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ROTEL

welcome

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Only in a hi-fi magazine can writers get away with recommending products with multi-digit price tags as being, "excellent value for money"! The trouble is, hi-fi journalists and hi-fi enthusiasts are not one and the same thing...

I am reliably informed that most people save up money and finally buy the hi-fi they want. This process, I'm told, can take months or even years. But in the hi-fi journalist's world, this does not

happen. Instead, should the scribe want something, then a simple phone call to a manufacturer saying, "do you know who I am?", usually does the trick.

This explains why hi-fi writers, whilst constantly speaking about 'value', wouldn't know it if it crawled across the room and bit them. They live in a world of hi-fi systems with telephone number price tags, go on press trips to hear the best from all around the world, and don't know the meaning of the word 'cash'.

Whilst being guilty on several of the above counts (I'm 'pleading the fifth'), I can at least appreciate that sky-high price tags don't necessarily buy you hi-fi happiness (although manufacturers would doubtless disagree). I've heard much high end, a lot of which has left me cold. There's some brilliant esoteric stuff around, but there's plenty of overpriced and over-hyped rubbish too.

That's why this issue is devoted to affordable audiophile kit. (With one exception) everything inside costs less than £1,000, and most half that or even one third. Having spent months assembling it all, several things surprised me. Firstly, the sound of some cheap separates is truly special, and secondly, almost none failed on the test bench - unlike with many of our high end special issues...

From the stunningly styled Astintrew separates (p10), to the wonderful value Rotel RCD-06/RA-04 (p18) and the budget esoterica of the Rega Apollo/Brio 3 (p20), to the technically superb new Audiolab 8000CD (p24) and bargain Usher CD-1 (p62), this issue is packed with brilliant budget buys. Enjoy!

So to McIntosh's MC275 power amplifier (p70), which weighs in at £2,650. In so many ways - sonically, technically, aesthetically - this is an amazing product. If you can't afford it, then at least there's a chance to win one if you go to the Hi-Fi World sponsored Park Inn Show (see p29). You could walk (well, stagger) away with one free, gratis and for nothing. Actually, no one will come away empty handed, as this show will be great fun and a real learning experience too. See you there!

David Price, editor

verdicts



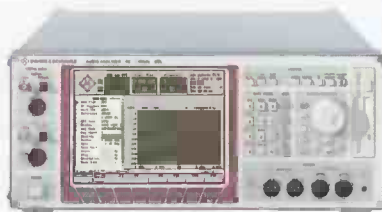
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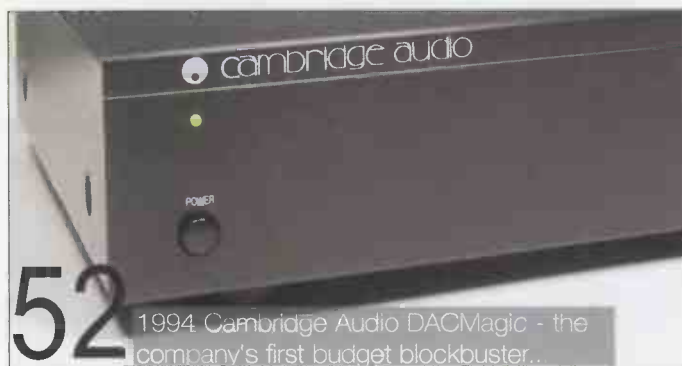
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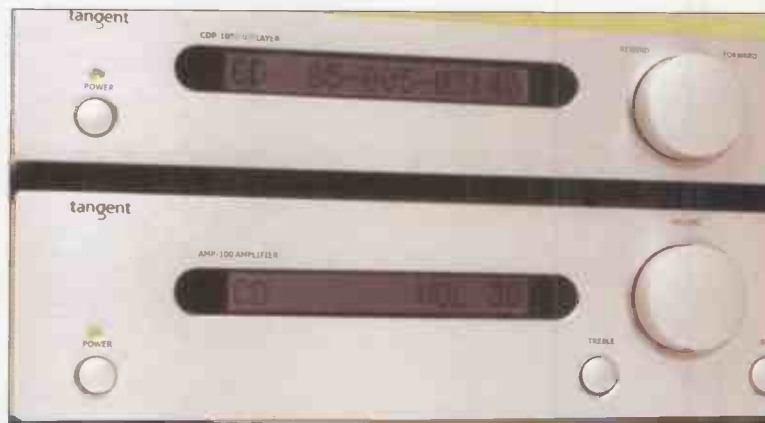
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THE CRUSADERS

An eighties classic is back, refreshed and reinvigorated. Ruark's Crusader III loudspeaker has been made to celebrate the company's twentieth anniversary, and sit at the top of the marque's Heritage Series as Ruark's new flagship transducer. The £2,800 Mk III's implement new and improved driver technologies and construction techniques, says the maker. It's a true three-way design, incorporating a ribbon tweeter, a 7.5cm dome midrange driver and 18cm composite carbon/pulped fibre woofer, housed in hand-crafted 25mm thick MDF enclosures critically damped with an internal non-symmetric brace system, with a contoured 25mm veneered plinth and adjustable 8mm spikes. Three standard veneers and two special finishes are offered. Ruark says the Crusader III's efficiency and load characteristics make it suitable for a wide range of audio applications. Vital statistics are 950x230x320mm and 26kg. For more information, click on www.ruark.co.uk.



KIND OF BLUE

BACK HOME

After spending the past few years majoring on multichannel, it's nice to hear that Japan's oldest hi-fi company, Denon, has two new two channel hi-fi separates. The new 700AE Advanced Evolution Series comprises the PMA-700AE stereo hi-fi amplifier and DCD-700AE stereo CD player, both priced at £249.99. The company says that both 700AE components "offer amazing value, are incredibly well built with solid alloy fascias and heavyweight power supplies and both deliver musical performance beyond their price class". The 700AE CD player includes Denon's unique AL24 processing to make all CDs sound better, has 'Pure Direct' mode, can play CDs with MP3 and WMA files and even has pitch control for music lessons.

The 700AE amp is fully discrete, with a High Current (HC) Single Push Pull Circuit, high-speed, large-capacity power supply, audiophile-grade capacitors



and a clean, straight-path circuit design. Both models are available in silver or black. See: www.denon.co.uk

IXOS's new XMM607 Bluetooth wireless stereo headphones (£79.99) are said to be ideal for use with iPods and any MP3, CD or DVD player. They come supplied with a dongle for cordless digital music from any player with a headphone socket, are certified to Bluetooth 1.2 specification for high quality audio playback and signal quality (radio frequency range 2.4-2.4835GHz), offer continuous playback time up to four hours and a standby time of up to 180 hours. They have an operating range of up to ten metres (in open space) and the dual-purpose power supply recharges headphones and the dongle simultaneously in three hours. For more information, click on www.ixos.co.uk.



MAGIC TOUCH

The princely sum of £999.95 buys you the Bewitch A30 Line Integrated amplifier, the result of collaboration between Days of Guangzhou Ltd and Guy Sergeant, a UK-based audio engineer formerly of Audio Innovations, JPW and Heybrook. Days of Guangzhou Ltd are principally a transformer manufacturer with twenty years of experience in the electronics industry. The amplifier features full Class A operation, three line level inputs, 30W (claimed) per channel, 4 and 8 ohm output taps, twin valve rectifiers, choke smoothing, ALPS potentiometer, SCR coupling capacitors and carbon film resistors. Russian made ElectroHarmonix 6550 output tubes are supplied as standard. The manufacturer says it sports "very substantial construction", including cast metal transformer shrouds. For further details contact Pure Sound on 01822 612449 or email pure_sound@hotmail.com.

SHOWTIME!

Anyone interested in affordable audiophile kit should make a date with fate – the London Sound & Vision Show (on the 22nd to the 24th September) is for you! With over sixty exhibitors, it's your chance to see everything that's great about real hi-fi. You'll be able to see and hear some brilliant bits of kit, many of which are featured in this august journal. The vibe is very friendly, not formal, and you'll meet countless luminaries from the UK hi-fi industry, and Hi-Fi World's very own David Price is also attending. It is held at the Park Inn Heathrow hotel, and will run for three days, the first of which is for the hi-fi trade and the other two for fully rounded human beings. As it's sponsored by Hi-Fi World, a good time is guaranteed for all – we'd really like to see you there, and will be happy to help with audio advice. For more information, please contact the show organiser Roy Bird at Chesterfield Communications 01829 740650, email roy@chestergroup.org, or click on www.chestergroup.org.

CORRECTION

The price of the AAD C-550 loudspeaker is £499 per pair, and not £900 as stated in September 2006's review. As such, this qualifies them for our full five globe rating... so congratulations are in order!



TALKING RADIO

Boston Acoustics has launched a truly tiny, polar white or platinum-finished tabletop radio which perfectly matches the sleek, chic appearance of the iconic Apple iPod player. For £130, the Receptor Series II delivers a wonderful way to really appreciate your favourite downloads around the home, an exceptional tuner and a host of other natty features, says the company. For more information, click on www.bostonacoustics.co.uk.



SPOTTED:

Revolver loudspeakers' talented designer Michael Jewitt in typical Cornish repose with his beautiful '65 S-type Jag. Not so much the West country's Inspector Morse as the Jason King of the English Riviera, rumour has it that Mr J has an exceedingly good £5,000 three way loudspeaker waiting in the wings, more of which next month...

NEW ANNIVERSARY

QED's new Silver Anniversary 'XT' biwire loudspeaker cable is described as a natural progression to the range, following last year's Silver Anniversary-XT speaker cable. The new biwire version incorporates QED's high end 'X-Tube' technology; the precise cylindrical construction of the silver-plated, 99.999% pure, oxygen free copper cables is said to reduce the distortion caused by 'skin effect'. "The result is a neutral speaker cable that allows good hi-fi and home cinema equipment to deliver their full potential", says QED. The new cable uses side-by-side 'double figure 8' arrangement with each silver-plated core visible through a flexible 3.9mm diameter clear polyethylene outer sheath. To ensure correct speaker 'phasing' the inner spacers, which maintain the cylindrical configuration of the cores, are individually colour coded. These spacers are also 'crushable' to allow straight-forward crimping with 'Airloc' speaker plugs. To optimise sonic performance by keeping capacitance as low as possible, the two outer conductors carry the positive signals and the two central conductors are used for the negative (or return) signals. QED Silver Anniversary 'XT' Bi-wire speaker cable has a suggested retail price of £10 per metre, and is available now from QED dealers nationwide. For more information, click on www.qed.co.uk.

POCKET ROCKET

PURE's new PocketDAB 1500, a stylish handheld portable DAB and FM digital radio, is on sale now for £89.99. The PocketDAB 1500 builds on PURE's best selling PocketDAB 1000 radio by adding FM with RDS, textSCAN, a new colour scheme and a ChargePAK rechargeable battery pack – plus a bundled set of Sennheiser's excellent MX300 in-ear headphones (which are also used as an aerial). At just 123g PocketDAB 1500 is PURE's lightest portable to date. It sports modern, attractive styling, with black anodised aluminium casework and attractive orange backlight display with clock and status icons. With the Lithium Polymer L37 ChargePAK, PocketDAB 1500 recharges from the mains for up to 24 hours of roaming DAB playback. The radio has been designed for ease of use with a central joystick for navigation and separate controls for key functions like display settings, presets and DAB/FM. The radio automatically remembers the user's ten most listened to stations in a favourites list and has twenty presets (10 DAB and 10 FM). Stations can be ordered alphanumerically, by multiplex, by favourite and by active stations. The radio's heart is a Frontier Chorus FS1010, which incorporates a META multi-threaded processor and DAB technologies developed by Imagination Technologies' Metageance and Ensigna divisions. For more information, see www.pure.com.



MISSING IN ACTION

Purveyors of excellent quality interconnects (we know, we use them!) Missing Link have moved premises. The new gaff has a "permanent test facility, workshop, offices and demo room" – the address is 23a-25a Prest Avenue, Meden Vale, Nottingham NG20 9PQ, and the new phone number is 01623 844478.

AND THEN THERE WERE FIVE...

The latest version of the Genesis 5-series loudspeaker improves on the previous generation. "The new G5 represents a change in design direction for the company," says Gary Leonard Koh, President of Genesis, "resulting in a loudspeaker that will be able to realise its potential when used in any music-lover's system." The system comprises a power amplifier, speaker cables and loudspeaker, and features a unique suspension system for the cabinet so that it can be used on the many types of flooring encountered throughout the world – including uneven natural stone tiles, granite and marble floors, deep pile carpet, and suspended wooden floors. The newly designed 8-inch woofers use a stronger motor structure, stiffer frame, and larger suspension to achieve higher sound levels with less distortion. Recessing the front tweeter has improved imaging and off axis response by reducing diffraction effects caused by cabinet interactions. Increasing the slope of the rear baffle on the head to just the right angle enhances the overall effect of the rear tweeter. This, coupled with the reworking of acoustic treatment in the midrange cavity deepens the sound stage creating a more accurate and enjoyable 'live music' listening experience. The company says that a no-compromise approach has been taken to ensure that this speaker can be incorporated into any number of situations "producing nothing less than spectacular results." The Genesis 5 loudspeaker retails for \$16,000 in High Gloss Black, Titanium, and Arctic Silver. See:

www.genesisloudspeakers.com.



SPOTTED:

Kulwinder Singh Rai was once a happy-go-lucky hi-fi hack, doe-eyed and innocent to the world. Then, inexplicably, he moved into hi-fi public relations, and the effects are clearly visible. Our message to other audio scribes with a penchant for PR – just say no! NEXT MONTH: Andy Giles.

SOFT MACHINES

A new software tool designed to measure and display audio system dynamics in real time 3D, to a claimed resolution "never possible before", has been launched by Manic Media. Stona is said to be ideal for any audiophile who wants to accurately measure the responses and dynamics of their set up *in situ*. This technology is based on "revolutionary theory into the biomechanics of the ear and neural perception of sound". The algorithm at the core of Stona is said to "enable 100% accuracy in analysing audio signals in real time, and more importantly re-synthesising the signal modelled on the human ear". In this sense it is now possible to see the cochlear hairs 'firing' in real time, in response to an audio signal, Manic Media says. The software analyses any given audio signal, input by microphone or soundcard, and then plots a scrolling 3D landscape of amplitude and frequency against time, drawn in real time. The user can navigate around the 3D environment, viewing from any angle and zooming in and out, to areas of interest. Stona is priced at £39.95. By playing a test sine sweep through an audio system, and then placing a microphone in the room relative to where the user would sit, the software is said to output a precise visual representation of the performance of the system. The visual output will display any changes made to the audio system, such as level changes, component changes and of course speaker placement within the room. A five day free trial version is available for download at www.manic.co.uk. For more information, you can click on www.darkmatteraudio.co.uk.



ASTINtrew is a new startup company making stylish yet affordable hi-fi separates. Channa Vithanna enjoys its idiosyncratic first system...

Trew Faith

Currently, for obvious economic reasons, it isn't often that a new hi-fi company is formed here in the UK. But ASTINtrew is one such rarity and is an interesting manufacturer because, firstly, they have an entire system from the outset, consisting of preamplifier, power amplifier and CD player, unlike some who can only afford to bring out just the one product, like an amplifier for instance. Indeed, ASTINtrew also have an AT6000 Clean Power Distributor unit for the mains, AT2000 integrated amplifier, plus a loudspeaker and cables out soon. Secondly, the superb design and build opposes the start-up trend by definitely not being 'hair shirt'.

The man behind it all is Michael Osborn, who is experienced in product design and engineering. He started ASTINtrew in 2004 and worked with an audio engineer in the UK to develop the electronics, while he designed the casework. So, why start a hi-fi company now? Michael states, "I felt there was a niche in the 'audiophile' market for a well priced entry-level product range with good sound and good looks. I also believed that the 'iPod generation' need to be brought back to the joys of listening to quality sound in the home; this is why I have offered an MP3 input on the fascia, along with both 6.3 and 3.5mm headphone/(in-ear) sockets."

While designed and engineered in the UK, the manufacturing takes

place in China. Michael says that, "from the outset, it was clear that manufacturing in the UK was a non-starter at the price band I was wishing to manufacture within. Manufacturing in the Far East has cost benefits, but managing potential (or real) problems is of course much harder from over here. (However) having a local engineer on my staff to resolve any production issues is very useful".

The system we have for review consists of the (£495) AT1000 preamplifier, (£645) AT5000 power amplifier and (£599) AT3000 CD player. The AT1000 preamplifier uses a Burr Brown PGA2311 resistor network volume control chip (and flywheel type dial) in favour of the

more traditional motorised Alps Blue volume potentiometer. Internally, for the power supply, the AT1000 uses a screened toroidal transformer with isolated power supplies for better sound. ASTINtrew says they, "chose to develop the valve line level stage using the ECC82 valve (one per channel) for a number of reasons. It is thought to be less microphonic than the alternatives and the Electro-Harmonix valves we use give a good balanced sound, unlike some other brands we tried. We are also fitting mechanical valve dampers on all valves. It does tighten up the sound and add to the imaging and is a good value addition. (Additionally) polypropylene input/ output capacitors (are used) for the best sound at the price."

For the headphone outputs ASTINtrew says, "Rather than use a cheap chip-based amplifier for the headphones, we wanted to offer a better sound. Our simple but neat single-ended Class A design does this well, we think." The AT1000 has a boxed weight of 9.1kg. It has an IEC mains socket at the rear, is fully remote controlled, supplied with a system remote with adjustable display brightness and six line inputs including tape and MP3.

The AT5000 power amplifier is a particularly unusual single-ended dual mono design with valves in the power supply.

"Dual mono design is the best way we know of producing an articulate stereo image. A dual wound single toroidal will always be inferior unless manufactured to a very high and costly specification. The two (overrated) 300VA toroidal transformers we use offer both channel isolation with plentiful dynamic headroom and bass control. The amplifier is a single-ended MOSFET design with some novel features. The signal paths are short and go through a small number of components, with short PCB tracks. The power supply is so important and in amplifiers in this price range, is where savings are often made. Our design does not skimp in this area. We have used Schottky diodes and multiple medium value electrolytic power capacitors along with some smaller values, offering an impressive 44 joule power capacity per channel. The design uses an ECC82 valve (one per channel) on the power supply side, providing a constant current high impedance load, as required in the design, it also acts as isolation from supply line variations and 'noise'. This is, as far as we know, a quite novel approach", adds Michael Osborne.

At the rear panel, the AT5000 features two sets of loudspeaker binding posts, phono socket inputs and an IEC mains input socket. It has a claimed 50W/8ohms or 95W/4ohms power output and a boxed weight of 15.5kg.

The (£599) AT3000 CD player is distinctive in that it uses a Phillips VAM1202 transport (and CD711 servo). This transport is isolated from the main casework by being mounted on a 4mm thick aluminium base plate, with compliant anti-resonance dampers between it and the plate. In operation, the transport itself is quiet and its disc-loading drawer glides in and out smoothly with low noise. The AT3000 uses a Burr Brown PCM1738 DAC. For the power supply, a 'C core' transformer has been used, which ASTINtrew says provides "separate power supplies for each section, (also) high quality electrolytic capacitors (are) used throughout (with) polypropylene input and output capacitors."

For the electronic design, ASTINtrew says, "a hybrid valve buffer output circuit for the AT 3000 was developed using the ECC88 double triode valve, selected for

"instrumental resolution was superb - the music was communicative and convincing..."

its exceptional linearity. We have selected the Golden Dragon valve as being the most dynamic and cleanest sounding production valve we have listened to in this circuit. Valve buffers, in our experience, make CD players sound more analogue-like and represent a good 'pound for sound' option in a player at this price point."

The AT3000 has a selectable upsampling feature, indicated by an LED, on the front panel which is labelled 24 bit/ 96kHz. The display is adjustable and a full system remote is included. At the rear panel, there is a single coaxial digital output, IEC mains input socket and a set of analogue output phono sockets. The AT 3000 has a boxed weight of 9.1kg.

The casework, featuring flush-mounted hex-head fixings, uses attractively designed and gently angled aluminium panels with finely crafted heatsinks. The design reminds me of a sleeker, more



resolved version of the ones used by Alchemist from the nineties. Each unit measures 430x340x110mm and the finish and build quality is very good for the asking price as the gunmetal/ titanium finish is superb.

SOUND QUALITY

Kicking off with the AT3000 CD player, and I actually preferred it minus upsampling, because the sound had slightly more vitality. The rhythms from the cello, violin and viola of the Balanescu Quartet from their 'Maria T' release were reproduced with a surprisingly high resolution sound for the asking price. The timbre of the violins, for example, was excellent; they sounded well defined

and extended while the deeper cello parts were agreeably deep, textured and also very nicely defined. Instrumental separation was excellent - the ASTINtrew system produced deep, wide and communicative music via the string music of the Balanescu Quartet.

On 'Yesterday Once More' by the Carpenters, the sound had excellent spatiality, which helped to create a wide and deep presentation. Instrumental separation was also super and thus clearly differentiated the lead vocals from the ostensibly easy-listening compositional style of the music. Instrumental and vocal resolution was accomplished, and combined with the fine spatiality - the music was communicative and convincing.

The simple acoustic arrangements at the beginning of 'Peace At Last' by The Blue Nile produced the perfect canvas for Paul

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Buchanan's longingly melancholic vocals. Both vocals and instruments had excellent definition, texture and resolution - and when the wonderful gospel break arrived, the ASTINtrew system was able to control this extra level of vocal texture and dynamics with ease, without stifling its communicative ability.

The angular and asymmetrically arranged electronic music of 'Windowlicker' by Aphex Twin was handled with confidence and - impressively for the price - a very revealing quality that extracted and opened out the many layers to this piece. Bass was nicely extended and tuneful, which powered the rhythms for this sophisticated piece of electronica with cohesion.

When I compared the (£1,140) combination of the AT1000 preamplifier and AT5000 power amplifier to my more expensive reference, the (£1,595) Moon i-3 integrated using the AT3000 CD player, I found the Moon had slightly superior instrumental resolution with the Balanescu Quartet. Also the Moon just had the edge on timing, with a finer ability to reveal successive notes as they appeared from the recording. However, this was a rare occasion when the Moon sounded narrower in comparison to the lower-cost ASTINtrew amplification. Usually, whatever amplifier I compare it with, the Moon ends up sounding more free flowing and wider, but the ASTINtrew amplifiers had more spatiality and finer instrumental separation - no mean feat!

With the Carpenters, the Moon resumed its superiority with spatiality, rhythm and bass tunefulness while the ASTINtrew remained more adept at instrumental separation. The Moon was better rhythmically and with the definition of instruments with 'Peace At Last' by the Blue Nile while the ASTINtrew was superior with instrumental separation and Paul Buchanan's vocals were clearer. With 'Windowlicker' by Aphex Twin, the Moon - though rhythmically superior - was less revealing than the ASTINtrew in its ability to unravel those complex electronic layers.

One downside of the ASTINtrew pre-power combo was the power amplifier's behaviour at full output [see MEASURED PERFORMANCE]. In practice, at sensible volumes via my reference Waterfall loudspeakers, the inability of the ASTINtrew to deliver full power uniformly across the full frequency band didn't show itself, and the amplifier actually proved a most beguiling and musical performer - but the same cannot be expected at very high volumes,

or with less efficient speakers. As such, we'd recommend you partner the AT5000 with efficient loudspeakers such as Revolver's R45i.

Comparing the £599 AT3000 CD player to the £1,250 Unico CD at approximately twice the cost showed that the Unico had slightly more resolution and timbral depth to the cello, viola and violins with the Balanescu Quartet, but it was very close. On the Carpenters recording, the Unico had more resolution but was less good at instrumental separation. Conversely, The Blue Nile recording had superior instrumental and vocal resolution via the ASTINtrew while the music sounded more diffuse and less well defined with the more expensive Unico.

CONCLUSION

Surprises all round, then, at what this very individual and characterful 'clean sheet' designed ASTINtrew system managed to achieve. The (£495) AT1000 preamplifier, (£645) AT5000 power amplifier and (£599) AT3000 CD player offered a generally clear and open window into all the music. Correctly matched with sensitive speakers, the AT1000 preamplifier/ AT5000 power amplifier combination proved more than capable of scrutinised comparison with my more expensive Moon Audio i-3 integrated. It bettered it with some music, as did the AT3000 CD player when compared to the more expensive Unico CD. The ASTINtrew components work best as a complete system, serving up a wide and deep spatiality with the added discipline of superb instrumental separation.

Considering their performance as separates or as a system, ASTINtrew provides much needed competition for the

REFERENCE SYSTEM

- Unison Research Unico CD player (£1,250)
- Moon Audio i-3 integrated amplifier (£1,595)
- Waterfall Victoria loudspeakers (£2,000)

MUSIC

- Balanescu Quartet, 'Maria T' (2005)
- Carpenters, 'Singles 1969-1981' (2004)
- The Blue Nile, 'Peace At Last' (1996)
- Aphex Twin, 'Windowlicker' (1999)

likes of Arcam, Marantz and Roksan et al, due to their individualistic visual identity, distinct design values, fine sound and excellent build. Instead of doing another 'me too' range of generic looking and sounding separates, they've come up with something really different.

VERDICT

This unusual combo sounds great at the price if matched with efficient speakers - with a musical and explicit sound - but won't work in everyone's system.

ASTINTREW AT3000	£599
ASTINTREW AT1000	£495
ASTINTREW AT5000	£645
ASTINtrew	
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- FOR**
- clear, enveloping sound
 - fine instrumental separation
 - design, build and value
- AGAINST**
- power amp matching issues

MEASURED PERFORMANCE

The chunky At 5000 power amplifier produces a modest 45W into 8ohms, rising to 72W into 4ohms, less than expected considering size and weight. Distortion levels and spectra looked good in the midband but deteriorated significantly at high frequencies. The AT5000 had a problem here, as it would not swing full output at 10kHz on either channel. It managed around 9V maximum (10W) into 8ohms before severe waveform distortion (greater than 3%) set in. At 1W output the amplifier's output distorted badly above about 25kHz too, a performance easily bettered these days. If it isn't run hard the AT5000 power amplifier gives good results, but not when pushed. It will give a rough or coarse sound at high volume, as the distortion spectrum was extended and severe. The circuit uses J162/ K1058 complementary MOSFETs in push-pull, used by Elektor back in 1984 in their Crescendo amplifier.

The preamplifier provides a useful x 3.8 gain at 1kHz, giving an effective input sensitivity in conjunction with the power amplifier of 260mV. Bandwidth was wide and noise low, like the power amp.

This combo is best used with sensitive floorstanding loudspeakers to best appreciate its strengths, whilst avoiding its weaknesses.

Although a budget player, the At 3000 frequency response extends smoothly from 2Hz up to 21.1kHz and there's no deviation from flatness at high frequencies so the player should sound evenly balanced, without either warmth or sharpness.

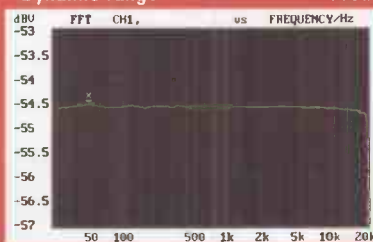
Distortion was low at 0dB, measuring 0.006%. At -30dB - a typical average music level, the result was no different, which is good. At a low music level of -60dB distortion remained low at 0.23%, helping toward a good EIAJ dynamic range figure of 111dB, on par with the best players available. The only wrinkle with this player appeared in the amount of jitter on the digital output; it measured a high 400pS around 400Hz. If this is not eradicated by re-clocking before the internal convertor then there

will be some wiriness in the sound. This player would not make a good transport for an external convertor.

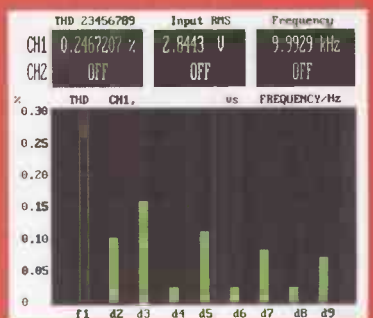
In spite of the above, considering its budget status the At 3000 measured well. NK

AT1000 & AT5000 pre & power	
Power	45watts
CD/tuner/aux.	
Frequency response	2Hz-130kHz
Separation	82dB
Noise	-91dB
Distortion	0.14%
Sensitivity	260mV

AT3000 CD	
Frequency response (-1dB)	2Hz-21.1kHz
Distortion	
0dB	0.006%
-6dB	0.004%
-60dB	0.23%
-80dB	2.8%
Separation (1kHz)	-122dB
Noise (IEC A)	-113dB
Dynamic range	113dB



CD player frequency response



Power amplifier distortion spectrum of 0.25% at 10kHz, 1W,

"A little champ of price/quality ratio: available at an affordable price, especially for a tube amplifier of more-than-usual power."

AUDIO REVIEW Italy, July 2004, Claudio Checchi

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

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

"A refreshing change from the transistor competition with a captivating presentation. Excellent finish and build quality makes for a package strong on value."

HI-FI WORLD, August 2004, Dominic Todd



PrimaLuna



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Since the arrival of the Prologue One, the audio community has been unable to contain its joy nor reign in its praise because PrimaLuna has revolutionised the concept of 'affordable audio.' With a pair of integrated amplifiers with prices more typical of mundane, solid-state products, PrimaLuna showed other manufacturers that compromises in fit and finish, styling and facilities are unnecessary.

Now PrimaLuna can offer the pride of ownership of true separates to aficionados on a budget. As promised, PrimaLuna has expanded the range upward with three exciting new models for users whose requirements demand separates rather than integrated amplifiers.

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And there's more good news: PrimaLuna has also announced retro-fittable auto bias boards for the Prologue 1 and 2, and a moving-magnet phono stage for the Prologues 1, 2 and 3. Additionally, there is now a choice of optional gold or silver front panels in place of the standard finish.

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Punks, Not Dead

Who'd have thought it? After years of languishing in the doldrums behind the glitz of AV systems and high end hi-fi, low priced, 'rough and ready' separates are back on the map. Channa Vithana auditions three brand new entry level separates systems from Tangent, Rotel and Rega...

Contrary to the belief held by your average pampered, ivory tower inhabiting hi-fi hack, the most important section of the retail market is budget separates. Whilst most audio journalists may spend hours deliberating over whether a £14,000 CD spinner is better than their £8,000 reference, many hi-fi buyers worry about whether they should buy a £329 one rather than a £299 one.

Budget separates are vital to this hi-fi world of ours. They're for those who've got an iPod and want it to go louder than the week-kneed 'iSpeakers' they've been using for the past year. They're for those who've suffered a mid nineties micro system for too long. They're for those who've spent too long with old, out-of-date separates that are beginning to give up the ghost. And last but not least, they're for those already owning well matched, finely tuned separates systems who want to upgrade and simply don't concede the need to spend four figure sums, whatever us magazine journalists may say...

With this in mind, it's disappointing how few manufacturers have taken 'the fight' to this end of the market. We have NAD and Cambridge Audio, plus a few lesser Marantz separates – but until recently that was pretty much it. Now though, three names have come back into the fray with totally new or revised systems – Tangent, Rotel and Rega. The former is an offspring of Danish based speaker moguls Eltax, the Rotels are completely reworked versions of their previous excellent range, and the Regas the same.

Regarding the latter, if Rega's experience is anything to go by, the budget separates area is far more fiercely fought than many hi-fi writers, languishing with telephone number price tag systems, might imagine. Rega told *Hi-Fi World* that, "If someone had said to us, prior to launch, that the new Apollo CD player's sales would outstrip the number that its predecessor the Planet sold in the early days some six years back, then frankly we'd have laughed... Well it has, and it's been lovely to prove wrong all those who told us affordable hi-fi was dead."

DP



REFERENCE SYSTEM:

Origin Live Resolution/ Ultra+ / Encounter MKII turntable (£3,740)
 Sumiko Blue Point Special EVO III cartridge (£235 approx.)
 Cambridge Audio 540P MM phonostage (£40)
 Moon Audio i-3 amplifier (£1,595)
 Waterfall Victoria loudspeakers (£2,000)
 Spendor S9e loudspeakers (£2,995)

MUSIC:

Sibelius & Nielsen/Cho-Liang Lin, 'Violin Concertos' (2001)
 Kate Bush, 'The Red Shoes' (1993)
 The Tea Party, 'Splendor Solis' (1993)
 William Orbit, 'Barber's Adagio For Strings' (1999)
 Willie Nelson, 'It Will Always Be' (2004)



TANGENT AUDIO CDP-100/AMP-100 £200

Tangent is part of the Danish brand Eltax who are known for their low cost loudspeakers and A/V components. Latterly Eltax has been sold in the UK by Richer Sounds. Indeed Richer Sounds are currently advertising the AMP-100 and CDP-100 for approximately £99 each, which is even cheaper than the estimated RRP conversion price from Euros to Pounds Sterling, where the AMP-100 works out at about £136 and CDP-100 is roughly £122!

The AMP-100 and CDP-100 are very stylishly designed at their respective prices, with both featuring the type of aluminium panels and finish that accompany more costly designs in the way they look. Consequently, the look is clean, with a sleek low-slung stance that sets the Tangents apart from the typically plasticky fare at this price.

Somewhat unhelpful though is that they both use figure-eight mains sockets at the rear, which are the usual domain of low-cost DVD players. And as such, this makes the use of better aftermarket mains cables for superior sound quality trickier. Why I mention the mains cables is that, as you can read later, they need all the help they can get. Ostensibly, I prefer the AMP-100 design to the more expensive (£200) Cambridge Audio Azure 540A design for instance, as its buttons are more discrete, while the Cambridge, though utilising superior build quality,

still uses those ugly oval knobs which look like leftovers from their previous generation of hi-fi.

The fully remote controlled AMP-100 is surprisingly well specified for its price with six line inputs (though no input labelled tape or recorder), a useful stereo line out for subwoofer/other amplifiers, headphone socket and MM (Moving Magnet with 47kohm impedance) phono stage plus phono-ground connector. As is typical with some ultra budget hi-fi, there are bass, treble and loudness adjustments. Bass and treble are adjustable through very neat pop-in/out knobs, with a claimed +/- 14dB range, either side of the multifunction volume control. Balance and loudness are adjustable via a combination of the function and volume controls. In use the tone controls did offer

is 40W/8ohm and 50W/4ohm. It measures 430x290x75mm. The CDP-100 is a sleek design that measures 430x290x60mm and interestingly uses a rotating knob, with similar action to the AMP-100 volume control, to scan through a CD. This feature makes it look more symmetrical with the AMP-100 and matching DAB-100 tuner, which also uses a rotary knob. The disc loading drawer operates with a solid and relatively silent action and the transport inside is able to read MP3 discs. However, its slimline proportions and lack of machined finger grooves makes removing discs problematic, while it is also quite flimsy so care needs to be taken when inserting or removing a disc. Unusually, the CDP-100 does not feature any digital outputs to its rear

"a pure, unreconstructed hi-fi bargain; some people spend more on a Beethoven box set!"

a superficial lift to the music, which seemed helpful, but ultimately they just squashed dynamics and made the sound more compressed. The display on the AMP-100 is very good in that it presents the various settings you can choose but it only works properly if you look at it straight ahead.

Internally, the AMP-100 uses a toroidal transformer for its power supply and the claimed power output

panel for digital recording and this also negates any form of upgrading with an external DAC, which is precisely how a budget design like this could be improved.

SOUND QUALITY

Of course, the Tangents are spectacularly cheap – many *Hi-Fi World* readers wouldn't blanch at spending this system's total price on an interconnect – so it's important

to remember their modest position in the hi-fi cosmos. Even so, I was less impressed with some aspects of the performance that I'd expected, with the culprit being the CD player; in isolation, the AMP-100 actually worked very well at the price.

There were adequate levels of detail with the Sibelius & Nielsen/Cho-Liang Lin 'Violin Concertos'. Here the elements of the recording were clearly reproduced with reasonable instrumental separation. Violin timbre was good with decent communicative ability to bring it out into the room. Dynamic horn crescendos were handled fairly well with acceptably clear extension. There was however quite discernible veiling and dynamic compression with the other instruments when more complex passages appeared. What this did was to make the complete sound seem much smaller, and it was also harder to follow the music. Interestingly and incongruously the Tangents had decent timing with the violin phrasing, but unfortunately not much substance to back it up.

'Rubberband Girl', from 'The Red Shoes' by Kate Bush had a good rhythmic flow to it, with adequate

arrangements were clear and quite well defined while the vocals were acceptable.

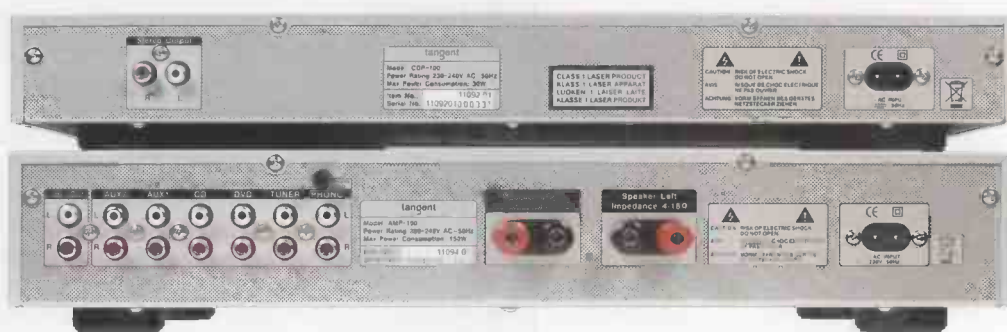
The six and a half minute Ferry Corsten remix of William Orbit's version of 'Barber's Adagio For Strings' had good instrumental/sample separation, and a decent level of spatiality and 'effects steering' as individual samples/tracks within the remix zoomed quickly from left to right. Here the high frequencies were listenable, but bass extension and tunefulness flabby and distended at my moderate listening levels. This was the only piece of music however, with the Tangents, where their unevenness (in this case the bass) did not prevent me from listening to the whole of it.

I switched listening rooms and systems to test the onboard phonostage of the Tangent AMP-100. I swapped the unforgiving (£2,000) Waterfall Victoria loudspeakers and used high-end (£2,995) Spendor S9e models (which are very forgiving by nature and always tend to flatter their source) and my reference (£3,740) Origin Live Resolution vinyl set-up with a Sumiko Blue Point Special EVO III high output MC cartridge (which has a 47kohm

it was still somewhat thin overall with the sound. When I connected a (£40) Cambridge Audio 540P MM phonostage into the CD input of the AMP-100 this brought more resolution, spatiality, timbre and better timing to the music, while the stridency from the slide steel was removed. So while the onboard phonostage isn't the best ever - which is asking a lot considering the low price of the AMP-100 - it was still musically acceptable.

CONCLUSION

The Tangent Audio combination of AMP-100 amplifier and CDP-100 CD player at approximately only £258 for the pair (even cheaper at Richer Sounds) are stylish affordable separates. They look far sleeker than the more expensive Cambridge Audio Azur series; however, at this lowly price you can't expect the fine build quality of the Cambridges. As a whole, the Tangent duo did not sound particularly convincing with all the music used. They were rather uneven, where detail levels were generally good and some elements of instrumental separation also. High frequencies were somewhat variable,



levels of instrumental separation. However, bass extension and tunefulness was somewhat diffuse and 'one-note'. Kate Bush's vocals had decent clarity and extension but sounded strident with high frequency harshness dominating the music while masking the instruments behind it.

The Tangents were - considering the previous two pieces of music - acceptably listenable with the opening bass lines with 'The River' from 'Splendor Solis' by The Tea Party. There was a good dynamic flow with the drum track while the vocals were also fine. However, as the music progressed and became more complex the high-frequency stridency returned and guitar solos were rather uncomfortable with some harshness and congestion. The opening acoustic folk of 'Midsummer Day' fared much better, where the more sparse and simplistic

loading, the same as many MM cartridges). I was expecting the AMP-100 to melt under the demands of the Spendors but, even though the volume control had to be run higher, the Tangent and its internal phonostage was surprisingly listenable!

The Spendors, although more of a demanding load, are more forgiving than my lower-cost Waterfall Victorias and the music from 'It Will Always Be' by Willie Nelson had a nice lyrical quality with a generally well balanced and communicative sound for the price. The country/bluegrass sound of the slide steel was, however, ever so slightly strident. And while performing much better without the accompanying CDP-100 CD player, the AMP-100 was still showing its budget origins in reference terms against the (three times more costly) Rega Brio 3. Thus

within the same song where they could extend vocals one moment and then go into stridency the next with guitars or the same vocal. They fared better with the simpler arrangements within songs such as the acoustic folk opening to 'Midsummer Day' by The Tea Party and solo violin parts.

Of the two, the AMP-100 integrated is much better than its partnering CDP-100 CD player and with its onboard phonostage proved quite listenable for its price. It is also well specified with full remote, adjustable tone controls and a MM phonostage. As such, by itself we'd award the AMP-100 four stars plus a pound sign for value, but as a system I'm afraid the CDP-100 drags the show down somewhat. It's a shame, because by and large this is a pure, unreconstructed hi-fi bargain; let's not forget that some people spend more on a Beethoven box set!

VERDICT ●●●£

Excellent amplifier compromised by a middling CD player, but still as a system this gives a lot of sound per pound; styling and features impressive too.

TANGENT AUDIO AMP-100 (APPROX.)	£136
TANGENT AUDIO CDP-100 (APPROX.)	£122

Tangent Audio
☎ +45 96 41 15 00
www.tangent-audio.com

FOR

- stylish design
- adequate starter phonostage
- great value

AGAINST

- thin, uneven sound
- CD player build



ROTEL RCD-06/RA-04 £600

Rotel has been distributed in Britain by loudspeaker manufacturer B&W for over twenty years. B&W says that this Japanese manufacturer is a "forty five year-old family business run by Bob Tachikawa, son of the founder who is still active in the company today." The Rotel design and manufacturing process is an exhaustive one and as such, they say "specifications and outline design is carried out in the UK, this is then taken up by designers and engineering staff based in Japan. From all this a product is made and sent to Rotel Europe (based here in B&W Group Worthing) for 'tweaking' and finalising. The tweaking process is an important part of the process and will determine the aural performance of the product. It is a painstaking process of aurally checking a wide range of components on a one-by-one basis in the signal handling stages of a product; (it is doubtful) if any other manufacturer goes to these lengths to optimise performance."

The £250 RA-04 is a new amplifier which resembles the previous RA-01 integrated in appearance and price as well. Rotel says of the RA-04 that "whilst it shares the basic layout with the

earlier RA-01, every op-amp and passive component to do with the signal path has been re-evaluated and revised." Like the RA-01, the RA-04 does not come with a remote. For this, there is the RA-05 which costs £100 more. However, the RA-04 does have an MM (Moving Magnet) phono input (with a 47kohm loading) which is very useful and on the front panel a 3.5mm 'Media Player' input for portable MP3/iPod devices along with a headphone socket,

discrete series regulators referenced to zener diodes." The RA-04 power output is a claimed 40W/8ohms and 70W/4ohms which Rotel states are "the 'real' 20Hz to 20kHz figures at 0.03% THD". The RA-04 measures 437x72x342mm and weighs 5.9kg.

The £350 RCD-06 CD player uses a Sony transport made especially for Rotel. Its power supply looks quite serious and accordingly Rotel says, "a toroidal transformer feeds seven separate LT regulator

" As a combination, the Rotels were sublime with the Sibelius & Nielsen/ Cho-Liang Lin 'Violin Concertos' "

four line inputs and one switchable tape in/out. There are also balance and switchable tone controls, but I preferred to not use them and had the tone controls switched off.

