deutschland?!' Of course not! This is the MBL 111RC loud-speaker. Here at the shop, we have the even more amazing looking full-range model, the MBL 111E Radialstrahler-Hybrid System 1 loud-speakers available for audition. Also available for demo too is MBL's top of the range CD Player, the MBL 1531. 'Wirklich wundervoll, yah...!'

Basis Audio 2500 Signature



We've just taken delivery of the latest Basis Audio 2500 Signature Turntable, as if there are not enough turntables at Walrus already! No doubt some of you might think it looks and sounds just like another brand of fashionable turntable in acrylic these days! Well, you'll be wrong. For an example, what look like 4 ordinary aluminium legs turn out to be very sophisticated, user adjustable, oil-damped suspension towers...



Hørning Agathon Ultimate



Remember when you were taught never to judge a person or an object by its look? The Hørning Agathon Ultimate is a classic example. The technology involved with these loudspeakers is so complex that we decided its best for you to read about them on the web. No doubt you'll also come across the excellent reviews too. Wait till you see the back of the loudspeaker; looks nothing like the back of your fridge...



The Music First Audio Passive Magnetic Preamplifier has been winning awards and accolades for the last year or so. Walrus was one of the first dealers in the UK to demonstrate its virtues.



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Emille KI-240

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The new Shanling CD Player, CDT-500, is visually so striking that we thought it best for you to come and see it in the flesh. Meanwhile we can show you what the national flag of China looks like!



Walrus' New Mascot

"a really good pair of headphones supplies insight that even the finest loudspeakers struggle to match..."



dominic todd

This decade has been the decade of the iPod – of that there is little doubt. Yet with the unprecedented success of the portable jukebox there's also been another winner: humble headphones. Whilst there has always been a market for higher quality compact headphones or earphones, it's never been as populated and profitable as right now.

Yes, we've had portable cassettes, CDs and MiniDisc players before, but their ownership hasn't been as high as the ubiquitous MP3/iPod and nor has the average price. We not only like our MP3s and iPods in this country but we also like the expensive ones – typically between £200 –£300.

Of course, another factor helping the headphone market is the general poor quality of the supplied plugs. Apple's, in particular, do the iPods no favours at all and it's a wonder the players became market leaders at all given the sound limitations they impose. Still, what with magazines like this and, of late, even the lads and lifestyle mags' all advocating the use of better quality headphones, we're now seeing a healthy headphone market.

Which to choose? Well, ever since I remember, we've been plugging the Sennheiser MX500s, and their recent successor the MX-550s. These little in-ear phones look nothing special, even in the white finish that was finally launched last year to match the iPod. Yet these £25 'phones are probably the most cost effective upgrade you can make to your MP3/iPod. Dynamic range, transparency and purity of treble all take a major step forward from the typical standard fare.

Of course, there's nothing new here. Like I said, the MX500s have been recommended for years now.

What has changed, though, is the increasing amount of more expensive earphones. Incredibly, Sennheiser alone now make an incredible 25 variations of in-ear headphones. Perhaps the most popular step up from the MX500s are the CX300s. At £40 they're twice the price of the MX500s but, as we'll see later, by no means the most expensive of ear-phones. Using what's known as "ear-canal" technology, the CX300s pipe the sound to the most receptive part of the ear. The sound is, literally, more direct and also more resistant to ambient noise too. If your journey to work involves noisy public transport then these are well worth having – just don't wear them whilst riding a bike!

Yet, for all their prolific range of earphones, it's not been Sennheiser that's moved the market on, but the likes of Etymotic and, especially Shure. Both these manufacturers promoted ear-canal 'phones, long before Sennheiser jumped on board. Neither company also seemed to be overly concerned by the perceived maximum price that could be charged for a pair of tiny earphones. A price of £200 for a pair of earphones would once have seemed like a joke, but that's exactly what both Etymotic and Shure charge for their ER-4S and E4C models. Take a listen to either, though, and it's hard not to come away mightily impressed.

Like the cheaper Sennheiser's, they both feature different sized sleeves to fit different sized ears. The first aspect to strike the listener is just how deep the bass is from either of these earphones. One simply doesn't expect such deep bass to emanate from such a tiny transducer. Less surprising, but still mightily impressive are the broad, engrossing soundstages, and finely detailed treble responses. If you've not heard either of these, love your music on

the move, and can afford them, then both are well worth a listen – just don't lose them! For those really wanting to push the boat out, there are always the Shure E5Cs at up to £500...

For all the advancements made by earphones and small headphones of late, a similar level of success doesn't appear to have translated to the full size designs. As a lover of headphones at home myself (I use electrostatic Sennheiser HE60/HEV70s), I'm surprised that more people don't take advantage of their benefits. Yes, they're obviously useless when you have company, but for solo listening a really good pair of headphones supply peerless sound staging, transparency and a level of insight that even the finest loudspeakers struggle to match. Best of all, there's no sweet spot, no complaints from the neighbours and no issues regarding room acoustics. Perhaps as more users try better headphones on their MP3s and iPods they may be tempted to don cans at home, too.

Sadly, Sennheiser don't make any truly high-end headphones any more, but their £300 range topping HD650s are still remarkably good and, when used with a decent headphone amplifier, will give a decent pair of £1000 standmount 'speakers a good run for their money. Yet, even in these times when it appears that everybody listens to music on the go and then watches (flat screen) TV at home, it's good to see that there are still some seriously desirable headphones out there. Grado's mahogany clad RS1s may look a little odd and, at £750, are far from cheap, but boy do they sound good.

If everyone got a chance to listen to headphones like these, then perhaps we'd start to see some of that ear-phone success move towards the home market. Plug over! ●

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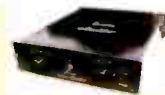
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"the 'retro' look is now creeping into the hi-fi arena, just as it has done with cars..."



adam smith

The variety of styling exhibited by some of the equipment that we have received for review in the office here over the past couple of months has made for a few discussions and resulting opinions, most of which were quite different. As with so many things in life, beauty is indeed in the eye of the beholder, but at least we should be thankful that hi-fi designers out there are doffing their respective caps in the direction of aesthetics for all of our hi-fi equipment. This was not always the case...

Back in the good old days when the world was black and white and the term "high fidelity" was in its infancy, all of the hard work went into the innards of an item. As the equipment in question would invariably find itself housed in an enclosure/sideboard/drinks cabinet, not too much attention was paid to styling. However, when the hi-fi cognoscenti finally realised that these big, resonant boxes were hardly the ideal resting place for their Garrards, Leaks, Ferrographs and Quads, the idea of separates was properly born.

Even so, this initially consisted of a hastily-constructed teak sleeve into which the equipment was slid, and it was not until the 1970s that truly separate equipment became more common. Now this, of course was the era of the big silver beastie and a race then ensued to see just how many knobs, buttons, switches, levers, meters and even oscilloscopes could be crammed onto the front panels. Part of this was down to the desire to look 'professional' and, leafing through a few old *Hi-Fi Year Books* reveals some amazingly over the top designs. I suspect that the dreaded 'Wife Acceptance Factor' term was first coined around this time...

That said, I must confess to having a soft spot for some of the

systems that were so popular in the 'decade that taste forgot'. The Akai GX-C75D cassette deck from this era that I once owned had two huge meters, six level control sliders and enough lamps to illuminate a Christmas tree. I also have fond memories of the big rack system owned by the father of one of my school friends which had no less than nine glorious analogue meters spread across the four components of which it consisted!

Fortunately, I think most would agree, this did not last and we then entered the era of 'madcap eighties minimalism'. This swung the pendulum right to the other end of the feature scale and did away with anything unnecessary like tone controls, scratch filters and output meters. Unfortunately, a number of manufacturers also included spare inputs under the heading of 'unnecessary fripperies'! Quite a few cottage industry firms started to flourish at this time as, aided by the hi-fi magazines of the day, people finally started to prize sound quality over features. Consequently it became possible to buy Rolls Royce sound quality for Vauxhall Cavalier money. Sadly this was often combined with Austin Princess build quality but I suppose something had to give.

Things settled down to the middle ground more by the end of the last century - the last decade that is - and it seems now that we have reached a sensible compromise in terms of form and function for most of our equipment. Whilst, happily, there is still the odd piece of wacky wonderfulness to keep us all interested, even the most sensible designers do generally seem to think 'outside the box' more. As an example, it is finally possible to buy separates from the same manufacturer that, when sat above

one another in a rack, have all their power LEDs lined up and glowing at the same intensity. This is a very minor point in the great scheme of things, but it is a nice touch and you would be surprised to how many people it matters.

Loudspeakers are another separate design entity that have assumed an astonishing range of shapes and sizes. As with separates, though, it is often possible to date a unit merely by taking a close look at it. Huge teak box with lots of drive units - 1970s. Smaller box with two drive units, one of which is some sort of exotic plastic - 1980s. Of course, some of the most adventurous designs in the industry have been found at the 'speaker end of the hi-fi chain and there have been some real eye-openers over the years.

However, the real difference here is that these weird and wonderful forms from the loudspeaker design drawing board generally stem from a desire to overcome an acoustic obstacle in order to improve performance. I somehow doubt that Thorens would claim that the delightful blue tint to the acrylic base of the TD2030 turntable reviewed in this issue is for sonic gain, but the huge spikes protruding from the rear of the seminal B&W Nautilus are there for valid and carefully calculated reasons.

A final interesting observation is how the 'retro' look is creeping into the hi-fi arena, like it did with cars. Quad's latest top-end valve amplifiers, the QC24 preamplifier and II-forty power amplifiers hark back to the original QCII/22, and the latest Slim Devices 'Transporter' music server even has digital representations of VU meters on its front panel! Mark my words, we could all be back with huge teak sideboards in our lounges before too long if this continues...●

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"forget Blu-Ray and HD-DVD - the future of digital audiophile hi-fi is broadband..."



paul rigby

On the face of it, the future of quality music reproduction is quite depressing. After all, CD has ruled the roost for a long time. There was an audiophile backlash of sorts - we saw DVD-A and SACD enter with a fanfare, stage left, and for those of us who care about the quality of music, this introduction seemed like the first brick in the wall of a brave new audio world.

Instead, what happened? We're now watching both DVD-A and SACD leaving, slightly shocked and disorientated, with their tails between their legs, covered in rotting veg, and broken eggs, stage right. Am I angry that the music industry didn't do a better job with these formats? That two audio formats existed at all when one might have had a chance and that ridiculous political and revenue-screwing posturing caused confusion amongst recording artists, studios and, most of all, the retail sector? Damn right I am!

So what, in fact, took CD's place as the dominant music format? Lossy downloads, that's what. Instead of moving up the ladder of quality, a trap door appeared below and sucked us, ladder and all, into an iPod-lined hell. If it wasn't so funny, I'd cry. I still might.

However, like the rotation of your turntable, what goes around, comes around. There are lessons in history that we are replaying right now, albeit in a shiny and rather more plastic manner, that might still save us all. We have been here before and here's the links: for vinyl, think Victorian live concerts; for CD, think the 78 and for

iPod, think the 45.

Before the introduction of the 78, getting up off your backside and strolling to a concert was the thing to do. Fans of the concert were the 19th century version of the audiophile. Music could be heard in all its glory. Then that dreaded word 'convenience' led to an explosion of 78-playing contraptions. Why get wet going to concerts? Why suffer sitting behind the woman in the big hair so you can't see the stage? Now, the 78 would make life simpler, the entire orchestra would be present in your living room and all for a fraction of the cost. Different convenience-based reasons surrounded the CD but, like the CD, the 78 restricted sound quality.

Evidence R&B artist, Ivory Joe Hunter, the subject a recent reissue from the specialist label, Ace Records. Because Ivory Joe was a singer-pianist he would quite often lean into the microphone. This artist had a voice to shake the foundations of the Tower of Babel which meant that his recordings experienced excessive distortion, which remained on the studio acetates. "The acetates revealed a level of passion in performance that the 78 masked," said Tony Rounce, archivist for Ace. "We found more music on the original acetates. This music was recorded hot and loud but Ivory Joe caused the VU meter to go into the red and gave the studio engineer apoplexy. By the time the processed music arrived on a 78, you didn't necessarily notice that because it was a fairly primitive medium from a hi-fi point of view. So you didn't hear that he was screaming and shouting."

The 45rpm vinyl appeared when the 'kids' wanted some element of portability and specificity. The portability became lugubility with the Dansette record player and listening to music on the move became the jukebox. Though, with the iPod, you take the music with you on your travels. For the jukebox, you travelled to the music. For the above, the end product, the audiophile nirvana, was the vinyl album.

We are currently facing a similar position. After the 78RPM disc came vinyl. If history is to repeat itself, our next principle audio format will be 'the one'. That is, Blu-Ray or HD-DVD. However, we've been here before and I'm not convinced. While both will achieve success as DVD-killers, due to the HDTV buying frenzy, inherent advanced video facilities and associated support via Sky, as an audio format, both are destined to go the same way as 16rpm vinyl in the '50s - down the toilet. As the 45rpm vinyl single was a cousin to the 'ultimate music experience', the vinyl album, I wonder if tomorrow's equivalent 'ultimate' will derive from the digital download destined for iPods?

I believe that future audiophile music will also eventually arrive via this method. Maybe we will have to wait for the broadband pipe to widen until the next generation of ADSL (i.e. ADSL2+) arrives in the near future to improve possible audiophile data download speeds from up to 8Mb/s to up to 16Mb/s or ADSL3+ with speeds of up to 54Mb/s in 2010 (that's only three years away). Ultimately, you can forget Blu-Ray and HD-DVD - the future of digital audiophile hi-fi is broadband. ●

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World Radio History

"audiophiles realise the switch to AAC+ is the only hope of receiving better quality on DAB..."



steven green

The first thing Ofcom did following the announcement that DAB is adopting the AAC+ audio codec was to hold a public consultation titled, "The Future of Radio". Perfectly reasonable in the circumstances, and as Ofcom publicly encouraged the broadcasters to investigate ways of adopting the new standard last year, you would have expected that the consultation would have laid out Ofcom's plans for switching to AAC+ as quickly as possible. Unfortunately, the new codec wasn't the main topic of the consultation – in fact it wasn't even mentioned once! No, in what was probably far more of an attempt to bury bad news than anything else, the consultation (which has now closed) was about switching FM off in around ten or more years' time.

The problem is that Ofcom and the broadcasters are now petrified that there will be a "crisis in consumer confidence" if the general public finds out that there's a new DAB standard on the way that current radios can't receive, and that this will affect sales, especially during the all-important run-up to Christmas when 50% of all portable radio sales take place.

Ofcom has also published the advertisement for the new national DAB multiplex licence, and for the same reason of avoiding a "crisis in consumer confidence" it stated that applicants must use the MP2 codec, which was very short-sighted in my opinion – I didn't expect them to propose to use AAC+ for all the stations on the new multiplex, but I think they should have saved a small amount of capacity to allow AAC+ stations to launch two or three years down the line. However, in contrast to Ofcom's actions, comments made

by two relatively senior members of the DAB industry were found on an Internet blog, which showed that the broadcasters are far more interested in using AAC+ than they or Ofcom are letting on officially.

Personally, I think Ofcom is making a fuss about nothing anyway, because even when AAC+ stations are launched the DAB receivers that can't receive them will just carry on receiving the same MP2 stations as they have always done. Furthermore, the vast majority of listeners wouldn't even be aware that any new stations have launched, because the new channels wouldn't show up in the list of stations; so why they expect there to be a consumer backlash about stations that people don't know exist, I really have no idea. Perhaps they've been watching too many of those psychic programmes on TV?

Ofcom didn't have any qualms about allowing the pay-TV operator Top-Up TV to launch its service on Freeview even though people wouldn't be able to receive it on existing set-top boxes – and Top-Up TV channels do show up in the channel list and the electronic programme guide. Despite the BBC complaining that Top-Up TV would "confuse consumers" and affect sales, Freeview sales have gone from strength to strength. Also, if there were the capacity available for it, I have no doubt that Ofcom would allow broadcasters to launch HDTV channels on Freeview straightaway, which again, existing set-top boxes would not be able to receive.