Build is superb for the price, with the feel and action of switches, knobs and buttons being solid and smooth. For its power supply, "the main LT supplies for the PA stages are derived from a (Rotel designed and manufactured) toroidal transformer, feeding a full-wave rectifier bridge arrangement with 6800uF capacitors. The supplies for the small signal stages employ

stages (with) a combination of full and half-wave rectification. Supplies for non-audio areas such as the display, mech processor, etc., utilise standard components. Selected components are used in signal-critical areas such as the lineout/ filter stages and DAC." The DAC used is a Burr-Brown PCM1716 which is described as a "24bit, 96kHz sampling enhanced multi-level Delta-Sigma" type. On the rear panel there is one coaxial digital phono socket output and 12V trigger to link to a suitably specified amplifier and external remote socket for when the CD player is located

out of sight. The RCD-06 measures 437x73x313mm, and both the RA-04 and RCD-06 come in black or silver finishes.

SOUND QUALITY

As might be expected perhaps, the background to the music from the Sibelius & Nielsen/ Cho-Liang Lin 'Violin Concertos' was very quiet compared to the ultra low cost Tangent system. There was very little 'noise' to the instruments and this helped to provide a clean and unconstrained canvas for the violin and orchestra. The former had excellent body, showing depth, power and texture. There was real and tangible emotion via these Rotels, unexpected at this price level. The phrasing of the violin was excellent and its accompanying timbral body meant that I could follow it throughout the overall composition. The orchestrations had power, depth and rhythmical acuity that provided

tangible levels of depth, texture and control. There was good spatiality to the music, which enabled a nicely rhythmic flow to the bass, drums and guitar parts. Jeff Martin's vocals were expressive, showing a good range of tonal colour and texture. His singing was well placed within the mix and was comfortably discernible as a result, being neither forward nor recessed.

The six and a half minute remix of William Orbit's version of 'Barber's Adagio For Strings' by Ferry Corsten showed the Rotel CD player to have superb timing considering its lowly price. The sound was exhilarating and propulsive, basslines were tight, tuneful and rhythmically engrossing while the electronic sounding string parts were clear and well defined. As the main melodic parts massed, there was a wonderful sense of effortless control and drive from the RA-04 amplifier with an enjoyable neutrality to the whole sound.

expressed. The upgrade in sound quality was small, but still discernible.

CONCLUSION

Offering superb value for money, the Rotel pairing of RA-04 amplifier and RCD-06 CD player are a superb match for the asking price of only £600. The RA-04 is an excellent amplifier with fantastic real world loudspeaker driving ability, being able to control and power the demanding (£2,995) Spondor S9e and the more unforgiving, (£2,000) Waterfall Victoria loudspeakers without dynamic constraint or loss of composure on difficult or complex instrumental and vocal parts.

As a combination, the Rotels were sublime with the Sibelius & Nielsen/ Cho-Liang Lin 'Violin Concertos'. Here they revealed a level of emotional tangibility to the phrasing of the violin that completely belied their budget pricing. The Rotels were convincing in their ability



a fulsome and enveloping sound with excellent dynamic crescendos.

Resolution and timing were excellent on 'Rubberband Girl' by Kate Bush - I could follow all the compositional elements with ease and was able to appreciate the musical quality of each instrument. Basslines had excellent rhythm and texture and were cohesively a part of the overall composition. Kate Bush's vocals had fine timbre and expression with clear extension into the listening room. Instrumental separation was also very good. The RA-04 amplifier had an excellent, unflappable driving ability and was consistently able to power through the mix of 'Rubberband Girl' with ease, as well as being capable of tackling the demanding high frequency vocals and groove-led bass lines within its stride.

The phrasing and expressiveness of the opening drum track to 'The River' by The Tea Party from 'Splendor Solis' was excellent, with

Moving to my smaller 4x3m listening room, in which a pair of (£2,995) Spondor S9e loudspeakers and a (£3,740) Origin Live Resolution turntable fitted with a Sumiko Blue Point Special EVO III high-output MC cartridge reside, I was able to assess the MM input on the RA-04. Impressively for this budget integrated amplifier, there was much less of an improvement than when I assessed the cheaper Tangent Audio AMP-100, as I substituted its internal phono stage for a low-cost but very high quality (£40) Cambridge Audio 540P MM phono stage through its CD input. The 540P did offer an improvement though, and it was primarily in timbral resolution to the instruments and vocals from Willie Nelson's 'It Will Always Be' LP, where they gained in conviction and tangibility. The second set of improvements came with better spatiality to allow the instruments and vocals to breathe and be

to reproduce texture, resolution, timing and space around the violin. The orchestrations were no less well revealed and the cellos had deep and powerful timbre when they were played in rhythmic swathes across the musical canvas. They were also very good with all the other music used, remaining never less than musical with generally good timing. Here I could follow the rhythm, beat or melody with ease, making it very easy to enjoy music.

Some may bemoan the RA-04 amplifier's lack of remote control, but at £250 it is fantastic in respect of build and sonics. Also, as a pair I think the RA-04 and RCD-06 look superb, with their slimline casework, unpretentious yet clean styling and excellent build quality. Of course, we applaud Tangent for attempting the impossible and offering real hi-fi for next-to-nothing, but here with this Rotel system is where things really start to get serious.

VERDICT

Superb at the price, the Rotels offer real emotional engagement and surprising finesse, even with far high priced ancillaries; build and finish excellent also.

ROTEL RCD-06	£350
ROTEL RA-04	£250
Rotel	
☎ +44 (0)1903 221 500	
www.rotel.com	

FOR

- slimline design
- amplifier timing
- good quality phono stage

AGAINST

- best with classical



REGA APOLLO/BRIO 3 £826

The £328 Rega Brio 3 amplifier and £498 Apollo CD player use attractively stylish casework (available in black or silver) designed by Rega's Colin Dillaway, utilising gently-curved 3mm extruded aluminium sections. The Brio 3 integrated amplifier is claimed as an improved version over its predecessor. The 170VA rated toroidal transformer and power supply are upgraded versions for better sound quality. Consequently, the power output has risen from a claimed 38W/8ohms to 49W/8ohms and from 53.5W/4ohms to 64W/4ohms. It uses an Alps volume potentiometer and its internal line/preamplifier philosophy and component choice is refreshingly simple in its description as being "no nonsense, with a high quality, no compromise circuit with no electrolytics, only polyester caps in the signal path." For non-Rega tonearms I would have preferred Rega to supply a proper, easy to undo grounding screw for the internal phono stage though, as you have to loosen one of the chassis screws (marked with a label) with a screwdriver at the rear panel and then retighten it once the grounding cable is secured!

The £498 Apollo CD player is the replacement for the Planet 2000, which in my view was a superb visual design success, as well as one of

the best sub £1,000 designs when launched. It is impressive that Rega have kept the price the same for the Apollo after approximately six years since the introduction of the Planet 2000. The Apollo also now comes with a remote as standard where as it was a £25 'Solar' option with the Planet 2000. Visually it looks very similar to the Planet 2000 in that it is a rare budget priced CD player with a top loading transport and slick operating lid. It would be nice if Rega offers a cost option for Apollo customers to allow retro-fitting of the solid aluminium fascia as used

and Rega says, it is "a high quality three point mounting ball chuck. This type of design has several advantages over the magnetic puck type design. Firstly, and most importantly it presents the disc as horizontally as possible to the laser spot, directly resulting in improved reading of the information on the disc. Secondly, there is no wear and tear to the disc from a puck magnet. Thirdly, the mass of the puck is lost completely giving the mech itself less stress and better acceleration and braking performance." [So one wonders why Rega originally used a puck system if

"the Regas give that rare musical combination of control and exhilaration..."

in their more expensive (£1,298) Saturn player as a replacement to the standard high quality plastic item.

There are physical changes though, as the Planet used sandwich-layer, compliant feet for isolation while the Apollo has simpler versions. The other main visual difference is the removal of the floating puck/clamp assembly used within the lid of the Planet. This is because the Apollo employs a push-in/clip-out type anchorage for an inserted CD, similar in appearance to the ones seen in CD portables from the early nineties and more recently in laptop PCs. This is quite an interesting solution to the usual top loading puck system

it had all those drawbacks? Seems to me that it smacks of 'needs must'; it's the best mech Rega can get at the price right now, and it happens not to have a puck this time! Ed.]

The Apollo is said to use a totally new CD operating system, processing and IC refinements. Rega say, "we believe we are now ten years ahead of the design of other CD operational software" (there's more information on this technology at www.rega.co.uk). The Apollo uses a Sanyo transport and Wolfson 8740 delta-sigma integrated DAC. Its power supply is in two parts, "one for (the) digital section and motors, using as highly rated

components as possible, given the price. The other is for (the) analogue section (using) separate windings from main transformer. This is designed to complement the Class A output stage." The Apollo measures 435x100x270mm.

SOUND QUALITY

The Rega system had even quieter perceived background noise levels than the Rotels before, instantly justifying its price premium. The sound from the Sibelius & Nielsen/Cho-Liang Lin 'Violin Concertos' recording was very clean in comparison to the other two systems. Violin was reproduced with excellent resolution and communicative ability, instrumental separation was excellent and the orchestrations were dynamic and clear, while the loud crescendos were handled with aplomb. The Rotel system in comparison was a little more free-flowing with a very slight lead in timing also. The Rotels had superior timbre and dimensionality to the violins and cello, yet although the Regas didn't struggle in this respect, they had a more measured, clean yet rhythmically astute sound. The Regas had excellent instrumental intelligi-

reproduction that portrayed the structure and quintessence of this brooding eastern-flavoured rock music. Instrumental separation was superb, while basslines proved outstanding, as did the drum track which had superior texture, phrasing and propulsion.

The sound was thrilling, expansive and dynamic with Ferry Corsten's six and a half minute remix of William Orbit's version of 'Barber's Adagio For Strings'. The quiet background of the Rega pair did not stifle the life from the music. Rather, the electronic sounding string melodies were of a very high resolution with excellent extension, delicacy and definition. There was a sheer adrenaline rush as the music grew in complexity; the Regas were giving that rare musical combination of control and exhilaration.

Knowing that Rega make tonearms, turntables, cartridges and phonostages, I was expecting good things from the built-in phonostage of the Brio 3 amplifier. I connected it to my (£3,740) Origin Live Resolution turntable reference using a Sumiko Blue Point Special EVO III high-output MC cartridge which has the same loading of 47Kohm as most



on 'Barber's Adagio For Strings' and 'Violin Concertos'. The Planet 2000 had a more 'grey' quality to the internal structure of the music compared to the Apollo, so overall - with the exception of outright timing - the new Apollo was superior with resolution, dynamics, timbre and a clean, vivid music making ability.

CONCLUSION

The Rega combination of Brio 3 amplifier and Apollo CD player at £826 was outstanding in its ability to excavate deep into all of the music



bility, meaning that they were able to go into the heart of the 'Violin Concerto', into its very structure to create an even-handed and uncoloured sound.

With 'Rubberband Girl' by Kate Bush, the Rega system was more dynamic and propulsive than the Rotels in comparison. There was a wonderfully clear and well-defined flow to the music with excellent resolution to the instruments and vocals, which were beautifully extended. Basslines were strong, defined and very tuneful while instrumental separation was excellent.

There was a vast, surging quality to 'The River' by The Tea Party. Here the music was presented in a deep and wide canvas with no discernible distortion to the instruments or vocals. The music had oodles of resolution with a convincing instrumental and vocal

MM (Moving Magnet) cartridges and (£2,995) Sendor S9e loudspeakers in my smaller 4x3m listening room. With the Willie Nelson LP, 'It Will Always Be', there was very little difference between it and the (£40) Cambridge Audio 540P MM phonostage. There was just the tiniest upgrade in spatiality and resolution, that's all - making an upgrade at the level of the Cambridge Audio inessential. The Rega therefore had the best phonostage of this group.

I was also able to directly compare the Apollo CD player with its descendant, the Planet 2000 (2001 edition) using a (£1,595) Moon Audio i-3 amplifier. On all the music used, the Apollo had a cleaner sound, but the Planet 2000 however had a slender but discernible superiority with timing compared to the Apollo, which was noticeable from the slightly freer flowing style

used and reveal the quintessence of its structure and therefore intelligibility of instruments, vocals and how everything all hangs together cohesively. The Rega system only sounded slightly ill at ease with the 'Violin Concerto' in terms of a more free-flowing style, which the £600 Rotel system exploited brilliantly. Like the Rotel RA-04, the Rega Brio 3 didn't come with a remote control, but has the best inbuilt phonostage of the group - showing its audiophile inclinations.

Overall then, the Rega duo produced very high resolution music for the price combined with a stylish, uniquely identifiable aesthetic design, loudspeaker driving ability and build quality. This is a truly great system - eccentric but utterly effective - and shows how little money you need for genuinely capable hi-fi reproducing equipment.

VERDICT ●●●●● £

With a level of performance that totally belies its price, this system offers simply startling value for money.

REGA APOLLO £498

REGA BRIO 3 £328

Rega Research Ltd.

☎ +44 (0)1702 333 071

www.rega.co.uk

FOR

- superb, individualistic styling
- outstanding resolution
- excellent phonostage
- build quality

AGAINST

- phonostage ground screw



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conclusion

As with many *Hi-Fi World* group tests, we have not lined up identically priced bits of kit. Rather, we've done a sweep of the sub-£1,000 system market,

with three of the best new entries. As such, the globe ratings aren't a strict measure of a system's sound quality in relation to each other, but we – as ever – assess their ratings in terms of where they are compared to the best at their own price points.

We congratulate Tangent on a solid new range, but it's a shame (for them) that we didn't review the AMP-100 integrated in isolation, as it's a worthwhile and capable machine for the money. Trouble is, we're less convinced by its stablemate CDP-100 CD spinner. The AMP-100's integral phonostage makes it better value still, and so the only thing that blots its copybook is that if you spend twice as much, you can get a lot more quality elsewhere. If cash really is that tight, go for the Tangent, but if you can stay away from your local hostelry for a week or two, the money saved would be well spent on the Cambridge Audio 640A, or better still the Rotel or Rega reviewed here.

As a system then, I could not for most of the music used get on with the Tangents as a duo, and the CDP-100 CD player is the guilty party. Together they sounded shrill and strained when more complex parts of music appeared, while being only acceptably mediocre with more

simple arrangements. Even for their obviously very low price, as a pair I cannot recommend them on sound quality terms. If you must have the Tangent twosome, then use warm and smooth sounding cables with a rolled off treble.

Conversely, the new Rotel RA-04 amplifier and RCD-06 CD player at £600 are superb value for money and I can thoroughly recommend them. The Rotels have sleek and low-slung casework, excellent build quality and equally superb sonics. I found them particularly good with the Sibelius & Nielsen/ Cho-Liang Lin 'Violin Concertos', where they completely excelled by being the best of the group at revealing and reproducing the violin and orchestrations with a free-flowing, highly textured and vivid distinction that made this type of music come to life in all its three-dimensions. So, fans of primarily classical music who don't want to spend a lot of money can audition the Rotels with confidence, and likely choose them over even the pricier Rega combination. Overall, it's an absolutely superb twosome, the only problem being the redoubtable quality of the slightly pricier Regas...

Although not quite as lyrical as the Rotels with the 'Violin Concertos', the Rega pair was exceptionally musically communicative on every type of programme material used. It's for this reason that they've got the remarkable five globes and pound sign rating. Few,

if any, hi-fi separates do so much for so little [if at all – Ed.], and the Rega system's musical lucidity is totally out of proportion to its price. [I think much of the Rega Brio 3's lush, fluid character is explained by the fact that renowned valve nut Terry Bateman designed it – Ed.] I was surprised at how consistently good the Regas were in being highly revealing, propulsive and engaging all at the same time.

At £826 for both components, the Regas cost £226 more than the Rotels, so the sonic superiority with the majority of the music is entirely logical, but I don't automatically go for the most expensive equipment as

"few hi-fi separates do so much for so little as the Regas, if at all..."

the best (quite the opposite in some reviews), but for this group test, if I was faced with a choice between the Rotels or the Regas, I would go for the Rega pairing because from my findings, they are definitely worth the extra outlay. Partner them to a pair of Q Acoustics 1020 bookshelf speakers (£130), for example, and it's one of the best ways to spend a thousand pounds yet invented. Rega has always been an eccentric - and some would say anarchic - company, and here's proof that their attitude pays off.

8000CD

Lab Science

Once the doyen of mid-price respectability, Audiolab is now back as an even more affordable brand. David Price reports on how the magically reborn 8000CD CD player measures up...

Once upon a time, a great British brand that sold very strongly until the mid-nineties was bought by a prestigious company, languished thanks to overpriced and inappropriate products, and was then bought by a Chinese manufacturer for a song. But that's enough about Rover...

Audiolab, just in case you didn't know, was also a once-great British brand, one which completely caught the eighties hi-fi zeitgeist. It was well made, reliable, came in an attractive shade of eighties-tastic black, and was affordably priced too. Although never the best in the class, Audiolabs were always a fine package and filled their sensible shoe-wearing owners with real pride.

In the mid nineties, the company was sold by its owner Philip Swift for a tidy sum to new audio start-up TAG McLaren Hi-Fi. Phil went on to take over the helm at Spendor (very successfully) and Udo Zucker, the new TMH supremo was thrown into the spotlight. Udo's charismatic stewardship was controversial to say the least. He ditched the Audiolab brand name, upped the prices, added a fancy volume knob, a splash of McLaren's nineties-tastic charcoal grey paint and took the brand upmarket.

Not everyone was convinced; 'new boots and panties' for a mid-fi brand did not – in many audiophiles' minds – constitute high end. Whilst some of the new products TMH introduced were truly impressive, much of the two-channel stuff was widely (and rightly) regarded as 'off the pace' by the early noughties. It was a classic case of trying to take a brand upmarket and failing, because there's a whole different set of imperatives operating.

When Taiwan-based IAG (International Audio Group) bought TAG McLaren Hi-Fi in 2003, they ended up with a load of mid-nineties intellectual property and a factory which perhaps they didn't need. The latter was sold to Meridian, and the former (rather like what the new owners of Rover cars are now doing, it seems) were lightly tweaked and relaunched under another brand, with a coat of noughties-tastic silver paint, at about half the price.

Such a dramatic price drop was possible thanks to the transfer of manufacturing to Shenzhen in Southern China, to the very same massive factory that makes Quad electronics and electrostatics, and Wharfedale loudspeakers. Considering that TAG McLaren's electronics factory – the very same facility that does the Formula One racing car circuitry – was stuffing

those same boards just a few years back, you can imagine the difference in build cost! The Chinese-built Audiolabs would be a fraction of the price of the TAG stuff to make, but the sixty four thousand dollar question was - would the quality be the same?

Well, you might be surprised by this, but the answer is yes. Having had the chance to compare a Huntingdon-built TAG McLaren 8000S amplifier with its Shenzhen-built Audiolab spawn in the IAG factory last August, I can confidently state that to the touch and to the eye, the Chinese stuff is as good - if not better. There was absolutely nothing to let the Chinese one down, and if anything the quality of the metalwork and paint was superior.

Audiolab are reintroducing all the old favourites, complete with all their TAG McLaren board upgrades, bar the 8000A amplifier as IAG considered it uncompetitive at the price. This means we see the 8000S integrated amplifier, 8000Q preamplifier, 8000M monoblocs and 8000P stereo power amplifier, plus a couple of new products too – the most interesting of which is the 8000CD you see here, which is virtually a 'clean sheet' design for just £600.

Whilst, say Audiolab, its old amplifiers are still able to cut the



mustard today (albeit at a reduced price), the 8000CD of yore was not. The result is a completely new machine, with that same, iconic 'retro' styling, albeit in silver clothes. And it really is all-new; IAG have put a lot of thought into it.

Most impressive is the transport, also seen in the considerably pricier Quad 99CDP-2. Gone is the Philips CDM12.4 mech of the old 8000CD, and instead the new spinner is based around a Philips VAM2202. However, rather than using bundled software to control this mechanism (i.e. the programming onboard the accompanying Philips CD10 servo-decoder chip), IAG has programmed the CD-10 to its own parameters and protocols - possible only by the hiring one of the key personnel responsible for Philips' original development of the CD10 chipset. The entire control system for the laser optic (disc reading strategies and laser control) is bespoke, and not compromised by having interleaved code and contingencies for computer data reading, reading discs while on the move, or for reading discs while in-car, all of which have been included in previous Philips transports to the detriment of playing a disc while the player is in a stable environment on a shelf! The result is what Audiolab call their 'lazy servo' [see box].

Moving downstream from the transport, and the machine is divided up into separate digital and analogue stages with twin power supplies (i.e. one for each stage). The latest generation 24bit/ 192kHz digital-to-analogue converters from Crystal Semiconductor are fitted - no antique 20bit design for the new 8000CD here. There's an improved alphanumeric vacuum fluorescent display panel, which can be defeated, and anoraks will notice that (along

"what it does, it does extremely well, and that is most things..."

with the ever-so-slightly different 'audiolab' font), this is the main difference to the 8000CD of old, because of its rounded corners, inset into the fascia. That and the colour, of course!

Round the back, there are two sets of analogue outputs (useful for multiroom systems) and BNC, Toslink and coaxial digital outputs. These can be defeated by going into the 8000CD's 'operating system', by pressing the play and stop buttons simultaneously on switch-on. The Play button on the remote lets you toggle the digital out on and off, and yes - it really does make a slight difference if you switch it off when you're not using it. This menu also lets you switch between digital filter settings [see box]. The remote is actually new, but has the timewarp early nineties styling of the original 8000CDM handset. Overall, the presentation of this machine is very good, but it still can't mix it with the likes of Marantz, at least for perceived build and finish - no thick slabs of brushed aluminium here for this 445x74x335mm pressed steel box. Appropriately perhaps, the machine is more reminiscent of a piece of lab gear than a swish slice of hi-fi.

SOUND QUALITY

This is an extremely able CD spinner by sub-£1,000 standards, and an interesting one too, inasmuch as its sound is quite distinctive. It can be characterised as 'neutral', but this is an oversimplification, because most people read either 'boring' or 'analytical' into this, and the Audiolab is neither.

'Glass-clear' is probably the best description. Tonally, the new 8000CD is very clean and transparent - almost starkly so. It's certainly never going to be accused of being 'lavish' or 'lush'. It's brightly lit and spry, offering an 'autumn sunshine' feel to whatever it plays. Dynamic contrasts - light and shade - are strongly portrayed, and this plus the fine timing and crisp tonality make for an almost translucent sound.

This doesn't suit some types of music, almost in the way that the Beatles don't suit CD. Curtis Mayfield's 'Jesus' was beautifully rendered, with oodles of detail (amazing at the price, making some rivals sound positively out-of-focus). Soundstaging was superb; it's an impressively 'dimensional' performer, never falling into that budget CD trap of laying everything around the plane of the speakers. Rather, there's real depth here, the Audiolab hanging

ON SPEED

The new Audiolab 8000CD has, intriguingly, a switchable digital filter. It's not easy to flick between settings, as per Sony machines of yore, but a wee bit of fiddling with the play and stop buttons on power-up will yield a choice between 'slow' and 'fast' filtering. The default 'slow' setting is said to permit better group delay characteristics, which is to say it's better at handling the way different audio frequencies travel through the player at different speeds, but gives poorer rejection of spurious noise. 'Fast' gives better rejection of spurious, and hence better measured performance, but is less good in the other respect. In truth, Audiolab's description of the subjective differences between the two is spot-on; the 'slow' setting sounds better (more 'all of a piece' and a tad tonally smoother too), whereas the 'fast' setting is brighter and more sharply etched but a tad mechanical. Actually, it really depends on your ancillaries; some will love the additional incision the 'fast' setting affords.



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images quite far back if the recorded acoustic dictates. Still though, it didn't sound quite right, because the machine was just a touch too explicit across the midband for the music's good.

Part of this is down to the fact that, unlike many modern machines, the treble hasn't been rolled off to give it artificial warmth. It's open and airy and expansive, but CD's generic deficiencies in the bass department (i.e. lack of weight) are there for the hearing. In short, the 8000CD can sound a little lighter downstairs than many rival machines (in fact, it's probably more accurate, but that's another matter), so there's no euphonic warmth engineered in for effect. Bass is taut and tight and decently strong (certainly not weak kneed), but not fat and sumptuous - and you should bear this in mind when system matching.

This, indirectly, leads me on to what I regard as the single stand-out quality of this machine - its timing. It works extremely well in this respect. It doesn't time in a predictably metronomic way, but is still ultra-stable and focused. It really gets inside a song, and delights in those rhythmic inflections, those spaces between the notes, that makes music magic. In this respect, it's all the better for not having an overweight, lardy bass to slow it down.

World of Twist's 'The Scene' is a case in point. It's a busy early nineties slice of electronic pop (much of which is courtesy of Dave Ball, ex-Soft Cell, trainspotters), full of swirling synthesisers and lavish electronic percussion. There's a lot to get jumbled up and confused, but the 8000CD scythed through the whole sprawling wash of sound, throwing out deliciously delicate hi-hats timed to perfection. It hangs on like no other sub-£1,000 player (Naim CD5i notwithstanding) when the going gets tough, remaining open, even-handed and unflustered at all times.

This is just as useful with large classical works, when the machine's innate rhythmic rightness makes for a beautifully poised performance. Alloy this to the excellent spatial ability and depth perspective, and an EMI recording of Mahler's 10th Symphony proved an electrifying experience. Even when the orchestra moved to a crescendo, the Audiolab showed real grace under pressure. Rhythmically, the 8000CD doesn't have that overt 'swing' of a Naim CD5i, but it still has all of its composure. If you can divide

LAZY SERVO

The new transport mechanism employs a 'lazy servo' which is expressly *not* designed for in-car or personal use - where the transport mechanism is subjected to large amounts of movement and the servo has to be ultra-responsive, continuously hunting the disc frantically to find its data. The servos built into most CD transports behave this way; using a strategy of overshooting and recovery, working very hard all the time, generating lots of electrical noise and draining the power supplies. Conversely, although audiophile CD replay doesn't require this, the servos still act in the same way, because that's how the Philips mechanisms were programmed (to be multi-tasking). Therefore, when playing a CD at home, the servo remains unnecessarily nervous, flinging itself around the track each time a scratch or piece of dust is encountered - darting off and over-correcting just in case you're jogging down the road. Of course, in the home scenario, one knows exactly where the next piece of data is coming from - it just needs to wait a moment for the dust or scratch to pass under the laser and little or no servo response is required. By reprogramming the servo software, Audiolab believes it has reduced the majority of noise, and hence DAC related jitter, generated by CD transport mechanisms. Its 'lazy servo' strategy is a result of IAG now having on its team one of the people responsible for all the programming on the Philips CD10 in the first place, with his highly specialised knowledge.



up a player's ability to time into a two aspects - its ability to convey accents, and its ability to remain consistent and composed always - then the Naim does the former better, but the Audiolab the excels with the latter.

The Audiolab's wonderful treble is surely a function of its super timing; it throws out massive amounts of filigree detail from Simply Red's 'Say You Love Me', proving delightfully spacious up top yet smooth too. Although the treble is definitely 'well lit', it's never harsh or forward, and makes a whole range of rival machines seem woolly, vague or simply just dull. There's lots of atmosphere and real insight into recordings. It all adds up to what non-audiophiles would call a very 'precise' sound - this isn't in any way disparaging; indeed for £600 it's a rare skill.

CONCLUSION

You could say the Audiolab has an 'architectural' sound, not too dissimilar in some respects to a Michell GyroDec. With wonderful clarity and scale, it is particularly accomplished with classical and electronic, and sounds crisp and impactful with rock and pop too, yet it makes jazz and soul a tad less

emotive than they might otherwise be. Me, I loved it - what it does, it does extremely well, and that's most things. But don't go thinking it's a universal panacea; here's a superb modern CD spinner that demands you to audition it, with your music and your system and your tastes. Still, whichever way you look at it, it's still superlative value. Audiolab has risen, like a phoenix from the ashes...

VERDICT

Exquisite timing and superlative transparency make this brilliantly accomplished at the price, but sound may be too spry for some.

AUDIOLAB 8000CD £600

Audiolab
 +44(0)1480 447700
www.audiolab.co.uk

FOR

- translucent sound
- superlative timing
- iconic styling
- value

AGAINST

- spry tonality

MEASURED PERFORMANCE

Frequency response of Audiolab's new 8000 CD player extends smoothly from 2Hz all the way up to 21.5kHz as our analysis shows, irrespective of filter. There's no high frequency tailoring so the player should sound balanced tonally, without any form of euphonic enhancement.

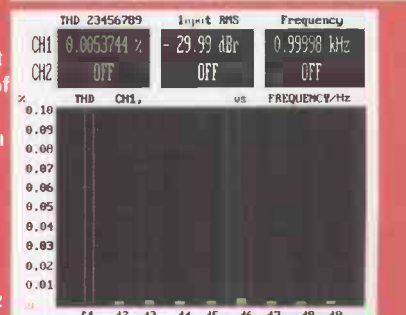
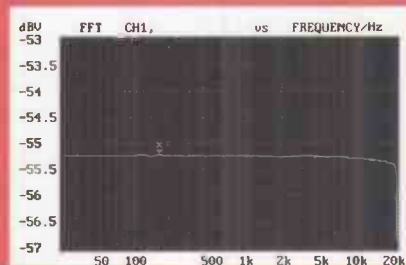
At high music level, distortion was very low at 0.0005%. At -30dB - a typical average music level - there was only a small rise, to 0.005% and our distortion analysis shows this. At a low music level of -60dB performance held up well, a figure of 0.22% helping to produce a good EIAJ dynamic range figure of 111dB, comparable with the best players available, again irrespective of filter. So the Audiolab turns out a set of results that are beyond criticism and are about as good as it gets from CD. Output measured a healthy 2.4V and channel separation was high. There was almost no jitter, the analyser showing a level of around 8pS right across the audioband.

The 8000 CD measured very well in all areas. It is a well executed design that should sound smooth and clean.

NK

Frequency response (-1dB)
 CD 2Hz - 21.5kHz

Distortion	CD
0dB	0.0005%
-6dB	0.0007%
-60dB	0.22%
-80dB	0.25%
Separation (1kHz)	-121dB
Noise (IEC A)	-108dB
Dynamic range	111dB
Output	2.4V



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Densen products are built for life and for long-lasting state-of-the-art performance. That's why all Densen products come with an exclusive lifetime warranty. The warranty is a global carry-in warranty that lasts as long as you own the product. At this time in history, Densen is the only manufacturer to offer lifetime warranty on high-end Hi-Fi. However, the warranty is no longer valid if you want to find out if the products float on water. Believe us, they don't...

It is our intention to make complete products. Not just products that are sonically superior, but complete like a perfect circle. As you learn about Densen, you'll discover that we go the extra mile in every aspect: design, user-friendliness, quality, warranty, upgradeability, production methods and of course sound quality. But you really won't have a clue about it all until you get to hear and see what we're talking about in real life. Then you will know what we mean when we say Air-Guitar factor (say what? check our website). There is one Air-Guitar / Air-Baton included with every Densen product. LIFE IS TOO SHORT FOR BORING HI-FI

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KEL84 Valve Amplifier Kit

"The quality that can be gleaned from this amp is a fine introduction to the joys of the valve sound"

The KEL84 features a pair of EL84 valves in Push Pull configuration per channel, providing two channels each 18 Watts into an 8 Ohm load. Available as a 5 input integrated amplifier with ALPS volume control.

KEL84 kit £325

KEL84 built and tested £499



WD88VA Valve Amplifier Kit

"The result is an amplifier that combines majesty, transparency and rhythmic boogie factor with the ability to swing and sing on all types of music"

Often described as a 'sweet sounding' valve, our particular implementation of the KT88 makes sure that it is driven to its ultimate performance. Available as a 35W stereo power amplifier with single input volume control, or as a relay switched integrated with five inputs.

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WD88VA built and tested £999



Headphone II Valve Amplifier Kit

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A beautifully simple stereo headphone amplifier design using Mullard ECL83 valves. It works directly from any source. The circuit uses twin high specification E/I output transformers that can be wired to drive any headphones between 16 to 300 Ohms.

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Headphone II built and tested £399



WD25A Standmount Speaker Kit

"The one aspect that stands out is the easy ability to resolve instruments and voices ... bass quality and definition is a revelation"

Cabinet kit (pair) £179

The aperiodic enclosure offers the bass clarity and definition of a larger closed box, together with the efficiency and easy amplifier load necessary for users of valve amplifiers. Available with SEAS STD soft dome treble unit, or high performance SEAS Excel treble unit.

WD25A STD kit (pair) £215

WD25A XL kit (pair) £398



WD25T Floorstanding Speaker Kit

"The WD25T always sounds crisp and taut, but can 'rumble' menacingly giving impressive physicality reminiscent of far larger boxes. Imaging is superb, the midband is also special; it's very open with masses of detail about the condition of the recording"

Cabinet kit (pair) £398

Cunningly arranged as an aperiodic enclosure leading to a lower sealed compartment, the WD25T combines the optimum damping of aperiodic loading with the bass extension of a large closed box. Available with STD soft dome or high performance Excel treble units.

Both the WD25 kits are based around a SEAS 26cm (10") paper cone bass unit with an efficiency of 89dB for 1W. The crossover has been developed for an easy drive 6 - 8 Ohm load making the system ideal for all types of amplifiers.

WD25T STD kit (pair) £279

WD25T XL kit (pair) £459



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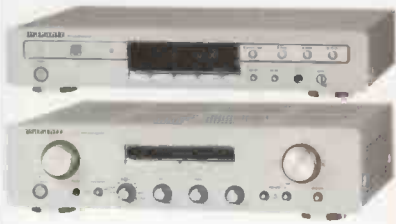


"The Silver RS6 is a success: it looks dressed to kill, delivers plenty of detail and punches like a heavyweight"

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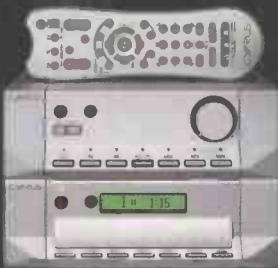
Marantz

Marantz is introducing a host of new products ranging from high-end hi-fi to HD-ready DVD players and AV receivers.

Latest additions to its hi-fi range include the entry-level **CD5001** CD player and **PM4001** amplifier offering a taste of high-end audio at an incredibly competitive price.

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If you've enjoyed listening to music before, try listening to it through a Cyrus system. With every product tuned by ear, Cyrus represents a quality of sound, which is rare at any price. Invest in a Cyrus system and you'll be rewarded with a wealth of sound you wouldn't have thought possible.



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BEST CD PLAYER 2005
CYRUS CD4



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CD PLAYER
BEST CD PLAYER 2005
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- Uni-Q Technology
- Finish Options
- Floorstanding
- What Hi-Fi? Award-Winner

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WHAT HI-FI?
SOUND AND VISION
AWARDS 2005
PRODUCT OF THE YEAR
KEF IQ5

B&W CM1

Behind its exterior of real wood veneer and familiar two-way arrangement of tweeter and bass/midrange lie innovations, engineering and a sound that are far from conventional.



"When B&W moves into the luxury miniature sector, it's time to sit up and take notice." HI-FI CHOICE • MARCH 2006

WHAT HI-FI?
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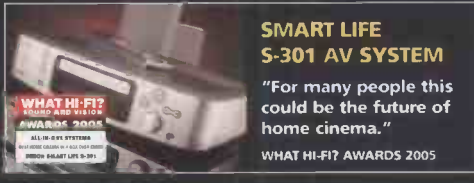
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SMART LIFE S-301 AV SYSTEM

"For many people this could be the future of home cinema."

WHAT HI-FI? AWARDS 2005

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New DiVA

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"Tight, controlled bass of great musicality" (R-505) HOME CINEMA CHOICE • AUGUST 2006

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Behind The

Much as the makers of high end hi-fi might like to pretend otherwise, the stairway to hi-fi heaven need not be paved with gold, says David Price. Instead, the secret's not believing the hype, buying the right kit for you and matching it all meticulously. Oh, and it also helps to know when to stop...

We live in a consumer society, where we're constantly bombarded with 'messages' (okay, let's call it advertising) that tell us our life is somehow incomplete without brand X or product Y. Despite all the evidence to the contrary – the fact that we're on the planet, by and large doing good, working hard, raising families, taking care of our loved ones, etc. – our lives would just be so much better if we had this or that...

The idea is that 'owning' (let's face it, we're not on the planet for ever, so our custodianship is more like buying the freehold) this or that will enrich our lives in ways we never knew possible, bring unknown pleasures to our very soul, and move us on up to a higher plane. Consumer society promises happiness if you follow its rules, and go forth and consume, and this applies to hi-fi as much as anything else.

It works on the presupposition that [a] music is great and [b] the only way to truly experience it is by buying the ultimate. Only one of these two propositions is correct, and the fact that professional

think the general idea is right, that the better your hi-fi is, the more you'll enjoy music, but I also think it's a dangerous oversimplification. Although having massive amounts of cash to throw at the problem is handy, it most certainly isn't a guarantee that you'll reach hi-fi Nirvana (and the letters pages in this magazine are living proof – lots of folk with very serious systems seeking better).

In truth, it's a stairway. You join it, and get off, when you want. You simply don't need to have many thousands of pounds to do this. The reality is that for a few hundred or so, you can get a nice sound which can be, by judicious fettling, very, very nice. Indeed, an £800 system properly fettled can equal or even better an £8,000 one.

Now, I'm not saying that eight gees spent on hi-fi is a waste. It's just that anyone with such a system also has to spend a lot of time tweaking it to give of its best, so it can really shine. Of course, you can squander twenty years of your life fiddling around with speaker stands, mains cabling or interconnects like *moi*, but it would be nice if (at this price) the dealer could supply his expertise for free, and they sometimes even

"spending massive amounts of cash is no guarantee of stunning sound..."

musicians often appear to cope very well - as far as musical enjoyment goes – with a dog-eared old 1970s music centre is proof.

Hi-fi, like life, is what you make it. Magazines such as this (and others) serve a nefarious purpose, which is to tell you why hi-fi's so great, and remind you that you ain't heard nothing yet – and so you simply must buy this or that. Only then can you truly realise why hi-fi's so great, and only then will you connect to music properly.

I say 'nefarious', because I

do. But don't be fooled – massive amounts of cash is no guarantee of a stunning sound. As always, it ain't what you do, it's the way that you do it. When we review impossibly high priced stuff, we expend lots of time and experience eking out the best; and this isn't easy for us, let alone a novice.

In this issue, we've reviewed three budget systems, two of which are quite stunning (to me) in their ability to communicate so much of what's in the music. The Rotel and Rega CD player/amplifier combos



Sansui SR222-II: beautifully built seventies budget turntable



NAD 3020 amplifier/4020 tuner: iconic, brilliant value classic separates



Cambridge Audio 640C - great CD from the modern budget masters



Monitor Audio Radius 90 - wonderful, cheap, contemporary mini-monitors

Mask

are one make, which goes against the established hi-fi lore that you should mix and match, yet manage a level of musical involvement which some fail to achieve with ten times as much cash.

Truth be told, 'twas ever thus the way. Being budget is not automatic disqualification from being able to communicate what's going on in a musical work. The secret is synergy, which is a tediously 'new age', nineties word for getting the balance right. The important point here to grasp is that when you decide what to buy, you should buy it, tune it as best can be done, then switch off and listen to the music. And that goes for £1,000 systems as much as £20,000. To use that well worn cliché, happiness is just a state of mind.

So, the way for fulfilment is for anyone embarking on the journey to give themselves very strict 'ground rules'. Buy the best to your ears that you can on your budget, spend a few hundred extra pounds over the next few months finessing it (supports, cables, interconnects) and then draw a line under it. Don't get too awestruck by all those other possibilities, hypnotised by those magazine reviews. Remember that – if you've got the basic component choice right (and truly the only way to do this is by finding the right dealer for you, which itself is something of an odyssey of discovery), then you'll not really reap massive dividends by 'upgrading' willy-nilly in future.

The critical thing is actually that very first contact point with the right dealer; magazine reviews, glossy advertisements, etc., are all very well, but what really counts is what works for you – and the only way you can tell this is by allying yourself to a serious dealer or hi-fi consultant. We do our best here (I suspect no other hi-fi magazine in the world offers such a comprehensive letters section), but it's your ears that should have the final say, and not ours. Listen, buy, enjoy.

BUDGET VS. HIGHEND SHOOTOUT

Here we put three systems from budget, mid-fi and high end price points respectively (and all carefully matched), against one another. Can things only get better, the more you spend? Yes and no, thinks DP...

BUDGET (£1,000)

Cambridge Audio 640c CD player (£250)
Onkyo A-933 integrated amplifier (£500)
Monitor Audio RADIUS90 speakers (£250)
Lovely! No one would imagine quite how well this system gels. There are other ways of spending a grand, but this one's banking on the two £250 bits of kit (the CD player and speakers) being special enough to handle the truly wonderful Onkyo A-933, which as anyone who's got one will know is a gem. The 933 has loads of power and it's very clean and rich sounding, with an excellent soundstage; the tiny MAs need lots of wallop, and they get it, the result being a very fast, tight and surprisingly weighty performance. The Cambridge CD player is great at the price; couth and open. Together, it makes a surprisingly revealing and enjoyable sound – more 'pint sized superfi' than 'budget'.



MID-FI (£5,394)

Tube Technology Fusion 64 (£2,200)
Sugden A21SE (£1,995)
Revolver RW45i loudspeakers (£1,199)
Here's where there's a step change in scale and sophistication. This system's been deliberately blended to sound very warm, lucid and emotionally engaging, and it does just that. The TT Fusion CD spinner is a superstar, offering a beguiling musical sound that not even the Naim quite approaches, at £12k more! The Sugden is deliciously emotive sounding, and has a lovely clean tonality which cuts through the mush on poor recordings, but it's weak-kneed, hence the deployment of Revolver's exceptionally efficient RW45is which go stupidly loud with just 20W or so. The result is warmth, depth and finesse unheard in the budget system, but there's still a visceral thwack on kick drums from the budget system that's missing here; the combination of those super-taut MA micros and a hairy-chested Class D Onkyo integrated has something that this system hasn't.



HIGH-END (£17,750)

Naim CD555/555PS CD player (£14,000)
MF Audio Silver Passive preamp (£2,750)
NuForce Reference 9SE monos (£3,100pr)
B&W 801D loudspeakers (£10,500)
Kowabunga! Any yearning for lightning transients and massive dynamics created by the mellow mid-fi system is instantly dispelled. The Naim CD spinner is massively commanding, bristling with dynamic impact and energy, the MF Audio/NuForce pre-power is as transparent and sharp as they come, and the big B&Ws are literally the most physical speakers on sale. You're pinned to your seat, assaulted by swathes of energy issuing forth from the speakers, utterly enraptured (and almost daunted) by the massive attack of percussion and the sheer physical size of vocals, which tower above you. However, there's a slight lack of midband warmth here; it feels like your ears are welded to the 801's voice coil, and there's almost no room to breathe. This is a stunningly impactful system, but whatever you do, it just goes on the attack, demanding your attention, pinning you to your seat. The mid-fi system is a lot more languid, relaxed and, dare-we-say-it, effortless - music washes soothingly around you like waves lapping at the shore. There's also the sheer physical size and complexity of this system – suddenly the budget system seems remarkably accessible compared to the high ender, and – funnily enough – barely any less musically enjoyable. A well designed budget system - small, but perfectly formed – can mix it with superfi in more ways than you'd think!



Walrus

11 New Quebec St, London W1



J.A. Michell Gyro SE
 with Rega RB250 arm and Sumiko Blue Point Special Evo3
 £1350 (classic silver) or £1420 (black - pictured left)

Upgrades to arm
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 Origin Live RB rigid/lockable counterweight, add £75
 Origin Live RB slotted armtube modification, add £85

Alternative arms
 Rega RB300 to replace RB250, add £64
 Michell Tecnoarm a to replace RB250, add £305
 Origin Live Silver arm to replace RB250, add £475
 SME Series 4 arm to replace RB250, add £1119

Alternative cartridge
 Lyra Dorian to replace Sumiko BPS Evo3, add £256

General accessories
 Michell record clamp, add £25
 Michell HR power supply, add £325
 Michell Unicover perspex platter/arm cover, add £46

"the most popular turntable we sell - an ideal purchase for someone starting from scratch (pardon the pun) or upgrading from a starter level deck"

Hyperion

HPS-938 (piano black) - £3750

"These are amongst the finest loudspeakers we have ever sold with performance comparable to models several times the price"



McIntosh

MCD-201 SACD Player - £3500
 MA-6900 (200W/ich) Integrated Amp - £4550
 MC-275 (75W/ich) Stereo Power Amp - £2580

"come and demo McIntosh components against some of the other best solid-state and valve designs and you'll see (hear) why Mac has so many loyal followers after 40+ years in the business!"



Tannoy Autograph Mini

Oak finish - £1250

"This delightful new bookshelf model has been a huge success. It's a long time since we've seen a really good, affordable mini speaker (excepting, of course, the Stirling 3/5a!)"



Tannoy Glenair

Cherry Wood - £3999

"If you've never sampled the delights of a Tannoy 15" dual concentric driver, there's never been a better time to do it. This is the latest model in the Prestige series and has a breathtaking size of soundstage which brings utter realism to both large scale classical works and the latest rock music too. Also on offer is relative neutrality, and great efficiency, enabling use with low power high quality valve amps"



Stirling Broadcast 3/5a

Walnut - £890
 Maple - £937
 Rosewood - £972

"Still able to impress after all those years, these remain the definitive tiny speaker, the benchmark by which others are judged"



Mystery hi-fi face of the month



"Anyone know who he is? Answers on a postcard, please..."

Solid Tech

Isoclear isolation feet (left) Set of 4 (20kg) - £51 (extra springs can be purchased for up to 45kg)
 Radius stand (right) - contact us for prices
 Rack of Silence stand (far right) - contact us for prices

"Swedish made Solid Tech is the line of isolation products we've been seeking for a long time. Superbly made, stylish looking, and modular. Even the humble Isoclear feet can be adjusted by simply adding or subtracting springs to cater for uneven loads. The domestically acceptable Radius can be configured with almost any combination of shelf spacing, and some shelves suspended for isolation. The Rack of Silence is a state-of-the-art stand using cross members instead of shelves to reduce resonance. Shelf isolation springing is freely configurable for different loading"

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 opus 3
 origin live
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 tom evans
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 transfiguration
 transparency
 trichord
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MILESTONES – KEY MOMENTS IN AFFORDABLE AUDIOPHILIA...

1974 PIONEER PL12D TURNTABLE

The first affordable (£50) high quality mass produced turntable; sounds surprisingly good even now with a warm, musical, sweet nature and no nasties (rumble, feedback); the latter alone was enough to set it apart from rest.

1978 ORTOFON VMS20E CARTRIDGE

No 'real world' cartridge had ever sounded as good; smooth, couth, open, detailed and spacious; real finesse for around £30.

1979 NAD 3020 AMPLIFIER

The princely sum of £79 bought a European designed, Taiwanese made budget superamp with brilliant loudspeaker driving ability, thanks to a serious power supply, that totally belied its 20W rated power.

1979 HEYBROOK HB1 LOUDSPEAKERS

Seminal Peter Comeau standmounters which took £130 boxes to a new level; massively musical and effortless too; modern budget bookshelf designs don't come close.

1980 DUAL CS506 TURNTABLE

Brought real depth, definition and finesse to entry-level vinyl playback. Swiss-watch precision was something not even the Japanese could match at the price.

1981 CREEK CAS4040 AMPLIFIER

About £130 gave a real, no-holds-barred amplifier that came close to the A&R A60 at twice the price; very smooth, even and musical.

1982 KEF CODA LOUDSPEAKERS

Crude but effective old-skool two way standmounter, these were far more musical than they had a right to be at under £100.

1983 REGA PLANAR 3

The earlier Planars were superb, but the new RB300 brought massive detail to mid-price turntables for the princely sum of £188. Some still use these in superfi systems with brilliant results.

1984 ROTEL RA820BX AMPLIFIER

The silver 820 lost its tone controls, got a coat of eighties-tastic matt black paint and turned into a swan – a delightfully musical £120 integrated despite the derisory power output.

1984 MISSION CYRUS 1 AMPLIFIER

Wonderful Henry Azima-designed shoebox that really got straight to the heart of the music; like Land Rover, it outgrew the company that begat it.

1985 TANNOY MERCURY M2 LOUDSPEAKERS

Plug-ugly large bookshelf boxes with seventies throwback styling and tragic vinyl wrap finish, but they brought 'hi tech' polypropylene drivers to the impoverished, previously the province of high end Mission 770s.

1988 PIONEER A400 AMPLIFIER

UK tuned Japanese amp offered power aplenty and musicality too; a bit fierce in the wrong system, but sold by thousand all the same.

1990 MISSION 760 LOUDSPEAKERS

The last fling of the classic budget box; this Henry Azima £99 design bought real smoothness and musicality to students the world over.

1992 MARANTZ CD52SE CD PLAYER

The first genuine 'affordable audiophile' CD spinner had insight and musicality in equal measure, and gave players at three times the price a migraine.

1993 AUDIO TECHNICA AT-110E CARTRIDGE

A smooth, sweet and svelte £20 moving magnet for next to nothing, but never as fashionable as its inferior Linn Basik cousin.

1994 PRO-JECT 7 AMPLIFIER

Almost no one noticed how good this oddball amp was; a cracking phonostage allied to wonderful musicality.

1995 MARANTZ CD63KI SIGNATURE CD PLAYER

...in which Mr Ishiwata finally makes a (deserved) name for himself; brilliant re-heated budget Philips with rare finesse; worth every penny of its £500 retail price, even now.

1996 SONY MDS-JE500 MINIDISC PLAYER

Not everyone's format of choice, but a blinding £300 machine all the same, offering a couthness that no other recording medium had ever achieved at the price.

1997 CAMBRIDGE AUDIO CD4SE CD PLAYER

Ridiculously good for its price point, here was a truly musically insightful silver disc spinner, with refinement the equal of far more expensive machines, for just £200.

1998 REGA PLANET CD PLAYER

Just as the Planar had decapitated its rivals fifteen years back, so the Planet was a wildly musical device at its £500 price.

2003 CREEK T50 TUNER

The problem (for other manufacturers) with this is that it's very hard to make any convincing argument for ever spending any more; others are better, but the Creek is close at a quarter of the price of top tuners.

2004 CAMBRIDGE AUDIO AZUR 640C CD PLAYER

Wonderfully capable entry level £250 CD spinner able to shame stuff at four times the price; fantastic detail and litlingly musical too.

2005 ALR JORDAN ENTRY S LOUDSPEAKERS

Karl Heinz Fink penned budget boxes with an uncannily smooth and upmarket sound; why did no one ever notice them?

2005 ONKYO A-933 AMPLIFIER

Don't let the 'mini compo' styling and myriad facilities fool you – a wonderfully powerful and satisfyingly musical machine for under £500.

2006 REGA BRIO S AMPLIFIER

A few subtle tweaks made the already lovely Brio a seminal budget buy. £328 amps just shouldn't be this good; valve nut Terry Bateman brings real music to the masses.

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MAY 2006

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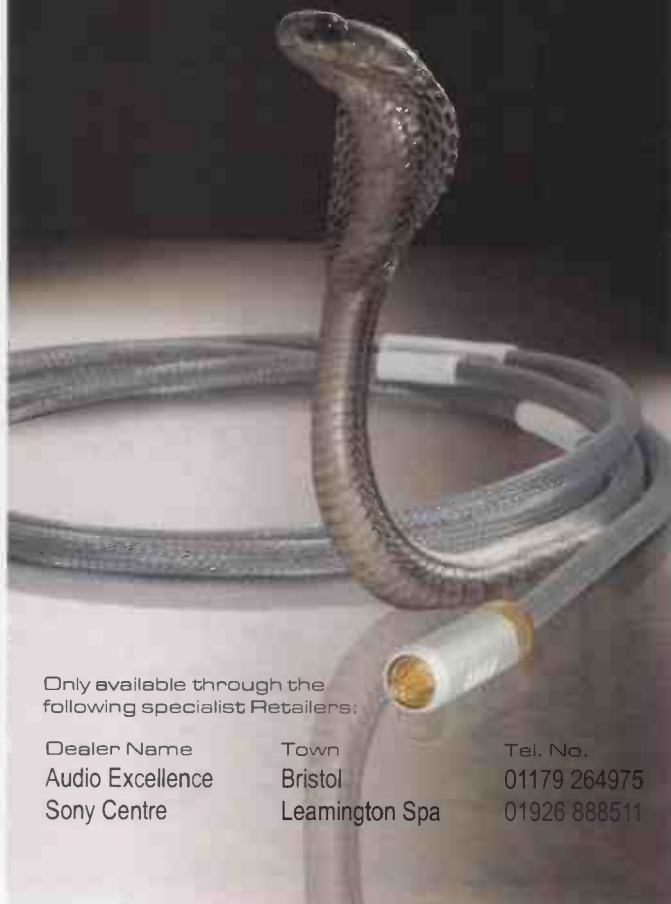


"The star of the whole group test has got to be the £500 ALR Jordan ENTRY L. A sonic triumph" *Paul Messenger - HiFi Choice (May 2006)*

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Sound Value

Is there such a thing as a serious floorstanding loudspeaker on a limited budget? Well, Channa Vithana thinks there is, thanks to the Q Acoustics 1050 and Crystal Audio THX T3...

Sometimes you find budget separates that transcend the laws of the market. Last year for example, we found that Cambridge Audio's £250 640C CD player uses the very same chipset found in Cyrus and Musical Fidelity machines at nearly four times the price. Considering the obvious quality of the 640C's power supply too, in reality the only thing separating it from its £1,000 rivals was the Cambridge's plainer casework...

It's lovely when you find this sort of thing, but it doesn't happen everyday. You do sometimes see this with amplifiers and – specifically – CD players (which are so uniformly similar inside, as a rule), but it's rarer with loudspeakers. Speakers, you see, are more subject to the rules of physics – what defines a loudspeaker's sound isn't just a circuit board or chipset, but a whole host of materials including large pieces of wood. This 'material world' is less susceptible to magic tricks – a well engineered and built loudspeaker costs real money to make, no matter how clever you are.

Well, the antidote to this immutable rule of the hi-fi cosmos (i.e. quality costs) is Chinese manufacturing. Here's a way to make good stuff cheap; labour costs are vastly lower than in the UK and there are now a range of OEM factories able to do extremely well finished cabinets and quality drive units at a moment's notice. Couple this to UK or European design and you have a recipe for success it seems. It's certainly no coincidence that so many of the products in this

month's 'budget special issue' are Chinese made, including the first of these two floorstanders...

Q ACOUSTICS 1050

Producing an attractively designed, well-built floorstanding budget loudspeaker with decent scale and good bass extension was, I thought, impossible. However, for £329.90 Q Acoustics have done precisely this with the 1050 model, the current flagship of the range. Q Acoustics is a part of the large and commercially successful Armour Home Electronics group (that owns the Goldring and QED brands to name but two). Traditionally, Armour have sold Mission loudspeakers, but recently opted to design their own range, and so the services of the highly revered loudspeaker designer Karl-Heinz Fink were employed to voice them.

Described as a two-way reflex type, the 1050s feature a prominent port located on the 32mm thick 'multi radial' front baffle. The cabinet is made of 18mm MDF and the 32mm front baffle also helps increase rigidity as well as being aesthetically pleasing. Of the cabinet, Armour says it, "incorporates extensive internal bracing to reduce resonance, much more than you would expect at this price point." Internally, the 1050 uses a 15 element, fourth-order, Linkwitz-Riley crossover which Armour says, "is something else that is unprecedented in this market sector, but contributes to the excellent dispersion characteristic of this model."

The 1050 features one 25mm ferro-fluid cooled, micro polyester



Q Acoustics 1050.

weave tweeter and two 165mm mid/ bass drivers with "aluminised copper wire on the voice-coils - to reduce the cone mass and speed up transients". At the base is a nicely designed aluminium plinth (incorporating adjustable spikes) which is delineated from the cabinet undercarriage by a screwed-in aluminium up-stand. The plinth and exterior design with its gently curved corners and clean lines gives the 1050 a discrete, modernist appearance that belies its low-cost price - this is industrial design at its cleverest. They come in graphite black, beech and cherry finishes, measure 975x295x195mm and weigh 17.8kg.

CRYSTAL AUDIO THX T3

Whereas the Q Acoustics 1050 uses European design and Chinese build to hit the sub £350 price point, at £600 it's possible to make the Crystal Audio T3s in Europe – Greece to be precise. The Athens-

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Crystal Audio THX T3.

based company was formed in 1998 by Vassilis Tsakiris, an engineer who has specialised in acoustics and loudspeaker design for twenty years. Crystal Audio design and make all of their components including drive units, cabinets and crossovers, and as such, they also supply OEM parts to other companies.

The Crystal THX T3s are £600 for the standard (dark) Wenge (Google it!) and silver finishes. They can also be ordered with an optional twelve-layer piano-black gloss for £800. The THX element is usually associated with home cinema designs but it has some interesting specifications that include 'THX Bass Management', said to minimise interaction between speakers and room boundaries, and a front grille design which must not impinge sound quality. Consequently, it's a discrete, aluminium-framed design, set forward from the drive units and features 'vents' to prevent obstruction to the

radiated sound on the horizontal axis. In practice, it offered minimum sonic impact when in place.

The grilles also proved aesthetically discrete, because the three 6.5inch (approximately 165mm) yellow mid/ bass Kevlar/ fibreglass drivers (including phase plugs for a "linear and fast response") are rather distracting to look at. The midrange driver at the top and two bass drivers (including a large port each) below have their own sealed enclosures to avoid standing waves and bass peaks and dips, and they also help to brace the cabinet.

The 26mm silk-dome neodymium magnet tweeter is housed in a nicely designed, isolated spherical aluminium enclosure, which says Crystal Audio, "avoids diffraction effects and improves high frequency performance". It can be rotated by approximately five degrees from left to right, for room integration. There's a choice of spike mountings or wider,

delineated metal plinths. I preferred the metal plinths for use on a flat, level floor. Each cabinet weighs 21kg and measures 250x1130x165mm.

SOUND QUALITY

Starting with the Q Acoustics 1050, and the impeccable precision of piano playing by Daniel Barenboim on Bach's 'Well Tempered Clavier' came over rich and deep with fine timbre. There was minimal coloration, an excellent result at this price level considering how hard it can be to reproduce this recording (where I have found some more expensive loudspeakers struggling to cope). Bass extension, and the phrasing of the piano playing, were also nicely communicated.

On 'Slow Motion' by Blondie, there was fine instrumental separation and spatiality. Rhythms were reproduced with scale and propulsion, making the music thrilling to listen to. However, the 1050s struggled to handle Debbie Harry's vocals - she sounded a little strained on crescendos.

The music had excellent instrumental separation on 'Infected' by The The; I could easily follow every element within the mix. Matt Johnson's vocals were well-defined - the 1050s were just about able to contain, control and reproduce the whole composition whilst remaining on the acceptable side of brightness. Overall, timing was very good, with cohesion, rhythm and dynamics aplenty. Powerful and atmospheric, the eastern-flavoured psychedelic rock of 'The River' by The Tea Party was reproduced with dynamism, scale and propulsion. Vocals had control and extension, but there was a small but discernible amount of congestion which led to some instrumental opacity.

Moving to the Crystal Audio T3 at nearly twice the price, and on the Daniel Barenboim version of Bach's 'The Well Tempered Clavier' there was no discernible coloration to the solo piano at normal volume levels. Piano timbre was superb, with excellent spatiality and timing - successive notes were revealed with precision, speed and delicacy also.

Blondie sounded effortless, with excellent treble detailing and extension, instrumental separation and timing. Most impressive was the ability of these speakers to provide a wide, lyrical spatiality that opened out the sound, which in conjunction with its timing made for really enjoyable music. Debbie Harry's vocals were handled superbly with extension, texture and delicacy, and the high-frequencies sounded very

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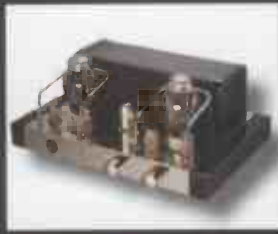
Push Pull Integrated Amplifiers

There are two models in this range. The VP16 (12 watts per channel) and using 6V6 valves. Price £450. The MP60 (20 watts per channel). And using 5881 valves. Price £800 Both these models are very conservatively rated and will drive most loudspeakers.



Single Ended Integrated Amplifiers

There are three models in this range. The MP15 (15 watts per channel) and using KT94 valves. Price £750. The MP2A3 (8 watts per channel) and using 2A3 valves. Price £850. The MP30B (ten watts per channel) and using 300B valves. Price £999



Headphone Amplifier

The MP5 is an amazing bargain. Not only is it a headphone amp but also a 13 watt integrated with a line stage input and a USB input. So you can link it to your computer or your MP3 player. Best of all it costs just £250



Preamplifiers

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



Power Amplifiers

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



Reference Power Amplifiers

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



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sophisticated. The depth and spatiality of the Crystals was outstanding, with power, texture and sophistication in abundance.

CONCLUSION

To my ears, the Q Acoustics 1050 redefines what can be done at the sub-£350 price point. A well built and visually attractive floorstanding loudspeaker, it's an industrial design success and the clean unadorned lines are something to savour. It also has excellent sound for the price, with enough scale to fill a largish room with ease, such as my own 6x4m listening area. This contrasts with the (£550) Castle Compact Column loudspeakers (HFW July 2006, p44) also engineered by Karl-Heinz Fink, which are more musical but limited in scale by their smaller cabinet volume. While they weren't quite perfect with my more expensive Moon Audio and Unico CD review equipment (which were a little too explicit for them in the treble), the 1050s would still make an ideal choice for a high-quality budget system.

The (£600) Crystal Audio THX T3s never once struggled and proved versatile enough with the higher-priced reference system to suit them comfortably. Without their grilles they aren't quite as attractive as the Q Acoustics 1050s, the Crystals offer

a fine blend of qualities, in particular cohesiveness, balance and spatiality. For further evidence, I compared the Crystals to the fine (£800) Monitor Audio RS8s, and found that although the MAs had superior vocal detailing and bass extension, the Crystals had a finer, free-flowing sound with superior scale and more open treble. They were also more cohesive across the frequency range and the timing was also superior.

If you have a high-quality budget system costing around £250-£500 per component, and you want to upgrade from entry level standmounters or floorstanders alike, then the Q Acoustics 1050s are an essential audition. If you're looking to take your system up a notch or two over the next few years, the Crystal Audio THX T3 at £600 is one of the best sub-£1,000 options available. Clever design and tight cost control, then, means there are even budget loudspeaker bargains to be had!

"clever design means there are budget loudspeaker bargains to be had..."

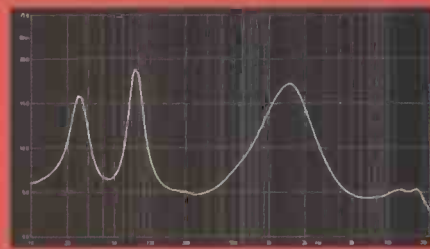
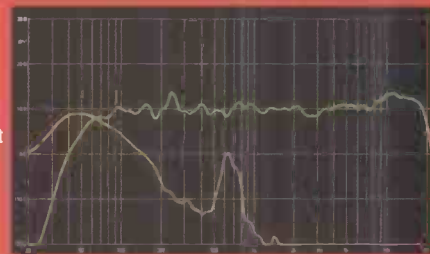
MEASURED PERFORMANCE

They hardly come flatter than this. The Q Acoustics 1050 is academically flat in its frequency response, our graph shows. Only at high frequencies is there significant deviation from the median line, the tweeter steadily peaking to +3dB at 12kHz. There's enough lift for the effect to be subjectively obvious in some top end sharpness. Otherwise, the flat response characteristic of this loudspeaker means it will sound detailed, dry and balanced, with of sense of "everything being there" compared to many other loudspeakers, with narrow band losses. However, a flat response loudspeaker isn't necessarily going to appeal subjectively, even though it is technically perfect, which is why so many loudspeaker manufacturers knowingly deviate from the notional ideal. In particular, the Q1050's bass will sound restrained and damped; the loudspeaker may well benefit from near wall placement. Whilst bass rolls off to -6dB at 50Hz, the port works at 40Hz to supplement output. There's a box 'boing' from the port, which unfortunately faces forward, so this will likely be heard as colouration.

The impedance curve shows port action at 45Hz, the tweeter

cutting in at a low 1.5kHz. This low crossover frequency ensures good driver matching and partly explains the smooth frequency response. Sensitivity was very high at 90dB, another big plus point.

The D'Appolito driver arrangement gives a stretched and unfocused vertical image, if a consistent one. The Q1050 is a neatly engineered loudspeaker that measures well and should give a good account of itself. NK



MUSIC

Bach/Barenboim, 'The Well Tempered Clavier' (2004)
The Tea Party, 'Splendor Solis' (1993)
Blondie, 'Eat To The Beat' (1979/2001)
The The, 'Infected' (1986/2002)

REFERENCE SYSTEM

Unison Research Unico CD (£1,250)
Moon Audio, i-3 Integrated amplifier (£1,595)
Monitor Audio RS8 loudspeakers (£800)

VERDICT

Superb value budget floorstander with fine build, excellent design and an impressively finessed sound at the price.

Q ACOUSTICS 1050 £329.90

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FOR

- industrial design
- build and price
- instrumental separation

AGAINST

- excitable treble

VERDICT

Lucid musicality and real transparency make this one of the best sub-£1,000 floorstanders around.

CRYSTAL AUDIO THX T3 £600

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FOR

- spatiality and depth
- free-flowing musical ability
- sweet, crisp treble

AGAINST

- styling

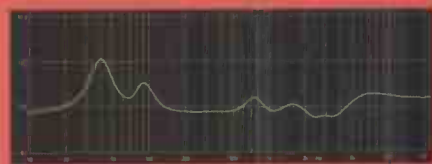
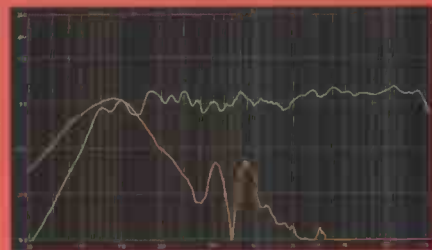
MEASURED PERFORMANCE

Like Monitor Audio RS8s, these loudspeakers emphasise upper frequencies, resulting in an obviously bright, almost crystalline sound I found, so their name is appropriate. However, at normal seating height, with the ear between the upper two bass/midrange units height-wise, the THX-T3s actually measure very flat. All the same, they produce so much high frequency energy overall that in most rooms they will come across as bright, but also detailed, concise and clear. There's no lift across the lower midband to add body to the sound, resulting in a fairly light balance, a property sustained by well damped bass that rolls off quickly below 60Hz. The port makes a contribution below this frequency, as it's broad in output and applies a lot of damping to the twin bass units.

This is very much a 4ohm loudspeaker, as impedance measured a low 4.4ohms overall with pink noise, and the bass unit's DCR is just 3.6ohms. Our impedance plot shows little variation across the audio band; the

THX-3 is a substantially resistive load with little reactance. Sensitivity was very high at 90.4dB or so. On balance then the THX-3 is an easy load; it draws current, but not much power. It will suit valve amps with a 4ohm tap.

The Crystal THX-3 measures well all round and is very well engineered. However, it has been tuned for a bright balance. NK



Pure

Touted "the most advanced portable radio in the world", Pure's Evoke-3 impresses Steve Green alright, although the entry-level Pure One raises questions about its value...



Pure Evoke-3

Boasting a mightily impressive feature list, Pure's new Evoke-3 (£165 – www.martindawes.net) is the company's top DAB portable. Standing 190mm tall and 290mm wide, it's significantly larger than I'd expected, and very solidly built too. Pure has played it safe with the styling, as it follows the same vein as the other members of the successful Evoke family, with wood on the top, bottom and sides of the unit and silver-coloured front panel and speaker grilles.

Atop the front-panel is a large (70x45mm) black on light grey background LC graphical display, which allows you to see lists of stations (as opposed to displaying one station name at a time), lists of programmes on the Electronic Programme Guide (EPG), programme descriptions, station text, or it defaults back to displaying the time with very large digits. The buttons and knobs on the front-panel of the Evoke-3 are well laid out, but operation was easiest using the excellent compact remote control provided. The only unimpressive aspect of the unit's operation was that tuning between stations on FM was very slow; although changing between FM stations was quick once the stations had been stored as presets.

The radio has the ReVu pause and rewind function that typically allows you to rewind through the previous thirty minutes of audio on a station you've been listening to. This is the second DAB portable radio

I've reviewed that has the pause and rewind feature, and although it works very well, I have to say that I haven't actually ever used the feature other than to test that it works, so I remain to be convinced of its usefulness.

One of the star features on the Evoke-3 is the EPG that shows which programmes will be on for the current day and over the following week. Navigating between stations and forwards and backwards in time on the EPG was straightforward, and you can set the radio up to record a programme to the SD memory card by simply navigating to the programme and pressing the record button, which is similar to the way you set up PVRs – such as Sky+ – to record TV. The only drawback with the EPG at present is that there's only programme information available for stations on the BBC and Digital One national multiplexes, but presumably information will be made available for the other commercial radio stations in the not too distant future.

It's also possible to record the currently playing DAB station to the SD card, or to set the radio up to record between specified start and stop times, and instead of recording to SD card the radio can be instructed to output the audio via the S/PDIF digital output or via the line output for recording to an external device. When recording DAB stations it is the actual received compressed MP2 bitstream of the radio station – i.e. the same bitstream that was transmitted apart from any data errors that occur due

to transmission – that is recorded to the SD card. And as radio stations on DAB use low bitrates, such as 128 kbps, recording one hour's worth of audio of a typical music radio station only consumes 55MB of memory on the SD card, so you should be able to fit around 19 hours' worth of music on a 1GB SD card.

Incidentally, this method of recording the received station's bitstream directly to memory is the highest quality method of recording radio transmitted via DAB (and TV or radio via digital TV for that matter), because there is no loss of quality, whereas most other methods of recording potentially degrade the audio quality, such as when D/A (digital to analogue) or A/D conversions and/or recompression (e.g. to MiniDisc or MP3) is involved.

Another good feature is that the USB socket on the rear of the unit allows you to transfer MP2 or MP3 audio between your PC and the SD card, so that you can store recordings of radio programmes on your PC or playback MP3 files on the radio. The USB socket also allows you to load software updates to the radio. As well as a USB socket, the Evoke-3 has an S/PDIF digital output, headphone socket, line out and auxiliary input on the rear panel.

The radio also has an alarm clock, but when I tested it the alarm only came on after two snooze periods had passed, so it's only recommended if you want to be twenty minutes late for work! I'd imagine this bug will be corrected when the next version of the software is released. The unit can be powered from the mains, by six C-type batteries or by Pure's ChargePAK rechargeable battery pack (£30). Pure quotes 12 hours of DAB playback from a set of alkaline

and Simple?

batteries, and 10 hours with the ChargePAK at normal volume levels.

SOUND QUALITY

For such an expensive portable, DAB reception quality was only average, with occasional bubbling mud sounds on the weakest DAB multiplex I can receive, but no problems on the other multiplexes. On DAB, when delivered with a clean source of audio, the sound quality on the Evoke-3 was very good, and it performed better in this department than the other members of the Evoke family. The unit delivers a big, powerful and bold sound, and the best performance was with vocals, speech and music with a lot of bass.

Classic FM on DAB came over in a rich and dynamic fashion via the Evoke-3, and the sound of the station brought the best out of the sound of the unit. BBC Radio 3 sounded reasonable, if a little uninspiring, although the problem will in no small part be due to the BBC reducing the bitrate of Radio 3 to 160 kbps – see my column on p79 for more on this!

The Evoke-3 also performed very well overall on the middle-of-the-road pop and dance stations on DAB, providing a weighty yet dynamic delivery. It performed less well on rock stations, however, and the audio tended to distort and disintegrate into a wall of sound when loud electric guitars were being played. And in general, when the audio wasn't particularly clean or sharp, it became a little muddled and

gritty, although this can be attributed to the low bitrates that the DAB broadcasters use rather than the radio itself.

However, if audio quality is your primary concern and you're not overly bothered about having the latest features, the best-sounding DAB portable I've heard to date was the Dualit kitchen DAB/FM radio. At £199 (John Lewis) it's far from cheap, but their strategy of getting the best sound from one high quality speaker and drive unit really paid dividends – Pure should take note. A positive step compared to the Evoke-2 is that the Evoke-3 now has separate treble and bass controls, which can give a lift to some of the duller-sounding stations on DAB.

FM on the Evoke-3 was very disappointing. The FM receiver is implemented using software-defined radio (SDR) rather than using

traditional analogue circuitry, but the receiver had very poor sensitivity and the high-pitch 'digital noise' was highly obtrusive on a number of FM stations that my £25 Sony FM portable receives perfectly! For a radio that costs as much as the Evoke-3 does, Pure really needs to pull its finger out with respect to FM reception.

CONCLUSION

Overall then, this is an impressive radio, with a superbly comprehensive feature set including EPG and SD card functionality. The sound on DAB is generally very good, but is let down by poor FM reception quality. If you're heavily DAB oriented these days, it won't bother you, but those stick-in-the-muds who prefer FM whenever possible should look elsewhere. Finally, the fact that Pure's One [see opposite] offers so much sound per pound is food for thought...

VERDICT ●●●●

A feature list head and shoulders above the competition and fine sound make it an excellent - if expensive - product, although reservations about FM reception remain.

PURE EVOKE-3 £165

Pure Digital

☎ +44 (0)1923 260511

www.pure-digital.com

FOR

- features
- sound
- operability

AGAINST

- FM reception

PURE ONE £50

Pure Digital

☎ +44 (0)1923 260511

www.pure-digital.com

VERDICT ●●●●£

Decent no-nonsense DAB portable for those on a budget, but limited in sonics and flexibility - as you'd expect at this price.

FOR

- styling
- portability

AGAINST

- sound quality

PURE ONE

At just £50, the 'One' is a lot smaller than I'd envisaged (210x145mm) and extremely light. The white rigid plastic casing with curves in the right places makes it a very attractive device, and I much preferred the modern styling of the Pure One to the more old-fashioned look of the Evoke-3. There's a low feature count, merely offering twenty presets altogether for both DAB and FM; a feature called Intellitext; and a kitchen/sleep timer. Similarly, in terms of connectivity, it only offers a headphone socket and a USB socket for software upgrades. Intellitext allows you to store text information sent by broadcasters that support the feature – such as football headlines sent by TALKsport – which you can then read the text at your leisure. However, because the display is very small and dims soon after you've pressed a button (to increase the battery life), the scrolling text is difficult to read, making this feature rather unappealing...

DAB reception was good, with no reception problems on any of the multiplexes I can receive. FM reception quality on the Pure One was also reasonably good and, like the Evoke-3, it uses software-defined radio to implement the FM receiver, which makes it all the more baffling why the Evoke-3 had such poor FM reception quality! The Pure One can be powered from the mains, by six C-type batteries or using Pure's ChargePAK rechargeable battery pack (£30). Pure quotes thirty five hours of DAB playback from a set of alkaline batteries and twenty hours with the ChargePAK at 'normal' listening levels.

The biggest difference between the Pure One and the Evoke-3 is in the output power: the former is puny compared to the latter. There's also a Catch 22 situation: because the radio isn't very powerful you tend to turn the volume up, but this frequently distorts the audio and the sound descends to an ill-defined mess. This was most readily apparent with loud rock and pop music, but was less of a problem with classical music, middle-of-the-road and dance music stations. As ever on DAB, the Pure One performs better with speech than with music. On FM, the volume was significantly lower than on DAB, and as the radio isn't very powerful in the first place this did no favours for the FM stations. Overall, the sound is mediocre, so I'd recommend spending a bit more to get a DAB radio with more oomph behind it, like Pure's own Evoke-1 (currently £49.95 at Richer Sounds), unless portable 'out and about' operation is essential to you.



Pure One

Completely



Japanese big name brands have driven multichannel almost single-handedly, but there's one affordable audiophile alternative to the orthodoxy of Denon, Marantz, Pioneer, et al. David Allcock enjoys the Cambridge Audio Azur 540R v2.0 experience...

When Cambridge Audio, a company with such legendary designs as the CDI behind them, arrived in the AV world, the competition knew they had trouble. Their first foray into multichannel, the 540R, was very well received - if a little basic by modern standards - and the subject of this review is its replacement, appropriately called the 540R v2.

The specification is extraordinary for the price point - along with six 80W amplifiers, there are four stereo inputs, a full tape loop, RDS FM tuner, a front panel stereo input with composite video input, three electrical and three optical digital inputs, a pair of HDTV ready component video inputs, three S-video and three composite inputs, and unusually at this price point both a 6.1 analogue input and 6.1 analogue preamp outputs.

These last two features show great forward thinking on the part of the designers. The 6.1 input is

not only required for DVD-Audio and SACD multichannel, but more importantly to hear the new Dolby TrueHD soundtracks on HD-DVD and Blu Ray discs. The 6.1 preamp output is also a welcome addition - in a low cost AV receiver the biggest compromises are invariably in the power supplies and power amplification stages, so these outputs give the owner the option of using better quality, external power amps to replace the internal amplifiers.

Opening the box brings you face to face to a solidly built, surprisingly heavy receiver, a dauntingly thick user manual (of which only 32 pages are English), a small ring antenna and a remote control unit. The main receiver is 430x150x350mm (WHD) and weighs 15.8kg. I was pleasantly surprised by the build quality on offer here - surprisingly solid with just a hint of ringing when tapped with a fingernail. Likewise, the controls on the front panel are good, if not luxurious, with the plastic buttons having just a little unwanted lateral travel and the main volume control

proving nicely weighted.

On the front panel are from left to right, an on-off switch, 6.3mm headphone socket, tuning up/down and store buttons, direct select source buttons for DVD, Video 1, 2 and 3, Tuner, Tape, CD and 6.1 Direct. Just beneath these are less critical controls for surround sound mode with buttons for stereo, Dolby Digital EX / DTS ES, Pro Logic II / DTS Neo 6, DSP Mode and Input mode, a remote control eye, front panel composite video input with stereo audio, all on RCA phono, and finally the volume control.

The rear panel is festooned with connections, starting with 75 ohm FM aerial inlet and 300 ohm AM loop, S-Video and composite video outlets for a TV/ monitor, three S-Video and three composite inputs, three TosLink optical and three S/PDIF electrical digital inputs, a TosLink and S/PDIF digital output, two component video inputs and a component video output, all on RCA phono connectors, four analogue stereo inputs, a full tape loop, 6.1

Surrounded



direct input and 6.1 pre amp outputs, six pairs of binding posts, an RS-232 connector and control bus for custom installation. Phew! The mains cable is a permanently fixed type giving no option for installing an aftermarket higher quality item.

Connecting this unit held few surprises, though there were a few small shortcomings. Starting with the binding posts, these can accept either 4mm banana plugs or bare wire, but not spades, as the shroud around the binding posts preclude their usage. There is no video conversion inside this unit, so if you have a combination of S-Video, composite and component video devices, you'll need to run all three video connections to your TV or projector. Whilst six digital inputs are present, these cannot be reassigned to any input, instead you're restricted to CD, DVD and Video 1 or 2, the three S/PDIF and TosLink pairs linked, meaning you strictly have three digital inputs, not individually addressable ones, which is a function you take for granted on more expensive receivers.

"the only AV receiver at or anywhere near the price that plays music in a pleasantly listenable way..."

The only other small disappointment is the preamp out facility, which has to be activated through the firmware and is an all-or-nothing switch, you either have all the preamp outs activated or you have the internal amplifiers activated, you cannot elect to use certain channels on preamp out. The subwoofer implementation is highly versatile, giving 10Hz crossover steps between 40 and 150Hz with a final step to 200Hz.

SOUND QUALITY

I elected to use Onyx Rocket speakers with this receiver, a pair of RS 550 MKII front left and right, RSC200 centre, RSS 300 dipole surrounds with a pair of UFW-10 active subwoofers. Whilst this entire speaker system is still expensive in comparison with this receiver

at £1,800 for all seven, they offer phenomenal performance for the money, are a benign 8 ohm nominal load, and are efficient at an average 89dB, making them a transparent match for this receiver. Also used was a Pioneer CLD-99 Elite LaserDisc player used as a Dolby Pro Logic source, and an M-Audio Audiophile 96/24 soundcard used for DVD playback, supplying Dolby Digital and DTS streams to the receiver. My usual reference system comprises a £1,000 Denon AVR-3805 receiver, three Briston power amps and five Martin Logan speakers with a pair of Rocket UFW-10 subwoofers.

I started out using DTS music, with Jean Michel Jarre 'Live A Pekin' DVD (Warner 5046761662), an astonishingly transparent, fast DTS mix pulls the viewer into the concert and is incredibly visceral. I had used

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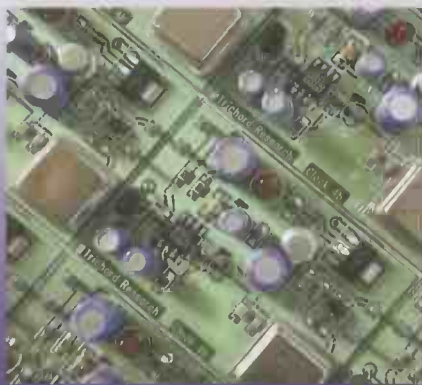
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the Rocket speaker system with my reference processor/ amplifier combination, so knew what it could do, but the performance with the 540R v2 was still surprising. On 'Aero' there was a little extra warmth in the lower midrange, giving a touch more richness and body and causing a slight congestion - but still nothing seriously objectionable. Bass was a little slower than my reference system, the UFW-10's felt as though they could go faster than the 540R V2 could, and likewise the high frequencies were slightly more closed in than my reference.

Given a high quality DTS signal, this system could generate a stunning sense of space, simply destroying the walls of the room and placing sound right around the listener. This was not splashy, diffuse surround sound, but highly directional and carefully controlled images, precisely located on the soundstage. Even with the formidable 'Zoolookologie' (a surround sound maelstrom), the 540R v2 proved more than up to the job in hand, keeping instruments in their appropriate speakers whilst steering the voices quickly and cleanly around the room. Dolby

was still an excellent performance.

On more subtle material, chapter 20 'The First Date' from 'The Thomas Crown Affair', whilst there was an echo around the museum as Rene Russo and Pierce Brosnan discussed the artwork, this was not as clear or as convincing as I usually hear, likewise the conversations of the other diners in the restaurant later in this sequence were indistinct, but the ambience generated around the room was widely enveloping of the viewer and succeeded in giving the viewer the feeling of listening into a conversation in a crowded restaurant.

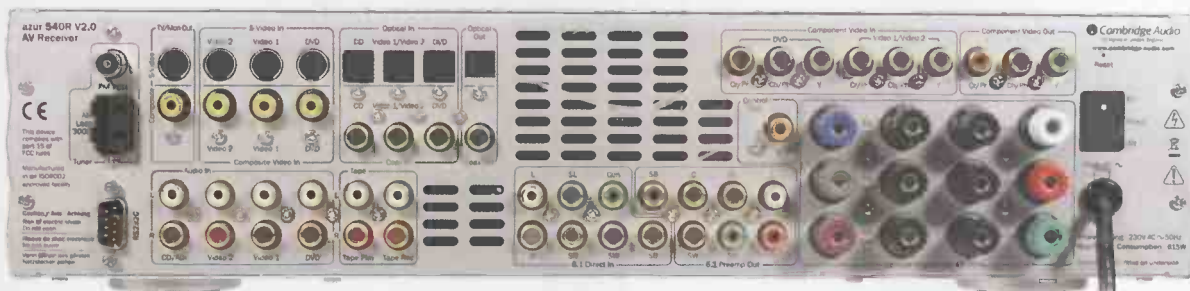
Dolby Pro Logic performance was assessed using 'Heat' on LaserDisc. The soundtrack on this is particularly dynamic, the final heist sequence is chaotic and requires sounds to be accurately placed in all speakers. Again the 540R v2 gave away some imaging precision and speed to the Denon 3805, but overall the steering was very quick, well focused, although the bass frequencies were a little

Still, I have to say, for £250 the stereo performance is peerless - I wouldn't so much as contemplate the idea of listening to music on any of the 540R's price rivals, as you'd never get out alive! At this price, the Japanese branded receivers sound just plain nasty on music, and the Cambridge Audio does not - therein lies the difference.

Finally we come to the radio, and I was pleasantly surprised by the sensitivity and separation available on the FM tuner. It pulled in The Bay from about 40 miles North of my home, cleanly with good separation, whilst BBC Radio Three and Four

"this receiver could generate a stunning sense of space..."

were both very quiet, offering a very listenable sound, whilst the RDS functionality of this receiver worked well. I would, however, recommend a good external, roof-mounted antenna if you intend to seriously use FM, as a small internal FM aerial gave very poor performance.



Digital is equally well served musically with the same signature speed and transparency, only with a little harshness in the high frequencies, typical of the Dolby Digital encoding process.

I selected two movies which each present their own challenges for an AV receiver. Starting with 'Swordfish' (Warner Bros. 85392 13222 Region 1), I went immediately to Chapter 18, 'Hitting the Hit Squad', which involves a high speed chase through a city centre with machine gun fire and soundtrack punctuating the sequence. The 540R V2 did an excellent job of allowing each strand of the soundtrack to be heard, but lacked the ultimate low frequency impact of my reference system, with the individual impact of each bullet being discharged from the chain gun sounding less dynamic than through the Denon 3805. Likewise, the dialogue channel had a little less clarity than my reference, but this

'softer and lacked the absolute impact which I can achieve with higher end units, this is still an excellent result.

A blinding multichannel performance at the price then, but on two channel, this receiver's lower cost roots are more obvious. When used to decode CD the sound is over dependent on the low frequencies, and this means some midband attack, texture and clarity is lost. Likewise, the upper midrange and high frequencies are somewhat harder and a little more forward than in real life. The midband is quite reticent and veiled, giving a slightly murky quality to the sound. However, all the blame cannot be aimed at the DAC stage as the analogue side of things exhibits a lack of midrange transparency together with a slight exaggeration of lower registers. I also noticed that everything went through the processor, even straight stereo, meaning there was no true pass through available for analogue signals.