I think consumers are a lot savvier about format change issues than Ofcom and the broadcasters would give them credit for; formats change very quickly as a result of the proliferation of digital technology, and consumers have come to rightly

associate changes in digital formats with advances in technology, so the vast majority are positive about such changes – so long as there isn't a format war, and there isn't in this case. DAB receivers aren't the expensive items they once were, either. For instance, the cheapest DAB radios are only £30, with decent quality models starting at £50; and with sales increasing you'd expect this latter price to have fallen to around £35-£40 within the next two years, so it shouldn't break the bank to buy a new one.

The people that would have most cause for complaint are people who have bought expensive DAB tuners, but audiophiles are disproportionately listeners to classical music and BBC Radio, and I can't see the quality of Classic FM being reduced (the chances of it disappearing on DAB are nil), and the BBC will probably be the last to start using AAC+; so most owners of DAB tuners won't be affected for some time to come. Of course, if the new commercial stations that are launched using AAC+ are of no interest, then there's absolutely no point in buying a replacement anyway. Ultimately, audiophiles should realise that the switch to AAC+ is the only hope of receiving better quality on DAB, so opposing the change itself would just be arguing in favour of keeping the status quo.

Overall, although Ofcom's actions suggest that they're playing things safe, it should be remembered that they're a "light-touch" regulator that "promotes self-regulation wherever possible", and the comments made by members of the DAB industry on an Internet blog were far more revealing about what's likely to happen in future; and in my view, I still think we'll see AAC+ stations launched in the next few years. ●

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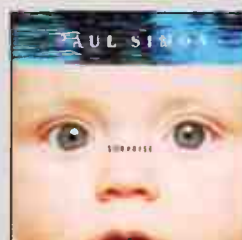
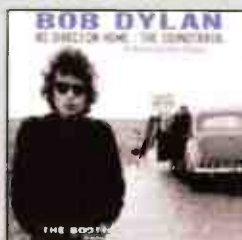
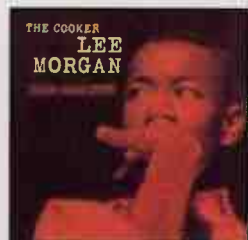
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World Radio History

"nowadays, there are no compelling new technologies in high quality audio..."



noel keyword

As we are constantly told, the UK economy has been robust for many years now; the last big recession was circa 1991. After fifteen years or so UK plc looks stable and relatively prosperous, both features that make it an attractive marketplace for foreign manufacturers. As a result I cannot remember a time when so many producing hi-fi overseas were trying to access the UK. This is wonderful news in many respects: never has there been such variety and such high quality. I just hope it keeps going, because at present there are some ominous warning signs in the UK economy suggesting a slow down that, hopefully will not become a melt down...

Is it this year's unseasonably warm weather that is keeping people away from the shops in the run up to the festive season? The torrents of rain this year have put a damper on things as well, but then this again is something most of us can cope with. All the same, there's no doubt that retail sales are very slow, both in audio (we are hearing) and in the high street generally. I can't help worrying that rises in indirect taxation, which are significant and getting ever more vicious if you run a motor vehicle, plus rising council tax bills, soaring gas and utility bills, rising mortgage interest rates and absurd house prices will in the end start to bite hard in this country.

It would not surprise me in the least if at present this was progressively reducing casual, impulse purchases on items such as CDs and DVDs, items of hi-fi and anything else that can be deferred because of its non-essential nature.

In the past, the consumer electronics market has relied upon innovation on a global scale to stimulate sales. One of the biggest was the arrival of CD of course, but that was back in 1983. Since then, the technological landscape has become increasingly fragmented and complicated, with competing technologies making the way ahead look increasingly unclear. We just don't have big sales drivers these days.

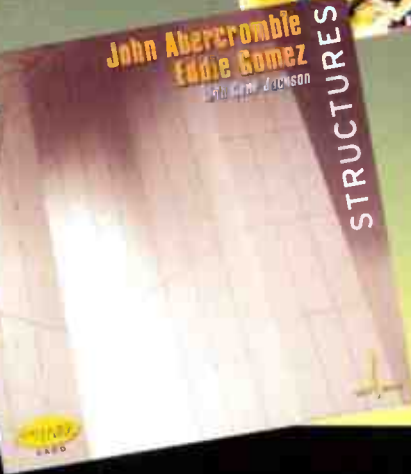
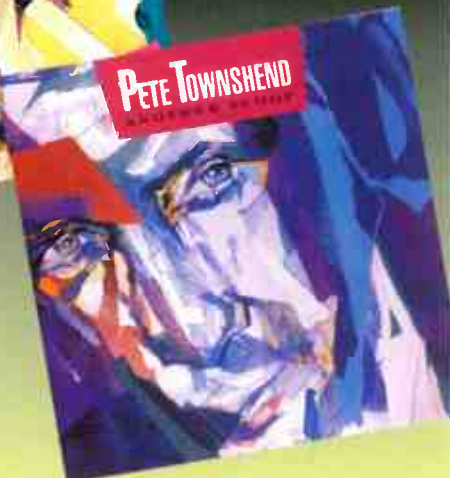
There are no compelling new technologies in high quality audio nowadays, and those that exist at all rarely have a clearly defined role to play, nor a clear set of attributes in the way that CD once did. Because of this, both successors to CD, DVD-A and SACD, seem to be on their way out, even though they have much to offer. Neither proved an attractive technology, as much to the music industry that seemingly put little effort into their promotion, nor to a confused buying public. It could just be that Blu-Ray will be used for music in future, because it has been specified to carry up to six channels of 24/192 digital audio, but I have my doubts here.

You see, the music business seriously geared up for surround-sound in the late 1990s, which requires heavy investment in the studio, but it hasn't happened in the home. Rather, 'home cinema in a box' is as far as buyers have been willing to go in allowing all this into their home. This will blunt the attraction of Blu-Ray as a music carrier, as to exploit it you have to install surround-sound - and that just isn't an option for most people. Full on surround systems are very intrusive.

Worse, Blu-Ray will be in competition with HD-DVD to be the format of the future for High Definition pictures. I am hoping Blu-Ray will be a far less complex set up proposition than current DVD based surround-sound systems, but even if it is I am unsure consumers will ever rush out at Christmas to buy such a technological monster for their home. Let's face it, when CD was introduced, to get into the latest in digital technology you merely had to buy a player and a few discs. To install surround-sound and video properly you must re-plan and even rebuild your lounge. No wonder it hasn't taken off.

The iPod is a simple to understand, affordable and self-contained proposition - much in the way a CD player was. Hardly surprising then that it has been such a big seller for so long. This is where music sales went to, at least for Britain's younger buyers - especially those struggling to pay off large mortgages. Music on the move has never been so popular, it would seem, and these items will surely move across shop counters before Christmas.

The portable market apart, there's every sign that spending will be slow on Britain's high streets this Christmas, in hi-fi as in other sectors. Britain's market, one that currently looks so attractive to those overseas, may be slowing down. I hope that I am wrong, and that next year will find Britons no less prosperous than the last, but somehow I am beginning to suspect that too much money is being squeezed out of us all for it not to have a serious affect upon the nation's well being in 2007. ●



**Blind Willie McTell
Statesboro Blues The Early
Years: 1927-1935
Document**

This month we're awash with CDs, themed around how record labels place their personality on a record. With Document and this McTell reissue, that means taking an original recording and trying to improve its sound from a poor quality source. "Some of the 78s were recorded by another colleague using Cedar then the final clean-up was made by me," explained Document mastering engineer Alan Taylor. "Other tracks were in our archive so had been processed years before. Some of them were new tracks, sourced from dedicated collectors. The problem was both trying to get the best out of the tracks and for them all to sound similar in quality. Difficult because there were examples that were in poor condition. Even for those earlier processed tracks, the task had not been completed despite improvements in the original sound. My task was to make the music more mellow and to move to a point where we think the music would have sounded when it was originally recorded."

Taylor is adamant that the result has more to do with the fact that he's a blues fan and, hence, has a more sympathetic ear to the result. And this is the crux of this month's column. Music is in the ear of the beholder. McTell certainly had an ear – he was sheer blues class. He

was an incredible guitarist and an excellent singer. He also worked for different labels and, because of politics, recorded under various names such as Georgia Bill, Blind Sammie, Hot Shot Willie or just plain Blind Willie. McTell, especially in these early recordings – surely the highlights of his career – shows both power and the ability to tell stories. The tracks are superbly 'processed' by Document giving the final work both clarity and immediacy. Highly recommended for all guitar blues fans.

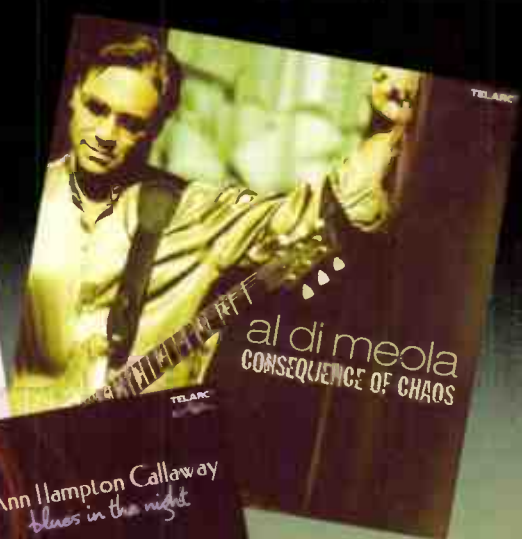
**HAZELTINE-MRAZ TRIO
Manhattan
ABERCROMBIE-GOMEZ-
JACKSON
Structures
Chesky**

Chesky can undoubtedly be classified as 'audiophile' both in how it records its music and in its presentation. Both these disks are Hybrid SACDs, both of these recordings were recorded in a church, a favourite location used for its unique acoustic properties. "Both were also recorded using a single point microphone," added co-founder for the label, David Chesky. "We also like to add as little processing to that recording as possible. We're really going for transparency."

Chesky said that the recording engineer takes a couple of takes for each song and takes the best from each to form the final CD. "We have

a special soundfield microphone that we've modified which records in surround. The microphone is split into capsules. You have the M capsule which is the mono signal, S for the side signal, W for the pressure and Z for the height. By adding the capsules together you can get a three dimensional sound signal. If you listen to our recordings, you feel that you're in a real space."

The initial recording is created for the SACD, which is then downsampled for the CD layer on top. As for the resultant sound, yes, you do feel as though you are sitting alongside the musicians sharing their own 'space'. There is a certain intimacy between musician and listener on both of these recordings. In the Hazeltine-Mraz Trio, the group perform music from the likes of Dave Brubeck, Jimmy Van Heusen, Harold Arlen and Ennio Morricone. As you might expect, the percussion provides the biggest shock. Its tonal response is very 'real' – but that's probably because we're all used to the drums being the main studio-processed instrument in any band. Both bass and piano sound remarkably free with room to manoeuvre and the trio work effectively and efficiently together. The trademark church sonics are also immediately apparent and work well. There is some complex stuff here but the artists take the musical exchanges in their stride, skipping through the tempo changes with ease.



PETE TOWNSHEND
Scoop/Another Scoop/
Scoop 3
SPV

Townshend has been the target of a major reissue programme of late. In addition to the headline CDs, other albums include 'Chinese Eyes', 'White City', 'Psychoderelic', 'The Iron Man and Deep End Live!'. Townshend's Scoop projects are, however, the albums which really get under his skin because they present the man at his most vulnerable. Townshend takes each track, often the bare bones version of a Who classic or a solo outing which include some tracks such as 'Tough Boys' on Scoop 3 – which changed their names in the final release ('Rough Boys', in the latter case) or, on the same album, Townshend's 'All Lovers Are Deranged' with the original music he composed for it as opposed to the music that was created for him via Pink Floyd's David Gilmour. Some of his stripped tracks are surprisingly effective. 'Athena', for example, is an excellent piece of work. It is also interesting to hear Townshend's stripped version of Who songs which are normally sung by his friend and band colleague, Roger Daltrey.

That there are so many of these songs available to us, after all of this time, via personal archives, is not such a big surprise after all. Townshend used home recording technology beginning with the first songs he wrote for The Who in the mid 1960s. He may have been one of

the first musicians to actually 'write' songs on multi-track recorders and present them to his band, rather than simply relying on paper and pencil, simply because Townshend can't write music. Hence, this so-called problem made the recording process doubly important for him. SPV has allowed the music to speak for itself, for good or ill, in a stripped format with varying quality. This personal and fascinating diary should be grabbed at the earliest opportunity by all Who fans.

JOHN PIZZARELLI
Dear Mr. Sinatra
ANN HAMPTON CALLAWAY
Blues In the Night
AL DI MEOLA
Consequence Of Chaos

As Chesky, SPV and Document have their own ways of doing business, so Telarc has its own signature method too. Michael Bishop, Senior Recording Engineer for Telarc says, "the approach for jazz is in the same approach I take when recording classical – in the type of equipment I use, the attention to detail, the signal path and the room type. The standard group process is to multi-track a performance with instrument and performance isolation. It's hard for a group to swing if each member is in four different rooms; with little or no eye contact the only communication is by way of headphones. They've been taken out of their natural environment and put into something artificial."

Bishop prefers the 'live' recording approach in as large a room as possible, although acoustically modified. Difficult, today, as big studios have been busy closing down. Quality kit is used. Multiple mics record the music and Bishop depends on the bleed between the microphones to fill in the gaps. This is similar to how jazz was recorded from the 1940s-1960s. All these albums have utilised this method which gives the recordings both big and intimate sound. However, there's certainly a freedom and vibe in the performances with, in Pizzarelli's case, an in-the-Capitol-studio-during-the-'50s-feel and, with Callaway, her night-club-Cleo-Lane-a-like approach. All three albums are highly recommended. Pizzarelli interprets the Sinatra songs 'his way', something Jamie Cullum summarily failed to do on his album, 'Twentysomething', for example. Callaway has a deep, husky even, arguably, 'black' voice for a white gal – she also has obvious power which she restrains for effect during ballads whilst Di Meola's release is not his best but an eclectic overview and an excellent entrée in his music. **PR**

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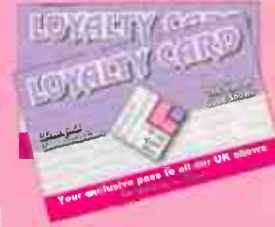