CONCLUSION

Here is a comprehensively equipped, multichannel AV receiver for only £250 - I have interconnects that cost more than that! Performance is superb on surround sound material, its tuner is very usable and the internal amplifiers are powerful beyond what their specification would suggest. If you are looking for a solid six channel AV receiver which can handle all the current surround sound formats found on satellite and DVD, I would give this an unequivocal recommendation, the value for money is astonishing.

Put simply, it's the only AV receiver at or anywhere near the price that plays music in a listenable way, as well as offering a welter of surround sound facilities. Other Japanese branded designs may have far more gloss and glitz to their finish and feature count, but this one punches way beyond its price point on sonics.

VERDICT ●●●●●
 Incredibly versatile, sonically excellent AV receiver at a bargain price.

CAMBRIDGE AUDIO
540R V2.0 £250
 Cambridge Audio
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 www.cambridgeaudio.com

FOR
 - excellent feature set
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 - Component video sockets

AGAINST
 - no onboard video conversion
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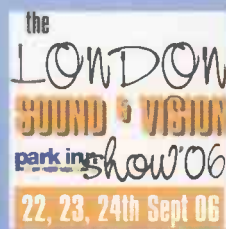
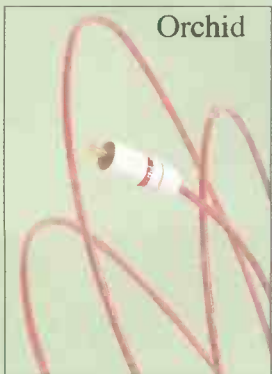


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Black Magic

Cambridge Audio's dull looking DACMagic digital to analogue convertor is the used bargain of the century, reckons David Price...

I remember it well. Back in the mists of time, one dark rainy winter afternoon in 1994, (then) *Hi-Fi World* editor Dominic Baker and I (the humble editorial assistant) were staring at an awful looking black plastic box, with expressions on our faces suggesting we were rapidly losing the will to live.

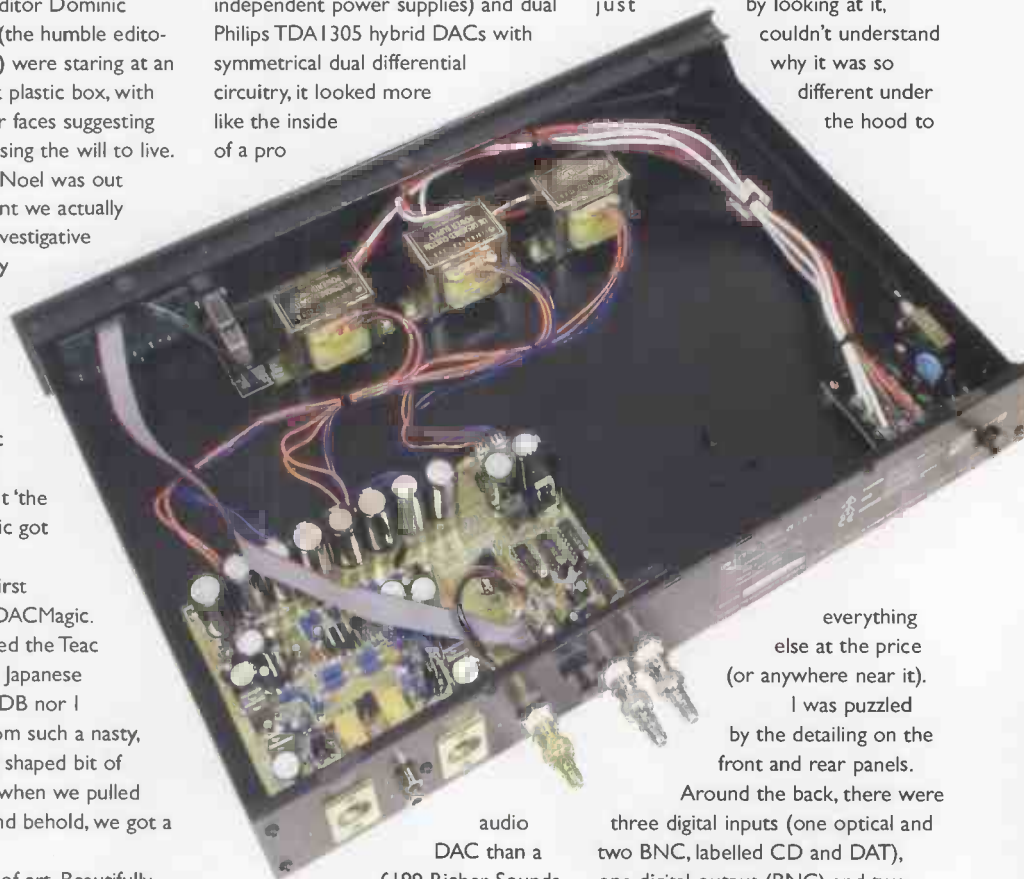
Still, publisher Noel was out (which always meant we actually got on with real investigative journalism – usually pulling things to bits and/or listening – rather than sitting there bashing at our Mac keyboards), so we thought we'd give it 'the treatment'. Dominic got the screwdriver...

That was my first meeting with the DACMagic. Having just reviewed the Teac VRDS-30 high end Japanese battleship, neither DB nor I expected much from such a nasty, flimsy, light, oblong shaped bit of black plastic - but when we pulled the casing off, lo and behold, we got a surprise.

It was a work of art. Beautifully laid out with gold-plated printed

circuit boards and connectors, high quality low-noise transformers (three of them, feeding nineteen independent power supplies) and dual Philips TDA1305 hybrid DACs with symmetrical dual differential circuitry, it looked more like the inside of a pro

This was all very puzzling. Dominic, who usually thought he'd got the complete measure of a product just by looking at it, couldn't understand why it was so different under the hood to



audio DAC than a £199 Richer Sounds special.

everything else at the price (or anywhere near it). I was puzzled by the detailing on the front and rear panels.

Around the back, there were three digital inputs (one optical and two BNC, labelled CD and DAT), one digital output (BNC) and two sets of analogue outputs (RCA and



TWEAKING

There's a lot of stuff on modding DACMagics on the internet, but the general consensus of opinion is that the Analogue Devices op-amps let the side down a little on the stock machine. AD OP275GPs are the ones to go for. This brings a fuller, deeper bass and better dimensionality, addressing the main failing of the standard DAC (i.e. slightly light, lean bass). The machine can also be clocked; some recommend an LC Audio XO Clock but there are various options from the likes of Trichord and Audiocom. De-jittering the DACMagic brings a far cleaner and more transparent sound, removing the 'mush' that all CD suffers from to a greater or lesser extent. Finally, there's a range of power supply capacitor tweaks – Elnas, Black Gates, you name it; the great thing about this bit of kit is that it's cheap but tuneable.

XLR). Balanced outputs on a £199 plastic toy – what was going on? Then there was a curious LED on the front for SCMS (Serial Copy Management System). Well, we all know what this was for, but what was it doing on a domestic DAC – this was (is) the province of pro designs. Curiouser and curiouser...

Little did we know it then, but Cambridge Audio's DACMagic was the brainchild of John Westlake, who penned the Pink Triangle Da Capo DAC. This was *Hi-Fi World's* DAC of choice, a brilliantly warm and smooth and beguiling bit of kit that sounded like nothing else on the market back then (the Chord DAC64 is its modern spiritual successor now). DB and I took the DACMagic downstairs to our listening room, hooked it up and were amazed.

No, the DACMagic wasn't anywhere near as good as the Da Capo, but it was still unexpectedly capable. It had a very spacious, dimensional sound with a smooth but very detailed top end. It was decently musical and, well, just sounded nicely natural. At the price, we'd never heard anything like it.

The interesting test was what it did with CD players. It was the era of £299 Marantz machines, which were actually pretty good performers even by today's standards. The DACMagic would upgrade a £350 CD63SE quite easily, and even brought things to the £500 KI Signature. Basically then, it would improve on anything under about £600 – Sony CDP-X33ES, Philips CD850 II, Denon DCD820, you name it. Even by today's standards, it will upgrade budget machines at

a stroke, but the real fun is to be had when you mod it, whereupon it becomes a giant killer [see TWEAKING]...

Cambridge Audio made a number of incarnations of the DACMagic – the 1, the 2, the 2i. Rumour has it that this latter version had some fifty percent less measured distortion. The Isomag was its successor, a madcap isolation platform/DAC with similarly excellent sound. Considering the ability of the DACMagic, it's surprising it didn't end up in everyone's first system, like the Pioneer PL12D or NAD 3020 before it, but even in the early nineties, DACs were seen as a bit of a niche product. Still, the Cambridge Audio sold well in this context, and so they're not hard to find secondhand for next-to-no money. Pay £50 or less for a mint, boxed example and then tweak it!



The Mains Thing

Mains cables come at all prices, from sensible to stupid. Does spending more on your mains make a change? Channa Vithana Investigates...

Why bother with after-market mains cables? It's a good question. Given that this magazine looks dimly on the claims made by many cable companies, and the fact that this month is a budget audio-

ophile special, we thought we'd try out five designs from £64 to £480.

The five different cables assessed for this review were run-in for a minimum of five hundred hours and compared against a 'free' mains cable (fully run-in) as supplied by most hi-fi manufacturers. Cheap interconnects

(£2.99) and speaker cable (£0.49p/M) were also used, to help isolate the mains cables' sound quality. Oh, one word of warning before we embark upon the test: you are now entering the silly name zone...



AUDUSA EUPEN GNLM 05/2.5 SE

The £64 (1.5m) Audusa uses a foil screen and special ferrite layer; EMC/COM, which is extruded around the copper conductors. This ferrite compound attenuates the "high frequency disturbances that are propagating on the conductor to prevent them from disturbing the signals". The SE version is silver-plated, and the IEC and MK Toughplug pins use "heavy duty" 5-8 micron silver-plating (BSI standard) and are further treated with ProGold contact enhancer. Artur Pizarro's 'Beethoven Piano Sonatas' SACD was much quieter in comparison to the free mains cable. This is a tricky recording, where the piano can sound coloured, and is tonally distinctive. However, the Audusa minimised the coloration very well in comparison to the free mains cable and had a fantastic bass tunefulness and extension also. The Audusa had slightly less well illuminated high frequencies. Bass tunefulness and extension was superior to the freebie cable with the thrash metal of 'Cowboys From Hell' by Pantera, and this helped to reproduce their crushingly powerful dynamics. The lead vocals and drums in particular were clearer. Overall, a definite step up from the stock cable, well worth the outlay.

JAS ZION AUDIO EXTRA POWER

The £159 (1.5m) Extra Power mains cable, says JAS, "is composed of three silver plated 12 AWG 6N OCC/OFC (copper) conductors. The line and neutral conductors are separately insulated with Teflon and individually shielded with close-lapped 6N OCC/OFC braiding providing 100% coverage for RFI/EMI avoidance. A 100% cotton cord is used in the centre for resonance and vibration damping." The JAS Extra Power is fitted with a red MK Toughplug. The 'Beethoven Piano Sonatas' had the quietest background of the group and the JAS was distinctly smoother. The music was exceptionally controlled and reproduced unflappably throughout the frequency range unlike the 'free' mains cable. Powerful dynamics were revealed, but not quite the best timing. However, there was excellent instrumental separation to 'Cowboys From Hell' and bass tunefulness was superb as was extension. The JAS cable was clearly superior to the 'free' mains cable in every area, but fell down in respect of timing against its LAT and Chord price rivals. Beautifully smooth, it's one to use to tame fierce systems.



TCI BOA CONSTRICTOR

The £480 (1.5m) Boa Constrictor consists of 24x0.597mm² silver-plated copper alloy cables, split into six live and six neutral sets of interwoven wires, with a further twelve wires woven around them acting as a filter for RFI. The plug utilises nickel plating and then rhodium plating for its pins while the IEC socket looks like a (Kimber) Wattgate 320i type with its clear cylindrical body. The Boa Constrictor has a claimed, calculated, 2.69ohm/km resistance which is much lower than TCI's £199.99 Super constrictor (4.04ohms), £99.99 Constrictor (5.14ohms) and £69.99 Baby Constrictor (8.5ohms). TCI says that lower resistance allows power supplies to recharge faster for better dynamics. The outstanding bass extension and tunefulness of the TCI was soon evident as it really had a wonderful ability to reproduce the timbre and dynamics of the solo piano playing from 'Beethoven Piano Sonatas'. The TCI also had fine spatiality and expressiveness when it came to reproducing the layering of successive notes from the piano. There was a slight but discernible smoothness; however, the power, expression and sheer grip from the bass was palpable with 'Cowboys From Hell'. Timbre to the lead guitar was also stunning, eliminating the uncomfortable ringing distortions of the 'free' mains lead. Excellent, but so it should be at this price!



CHORD COMPANY POWER CHORD

The £140 (1.5m) Chord Company's Power Chord has the rare distinction, for a mains cable, of being CE safety approved [and rarer still, doesn't have a silly name – Ed.]. The outer jacket is made from PVC because it is durable. Next, a three-layer screen comprising of two foils plus one circular braid and then a woven layer of PVC; and finally, three 13AMP OFC conductors with polyethylene insulation. For the Schurter IEC, Chord used direct soldering instead of screws for better sound quality. The Power Chord uses a white MK Toughplug. Timing from the solo piano playing on the 'Beethoven Piano Sonatas' SACD was outstanding via the Chord, so the layering of notes and phrasing of the piano flowed effortlessly. Timbre from the piano was superb - there was no unwanted coloration in comparison to the free mains cable. The Chord had excellent timbral acuity with the instruments and vocals on 'Cowboys From Hell' by Pantera. Here, at all the frequencies, it was entirely convincing, and consequently music was wide, deep and powerful. Without doubt, worth the extra cash in every respect.



LAT INTERNATIONAL AC-2 MKII SE

The £132 (1.2m) LAT uses a foil screen, PTFE/Teflon, and proprietary Silverfuse which is, "a near alloy of silver and copper. It is not silver plated or silver clad. Plating causes a dioding effect when signal is passed through resulting in brightness and distortion. The Silverfuse process starts with seven nines (99.99999% purity) OFHC copper wire (which) is then pulled through a trough of molten silver. The wire with a silver deposit is then forced through a compacting die where it is subject to tremendous pressure. The silver and the high purity copper are fused together into a near alloy. No dioding subsequently occurs with this process." The SE version has silver-plated MK Toughplug and IEC pins. Timing was superior compared to the Audusa and standard free cable on the 'Beethoven Piano Sonatas' SACD. Here the LAT had a nicely balanced sound overall, with the quietness of the lower-cost Audusa but now with a more revealing midrange and treble with superior timbral and phrasing finesse compared to the 'free' mains cable. The LAT opened out the music to 'Cowboys From Hell' by Pantera with a much wider aperture allowing free-flowing dynamics. It had slightly less bass extension than the Audusa but was more musically cohesive. The LAT's assuredness with timing established a finer, life-like feel to 'Cowboys From Hell' than the free cable. In most respects then, a marked upgrade to the Audusa.



CONCLUSION

There's no doubt that bundled mains cables aren't much good (sonically, although they do a worthy job in establishing a basic electrical connection), and that spending more yields significant sonic benefits. The question is - what is the order of magnitude, and does this correlate to the extra outlay? Here is my order of preference, starting with the worst (in sonic terms)...

The £64 Audusa had fantastic bass tunefulness and provided a very low noise background for the music compared to the freebie. It is excellent value for money and though not as sharp in the higher frequencies, it was easily superior to the 'free' cable.

The £159 JAS cable had a particularly identifiable musical smoothness, which some will prefer. It also provided an exceptionally quiet background to music, and

unflappable control over all the frequencies. The JAS was good but seems better when combined with its own interconnects and speaker cables (see HFV May 2006, p17).

The £480 TCI Boa Constrictor was slightly smooth but had outstanding bass and control, which is expected at the price. It startlingly revealed the music in all its glory and will benefit high-end sources most. Although able, you pay for it!

The £132 LAT had less identifiable bass extension but instead supplied frequency range cohesion, with excellent bass, mid and treble tunefulness. It also had good timing to help express the layering of musical notes from a piano sonata to the thrash metal of Pantera.

Overall, my personal choice is the £140 Chord Company Power Chord, which had the best timing of the

group, and sounded the most natural as a result. Timbre, and therefore individual instrument and vocal identities, were also first rate.

If you can put up with the whole wretched world of silly names and snake oil that is hi-fi cables, then there are real benefits to be had, and by and large, spending extra does yield improvements - although I have to say that the £50-£150 price point is the one to go for, if you want the maximum 'bang per buck'. Whatever you do, I'd suggest you find a good dealer who can lend you cables to try out in your system - as the effects are so subtle, it's the only truly reliable way to upgrade.

REFERENCE SYSTEM

Moon Audio i-3 integrated amplifier (£1,595)
Onkyo DV-SP1000E universal player (£2,800)
Castle Compact Column loudspeakers (£550)

VERDICT

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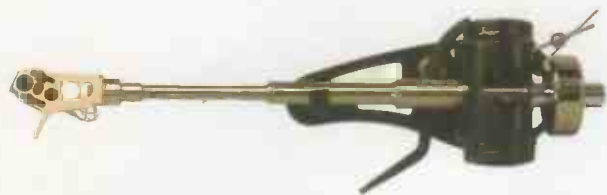
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On The Run

Stalwart contributor Dominic Todd posts a running report on his current reference system, one that didn't cost a fortune...

They say the cobbler's son has the worst shod shoes and, in some respects, that's how I feel about my system. It's far from being bang up-to-the-minute, nor does it resemble a classic system from yesteryear, but it is the sort of thing you could put together to get a great sound at a bargain price. I've lived with it for some time now and it survives, in spite of more modern items passing through my hands.

When it comes to reviewing I generally use other equipment that's relevant to the product or my Sennheiser HE60/HEV70 headphones. The rather modest, small graphite coloured box in my system is the headphone amp. It's a Class-A design and works wonderfully with the electrostatic HE60 headphones. Aside from a slightly weak bass response, these headphones allow me to listen to any source, warts and all. Along with the sublime transparency, another key aspect of using headphones for review or pleasure is the freedom from room acoustic variations. I can use them in any house, room or listening position and still get to hear the heart of the music, and all perfectly staged.

There are times though when even the best headphones aren't enough. Rather like the vegetarian who craves a bacon sandwich, sometimes only a pair of loudspeakers will do. I bought my Celestion SL600s some fifteen years ago now, and yet they still have qualities that impress me today. There's a sense of seamlessness and cohesion to music that I find lacking in many modern speakers. Considering their size they also manage to pack quite a punch although not always, I must admit, with the most lightning of speed.

Since owning them, they've been heavily modified with upgraded internal cable and crossover components. The switch to DNM Reson cable internally opened the sound up and gave a good deal of that extra pace that they lacked with

the previous heavy gauge Ortofon multistrand. They've also had several new tweeters, but then I guess that's the price to pay for testing 200 watt power amps to their limit! With a sensitivity of 82dB the SL600s aren't an easy load. It's for this reason that any amplifier under 100 or so watts that I review rarely gets partnered with them. Nevertheless, after a day of hard graft at the office, the SL600s are still just the job to soothe and beguile. Just as editor DP has a soft spot for his NS1000s, so I do for the SL600s, even though two more different speakers you're unlikely to find!

Powering the '600s is a Thule IA100. I came across this 100-watt integrated almost by accident. It's a Danish design that cost around £1,000 ten years ago. There was never much made of the IA100, but I've always found its dual-mono configuration and high current output to be a good match for the Celestions. Its also exceptionally neutral and, as such, an excellent reviewing device. Balanced XLR sockets allows me to review CD players with balanced outputs and the protection circuit has probably helped save innumerable loudspeakers from certain death.

Rather like the amplifier, my CD player is less well known. It's the rare, two-box version of the early nineties classic, the Cambridge CD3. With its wonderful Philips CDM1 Mk2 diecast swing arm transport and Crown grade 16x16 DAC, this is classic multibit from its glory days. By today's standards the treble is a little rough, but it's the midrange that makes this player stand out. There's a certain solidity and bounce that, whilst not strictly neutral, makes for a highly entertaining listen. Whilst just



about any CD these days will offer greater refinement, there are still few that connect with the music so well at least not under £2,000 or so.

So to the turntable. This oddity is actually something of a stopgap. With a house move having recently drained my funds, I had to part with my beloved Roksan Xerxes/Artemis. Filling its place for now is an Ariston RD90 Superieur. This lovely old deck was actually unused when I bought it a couple of years ago for £40! It had languished in a dealer's stockroom, with the box gathering mould. One look, and feel, of that incredibly heavy brass platter and I couldn't resist. With its sprung suspension and outboard, electronic power supply, it is similar in concept to a Linn LP12 Lingo. It was, after all, Ariston that inspired Linn in the first place. Fitted with a new belt and SME 3009 Fixed head, the results are fine at the price I paid. Had I paid over a £1,000 for the combination in the late eighties, then I might have felt somewhat hard done by - its rather rosy presentation can be relaxing to listen to, but when funds allow I would rather like some of the Roksan's bite and resolution back again.

Not every hi-fi system has to cost a fortune. This one is modest, but thoroughly enjoyable. Until I can afford said Roksan, or perhaps an SME or Michell, I'll just have to get on and do some more reviews. Those shoes are just going to have to wait to be resoled too...

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OK Computer?

Setting up a home Wi-Fi music system can be a frustrating experience, so what's needed is a superb sounding plug 'n' play system that takes the pain away – which is precisely what the Sonos Digital Music system is, says Neal Gibbons...

I've been a contented user of a SlimDevices SqueezeBox audio system for some time now. It's been a liberating experience, dispensing with a single room only CD system and replacing it with a multiroom capable system that can provide quality digital music wherever it's needed.

Eliminating the CD transport and inclusion of a good external DAC has lifted CD replay quality to the point where my long standing Naim CD5/FlatCap II has had to give way. However, getting to this point was hardly plain sailing, I went through a steep learning process which at times had me questioning my sanity!

Luckily I started out with an advantage, being computer-literate with most of the technology involved. So problems about Wi-Fi security keys, signal strength, etc. were all dealt with easily enough - and yet there were times when I would have preferred to pull my hair out. Quite where that leaves the average Joe who likes the idea of better CD quality, extra features (Internet radio, multiroom capability, etc.) but knows little or nothing about computers and Wi-Fi, I'm not sure...

Well, the Sonos multiroom digital wireless system may provide the answer. It makes some important progress in the ease of use and setup department; some computer know-how is still required for setting up but once done the rest is child's play!

The system is based around bespoke wireless relay units that can be installed in any location in the home. Each unit relays music to any other unit within range, extending wireless distance by creating a wireless mesh. This overcomes one of the major drawbacks of Wi-Fi: dropouts due to poor signal quality or strength. Up to 32 units can be meshed in this way. The wireless network is a modified AES encrypted peer to peer network called SonosNet, and works independently of any existing Wi-Fi network in the

house. All the units are controlled by a very neat wireless handheld remote with clear LC display and iPod-esque rotary touch and select wheel pad which allows control of any unit from anywhere in the house - neat!

The system allows you to ingest audio from any analogue source and relay it around the Sonos network. This could be music from a Sky radio channel, an MP3 player or even LP record. Multiple audio streams can be relayed at the same time in a 'one to one' or a 'one to many' configuration. But what makes it all so compelling is its ease of use: there are no security keys or channels to mess with, the devices virtually auto-install themselves, as my ten-year-old will testify!

THE KIT

There are two units - the ZonePlayer 80 and 100. The ZP80 features analogue line-in/ line-out, S/PDIF and Toslink connections plus a two port Ethernet 10/100 switch, whereas the ZPI00 differs with an inbuilt Class-D 50W amplifier and no S/PDIF connections. It also has a 4 port Ethernet switch and a subwoofer output. Speaker connection is via some strongly spring loaded binding posts, which work okay but at the price I would have preferred a good screw down post.

Both units are neatly styled in a MacMini way and both have a front mounted volume control and mute button. The mute button glows green when in operation and there is a white status light indicating mode of operation. The ZP80 measures just 75x135x135mm (HxVxD) and the ZPI00 115x258x182mm. The former is intended for use with an existing amplified system, be it a self-powered set of speakers or a separate based system, whilst the ZPI00 is a standalone wireless amplifier with the

flexibility of adding a line-in source.

Both players' bass and treble can be controlled remotely, along with volume and mute. The status light can be turned off if it's found too distracting and the line-in level can be set to match volume levels from different sources. The remote measures 24x163x97mm and features a clear 75x60mm colour display. All control and setup functions are available from the remote, and menu navigation is easy and intuitive.

The remote can be programmed to power down after a set time and can be woken up with either a key press or simple movement of the unit. The buttons are backlit and

"it comes wholeheartedly recommended; so much so that I bought one myself..."

automatically illuminate if the light level drops. Battery life is good and an optional charger cradle is available.

The system supports MP3, WMA, AAC (MPEG4), Ogg Vorbis, Audible (format 4), Apple Lossless, Flac, as well as uncompressed WAV and AIFF files. It has support for 48 and 44.1kHz sample rates and below; internet radio is supported in the shape of MP3 and WMA streams, the system comes preloaded with 190 internet stations! Rhapsody 3.0+ and Audible are also supported.

GETTING GOING

The first ZP unit (ZP80 or ZPI00) needs to be connected to your ADSL router. Your music library, if you have one, needs to be physically connected to the same router. Sonos say they do not support wireless connection of a music library but throughout this review this is exactly how I used it! Also, it's possible to setup the Sonos without a router. Again, this is not





supported but in practice works very well! Just connect a ZP directly to your Ethernet equipped PC, it will auto default to a pre-defined IP address and be ready for setup.

With the first ZP connected a system setup and configuration CD needs to be loaded on to a local PC, this can be your home PC or it could be the music library PC. The software sets up a network share of your music library for access by all the ZonePlayers and also acts as a desktop control with the same features as the remote. OS supported are Windows 2000, XP, Mac OSX 10.3 and 10.4

The software searches for the first ZonePlayer by prompting you to press the Mute button and the + Volume button on the ZP front panel, and once discovered you can name the ZonePlayer to something like 'Office' or 'Sitting Room'. The discovery of any remaining Zone Players is easily performed from the remote control, simply select 'Add a ZonePlayer' and press the front panel buttons within two minutes and it's installed. Compare that with the way a SqueezeBox needs to be set up and you soon appreciate how easy the Sonos system is to use.

I located a ZP80 in my office where the router resides as the first ZP. Attached to it I used a pair of self powered PC 'speakers and connected

up a Denon TU-260LII tuner. I installed another in the sitting room connected to my Sky box and a ZP100 in my main listening room, so I could assess the sound quality of the system as a whole and also the ZP100 as an amplifier. With all the sources connected up, any Zone Player could either play from the music library, its own line-in source or any other line-in source that was enabled - I even relayed LP around the network with good results!

After a few weeks familiarisation, the sound quality of the system crystallised in my mind whilst listening one evening to 'Later' with Jools Holland via Sky. Amongst the performances two stood out, 'Heart Beats' by Jose Gonzalez and 'Over My Head' by Ray Davis. Firstly, the broadcast sound quality by the BBC impressed greatly and also that it lost nothing in its conversion from Sky box analogue out into ZP80, wireless to ZP100 then out to my 'Spendor 6Se's.

All the details and emotion of the live performance where conveyed with attention-grabbing realism, I sat transfixed throughout, not wanting it to end. Now, it could

have been the half bottle of Merlot consumed prior to the program airing that gave such a high but over the following weeks in a more sober mood I confirmed the level of performance was not a one-

SOUND THINKING

Sonos have used a Class D amplifier in the ZP100, and kept an eye on sound quality by using a toroidal transformer and a regulated linear power supply. The analogue inputs to both the ZP80 and ZP100 can be set to compressed or non-compressed mode. In compressed mode the analogue input is compressed to 128kbps WMA after first passing through an A/D converter, no signal processing is performed on an uncompressed stream. All analogue inputs are treated the same, be it locally on the same ZP or from elsewhere in the network. It's also possible to synchronise players.

PRICES

SONOS ZP80	£269
SONOS ZP100	£379
SONOS REMOTE CONTROL CR100	£319
SONOS REMOTE CRADLE CC100	£44.99
SONOS ZP80 BUNDLE (ZP80 x2 & REMOTE)	£779
SONOS ZP100 BUNDLE (ZP100 x2 & REMOTE)	£949

off. The ZP100 is a very capable amplifier - clean and engaging with all sources and material. The ZP80 really stood out though. Supplying my Musical Fidelity A3.24 DAC and 300B valve amplifier the sound proved to be as good, if not better than my SqueezeBox II system.

CONCLUSION

Overall then, this system proved exceptionally capable. Of course, it's not going to out-do a high end separates system, but it's not meant to and so doesn't try. Rather, what it attempts is to integrate a number of sources from around the home, making them all accessible in every room, and give them to you with high fidelity replay quality. In this, it succeeds brilliantly. It is surprisingly easy to use and the sonics are by no means an embarrassment; indeed if they embarrass anything it is other products. I found it extremely listenable and no less useable, and as such it comes wholeheartedly recommended; so much so that I bought one for myself.



Busy back panel of Sonos ZP80.

VERDICT ●●●●●

Ease of setup and use, plus surprisingly fine sonics make this a compelling product for those seeking multiroom on a budget.

SONOS ZP80 £779
 Sonos Europe BV
 ☎ +31 (0) 35 6260520
 www.sonos.com

FOR
 - excellent sound quality
 - ease of use
 - flexibility

AGAINST
 - price



Usher, In

From Taiwan comes a new entrant to the budget CD player fray – Usher's chunky CD-1. Chinese cracker or oriental excess? David Allcock decides...

Chinese manufacturers have recently come up with some unexpectedly capable components, the Shanling CD-T80, Qinpu A1000X and the JungSon JA88-D being but three examples. To that list, Usher doubtless hopes its CD-1 CD player will be added. So far the brand has been best known for loudspeakers, but they're also a major player in electronics with an extensive range including the R1.5 class 'A' power amp, P307A preamplifier and of course the subject of this review, the CD-1.

Although I don't expect Chinese products to better Japanese ones at the high end, the story's different for affordable kit, where the value for money is hard to argue against. No surprise then that the build quality of this £450 machine impressed. The CD1 has two 'U' sections, a base plate, and a top cover, with a rear section, all made from sheet metal, whilst the front panel is machined from 11.5mm aluminium. The front panel contains a power button (actually, a standby button as the

power switch is on the rear panel), a centrally mounted disc drawer with its display directly beneath, and on the right the eject/stop, play/pause, previous track and next track buttons all flush mounted. Around the back is a power switch, IEC power inlet, electrical and optical digital outputs plus a pair of high quality, gold plated RCA analogue outputs.

Inside the player, on the left is the power supply, while the centre section holds the Philips transport, which is an L1210/63 loader with a VAM 1202/21LD 3 beam pickup, and one of the few dedicated CD only transports still in production. Down the right hand side is a single circuit board containing the control electronics, digital decoder IC, in this case a Philips SAA 7327H, and a Burr Brown PCMI738E DAC. The analogue outputs comprise four Burr Brown OPA604AP op-amps with a pair of OPA2134PA op-amps, all socketed allowing for easy upgrading and tuning for tweekers. The output stage is full of Nichicon capacitors including several Gold Tune audiophile caps. At this price

point, the internals of this player are exceptional and it would suggest that the only place where Usher have saved any money is in the casing, the rest of this player containing very high quality components.

Mention must be made of the remote control, which is a huge, hewn-from-a-billet-of-aluminium device, which bears a striking resemblance to the Shanling CD-T80 unit. This sort of remote would usually grace something with either Krell or Mark Levinson on the front panel, so at this price, it's unheard of. Bravo to Usher for realizing that this is the part of the player most users will have the most interaction with.

SOUND QUALITY

Out of the box I found this player dynamically flat and lifeless, but this is not unusual for a brand new CD player, and sure enough things started to improve as I ran the player in. I used the IsoTek burn-in disc, which effectively halves the burn-in time, and after three days of running the player on track two of this disc, which is a full range burn-in signal,



performance started to level out, with little further improvement after a further day of running. Usually this would mean you'd need six days of continual burn-in to truly hear its best. I also found that simply replacing the standard IEC mains cable with a budget aftermarket item - in this case an IsoTek Premium - yielded a performance improvement completely out of proportion with the modest £55 cost. It's rare for the improvement to be as great as it was in this case. I also tried Townshend Isolda DCT-100 and Chord Chameleon Silver Plus audio interconnects, eventually opting for the latter's slightly leaner, drier sound, which suited this player more.

Duly run in and equipped with decent cabling, the Usher CD-1's sound was hugely improved. The Burr Brown PCMI738 DAC fitted, when used correctly, is capable of superb sonics, and clearly the Usher team knew what it was doing as the soundstage on this player leapt away from the confines of the speakers and proceeded to fill the front of my listening room. There was a great sense of space on Brenda Russell's 'Walkin in New York' from 'Paris Rain' (Hidden Beach EK62138). This is an outstanding recording, and the CD-1 allowed it to speak for itself, with Brenda Russell's lead vocal standing way in front of the plane of the speakers, with a very good sense of layering back through the musicians to the rear of the stage. Laterally, on 'She's In Love' you can clearly place the acoustic guitar

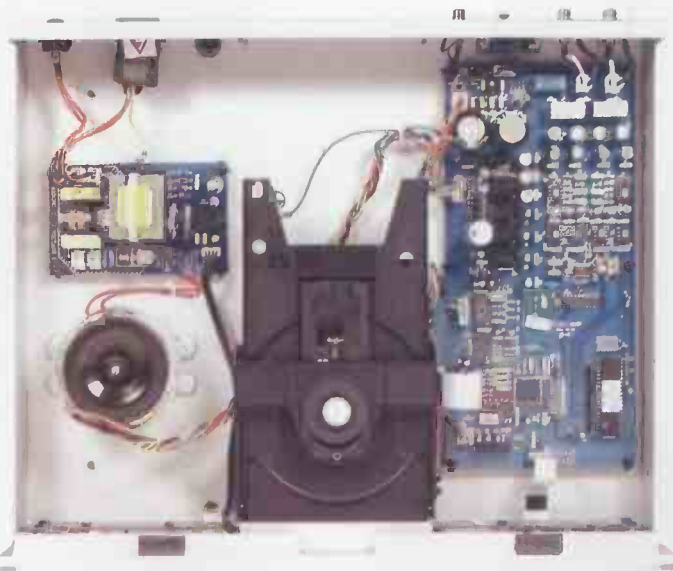
"I was happy to hear the Usher even with £4,000-plus machines at my disposal in the listening room..."

outside the outer edge of the left hand speaker, whilst the outer edges of the studio could be easily located with clear ambient information coming from far beyond the speakers' outer edges, regardless of whether my reference Vantages or Hyperion HPS-938s were used. Whilst I felt the Shanling CD-T80 captured the sense of space around the musicians a little better than the CD-1, it also costs £200 more...

Bass was superb for something with such a modest price tag. Not only was it well extended, but also deftly proportioned, showing no signs of being overblown. Rather, it exposed the subtle textures between a bass guitar and a synth bass, whilst the dynamics of the kick drum - though not in the same league as the formidable £4,000 CDT-300 - still carried a power which could be felt in your chest. Vocals were again excellent, and wouldn't disgrace a player at twice the price. Transparent and effortless, there was little sense of either lower midrange congestion or, all too often heard on lower cost players, upper midrange forwardness. Instead the midrange offered fine balance, capturing the subtle inflections and timing shifts of Brenda

Russell's vocals, pulling the listener into the musical event in a far more convincing manner.

In an effort to provoke some misbehaviour from this player I switched to Mark Shreeve's 'Crash Head' (Centaur CENCDC007), a high energy electronic recording right on the edge of being spitty, hard and aggressive. The CD-1 handled itself with aplomb, allowing the delicacy and detail of the lead synthesiser line to come through, whilst avoiding any overt hardening or forwardness. This is not to say it was polite; instead it showed an excellent blend of balance



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Channa Vithana
Hi-Fi World, Sept 2006

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Audio Research CD3 Mk II, silver, mint, boxed! (£5190) £3295
Shanling CD-T200 SACD, full UK version, sup cond (£2150) £1295
Primare D302 CD Player, black, boxed, exc cond (£1500) £749
Musical Fidelity DM25 DAC + Transport, mint (£4000) £2995
Musical Fidelity KW SACD player, boxed, mint (£4000) £2195
AVI Lab Series CD, current spec, boxed, mint (£1499) £1195
Consonance 2.2 Linear, brand new! boxed (£1400) £995
Audio Analogue Maestro MkII, exc cond, boxed (£1500) £695
Jungson Magic Boat v2 CD/SACD player, silver (£995) £699
Krell MD-10 CD Transport, exc cond, boxed (£9995) £1495
Shanling CDT300 Omega Drive, ex-dem, immac (£4000) £2895
Resolution Audio Opus 21, 2 box cd player (£2950) £2395
Unison Research Unico Valve output CD, mint (£1250) £795
Wadia 302 in silver, superb condition, boxed (£4000) £1995

Amplifiers

Qinpu A1.0x, boxed, mint, full warranty (£300) £230
Qinpu A-8000 MK II, boxed, mint (£1295) £895
Musical Fidelity A5 Int, boxed, as new (£1499) £995
Musical Fidelity A5 Power Amp, as new (£1499) £995
AudioZone Amp-2 MK1 Monob, as new (£1800) £1195
JVC AX-SD1 Integrated, very rare amp, mint (£2000) £995
Bryston B-100 SST Int, mint, boxed (£2750) £1995
Consonance Cyber 800 Monob, mint, boxed (£3000) £1995
GamuT D200 Power Amp, silver, mint, boxed (£3200) £1695
Croft Epoch Pre Amp, ex-dem, boxed, mint (£1500) £995
Quad II Forty Mono Blocks + QC24 Pre, boxed (£4000) £2495

Art Audio Jota Power Amp, exc cond, boxed (£5400) £2495
Musical Fidelity KW500 Int, boxed, mint (£4000) £2695
Eastern Electric M520 Int, 4mths old, boxed (£1539) £1095
McIntosh MA2275 Int, mint, boxed (£5773) £3995
McIntosh MC2102 Valve Power Amp, mint, boxed (£5700) £3995
McIntosh MC252 Power Amp, boxed, mint (£3812) £2795
Eastern Electric Minimax Pre, ex-dem, mint (£769) £649
Marantz PM1551 int, boxed, superb cond (£1099) £795
Audionet Sam V2 Int, silver, boxed, mint (£2400) £1195
ATC SCA2 pre amp, boxed, good cond (£3900) £1295
Border Patrol SE300b Power Amp, boxed (£4995) £2495
Thiel CS2.3's, gloss cherry, absolutely unmarked (£3600) £595
Croft TS1 hybrid power amp, boxed, mint (£2000) £995
Bow Walrus Power Amp, boxed, exc cond (£3995) £1995
Bow Warlock Pre, boxed, exc cond (£3495) £1695

Loudspeakers

Hyperion 938, gloss black, immac cond (£3750) £2995
Quad 989, Vintage finish, boxed, mint cond (£5000) £3795
Acoustic Energy 1 MkII, B stock, slight mark (£1995) £1495
Living Voice Auditorium, maple, immac cond (£2100) £945
Wilson Benesch Discovery, silver, boxed, mint (£5700) £1695
Mission Elegante E82, 1yr old, boxed, superb cond (£1300) £2995
PMC FB1+, cherry, boxed, immac cond (£1695) £749
PMC FB1, upgr + spec in 2005, oak finish, boxed (£1695) £1295
PMC IB2 in cherry, immac cond, boxed (£6995) £895
Innersound Isis Hybrid Electrostatics, exc cond (£2300) £4395
PMC OB1, in oak, boxed as new, latest spec (£2700) £1245
Living Voice OBX-R2, cherry, slight mark (£4400) £1995

Mirage OM7 Omnipolar, black gloss, good cond (£2000) £695
JAS Audio Orsa, poplar tumor (£1399) £1149
KEF Reference 1.2, black, 2yrs old, exc cond (£1000) £499
ATC SCM-20A S (active) Tower spkrs, cherry, boxed (£5177) £1899
JAS Audio Supertweeters, superb speaker upgrade (£649) £599
Audio Physic Tempo 4, cherry, ex display, immac (£2199) £1699
Triangle Titus, ex-dem, mint cond, boxed (£370) £279
Audio Physic Virgo III, cherry, boxed, as new (£3999) £2499

Analogue

Trichord Diablo phono stage, exc cond, boxed (£750) £499
Wilson Benesch Full Circle, boxed, exc cond (£2100) £1499
Tom Evans Groove Plus phono stage, boxed, mint (£3600) £2399
Mark Levinson JC-1 phono stage, rare. Battery power. £1499
Eastern Electric Minimax Phonostage, mint, boxed, ex-d (£1099) £899
VPI Scout inc. JMW-9 tonearm, immac cond, boxed (£1300) £999
Linn LP12, Ekos Arm, Arkiv cartridge, lingo PSU upgrade, exc cond £1699
Linn LP12, Lingo PSU upgrade, lttok Arm, inc Klyde cartridge, excellent condition, fully serviced and upgraded £1299

Miscellaneous

Pioneer PDP436-XDE 43" Plasma with stand. Brand new sealed box. Must sell! (£2900) £2400
Townshend Super Tweeters in Titanium matt £649
Isotek 2K Qube2, boxed, one owner, in silver, sensational mains conditioning unit. (£1595) £699
Isotek GII Minisub, silver front, current spec, immaculate condition, fully boxed, breath life back into your system!! (£545) £399
Isotek Titan mains conditioner, few months old, immac cond, boxed, best power amp conditioner currently available! (£1500) £699



REFERENCE SYSTEM:

- Shanling CD-T300 CD player
- Inca Design Katana SE CD player
- Krell KRC-3 preamp/Bryston 3B and 14B-SST power amplifiers
- Nu Force Reference 9 monoblocs
- Martin Logan Vantage loudspeakers
- Hyperion HPS-938 loudspeakers

CHINESE CRACKERS

In my view, the performance of some modern budget CD players has evolved to a point where even some high end players from ten to fifteen years ago would find it hard to compete. A prime example of this is the Inca Design Katana, in both standard and SE guise. This player used a raft of high end components in an RFI and EMI shielded chassis including a VAM 1202 transport, mounted on a massive copper base, a fully shielded mains transformer, with both balanced and single ended outputs. This player offered a highly solid bass performance with exceptional transparency throughout its midrange, a smooth and open top end and imaging which would do a player at quadruple its price proud. With super build, a radical, original design and decent transport which can supply the very finest DAC's with digits, the Katana is a formidable player. With the SE model and its redesigned power supply and output stage, performance is lifted still further.

Also hailing from the Far East is a firm favourite here at HFW, the Shanling CD-T80. This has a fine feature count, once again using the Philips CDM 12.10 transport, not only a fully encapsulated power transformer, but a fully shielded digital transport, something I've not seen in a sub-£2,000 player before. Electronically the player uses a Crystal Semiconductor CS8420 upsampler with Burr Brown PCM 1738 DAC, as used in the likes of the Musical Fidelity Tri Vista 21 DAC. The output stage is a valve design with a pair of BB OPA 2604 opamps followed by a pair of 6N3P triodes. This formidable component list is put to good use with beautifully open high frequencies, a bass response almost subterranean in its extension, and a vocal range which is impressive at any price point, let alone the Shanling's £650.

VERDICT ●●●●● £

Truly accomplished sonics and excellent build make this an excellent budget CD spinner, but it faces stiff competition all the same.