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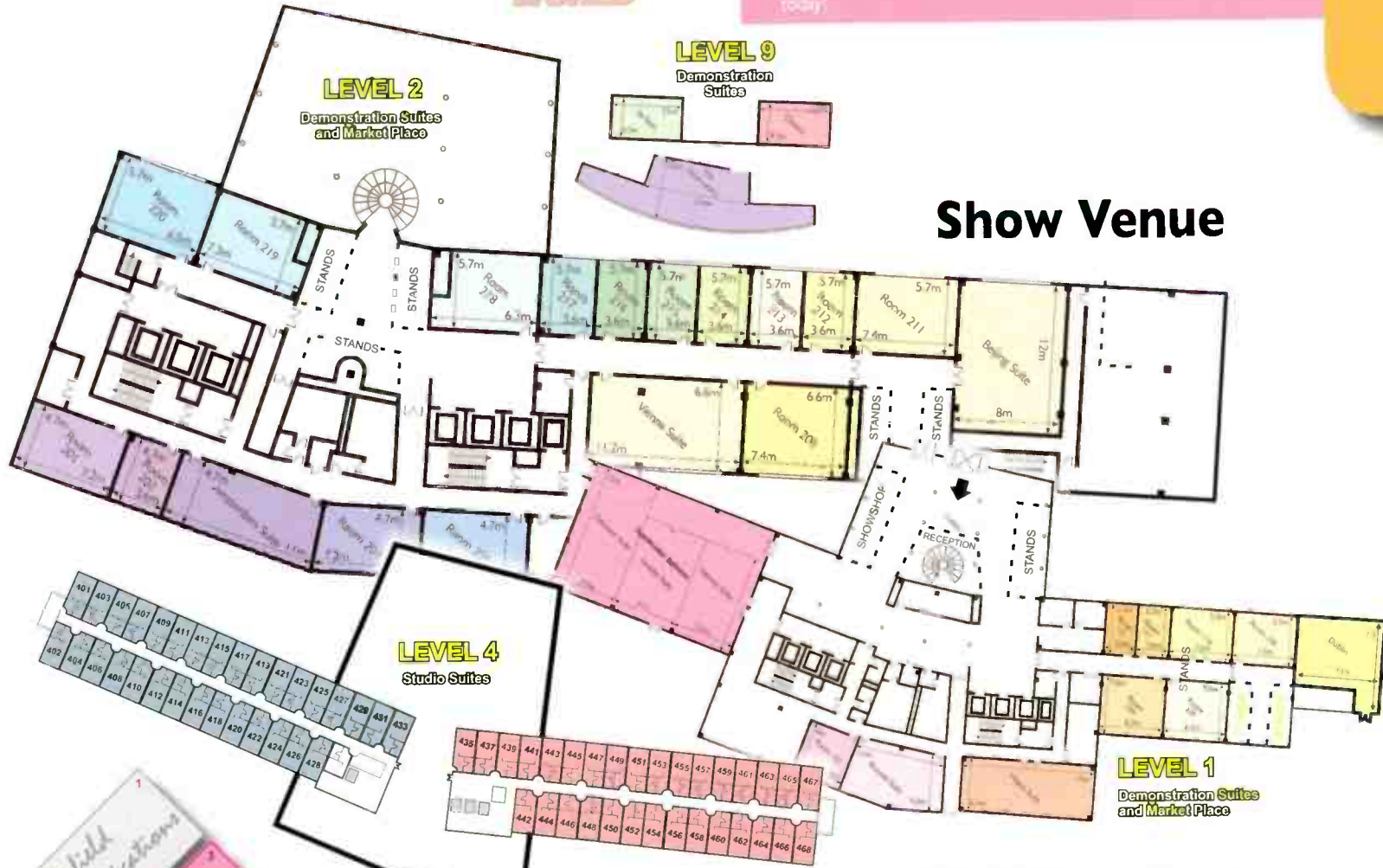
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Transmission Lines are often considered the true enthusiast's speakers. Peter Comeau looks at their heritage.

Last month we showed how the port of a bass reflex loudspeaker helps extend output at lower frequencies by exciting a Helmholtz resonance in the air volume of the cabinet. The mass of air in the port is, if you like, acting as a passive drive unit that augments the output of the main bass unit.

Now it doesn't take a leap of imagination to translate that mass of air in the port into a second passive drive unit. We call this a Passive Radiator (PR) or Auxiliary Bass Radiator (ABR). The PR can be as simple as a drive unit without a magnet and voice coil, in fact it is quite common to use the same cone and surround as the active bass unit. You can achieve better efficiency and extension by designing a PR specifically for the job, however, and there are several software programs that can help you do that.

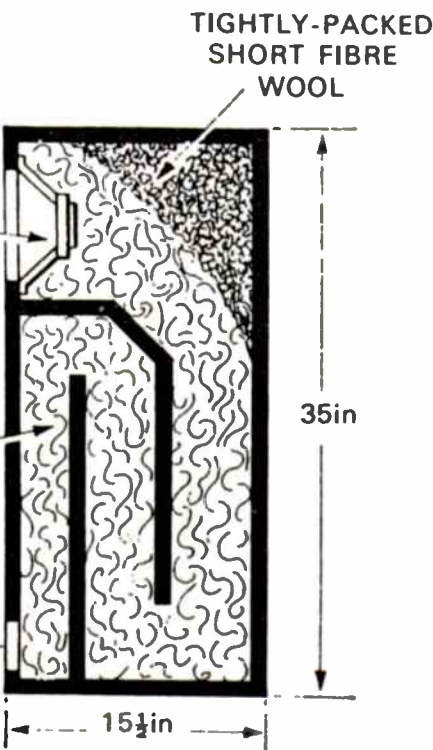
Now that we have shown that the port or PR is behaving as a drive unit, albeit a passively driven one, why don't we make the port or PR the drive unit proper? This is what happens in a bandpass enclosure where the port or PR provides all the bass output from the system. Fig. 1 shows a cutaway of a bandpass enclosure and its response.

So we can use a bandpass enclosure to provide bass without the necessity of a crossover. There are downsides to its use in hi-fi, however. For a start the filter slopes approximate to 18dB/octave at each side, better than a vented box but worse than a closed box and,

remember, you will need greater overall enclosure volume than an equivalent closed box system because of the added front enclosure. The front enclosure also contributes considerable ringing artefacts and pipe resonances outside the bandpass response, all of which are clearly audible, and can only be controlled using considerable amounts of enclosure damping which reduces system efficiency. The end result is that you don't often see bandpass enclosures used in high performance hi-fi systems.

THE QUARTER WAVE LINE

There is another, high efficiency, way of using a port in the box to provide bass output and that is the Quarter Wave Line. This type of enclosure utilises a pipe resonance to augment output. The principle is well known in musical instruments where a column of air in a tube is excited at one end with the output appearing at the open end of the tube (an organ pipe



Baileys original Transmission Line speaker.

is probably the best example).

If we leave the line relatively undamped then the resonance, where the length of the line is a quarter of the wavelength, is easily excited and the output from the open end of the pipe is fairly prodigious. In addition the mass load on the driver at system resonance is such that the cone displacement is small for substantial overall output.

However, before we get too excited, the fundamental pipe resonance is not the only excitation. Harmonic modes occur at multiples of the pipe resonance, also at a very high level, and these extend right up into the midrange where they can prove extremely troublesome. Adding damping to the walls of the pipe can reduce the level, and hence audibility, of these modes but the efficiency of the system is also reduced. Similarly, as the most objectionable mode is the third harmonic, mounting the driver up to a third of the way down the line from the closed end will

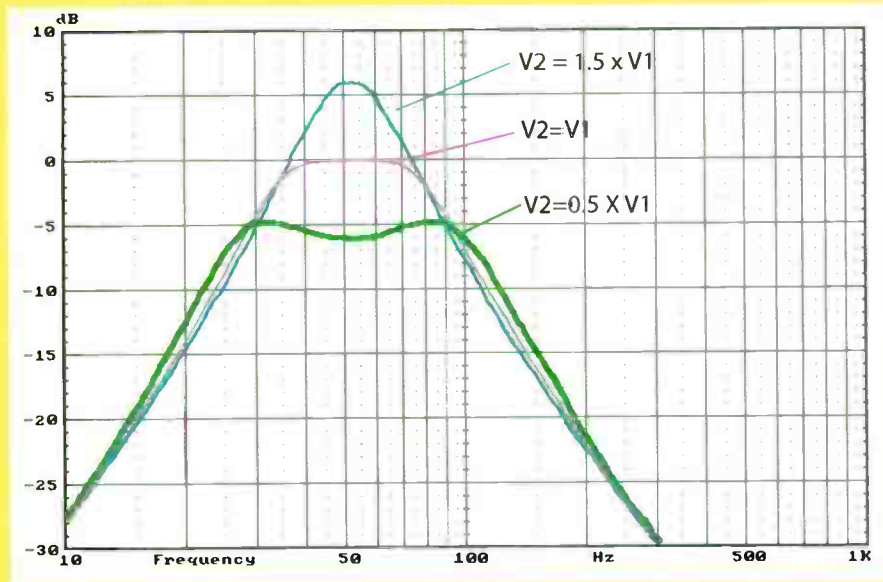
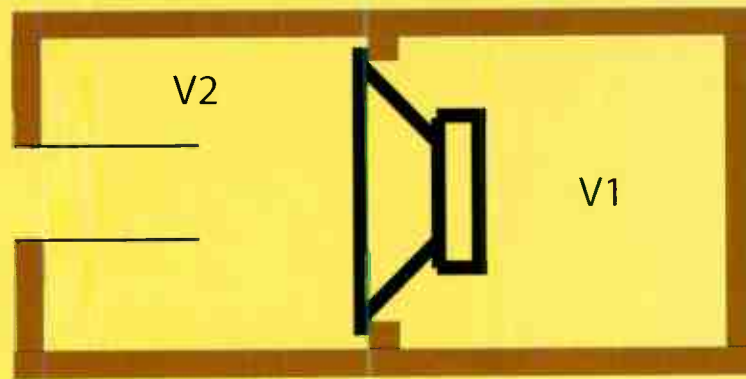


Fig.1 BandPass Bass.

A BandPass enclosure is a special type of bass reflex where the active drive unit is loaded by an air volume at the rear and front. The rear volume can be a closed box or a vented box (Bose have a patent on the latter principle) whilst the port in front of the drive unit provides the main output.

You can see that the port acts as a filter in front of the active drive unit and has the typical bass reflex performance with a system resonance positioned higher in frequency (blue curve). By judicious juggling of the port area and length, enclosure volume and drive unit characteristics we can flatten the main peak to provide a broader 'bandpass' output (green and purple curves).

avoid undue excitation at higher frequencies.

One variation on the quarter wave line, which made its way into commercial designs from Castle, is to 'tune' the open end of the pipe by restricting its radiating area. Various DIY methods actually use a port tube but Castle's method was more ingenious. By mounting the open end of the pipe slightly above a plinth the radiating area became the gap between the plinth and column walls, and the gap could be 'tuned' to lower the Q of the LF output.

One aspect to bear in mind with quarter wave loading is the length of line required for a truly extended bass response. The wavelength at

30Hz, for example, is 12m requiring a 3m line for efficient output at this frequency – a rather large cabinet ensues! A more common use for shorter length quarter wave designs is to bolster the bass output below 100Hz from full range drivers which typically have weak bass performance and therefore need all the help they can get.

TRANSMISSION LINE SYSTEMS

The consideration of line length, and therefore large speaker size, brings us neatly on to the Damped Line system more commonly known as the Transmission Line speaker. TL speakers are a cross between a reflex and a quarter wave pipe. At first this

seems an odd combination, neither one nor the other might appear to be a bit of a bodge. And it's true that the 'science' of TL speakers is not at all exact. Only by constructing and experimenting with a TL can you begin to get reasonable results – doing things 'by the book' doesn't often work anywhere near as well as expected.

The concept behind the true transmission line is founded on the principle that the output of the drive unit is completely absorbed, down to all except the lowest frequencies, throughout the length of the line. This concept has rarely been put into practice – the B&W Nautilus being just about the only commercial

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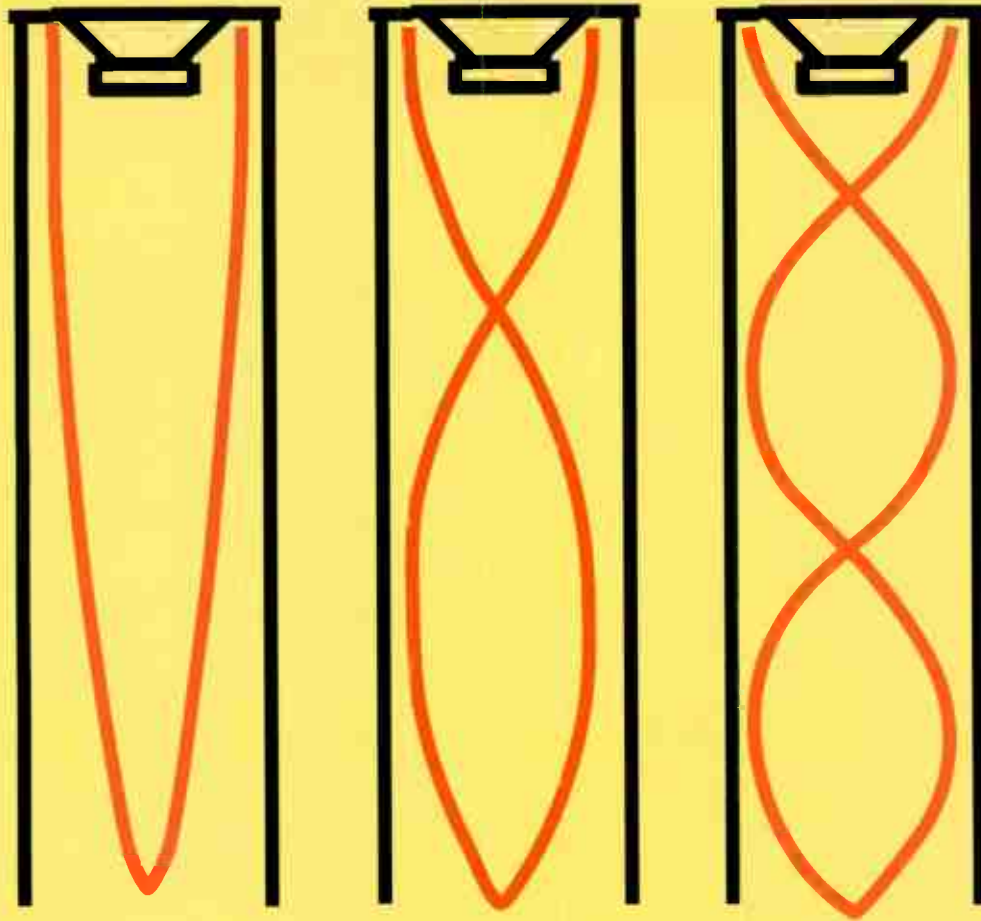


Fig.2 Pipe Harmonics.

Both the quarter wave line and TL systems are based on the resonance that occurs in a pipe that has one open end. The column of air in the pipe is easily excited at a frequency where the line is one quarter of the wavelength. Unfortunately harmonics of the fundamental resonance continue to midrange frequencies and require damping to avoid horrendous colorations.

example extant. Most so-called TL speakers work around the main problem of the 'transmission line' – that the line can only absorb frequencies down to the frequency where the length of the line equals the half wavelength – by opening the end of the line through a 'port'.

Once you open the line through a port then the theory changes completely. What you end up with is the same as a column open at one end and driven at the other – in other words a quarter wave pipe. The pipe resonance can be 'tuned' by choosing a length and port opening area that puts the fundamental resonance of the line close to the free air resonance of the drive unit. This enables the drive unit to develop considerable power down to its fundamental resonance resulting in the considerable extended bass 'rumble' that big TL speakers commonly exhibit.

Unfortunately you don't get something for nothing. If the line is left relatively undamped then, just as in the quarter wave pipe, associated modes occur at higher frequencies, usually multiples of the fundamental. These pipe resonances are clearly audible as a boom in the bass and a honk in the midrange. To overcome these modes damping is added throughout the length of the pipe. Naturally such damping reduces the efficiency of the quarter wave resonance, so to prevent lower bass from being damped to insignificance the line is often treated either by lining the walls of the pipe with foam or felt or using an open fibre form of filling such as long hair wool.

With optimum damping applied to remove all the upper pipe modes, the typical sound of a TL speaker exhibits a gradual loss in bass power as the frequency decreases until one reaches the area of the fundamental

resonance when power in the room becomes significantly audible. Fans of TL speakers describe this as 'hearing bass only when it is really present'. By that they mean that the resonant boom of the typical bass reflex is missing and, instead, only programme material with considerable low bass content generates satisfying bass power.

But there are ways round this. For example tapering the line and placing the bass unit part way down the line, as well as letting the bass unit drive the line from an upper enclosure, can reduce many of the objectionable resonances without excessive damping and thus yield a bass performance which is more naturally balanced and revealing. We will explore this further when we work on our practical TL project later in the series.

Next month: Horns and Efficiency

WD Series 3 Modular

Part 2

World Designs PRE3 is not just a new preamplifier in our modular PRE/PSU/PHONO stage kits, it is a complete rethink of how best to realise the concept of a hi-fi preamplifier. Peter Comeau explains all.

Normally a line level integrated amplifier includes input switching and a volume control, so for CD, tape and tuner you don't need a preamp at all. At best you need a phono stage to boost and equalise the output of your MC or MM cartridge, and this can feed the line level input direct. We'll be introducing just such a valve phono stage later on in this series.

However there are those who prefer to have the preamp section removed from the power amplifier. The justification for this used to be that the high current and magnetic field levels floating round a power amplifier were no place to house a preamp circuit controlling the lower, input signal levels. To this we can add that a sensibly designed preamplifier will do a better job of input switching and signal control than a power amp can.

At this stage who better than the WDPRE3 designer, Andy Grove, to describe exactly how such a preamplifier can be designed.

'This preamp line stage is essentially a small S.E. triode power amp, it has a voltage amplifier, and a power output valve, which drives a load via a transformer. The valve used here is the ECC82 double triode; it's a commonly available, low gain, low impedance type. One ECC82 section is used as the input stage, and is arranged as a plain anode loaded voltage amplifier and is capacitor coupled to the power amp stage, another ECC82 triode, and this section has the output transformer as its load.

Usually it is an advantage for a line stage to have a low output

impedance. Long cables and power amplifiers with transistor type input impedances (around 10k), for example, require a few milliamps of real current, even at line level voltages. One of the most common ways of achieving a low output impedance is to use a cathode follower.

There is a potential flaw with this approach however. Briefly its output impedance is "small signal" as it is generated by feedback. In some circumstances this feedback generated output impedance is useful, but if the load is potentially highly capacitive (such as a few metres of cable) then there is the possibility of slew limiting, and some possibility of oscillation. The new WDPRE3 line stage uses a high ratio output transformer, approximately 20:1. A quick calculation illustrates that, even if the transformer secondary were loaded with a 10k transistor amp input, the power amp stage would see a load of 4 MOhms. Compared to the ECC82's 10k (approximately) anode impedance this load is insignificant. Even if the load were 600 Ohms the valve's load equates to

about 240k, which is still very high.

In itself the design of the output transformer was an interesting exercise. There is an interwinding screen between primary and secondary. This isolates the secondary from the primary, and means that the secondary can be floated with respect to ground, or grounded via a 10 ohm resistor. This enables ground loops between two power amps, and between the power amps and the preamp to be broken, resulting in less hum.

If there is any disadvantage to this type of linestage it's the very fact that the transformer has such a high ratio. To get 2V_{rms} at the transformer secondary requires 20 times that on the primary, so the output valve has to swing quite a lot of volts at its anode. However, because the load is so high (usually



Preamplifier



transformer at the other end, at the power amp input, and achieve a fully balanced link (or use a power amp with a fully balanced input).

Apart from the purely electrical arguments, after trying many different line stage topologies I found this type to be the best sonically. The high ratio line stage was one of those "slightly bizarre" ideas I had a few years ago, I tried it and it worked. There are more "technical" topologies such as SRPP, Mu followers, cathode followers, 10 6DJ8s in parallel and whatever else, but my argument is always: "What are you looking for? If you want transistor-like specifications then

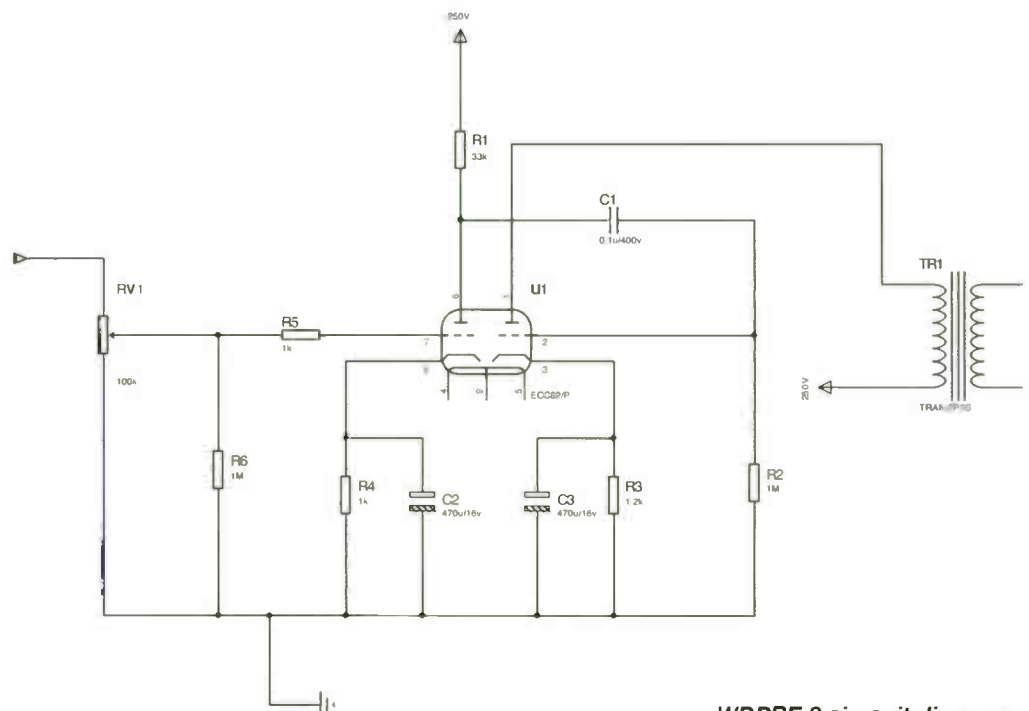
use transistors, they are better at it. If you want good sound, then look somewhere else."

So there we have it, a preamplifier capable of driving any load and maintaining its linearity no matter what cables or partnering equipment you prefer to use. The preamp does, of course, include our relay switched input board for the shortest, and cleanest, signal path, and is powered from a separate PSU in its own, matching, case. The output can be taken from the phono sockets via twin core and screen cables for pseudo-balanced operation, grounded at the power amplifier for optimum signal transfer and to minimise the effects of interference. Breaking the ground loop between preamplifier and power amplifier, and utilising an output stage capable of driving any cable and load, ensures the cleanest possible transfer of music from your source, whether it is CD, radio or vinyl. The WDPRE3 does exactly what our concept of the perfect preamplifier says it should.

Next month – Layout, construction and the PSU.

more or less infinite), distortion remains fairly low and is innocuous. The maximum output voltage is limited too; 6 or 7Vrms is the maximum. This is something which must be borne in mind, not so much when using a power amplifier - if you have a power amp which requires 7Vrms for full power there's something wrong with it - it's when using a line integrated as a "power amp". A line integrated amp has a volume control at its input, turning down the volume effectively reduces the input sensitivity, so it's best to set the volume on the power amp in this case to maximum, or nearly so.

It's not such a big issue in practice as I've said, no power amp has an input sensitivity of 7Vrms - usually it's around 2V or less. The volts this line stage can deliver are REAL; if you want a laugh, connect a speaker to the line stage output, it will play. It opens up possibilities in power amp design, it means that you can drive the cable hard, and put a



WDPRE 3 circuit diagram.

Performance Tuning

Classic radiohead Haden Boardman pens a personal paean of praise to what is, in his view, the ultimate audiophile tuner, the Sequerra Model One...

Radio has always played an important part in my life, and as I get older I find myself listening to 'the wireless' more and more. It's funny that over the past fifteen years my radio choice has varied between various valve and solid-state devices. Some years ago, *Hi-Fi World* was of course responsible for putting the classic Leak Troughline valve tuner back on the hi-fi map. However, good as the Leak set up is, it never fully satisfied my listening experience...

Although more open and musical than the Revox B760 mine replaced, it was also quite coarse and coloured sounding, and could get slightly ragged without a strong signal. Convinced that my entire system had to be valve, I sought out the ultimate tube tuner; the Marantz Model 10B. Although this beast was better than both the aforementioned, after spending so much money on the thing, I simply could not justify its cost, and I sold it. For many years I used a small Sugden R51 tuner, fitted with the classic Motorola MCA1340P PLL multiplex decoder IC (the same as that used in the *Hi-Fi World* tube decoder, which died through lack of any more of the Motorola chips) which along with sister models R21 and T48 remain one of those great tuner bargains out there.

A chance purchase of a Trio T-02 tuner relit my fire for FM radio. It was a shame I no longer had the Marantz 10B for comparison, but to my ears the Trio was much superior, being cleaner, faster simply more detailed. The T-02 was put up against a plethora of cult FM tuners,

such as the Accuphase, McIntosh MR67, Pioneer TX9100, Yamaha T-2 and CT7000, etc.. (I've yet to hear any synthesiser tuner to hit the high levels set in the 1970s 'super analogue' era), and only the earlier Pioneer TX9100 was in the same league. There have always been a couple of legends that I have not been able to play with - one is the Luxman version of the 10B (only ever seen in Japan), and the other is this - the Sequerra Model One tuner you see before you.

Those with a memory will remember that Richard Sequerra was one half of the team responsible for the Marantz 10B tuner (Sid Smith being the other designer). The Model One is nowhere near as famous as its earlier tube counterpart, despite a massive increase in sophistication. Launched in 1973, at a colossal US cost of \$2,500 (a Marantz 10B was \$750 only a year or so before, and a Quad FM3 roughly came in at \$160), the unit remained in production for several years, and there is some 'spiritual' succession today with the DaySequerra HD radios (America-only).

Most FM tuners follow fairly established lines, a front end, IF strip, demodulator and stereo decoder; where Model One differs is in the details... The Model One was launched as the ultimate in FM tuners, no expense was spared in either the unit's design or execution. This is the only radio set I know that uses a fully balanced RF front end, all the way through to the FM demodulator.

Tuning is via electronic potentiometer adjusting the tuning voltage

between 7.4 to 32 volts. The IF (intermediate frequency) stage uses what is described as an eighteen pole Papoulis filter, each section containing three separate coils and two trimmer capacitors (IF alignment on this FM set may not be so easy). This section is followed by a five-stage limiter, and then on to the FM detector stage, a unique circuit called "Travis-Smith", which uses two peak detectors to attain an incredibly low distortion figure of under 0.05%, microscopic compared to most FM set distortion figures.

The stereo multiplex decoder is of course state of the 1970s art. A phase-locked loop design, the circuit has been called by its designer a "quasi-vestigial side band processing circuit"! Special filter circuits remove any trace of the original multiplex signal, and the tuner's own 38kHz oscillations, with a resultant signal-to-noise ratio in excess of 70dB. About the only redundant feature in the UK is the Dolby noise reduction.

Of course the main thing you cannot miss from the front panel is the oscilloscope, or as Sequerra call it, the Panoramic Analyser. This entire article could be dedicated to the level of sophistication built in with this unit. It serves four main functions. "Panoramic" mode displays 2MHz of the FM band, showing signal strength of the tuned station, and any other stations close by. "Tuning" not only shows signal strength (from microvolts to a volt!), but also modulation and multipath distortion. "Vector" displays stereo separation and location. Fascinating to watch, Sequerra provides facilities to connect the Vector display to the





outputs of any other audio device, not just stereo, but quadrasonic! So far I have resisted the temptations to reverse wire this to my preamplifier.

Connections to the rear are a pair of fixed audio outputs, a pair of variable audio outputs, four channel vector scope input, detector output and a Dolby test point. There are numerous presets for the scope, an accessory input for remote control/presets, and a simple three tag aerial connection for 75 or 300 ohms.

Even by today's standards, this thing is a technical *tour de force*. Its complexity is awe-inspiring, build quality is high and finish is excellent. I may not be a huge fan of the light display, which is not exactly subtle, but the early LED display is from instrumentation (care of Hewlett Packard) and so, of course, is the oscilloscope. Pulling the lid off it did slightly remind me of the Marantz 10B. You can see similar architectural lines to the layout, despite the very solid state nature of Model One. Everything is screened off in cans, and I have not been brave enough to break the seals and nose inside them.

When this tuner first arrived with me, it had not been in use for around fifteen years. Poor thing needed a good clean up. I slowly powered the unit up on a Variac, as not to shock it too much. Virtually

every bulb on the front fascia had failed, switches were sticking, but the tuner burst into life. 'Mixing It' was on Radio 3, Black Boys of Alabama; a recording of quite immense bass - even in the workshop, with a small pair of monitors, it was clear just how clear this tuner was!

Richard Sequerra very kindly sent me a list of spare parts for the displays; all of which were available from American parts supplier Mouser, and within seven days the Model One

"its performance is a class above anything currently broadcast by the Beeb..."

had replaced my then reference Trio tuner...

It is hard to explain just how clear this thing sounds. The over modulated local radio stations actually have become listenable (well almost), while listening to Radios 2, 3 and 4 was an 'in the studio' experience. The difference between various broadcasts on the same station is ridiculous. Steve Wright in the afternoon sounded thin and compressed compared to Humphrey Littleton later that evening (the Vector display on Steve Wright was showing virtually mono!), Radio 3 sounded like a

decent quality CD player and the direct speech on Radio Four was a revelation. It really does go much closer to the broadcasts than I have ever experienced before, with total freedom from sibilance, fuzzy noises and hiss. Oh how I long for a pure analogue connection between studio and transmitter, and how I look forward to a real live concert, I cannot imagine just how good this device could actually sound. I am convinced its performance is in a

class above anything currently being broadcast by the Beeb.

I have never really been in to radio DXing. My simple attic mounted dipole picks up all the main stations, and all the local stuff I need. But you cannot help but find things I did not know where there. Radio Leeds, Sheffield and Stoke was not what I was expecting in deepest Lancashire! The Sequerra's excellent RF stages were clearly proving a point here.

Is this the world's finest FM tuner? Well, I have to say that, without doubt, it is the best radio I have ever used.

**Northern
2007
Sound & Vision**
The Quality Home Entertainments Show
Radisson SAS, Manchester Airport
27-28 January 2007

Northern

The Northern Sound and Vision, held at the Radisson SAS hotel, Manchester Airport, is always a heart-warming affair. Noel Keywood previews the forthcoming events of Saturday 27th and Sunday 28th January 2007...



Your stomach may have reached the ceiling by now, and the brandy has most likely run out. Another Christmas is over; hopefully Santa will have delivered you a nice new digital stylus pressure gauge - far more interesting than an iPod - and the turkey sandwiches have been eaten by the dog. It's time to get a big bottle of champers to celebrate the New Year - and it's also time to think about a lovely Hi-fi Show.

Isn't "lovely" better applied to Catherine Zeta Jones? Well, yes, but this Manchester show has gained a deserved reputation for being friendly and enjoyable. It has a relaxing atmosphere and is held in an elegant venue, the SAS Radisson Hotel at Manchester airport. As this is conveniently situated smack-bang in the middle of the three terminals and right near the railway station, difficulty of access is not a viable excuse for not attending! I went for the first time last year and loved it. I also learnt why the Show is gathering a good reputation and how this is attracting an increasingly large range of exhibitors. Being an exhibitor myself, as well as hi-fi buff, I see it from both sides and feel that the Shows like this are just what we all need. A nice bit of relaxation, plus the opportunity to see and hear some amazing pieces of specialist hi-fi. And all that walking around will help to shift some of the Christmas pounds!

So who and what will be there? Well, me! And somewhere between me at one end of a scale of loveliness and Catherine Zeta Jones at the other lies a whole host of interesting hi-fi products and people. The Show is full at the time of writing this a couple of months beforehand I should add. And for some reason it is getting a strong reputation from European companies, possibly because it is so easy for them to get to, and attend once having arrived.