USHER CD-1 £450
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 www.hiaudio.co.uk

- FOR**
- build quality
 - soundstaging
 - taut, extended bass

- AGAINST**
- dynamics
 - textural detailing



and speed, allowing you to hear the transient and attack of each note without undue emphasis or exaggeration.

I did find that textural information was not brought out as fully as it could have been, blurring the respective timbres of different keyboards used a bit, but it was good at this price point. This player also surpassed my expectation when it came to intelligibility throughout the frequency range, allowing independent threads to be picked out and followed without losing coherence across the whole piece. It was very easy to focus on the behaviour of a single instrument despite the myriad complex happenings around it.

Dynamically, I found this player excellent for its price, and good in absolute terms, whilst on tracks like 'Graveraver' from Mark Shreeve's 'Collide' (Champagne Lake Productions CLPCD001),

the break from a single keyboard and bass guitar to the whole band playing in a huge crescendo lacked the jump-out-of-your-seat impact found from truly high end players, but it still came in with considerable energy and drive, and could in no way be described as overtly polite and restrained. Microdynamic inflection was captured very well, allowing subtle variations in key velocity to be heard clearly.

CONCLUSION

I can think of no greater complement to pay this player than to say I was very happy to listen to it even with a pair of £4,000-plus machines at my disposal in my listening room. Whilst it lacked a little in dynamics and atmosphere in outright terms, at £450 the Usher CD-1's performance is excellent - and so it comes heartily recommended.

MEASURED PERFORMANCE

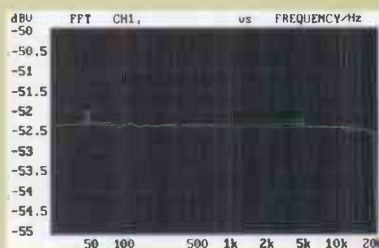
The Usher's frequency response extends smoothly from 2Hz all the way up to 21.1kHz our measurements show, and you can see there's little variation up or down from the median 0dB value in our analysis. So this player should sound balanced tonally, without the warmth of some or sharpness of others.

At high music level, distortion was low at 0.001%. At -30dB - a typical average music level - there was only a small rise, to 0.005%. This almost matches the best players available, which get to 0.004% or so. Down at -60dB things held up well, a figure of 0.22% helping to produce a good EIAJ dynamic range value of 111dB, again up with the best. Output measured a healthy 2.5V and channel separation was high.

The CD-1 measured very well in all areas. It is a textbook design that should sound smooth and well balanced. NK

Frequency response (-1dB)
 CD 2Hz - 21.1kHz

Distortion CD
 0dB 0.001%
 -6dB 0.0013%



THD 23456789	Input RMS	Frequency
CH1 0.0053589 %	-29.999 dB	1.00012 kHz
CH2 OFF	OFF	OFF



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Bonsai-fi

Small things are big in Japan, and audio is a case in point. Since the Aurex microsystem of the late seventies, Nipponese names have been responsible for some cracking bits of kit, and Teac is one of the greatest exponents. Dominic Todd sounds out the new CR-H255 DAB miniature...

Let's face it; you don't buy a microsystem for the ultimate audio experience. That said, those of us used to true high fidelity often want something a step or three up from a boombox for another area of the home, away from our main systems. It's to this market that Teac have been successfully selling their range of micro systems for many years.

Take a look at the new CR-H255 and it's not hard to see why they've been so successful. For just £260 or thereabouts, you can secure a well-made and compact unit with a 25W amp, CD player and DAB/FM/AM tuner. Best of all, the sound quality will have some pretension towards hi-fi. Take a look inside and you're hardly going to be blown away by the quality of componentry, but that's hardly the point. The key fact is that the basics such as power supply, output capacitors and heatsinks are of a decent quality and far eclipse those of the similarly priced 'flashing light' brigade.

Although the amp' is pretty puny, it is (as we'll find later) powerful enough and it comes with a comprehensive selection of socketry. Around the back you'll find proper 4mm binding posts for the speakers, twin tape loops and a third auxiliary input. Better still in these iPod days, the front panel houses a 3.5mm input. More unusual, but still of use for some is a USB socket that allows recording or playback to or from an MP3 flash drive. Finally, there's even an optical output for digital recording, which brings us nicely around the CR-H255's crowning feature; the DAB tuner. Buyers of this type of system often listen to a good deal of radio, and the lack of a digital version had proved to be a sales weakness. Teac have now addressed this but, thoughtfully, left the original RDS FM and AM tuners intact. With a large and clear display, the result is a convenient and flexible tuner that offers everything you could want from radio.

Predictably, the CD section uses

a CD-ROM mechanism and basic 1 bit DAC. That mechanism does at least allow it play CD-RW, MP3 and WMA discs. With the USB, RCA phono and optical outputs, there are also an impressive three methods of recording from said CDs.

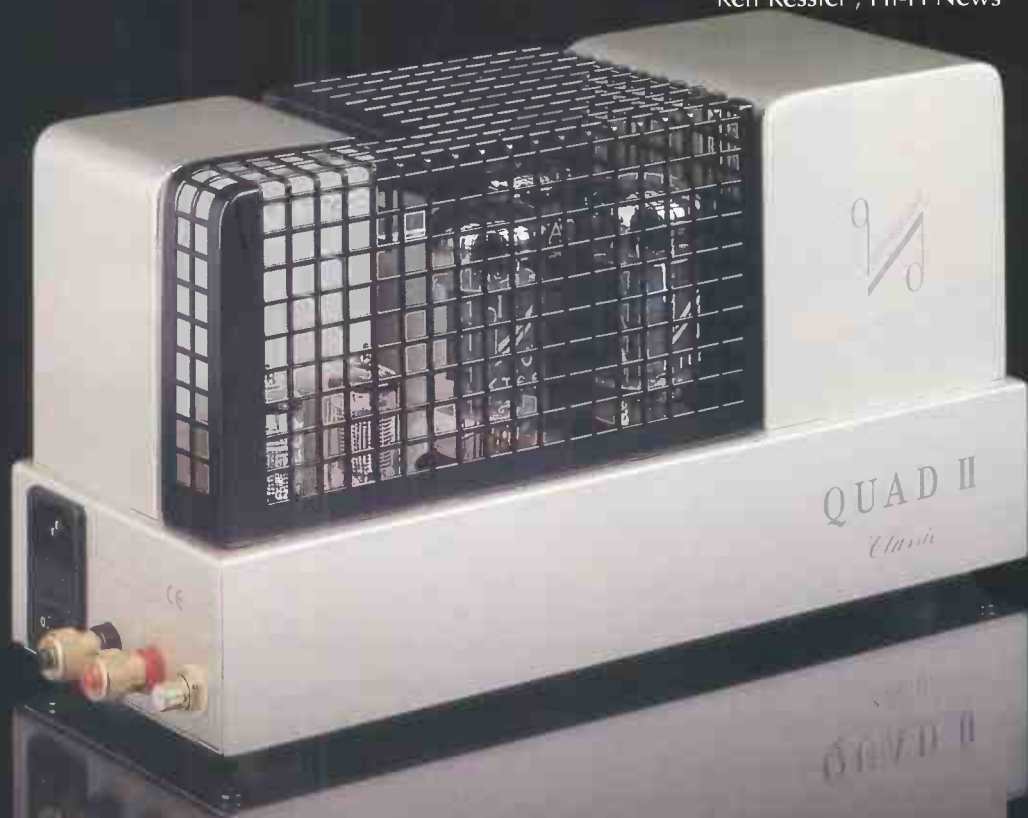
What else? Well, Teac includes a full remote control that's comprehensive enough to put more expensive models to shame. It's even flexible enough to control the file selection from your plug in flash MP3 player. The display is dimmable and there is a selection of timer settings. Perhaps the most interesting of these allows for a timed recording using the USB connection – very handy for missed radio programs.

Given the budget price, build quality is impressive. The small casing is well braced and the lid, whilst being thin, is at least well damped. The front panel is finished in real aluminium, and all the controls have a well-weighted and solid feel to them. In short, you wouldn't be unhappy with the quality if you'd paid twice

II-classic

"The II-Classic is so much more rewarding a product than even a mint original that I almost feel like a heretic, or a traitor"

Ken Kessler, Hi-Fi News



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SOUND QUALITY

With the Teac plugged into a pair of Wharfedale Diamond 8.1s I began by listening to the CD player. With The Propellorheads' and Shirley Bassey's 'History Repeating', I was pleased to be greeted by an open and fairly dynamic sound. Clearly, the tiny amplifier output wasn't going to be an issue – at least in my medium sized listening room. Unsurprisingly, there wasn't a great deal of truly deep bass, but what there was, was taut, well controlled and blessed with decent pace. The background vocals were clearly depicted, with a level of layering you wouldn't normally associate with an all-in-one of this price. The treble was perhaps a touch bright and mechanical sounding by separates standards, but this never proved to be a serious issue. Whilst hardly leaping into the room, Bassey's vocals were well separated from the mix and clearly defined.

Moving to Ian Dury's 'My Old Man', I was similarly impressed by the Teac's level of listener involvement. Although the percussion lacked weight, its crisp bite gave it a sense of drive without being unrelenting. The

drums. Frequency extremes saw a loss of focus and the brass did lack bite but, over all, the piece proved just as enjoyable to listen to as the others had.

Perhaps this was a mistake, but my next source of choice was the FM tuner. Without a doubt this proved the star of the show with Elvis Costello's 'Veronica' on Radio 2 sounding wonderfully spacious and upbeat. Whilst the bass was still on the lightweight side, the treble breathed in a manner that eluded the CD playback and, as we'll see, was completely alien

to the DAB section. Vocals were well textured, instruments focused and the whole song had a sense of life that made the other

sources sound compressed. Which, of course, is exactly what DAB is. At 128kbps, the otherwise brilliant Radio 6 couldn't help but sound rather shut-in after the FM experience. Yet it wasn't just the staging that suffered. In typical compressed style, treble information lost a good degree of clarity and became indistinct and splashy. Not a particularly good result, then, but to be fair to Teac the performance with DAB was still on a par with its rivals. It's also worth pointing out that if you only ever listen to speech from, say Radio 4

or 5 Live, then you'll be quite happy with the clarity. Listen to a live studio session as I did, though, and there's no way you could ever imagine yourself being there – a shame.

CONCLUSION

It's quite a paradox that what is meant to be the real selling point of this microsystem, its DAB tuner, is actually its most disappointing feature. The sound is rather compressed and splashy, even by DAB's usual poor standards. Nevertheless, it's exactly the sort of sound you'll find from rivals, and until you get to the better separate tuners from the likes of Denon and Cambridge Audio this is as good as it gets. By contrast, the FM performance is genuinely impressive and the CD is better than expected, too. Combine this with a thoughtful selection of features, excellent connectivity and sturdy build quality, and it's hard not to warm to the baby Teac.

For its price, there's very little to complain about, and I can see it filling its role as second system with aplomb. Along with the Yamaha CRXM170 and Tivoli RadioCombo [see box], this is as good as compact systems get. Of course it's not the ultimate audiophile machine, but – dodgy DAB aside – microsystems don't get much better.

THE MARKET

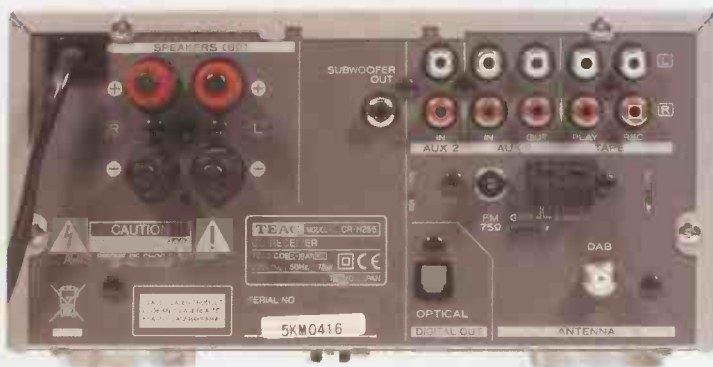
The quality micro system market is a segment that Denon and Teac used to have pretty much to themselves. Those days have now long gone, and today there's hardly a mainstream electronics manufacturer that doesn't offer some form of 'audiophile' (ahem – Ed.] microsystem. One of my long-term favourites has been the Yamaha CRXM170. Like the Teac it comes with or without speakers, has a DAB tuner and boasts a power output of around 25 watts – into a 6-ohm load! Take a closer look at the Yamaha's spec. and it could be the Teac's twin brother. It too has 4mm binding posts to please the audiophile, an aluminium front panel, 3 aux inputs and an optical output. All that's really missing are the CRH255's USB and front mounted 3.5mm sockets. If you can do without these, then you'll save yourself around £40 over the Teac, or more if you shop around. Put this towards better speakers, then pound for pound, you'll have a better sounding system.

Yet this wouldn't be my ultimate choice of micro system. That accolade would go to the rather eccentric yet covetable Tivoli RadioCombo system. Finished in a real walnut veneer and signing in at around £320 including a CD and speakers, the Tivoli makes its thin metal rivals look instantly cheap and nasty. True, if you want DAB, then you'll have to fork out another £100 and make do with the speakers pointing up in the air, but with such a fine performance from FM this is exactly the sort of tuner that makes you question whether you really need DAB. The speakers aren't as good as typical £100 standmounters that you'd partner with either of the others, but when it comes to background music for the kitchen, bedroom or what have you, I know which I'd rather have. That would be the wooden one with the FM tuner, then...

"it's hard not to warm to the baby Teac..."

guitar was extremely well resolved whilst the brass sounded short of depth. Nevertheless, as a whole the piece was cohesive and enjoyable to listen to in a manner that even some separates can struggle to match.

I wasn't expecting thunderous dynamics from Mussorgsky's 'Night on Bald Mountain', but at least the Teac produced some fire from the piece's introduction. In a modest way, the CR-H255 bowled through the piece, faithfully reproducing the strings' timbre and creating a sense of motion from the rolling timpani



VERDICT ●●●●£

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FOR

- FM and CD sound
- build quality
- connectivity

AGAINST

- disappointing DAB

Global Superpower



McIntosh's huge MC275 power amplifier is the latest incarnation of the company's sixties classic. Noel Keywood thinks it will win friends all around the world...

This amplifier is no mere retro styling exercise, but the fourth update of a classic McIntosh originally launched in 1961. As such, it's not a new design, but then again it is...

Unlike the earlier Commemorative version released in the nineteen nineties (see www.mc275.com for more on this), this one doesn't aim to mimic the original. It has a circuit board instead of hard wiring, and employs good quality modern components. There are solid-state rectifiers in the power supply, instead of bulky valves, a distinguishing point from the retro Quad II-fortys I use regularly, but like Quad, McIntosh use a choke (thankfully).

Although McIntosh's unique output stage was patented in 1949, I view it as very modern in its

topology and design aims. It gets maximum power from a valve, as well as minimum distortion through the application of feedback. This is no golden oldie, like the many single-ended triode (SETs) designs floating around, nor is it a conventional post-war topology like the Quads (okay, the cathodes are in the primary, so it is just like Quads!). McIntosh came up with a revolutionary circuit, but it relies on complex output transformers of dump truck proportions that must be expensive to make.

That's the context of the design, and there are many implications. The MC275 gets massive amounts of power from just four KT88s so it drives them heavily, mostly in Class B with feedback keeping distortion in check. That's a very modern way of doing things. The highly linear KT88s

respond wonderfully to all this: there is no sign of crossover distortion, for example. As valve amps go it seemingly doesn't get better, but I can tell you what an amplifier like this sounds like without switching it on! Not in detail admittedly, but in outline...

KT88s give a beautifully clean sound when run properly, one that you could say is reminiscent of solid-state in that it has quite a shiny sound, well lit across the midband. By the way, I'm glad the MC275 avoids 6550s which can sound a bit coarse by comparison. With massive power of 90W and a good damping factor, loudspeaker matching isn't an issue and, I can assure you, valve amps like this usually have bass drive that leaves transistor amps gasping. The Audio Research D150 we reviewed recently was just such a beast: it had

sledgehammer bass, quite beyond 'yer average transistor'. I sat someone down in front of 'our' Quads the other day; he had never heard valve amps. His first comment was "how powerful are they?" He couldn't believe a 40W amplifier had such dynamics. The 275's 90W eclipses the Quads in this respect and I know it will be obvious to any listener as strong, well controlled bass.

Whilst most people want what valves do well, not all of them want what they do badly: soft bass and warm treble are common criticisms, and there's no doubt many of today's designs recreate this dated presentation effectively. The McIntosh 275 delivers full power right up to 20kHz and right down to 40Hz, with absolutely no trouble at all. It sails past other valve amps here. It also clips hard, like any solid-state amp with good amounts of feedback. Feedback is responsible for the rather tight, dry presentation of solid-state amps, curtailing their fluidity and sense of atmosphere.

The 275 will have a tighter, drier sound than most valve amps, especially SETs or those with no feedback. It will lack their romantic sound, it will likely not have their sense of depth, trading these properties for drive, bass control and dynamics. But you will still get what valves guarantee: the ability to listen for hours on end without fatigue, plus liquid clarity and superb sound staging. I've listened to many, many KT88 based amplifiers, including our own World Audio Design KAT88 in the past and, today and nearly everyday, Quad II-forty power amplifiers. The KT88 is a great audio output valve; it was designed specifically for audio after all. McIntosh's 275 gets more from this valve than any other design I've ever encountered, using the cleverest circuitry and output transformers.

Helping it do this are a battery of small signal valves, 12AT7s and 12AX7s. There's much talk on Audio Karma (www.audiokarma.org), which has a McIntosh forum, about tube costs, but KT88s (and the rest) are not expensive at around £40 a pop. If you want matched pairs then, say £90 or thereabouts, and for quads £200. You can get original (NOS) GECs but they're up to £200 each nowadays, a price to turn transistor makers green! In theory if a valve goes you can replace it alone and the 275 will compensate for any change in transconductance. This may work well if the replacement valve is of the same make and type as the others. Otherwise matched pairs are best, or two matched pairs if you want

to ensure both channels sound identical.

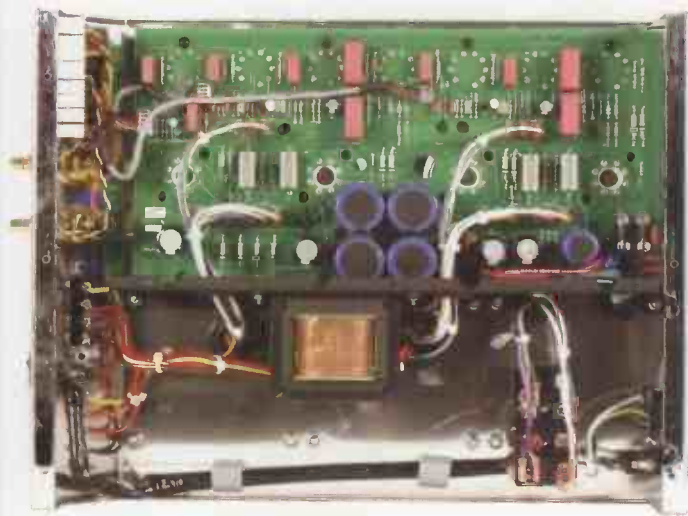
This power amplifier has both conventional unbalanced (phono sockets) and balanced (gold plated XLR) inputs. The basic amplifier is unbalanced the Audio Karma news group suggests, but in the circuit diagram it looks all-balanced to me, from a fully balanced valve input stage, so it is worth running the 275 balanced. Happily, McIntosh carry out unbalanced-to-balanced input conversion through a valve, not a dedicated integrated circuit, of which there are a zillion nowadays - all horrid. Because balanced goes in one valve down the line sensitivity is low and you'll need a good preamp with plenty of gain to run a balanced line.

As this transfers the gain requirement to the preamp, whether it sounds better depends somewhat upon the preamp. You could conceivably run a CD player with balanced output and adjustable volume straight in, but McIntosh have a dedicated preamp in the C220, price £3,300. Croft can supply a sweet sounding unit for £600 or so too, for those strapped for cash. I used our Quad QC twenty four preamp, which uses just one valve, driving the unbalanced input, which

"It's a fascinating presentation for a valve amp, being poles apart from most else on the market..."

keeps the active device count ahead of the amplifier to a minimum.

The MC275 has some idiosyncrasies, but none obstructive. Loudspeakers are connected up through a terminal block that accepts bare wires or (small) spades - no provision for 4mm plugs here, which means many or most made up audiophile loudspeaker cables won't fit unless you cut the plugs off. There's an externally mounted mains primary fuse, but also a couple of secondary fuses on the circuit board, so the unit may go dead, typically through valve electrode shorts, but the visible fuse will not have failed. The heaters are in series connected groups, so if one goes many valves



will extinguish, an unusual feature. It lessens the current draw - a neat idea - making for a cooler and smaller mains tranny. McIntosh use a simple stainless steel, folded sheet chassis which is non-magnetic, a property that improves sonics.

SOUND QUALITY

Switch on is drama-free. As the floorboards quiver I often wonder whether I will find myself in the next street at this moment with my own monster, but the McIntosh is fear-free. My expectation of sound quality wasn't too far from the mark, I found. It's quite hard etched in delivery against what I am used to - and even the Quads. But that also makes it sound faster and more incisive, with fantastic grip against most of its peers. Celine Dion's 'I'm Alive' was rock-solid in its metronomic timing from the opening bar; I was left in

no doubt by this amplifier about its nature. Transients were lightning-fast yet had power; the thwack of stick against cymbal hit me hard from this amp. I also heard solid-state subsonics - that dry, deep rumble you generally don't get from valve amps, but best of all Celine Dion's pure voice was rendered beautifully, with depth, power and body. Her vocal pushes - and she is a vocal gymnast - were given real shove.

I knew I was listening to valves here; the 275 still has that magic something, that purity and liquidity, that sheer body that solid-state just fails to establish. It also has sledgehammer power, to a degree that will have Rock lovers begging for more.

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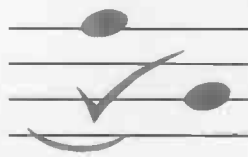
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12in, 45rpm single if you can) pounded out with the strength and assurance of a steam hammer. This amplifier makes most others sound weak kneed; it's a desperate listen at times,

as it comes over as viscerally gripping but also powerful beyond belief if you turn the wick up a little. One listener did say that the 275 always sounds super clean, and this is the case, but it isn't sterile or flat, so you can wick it up and up without any sign of stress - just as measurement showed.

This is good news for classical listeners. Strings seem to bring out the worst in any product that distorts, but the MC275 shone here as well. It animated the strings of the Royal Philharmonic playing Wagner's Lohengrin, injecting a level of vitality I hadn't expected. Horns sounded crisp but resonant, rasping out strongly. The 275 makes for a vivid performance, yet one that stays clean and well ordered.

It is conspicuously more revealing than I am used to as well; Naim would be fascinated by this amplifier's presentation, as it really separates out instruments and ruthlessly exposes them on an open stage, much like a high resolution solid-state amplifier. Performances become clearer but also a trifle more stark; it's a fascinating presentation for a valve amp., being poles apart from easy going SETs especially, but also from most else on the market today as well. Classical lovers will luxuriate in the richness and complexity of an orchestra, but also the succinct clarity of individual instruments.

CONCLUSION

As some readers may have discerned, I am a fully paid up valve amp enthusiast - but it's still the case that as wonderful as they are, drawbacks exist. McIntosh's MC275

Jackie Leven, a man seen "heading for the bar and something strong", as he puts it in 'Boy Trapped in a Man', come over as the

wonderful track it is via the MC275, which reproduced it with all the grittiness and power it deserves. Plucked guitar sounded vibrant and powerful at the start of Desolation Blues, as pick against string cut out powerfully from the 'speakers. Like many Class Bs the McIntosh needs to be played loud to get the best from it. I used Tannoy Kensingtons, but they were arguably a little too sensitive for a 90W amplifier like this one. It's best partnered with everyday hi-fi loudspeakers of lower sensitivity, unless you have a really big room.

That the MC275 has seismic bass became evident with strong low frequency content of Goldfrapp's 'Supernature', but the amplifier retains a vice-like grip on the bass cones. Huge midrange dynamics had synthesiser fairly ripping out from the Tannoys as it buzzed alarmingly across the soundstage from 'Lovely 2 C U'. Again, female vocals were clearer, drier and more forward than I am used to. In this case Alison Goldfrapp was as close as I've ever heard her, every small insinuation carefully teased out of the mix. Her breathy, floating vocals drifted through the room beautifully, whilst in the background the insidious beat of 'Ride a White Horse' (get the

WIN THIS BEAST!

Those awfully nice people who import McIntosh to the UK, 'A' Audio, have kindly offered one as a prize in a free competition. You can pick up an entry form from the Hi-Fi World sponsored Park Inn Show at Heathrow (see p29). The McIntosh rooms are Bleriot 1 and Bader - competition entry forms will be in the Bader room and the entry box in the Bleriot 1. Alternatively, write to the 'A' Audio direct for a form at: 'A' Audio, Metro House Business Centre, 57 Pepper Rd. Hunslet, Leeds LS10 2 RU.

REFERENCE SYSTEM

- Chord Blu/DAC64 CD transport/DAC
- Eastern Electric MiniMax CD player
- Quad QC24 preamplifier
- Quad II-Forty power amplifiers
- Tannoy Kensington loudspeakers

overcomes them all at a sweep. In so doing it goes to the front of the

queue in my estimation. It hasn't the beguilingly expansive presentation of my hand fettled, zero-feedback 300B amplifier, but boy does the MC275 go for the jugular when it comes to fun! Anyone would enjoy listening to music from an amplifier like this I feel; I certainly did. It's undoubtedly the valve amplifier for all seasons. If you'd like to hear what valves can do, but are scared of the cost and drawbacks, this is the one to choose. Technically, it is well judged, well developed and thoroughly effective. Subjectively, it is right on the nail. You could not ask for more.

VERDICT ●●●●●

Oodles of power and the ability to drive any loudspeaker clearly make this a great valve amplifier. Powerful sound that's clean as a whistle.

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MEASURED PERFORMANCE

Power output measured a massive 90W, into both 4 and 8ohms, showing the shorter 4ohm winding section is sufficiently well coupled to give the same output as 8ohm section (I did not measure the maximally coupled 16ohm section). It's normal to get 40W maximum out of KT88s in auto-bias push-pull, and around 70W in fixed bias, which necessitates bias adjustment. So McIntosh's unique circuit and output transformers are impressively effective; the 275 swings real power from KT88s, much more than you'll get anywhere else - and you don't have to adjust bias.

It got even better when measuring distortion. Distortion levels were as low as they get from valve amps., measuring around 0.02% at 1W and 0.12% at full output, -1dB. These figures did not deteriorate much at high or low frequencies, the transformers managing just 0.13% at full output right down to 40Hz, a frequency where most are saturating and producing strong third harmonic. Better again, all distortion residuals were predominantly second harmonic, and there was very little change in distortion pattern either with level or frequency. These results were managed from both 8ohm and 4ohm taps. I would expect the 275 to sound very clean, with no hint of bass wallow or softness, nor of treble softness or muddle.

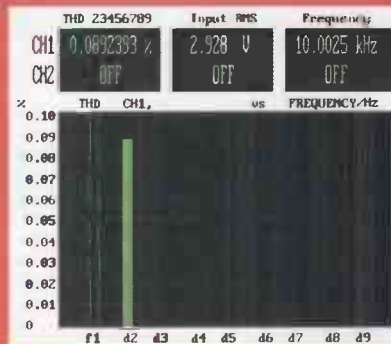
Noise levels were also amazingly

low, especially hum, which needs to be less than 1mV but from this amp was just 0.07mV - unusually low. There were no frequencies above 50Hz either. This was almost strange for a valve amp.

The unbalanced input is insensitive at 1.4V, so a preamp with gain is needed (x3 or more). The balanced input is even worse, needing 2.7V for full output.

The MC275 turns in unusually good measured performance figures for a valve amp. It's wonderfully engineered. NK

Power	90watts
Frequency response	7Hz-53kHz
Separation	72dB
Noise	-112dB
Distortion	0.06%
Sensitivity	1.4V



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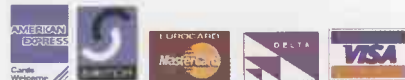
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I must confess that, until recently, I hadn't listened to cassette for at least a year, and probably more like two. After a couple of recent house moves, finding the cassettes took some doing, but once I had located the classic eighties 'Caselogic' boxes, the results proved well worth the hunt.

Fortunately enough, most of the cassettes I recorded some ten to fifteen years ago were made using a Nakamichi cassette deck with the source being either a Conrad Johnson SD1 (not bad), a Michell GyroDec with RB300 (better) or an SME Model 20 with Series V (still amazingly good). The tapes used were Maxell, TDK or That's (remember them?). Most were chrome or metal, but the odd 'super Ferric' did slip in there in the form of the classic TDK AR-X. Because the cassettes, literally, hadn't seen the light of day for several years, they were in remarkably good condition, with just one old That's tape having decided to stick itself together. Yet the greatest pleasure came not from reliving the eighties cassette tape nomenclature and terminology but, perhaps surprisingly, from the listening.

I say "perhaps surprising", because I've always known deep

down that cassette can sound decent, even though I never listen to the format and am disappointed whenever I hire a car that still has a cassette deck only. Oddly enough, it's the car industry that has sustained the cassette market for longer than it would have survived on the home front. Buy a new car today, and there's still about a one in five chance that it will have a cassette player. Just a couple of years ago, this was more like 50/50. Still, I digress, with the Akai GX95 wired up and fed with quality tapes and recordings, I was transported back to another era. Yes, there was some tape hiss, but the fluidity, depth and sheer scale of sound was leagues ahead of any MP3 player or, dare I say it, even CD. Pitch stability, often the bane of cassette, was rock solid with this particular deck, and there was not a trace of the dreaded wow and flutter.

You may not be surprised to hear of the virtues of cassette, but what may come as unexpected is just how many new cassette decks are still being sold. True, vinyl has now convincingly out-lasted cassette and there are many more record than cassette decks out there. Yet, dig a little deeper and you'll still find cassette decks - brand new and boxed! Sadly, the last Nakamichi cassette deck shuffled off the production line some years ago, but there are still some fine new machines out there.

Probably the best, and still showing on Yamaha's website, is the KX580SE. This classic has been around for years now, but for good reason. Short of a Nak', or one of the high-end Japs, this is about as good as Compact Cassette gets. UK tuned electronics and a solid transport make this a more than competent machine. Better still is the Dolby S system which was Dolby's

last and finest attempt at eradicating tape hiss. It's also worth noting that Dolby S is retro compatible with Dolby B, meaning that if your car system only has the later (which it will as "S" never really made it to the automobile world), then you can get the benefits of "S" without phasing issues.

Yet the KX580SE isn't the only deck worthy of mention that's still out there. Although harder to find, the Teac VI050 is well worth a look. It always was one of the best value three-head machines available and is now the only three-head deck available! A die-cast block and quality wiring make this a finely engineered deck. It's perhaps not quite as natural sounding as the Yamaha, but if you're still into recording on cassette, then this makes a decent choice.

Finally, there's the 'twin'. Twin decks were always slightly frowned upon by the hi-fi fraternity as they never quite matched the quality of their single brethren. One brand that made a better job than most, though, was Denon. Check out the Denon website and you'll see that, amazingly for such a trendy company, they still market the DRW-695 twin deck. From memory this is a pretty decent deck and bound to be better than the equivalent Sony and Pioneer twins that still linger in the price lists.

Whilst tape can never hope to match the convenience of MP3, it can still put in a surprisingly good performance at home, in the car or, should you be lucky enough to have a working Sony Pro Walkman, on the move. If you already have cassettes, then you probably have a decent deck - most that didn't will have chucked their tapes away years ago. For the rest of us, we'll probably remember the format, still covert a Dragon or CR7 - and then pop into the nearest Apple Store to buy an iPod. ●

Thinking Of A Valve Amplifier?

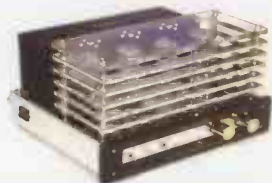
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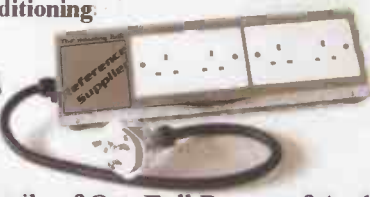
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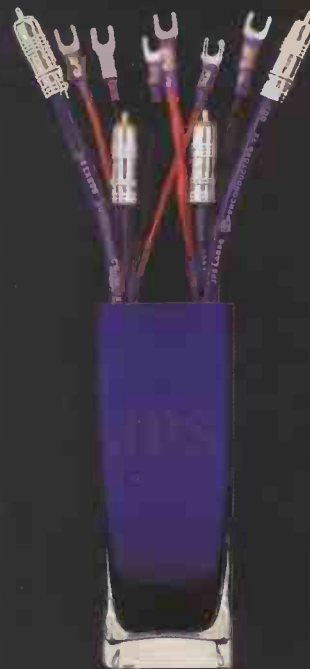
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"BBC Governors are probably blissfully unaware of the DAB audio quality problems..."



steven green

As many of you will already know, or at least suspected, the BBC reduced the bit rate of Radio 3 on DAB from 192kbps to 160kbps in July. When they first made the change, I actually thought they'd made a mistake and they'd revert back to 192kbps in a few days' time – even the BBC, with its diabolical track record on DAB, wouldn't do anything as stupid as this, I thought... I was wrong.

The justification that the BBC gave for making the change, in the form of an email/letter that was sent to listeners who'd complained, was that the BBC had been covering lots of sporting events over the summer (although the list of sporting events they mentioned had virtually all finished by the time the change was made), so they had decided to take 32kbps of bandwidth from Radio 3 and give it to Radio 5 Sports Extra, which would allow the latter to transmit a looping advert for the station 24/7.

Radio 5 Sports Extra was previously a part-time station that only went on-air when it was carrying some commentary, and some listeners apparently thought they had a problem with their DAB radio because they couldn't find the station when they looked for it – i.e. it was off-air when they looked.

The BBC email also said that they had installed new MP2 audio encoders for Radio 3, about which they said: "We believe that audio quality at 160kbps with the new encoding is almost indistinguishable from 192kbps via the old encoding, and internal testing supports this." Yet at the time, Radio 3 sounded like nails scraping down a blackboard.

Needless to say, Radio 3 listeners

were far from pleased with the BBC's view that the audio quality of Radio 3 should be degraded to allow a looping advert to transmit, so they continued complaining. After a couple of weeks more of this had passed, the BBC edited the email they were sending to complainants, and they admitted: "We have discovered that during July, the level on DAB for Radio 3 was unnecessarily increased which caused distortion and loss of sound quality," and that they'd now corrected the problem.

That explanation is simply nonsense. The problem that they had corrected, and which was obvious to anybody with even a slight understanding of how the MP2 audio codec works and performs, was that they had been transmitting at 160kbps in 'discrete stereo' mode (true stereo) for the previous two to three weeks, when at bit rates below 192 kbps you have to start using 'joint stereo' mode – at such low bit rates it is preferable to degrade the stereo image in order to provide some improvement in the audio quality, albeit not much of an improvement.

This episode highlights a major problem with the BBC, because BBC executives who don't have an engineering background make decisions that should be made by engineers. Furthermore, the BBC is unregulated with respect to technical issues, which makes it all the more outrageous that poor engineering decisions are being made by non-engineers and the general public has absolutely no redress – the BBC Governors only apparently ever see unresolved programme complaints (taste and decency issues and so forth) that have made it through all of the stages of the complaints

appeals process. In contrast, technical complaints cannot even be appealed against – the BBC Governors (i.e. regulators of the BBC) are probably blissfully unaware that there are major problems with the audio quality on DAB!

Despite the BBC's claims that Radio 3's audio quality is "almost indistinguishable" from how it was prior to the reduction in bit rate, it isn't – and I didn't think it sounded very good when it was 192 kbps either. At the time of writing, Radio 3 on DAB sounds dull and muffled, with virtually no high frequency response, very poor definition and a rather soulless sound.

However, Radio 3 is still transmitted at 192 kbps on Freeview, digital satellite and cable. The best quality digital version of Radio 3 is on satellite, which sounds a lot better than R3 on DAB. R3 on Freeview also doesn't have the problems that are apparent on DAB, but it can sound quite harsh at times. The reason for the difference in sound between the streams on Freeview and satellite will almost certainly be due to the BBC 'transcoding' (decoding followed by re-encoding – a definite no-no with low bit rate compressed audio, and it will only have been done to save a small amount of money... yet another bad engineering decision) the streams *en route* to the Freeview multiplex operator. In comparison, the BBC carries out its own uplinking to the satellites, so there's no need to transcode the signals first, so the quality is not degraded.

Having said all that, Radio 3 on FM still sounds much better than any of the digital versions, providing better detail, definition and high frequency response. All I can say is long live Frequency Modulation! ●



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"The quality that can be gleaned from this amp is a fine introduction to the joys of the valve sound"

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WD25A Standmount Speaker Kit

"The one aspect that stands out is the easy ability to resolve instruments and voices ... bass quality and definition is a revelation"

Cabinet kit (pair) £179

The aperiodic enclosure offers the bass clarity and definition of a larger closed box, together with the efficiency and easy amplifier load necessary for users of valve amplifiers. Available with SEAS STD soft dome treble unit, or high performance SEAS Excel treble unit.

WD25A STD kit (pair) £215

WD25A XL kit (pair) £398



WD25T Floorstanding Speaker Kit

"The WD25T always sounds crisp and taut, but can 'rumble' menacingly giving impressive physicality reminiscent of far larger boxes. Imaging is superb, the midband is also special; it's very open with masses of detail about the condition of the recording"

Cabinet kit (pair) £398

Cunningly arranged as an aperiodic enclosure leading to a lower sealed compartment, the WD25T combines the optimum damping of aperiodic loading with the bass extension of a large closed box. Available with STD soft dome or high performance Excel treble units.

Both the WD25 kits are based around a SEAS 26cm (10") paper cone bass unit with an efficiency of 89dB for 1W. The crossover has been developed for an easy drive 6 - 8 Ohm load making the system ideal for all types of amplifiers.

WD25T STD kit (pair) £279

WD25T XL kit (pair) £459



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"used prices depend solely on the value people put on something, based on hearsay..."



noel keyword

Funny how the notion of 'cheap' has all changed. Long ago I expected the future to be more expensive than the present. Prices always go up, with the same predictability that gravity always makes things go down. Some things never change, or so I thought. Now, everything that once made sense in budget hi-fi has been turned on its head. A brand new DVD player costs £17.97 from Amazon, but if you buy old tat second-hand it will cost more now than it did when new - especially if it is from Quad. These days it is difficult to predict how cheap budget hi-fi may actually be, or even what makes up a budget system.

Once upon a time it comprised something like a Dual turntable, NAD 3020 amplifier and a pair of Wharfedale Diamond speakers. Even if you were short of cash, that was the solution - and the only solution. Sure, you could buy a Trio amp or Garrard turntable, but this was simply moving the chairs around a bit. How things have changed. Now, for very little cash your loudspeakers might come in a removal van, because the internet (ebay) has changed everything. Somewhere, someone wants rid of large loudspeakers inherited from Granddad when he passed away, because they're blocking the hallway. You get a pair of Tannoy GRFs - and a bill from Pickfords.

This is just one development I could not have foreseen in the past, but it has changed the way we see budget hi-fi today. Now, *Hi-Fi World* readers are happy, even excited, to scour the internet for a rare item on the promise of amazing sound at a bargain price. Some of it is misguided I believe, the reputation of

many products becoming hyped by repeated mention on the internet. This underlines the fact that the price of an item depends solely on the value people put on it, and that can at times be based on hearsay. Old cartridges, turntables and arms suffer this most. Units I wouldn't have given much for twenty or more years ago are being 'rediscovered', yet they are likely to sound worse now than then, due to wear and tear over the years, so Heaven knows what it is that their new owners find so attractive!

Or it is based on misunderstandings, for example that the qualities of a mystical item like a Quad ESL-57 can be as easily appreciated as those of a Monitor Audio GS60. In truth the wonders of a '57 can only be heard after a costly service or rebuild, because all are now very old, the partnering equipment must be compatible and the room suitable. With something like this you can easily end up out of pocket and wondering what all the fuss is about. All the same, our Letters pages show that increasing numbers of people are buying enthusiastically, finding that if they don't like what they've bought then there's always another mug willing to make the same mistake.

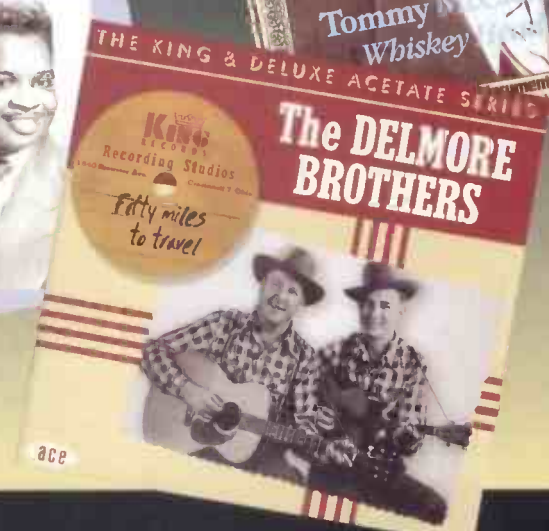
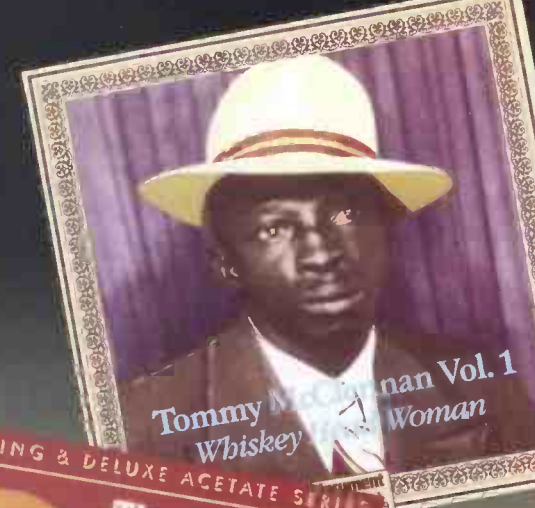
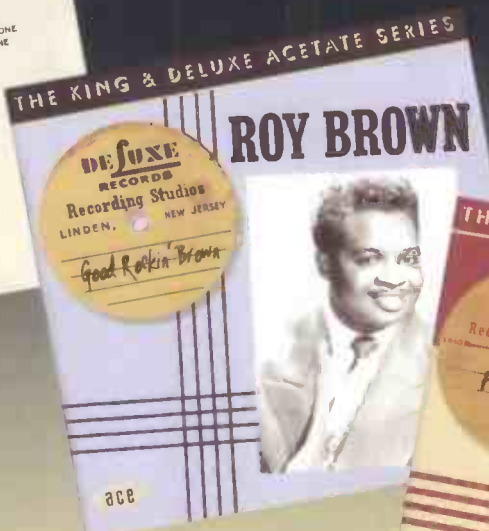
Generally, no matter how much people like myself might tut-tut, the experience seems to be a good one - and it does have some great aspects. Everyone is a winner. The seller gets paid to have their 'junk' removed, whilst the buyer hopes to pick up an all time classic that when restored will sound fabulous and will gain in value instead of losing it.