Having done some considerable research to save you the bother, we have discovered quite a few new and exciting products that will be pushed, blinking, into the public glare for the very first time. Perhaps the most intriguing of these will be found in the A.A.P.Tech room, where VEF Radiotehnika RRR will be making the long trip from Latvia to show their new FS100 flagship floorstanding loudspeakers, FS10.1 three way loudspeakers and HC9.1 home cinema surround sound setup. The company have existed since 1927, and assistant ed. Adam recognises their name from a 1970s radiogram that he used to own! This apparently had separate and large loudspeakers, which he assures us were surprisingly capable, so they could be well worth a visit?

Moving back to home territories, and Naim Audio will be occupying two rooms and using one of these to unveil their much anticipated SuperNait integrated amplifier, although whether it will be resplendent in a red cape and y-fronts is still yet to be confirmed. As well as power output and input count increases over the standard Nait, the most interesting new feature is an additional digital input available through optical or coaxial connectors, that accepts sampling rates from 32kHz to 96kHz. At last, your digital television outputs or

Soul

computer-stored music files can be given the Naim treatment!

Sticking with two channel audio, those nice people at Arcam will be demonstrating the DiVA series CD73 Compact Disc player through their new A70 amplifier. This is the new budget item from the Cambridge-based audio wizards and incorporates some filter-down technology from their more expensive products. As an example the A70 is the first budget Arcam amplifier to feature fully electronic operation of all user controls, which brings gains in reliability and sound quality.

On the dealer side of things, Orpheus Audio will be showing off some new equipment from Shanling, in the form of the CD500 CD player and A500 reference amplifier. They will also be exhibiting new loudspeakers from Acoustic Zen and Duevel, in the form of the Adagio and Planet models respectively. Looking at pictures of these, it seems that there will be some very impressive sights in their room, as well as sounds.

Whilst thinking of impressive items, Chord Electronics will be showcasing a new entry level pre and power amplifier. The power amplifier is called the SPM650 and the preamp carries the equally catchy name of CPA2500. Knowing Chord, I think we can fully expect great sound, superb build and no doubt, shiny styling.

Sugden Audio will be demonstrating an exciting range of new items, alongside Focal JM Lab's loudspeakers. Up first will be the new Mk2 versions of the A21 amplifier and CD21 compact disc player. However, even more exciting are the new Masterclass items, which are in the form of the MBA4 monoblocs, the LA4 preamplifier and the BDT4 Compact Disc player. As an added bonus, all that Class A fabulousness running in one room should help to keep the January chills away!

We would also like to welcome a new name to the crazy world of hi-fi shows in the form of Robson Acoustics. This company, based in Cumbria, are hitting the market with a range of rather spectacular looking loudspeakers that are both designed and manufactured in the UK. Making

use of exotic materials like Cumbrian slate, granite and a range of hides, they promise a 'bespoke service where no design concept is rejected' so those pink velour loudspeakers you have always fancied could now be within reach. They will be demonstrating their Arabis loudspeakers along with another couple of new models that are still to be confirmed.

Finally, and the biggest news of all, this year, we are delighted to announce that *Hi-Fi World* will be sharing a room with World Designs. Peter Comeau and his team will be showing their WD88VA and WDKEL84 valve amplifiers, as well as unveiling the new Pre 3, PSU 3 and Phono 3 modular preamplifiers that we are currently covering in the magazine (see Page 89 for this month's instalment!).

On the *Hi-Fi World* side of things, we will be demonstrating some of the equipment that has impressed us recently and, no, we're not going to spoil the surprise by telling you what it is going to be! We hope to have a large dem room, where we'll be playing a selection of exquisite kit, including B&W's show-stopping 801D 'loudspeakers, no less! Members of the team will be on hand all weekend to answer your queries and offer assistance and we also hope to be hosting more of the regular 'audio clinics' that proved so popular at the Heathrow Hi-Fi Show in September 2006. As if this wasn't enough, the room will also feature a display of the impressive electronic test equipment from Rhode and Schwarz, as used by ourselves for equipment measurement.

So there we have it. A brief selection of the veritable cornucopia of aural delights that awaits you in Manchester has hopefully whetted your appetite suitably, although we have yet to confirm whether Catherine Zeta Jones will be attending. Don't forget to pop over to us and say hello!



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Arena Electronics was appointed official UK distributor for SEAS high performance drive units in January 2006. We offer the full range of SEAS drive units, designed and built in Norway, together with speaker kits and advice for DIY speaker builders. These include the World Designs WD25A project, complete parts for which can be purchased on our website including the cabinet kit.

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Letter of the Month

GOING, GOING, GONE!

Has anyone else noticed how the growth of the internet is changing the way us hi-fi enthusiasts behave towards each other? I have been making changes to my system for thirty years (getting there...) and until a few years ago buying and selling my used hi-fi has been fun. You could be unlucky and get the odd rogue, and some people have always been economical with the truth; but usually you found those you were dealing with were honest, fellow enthusiasts. Everyone knew that bad behaviour would end up affecting us all and I have made many good friends this way; some I have now known for years, and we still buy and sell our stuff to each other. But things are changing... and not for the better.

The growth of internet sites has fostered a much harsher mentality where the object is purely to get goods at the very lowest price. We are now creating a generation which meets Oscar Wilde's dictum of people who know the price of everything and the value of nothing. I find that the notion of a band of fellow enthusiasts with lots in common is dying out. Using the internet you get brusque demands, often in semi-literate language with people hiding behind their internet address. You do not know who you are dealing with and descriptions of goods are often exaggerated, or just plain false. If you do finally manage to speak to people they are suspicious and often seem driven by nothing but price. Just to add to the mix there are plenty of scammers out there preying on us. The internet has brought much greater convenience for us but the price we are paying is hidden. It is not in money, it is in a weakening of the ties that bind us together. We have less in common, we are more divided, more alienated from each other; and because of that... we all lose.

Peter Skinner

I think you're quite right Peter, and this is what I was saying, indirectly, in

my eBay Survival Guide last month. Everything is being reduced to naked self-interest, and the whole buying and selling experience is becoming less pleasant. This doesn't just go for second-hand hi-fi, because many 'dealers' sell new kit online. The sad thing is that people go into dealers for dems, then try to buy the kit at an 'online price', and then if they fail, they buy online. Then they complain to me that their dealer is useless and doesn't want to help them! I still think you should use eBay for curios, but as I said last month, expect the thing to fail or die (i.e. the worst case scenario). For serious purchases, find a good dealer and stick with him - you'll save more in the long run. **DP**

A rather depressing letter but one that has more than an element of truth in it I'm afraid. I do feel for the thousands of people out there who have had their fingers burnt when attempting to purchase second-hand gear over the internet. Unfortunately, you are quite right that there are more than a few con-men and chancers out there and these do tend to tar all sellers with the same brush, especially from the point of view of those who have had firsthand bad experiences. Personally, I much prefer the convivial atmosphere of a dedicated audiofair, where you can examine the equipment closely, even if you cannot always see or hear it working.

The sellers are all enthusiasts and also tend to be regulars, so most wouldn't dare sell any duffers as their reputation will suffer!

Sadly eBay is having something of a knock-on effect here as well, as some sellers are increasing prices to somewhat unrealistic levels as that's what one sold for on eBay last week. That said, I will not be giving up on eBay any time soon as there is still too much rare and unusual equipment on there that gets me all childishly excited. I like to think that I can pick the good items from the suspect ones, but each new transaction adds a further element of nervousness as I wait to see if my new bargain will arrive in one piece, if it arrives at all. **AS**

LASER DEATH

Adam, rest assured that the laser in your Marantz CD94 is not about to die unless you send it for service. Laser diodes and their balancing diodes are vulnerable to static electricity before installation. If you experience mistracking it is more likely to be a dusty lens or an imperfectly set-up focus error servo. If your mystery turntable has no nameplate could it be a Revolver kit or something else supplied by MOTH?

Leslie Bourne

Thank you for setting my mind at rest! I can assure you that I have had no tracking problems at all with the CD94 but whenever I see



Marantz CD94 - not about to die.

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Adam's eBay bargain; an SSC Baltica turntable. Does anyone know its history?

it mentioned anywhere, a doom-laden comment is invariably included regarding the lasers failing and their now unobtainable status. The biggest problem I have found with the CD94 is with the multiple belts that are used in the drawer loading and laser positioning mechanism - these have to be replaced every few years and mine are on their way out again so it would appear that I need to wield a screwdriver in its direction once more.

As to my mystery deck, the time has clearly come to call upon the collective knowledge of the Hi-Fi World readership and so here is a photo of the beast. All I know so far is that it is a well-made and weighty two-speed belt driven unit, with a sticker under the platter that informs me that it is an SSC Turntable Baltica - who SSC were and where the Baltica came in their range is still a mystery. It appears to use the same arm as the Acoustical 3100 turntable that dates from the late 1960s. I assume this is the original item as the top plate is specifically cut to accept it and the cueing device. If anyone can tell me anything about this unit and its history, I'd love to hear from you!
AS

DUAL DECISION

I have recently purchased a used DUAL CS-503-1 turntable and I am looking



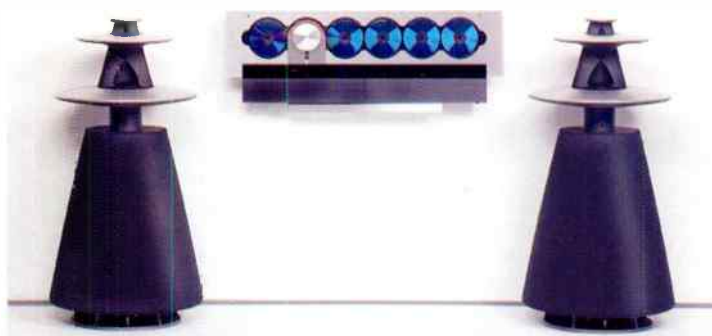
Get an Audio Technica cartridge for your Dual, says Adam.

ARISTON AND ON...

I have recently unearthed my Ariston Pro 1200 turntable from the attic and would like to listen to my vinyl collection that hasn't been heard for fifteen years. How can I find out what cartridge and stylus are compatible with the above turntable? Can you recommend a website that has this information? I have Googled for hours without success.

Nathan McGough

Any standard moving magnet cartridge will work with your Ariston deck but as it isn't really the last word in budget turntable design, I wouldn't spend too much. As per the previous letter, an Audio Technica AT95EBL or AT-110E should elicit



B&O Beolab 5 loudspeakers - great looks and awesome sound.

to identify what would be a suitable range of replacement cartridges for this model. Alternatively, it has the original Dual DMS 249E cartridge. Could you please recommend a replacement stylus, if available?

Alan Salisbury

Well, its good news, as the Diamond Stylus Company (www.diamond-stylus.co.uk; 01492 860880) will sell you a replacement DNS 249E stylus for the sum of £25. Alternatively, although a good budget unit in its day, the CS503-1 doesn't really warrant a huge amount of expenditure on a new cartridge. However, if you feel you'd really like a change, one of my personal budget favourites, the Audio Technica AT-95EBL, will work well in the arm and never fails to impress me as to how much better it sounds than its price would suggest, which also happens to be £25. **AS**

Agreed - although I'd splash out the extra fiver or so on the AT-110E which has an altogether smoother, sweeter sound. Glue the stylus in place with Superglue and clean the pins with Kontak (even if its brand new), and the little AT will sound all the better. **DP**

some respectable noises, however, and enable you to rediscover your vinyl. **AS**

DESIGN DIFFICULTY

I am eighteen years old and am just about to start my design and technology project for A level. You may think I'm absolutely mad but I have decided to build some scaled down mini Bang and Olufsen Beolab 5s - that's right, the ten grand ones! However, I have no idea what drivers I should use or where to buy them? Any suggestions would be helpful.

Oilly

Now that's an intriguing prospect! Really it depends on how much you want to scale down, as the real thing uses a fifteen inch subwoofer, six inch upper bass driver, three inch dome midrange and a one inch tweeter. Depending on your budget, drivers can be sourced from the likes of Peerless, ScanSpeak, SEAS or Audax, or if you're really cash-strapped, then your local Maplin store has a reasonable range. Personally, I would be interested to see the finished result but, bearing in mind that the real thing uses some serious digital signal processing, room correction

and 2500Watts of amplification per speaker to achieve its sonic performance, I'm not so sure I'd be quite as keen to hear them... **AS**

EUROPA UBER ALLES

Some years ago I removed a tonearm from an old Japanese record player. I now would like to mount it on a Thorens TD150. As I do not have a mounting template my problem is how to find the right distance from the arm pivot to the spindle. Is there any simple method to find it out (no mathematics beyond the basics please)?

Another issue: I very much appreciate that you also review vintage products. Regrettably, you seem to focus on British and Japanese equipment. What about Philips or Saba Telewatt tube amplifiers (the Philips AG9015 or Telewatt VS56 really sound excellent)? What about B&O, Grundig (they both have superb tuners), Cabasse, etc.?



Philips Black Tulip, Holland's 1970s attempt to stem the Japanese tide. Is it a classic?

From old hi-fi catalogues I know that these brands have been on the market in Britain. Therefore they should be obtainable for a review.

What about vintage full range loudspeakers? In German internet chat rooms there is much hype about Saba Greencones, Isophon and Telefunken full range loudspeakers. On flea markets you get them for a few pounds (from radios, portable record decks etc) and they have a really astounding sound quality. Combine them with a T-amp and you will be surprised to have a top sound quality system at extremely low costs.
Johann Pummer

The makes you mention hardly existed in the UK Johann. Although Philips have been in the UK since the 1930s they have never had much of a presence in the top end of the market. Even Black Tulip got re-labelled Black Turnip and disappeared as fast as you might imagine. Only Dual and Thorens from Germany were popular, plus Ortofon from

Denmark. B&O kept aloof from the serious hi-fi market, as they detested criticism and comparison. All of us here at Hi-Fi World go to vintage hi-fi fairs, and we know what is to be found.

Most pickup arms use a turntable spindle to arm pillar (centres distance of 220mm. With a cartridge fitted you should get an overhang of 10-12mm or so, when the cartridge is in the centre of its adjustment range within the headshell. The cartridge should be at a tangent to the LP grooves at 76mm (inner grooves) and 122mm from LP centre - use a protractor to check this. **NK**

I can sympathise with your concerns regarding items we may miss but the simple fact of the matter is that we try and concentrate on equipment that was well known in the UK - as far as I am aware Saba and Philips

The story goes that when I paid Simon Bennett a visit at his North London premises a year back, to view his latest products (his company, Absolute Analogue, imports Plinius, Reference 3A and Aurum Cantus, to name but three brands), we got talking about turntable design. Simon and I are both rather enthusiastic about this subject, and subsequently had extensive telephone conversations over the next few months, about what we thought would be the best way to do an ideal turntable.

We soon agreed on Direct Drive as superior, theoretically, to belt drive, and then began talking about all other matters of turntable design. We talked about isolation (I cited Pioneer's 1979 model year PL600X and PL-L1000, both of which I own, as being ideal types, as they are, to my knowledge, the only suspended-subchassis Direct Drives I know, and I also mentioned Loricraft's tennis ball halves suspension system used in their Garrard 301/401 plinths). We spoke of platter materials (I cited SoundDeadSteels Isoplatmat, which SDS's Les Thompson had recently developed, as a great material). We also talked about the best DD motor to use (some are torquier than others) and all sorts of other detail points. It had become one long fantasy Direct Drive brainstorming session...

Anyway, Simon called me again early last summer to announce he was going to make a DD himself. He'd gone away and done a lot more research, and had now found a DJ deck he regarded as a suitable candidate to modify heavily. At this stage, he couldn't say what it was, but I got the impression that it was going to be more than a lick of paint and new headshell! For example, Simon was talking about junking everything except the motor and servo control circuitry - effectively then, it's a whole new deck. Last week, Simon e-mailed in and said it is still on, still work in progress. He's done an enormous amount of thinking, and I would expect it to be seriously capable.