Then, of course, we save our heritage and don't needlessly throw things away, so saving the planet

(blah...blah). I'm a little sceptical about this last point because no matter how many Tannoys or Garrards we save from the skip, it would make not one jot of difference to output from the world's big CE plants in China, Malaysia and Japan, all turning out cheap DVD players by the zillion. The EU's forthcoming Waste Electrical and Electronic Equipment (WEEE) directive, which comes into force during 2007, will be more effective at coping with this ever-increasing torrent.

Mass manufacture in the Far East is the other major development to affect budget hi-fi. At present we are seeing the latest technology, such as that in a DVD player, being sold at inconceivably low prices. No DVD player ever cost £17.97 after taking manufacturing costs, profit, shipping and retail profit into account. It's either a loss leader or a stock clearance in anticipation of Blu-Ray's arrival, not to mention HD-DVD of course, which has all but arrived. The vicious downward price spiral that now characterises this market, one that really deals in global commodity - no matter what gloss is put on it - is quite different from that of real hi-fi.

All the same, I suspect we could in the near future see real hi-fi from China at prices lower than today's. It wouldn't be difficult to construct a Class D digital amplifier with lightweight switch mode power supply, using surface mount devices, for example. [Sonic Impact T-Amp, anybody? - Ed.] I'm not sure it will sound a whole lot better than a NAD3020 of yesteryear or a Cambridge of today, leaving many of us to find heaven in an elusive bargain from the internet. So happy hunting! ●



DUKE ELLINGTON
Duke Ellington's Spacemen: The Cosmic Scene
Mosaic

Originally released in 1958, this album features the solo work of Clark Terry on flugelhorn, Paul Gonzales on tenor sax and Jimmy Hamilton on clarinet. Combining both Ellington material (i.e. 'A-Train' and 'Perdido') and covers (i.e. 'Avalon' and 'Early Autumn'), the session was originally recorded at Columbia's legendary 30th Street Studio by Fred Plaut. US-based Mosaic is renowned for its attention to detail when producing CDs, always going one step further to enhance or retain sound quality. Michael Cuscuna, President of Mosaic, explained that the company, "always ignores the LP master tapes because they have compression and/or added echo and/or added highs. We rebuild the album from the original session tapes; the sound is purer and far superior." Mosaic ordered all the session reels as well as the LP master tapes from the original record label. "In the case of this album, we used the 3-track session reels, rebuilding the LP and matching its edits and then found the additional take of Jones which was issued as a 45 and the only releasable alternate take, 'Body and Soul'."

Putting the album together from scratch is a painstaking job. Yes, there are occasionally EQ setting notes in old tape boxes to act as a guide but, as Cuscuna said, "they are

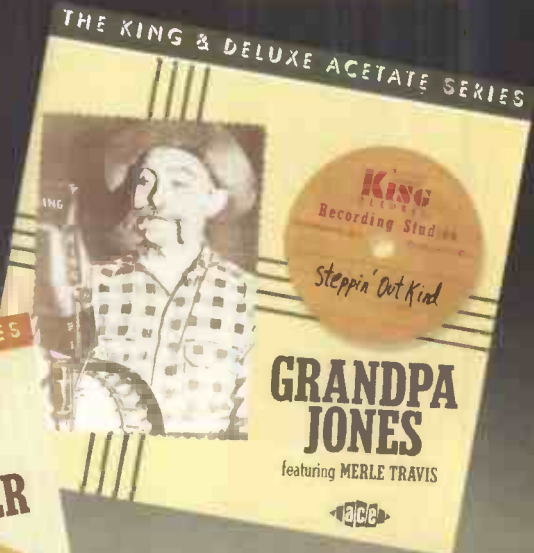
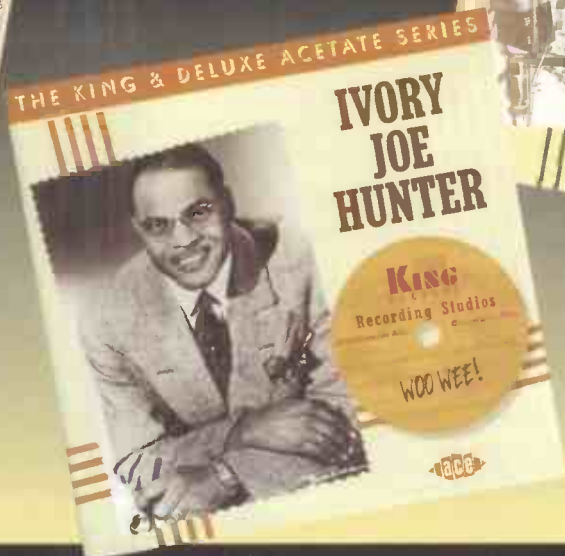
meaningless with today's equipment. Besides, we always start from scratch, using today's criteria of getting the purest, most natural sound with the least amount of electronics imposed on it." As for the packaging? The CD (it's unavailable on any other format) uses the original artwork, scanned from a clean copy of the LP – and very effective it looks too. The sound quality is delicious - no doubt the original recording session had plenty to do with this, but Mosaic has worked hard to further enhance things. Any jazz fan needs to hear this CD.

ROY BROWN
Good Rockin' Brown
THE DELMORE BROTHERS
Fifty Miles To Travel
Ace

Ace has recently released a series of CDs under the banner 'The King And Deluxe Acetate Series'. That is, all of the recordings are sourced from those label's original acetates which were painstakingly examined in the USA and then carefully shipped, all 53 crates, untouched for 30 years, to the UK for processing. Some of the wartime acetates (made from glass – there was a metal shortage at the time) had previously been destroyed whilst other damaged examples were processed first by Ace. During the '40s, acetates were the principle source for early recordings and still retain the potential for high quality sound sourcing. Even when tape was eventually introduced as a mastering

format, many studios mistrusted it. King and Deluxe focused on R&B, country, blues, hillbilly and gospel. Brown represents the R&B genre. His work, here from 1947, was a major influence on rock'n'roll. For example his songs were covered by Elvis Presley. The Delmore Brothers, however, sang hillbilly songs and were great harmonising vocalists that should have tasted the same fame as the Carter Family.

Both CDs represent the first batch of releases from those crates. Examining the contents brought to light unexpected treasures - 17 'lost' acetates from Roy Brown, none of which had ever been heard before. Brown's release is very important for it's early versions of over-dubbing. Tony Rounce, series compiler and archivist for Ace explained, "They recorded tracks leaving gaps for what they wanted to overdub and then played back the final acetate, having the overdubbing instrument play 'live' in the remaining space." Hence, a tenor sax man might, at the same time be both the soloist and be part of the rhythm section. Ace utilise a thorough and careful process during its CD productions which has resulted in excellent productions for these rare works. Considering the sometimes less than ideal original recording conditions and the age of the acetates, Ace's sound quality is remarkable. Several rungs up the ladder from the 78 originals, whose basic shellac format was 'anti-audiophile', to say the least.



TOMMY MCCLENNAN
Vol.1 – Whiskey Head Woman
Vol.2 – Cross Cut Saw
Document

Entirely CD-based, Document Records is arguably the most important roots-based record label in the world and contains the world's largest catalogue of vintage blues, jazz, boogie woogie, gospel, spirituals and country music. This CD set was mastered by Paul Swinton (www.frogrecords.com) who believes the secret of a good vintage music CD is the source. Previous McClennan issues were poor, so Swinton endeavoured to source either the original McClennan 78s or a flat transfer on a DAT from examples of horribly rare 78s situated in other parts of the world belonging to top collectors. Swinton's kit includes a Dual CS5000 turntable and Owl valve amp, before the signal's transferred into a 24bit audio card into a PC. He spends most of his time at the source. "It makes a huge difference depending on what stylus and weight you will use, from 20-30g; standard rules say a particular label will benefit from a certain weight. There's trial and error too." This can go as far as repairing broken 78s or melting down spare shellac and melding it to repair missing pieces of a 78.

McClennan belonged to the great batch of original blues guitarists, with a gruff voice but full of humour, known for tracks such as 'Cross Cut Saw Blues' and 'Deep

Blue Sea Blues'. Listening to these CDs, I'm willing to bet that this set could not have been produced by a mastering engineer at a major studio. You really need years of experience in the blues to be able to 'feel' what's required. The proof's in the listening, which is a bit of a shock – these CDs are so smooth. It's amazing to believe that the track sources were 78s and not acetates. You can almost hear how McClennan shapes his mouth, tongue and lips to accentuate certain words.

IVORY JOE HUNTER
Woo Wee!
GRANDPA JONES FEATURING
MERLE TRAVIS
Steppin' Out Kind
Ace

CD fans love Ace and its sound restorers are an independent lot. They have no love of vinyl and on the question of hi-fi, strongly believe that you need to spend 50% of your budget on improving the listening room. Their approach to preserving the sound quality for both of these CDs is interesting, therefore. Ivory Joe Hunter (his real name) tamed rock'n'roll, at his piano, with his velvet-voiced blues. Grandpa Jones, on the other hand, was a consummate country performer and, during the '30s and '40s was almost solely responsible for keeping the banjo alive as a country instrument. Both artists' acetates were initially cleaned using the superb Loricraft machine. To transfer the music, the

acetates were played on a specially made Pink Triangle adapted for 16" acetates – there are only two of these decks in existence, and Eddie Grant has the other! 16" disks were used to squeeze four or five, three minutes tracks on one side.

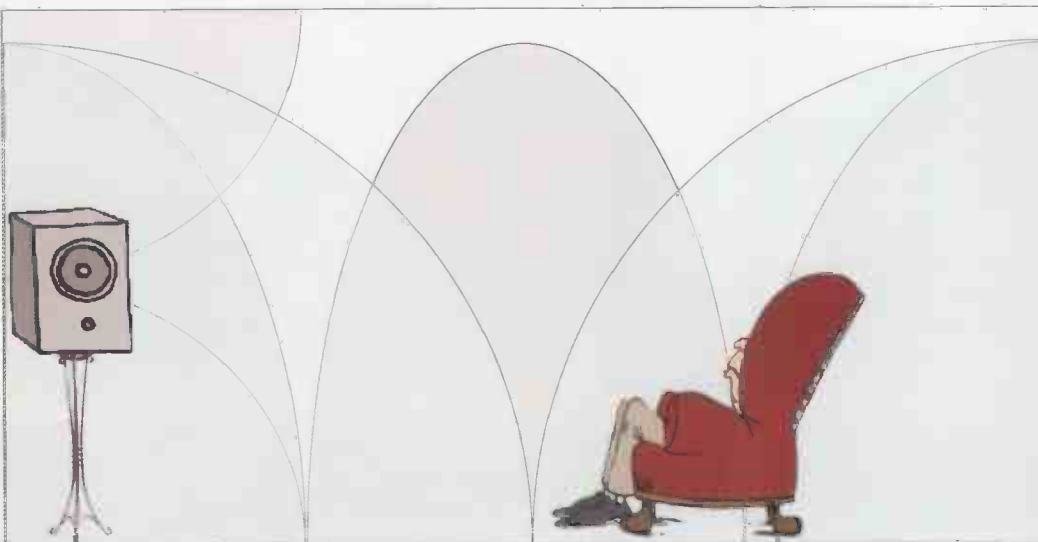
The sound was then moved through an old Yamaha CX630 preamp to a PC-based Lynx card with an excellent A-D converter running at 96/24. A digital editor, Sadie (a UK product), took over with the addition of plug-ins called Waves Restoration Suite and Waves EQs. Declicking and dehisssing was undertaken by the Cedar Cambridge system. Ace feels this great kit gives them the edge over analogue, "there are certain processes we can do in the digital domain that you just cannot do in analogue such as azimuth correction," explained Nick Robbins, Ace Mastering Engineer. "For example, at the beginning and the end of playing vinyl, there's a small angle differential between the left/right hand channel. We can correct this azimuth error during restoration." Ultimately, this system, alone, can remove 3dB of noise. The final CD results are a triumph - Ace has shown a restorative sensitivity for both the original recordings and our ears.

CONTACTS:
www.acerecords.com
www.document-records.com
www.mosaicrecords.com

Upgrading Your

Part 3 - Speakers & Rooms

No mention of upgrading speaker performance should be complete without guidance on how loudspeakers integrate into rooms. Peter Comeau outlines the steps you should take.



Over the last couple of articles we looked at improving your loudspeakers by tackling the mechanical and electrical aspects of their design.

But the toughest decision is yet to come – where to put your loudspeakers in your room. There is a wealth of empirical detail and mantra available that purports to tell you exactly the best place, whether by ruler or three dimensional calculation, as to where you should position stereo speakers, but the truth is that no amount of amateur scientific analysis will allow you to hit the right spot first time, every time. The reality is that every room and every speaker design is different and so will all react in different ways. However, don't throw in the towel just yet as there are some straightforward guidelines to help you.

To understand how these can help, first of all you should appreciate some of the fundamentals of what is happening to the sound in your room after it leaves your speakers. All the surfaces of a room are reflectors and the idea that it is only the direct sound from the speakers to reach your ears that matters is hogwash. The straight line path from the speaker drive units to your ears is, of course, important but only to the perception of transient information, in other words the

details of how an instrument is plucked, hit or bowed, or of vocal inflection and the 'explosive' parts of vocalisation formed from the lips and tongue. The stereo image is also largely constructed from the arrival time of transients, though accurate image localisation can be blurred by reflections near to the speakers as we shall see later. Everything else, the timbre or 'colour' of the sound, the character of the instrument, the purity of voice, is given by a combination of direct and reflected sound.

In essence this means that, as most of us know, the character of a loudspeaker can take on a different form depending on the room it is put in. Thankfully all is not as bad as it seems at first sight; our ear-brain hearing mechanism is remarkably good at adjusting for different acoustic surroundings. For evidence of this ask a friend or partner to talk to you and then move from your living room to the kitchen or from bedroom to bathroom. You will hear the effect of the more reverberant acoustic in the hard surfaced kitchen or bathroom but your friend's voice is still recognisably theirs. The brain is able to adjust within a few seconds of being faced by a new acoustic environment.

However it is easy to upset this self-adjusting mechanism. In order to work as an effective graphic equaliser

the ear-brain mechanism bases its calculations on the fact that most sources act as a point source and emit sounds as omni-directional radiators. (This doesn't mean that speakers also have to be omni-directional even though it sometimes helps if they are). Unfortunately many speakers on the market today exhibit a very different frequency response and character off-axis, to the sides and above, than they do on-axis as they point towards the listener.

Because room boundaries are reflective the ear-brain tries to correlate the direct and reflected sound as one to form the timbral character of the source or, in our case, speaker(s). Where the off-axis sound is distorted in character compared to the on-axis performance the speaker's character will also tend to sound distorted timbrally or 'colored'. For this reason many specialists advocate putting speakers in a 'dead' area of the room where reflections are minimal, for example with heavy curtains on the walls.

This 'dead-end/live-end' design of listening rooms is an interesting one to explore, especially as it polarises opinions so much. Making the decision is fairly objective and can be ratified by your subjective experience. If you want to hear your speakers sounding exactly as a technical analysis of their frequency response would indicate then put them in non-reflective surroundings, or the 'dead' area of a room. Be prepared, however, to supply four times the amplifying power you might expect to be necessary and don't anticipate a soundstage which is going to be larger or more expansive than the width and height of the speakers themselves. And you will need speakers which have a very tightly controlled and accurate bass performance.

Why should this be so? A lively room will increase the subjective output of a speaker using reflections from rear and side walls to double the power output, and from walls,

Loudspeakers

floor and ceiling to quadruple apparent Sound Pressure Levels (SPL). There's no magic to this. Take a speaker out into the garden and it will sound small, dynamically lifeless and miniature in sonic image scale compared to how it sounds in a typical living room. As for the stereo soundstage effect, just listen to most of your recordings on headphones. Notice how the sound is almost two dimensional, concentrated in the ears or between them. This is because recordings are made with microphone positions and mixed in a way that allows for playback on loudspeakers in real rooms.

Whilst placing speakers at the 'live' end of a room is better for stereo performance, the opposite may be true for larger AV speaker systems. Image localisation in a discreet surround sound system is served by cutting down on local reflections. If you are dedicating a room to be a home cinema then reducing the reverberation time by the use of heavy carpets, curtains, soft furnishings and sound absorbers is, generally, the accepted way to go. However if your AV system utilises small satellites these usually benefit from, and are likely designed for, some acoustic 'enlargement' by reflections from nearby walls.

One of the problems of the 'dead' area for loudspeakers is that all of the sound absorbers, like the curtains or carpets that we use in rooms, are good at cutting down on mid and high frequency reflection but poor to absolutely useless when confronted with bass frequencies. And low frequencies are the ones that rooms boost most, by as much as 12dB below 100Hz. Putting speakers at the 'dead' end thus exacerbates low frequency problems from anything other than loudspeakers with extremely tightly controlled bass performance.

And this is where most people have problems in rooms – with bass. Part of the problem is due to commercial loudspeaker design and part due to the rooms we have to live in. Rooms are rectangular shaped boxes and exhibit very strong, and very obvious, resonant modes. Luckily the upper frequency modes are reduced dramatically by the soft

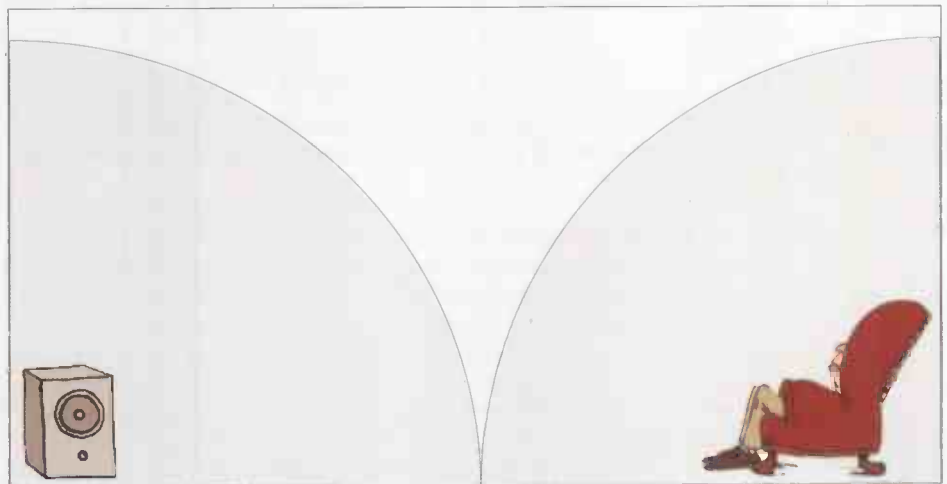
furnishings with which we normally litter our living rooms. But there is nothing, I repeat nothing, that you can do about low frequency ones. But all is not lost as there is much you can do to avoid exciting these resonances by positioning speakers or listeners in the 'right' place.

To judge the effect walls and floors have on speaker output, a speaker in open space will radiate all around at bass frequencies. This is called radiating into 4pi steradians. Place the speaker on the floor (or against a wall on a tall stand or shelf) and you reduce the space the speaker radiates into by half to 2pi steradians with an increase in SPL of 6dB. Put a speaker on the floor and against a wall and SPL is increased by 12dB, and in a corner low frequency SPL increases by 18dB.

For most of us the closest we will get to using these low frequency boost factors will be by placing a

The outcome of this is that moving a speaker closer to a rear wall will increase bass output and also couple strongly to room modes based on the dimension of the room which the speaker is facing. Conversely moving the speaker away from the wall will reduce bass output and couple less strongly to room modes. There is your first method of control over your speaker's bass performance, and most speakers can be balanced between bass and midrange just by moving a speaker nearer or further away from a rear wall.

Few of us, however, can keep speakers away from both rear and side walls. Don't forget that the same discipline fits a speaker close to a side wall as it does to a rear wall. So in this position the speaker is going to couple to the mode across the room as well as down the room. If the bass unit is placed low down



First room mode down length of room gives high pressure areas at each boundary. Speaker couples strongly to this mode, as do the listener's ears.

speaker against a wall, either on a stand or shelf. Besides increasing the output gradually below 300Hz, and markedly below 100Hz, this will also drive the modes down the dimension of the room facing the speaker. Box loudspeakers are pressure generating devices and, as such, will couple to the room modes where pressure is at a peak. And pressure is at a peak near any room boundary (if you think about it air particle velocity will always be at a minimum at a reflecting surface and pressure at a maximum).

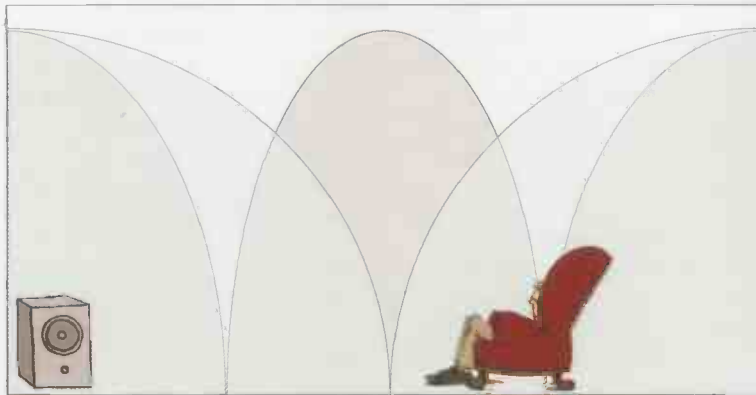
on a pair of floor standing speakers then the height modes in the room will be excited as well. Can you see the potential for problems in small rooms? It is hardly surprising that smaller speakers with limited bass output, mounted on tall stands or wall brackets, are often preferred by those with smaller rooms. If you do have a long room and suffer from bass problems try putting the speakers along the long wall, facing across the room, to keep them away from the effect of having nearby side walls and thus couple to fewer

CALCULATING ROOM MODES

First of all it is instrumental to find out which modes in your room you are likely to fall foul of. To do this you can either measure your room or use a test CD which has individual low frequency tracks for analysis. The major modes are due to reflections between parallel walls down the length, across the width and up the height of the room. To calculate these modes use the formula $f=v/d \times 2$ or frequency=velocity \div dimension $\times 2$. Working in metres the velocity of sound is 345m/s. So the dominant fundamental length frequency of a 5m long room is $345/10 = 34.5$ Hz. There will be modes at multiples of this frequency too, thus 68, 103, 138, 172 Hz and so on, though due to absorbency by objects in the room these modes will diminish in intensity as the frequency increases. But don't stop there; you also need to add the modes from the width dimension, and then the modes from the height dimension. There are further modes due to tangential reflections across all four walls and oblique modes due to reflections that circulate the room, but these usually die out quickly due to absorbents in the room.

Once you have finished calculating the major room modes based on length, width and height it is time to discover which of these are causing a problem. This is where a test CD with individual bands of frequencies will help as it is as much down to your speakers and their position as your room which decide the problem frequencies. Most users either complain about not enough bass or too much bass, rarely do listeners complain about uneven bass. Yet an uneven bass performance is usually at the root of the troubles.

The modes you have calculated will all be 'driven' by putting a loudspeaker in a corner. This can be quite useful if you have a speaker balanced to suit corner 'drive' as you will 'hit' every room mode and this can result in an evenly tempered bass performance. However putting a speaker in the room corner will increase its output by a factor of 18dB and very few speakers are balanced with such a light bass performance except the for the specific requirements of corner horns.



Moving the chair away from the rear wall shifts the listener into the low pressure area of the second, possibly troublesome, room mode.

modes.

You can also move away from prominent room modes by adjusting the seating position. Consider what happens where you have speakers up against a wall at one end of the room and a chair against the wall at the other end of the room. Not only are the speakers coupling to the room modes at a high pressure point but you are sitting at a high pressure point too. In our calculation of room modes we took, as an example, a 5 m room with a dominant fundamental mode of 34Hz. Now sitting in a strong 34Hz mode will not trouble most listeners, in fact organ enthusiasts might well be delighted. But the other modes at 68Hz and 103Hz will certainly not go unnoticed. If these cause problems then move the seating position a third of the way down the room where you will be at, or close to, a pressure null for these frequencies.

LOUDSPEAKER TYPES

Typically the problems of speakers in rooms are not so much the fault

of the room itself but that of the speaker. The worst type of room for encouraging bass problems is the cuboid room where the side modes are close to, or identical to, the length modes. Similarly a room which has the same dimension of width to height will encourage obvious room mode emphasis to the bass.

Problem speaker types are those which encourage resonance in order to realise an apparent subjectively powerful bass output. Chief amongst these are bass reflex and quarter wave types, but you cannot rule out the closed box either. Wherever the designer has chosen to provide an 'impressive' bass performance then you can expect bass problems in some rooms. Take the bass reflex speaker. Here the drive unit is exciting a resonance in the box caused by the springiness of the volume of air in the box and the mass of the plug of air in the port. If the system is designed optimally for accurate bass performance then the Q of the resonance will be such that it is under control of

the drive unit and, therefore, the amplifier. However designers have a predilection to boost bass output by raising the Q and allowing the resonance to 'ring'. Combined with an in-room resonance the bass output, whilst initially impressive, can quickly begin to swamp the midrange output of the speaker and prove tiring and annoying to listen to. Such bass performance is characterised by undue emphasis to certain notes of bass instruments and a lack of definition in this area.

Quarter wave designs encourage a similar mode to room modes, but internal to the speaker. The box is arranged as a tall column with the drive unit at one end and an open ended 'port' at the other. Like an organ pipe this arrangement will resonate strongly at a frequency where the column is a quarter of the wavelength (unlike a room which has two reflective ends the column has an open end). There will also be further modes at multiples of this frequency, again like the room modes, though clever design can ameliorate these. Quarter wave designs are often used where the output of a so-called full range driver needs bolstering below the lower midrange area where the output of the drive unit is falling rapidly. You can imagine what happens where the internal column modes coincide with room modes. Usually careful placement of Quarter Wave designs is required in a room to avoid these problems.

Transmission Line speakers are a special version of a quarter wave design with an extended, folded column to lower the fundamental mode and extra damping to control the upper modes. With a long transmission line the strongest mode is usually at too low a frequency to disturb listeners and is often impressive in intensity where it hits room modes. In fact the 'vent' of a Transmission Line speaker is often mounted at floor level to couple strongly to the floor to ceiling modes. Smaller TL speakers often fall between quarter wave and reflex operation and should be critically or over-damped to avoid resonance problems.

One of the ways that designers sometimes resort to in order to ensure a balanced Sound Pressure Level in the room is to endeavour to couple to as many room modes as possible. There is considerable evidence to show that coupling to the majority of room modes in larger rooms will help provide a full, balanced and articulate bass performance by avoiding the gaps between room modes that are

coupled to selectively by speakers which are positioned in free space. Designing a floor standing speaker so that it couples to both floor and rear wall works very well providing that the designer allows for the increase in bass output by dialling in a falling anechoic low frequency alignment below 300Hz.

An alternative approach is to design for free space. Here the designer has to take into account the transition from 4π radiation at low frequencies to 2π radiation once the frequency increases to a point where the wavelength is less than the baffle width. This is the so-called 'baffle step' and marks an area where there is a gradual increase in output of the drivers and a corresponding reduction in coupling to the room modes. To try and avoid this area of transition some designers attempt to realise an omni-directional speaker by using multiple drive units at angles round the speaker or mirrors of the mid and treble drivers on the rear of the speakers. Because of the lobing of conventional drivers at increasing frequency not all such attempts are successful, but a true omni-directional performance may be realised with drive unit designs such as the spherical radiator of the MBL 101e speakers featured in our June issue. For these types of speakers you need to arrange them to be between 0.8 and 1 metre from the nearest wall to make sure that sound reflections arrive at the ear over 5ms later than the direct sound so as not to integrate or disturb the character of the speaker.

There is another class of speakers, however, which exhibit few of these problems and have the potential to fit into rooms in a better way. These are the velocity generators as distinct from the pressure drivers of the box loudspeaker class. Better known amongst these are the panel loudspeakers such as electrostatic types but, in fact, any dipole loudspeaker (as long as it is a dipole over the whole frequency range) is a velocity generator.

As we mentioned, at room boundaries pressure is at a maximum and velocity is at a minimum. You can therefore expect a dipole to couple poorly to room modes at room boundaries. In addition a true dipole has minimum sound output at its sides. So you can get excellent results by placing a dipole two thirds of the way down a room near a side wall. At this distance down the room you are still far enough removed from coupling to the fundamental room resonance and its odd multiples.

Exactly at one third you will couple to the even order modes but, even here, the excitation will be less as the total radiated power of a dipole is $1/3$ rd lower than a monopole box speaker for a given SPL.

This gives panel speakers their unique bass clarity and accurate transient performance in rooms. Initially it is a bit of a shock not to hear the high pressure impact that box speakers generate in a room but, once you get used to the change in balance, dipole speakers have a lot to offer those who have rooms big enough to accommodate them.



Lifting the speaker on a stand or shelf reduces its ability to couple into the first vertical room mode.

STEPS YOU CAN TAKE

So far we have just looked at the low frequency region where wavelengths are of similar scale to room dimensions as this is where the main problems lie. We have also considered the room boundaries to be solid, but this is rarely the case in real rooms. For example plasterboard ceilings are very 'leaky' to low frequencies, as anyone who lives above a student flat will testify! Similarly internal stud walls and windows, especially large sliding glass doors, let low frequencies pass out of the room and will damp low frequency room modes. Solid walls and concrete floors are the true reflectors. Just adding a wooden plank floor supported on joists can often solve room boom problems as a result.

Above this region is a transition area where the wavelengths become too small to fall into the simple room dimension modal excitation model and, instead, are modified by diffusion and diffraction. This transition typically occurs between 100 – 200Hz in large rooms but can be higher in smaller rooms. As a result small rooms are most problematic from the more audible, and troubling, room boom modes. In the upper bass regions you can start to add acoustic resistances to control resonances. Typically large pieces of soft furnishings, for example leather sofas and large bookcases stuffed with books (or, more usefully, LPs) will help. At high frequencies

any boundary becomes a sound reflector behaving like a mirror to a ray of light. This results in the 'slap echo' that you hear if you clap your hands in an empty room. Carpets, curtains, paintings and cushions will all help as absorbers in this region. Full bookcases are particularly useful as they can be moved around, partic-

ularly along side walls, to control annoying reflections.

As always, with anything to do with acoustics, cavities of all sorts are to be avoided. Putting speakers deep in alcoves either side of a fireplace is asking for trouble as the dimensions of most alcoves ensure that they have strong upper bass modes. Similarly window bays often cause problems unless they are wide and shallow. For good stereo performance it is certainly ideal to place the speakers symmetrically in a room so that each generates near-identical reflections from nearby walls and thus has the same timbral character. Clearly experimentation in positioning is the order of the day.

And that is the only conclusion we can comfortably reach – despite all the theory and all the calculations, the real answer to positioning speakers in rooms is to experiment. Remember that a change in listener position is often as good a solution as moving speakers. Smaller rooms are more problematic as the major modes start higher in frequency and have wider gaps between them. Positioning speakers to fire across the shorter width of a room can avoid the lower frequency modes down the length of the room. Moving speakers closer to a wall, even by a few centimetres, will reinforce bass performance whilst moving them away will lighten bass by reducing the coupling to room modes. In short using your ears as well as your brain can usually solve most loudspeaker and room integration problems.

WD88VA Part 4

Input Switching

WD88VA is configured as a single input power amplifier, though the inclusion of a volume control allows you to use it with a single line source such as a CD player. As an alternative you can add input switching to make it suitable for up to five line inputs. Off-tape monitoring is also optional as Peter Comeau explains.

Input switching is usually carried out by a multi-pole switch on the front panel. Unfortunately this means carrying all the input signals up to the front panel through a bunch of cables, expensive in cable if you are going to use the very best, and difficult to route neatly around the transformers and valve bases - and always with the possibility of picking up interference from them. A neater solution would be to couple a long spindle to a rear panel mounted switch leaving only one pair of cables to carry the switched stereo signal to the input valves. The drawbacks here are a floppy feel to the front panel switch knob, unless you can afford some excellent bearing sleeves for the spindle, and the difficulty of routing the spindle past the valve bases, components and transformers.

As we have chosen to use drop-through transformers to slim down the WD88VA it was impossible to route a spindle down the length of the amplifier without wrecking our proposed layout of the front panel. Accordingly we looked for a neater way of switching the inputs at the rear. Our proposed option is to use high quality miniature relays to switch the signals directly they enter the amplifier, taking the selected signal through our pair of high quality cables to the first stage valve. We can then operate the relays using a DC voltage relayed from the front panel switch via a single multi-core cable.

There were still several obstacles to overcome. If we used a standard PCB mounting method then the simplest phono socket to use would be the PCB mount type. However we wanted to keep the high performance individual chassis mount phono sockets that we have chosen for optimal sound quality as well as give kit builders the option to substitute their own favourite phono socket if they so wished. To do this

we have to mount the PCB so that the board can be soldered onto the sockets after they have been fitted to the chassis. That means that the components need to be on the socket side of the board and we needed to find a relay that was compact enough to fit between the sockets.

We chose the NAIS TQ2 with gold over silver contacts that give an initial contact resistance of only 50mOhms. Switching capacity is 1A at 30v. These relays are readily available with 5v coils consuming 140mW with a maximum switching voltage of 7.5v so we can drive them from the heater voltage. All we have to do is route the heater voltage to the front panel switch and it can then be linked to the requisite relay. For those who want a tape monitor facility they can add a front panel switch to act directly on the tape input socket and use the changeover contact to break out of the source routing (a special PCB is included with the tape monitor option to facilitate this). Otherwise the changeover contacts are used to shunt the unused inputs to ground, avoiding crosstalk between inputs.

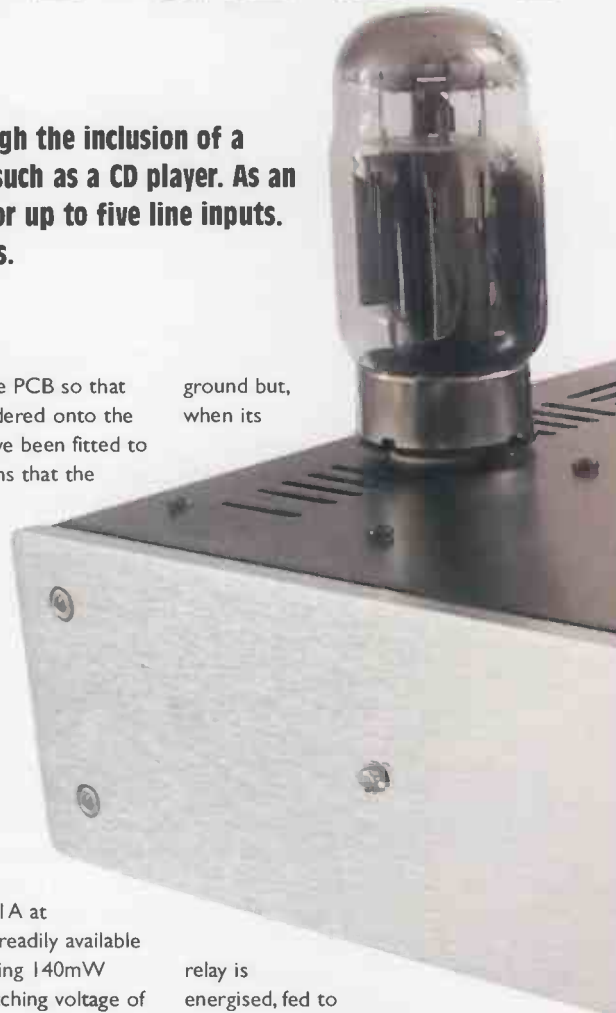
The layout of the PCB is shown here and you can see the extensive ground plane running down the middle to avoid interference and crosstalk. The 6.3v heater voltage is linked to the board and the negative side sent to the front panel switch via S0 with a small dropper resistor RRY1 smoothing any initial voltage surge at switch on. S1 - S5 are the returns from the switch, each going to the requisite relay coil. Each phono socket is fed to the changeover contacts, normally connected to

ground but, when its

relay is energised, fed to the output bus bar. L6/R6 are the tape outputs fed from 1k buffer resistors. OPL/OPR are connected to the input stage of the amplifier via the passive volume control.

Talking of volume controls brings us on to the upgrade options. There has, in recent years, been considerable interest in using an L-pad switched volume control instead of the ubiquitous potentiometer. The common sense approach is that passing the signal through two high quality resistors and a switch is better than through the vagaries of a potentiometer track and wiper. In practice the subjective difference is small and perhaps not worth the considerable expense of the switched L-pad attenuator. However there is another way of achieving much the same object - the shunt attenuator.

Here the volume control is fed from a high value resistor and the potentiometer connected as a shunt to ground. The signal passes only through the resistor - the pot then just acts as a variable resistor to ground as part of the L-pad. It is tempting to think that any old pot





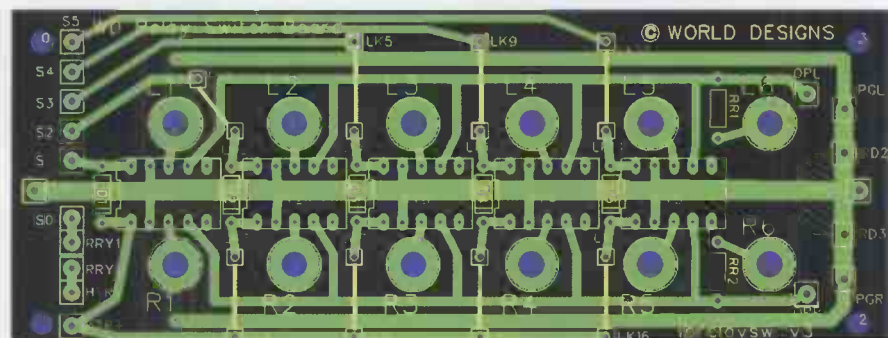
can then be used, because the signal is not passing through it, but in fact the pot is in parallel with the input stage so any noise due to the pot will appear on top of the input signal. Use a quality pot, like the Alps, however and your main improvement is that the signal in this arrangement is affected only by the quality of your series resistor.

There's a downside, of course, there always is! This arrangement gives a 6dB loss of signal level. For most sources, given the high sensitivity of the WD88VA, this won't be an issue, but if you are thinking of using the output of older devices, such as a valve FM tuner, then the loss of signal will not do it any favours.

Otherwise the upgrade pack offers the usual component improvements in CSD04060A Schottky diodes for the power supply and Soniqs SAX PP capacitors

bypassing the power supply capacitors and in place of the standard coupling capacitors. Cathode bypass capacitors will include Elna Cerafines.

Next month: Performance



Input switching is carried out by high performance relays on this PCB.



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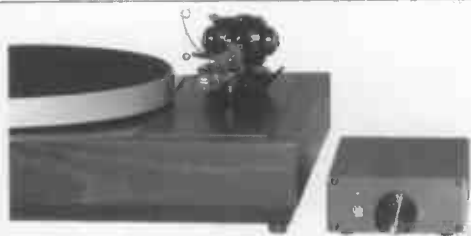
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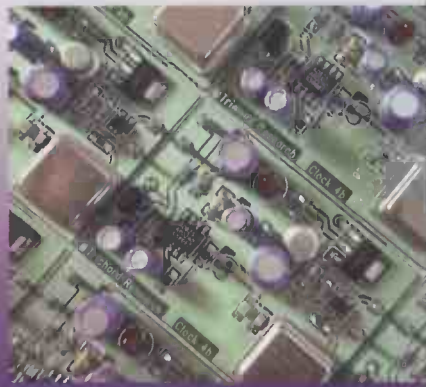
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Show Time at the Park Inn!

Something very special is happening in September – the London Sound and Vision Park Inn hi-fi show. David Price explains...

Hi-Fi shows are very variable. In theory, it's a great idea – your chance to see (and hear) all the new gear for yourselves, come away with stacks of brochures and goodies, buy equipment and accessories at bargain prices and generally have a fine old time. However, not all shows are created equal, and it's all down to who's running the show, how many (and which) exhibitors attend, and how everyone feels 'on the night'. If it goes wrong, you end up with a show with all the atmosphere of an airport car park, fewer amenities and even less charm...

This year, something very special is happening to guarantee a cracking time will be had by all. Chesterfield Communications (the company behind the tremendously successful Northern Sound & Vision show in Manchester last January) in association with *Hi-Fi World* magazine, brings you the London Sound and Vision Park Inn Show at Heathrow. There are (at the time of writing) no less than 69 exhibitors, many of which are distributors and/or

importers carrying a huge range of brands. We expect that there will be hundreds of manufacturers' products on demonstration, for you to see and hear - see the boxes below for the full list. In addition to this, all the *Hi-Fi World* team will be there, running regular 'Audio Clinics' on the Saturday and Sunday, where readers are welcome to hit us with their knottiest hi-fi problems, which we'll try to solve! Think of it as 'Hi-Fi World Live'...

The show is on Friday 22nd, Saturday 23rd and Sunday 24th September, from 10am to 5pm. Friday is trade-only day, and Sunday ends early at 4pm. Access is easy by car, train or aeroplane(!) and there's plenty of room to roam around to your heart's desire. There's even a bar too, should you have a strange desire to meet members of the hi-fi press... For more information, click on:

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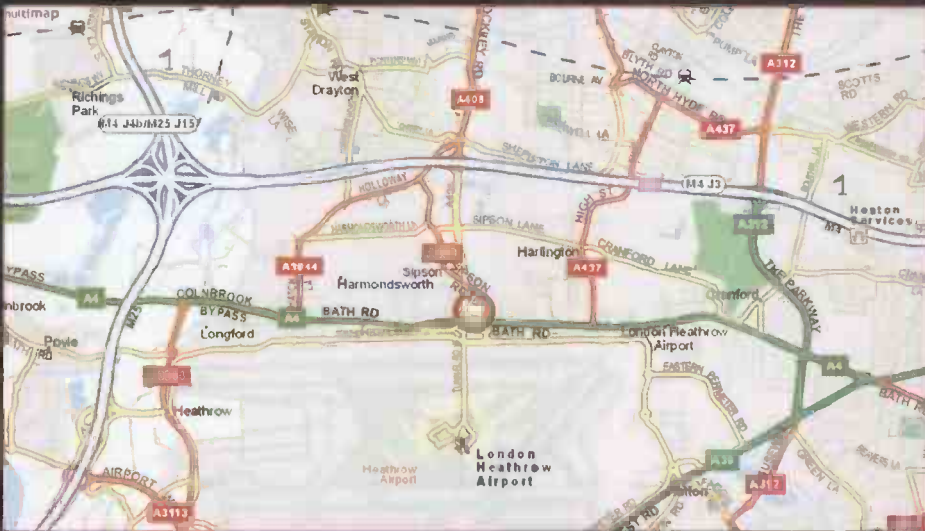
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Follow signs for M4 Terminals 1, 2 & 3. Take exit 4 off the M4 for Terminals 1, 2 & 3. Avoid entering the tunnel into the airport and take the spur road to your left and turn left at the first set of lights. You are now in front of the hotel.

From the M4

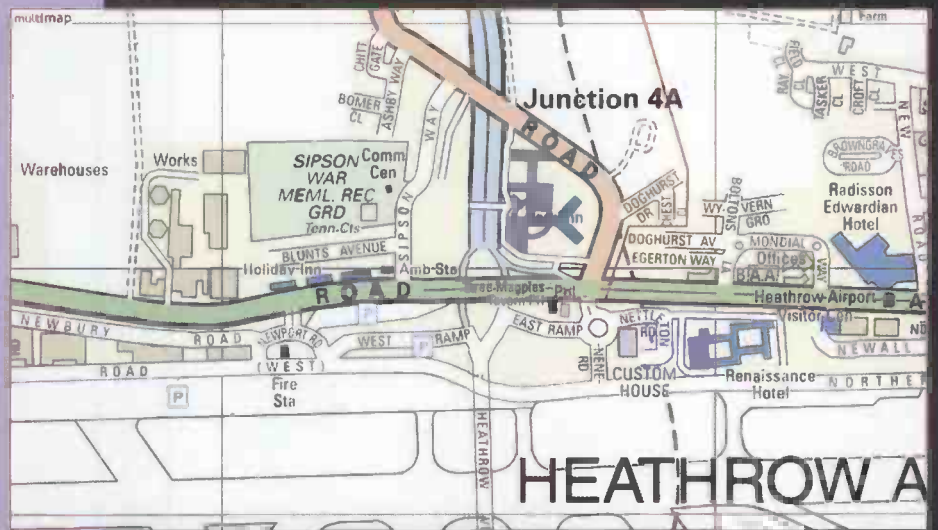
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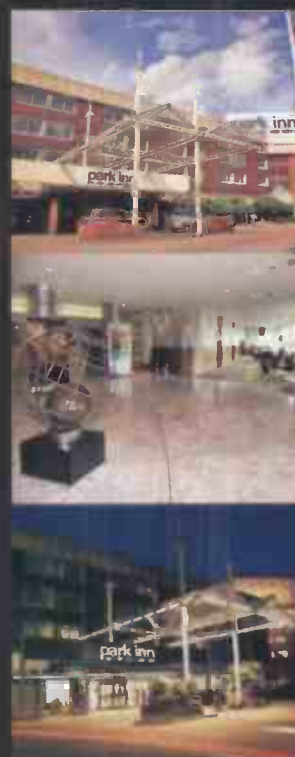
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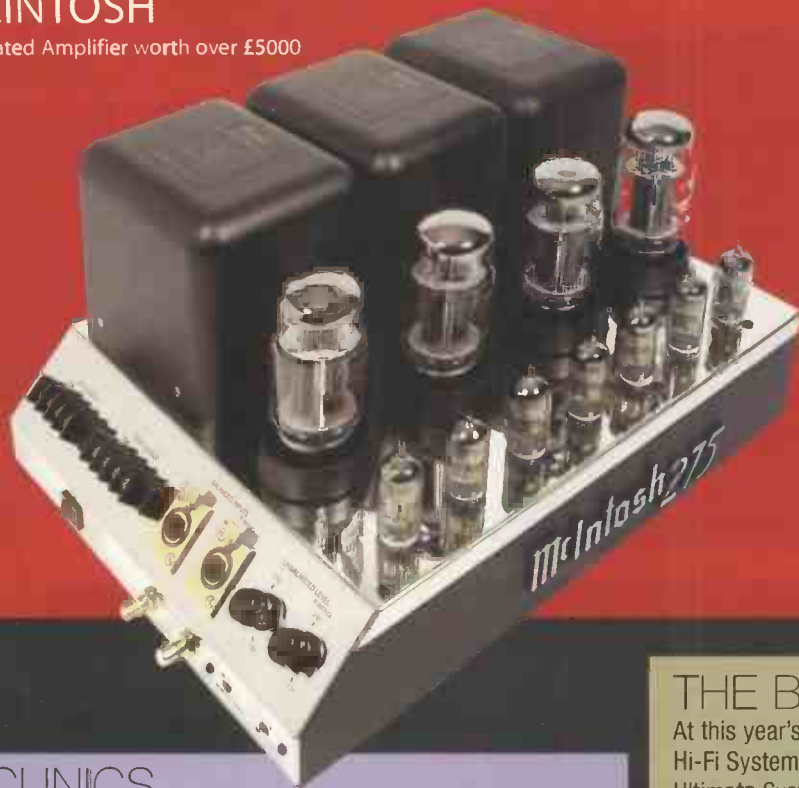


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We can now confirm that throughout the Saturday and Sunday we will have regular expert clinics for all those questions you've ever wanted to ask. Sessions will last around half an hour each and there will be at least four a day. There will be a range of experts on hand drawn from various parts of the industry, each contributing their own skills and knowledge. These sessions are free - just look out for the clinic programme sign and details also within the show manual. If you've got questions now - let us know in advance so that you receive priority.

CAR-PARKING

Something we all hate - paying for parking at Heathrow. It's expensive and often remote. Not this time! You can park all day at the venue for just £5!! The first 300 cars are guaranteed a space - so get there early and make it easy for yourself. That's £5 for your car - so if you are coming with friends it's cheap as chips as they say. See 'directions' if you're unsure of the route.

TICKET VALID BOTH DAYS

In keeping with our other shows your ticket is valid both days, so if you don't see everything you want then you don't have to pay twice.

FACTORY VISITS AND TRIPS TO OVERSEAS SHOWS.

After the show we'll be mailing you with details of some terrific trips you can get involved with throughout 2007-8. You will benefit from a special group package which will be all inclusive. If you have some special interests let us know and we'll see what we can do.



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VARIETY

For a show to be really interesting we know you'll want to see new faces and a really good mix across all product groups. That's the hardest job for an organiser as he tries to balance financial requirements with visitor satisfaction. We think we've achieved that with this new show, we really have got the lot.

LOYALTY TICKETS

Look out for the special ticket when you register on the day - it gives further discounts off the Privileged Ticket price for our other shows.

LIVE ENTERTAINMENTS

We are currently putting plans together for some exclusive performances by some top performers. Check www.chestergroup.org website early Sept for full details. This will be included in your ticket price. SHUTTLE BUS For those travelling by train or plane to the Airport make your way to the Airport Terminals 1-3 and get on the H2 hopper. For other services from other Stations check this website nearer the time. The H2 Hopper only takes a few minutes to reach the venue.

THE RIGHT VENUE, AT THE RIGHT TIME, IN THE RIGHT PLACE.

Hi-Fi World is pleased to sponsor this year's hi-fi show at Heathrow. We hope you enjoy it and hope to see you there.

One of the reasons the organisers have chosen the Park Inn Heathrow is because it was one of the very few venues in the area that was committed to expansion. The Park Inn Heathrow has proven by far and away the most popular venue for hi-fi shows not only for its superb location, but also its modern interior, excellent parking facilities and ability to host the show on one floor only - the ground floor. Soon, a massive

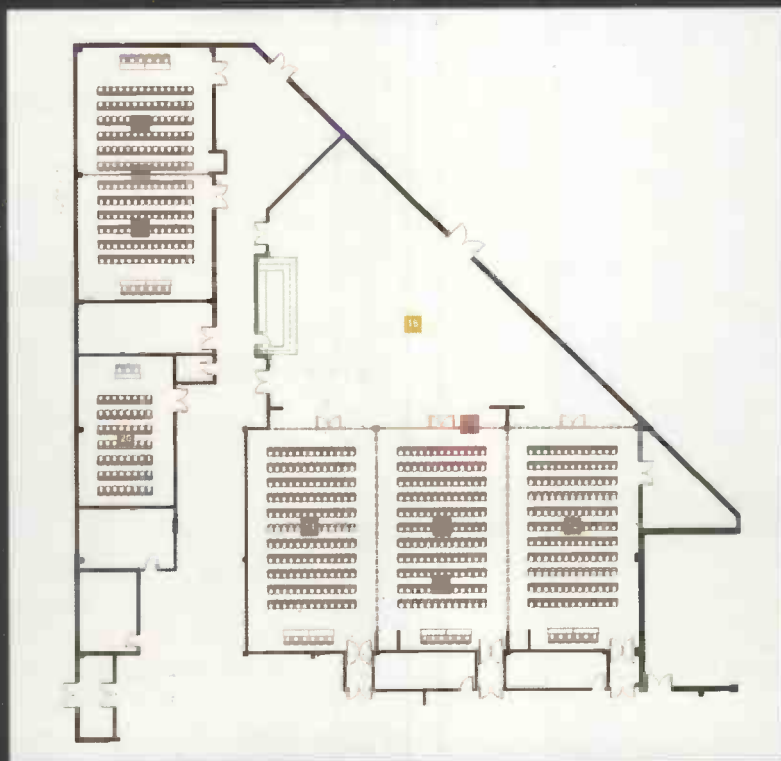
extension to the Hotel will be completed well before our two shows in 2007. This will mean that future London Sound & Vision shows can enjoy uninterrupted expansion. The new extension really is a state of the art Exhibition/Conference Centre in its own right and will make the Park Inn Heathrow one of the largest exhibition venues in Heathrow. The complete centre will have over 2000 square metres of exhibition space, incorporated into which will be nine extra demonstrations together with

new reception facilities, bars and restaurants.

The new centre will be very modern and contemporary in design with a chrome and glass décor to inspire and innovate.

The organisers already have interest from exhibitors for these extra suites for 2007 which augers well for the scope and future success of the show. We hope you enjoy this year's show and return next year to an even more lavish venue.

The new Conference centre



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Letter of the Month

DEJA VU

During the winter of 1970 I had a week's holiday in Oslo. On one very cold day I went into the City to find a record store and buy a copy of Crosby, Stills, Nash and Young's 'Déjà vu' LP. I had only heard 'Our House' from this album and so asked the chap in the store if I could listen to a few tracks. He ushered me to a counter where they had several pairs of what I can only describe as ear pods on extendable cords mounted into the counter. I duly pulled these out and placed them to my ears as he cued up the record. As I listened, the strumming of Steven Stills' guitar came into focus in the left ear and the group started to sing 'Carry On' and the whole song blossomed into glorious stereo...

This was a magical moment for two reasons; one it was a musical revelation as I had finally discovered a replacement which for me was close to the then recently disbanded Beatles, and secondly it was perhaps the first time I had heard anything remotely like hi-fi.

The sound I heard that day has lived with me ever since and become a benchmark by which I have measured equipment. I have long since searched out equipment that could approach the sound I heard that day. I am sure by today's standard and in retrospect, the quality was not that good but the illusion has grown and still remains with me.

Over the years my search for a good sound has continued and I have moved from a Dansette record player, Sony separates, B&W DM110s and Yamaha CD player, Quad 34/306 Quad 67 CD player, Thorens TD160 and Shahanian Super Elf speakers to my present set-up of Naim Nait Si and CDX, purchased from that wonderful little hi-fi Shop Audience in Bath, Shahinian Super Elf speakers, Slim Devices Squeeze Box II and a rather fine Technics SL1210mk II direct drive turntable which I bought for a bargain £150 from eBay.

I have become an advocate of



Technics Direct Drive – brilliant, if you mod it

DD turntables despite the fact they have been met with some derision from certain audiophile quarters. I have tweaked and modified a Thorens TD160 and had great fun with it, but the assured rock solid sound from the Technics has forced me to reconsider. My reasoning is the derision for DD was probably propelled by ignorance of the basic facts and the notion that a quartz-locked DD would always be hunting for the correct speed, compared with belt drive turntables. However this theory ignores two basic facts:

A motor with an elastic belt driving an inert platter constitutes an undamped mass-spring and will resonate. Belt drive motor control units are remarkably similar to the 'hunting' controllers of Direct Drives and suffer the same flaws. Possibly this will start a heated discussion in your pages but history has demonstrated that well built Direct Drive turntables such as Technics SP-10MkII, the Sony PS-X9,

the Trio/Kenwood L-07D and the Denon DP-100 have much to offer.

None of these systems ever produced quite the sound I believe I heard that day back in 1970 until a work friend of mine loaned me his Stax SRS3030 ear speaker setup. I got these little beauties back home and plugged them into the CD player, switching it to phono output mode. I grabbed my current remastered copy of Crosby, Stills, Nash and Young's 'Déjà vu' CD, put on the phones and loaded the disk and then absolute magic! It was if I had been transported back to being that sixteen year old sitting in a record store in Oslo on a freezing Wednesday morning. The sound was phenomenal, clear crisp, tuneful and once again exciting and I listened uninterrupted to the whole CD. So amazed was I by the sound I got my latest favourite 'Son of Dave' O2 CD and was equally impressed.

Once I have purchased a set of

Stax earspeakers (now a 'must have' item), how can I best upgrade my Technics turntable? I am aware there is a converter from Origin Live and that I can then fit a RB250/300 arm but my dilemma is this. I have a budget of £500 to £600 for these upgrades. Would my money be best spent on an RB250/300 or is there a better choice?

Secondly, I guess I will have up to about £400 for the cartridge and would be interested in what you can recommend at this price point? I should point out that I currently use a basic Project Phonostage which I will consider upgrading in time. Finally, the Technics came with a Denon DL-103 cartridge which sounded a great deal better than I had reason to suspect and I would be interested to know your views on it.

Garnet Newton-Wade

I think the anti-direct drive sentiment of the UK press was ill considered for exactly the reasons you suggest. It's interesting you can detect the superior speed stability of the Technics over your Thorens belt drive. I used to measure large differences: Direct Drive exhibited almost no speed variation and the wow and flutter that arises from it, whilst belt drive usually suffered significant low rate variation. There were confusing factors that made it difficult to be adamant about one or t'other, however. A good belt drive could turn in fine weighted wow and flutter figures, but DIN weighting was devised to isolate a particular form of wow, giving a misleadingly flattering result by critical hi-fi standards. And Japanese Direct Drives came with mediocre pickup arms that probably compromised their sound more than the basic drive system. It was difficult to say 'which was best: a belt drive with a good arm or a Direct Drive with a mediocre one. Your desire to replace the Technics arm makes sense and an RB250 or 300 is about the only option. As you are aware, Origin Live offer tuned up versions if you want something better than the standard item.

The Denon DL103 cartridge has an ardent following we find, so you may well be best advised to stay with it and listen to a few alternative phono stages, as this item affects LP sound quality greatly.

In a nutshell then, I suggest you simply tune up what you have and enjoy the music. My 'Déjà vu' wore out long ago, alongside Yes, King Crimson, Deep Purple and all those other quintessential seventies acts. Amazingly vinyl is reappearing and someone like Darkness on LP isn't dissimilar.

NK

Hi Garnet – spot bloody on, my friend. It was technically quite right for seventies hi-fi hacks to point out the problems of DD, which is the servo hunting. But what they forgot to mention was the problems of belt drive, which was the pliant rubber belt acting as a clutch (or more specifically, a continuously variable transmission a la DAF Variomatic cars). Put a load on a DD and the servo sends more juice to the motor for it to get back to the right speed; do the same with belt drive and the belt flexes and the platter slows down. I suspect a lot of this was from certain 'key players' in the Brit belt drive camp, and it was disingenuous – they must surely have known that belt drive was also flawed?

The results you can hear for yourself today; DDs sound tighter and more speed stable, even against massively expensive high end belt drives. Noel's right to say though that although the DD system was fundamentally superior, most came with rubbish tonearms and tragic acoustic isolation, and so managed to spoil the ship for a hap' orth of tar. Fun and games! So my advice is – get an Origin Live Silver mounted to your Technics, fit a Goldring GI042, SDS Isoplatmat and isolate it on a Base SP01. I'm sure owners of £10k superfi belt drive turntables won't like to hear this, but you'll be gobsmacked... Re: the great Denon debate – buy next month's issue! **DP**

STAND AND DELIVER

I currently own a Linn active system, comprising Linn LP12 (fully up to date), old style Lingo power supply, Ittok LVII (silver), Klyde moving coil cartridge, Linto phono stage, Wakonda preamp, LK140 x 3 Aktiv power amplifiers, Pekin



Linn Ittok arm - not easily bettered.

tuner, Karik MkIII Numerik Keilidhs and Kustone stands, Linn triwire cable & interconnects

I intend changing or selling almost the entire system (except the tape decks) due to a house move, retirement, consequent downsizing and a wish for a simpler approach overall; despite being very happy with the sound, it is time now to move on.

The sale of the above will assist in the purchase of new items and may give

you an idea as to approximate budget, but I am pretty flexible - as music is very important to my partner and I.

I will however, need a record deck capable of taking two arms to accommodate a very large collection of pristine LPs, as well as a growing number of collectables from car boots sales, etc. that have seen considerable abuse and are currently played in another room on another cheapo Dual deck.

An amp with inputs sufficient for the record deck without constantly pulling leads, plus for CD, tape (Nakamichi DR-10 cassette & Akai 630D reel to reel can share if need be but are essential as I have abundant software), MiniDisc, aux/video/DVD and tuner, a spare Denon that I have TU-260L II should suffice for now until the FM/DAB debate is over. So we need seven inputs in total - unless the phonos can somehow be switchable. I would probably anticipate using offboard phono stages into line inputs (but am open to any suggestions) and possibly only moving magnets for both arms, to permit cost-effective stylus replacements in my old age.

I therefore need some thoughts on replacements: specifically the record deck/arms/cartridges which will be wall mounted, phonostage(s), CD, one box integrated amplifier and speakers. I hold no prejudices regarding make/origin, valves/solid state. Speakers need to be stand mount only and placed very close to rear walls for space and aesthetics. The new room is sprung boards by the way.

I listen to all manner of pop, contemporary, new country (no really hard rock though) and a clear, sweet sound with good quality bass is important, as well as adequate volume. The Linn rhythm trick is important and

sold the last set up to me (although it grew gradually from a much more basic system).

Mark Eley

I would be tempted not to replace the Linn front end, but you could try a Rega with Goldring cartridge to replace the Dual and see how you get along with it. If this is acceptable to you, then you could use it as a Linn replacement (a lot of readers

will wince at this!). An external phono stage feeding an Aux input solves the problem of having two decks, switchable. Two arms on one deck isn't really practicable.

For loudspeakers listen to KEF iQ5s, which are for small-ish rooms and near-wall positioning. I don't count the inputs on amplifiers so am a bit lost on this matter, but most Japanese amps have plenty, plus a phono stage. Or look at what Arcam and Cambridge offer. **NK**

Hi Mark – sorry to be a drag, but basically you're going to struggle to comprehensively better some parts of your system, such as the Pekin tuner and LP12, without spending lots of money. Still, here goes: I'd retain your Sondek, Ittok and Linto, fitting an Ortofon Kontrapunkt B instead of your Klyde cartridge; your

and full remote control. Its punchy sound is infectious, and you'll find it wonderfully musical – many will never need more.

DP

COMFORT ZONE

Regarding the new Copland 405, will you be doing a test report on it sometime? Wondering if it would be advisable for my system as an upgrade, if I don't do anything else? Or should I just keep on buying more software (used LPs) and just enjoy my 'pipe and slipper' system which consists of the following: Thorens 125/Rega300/Dynavector 10x4 Mk2, Quad 44 preamplifier, 306 power/405-II power amp, Quad 63s with Gradient subwoofers. Musical tastes – mostly classical with emphasis on choral music.

Joe Wdowiak
Canada



Acoustic Energy AE-1 Classic – the rhythm divine.

notion of two arms is unrealistic; there are no affordable decks that offer this, as Noel says. If playing poorly records is the worry, then opt instead for a Goldring G1042 cartridge, and invest in a 1006 stylus for moments when you play old discs. The other (better) option is to buy a decent professional record cleaning machine, such as the Loricraft...

The amp/speaker combination is critical, which is why I'd counsel a pair of Acoustic Energy AE-1 Classics with Partington Dreadnought stands (£1,000 all in), which have all the rhythmic bounce you could ever wish for – they're a riot to listen to – and smooth and clean too. You'll need a serious integrated to drive them; if the budget is tight, Onkyo's A-9755 is brilliant at £700, and has a host of inputs. It has a big, smooth, powerful sound and will drive the AE1s with ease. If you have more cash, Audio Research's VSi55 (£3,000) is a sublime high power valve integrated with plenty of inputs

The upgrade you need is a pair of Quad II-fortys, Joe, with QC Twenty Four preamp. This uses KT88s in push-pull, just like the Copland, but it is designed by tubemeister Andy Grove and has thermionic rectification courtesy of 5U4Gs. This amplifier is perfect for ESL-63s of course, as it is for most else. The Quad is as good as it gets for KT88 based tube amps. You will need an

external phono stage though, as Quad haven't finalised their internal valve stage. **NK**

CDs IN OZ

I thoroughly enjoyed your May article – I have the MA Radius 90s (and a Legend Kurlette sub-Aussie brand) and will add the Brio soon. However, I am a CD listener, mainly Pop/Rock with a large, bright room. I will audition the Rotel RCD-06 when it arrives here. Are there any other CD players that you recommend I audition – or am I barking up the wrong tree altogether with the MAs and Brio, considering your system was for vinyl. Any advice would be greatly appreciated.

James Sedgwick
Australia

You're pretty close... A look at this month's group test shows that the Rega Apollo/Brio 3 is a seminal combination – and it should (just about) drive the MAs, now the Brio has gained a few watts per side. The Apollo is a fantastic £500 silver disc spinner; it's very musical and works famously with the new Brio. **DP**

AWFULLY VERSATILE

I can't help noticing that my cheapo DVD player, when playing back live bands, gets everything (especially the top end) pretty much spot on. I also can't help noticing that every CD player I've heard (admittedly mostly budget models, but all of them costing a darn sight more than my DVD player) is incapable of delivering an accurate top end – I'm thinking mainly anything to do with drumsticks hitting cymbals. Okay, CD players outside my budget might actually be getting it right in that area, but instead of ever more humongously expensive CD players trying to tease out what hides within a CD, why not have the music on a DVD in the first place, and have it played back on an inexpensive dedicated audio DVD player which, if my theory is correct, would have no problem in delivering excellent sound quality. Wouldn't it be relatively



QUAD II-forty and QC twenty four preamp.

easy to begin by releasing music albums on both CD and DVD until DVD takes over, and surely the best DVD players wouldn't need to be prohibitively expensive, allowing us mortals to enjoy sublime musical accuracy.

My present CD player, by the way, is the much acclaimed Cambridge Azur 640c Mk2 - yes, I fell for the hype. Okay, it does create a bit more space between the instruments and doesn't

is where its digital coding system, PCM, is most ragged (i.e. riddled with distortion) - this puts it right in the most sensitive area of human hearing. Even DAT's 48kHz sampling frequency lifts the ragged area a bit higher up the range, where the ear is less sensitive. By 96kHz (most DVD-A), PCM's nasties are comfortably out of the range of human hearing, but it's even smoother and cleaner with

have my TEAC checked over by NSS Ltd and I will then get the clock mod. which you recommended for the T1. Once this has been done I want to upgrade my DAC (to one with the above mentioned balanced XLR/EBU outputs). As this is likely to be my last CD replay chain purchase, my budget is in the range of £1,500-£2,000. You recommended the Net Audio Sonance DAC to Fred Straw and approved of the Musical Fidelity Tri-Vista 21 in the case of Dave Meyer. If my memory is correct, neither have balanced XLR/EBU outputs.

Over the last two years four of your DAC reviews interested me enough to encourage me to want to listen to the equipment with my TEAC transport. They were the Stello preamp/DAC - which I believe is temporarily withdrawn from sale - Chord DAC 64 - North Star Design Extremo DAC - TT Fulcrum DAC 64 (I realise you reviewed the CD player.). All four of these are available with balanced XLR/EBU outputs and three are very flexible in respect of digital inputs.

As you may realise, it is impossible to listen to all four in the same set up at one dealer and almost as unlikely that they can replicate the amplifier / speaker set-up. I have managed to locate one dealer who stocks the Stello and the Chord. (Given the distance to this dealer this journey will require a long day trip).

However good my memory I am unlikely to be able to juggle the memory of the soundscapes the respective DACs "paint". This inevitably means reducing the number of choices so that my memory can cope. I only listen to classical and acoustic jazz music. Judging by your reviews, and taking flexibility into account, I believe I should concentrate on listening to the North Star Design Extremo DAC and the TT Fulcrum DAC 64 (which also has the advantage of a valve analogue output). I would appreciate any advice you may wish to give.

Daniel

I am a fan of Chord's DAC64 and Tube Technology's DACs, both of which use Rob Watts' WTA filter. Mr Watts was also responsible for



DVD-Audio – a shame the world wouldn't listen...

clog up quite so much as my previous players when there's a lot going on, but it's still not delivering the goods in the top end. I used to play drums (after a fashion), so I'm going to give myself the benefit of the doubt that I know what cymbals should sound like when hit with a stick. Okay, I've run me flag up the pole - anybody going to salute?

Steve Marron

Good point Steve and one I understand and agree with. Yes, CD just goes "clank" when a drummer hits those things: it's so bad it's embarrassing. However, I am not so sure this is all down to CD so much as the recording on it. Some modern CDs don't sound so bad here, at least when listening through a good player. I don't spend so much time with DVD-A as it generally sounds as sterile as CD, but more so. SACD is another bag altogether and far more like it, as many readers and enthusiasts I know insist. But with Blu-Ray and HD-DVD on the horizon it's all change on this front in any case. Pity that it means we will likely see the end of Direct Stream Digital on SACD, as Blu-Ray does not support it. **NK**

Agreed – even ultra-high end CD players such as the Naim CD555 I tested last month, don't do treble or upper mid-band as well as a decent DVD player playing anything above 16bit, 44.1kHz CDs. Even 16/48 (as used on DAT and lots of DVD soundtracks) sounds far, far cleaner. This is because CD tails off at 22kHz (max) and the top one third of this

192kHz recordings. This is precisely why DVD-Audio was born (i.e. 24b/192), but unfortunately the music industry managed to accidentally stop anyone buying them... **DP**

DAC'S ENTERTAINMENT

I have been reading your correspondence with Dave Meyer and Fred Straw regarding TEAC transports and possible matching DACs with interest.

My current CD playing set-up is as follows TEAC VRDS P-700 transport, DPA Bigger Bit DAC, Music Fidelity X-10 V3 (with X10-PSUV3), Krell KV-400xi amplifier, Castle Howard S2s. The cabling is of similar quality including Nordost speaker cables. I need to reclaim one of my limited number of Krell inputs for a phono amp, so it is essential that I connect my CD player set up to the balanced XLR/EBU Krell inputs.

As my previous set-up was based around a Denon DCD3300 II, which I used as a transport as it got longer in the tooth, this is a good chance to clean up the number of boxes (and cabling) on the equipment rack. I am about to



Stello's DP200 – a cracking DAC/preamplifier.

your Bigger Bit, another DAC we always respected. As I remember it, the Bigger Bit has a brighter sound than either the latter. I found TT's CD player a bit fruity and the Chord DAC somewhat more balanced in presentation. I do not know the North Star. **NK**

Yes, I'd say it's a toss-up between the Stello and the Chord. I've had extensive experience of both and love them. The Chord has an extremely beguiling, analogue-like sound that's just a tad rolled off up top, while the Stello's far more open and extended, but sounds just a tad less natural and bit more 'hi-fi'. Either is a brilliant choice, and it's your call as you know which presentation you prefer better than we! So make that long trip to your dealer, it's worth it. **DP**

THE CURE?

I feel I've taken huge strides towards the sound I want, and with the right source material my system now sounds (to my uneducated ears anyway!) quite fantastic, but there are still a few areas I want to address. Room size is a big limiting factor - just 13' x 10', with the speakers on the long wall, but at least I do have a dedicated listening room and don't have to share with a TV. Musical tastes are varied but blues and prog rock are most often played.

My system was a Linn Sondek LPI 2/Akito/K9/Lingo, Audiolab 8000A, Linn Index IIs with Kustone Stands and Linn Mimik. Bought in 1992 this has given good service but gradually I had become very dissatisfied with it due to what I perceived to be a poorly integrated, harsh and sibilant sound with little bass. Whether this creeping dissatisfaction was due to my hearing changing as I got older, my room having changed, more time spent with the system as the family grew up or what, I don't

know, but I had stopped listening to CD altogether and even vinyl left a lot to be desired, so when cash became available I started to upgrade...

On the vinyl side I upgraded the cartridge to a Dynavector 10X5. I know this is one you've often recommended and my local Linn dealer also suggested it. Anyhow, I have never spent £300 better. It was a huge improvement. I was struck not only by the tonal improvement but also the tremendous decrease in surface noise, the vastly improved imaging and the space around instruments.

However, I'm greedy for more and I want to upgrade further. My LPI 2 sits on a rather massive wooden structure which also houses the electronics. I know this is not recommended, but room size dictates that a separate turntable stand is not practical. I was therefore thinking about adding a Trampolinn baseboard, but the Linn dealer was not keen, instead trying to persuade me to buy the Circus upgrade. What are your thoughts here? Are either or both of these upgrades worthwhile; would my money be better spent on upgrading the tonearm or even another cartridge upgrade, or is it time I moved on from the Linn? I do like the warm sound it produces but I realise that sound is

coloured and I have often seen the Sondek described as "off the pace" in recent years.

I changed the Audiolab amp for a Shanling STP-80 and, as I now needed a phono stage, I also bought a Trichord Dino. For a short time while I waited for delivery of the Shanling I had the Dino connected to an auxiliary input on the Audiolab. I was disappointed to find that although the Audiolab's phono stage was noisier, to my ears tonally it was preferable to the Dino. I've found auditioning phono stages difficult, as all the dealers near me stock only one model other than the ubiquitous Project Phono Box, so making direct comparisons is impossible. Should I stick with the Trichord and upgrade the PSU or trade it in for something else? What would you recommend with a budget of around £500?

My CD player has been replaced with an Eastern Electric MiniMax. I listened to a number of CD players and had begun to despair of finding one I really liked. I was impressed by the imaging and spatial characteristics of the Musical Fidelity 3.5 (though strangely not the 5). I listened to the Meridian G08 expecting to like it, but the sound just grated. Naim I found very "ho hum" ordinary, and the same



Eastern Electric Minimax - a revelation.

STAMFORD
AUDIO

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with Arcam. I was close to buying a Shanling CDT-100 which was the best I'd heard so far when I read your review of the MiniMax and decided to take up Shadow Audio's 30 day money back offer. What a revelation! I can only describe it as being as close to the sound of vinyl as Red Book CD is ever likely to get. With well-recorded CDs the sound, to my ears, exceeds anything I ever thought possible from CD.

Unfortunately, my one tube-rolling experiment so far has failed to improve on the stock valves. I acted on DP's recommendation to try NOS Mullard tubes but was not impressed, finding the sound rather "veiled" - if throwing a wet blanket over the speakers can be described as "veiled" that is! I'm using Van Den Hul "The Name" interconnects and although I don't feel any real need to improve on these (and I'm fairly sceptical about cables in general) I wonder if you think them adequate?

My speakers have, as a stopgap solution, been changed for Linn Keilidhs. I liked these when I bought the Indexes, but couldn't afford them at the time. Anyway, I saw a pair in nice condition with Kustone plinths for a bargain price and as my funds had been temporarily exhausted on the electronics I decided to take the plunge. They work surprisingly well with the Shanling amp and are a big improvement on the Indexes. Bass is much tighter and there is more of it. Integration across the frequency ranges is better and the sound overall much smoother, presumably because of better cabinet construction. Initially I was using QED 79-strand copper cable. I bought some Linn K400 biwire but was not impressed so I went back to the QED. What would you recommend to improve this area? I do intend at some time soon to upgrade the speakers further and wonder what you would suggest with a planned budget of between £1,000 and £1,500. The speakers must be usable close to a rear wall. Perhaps I should just keep the Keilidhs and upgrade the tweeters to those from the Ninkal Katan which I have heard is worthwhile - do you have any experience of this modification?

The one area I still consider a problem is vocal sibilance, both on CD and vinyl. The system does not introduce it but simply reproduces it when it is present in the recording, though it does nothing to smooth or mask it. Is this the price I have to pay for transparency and detail or can I do something about it? When I demo'd the amplifier I heard it with Monitor Audio Silver RS8 speakers and this combination seemed to keep sibilance under control rather well. Some people have suggested I improve my cables, others that I introduce a mains conditioner.

What are your thoughts on mains



Monitor Audio RS8s - light and bright.

filters? I don't think I have a particular issue there as I don't hear any clicks or pops and I have heard that they can limit transient performance, which I don't want to do as that is one area where the Shanling amp excels. Should I just accept this for now and hope to address it when I change loudspeakers? Is the problem perhaps just down to my being too close to the speakers because of the small room? I have experimented with toe-in and tried introducing some more soft material in the form of a wall hanging and curtain over the door and whilst this has helped a little it is not a cure. I hope you can help cure my problems.

Phil Cowley

Oh my gawd... this is another 'how long is a piece of string' one! First, you were right to have junked the K9; as its name suggests, it's a dog, and any half decent modern cartridge kills it. When will people stop thinking everything Linn ever made was the best? The truth is that some things that Linn made were the best, but not all. The Linn LP12 is a case in point; I've still never heard a more musical machine, but it's way behind in so many other respects - imaging, soundstaging, bass evenness and clarity, treble extension, etc. You've got to decide if you want a system voiced towards that overt LP12 musicality, or you want insight and clarity - you can't have both with your Sondek I'm afraid. If you want the former, get an Origin Live

Silver fitted (£600) and you'll love it; if not the get a Michell Orbe SE (£2,200) and you'll love it. If you go for the former, a Cirkus is far more worthwhile than a Trampolinn base; if you want to isolate your LP12 then an Audiophile Furniture Base SP01 is brilliant at under £100 (and it works wonders on the Michell too). The Dino is excellent at the price, but these days is troubled by Graham Slee's ERA V, whose main problem is that it's MM only. Fortunately, your Dynavector is high output, so should give great results with an ERA V; pound for pound the latter is more musically beguiling and richer too - it's only when you're using MCs that this loses out on value, as you have to buy yourself an Elevator.

The Mullard tubes are superior by a mile, but in your system that additional richness obviously doesn't work, and a thinner, lighter sound is preferable; fair enough - but if you ever get into the realms of truly high resolution systems, I suspect you'll go back to the Mullards, so don't bin them! I'd recommend Black Rhodium Tango loudspeaker cables; they're the most musical £15 per metre on the market and will flatter the Linn speakers' rather dry tonality. Leave mains conditioners for another day; next on your list should be a serious amplifier (I don't regard the Shanling to be such); these start at £1,000 in the shape of Sugden's A21a, but you'll have to buy more efficient speakers like Revolver RW45is (£1,200) to get

it to go louder than a shy mouse with problems expressing his emotions. **DP**

I cannot comment on all your problems Phil, as I don't have the necessary answers. Phono stage quality becomes a crucial issue once you move above everyday items and sound quality varies widely - and often distressingly, as you have found. If you like the presentation of the Shanling, try a valve phono stage. Or try the Aqvox 2CI which is very flexible and both easy going and spacious in its sound. I liked it.

On the matter of sibilance I am surprised you found there was no sibilance with the Monitor Audio RS8s, as this I found recently is one brightly balanced loudspeaker. It suggests your Keilidhs are the cause of the problem, due to their forward sounding tweeters. If you liked the RS8s, then try auditioning the new GS60s if you can. They are far more civil but also more revealing. Whilst big floorstanders are not ideal for a small room, the GS60s have well damped bass. At less cost are KEF's iQ5s. They are suitable for near wall use, for small rooms and for valve amps.

I'm interested to hear about your experiences, but you don't say how the change from Audiolab to Shanling amplifier - a large step - went. **NK**

THE CHINESE WAY

Since sending you the email about finding 6n6t valves for a MeiXing 67ha preamp I thought it might be of some help to your readers that I was able to find these valves for sale in China. It's very simple, add the translate keys [Chinese] and you can order as many as you like from most of the audio shops in China. Paying can be a problem as they don't like Paypal on ebay and you can't pay via the Post Office as they accept transactions anywhere in the world except China. The most common way to pay is through Bank of China, but be prepared - you will require every little bit of information; I was even asked for the town they lived in.

Jonathan Heyes

I'm glad you succeeded in buying those valves Jonathan. I'm sure readers will be interested in how you managed it as this is a difficulty with buying from China direct. I do not understand what you mean by



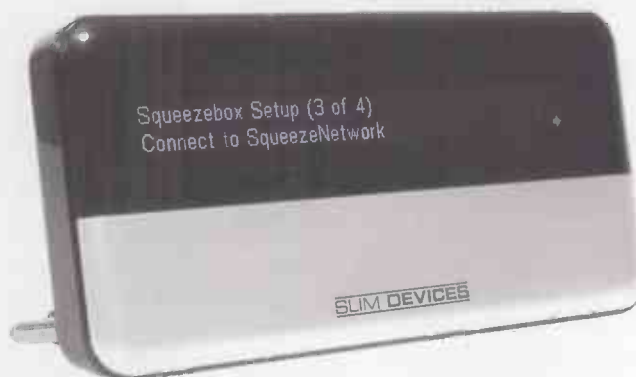
Bank Of China - er, yes!

"add the translate keys" but I suspect others will. Sites like AltaVista have translation mechanisms, in this case BabelFish, which can aid overseas transactions. **NK**

ON THE RADIO

I bought the August 2006 issue and read it with great interest. I do a lot of radio listening and I wanted to know more about what is going on. This issue really helped me.

Some comments however: all *Magnum Dynalab FM tuners can be bought with solid-state outputs at a lower price. This should have been mentioned and I would have liked to see a comparison. I do not automatically*



Slim Squeezebox - internet radio.

assume that tubes are better, as some do. I would also like to suggest a look at Germany, where a lot of regions seem to have good DAB reception (see *Audio, Stereo, Stereoplay*). I have not been in the UK lately, so I assume that your criticism of the BBC and other radio stations is correct.

On the same matter: what happens in the USA, Korea, Australia with digital radio? How about satellite radio with a dish, its quality and the number of stations?

As for me, I have ordered the Denon TU-1500 (black version). In my apartment I have a contact in the wall that is controlled by a cable company. I cannot even control which cable company, because this is regulated collectively for a whole block of

apartments. I am on the ground floor, so my own antenna would not take in much.

Some general comments: I prefer equipment that switches on in five seconds and gives me music. Waiting one minute for start-up of an operating system and having to worry about updates and virus protection is unacceptable for me. Also, computers use a lot of energy, much more than a solid state tuner, something important in these days of increasing energy prices. So I agree with your editorial board that the computer can not completely replace hi-fi separates.

I like your philosophy of respect for the oldies. Some old classics are really unbeatable and can hold out very long with minimal maintenance. Some other UK magazines seem to think that only the latest can do: the Kleenex philosophy.

Paul Geladi
Sweden

It's funny you should mention DAB in Germany, because, as I write this, only yesterday the body representing the German commercial radio industry released a statement that said: "The "classic" DAB system should be either modernised or switched off". Instead they want to

use the modern DVB-H and T-DMB systems for digital radio. There's also been similar disquiet about using the current DAB system in France, Sweden, The Netherlands, Canada, Australia and Finland. The problem is that the DAB system uses the prehistoric MP2 audio codec, and everybody now wants to use the AAC+ codec instead, because it is far more efficient.

In fact, of the other countries you mention, Australia has already committed to using AAC+ on DAB, and it was South Korea that developed the T-DMB system T-DMB is actually just a modernised version of DAB that was designed for mobile TV transmission, but it also uses the AAC+ codec, so it can be used for

digital radio as well.

The U.S. has gone in a totally different direction to the rest of the world, however, and it has two subscription-based satellite digital radio systems, XM and Sirius, which already have 11.5 million subscribers between them. They're also using a different terrestrial digital radio system to everybody else, called HD Radio, which stands for High Definition Radio, but if some of the plans I've seen for it are true it will be more like UK DAB-definition than hi-def.

By the way, you can already buy devices that allow you to receive Internet radio without having your PC on, for example the Slim Squeezebox. And although the Internet isn't the simplest way to receive radio, I think it will become the highest quality source of radio over the next few years, so, personally, I'm willing to put up with its slight drawbacks.

On the energy issue, I'd be far more inclined to do my bit for the environment if the UK government could be bothered to get strict with the consumer electronics giants over the issue of standby power, which wastes scandalous amounts of electricity. **SG**

On that last point, I recommend using valves; you have to switch them off when you've finished listening or [a] your listening room reaches 4,000 degrees centigrade or [b] it catches fire. **DP**

THE RIGHT STUFF

I feel it worthwhile to comment on your interesting article on the run p57 in Sept issue of Hi-Fi World. The lines that I particularly refer to are "Now some seventeen years later, I find myself with a system that's probably the closest to how I remember that eighties set-up,

but which is in absolute terms massively better. I love it and I'm always seduced by it, but I still don't get as thrilled by it as my old Linn/ Naim combo."

There came a point six months ago when I realised that I wasn't experi-

encing quite the same richness and spinning quality in tracks that I remembered some twenty years or so ago. Now I know for a fact that my system is an awful lot better than the one on which I was so captivated by when younger. Some people might say that mains pollution/ radio wave increase or any number of things is affecting the ability of my hi-fi to perform as it used to, but the explanation is a bit closer to home. I believe it's absolutely

nothing to do with the hi-fi but that I have changed. Age affects us. Our physical abilities and senses decline ever so gradually over the years. The most sensitive of all senses is probably the ear and the pleasure centres in the brain that perceive it.

In spite of the above, I have been recently surprised at seemingly unrelated ways of improving matters significantly. A while ago I was starting to suffer from regular headaches and lack of sleep. By simply cutting out most tea coffee and drinking loads of water the headaches

and insomnia disappeared. However, I also noticed that my enjoyment of music was dramatically improved. Listening pleasure is not just about the quality of the airwaves but the quality of neuron activity in the body.

Glass of wine helps.



Some years ago there was an article in one of the magazines that had done some research into listening ability as it related to blind listening tests. The conclusion was that coffee adversely affected listening ability whereas one glass of wine (but no more) improved matters. I would lastly mention that I have a suspicion that mobile phones mess with the ears neuron activity and personally because of the critical influence that hearing has in designing products, I hardly ever use them.

There's probably any number of

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things one could factor into explaining the very honest comments in your article and I expect it has provoked a good number of responses like if your Linn/ Naim combo was so thrilling why aren't you still listening to it?

Mark Baker

Those are imaginative reasons for having a glass of what you fancy late at night whilst listening, and keeping away from infernal contraptions like mobile phones. I'm sure a lot of us agree with you, Mark. **NK**

Hi Mark (eagle-eared readers will know this man knows a thing or three about making stunning tonearms). Actually I disagree; despite hitting the big 'four-O' recently, I am still at the peak of physical fitness (cough) and actually predict that I'll be even fitter when I'm even older than I am now, which is of course not very old (?). But seriously (if you pardon the Phil Collins album allusion), I think that the doe-eyed wonder at the world one has in one's twenties can be restored by several glasses (or indeed bottles) of wine, as opposed to your suggested one solitary, pathetic unit. Of course, if you're designing Origin Live tonearms you'd probably best stay sober, but as for me, I find I can revert to my 'Young Ones' student mentality quite easily with the simple addition of 'grog'. I know this to be a scientifically proven fact – and no mere subjective observation – as I've seen many hi-fi PR people display similar 'naïveté' after copious amounts of Bolly... **DP**

HEAR WE GO...

My deck is an Ariston RD80 fitted with Linn Basik arm and a cheap Goldring cartridge, Quad 33 and 303 amp and preamp, Wharfedale Diamond speakers. It all sounds quite nice, but I want to improve the system. Where is the place to start? I realise the deck has its limitations but I reckon its worth spending something to upgrade things and had assumed the tone arm and cartridge was the place to start. Any advice would be very welcome.

I breathed a small sigh of relief when I read your excellent feature article on digital audio in the June issue of HFW. Sure, its a shame that industry have once again presided over the wasteful mutually assured destruction of a new high fidelity format, but the upside is that I won't be splashing out on a new SACD/ DVD-Audio player, as I was about to do. For the moment I will stick with my records - the only high resolution format that can be attained for a \$1 a piece at your local flea market.



Quad 33 / 303 an old classic worth renovating.