Pricing is another matter: there has been talk of anything from £1,500 to £4,000, with the first sample out sometime in 2007. Well, here's something that might get Simon to put his skates on: October's Hi-Fi World Park Inn Heathrow Show saw yours truly and Pro-ject supremo Heinz Lichtenegger propping up the bar late one night. After my second ginger ale, I picked up enough courage to tell this charming Austrian that, however much I like what he's doing (and I do), he should be thinking outside the box and start to

were never particularly common over here for higher end equipment, with the possible exception of the latter's Black Tulip range which purported to be high end but, er... wasn't! As for B&O, I am a closet fan and so will be doing my best to sneak as much Danish style onto these pages as I possibly can when the editor isn't looking. **AS**

Oh my God, I'm a closet B&O fan too, and was hoping to sneak some in when the publisher wasn't looking...
DP

ON THE RECORD

In Hi-Fi World January 2006, DP says that a Mr Simon Bennett was to investigate and maybe launch a heavily modded quartz lock Direct Drive turntable. I'm curious about this since I have bought a Technics SL-1210 MkII and want to upgrade it; new arm... and what else? Do you have any suggestions please?

Torbjorn Sjoberg



Technics SL1200 - a top Direct Drive - for DJs.

make a high-end Direct Drive. Instead of the look of horror I'd expected (I've tried this before on other turntable manufacturers, you see...), there was a wry smile. He replied in such a way as to make me believe that this could be a possibility.

Now, I am being deliberately opaque here, because I don't want to pre-empt any announcements, but I think things could be seriously interesting if the new European Prince of Turntables himself is thinking this way.

Back to the present, and yours truly has now shelled out on a Technics SL1200 of his very own. You might remember that Hi-Fi World's own Stewart Wennen produced a design for a Rega armboard mod for the Technics, some three years ago, in these very pages. This is now on sale through Origin Live for £39, and I have ordered one of these. Next, I am going to pull the deck apart, upgrade the mains cable, isolate all the electronics using Dynamat Sorbothane sheets, change the bearing oil to VDH TLF, rebuild it with an Origin Live Silver tonearm and - cue fanfare - design an outer plinth for it, introducing an extra layer of isolation, which I am having fabricated in black acrylic. This project, I hope, will appear in the next vinyl special issue in April 2007, and then we'll put it against some of our favourites, such as Noel's 401 (if he'll let me)!

Finally, we do still have a Japanese Direct Drive Superdeck Shoot Out coming up, featuring the Onkyo PX-100M, Trio L-07D, Sony TT-S8000, Pioneer PL-L1000 and Technics SP10 Mk3, but we are still waiting for Britain's resident Direct Drive guru Richard Peachey of Vantage Audio to finish fettling the Onkyo and Sony. This man was behind the

Trio L-07D feature we did in April 2005, and we are forever indebted to him for his help and assistance in making this possible. Unfortunately, a large number of readers decided they'd contact him after the feature was printed, the result being that he's been snowed under with work since then, and this has delayed our feature! **DP**

The issue of torque and servo feedback in Direct Drives is interesting. Technics speed sense toward to platter periphery to improve speed sensing resolution. We deliberately hounded Vestax for their top Pro DD turntable to see how Direct Drive is engineered today, as you'll find elsewhere in this issue. Hope it is of interest to all you 'Direct Drivers'. **NK**

THIS IMMORTAL COIL

I have been a keen reader of your august journal for some years now, on and off - I bought my first copy way back in '93, when I recall you were reviewing a Marantz 10b: now that was cool I thought! Anyway, I never felt the urge to put pen to paper but something happened the other week and I figured I should attempt to relate the experience to those who, like me, have not bothered making any changes to their systems for years, either through lack of funds or simple complacency (I plead guilty on both counts). So here goes.

I happen to go to my local town the other day with the family and after dropping the car off we all went our separate ways. I usually end up browsing through the charity shops, hoping to find some elusive LP, when I came across a newly opened second-hand place, full of old and not so wonderful audio gear, along with an eclectic mix of guitars, keyboards, drums and, er, PlayStations...

Anyway, curiosity got the better of me and I went in. I had a great chat with the guy behind the counter and to my horror ended up spending money, I mean like over £100(!) in exchange for an Audio Technica OC-30 moving coil cartridge, complete with genuine SME headshell (£30) along with a small Denon step up transformer (model HA500, £90). Over the years I had often wondered what all the fuss was about moving coils, without ever really getting the chance to find out (they always seemed so expensive, why so I wondered?) so until now I had remained convinced that the practicality of my good old Shure was the way to go for me.

Boy was I in for a shock! I have been grinning from ear to ear ever since! I have no idea how you rate the Audio Technica or the Denon but suffice to say the little MC has unearthed the most magical detail from those old grooves. I just can't believe that the microgroove format (soon to celebrate its 60th birthday) was capable of such resolution. Sorry I can't have been listening to what you fellows were saying, but rest assured my listening room is now littered with LP covers every night as I rediscover my old favourites.

The rest of the system is pretty bog-standard, mostly purchased second-hand but decent quality, consisting of Leak valve amps, Croft Micro preamp, Garrard 401, SME3009, home made horn speakers using a mix of PA components (I'd be interested to hear your views on this - how about a DIY feature?).

I feel the moral of the story here is that there really is no need to spend loads of your hard earned to enjoy this hobby, and perhaps more importantly to develop your system. And here's a tip to fellow Shure V15 users: do yourselves a favour and go try an MC - it's never too late! Keep up the good work!

Guy Cooper

*I know what you mean - like you, I found it very difficult to go back to an MM once I was drawn in by the sound of MC. Funnily enough I also own an Audio Technica, the AT-OC9. Sadly, it is no longer in the best of health and so I am having to live with an MM once again whilst I ponder my next upgrade. To use the sort of vehicular analogy that our esteemed Editor is so fond of, it's like going back to a rough old four-pot engine after years of living with a creamy smooth V8! **AS***

Alright Guy, you don't have to spend big money, but only if you can find Leak amplifiers and a Garrard 401 turntable at small money! Those days are over, because the rest of



Ortofon Rondo Bronze prototype, disguised as an MC30!

the world wants a listen. Like me I suspect, you just happened to acquire these items before the internet and eBay got under way - one of the few benefits to pre-dating the internet. I'm partial to running a Moving Magnet cartridge through a valve phono stage, which is lovely to listen to, if not the same as running a Moving Coil through same. **NK**

Agreed Guy - and the good news is there is better to come! I got good results from OC5s and OC9s through the nineties, but remember that it is an eighties cartridge, and that something modern like a £500 Ortofon Rondo Bronze will really get things cooking! Spot on with car analogy Adam - wish I'd said that! **DP**

DAZED AND CONFUSED

I'm currently using a small headphone-based system consisting of Cambridge Audio Azur 640C, Musical Fidelity X-CAN v3, Sennheiser HD600 and van den Hul The Name interconnect. Recently, I got quite a bargain for Musical Fidelity X-Ray v3 and am really happy with my purchase and seriously considering getting a full setup. I'm

writing hoping you can give me some advice on the following.

I noticed some colouration in ProAc Studio 130 midrange, and am not sure if insufficient run in or system mismatching was the cause of it. Otherwise, I really like the openness, spacious soundstage and wide dynamics of these loudspeakers. There are some good reviews on Studio 140, but haven't heard it yet.

Other speakers that I'm considering include ProAc Tablette Reference 8 Signature, Sonus Faber Domus Concertino, Spendor S5e, Focal-JMLab Cobalt 806 or 816 and B&W 705 or 603 S3. My room is medium-small. Also, for the standmount speakers, can you recommend suitable stands?

With the matching MF X-series amp no longer available, I auditioned Musical Fidelity A3.5 integrated and really liked it. I'm also considering Creek 5350se, Pathos Classic One, and Sugden A21a.

Finally, can you also recommend some cables and interconnects for the system? Nordost Blue Heaven, or Chords? Please help!

Thanks!
Lee Y.N.



Acoustic Energy AE-1 Classics - great small loudspeakers.

Hi Lee. In a small room you have the luxury of not needing much power, which means you can use a Sugden A21a Class A integrated. This is still the best sounding design at the price, with the big proviso that power is not needed. To this, I would hook up a pair of Revolver R16 standmounters (£500). Again, they are very sensitive for speakers of their type, and play great music with the Sugden. If you want to go the Class AB way, then I think the Vincent SV-236 is the answer, paired to Acoustic Energy AE-1 Classics, on Partington Dreadnought stands. This is a cracking combination.

Once again, the most important thing here is the speaker-amplifier matching. This is critical and simply reeling out a list of speakers is fine in theory, but it is an academic issue. You should always look for synergies, and there is no more profound one than the electro-mechanical match between amplifier and loudspeaker. Hope this helps! **DP**

GETTING IT TAPED

I want to convert my old audio tapes to CD, partly because I don't have a tape deck any more. I have been trying to find a combo with a tape deck and a CD writer. There seem to be plenty of VHS to DVD combos, so why not audio? Can you help??

Daphne & Glyn

Well, a brief scan of the StudioSpares catalogue reveals none other than the Tascam CC222, which is a combined CD-RW recorder/player and a cassette recorder/player. Heck, it even has an RIAA phono input if you wish to do some vinyl recording! Retail price is £495 plus VAT and delivery. StudioSpares can be contacted at www.studiospares.com or on 08456 441020. **AS**

CZECH MATE?

Dear Editor. I am surprised that you do not feature Xavian (from Czechoslovakia) loudspeakers anywhere in your lists. Are they not easily available in UK? I am interested in the new Xavian Mia Bookshelf speakers. - do you know of any reviews?

Thanks

**Davin Seremban,
Malaysia**

Always keen to discover new brands, I had a look on Xavian's website and I must say that their loudspeakers look rather impressive and appear to use good quality drivers. Sadly, they are not a name known in the UK and it seems that they have no UK distributor so it looks like they are currently destined to remain a

mystery to us. By all means drop us a line to let us know what you think if you manage to track down a pair. **AS**

FINE WINE

Now I've stopped chasing and hunting down classic hi-fi, I'm finally having a proper listen to what's in front of me and have come to the conclusion that the listening is only part of the whole owning hi-fi experience. The rest is in the hunting down and finding information on the next purchase in question. My quest has taken me an odd route, from starting with a strange collection of 1980s Marantz separates and some dire speakers (mind you the CD73 has

course now I had one pair of '57s it only seemed to make sense to acquire a second pair to have a go at stacking at some point (which I've not done yet). Instead, I tried to drive this second pair of '57s with the PM-60100SEs. Oh dear, a very thin and weedy sound with no bass or fullness.

Oh well, let's hunt down a pair of Quad IIs (man these vary in price!) which I duly found - a lovely late pair, fully serviced, and these now make up my second system. What a difference it makes, a much fuller, deeper sound, with a gentle yet detailed bass. For my taste in music, which is female vocal and acoustic, this setup now sings.



Quad II-forty power amplifier - has a lot of bottle.

survived and still lives on in system one), onto a nearly all-Rogers setup (as per your suggestion a long time back) of LS7t 'speakers, A75 amp and T75 tuner.

This was followed by playing with bi-amping using a pair of Marantz PM-60100SE amps (this worked a real treat with the LS7ts), but then I was blessed and maybe cursed to be given a tired pair of Quad ESL57s, which I duly hooked up to my aged old Marantz amp - and blew it up... oops!

Next step was to bring the ESL57s back to life with a full OneThing service and finding a suitable amp to drive them, which lead me on the quest for a Quad 606/44 combination. Now the system sounded very detailed indeed, yet maybe a little on the harsh side. Of

So I now have an interesting setup with two systems. The first is a pair of serviced ESL57s, Quad 606/44 pre/power amp, Marantz CD-73 CD player and Thorens TD150 turntable, while the second system is a very late pair of ESL57s, serviced Quad IIs/22, Sony SCD-XB940 and Sony PS-X600. Of the two, I have to say I prefer the valve setup, since I could listen to this all day long, and relax with the lovely orange glow of KT66s and a glass of red wine. The solid state is detailed, but just doesn't let the music wash over you. Rather, you're almost slapped into listening.

Anyway, I've had a happy ramble, an exciting time hunting, and now onto some mellow listening. If you're able to make any suggestions regarding future

changes then I'm all ears. I am thinking maybe changing the Quad 44 to a valve pre would really help soften things, while maybe the Quad 22 could also do with changing to something a bit newer? What do you think?

David Oxtoby

Hi David. The obvious choice for your ESL57s is the current Quad QC twenty four preamp and II-forty power amp combo, total price around £3,000. Not quite so obvious and a bit left field is a Naim Nait 5i, or a NAP150, whose ample bass suits Quads. I suggest this solid-stater in case you want solid-state in one system. It sounds more engaging than the old Quad 44. Otherwise, it is time to relax, not think about upgrades - except perhaps to the turntable - and have another glass of wine! **NK**

PATH TO PERFECTION

My full system is as follows: Pink Triangle LPT (OL DC motor) with Roksan Tabriz-Zi arm and Grado Prestige Gold into Naim Stageline, Nait 5 and Epos M12.2, via Chord Rumour 2 cables. The Nait is Flat-Capped, with the other half of the power supply going to a CD5. There's also a Musical Fidelity A3 tuner with a decent aerial.

The Prestige Gold was a recent purchase that is a considerable improvement over its predecessor. Thinking of the future, today I heard a CD5x through a NAC 202/ NAP200 combination which was awesome. I had originally thought of upgrading in stages by adding a NAP200 to my Nait 5 and then the NAC202 when funds allow. Does this make sense to you? Are there other pathways I should consider and then get the appropriate dem? I'm definitely staying with Naim.

My feeling is that a lesser pre-power such as 122x/150 or with an earlier discontinued pre such as the 112 (of which there are now loads on the market) won't give a suitable leap in performance. In other words, I've got to go to the next but one upgrade to get blown away.

Last thing. My Graziela lamp from Habitat [warming the arm/ cartridge/ record as you previously advised] gives a buzz through the speakers in this system, as it did with the previous electronics. Any suggestions?

Chris Moorhouse

Having done a Nait5i versus NAC122x/NAP150 comparison in this very issue I can assure you that the latter is definitely a step up over the Nait. However, I personally would not venture too much higher up the amplification chain than this with your current loudspeakers. Good



Quad ESL57s - venerable classics that can be tuned up by One Thing Audio.

though the M12.2s are, amplification of the calibre of the Naim NAC 202 and NAP 200 (or even the 122x/150) is deserving of even better transducers.

As to your lamp issue, unfortunately halogen items can indeed cause buzzes in sensitive hi-fi equipment. You might have to resort to switching it off when records are actually playing... **AS**

A GOOD DEALER?

I always like to take unbiased advice before making a purchase. My daughter is still using the Yamaha K-300 cassette deck which I bought as a result of a Quest Test by one N. Keywood some twenty five years ago...

Anyway, after years of upgrading, tweaking and general fiddling about, ten years ago I settled down with a system



Martin Logan Fresco - an elegant wall solution.

which suited me perfectly. It's one of those set-ups where every component seems to complement every other one. There may be 'better' out there, but I've yet to hear it. My front ends are: Michell GyroDec with Tesseract power supply, SME IV arm overhauled and upgraded to V spec by SME, Transfiguration cartridge; Audiolab 8000CDM transport; Quad FM4 tuner; Sony Pro Walkman (used mainly for live events, school concerts etc and capable of astonishing results).

Middle bit: Audio Synthesis Amp02, built with my own fair hands, and containing their own DAC and phono stage. Output to a pair of Quicksilver monoblocks, revalved and upgraded by Graham Tricker.

Back end: Quad ESL63s, heavily modified by Russ Andrews and supplemented by a REL sub.

All this was fine in my old house, which had a listening room measuring about 24ft x 14ft x 8ft with plaster walls and ceilings and a concrete floor. However, now retired and with not much of a pension I have downsized to a much smaller (read cheaper) place with a living/dining room about 20ft x 13ft x 7ft, tapering to 9ft at the dining end. The listening point is about

10ft from the back wall. The walls are cheap plasterboard and hollow and the wooden floor has all the rigidity of a trampoline. The problem, if you hadn't already guessed, is that the Quads just don't work in here either physically or sonically. So sadly they will have to go, but what to replace them with, without losing too much?