On to an issue of a more philosophical nature. Ken Ishiwata's "Digital Dream" was interesting, although it raised some conceptual questions for me. Ishiwata imagines a coding system that allocates, quote "the required numbers of bits in accordance with the music's dynamics! For silence we don't need any bit allocation, do we?" I get the gist of this - that we don't need to store information when there is no information to store - but I was curious as to how we define musical dynamics and its codification into information. What is silence? And at what point will the dynamics of a given sound enable a higher or lower quantity of information to be stored? Whilst it is true that theoretical 'pure silence' contains no sound information, in reality silence within passages of music are rarely absent of sound. Anyone who has attended a concert will know that musical breaks within a piece also contain low level information, such as the breathing of the players, the echoed resonances of musical instruments, the buzz of amplifiers and inevitably, the creaks and groans from the audience. Certainly, some of my friends who are into experimental music (field recordings and the like) will say that passages of sound that are not dynamically speaking "loud" may be still rich in musical information, albeit at low levels or beyond the range of human hearing. We know that acknowledging the importance of this for music has been an important factor in the expanded frequency response of recent loudspeakers and components. Anyway, I don't mean to question Ishiwata, since he knows a good deal more on this topic than I could ever know. But I was left wondering (and I guess the same question may be asked of compression schemes), how do we reasonably determine what information to include, and what to leave out? This is an important question, particularly if future technological advancement in recording techniques could enable us to capture more, and hence improve our ability to hear recorded music in its fullest sense.

D. Wadiwel
Australia

In a nutshell, we don't know what the ear requires for the brain to register a sound as natural. Consequently it's a subject that raises debate through to argument, plus considerable research and experiment in the medical field and in telecoms, if not in the hi-fi business (believe it or not). Some of your fears are unfounded but others are real.

Allocating bits according to information is called a Variable Bit Rate system and is already in use. Audio, the earliest type of data to get digitised, remains locked into a relatively simple scheme known as Pulse Code Modulation, that uses a fixed bite rate. Data reduction ("compression") schemes throw away so called unnecessary data within PCM code, but VBR also leads to efficiencies. However, as data transmission systems, from disc to cable to wireless, gain capacity at a great rate, I am not sure concentrating a lot of effort on data reduction or variable bit rates is a pressing concern. At present, in the UK at least, broadcasters are besotted with the idea of variety, at the expense of all else - especially quality, be it sound quality or programme quality. This is likely to change in the next ten years or so as we all cable / wireless up and it becomes clear as to how many channels of info, or how much (multiplexed) info we really do need.. The UK, having been highly regulated, is really in a state of change here and as such, is behind the rest of the world - especially the USA.

All linear digital systems code into silence; PCM actually mutes at zero, so no problem here with low level signals, providing sufficient resolution is available which, with 24 bit it is. Data compression schemes such as mpeg 2, AAC and what have you are problematic here as they throw away info below a certain level on the basis that we cannot hear it, but at what level we cannot hear something will always be open to question and therefore approximate. William A Yost, of the Parnly

Hearing Institute (Loyola University, Chicago) notes that at 0dB, the lower threshold of hearing, the ear's tympanic membrane is "vibrating a total distance approximately equal to the diameter of a hydrogen atom". So in cosmic terms even, the ear is a pretty sensitive device, and as you say we are well advised not to remove low level information if this acuity is to be respected. All is not lost though, for SACD and DVD-A reach down to incredibly low levels, often below the Johnson (thermal) noise of downstream circuitry, as they theoretically possess 144dB of dynamic range below their 2V of output. Both Blu-Ray and HD-DVD offer the same dynamic range, but six channels of it. These transmission systems don't, in highest quality



GL75 - keeps on turning

form, delete low level information, so anything captured by a really high quality microphone should make it through to the loudspeakers. At present, we cannot expect the same quality from radio, TV or internet, but even modest 5:1 compression ratios are becoming possible here, enough to give a perceptible increase in quality over AAC and what have you. So the future looks bright.

SACD will inevitably fade away, but at present it offers greater dynamic range across the audio band than DVD-A and is the best digital music coding system I have heard, in the sense that it doesn't display the harshness we associate with digital. You might be able to pick up a good player second hand; discs are likely to remain available for many years yet.

Your system is an old classic. Go to www.net-audio.co.uk for Quad 33/303 upgrades, comprising new plug in boards. I regret parting with the 33/303 I once owned, as it was lovely to use. It wasn't up to the best sonically even in its day though (dull and fluffy), so you are well behind the times now. Component quality is a big issue with old Quad products as they never accepted at the time that resistors or capacitors had "a sound". This was an absurdity to

Peter Walker, I know from speaking to him. If you don't want to upgrade the 33/303s, sell them as the world is happy to re-cycle these products. A Cambridge Audio Azur 640A amplifier has an optional phono stage and is worth considering.

You do not say which Wharfedale Diamonds you own, but it's likely early models that could well be replaced with modern Wharfedales or KEF iQ Series floorstanders, or such like. Brit 'speakers are expensive in Australia I believe, but they are well designed and built true hi-fi products, rather than China cheapest, even though they're built in China!

An obvious cartridge upgrade is to a Goldring G1042. This will work well with the Cambridge and get you up and running in today's world! **NK**

ON THE BUSES...

During the same month you reviewed the Goldring Lenco GL99 classic deck, I came by a GL 75 in a shop for the princely sum of £45. After getting a back injury carting it home on the bus (I kid you not!), I put it down and gave it an inspection. My brother gave me some good tips, i.e. make sure the idler wheel didn't have a flat spot etc. The result was that the lid had been damaged at some point and the front right edge hung slightly low, not as a result of the bus ride, I had already noted this when I bought it. The deck itself was unmarked. No dirt marks on the brushed aluminium, mat in pristine condition, the arm had fingerprints on, but not scratches and would have polished up well. The cartridge head and pins were fine too. The lift arm worked smoothly. It came with a Shure M75MB cartridge and the needle still seemed fine. So, to operating the deck. I had dlled the manual from the web and found that the heavy bob weight was on it, the light one and setup equipment were not supplied. I followed the manual instructions (very poor, I must say) and found my main problem.

I am assuming you are aware of the construction of the armboard/arm lift mechanism for this model. I found it impossible to get the lift arm low

enough for the needle to track! Due to the arm resting in a channel, I could not just simply raise, or lower, the arm pillar. My brother found all the screws and no amount of adjustment could alleviate this problem. So we just took off the arm lift and - presto! - a working record deck. We did a quick set-up and played some vinyl. How great the sound was. The cartridge must have quite a high output, the NAD needing much less volume than either the P3 or Thorens decks my brother had lent me up to that time. So, I am now using the deck with no arm lift and it sounds good. I have acquired D. Gilmour's 'On An Island' on vinyl on Saturday last - scrumptious! Though I have to say, the clear vinyl single 'Smile' was dreadfully pressed and the shop let me order a replacement before I even left the shop.

I would like your thoughts on the conundrum with the deck please. I am pretty sure from web pics that the mat is original. My brother has offered to give me a second, thick mat to put on top to give enough height to replace the lift arm useably. Even in this rough and ready state (cartridge set at 1.5g) it plays a sound I really like. I felt it gave more bass and clearer, if not higher treble than the other decks, now I have listened to it some. Although not the top end item you reviewed, I am sure that when fettled, it will prove a surprisingly good player and will probably outlast me, the construction is so solid.

Paul Clewlow

I dimly remember the GL75 from many moons ago and it was good, but prone to rumble. I presume yours does not. Cartridges were mounted on spacers to cure the problem of insufficient height. Shure's M75MB was also a good 'un in its day, with big bass and plenty of output I recall. The stylus wasn't so advanced however and I am sure a modern Fritz Geiger profile in a Goldring 1042 will be obviously superior. Have fun. **NK**

Agreed - plus the Sound Dead Steel Isoplatmat, which is a brilliant upgrade to almost any turntable; it takes out the zing from poor platters and cuts noise from motors right down... **DP**



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Sound had reached a pretty good standard some time ago, and it's easy to pretend that picture quality is less important, and indeed for some time I have been advocating the greater importance of sound, as if that's not right you won't enjoy what you are watching, whereas the opposite isn't always true. But that was before High Definition, and although DVD has to get it's act together, we do now have HD from Sky, and pretty spectacular it can be. Some of the programmes on HD channels aren't HD, but the BBC demo channel, with Bleak House/ Hannibal/ Galapagos / Jools Holland etc., looks really good, especially when blown up onto an 8ft. screen. It will be great having opera, ballet and music programmes looking so good that the enjoyment of the picture can equal that of the music!. So with projectors getting so cheap now that you can set up a projector/screen setup for around £2.5K, which is what a 42in. plasma will cost, there really is no excuse for looking at this option. The picture is more natural, and size really does matter! So do give us a ring and let us show you what can be achieved today.

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Technics ST-610L Tuner (FM/AM/LW)	£85

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Transparent Music Wave + 10-ft pair	£425
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Linn LP12/Basic + Armi/K9 cartridge	£245
Kinshaw Perception phono stage with power supply	£350
My Sonic Eminent (EX review)	£1995
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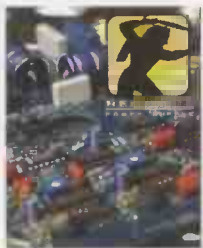


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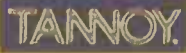
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I have the following items for sale. This is an assortment of ex demonstration (ED) or secondhand (SH) equipment. Most of the ex dem pieces will carry a warranty and are generally in pretty much as new condition. Secondhand items too are generally in as new condition. Please call to ascertain exact details. Unless otherwise stated items will be in original manufacturers packaging. If an item needs to be sent then the carriage costs will be borne by the buyer.

1. Tannoy Dimension 12 loudspeakers. Cherry. ED. Virtually unused. £4500.
2. Innersound Eros 111 semi-active hybrid Electrostatic speakers. Maple side cheeks. Complete with 600 watt bass amp. Brilliant, Brilliant speakers. ED. (New price £7500) £5000.
3. Sugden Masterclass AA mono blocks. 150 watts ClassA. Black. ED. £4500.
4. Sugden Masterclass pre amp. Black. ED. £1595.
5. Tom Evans Vibe line pre amp. ED. £2700.
6. Unison Research SR1 hybrid valve amp. ED. £975.
7. Complete Chord Choral system including rack. Comprises Blu cd transport, DAC 64, Prima pre amp and Mezzo 50 power amp. Silver. ED. (Price new £11935) £8750.
8. Chapter Audio Verse 11 (NOT Plus) power amp. ED. £2250.
9. Roksan Kandy KA-1 Mk 11 Integrated amp. ED. £225.
10. Roksan Caspian CD player. SH. Some minor marks. £450.
11. Densen Gizmo. Brand new in box. £125.
12. Moon i5 integrated amp. Black. No remote. Remotes are available separately from importer or me. ED. £1800.
13. LFD L51 linestage pre amp. Black. SH. No box. £375.
14. Plinius SA102 power amp. Black. ED. £2995.
15. Plinius M8 pre amp. Black. ED. £1600.
16. Red Rose Spirit amp. ED. £695.
17. Red Rose Rosette amp. ED. Brilliant -- especially partnered with R3 speakers. £1250.
18. Red Rose R3 speakers. Maple. SH. £1750.
19. Red Rose R3 speakers. Maple. ED. £1995.
20. Red Rose Rosebud 11 speakers. Piano Rosewood. ED. £2250.
21. Red Rose Spirit speakers. Rosewood. ED. £650.
22. Red Rose Spirit speakers. French Afromasia. SH. £700.
23. Proac Tablette 2000 speakers. Walnut. ED. £425.
24. Acoustic Energy Reference AE1 speakers. Gloss Black. With stands. ED. Very little use. £1850.
25. Musical Fidelity A3CR pre amp. Silver/Gold. ED. £650.
26. Musical Fidelity A300CR power amp. All Silver. ED (unused) £1500.
27. Consonance J5000 Plus 300B integrated valve amp. ED. £1095.
28. Consonance M100 Plus 300B integrated valve amp. ED. £1150.
29. Wadia 301 Mk 1 cd player. Variable output. Silver. ED. £2250.
30. Audio Synthesis Desire Decade power amp with Black Gate capacitor upgrade. ED. £2250.
31. Avid Diva turntable. No arm. ED. £975.
32. Audio Analogue Maestro. An absolute monster of an integrated amp. ED. £1995.
33. DNM 3B Twin 2 box pre amp. SH (Cost new £3000) £1350.
34. Exposure XX111 pre amp. New. £995.
35. Exposure XXV111 power amp. New. £995.
36. Exposure XX11 CD player. New. £995.
37. Consonance Cyber 50 valve line pre amp. Mahogany top. ED. £725.
38. Consonance Cyber 40 valve phono stage for m/m and m/c. Cherry top. ED. £650.
39. Living Voice Auditorium speakers. Cherry. Black plinths. ED. £1250.
40. Audia CD One cd player. Black/Silver. ED. £2750.
41. Audia Flight pre amp. Black/Silver. ED. £2750.
42. Audia Flight 50 power amp. Black/Silver. ED. £3000.
43. Vienna Acoustics Haydn speakers. Rosewood. ED. £400.
44. Vienna Acoustics Mozart speakers. Beech (one grille is broken) ED. £850.
45. Vienna Acoustics. Beethoven speakers. Black Ash. ED. £1500.
46. Anthony Gallo Reference 3 speakers. Black/Silver. ED. £1800.
47. Harbeth HL P3ES 11 speakers. Cherry. ED. £550.
48. Talk Electronics Thunder 3.1B cd player. Fixed output. Silver. ED. £1450.
49. Talk Electronics Hurricane 3.1B pre amp. Black. ED. £1350.
50. Talk Electronics Tornado 3.1B monoblock 200 watt power amps. Black. ED. £2150.
51. Veritas "20" speakers with matching stands. Piano Black. ED. £995.
52. Veritas H3 Floorstanding folded horn speakers. 102db sensitivity Gloss Black. ED. Paul Messenger rated these as one of his products of the year when he reviewed them (cost new £5995) No boxes. £3500.
53. Totem Model 1 speakers (not Signature version) Cherry. SH. £750.
54. Alon 1 speakers. Light Oak (cost new £1695) ED. £750.
55. Alon Petite loudspeakers. Walnut (cost new £1295) ED. £600.
56. Proac CCI Centre channel speaker. Mahogany. Slightly marked. ED. £350.
57. PS Audio P600 Multiwave mains regenerator. ED. £1995.
58. Audionote ANK/SpX speakers. Walnut. SH. £550.
59. Audionote AZOne speakers (the original design) Never used. £250.
60. Proac Response 1.5 speakers. Black Ash. ED. No boxes. £750.
61. Meadowlark Swift speakers. Light Oak. ED. £550.
62. Philosophy Audio Gold Series speaker cable. 5m Bi Wire terminated with banana plugs. This cable is one of the very very best. ED (Cost new £1875) £1200.
63. Musical Fidelity X-80. New. £275.
64. Musical Fidelity X-150. ED. Never used-displayed only. £450.
65. Wheaton Triplanar MkV11 tonearm. With fly lead terminated with RCA phono plugs. Brand new and unused. Complete with manual and gauges. £2750.
66. Pathos Logos hybrid valve amp. ED. £2150.
67. Musical fidelity M3 Nu Vista integrated amplifier with separate power supply. As new condition. Boxed. SH. £1750.
68. SME Model 30 with special order Silver V arm fitted with Micro Benz LP moving coil cartridge. Arm lead is Nordost Quattrofil. As new with all tools and crate. Two and a half years old. Little use. Previous owner buying house !!

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Audio Synthesis DAX Decade 22 Bit Single ended S/H	2999	1499	JM Lab Sib XL x5 Grey S/H	1000	499
Audio Research CD3 S/H	4999	2299	Martin Logan Aeon Oak S/H	3189	1749
Densen Beat400 XS x demo	2600	1749	Martin Logan Aeon I Oak BNIB	3189	2400
Krell SACD Standard x-demo	3998	2995	Martin Logan Clarity Cherry 4 months old S/H	2498	1899
Krell KPS20i/L CD/Processor S/H	14995	3999	Neat Ultimatum MF7 S/H	6999	3500
Meridian 206 CD Player S/H	N/A	379	PMC FB1+ Black new tweeter upgrade	1900	899
Meridian 200/203 Transport-DAC S/H	N/A	499	Pen Audio Rebel 2 x-demo	995	699
Musical Fidelity Nu Vista CR 3D Player S/H	2999	1699	Pen Audio Charm Active Subwoofer x-demo	1995	999
Orpheus labs One DAC with anagram x-demo	3150	1799	Sonus faber Ironwood Stands S/H	498	279
Orpheus labs Zero CD player x demo	4600	2999	Sonus Faber Leather Stands, fixed height, x-demo	310	199
Primare V10 CD/DVD Player x-demo	795	499	Spendor S3 Cherry S/H	599	379
Resolution Audio Opus21 Silver S/H	2995	1995	Spendor S5e Cherry S/H	1195	699
Sugden masterclass CD x demo	2700	1999			
Sony CDP X940 SACD Player S/H	549	249	Cables and Accessories		
Theta Generation V Balanced S/H	6290	1299	Atacama 50cm Sand filled stands S/H	179	69
Theta Pro Basic II DAC with Oscom/Balanced S/H	2990	695	Audio Note 2x5ft bi wired AN Spa Speaker cable S/H	599	299
Wadia 302 Black x-demo	4000	2999	Audio Note 1m ANVx AES/EBU balanced Digital S/H	165	99
			Cogan Hall Intermezzo EMD 0.75m RCA S/H	N/A	99
Analogue			Cardas Cross 1.5m RCA-RCA S/H	550	299
Crown Jewel Ltd Edition MC Cartridge 100hrs	2650	1499	Madrigal MDC1 1m AES/EBU 110ohm Digital Cable new boxed	420	249
Clearaudio Emotion TT package x-demo	655	499	NBS Pro Balanced 4ft interconnect S/H	1799	499
Conrad Johnson EV1 Phono stage x demo	1650	995	Nordost Shiva 2m mains cable x-demo	220	175
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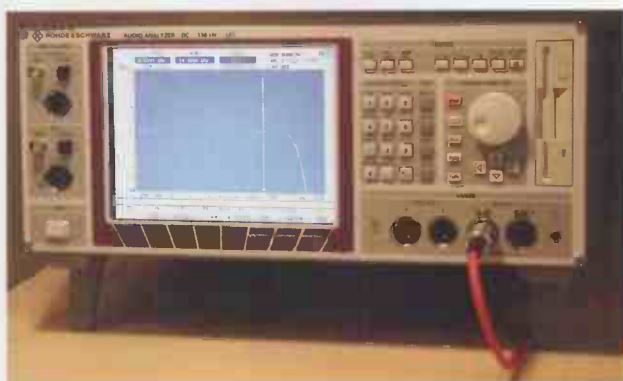
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In-house measurement is costly and time consuming, yet it has always been central to our belief that both readers and manufacturers deserve it, because there is no alternative if complex technologies are to properly assessed.

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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The reviewer is then given the results. This gives useful guidance on what to watch out for in listening tests. For example, if three CD players use the same chip set they may well sound much alike in their basic attributes, if not identical. This is useful information for a reviewer.



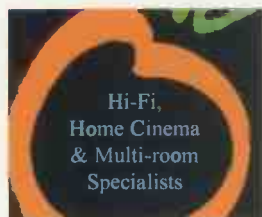
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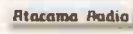
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- CROFT EL84 POWER-AMP £350
- AUDION SILVER NOTE ONE £2500
- RGD PX4 AMPS £2500
- YAOIN MS-12B Valve pre-amp with phono stage MC/MM £225
- CR Developments ROMULUS S881 [25watts] [£2995] £1250
- Audio Research VT60 £1250
- Eastern Electric Minimax pre-amp £769
- Eastern Electric Minimax power amp £989
- LECTOR valve hybrid, integrated, 50 watts, NEW £1050
- PATHOS Classic 1, integrated, as new £875
- Foundation Audio valve pre-amp/phono £325
- Aria Music Angle KT88 valve amp £625
- AUDIO NOTE OTO SE integrated £1899
- Eastern Electric M520 Integrated Amplifier - £1,539.00
- WORLD AUDIO EL34 power AMP £550
- Meixing MC67-HA Valve Tube Pre Amplifier £575
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- Audion Sterling MK1 EL34 £650
- Audion Sterling MKII EL34 £750
- Black Cat Electronics PX4 Valve, STEREO power amp [Lowthers/Tannoy] £2750
- Black Cat Electronics stunning Valve line stage/FETPhonostage/PREAMP £1250
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- ANTHEM XI EL 34 single ended stereo valve integrated amplifier £525
- BAT 3Ki, hybrid, phono stage, boxed £1400
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- LEAK STEREO 60 £875

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- MISTRAL integrated, black, warm but dynamic £2500
- LINX STRATOS VDH wired pre-amp dual-mono £225
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- QUAD 33/44 pre-amps, 303/306/405 power amps always available £1250
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- MYRAD CD10 boxed £215
- MYRAD CD20 boxed £295
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- DENON I03 CARTRIDGE £275
- THORENS TD125-SME 3009 ARM-John Morris SPIRALEX plinth-SHURE V15 £725
- 8850 MICHELL gyrodec SE £625
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- ORIGIN LIVE AURORA GOLD £419
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**WIN ONE OF THREE
PAIRS OF SUPERB AAD
C-550 FLOORSTANDING
LOUDSPEAKERS IN THIS
MONTH'S GREAT GIVEAWAY!**



This month, *Hi-Fi World* has no less than three pairs of AAD's superb C-550 floorstanding loudspeakers to give away! Yes, that's right, three lucky readers will be getting an early Christmas present - the chance to hear how great these things sound, which is exceptional for the asking price of £500 per pair! In September's *Hi-Fi World*, here's what Channa Vithana had to say:

"AAD (American Acoustic Development) may not be a household name here in the UK, but when you consider its founder and loudspeaker designer Phil Jones is behind it, then things start to get interesting. Phil Jones is probably most famous for designing the legendary AE1 mini monitor loudspeaker by Acoustic Energy. In 1998, he founded AAD which is based in St. Louis, Missouri. AAD design, test and manufacture all their cabinets and drive units in-house. For more information, see www.aadsound.com. The compact C-550 floorstanding model for review here is described as a 2.5 way design and comes in Cherry, Black or Maple vinyl finishes. Build is excellent as was the

flawless panel fit and material finish. Dimensions are 940x222x282mm and weight 18.5kg.

These loudspeakers have a distinct, and I think quite specialised, musical ability... It's this composure and couthness, allied to a powerful bass reproduction (as you might expect, considering who the designer is), and clear insight into instrumental and/or vocal quality which characterises them. Essentially then, they're like a pair of down-scaled studio monitors - they'll appeal to listeners who are highly critical of details, yet don't want to spend vast sums of money. Everything was tightly ordered and reproduced - from the individual instruments to the overall recorded acoustic. Instrumental separation was very good, and the timbre of each instrument excellent,

because there was finely detailed definition to du Pré's cello playing and the surrounding layering of the violins. Dynamic crescendos were handled with consummate control. Properly fettled however, you get an extremely couth and composed sound at the price; this is what will win the C-550s many friends. An audition is essential - these extremely accomplished loudspeakers are well worth a listen."

If you'd like to own one of the three pairs of AAD C-550s we have on offer, all you have to do is answer the following four easy questions. Send your entries by 29th September 2006 on a postcard to: **October 2006 Competition, Hi-Fi World Magazine, Unit G4, Argo House, The Park Business Centre, Kilburn Park Road, London NW6 5LF.**

RULES AND CONDITIONS OF ENTRY

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

QUESTIONS

[1] AAD WAS FOUNDED BY WHOM?

- [a] Phil Jones
- [b] Phil Collins
- [c] Phil Silvers
- [d] Prince Philip

[2] AAD STANDS FOR WHAT?

- [a] American Acoustic Development
- [b] Audio Acoustic Design
- [c] Actually Awesome Dude
- [d] Any Apples, Dear?

[3] WHEREABOUTS IS AAD BASED?

- [a] St. Louis, Missouri
- [b] Lewis, East Sussex
- [c] Lockerbie, Scotland
- [d] London, England

[4] CHANNA DESCRIBED THE C-550s AS "DOWNSCALED" WHAT?

- [a] studio monitors
- [b] horn loudspeakers
- [c] subwoofers
- [d] electrostatics

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

entries will be accepted on a postcard only

**JULY 2006 CREEK DESTINY CD PLAYER WINNER:
Stuart Rudd of Reading, Berkshire**



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Sovtek 5881	£12.49
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JJ EL34	£15.49
5U4G Russian	£9.94
GZ34 JJ	£16.99
5687 WB Philips NOS	£12.49
Svetlana 6N1P	£6.50
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by Morgan Jones £29.50

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Low ESR Al electrolytic £8.95

Bridge Rectifier 25A 700V
28.5mm x 7.5mm £3.25

private ads

Dealers must not advertise in the Private Classified section. Monthly consecutive insertions will be considered Trade advertising. The Publisher reserves the right to judge submissions.

WANTED: SHARP GF-555

Four band Stereo radio cassette recorder 1980's Double cassette decks offering £500.00 see conditions. Also Sharp RP 114 Vertical playing Linear tracking turntable. Offering £300.00 see conditions. Both must be in almost Mint/Excellent condition with no signs of wear/damage no scratches or cracks on plastic no missing parts and Fully Operational. E-mail fiskallen@aol.com or Telephone early evening: 01865 378 578. (Oct)

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WANTED: QED Speaker stands. Tel: 020 8262 7568 (evenings) (Nov)

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MONITOR AUDIO MD852

speakers, teak, immaculate, £70. Heybrook HB1 speakers, walnut, good condition. £45. Tel: Mike 07843 656 788 or 02920 531 304 (South Wales) (Oct)

KEF SPEAKERS Reference Four, new tweeters, black finish. One owner. Excellent condition. No boxes though! Need to hear but in North East Scotland. Offers around £1700. Tel: 01224 483 642 (evenings) (Oct)

MISSION 728 floorstanding speakers, rosewood, as new condition. Five star rating in What Hi-Fi. Awesome sound, £395. Tel: 01932 886 862 or 07723 378 012 (Oct)

BRYSTON 4NRB ST power amplifier, £1195. Bryston BP25 pre amplifier (MC phono stage), £795. XLO Signature AES/EBU interconnects (x2) 1m, £150 (boxed as new condition, 15 years warranty remains). Tel: 01636 830 944 or 07979 536 753 (Oct)

TEAC A-7300 Direct drive capstan I.C. logic control reel to reel + spare tape, £300. Nakamichi 1000 cassette £900. Audio Synthesis Dax Decade 2, remote control, £750. Tel: 01189 760 756 (Nov)

MATCHED PAIR EH 300B valves, gold grids, £80. Riverside P2 phono stage - valve, £180 ono. Goldring 1042 cartridge, as new, £90. Origin Live silver tonearm, vgc, £310. Thorens TD160 turntable £55. Naim CDX CD player, boxed, vgc, £825. Tel: 01492 516 875 (Oct)

WANTED: MISSION 770 loudspeakers, 1978+ vintage. Tel: 01843 843 145 (Oct)

NAIM SYSTEM CDS3 (CD).

Black Linn LP12, Aro, Armageddon, new Akito cartridge, NAP 500 power amplifier, 552 pre amplifier, Shahinian Hawk speakers. All as new. £25,000. Will split. Tel: 020 8524 2181 (Oct)

B&W NAUTILUS 802, 3 way floorstanding cherry speakers, Cyrus APA7 mono's + ACA7 + PSXR, Pioneer F504 RDS, Primare 30.2 CD, Rega Planar 25 with cartridge DV20X Lehman Audio Black Cube. All in excellent condition. For full details telephone 07779 142 961 or Email: myketyke@netbreeze.co.uk (Nov)

WANTED: BANG & Olufsen U70 stereo headphones. Must be in excellent/mint condition. Offering £180. Email: fiskallen@aol.com. com or telephone evenings 5pm - 9pm 01865 378 578 (Oxford) (Nov)

FOR SALE: Top of the range unwanted competition prize. Opus four zone multi room audio system. Retail £4200. Wanted £2000 ono. Tel: 0121 454 1893 or mobile 07791 749 921 (Birmingham) (Oct)

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KLIPSCH HERESY II speakers in walnut, 14 years old, v.g.c. £495 or £565 with matching stands. Also pair Quad ESL57 bronze c/w tilt-able custom stands £350. Tel: 07788 520 242 (Leeds) (Oct)

LINN IKEMI £950, Trivista 21 DAC £750, Talk Electronics Hurricane/Whirlwind pre with Tornado monoblocs £750, all good, prefer to demonstrate. Reason for sale; have gone all valve. Tel: Chris 01227 274005 (Kent) or E-Mail chris.iredale@btinternet.com (Nov)

MICHELL ORBE, Michell Iso phono stage. SME V. Cost £4000. Accept £1500. Theta Chroma DAC, cost £800, accept £250. All excellent. 300 Vinyls, all categories. Tel: Mike 020 7722 3748 or 07932 674 810 (London NW3) (Oct)

NEAT ACOUSTICS Ultimatum MF9 speakers, special piano black finish, immaculate. £5,750. Tel: 07852 265 721 (Oct)

CLASSIC HI-END HI-FI. Pioneer PD91 Reference CD Player, re-clocked by Trichord Research. Piano laquer Black with Polished Mahogany end cheeks. Exemplary condition, Instructions, Boxed £490.00 ono. Asemblage DAC 3, VGC, Vaish Caps, Black. £290.00 ovno. Tannoy ST200 Supertweeters in Oak, Exemplary, Boxed. complete with ST81C speaker cables £600.00 ovno. Emigrating. Tel: 01403 251935 or Email: John501hifiman@aol.com

FOR SALE: Rega Planet CD Player (Original style), plus Solar remote control. £130. Ruark Acoustics Epilogue Speakers (original speakers) and metallic stands £85. Contact Mark, E-mail MarkPMus@aol.com. Buyer collects, Hastings, East Sussex area. (Nov)

NAIM I12x. Purchased new in Oct. 04. Mint, boxed, remote, lead. Can Dem. Tel: 01273 85209 (Brighton) (Oct).



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SEAS T29CF001 £137.82
29mm Excel soft dome treble unit used in WD25 XL speaker kits

SEAS T25CF002 £161.09
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Set of four speaker floor spikes with matching M8 cabinet inserts

SONIQS M4x16mm £0.08

SONIQS M4x25mm £0.09

Hex Hd Nickel Plated wood screws

SONIQS PDC per metre £2.61
Heavy 6mm Bitumen Panel Damping Compound 50mm wide strip

SONIQS CDF per metre £1.49
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80ppi reticulated foam strip for Aperiodic port airflow resistance



SONIQS Polypropylene Caps

SONIQS capacitors are formed from high voltage polypropylene film and hand soldered using silver solder to copper leads. Construction and resin encapsulation has been formulated for optimum acoustic and electrical performance.

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PXX 3.3uF 250V £1.70

PXX 4.7uF 250V £2.06

PXX 5.6uF 250V £2.35

PXX 6.8uF 250V £2.66

PXX 8.2uF 250V £2.90

PXX 10uF 250V £3.18

PXX 12uF 250V £3.74

PXX 15uF 250V £5.03

PXX 18uF 250V £6.03

SAX 1.0uF 630V £2.40

SAX 1.5uF 630V £2.81

SAX 2.2uF 630V £3.17

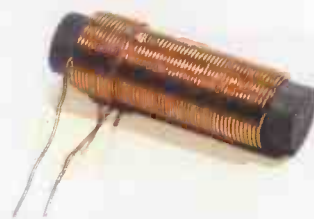
SAX 3.3uF 630V £4.19

SAX 4.7uF 630V £4.49

SAX 5.6uF 630V £5.28

SAX 6.8uF 630V £6.16

SAX 8.2uF 630V £6.93



SONIQS Ferrite Inductors

SONIQS coils are wound on high density 12.5mm dia. ferrite cores for high power handling and dynamic range. High purity copper 0.71mm wire heat bonded to reduce vibrational effects. Tolerance 5%. State value required when ordering.

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50mm core 1.1 - 2.5mH £3.98

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SONIQS air core coils utilise 0.56mm dia high purity copper wire on a rectangular bobbin that allows vertical and horizontal orientation to minimise coupling effects. Tolerance 5%. State value required when ordering.

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High Power resistors encapsulated in Vitreous Enamel to minimise vibrational effects. Tolerance 5%. State value when ordering.

3W 0.68 - 100 Ohms £0.99

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SONIQS TP1 panel £3.60

Bi-wireable terminal panel with gold plated connections allowing spade, bare wire and 4mm plugs. Plain Tufnol CCB circuit board also available to fit PCB slot at rear to allow component hard wiring.

SONIQS CCB board £1.49

trade ads

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VINYL LP's Wanted. Folk, Rock, Jazz, Blues, Reggae, Soul, Classical. Must be in excellent condition. See website for more information.
Phone:- 0845 094 1997
Lists:- tantrel@bigfoot.com
Website:-
<http://www.tantrel.com/>
(Mar07)

BRILLIANCE'S COMPREHENSIVE range of Hi-Fi and AV interconnects and speaker cables employ Teflon insulation throughout. HFW said 'Results way beyond those expected at the price'. Demonstration cables available. Contact Mike on 07963 117 341
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www.sugarbushrecords.com (Oct)

HIGH QUALITY Stereo Decoders available from stock. Replacement for existing Leak Troughlines etc. Full installation and modification services available. For more information contact E.F.G. (London) Ltd inc. E. Gane and Son Est 1948 on 020 8743 2727 (Oct)

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Website:
www.paulhynesdesign.com (Dec)

AUDIOPUBLIC, 78 Otley Road, Headingley, Leeds, 0113 217 7294. Yorkshire's newest Hi-Fi retailer, stockists of Naim Audio, Rega Research, Conrad Johnson, Sugden, Dynavector, (cartridges and amplifiers) and many more. Please call for advice. (Oct)

AMAZING CABLES! DIY or ready made solid silver interconnects, speaker cables and powercords, with world-class connectors. True high end performance at real-world prices. Sole UK agent for Voodoo Cable of Germany - www.voodoo-cable.com
Tel. 0115 982 5772 after 7pm,
Email bob@skydivers.co.uk (Jan)

FOR SERVICE, Repairs, Upgrades and Re-Manufacturing of all valve audio equipment. Leak Troughline specialists, re-aligned etc. For more information contact E.F.G. (London) Ltd inc. E. Gane and Son Est 1948 on 020 8743 2727 (Oct)

AUDIOPHILE OBJECTIVE for New, X-Display and Preowned Hi-Fi. Regular brands and some not so known. We're 5 miles south of Stansted airport in Sawbridgeworth. Free Parking. Tel: 01279 724 024. Hi-Fi Purchased. (Nov)

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CLASSIC CONTACTS

When a classic goes 'poof' your troubles have just started, but there may be a good ending. Replacing failing parts can improve the sound, so here is a short listing of all those companies who specialise in getting a classic up and running again after its deposited a small ring of soot on your ceiling!

CLASSIQUE SOUNDS
(Paul Greenfield, Leicester)
ESL-57s restored, rebuilt, fully renovated or Improved. Leak, Quad valves amps etc.
Tel: 0845 123 5137 / Mob: 0116 2835821 Email: classique_sounds@yahoo.co.uk
www.flashbacksales.co.uk/classique

AUDIOLAB
(Phil Pimblott, Leeds)
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www.sowter.co.uk

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Tel: 01584 823446

LOCKWOOD AUDIO
(London)
Tannoy loudspeaker parts, restoration and repair. Also Epos and TDL loudspeakers.
Tel: 020 8 864 8008
www.lockwoodaudio.co.uk

LORICRAFT AUDIO
(Terry O'Sullivan, Bucks)
Garrard 301/401 and their own 501 repair, spares and service.
Tel: 01488 72267
www.garrard501.com

GT AUDIO
(Graham Tricker, Bucks)
Leak Troughline specialists. Also Quad and most classic tuners, radios and amplifiers restored, repaired.
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www.gtaudio.com

QUAD ELECTROACOUSTICS
(Cambs)
Quad's service department, able to repair almost all Quad products, from the very first.
Tel: 0845 4580011
www.quad-hifi.co.uk

WEMBLEY LOUDSPEAKER
(Paul MacCallam, London)
Comprehensive loudspeaker servicing.
Tel: 020 8 743 4567
Email: paul@wembleyloudspeaker.co.uk
www.wembleyloudspeaker.com

ONETHING
(Coventry)
Specialist in electrostatic panel manufacture and repair. Can refurbish ESL 57s and 63s as well as Leak Troughlines and Quad lls.
Email: one.thing@ntworld.com
www.onethingaudio.com

CLASSIC NAKAMICHI
(Paul Wilkins, Worthing, West Sussex)
Restore, Repair & Service Nakamichi Cassette Decks.
Tel: 01903 695695
Email: paul@bowersandwilkins.co.uk
www.bowersandwilkins.co.uk

CARTRIDGE MAN
(Len Gregory, London)
Specialist cartridge re-tipping service and repairs. High quality special cartridges.
Tel: 020 8 688 6565
www.listen.to/thecartridgeman

TECHNICAL AND GENERAL
(East Sussex)
Turntable parts - wide range of spares and accessories, plus arms and cartridges. Tel: 01892 654534

ARKLESS ELECTRONICS
(Northumberland)
Specialist in repairs, restoration and modifications to all amplifiers, valve or solid state, ancient and modern.
Tel: 01670 829891
Email: arkless.electronics@btinternet.com

EXPERT STYLUS COMPANY
(Wyndham Hodgson, Surrey)
Stylus replacement service for all types of cartridge. Including precise profiling for 78s
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Email: w.hodgson@btclick.com

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(Dave Smith, Hornchurch, Essex)
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(Bristol)
Unit 2, 16 Midland Street, St Phillips, Bristol.
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www.octave-aw.co.uk

REVOX
(Brian Reeves, Cheshire)
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NEXT MONTH

THE VINYL CUT:

As the dark nights draw in, what could be better than sitting by the fire, luxuriating in the warm, sumptuous sounds of analogue? November's Hi-Fi World turntable special issue is a fix for even the most dedicated vinyl junkie, as we celebrate the pleasures of the groove. Here's just a taste of what we hope to bring you:

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- THE VINYL REVIVAL: FACT OR FICTION?
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- WEIGHTING HERE: STYLUS BALANCES TESTED



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DONNA SUMMER

I REMEMBER YESTERDAY

1977

"This is the future."

(John Lennon, after hearing the single, 'I Feel Love'.)

The queen of nineteen seventies disco, Donna Summer, cut a momentous album during 1977, produced by the legendary Giorgio Moroder. "We first met Donna in Munich, Germany," said Moroder, "she was stranded there after a musical she was in was cancelled. She was first employed by us as a backing singer. We were impressed and said that, if we ever had a song that we'd like to produce for her, we'd call her."

Summer's first big hit with Moroder was the sexy 'Love To Love You Baby', which according to him contained "fifty seven moans". For the later album, 'I Remember Yesterday', the idea was "to have some songs of the '40s, '50s, some of the '60s, some of the '70s and a song of the future."

The poppy, '40s-derived bouncy beat of the title track was a Top 20 hit in the UK with its light, positive lyric and smiley music. Next, the '50s rock'n'roll track, 'Love's Unkind', the tale of a school girl's unrequited crush, is a girl group stomp - this hit No.3 in the UK charts. 'Back In Love' again is an excellent Motown/Supremes pastiche with appropriate harmonies that rose to the Top 30 in the UK. Next, 'Black Lady' offered a blaxploitation/ Shaft approach with an energetic, funky vibe.

For the 'future' track, Moroder went into the studio with a "huge" synthesiser, an unusual thing for him

at the time, "I had a guy program the bass line, just three or four notes, which kept a certain time. We recorded it over and over until we had the whole three and a half to four minutes," said Moroder.

Don't forget this was 1977, so using a synthesiser in this manner was still unusual. In fact the engineer thought Moroder crazy to keep the four notes pumping through the track which would eventually become the blockbuster 'I Feel Love'. "The tuning was terrible, however, so, after every four beats, we had to rewind the tape, drop the bass in and out, fiddle with it and, well, it took several hours just to do the bass line."

At that time, Moroder's favourite artists were Tangerine Dream, Kraftwerk and Vangelis - all direct influences on this track. During the mix, Moroder added a little to the bass and then added a delay which gave the track that rolling, signature, throbbing feel, "The vocals for the track took only thirty to sixty minutes, said Moroder. "That was helpful because it retained the spontaneity. Even if there are little mistakes here and there, it didn't matter because the feel was great."

The first time Moroder heard the track outside of the studio was in the famous Studio 54 club in New York. Oddly, he said, the first part of the bass line emerged from the speaker on the left and the second was on the speaker on the right, slightly after it. "I thought, oh no, have I made a

mistake in the mix? But, no, if you stood in the middle of the floor the stereo effect was fine. However, I noticed that the people on the right hand side of the floor danced differently to the people on the left!"

'I Feel Love' stayed at No.1 in the UK for four weeks and was the very first pop hit recorded with a synthesised backing track, which was imitated by dozens of Euro dance imitators. This song, alone, directly influenced the electro revolution of the '80s and the techno revolution of the late '80s-early '90s. Madonna's recent 'Future Lovers' single almost borrowed from the track wholesale.

"I Feel Love had an influence on us," said Blondie's Debbie Harry. "It made us look at these sounds differently. We had played around with synthesisers already in the band but Giorgio was the master. The song gave us a new lease of life or a new license to do other things with synths." Ana Matronic from the Scissor Sisters was impressed by the album too, "Giorgio Moroder is god!" she exclaimed. "The disco and dance music from that time is so influential. I Feel Love, though, to me produced the feeling of falling in love. Hearing it, I have the sense memory or body memory of falling in love with someone."

'I Remember Yesterday' initially appeared on vinyl and then later, of course, on CD. The first issues of both formats are the best of the bunch. **PR**

EST.



1979

INTRODUCTION

In a world of copycat dealers and counterfeit products, the arrival of an original master is worth celebrating; and hopefully worth the trouble to check out. When you've discovered the short-cuts are cul-de-sacs, make the pilgrimage to Britain's last remaining high-end dealership. Still crusading since 1979.

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ESOTERIC

TEAC decided to keep UK customers waiting for the special edition X-03se at no extra price for the stiffened power supply and other refinements. It has been worth the wait. This is a combination of VRDS precision engineering and painstaking audiophile refinement. At £4,995 it has to be the high-end bargain of the decade.



UNISON RESEARCH

We commend the quality and value of Unison Research amplifiers (we stock models from £950 to £32,950!). From the astonishing 845 Absolute, the chief designer Prof Sacchetti has derived a series of wallet-friendly integrated valve amps; the £5500 Performance; the £2950 Sinfonia and now the £1795 Preludio. Hard to believe, but makes Chinese products overpriced (even the Chinese amps with British or American badges!)



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The next decade's cables available now! SuperConductor brought JPS to the attention of the world's audiophiles almost 20 years ago. Now the third generation SuperConductor is launched: interconnects and loudspeaker cables which definitely deliver performance audibly ahead of anything you have heard. Thanks to JPS policy of minimal marketing, the price of a metre pair is £795 and £349 for the "junior" version. Home loan/ approval is available.



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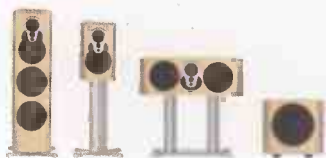


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