I have spoken to a number of dealers, but most of them have never heard of my present components just "we've got so-and-so in stock, come in for a listen". The honourable exception was a chap called Paresh at Riverside Hi-Fi, who was familiar with my existing system, and understood exactly what I wanted to achieve. His suggestion was a pair of Martin Logan Frescos, and he offered to let me try them at home to see if I liked them. On the face of it these would seem ideal wall mounted, so that's one problem out of the way, and the flat panel technology appeals. After years of living with electrostatics I think I might struggle a bit with box speakers, no matter how good.

Before going ahead, could you please let me know if you have any experience with these Frescos? If I do take this route, will my Quicksilvers be a good match, or should I consider a change of power amp? Or is there anything else you would recommend, bearing in mind they will have to be small and able to work well if placed close to an end wall?

I am not at all interested in deep bass, as from previous experience I should be more than happy to add a REL to deal with the bottom octave.

I shall also need an equipment stand. There used to be dozens on the market, but all I can find via Google is the Townshend (ugly) and the Russ Andrews Torlyte (£600 - I don't think so). I have in mind a simple glass and steel unit and I still have some Medite platforms which could be added if necessary. Any suggestions? Would it be okay to use the top shelf for the turntable, or would a wall-mounted shelf be better? (I understand Rega do one, but it's not even listed on their web site).

Finally, not connected with the above but I thought it might amuse you, as I suspect we are of a similar generation. My second wife was some twenty years younger than me and not surprisingly our listening tastes varied quite a bit... I usually have Radio 4 on most of the day, while she preferred endless pop music, Radio 1 or commercial stations. When she first moved in with me I pointed to the glowing valves in the Quicksilvers and explained that my wireless was too old for that sort of stuff and would only receive the Home Service. I got away with it for about nine months, until one day she was idly pressing buttons on the

FM4 and, of course, out came Capital Radio, strength five. I've forgotten exactly what she called me, but it wasn't very ladylike!

Geoff Mackenzie

I don't know the Frescos, so cannot comment - but why not drop in to the dealer and listen at least? Otherwise, there are no open panels that are suitable nowadays. Sadly, NXT don't now occupy this region of the market. You will need a high quality, small box loudspeaker of good sensitivity - a contradiction in terms. Our group test this month of small, inexpensive loudspeakers will interest you I suspect; the largest of the group, B&W 603 S3s, are the most sensitive. KEF's iQ5 is meant for near wall placement and may just fill the bill.

Henley's MR5 stand of glass and aluminium is good looking and works well; I use one and can recommend it. If you can, use a wall shelf for the turntable. Either get a proprietary one or search B&Q. I believe I saw some very heavy duty kitchen shelf brackets that would fill the bill. Use some thick kitchen worktop to build a faux marble jobbie, or similar!

*I've got the bruises to show that there are problems with them being twenty years younger. **NK***

The Martin Logan Frescos may be an anti-climax after your Quad ESL63s. They are a lovely design, but these are not 'real' Martin Logans, in the sense that you don't get the



Henley MR5 glass and aluminium stand - elegant and effective.

benefits of an electrostatic speaker - however flat they may appear to the eye. It strikes me that what you need is a very high quality pair of standmounters. The ALR Jordan Classic Ones are just this, but I think they are too small, and not quite in the same league as the Quads. To wit, the Leema Zens are extremely

analytical - very much like a studio monitor, and these would be ideal for around £1,000. **DP**

LOW LIFE

Thank you for your insightful reviews and good guidance through published responses to readers queries, all of which have helped me shape my own sound system over the years. I went into home cinema but missed my old hi-fi so much that I've brought my two-channel equipment back into service and also upgraded it a bit recently. My system consists of the following: Quad 99CDP2 (using the fixed output), Creek OBH-12 passive preamp, Quad 909 power amp, B&W 805 Signature and dedicated stands, all wired up using Townshend Isolda DCT300 interconnects and matching Townshend Isolda speaker cables. I also use an Isol-8 Minisub 2 and AC leads, which improved the system significantly (lower noise floor, tighter sound, better detail). I like female vocals, piano music, jazz and a bit of

low volume listening, perhaps a better power amplifier instead of the Quad 909? I only use digital source so do not need an integrated amplifier or a fully fledged preamp with several inputs. I can stretch to £2,000. My dealer let me home audition a Lyngdorf SDAi2175, which is uncannily smooth and detailed, but (again) better at higher volumes than low; it also lacks emotion and the sound-stage seems narrower than the Quad 909. I have not tried but like what I read of the Sugden A21SE integrated amp or the A21a power amp, but wonder if either has enough power to drive the 805s?

I like my system because it has detail and clarity in the treble and mid regions, and the sound stage and dynamics are quite good, and the bass not bad either, even at low volume (i.e. you can hear it). I do miss the deep and very controlled bass from the PMC FB1+ I used to have, but they took up too much space in our new living room and they also never sang until you cranked

reviewed last month, ideal if you don't need large volumes. This tiny digital wonder really goes for it and may be what you are looking for. **NK**

Of course, Noel's quite right - good sound at low volumes comes not from massive power amps, but sensitive speakers. You would be amazed a how good big Tannoy Dual Concentrics or B&W 801Ds, for example, can sound with just a watt of power. For this reason, I think you have to change your current speakers to something that works with next-to-no power - and my nomination is Revolver's RVV45i (£1,200). These are beautifully musical and sing at low levels - we once privately put them against a certain power-sapping £6,000 speaker and, they won! Better still, it means you then have the capability to go valve. Tube amplifiers really work well at the lower end of their power envelope, when the output transformers are nowhere near saturation point. To wit, consider Unison Research's S2K (£1,495), which has 12 watts of KT88 power. This is enough for a smallish room with very sensitive speakers such as the Revolvers, and will fill the room with the warm, bouncy sound that you crave. **DP**



Flying Mole amplifier - a great digital solution if you want real punch.

pop/rock. I am now wondering what my next step is to achieve my ultimate goal from this system.

I have had enough equipment over the years which play loud well, but I am after something that sounds great at low listening volumes. I live in a terraced house and I can only use the system late at night - it is a rare treat when nobody is in the house and the neighbours out, so I can go loud!

In electrical terms, I think I am after amplification that draws a big current even at low listening volumes, because I think that is what will give the sound the presence and soundstage I am craving for. I am pleased with my set-up and my planned next upgrade was to buy a second Quad 909 and another pair of Isolda speaker cables, to bi-amp and bi-wire, not to go loud but to draw more current into the system. The cost of such upgrade would be about £1,500. Is there a more efficient upgrade, to achieve my goal of great

up the volume. If there is a power amp that gives me more dynamics and controlled bass (without sacrificing the clarity and detail), please let me know and I would be grateful to you.

I love my Creek preamp as well as the Quad 909 power amp but would consider ditching them for an integrated amp. I would also consider valve amplification but I think it would be too costly and/or not powerful enough.

Dai Takekawa

To draw high current you need to use low impedance loudspeakers, but in my experience this offers no great benefit in itself. For a lively sound at low volume you should aim to get a loudspeaker that is sensitive and a little exuberant at low and high frequencies. Here I would generalise and suggest you look at B&Ws and Tannoys, the bigger the better. An unusually dynamic sounding amplifier is the interesting Flying Mole I

WEIGHT A MINUTE

Oh, dear! Oh, dear! There are many esoteric points of hi-fi I will probably never understand, but sometimes when something jumps up and hits me in the eyes I feel I have to respond. In the review of the Ortofon Stylus Balance, Stewart Wennen says that "the gauge is set in Newton metres (Nm), not grams". Now even I can see in the photo that the scale is in mN (milli-Newtons), which are units of force, not Newton metres, which are units of torque! Ortofon are being entirely logical in choosing to scale the balance in mN (unit of force) rather than grams (unit of weight). Grams are not a unit of force except in the presence of an appropriate gravitational field, such as we have on the surface of the Earth, or in an equal inertial acceleration. Actually, it's probably simpler: Ortofon used to state the required tracking force of their cartridges in units of mN, and sometimes gave the approximate equivalent weight in grams at an approximate conversion of 10 mN = 1 g (as given in the instructions for the old Ortofon M 20, FL 20 and VMS 20 series cartridges and the SME 30H arm wand). However, my old Ortofon Concord STD has the tracking force given only in mN, but I see my newer Ortofon MC cartridges have the tracking force given only in grams.

To convert more exactly from mN

to grams, divide the force in mN by 9.80665 m/s² (acceleration due to gravity at the surface of the Earth) to get the equivalent weight in grams: e.g. 24.5 g is approximately equivalent to 24.5 mN. For practical purposes here, a scale factor of 10, as used by Ortofon, instead of the more precise 9.80665, gives an error of less than 2% in the conversion.

Well, having got that pedantic rant off my chest, may I finish by saying how much I enjoy the mag. I particularly enjoy the reviews of older (more affordable!) equipment and the DIY articles.

Gerard Lardner

Aha! A man that knows his gravitational units. Thanks for your elucidation. This confusion has arisen in the past and may explain why Ortofon decided to ditch technically correct milliNewtons for good, old fashioned gravitational grams. As all us hi-fi buffs live on planet Earth, even if some contest this (!), the difference is a little academic I feel, if fun to discuss.

You might be interested in our own newly found accelerative environment - at the end of a pickup arm. I was joking to Adam, our Assistant Editor, the other day, as we were reciting the equations of motion, that someone in our readership will have fun reading these measurements made with an accelerometer. Us electrical engineers start to struggle with amplitudes, velocities and accelerations! I look forward to hearing what you and other mechanical guys might make of our tinkering. Interesting literature on things that vibrate - a subject that raises big laughs from the girls in the office - can be found at www.bksv.co.uk/Literature/Primers.

NK



Name the Tannoy. We asked Tannoy and give their reply below.

SPOT THE TANNOY

Hi, hopefully you can help me identify these speakers made by Tannoy in the 1960s. I picked them up at a house clearance auction with a couple of Quad 11 amps, control amp and tuner, Thorens TD124 Mk11 and an SME 3012 Mk11 with Shure M55E cartridge, plus lots of spares. I won't say how much I paid, but it was less than a nice meal for four!! They measure 16.5 D x 25.25 W x 33 H inches and have the serial numbers 052538 & 54 on the labels. The model definition looks like 15 Dual but it is hand written in pencil so has faded. They look very similar to the Canterbury but the dimensions are slightly different. Your assistance would be much appreciated.

Alan Vincent

You've got us guessing Alan. A meal for four costs £16 from your local chippy or, I was horrified to learn recently, £1,100 at Claridges for a Christmas Day meal. So that gives us quite a price range. And I'll be eating chips for Christmas.

NK

The general consensus is that it's a Tannoy Corner GRF (Guy R Fountain ...obviously!) that was manufactured from 1956 - 1966. **TANNOY**

HYBRID

I'm hoping you can help me resolve a little problem. My system consists of a Rega P3 turntable with full Origin Live modified arm, Dynavector DV10x5 cartridge, Naim Stageline phonostage,

Billy Vee
SOUND SYSTEMS

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**Melody P1688
Signature preamp
works nicely with a
NAP150 - visually and
sonically. But it costs much
more, so alternatively try a Croft
Micro.**

Naim 112x and Naim 150x pre-power amps, Naim CD5i and Neat Elite S.E. loudspeakers. I read with interest your December issue and the classic amplifier test. I auditioned the Naim Nait 5i and felt it wasn't as explicit as my pre-power amps. This may be a bit convoluted but I made the fatal mistake of popping in to a top-notch hi-fi store recently and was treated to the joys of a hybrid Pathos amp.

The key element was emotional engagement which I feel my Naim combo lacks. Admittedly, the amp was over £5,000 and hooked up to a Moon Andromeda and what looked like very expensive speakers. The sound was sublime, better than I ever thought CD could sound. So reading about the Vincent hybrid I wondered would this be a corrective, for I quote in reference to the Naim Nait 5i "It isn't the last word in transparency or emotional presentation...". This could also be said of my present amps.

Now obviously I'm not going to get the sound of a system costing possibly in excess of £20,000 with my present set up and a changed amp costing £1,000 or so. I love the drive and attack of my Naims but would like something a little cultured. On both CD and vinyl replay they sound very good with any Dance-style music (Massive Attack, Funkadelic etc.), but seem unable to really shine with much else (mind, the Pixies Surfer Rosa on vinyl really hits the spot) - my musical taste is very eclectic. A pre-requisite is that the amp would have to work well with my Neat Elite S.E. speakers, which I consider to be very sound (no pun intended) and cost more than I ever felt I would splash out on a pair of speakers. Lastly, my format of choice is vinyl so it would have to work well with my souped up Rega.

Yours in anticipation,

Des.

Good though the Naims are, you will indeed gain an increase in emotional involvement with an amplifier like the Vincent SV-236. Its valve preamplifier stage ups the emotion quotient nicely but the Class A/Class B solid state power amplifier means you won't lose too much of the detail and authority that Naim equipment does so well. **AS**

Des, I have the very solution: use a valve preamp with the NAP150. I did this very thing the other day by soldering up a DIN to phono lead (you can buy them) in order to connect up, alternately, a Quad QC Twenty Four and a Melody P1688 Signature Both gave great results, showing the NAP150 is smooth and powerful sounding, and quite neutral. Naim's preamp contributes much to the classic Naim sound, so if you want a different presentation, but with all that classic oomph of a Naim, this is the way to go. I was really impressed by the blend of qualities and abilities, all at a reasonable price. **NK**

BAFFLED

Whilst I thoroughly enjoyed Peter Comeau's article on baffles in the November 2006 issue may I, with due timidity, raise a query or two? Whilst it must be true that putting two edges against wall and floor extends the baffle, it is surely unlikely that this extension would count for much since the pressure short circuit is amply available at the other two edges? One might as well claim that placing the drive unit in the top corner of the baffle rather than in the centre extends the baffle in a similar way. Clearly there is an advantage to be gained by juxtaposing edges with wall and floor but, as Briggs suggests, isn't it largely a matter of reflections?

The real gain, of course, is that the unit can be placed low and off-centre. Briggs also shares your concerns with regard to baffle rigidity. Your claim that a box is inherently more rigid is, of course, correct, but there is pressure within, especially if the box is closed - can there really be much such pressure on a baffle? I see that one needs rigidity in case there is transmission from the unit's chassis but that is perhaps fairly easy to deal with.

You'll be amused to know that my first baffle was a half sheet of plasterboard and the hole for the 12in Goodmans unit (meant for radiograms and TVs - miniscule magnet!) was cut with mum's bread knife! Later, having dug out much earth, I mounted a better unit in the floorboards - adequately sealed by the detritus of ages, plus a heavy carpet. That was very fine but I thought a more powerful magnet would be an upgrade, only to find that I had less bass. Finally, on an open baffle system, is the distance to cancellation the determinant, the longer way round, the sum of the two, or their average? **Ronald Swains**

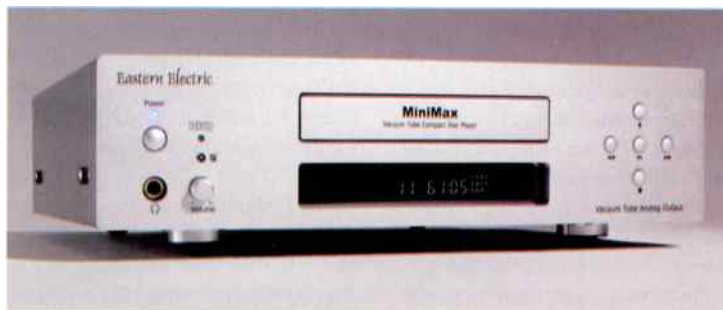
No need for timidity, questions are always welcome! I think the problem with understanding the behaviour of the open baffle system is in the concept of cancellation. As I pointed out in the article, cancellation of the front and rear radiation does not occur abruptly at the frequency where the baffle is a half wavelength in dimension but, instead, the bass level falls away slowly at 6dB per octave. So there isn't a pressure short circuit until well below the frequencies at which cancellation starts to affect output.

As far as the edges of the baffle are concerned you will, of course, experience cancellation at the highest frequency where the distance from the drive unit to the baffle edge is shortest. So to make the most of the floor extension you should design a 3-way system where the bass unit should be placed close to the floor. In this position floor reflections boost the upper bass too, which can be an added bonus or hindrance depending on the design. We will be covering these aspects in our practical example later in the series and, of course, most open baffle builders have already found this out by experiment! In-room the overall effect is, if you like, an average of the baffle dimensions. What you might lose from the shortest dimension is made up by the longest. In fact, most open baffle users are surprised by the level of extended bass in a typical room, as many Quad ESL57 owners will attest.

As for rigidity you have, naturally, lost the pressure effects evident in a closed box but you do have to beware of the mechanical vibration from the drive units causing resonance in, what is in effect, a free edge radiating plane. This isn't so easy to deal with as you might think, which is why Gilbert Briggs went to all the lengths of producing and marketing the Sand Filled Baffle. **PC**

INTERESTING DECADE

Dear sir, being a record collector from my childhood and, consequently, one of those who affirm the superiority of analogue performance compared to digital sources, I am glad to see the participation of our beloved magazine *Hi-Fi World* in the revival of the vinyl era. A few years ago I purchased a Henley



Eastern Electric Minimax all valve phono stage - Noel's favourite.

MC50 moving coil phono stage, with which performance was very modest with my Ortofon MC30 Supreme. However, I decided to open the phono stage and change the internal wiring to 20AWG Audioquest silver plated solid copper wire. The improvement was astonishing; this small £200 box suddenly took on the performance of a high-end device.

I was happy until I came across an advertisement for the Lehmann Decade Phono stage costing 1200Euros. Although I realise it has not been covered by you in the magazine I would be grateful for your opinion about buying it as an upgrade. Also, I was surprised to see many small capacitors in my Henley phono stage connected to the PCB through nickel supports instead of pure copper ones. I think it is a determining factor in compromising sound quality, do you?

Thanks and regards,
Nadim El Awar

I haven't heard the Lehmann Decade, only the Black Box, which was excellent. However, with an MC30 Supreme you may well like to consider stepping up to an all-valve stage with input transformers, such as the Eastern Electric Minimax. High quality valve stages like this are a superb experience.

Nickel isn't likely to improve the sound, but then various metals

are used on bidders electrical parts, which is why custom components have appeared and are used on the best products, but you do pay of course. **NK**

BURNING DVDS

I have tried to get help from suppliers and manufacturers on an ongoing problem, but no-one seems willing (or able) to respond. I am hoping you might be able to spare the time to assist me on the above subject, which saw you publish in March 2005 a letter I wrote to *Hi-Fi World* magazine (to which I am a subscriber). I followed the advice you gave in response to the letter, i.e. invest in a good front end and a 24/192 sound card and continued to transcribe well recorded vinyl to DVD-A discs produced on my computer but with increasingly

mixed results. Hence the problem that seems to be increasing in frequency, which is that more and more of the discs I burn play perfectly well through my Marantz DV8300 Universal player for about 95% of their playing time, BUT, there is increasingly a tendency for what can only call dropout, i.e. for no discernible reason during playback there are periods of total silence lasting from anywhere between 4-5 and 10-12 seconds. Playback resumes more or less at the point at which it ceased. On very rare occasions some discs suffer more of this problem and don't play well at all and I have put this down to faulty media (the disk used). I have tried a variety of disks from numerous manufacturers and always burn at the slowest possible speed with as few other programmes running at the same time, but cannot believe that the problem lies totally with the blank discs used. As well as trying to clarify what the problem is I have tried to isolate where the problem might be the basic Wave file recordings made via the sound card play back without fault through the sound system linked to the computer (both before & after editing) and when I down sample these to 16/44 and play via a wireless Squeezebox unit into my hi-fi system. Both my DVD writers produce perfect CD copies when I produce them, whether via down sampled 24/192 Wave files or via original 16/44 files. I currently use a 6 month old Dell

Dimension 9150 computer (2Gb RAM & 300GB hard drive) with an M Audio 24/192 sound card installed. Editing is via Adobe Audition 2 and the DVD-Audio authoring programme is Discwelder Bronze. Discs are burnt, either via the Dells NEC/Optiarc DVD writer, or via a 2 year old Sony DRU700A DVD Writer that I had in my previous computer and have also had installed into the Dell. The faulty playback problem occurs whichever DVD writer is used. All connections in the hi-fi playback system are OK. My suspicion is that the problem might lie with the Discwelder DVD-Audio authoring programme, or within the Marantz player, or lastly but least likely the new Chord 64 DAC I have recently purchased and installed in order to improve CD playback. I use the down sampled digital out from the Marantz into the Chord DAC. Whilst I have my suspicions I cannot find a way to verify them. Minnetonka support have not responded to my emails and the people at Marantz don't seem to know what the capabilities or limitations of the DV8300 are with regard to appropriate media to use in their machine. Chord are prepared to check the DAC and modify software in order to interface with the Marantz if necessary, but I have no way of knowing if the DAC might be the problem. Commercially produced SACDs and DVD-Audio discs play perfectly well through the Marantz and via the DAC.
Yours gratefully,
Hugh Duff

This is a little too complicated to be able to pinpoint with certainty. My first suspicion here is buffer overrun in the DVD burner, due to the amount of data being sent. The fact that two different burners exhibit the same problem appears to rule this out, but as there are only a limited number of DVD mechanisms and much OEMing, plus buffer sizes tend to be similar, it could be the source of your difficulties. I see you are using a Sony DRU700A DVD and I have had great results with the older 500A, so this raises some doubt in my mind.

That leaves the Marantz player and its sensitivity to various discs, the sound card and any memory it may be using to buffer data, or Disc Welder Bronze.

To be honest, I do not have a sufficiently deep knowledge of any of these items to be able suggest where such a problem may lie. The only way is to substitute the items, as I am sure you realise, or to be lucky enough to hear from a *Hi-Fi World* reader who has an answer - as they usually do! So if anyone can help Hugh, please write in. **NK**



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QUESTIONS

[1] The 'KI' Nomenclature refers to what?
 [a] Ken Ishiwata
 [b] Kissing Issue
 [c] Kaput Inside
 [d] Kronenbourg Infusion

[2] The SA7001 KI Signature plays CD and what?
 [a] SACD
 [b] MINIDISC
 [c] LP
 [d] HDD

[3] HDAM is an abbreviation of what?
 [a] High Definition Amplifier Module
 [b] Hello Dolly And Maureen
 [c] Hope Didn't Annoy Malcolm
 [d] Hissing Dancing And Messing

[4] According to DP, the midband is the beginning and what of the SA7001 KI Sig's sound?
 [a] "end"
 [b] "side"
 [c] "finale"
 [d] "middle bit"

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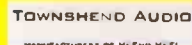
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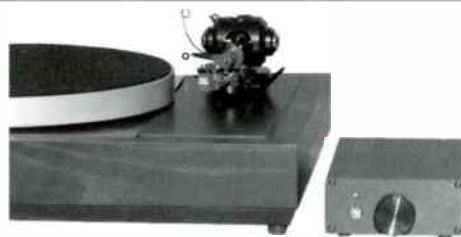
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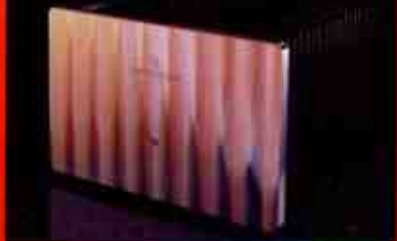
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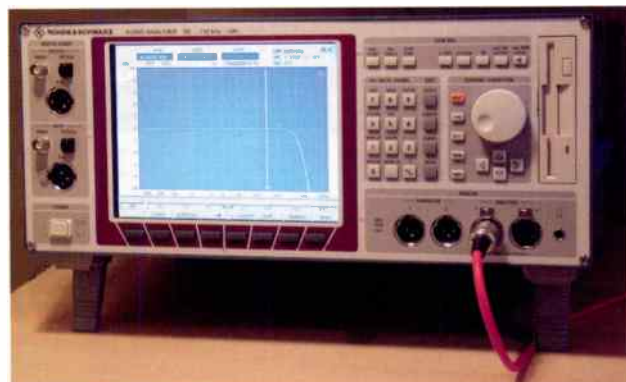
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In-house measurement is costly and time consuming, yet it has always been central to our belief that both readers and manufacturers deserve it, because there is no alternative if complex technologies are to properly assessed.

Measurement achieves many things. It ensures a product is working properly before it is subjectively auditioned. We pick up problems like loudspeaker drive units wired out-of-phase by accident, digital filters that roll-off in a bizarre fashion due to design error, a transmission line loudspeaker with no bass (!), amplifiers with excessive d.c. offsets, excessive jitter and all manner of other funnies.

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We continue to upgrade our testing to keep up with the latest standards, to ensure that both readers and manufacturers receive the most accurate information possible about the items we review. No one does it better than Hi-Fi World.

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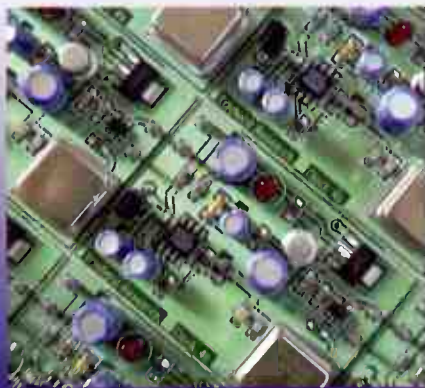
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classifieds ads order form

ADVERTISERS INDEX

2ndhand hifi 113
 Anatek Acoustics 98
 Astintrew 60
 Audiolab 88
 Audio Salon 48,IBC
 Audio T 78
 Audio Xpress 123
 Audusa 116
 B & W BC
 Big Ears 113
 Billy Vee 106
 Chesterfield 84,85
 Choice Hi-Fi 125,127
 Classique Sounds 110
 Dali 18
 Decent Audio 115
 Densen 26
 English Valve Amplifiers 116
 Flying Mole 12
 Heathcote 112
 Heatherdale Audio 115
 Henley Designs 62,63
 Hi Audio 58
 High End Cable 111
 Hi-Fi Sounds 122
 Ian Harrison 114
 Icon Audio 74
 iCube 44
 KEF IFC
 Kudos 115
 Langrex 98
 Leema 76
 Mantra Audio 98
 Matrix 123
 Michell Engineering 44
 Midland Audio Exchange 117
 Naim 22
 Needles & Spins 48
 Oehlbach 44
 Origin Live 42,114
 Pressblog 112
 Retro Reproduction 110
 Rochester HiFi 111
 RPM 111
 Sevenoaks 28,29,30,31
 Shadow Audio Cons. 64
 Signature Audio 12
 Stamford Audio 80
 Sugden 58
 Teac 38
 The Chord Company 54
 The Missing Link 48
 The Right Note 74
 Trichord Research 123
 Tube Shop 123
 Turntable World 122
 V'Audio 111
 Walrus 72
 Whest Audio 60
 World Design 124,126

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MARCH 2007 - 5TH JANUARY 2007

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THE COMPLETE MOTOWN SINGLES: VOLUMES 1-6

UNIVERSAL/HIP-O SELECT
1961-1966

"there is only one word you can use to describe this collection - beautiful..."

CD-based collections of music often proclaim to cover all the music from this artist or that era but then you quickly find gaps which not only disappoint but generate cynicism that you're being ripped off. If you are one such victim, this series of box sets, which focuses on the singles from the legendary record label Motown, will restore your faith in mankind. This is not an original album, but Motown singles, like an album, are a body of work - so this collection deserves attention.

Formerly only available as imports from the USA, this landmark series is now being distributed into the UK along with the brand new set, Volume 6. This limited, on-going series covers the lot. Every single Motown ever produced. So that means every A and B-side and all, and I mean all, subsidiary labels. That includes Tamla, Motown, Gordy, V.I.P., Soul, Rare Earth plus the temporary labels such as Divinity (Gospel), Mel-o-dy (Country), Workshop Jazz, Miracle plus all the rock/pop, blues and jazz recordings Hitsville ever put out. You also receive first and second pressings which vary slightly on different takes.

There is only one word you can use to describe this collection - beautiful. In fact the series is building into a complete work of art, both in the substantial body of work featured within the sets and for the superlative production values that have been set for the incredible packaging. Each set is presented as a

bound book. Within the front cover of each book is a replica 45rpm jukebox vinyl single (jukebox because there is no spindle holder in the centre of the record). After that follows a wonderful glossy, colour reference book which tells the story of every featured track in the set along with label photos, sleeve and artists pictures plus company document images.

Within this section you will also find informative essays written by notable figures. For example, Volume 2 features text from Claudette Robinson from The Miracles and noted author Gerald Early. Dedicated fans will also appreciate the multi-tiered index which groups the singles by artist, label and title. Further into the bound book comes the CDs themselves, slipped into an open topped sleeve with, on the facing page, a full track listing.

The music itself has been superbly mastered. Harry Weinger, Vice President of A&R for Universal Music described the search for the raw material, "There isn't tape for every song. I'd say 15% of them have no tape left. Motown, in the early days, especially, was not saving their masters because who knew it was gonna last? I think the challenge was not being able to really compare different versions, because so many of those songs are rare. We know what 'Money (That's What I Want)' sounds like and we know what 'Please, Mr. Postman' sounds like, or we know what 'Shop Around' sounds like, but there's two different versions of 'You Can Depend On Me'. There's

this relatively unknown guy called Herman Griffin, there are these lesser-known artists such as Nick and the Jaguars, too. You have to dig deep to find their 45s. I think the challenge is making sure what you've got is the definitive statement. We have since discovered that there are probably a couple of little things that are a little bit off, but not by much."

However, even utilising masters, the task of recreating the finished singles was sometimes a daunting task. For example, sometimes the reissue team would find a master that didn't have a vocal on it or, "this is the only version of whatever song and you'd play it and there wouldn't be hand claps or there wouldn't be background," added Weinger, "or it would be the exact version of the song you want but there's no background or vocals. So that was a big challenge."

When masters proved elusive, and to fill in the master gaps, the reissue team had to contact dedicated collectors. "We worked with a number of different collectors. Keith Hughes in England had a professional ex-BBC turntable at home and he had mint copies. He would burn them onto CD off of his professional BBC turntable. Then they'd come to New York and go through a series of high-end cleaning."

The task has proven to be well worth it. A candidate for the most impressive series of box sets there has ever been, The Complete Motown Singles series is utterly breathtaking. **PR**

Zingali



Zingali Loudspeakers has been my passion. A crusade since I first heard a pair of Overture Twos almost nine years ago.

Jack Lawson



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Zingali Loudspeakers has been my passion. A crusade since I first heard a pair of Overture Twos almost nine years ago. Today the brand's signature model finally has arrived. It is a loudspeaker as beautiful as it is unconventional. It only bears the name of its creator and its owner. It is the first loudspeaker model to have no name, perhaps reflecting its neutrality.

It is the result of 20 years development to achieve the perfect loudspeaker; a transducer which adds no colouration and thickness, and subtracts no dynamics or harmonics. Coming from the land of Gucci and Ferrari, you need not ask if it is musical. It glues you to your seat; wherever you are in the room as there is no stereo sweet spot.



Happily, at 124cms height it is neither the size nor the shape of a wardrobe. At £15,995 per pair it offers very good value against

much more expensive and inferior flagship rivals.

The entire range, however, may be neglected for similar reasons of compact size and prices. Don't allow your expectations to limit your hopes. At £1,995 you may not believe it is

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