KINGSOUND PRINCE II
electrostatic loudspeakers
EXCLUSIVE!

FREE READER CLASSIFIED ADS IN THIS ISSUE!

SURROUND SOUND
hi-fi AV receiver supertest

YBA YC201
CD player

JOHN BLUE JB4
loudspeakers

A.N.T. AUDIO KORA 31 LTD
phono stage

TOWNSHEND ROCK R7
turntable

ASTINTREW AT2000
integrated amplifier

YAMAHA CD-S700/
A-S700 CD/amplifier

ARCAM FMJ T32 DAB+
hybrid tuner

olde worlde:
DUNLOP SYSTEM DEK
M.C.X.
Regular readers won’t have missed the fact that Hi-Fi World is a friend of the vinyl LP - and two channel stereo and analogue in general. With this in mind, it might surprise some that this month we’re running a group test on surround sound AV receivers! Well, just as we didn’t jump on the AV bandwagon a few years back, keen to chase where the market was going, so we don’t mind taking a close look at the latest in multichannel digital, when the world it seems is moving back to stereo...

Of course, we’ve always been a supporter of two channel hi-fi, simply because it works - as anyone who’s heard Kingsound’s Prince II electrostatics [p10] will attest, you can get a massive, panoramic soundstage from stereo. But you can also get very nice noises from the latest Blu-ray discs too, as our AV group test [p15] shows.

The trick is to find the right receiver for you, and then as Noel Keywood sagely points out in his ‘4 on the Floor’ feature [p26], don’t complicate things by trying to run it in 5.1 mode. Most British listening rooms are barely big enough to get the best from two speakers, so six will create more problems than they solve. Eliminating the centre channel and the .1 bass channel, to run just four matched hi-fi speakers, can sound superb.

The good news is that Blu-ray is able to carry far higher quality audio than DVD ever could, and there’s a range of new formats like Dolby TrueHD and DTS HD-Master Audio to bring it to us. Watching high quality live concert discs with ‘high resolution’ soundtracks is a special experience, as is simply playing stereo or surround sound digital at a resolution that CD users could only dream of - providing it’s done properly, of course!

As an ‘AV skeptic’ I don’t think Blu-ray is a universal panacea, but it’s certainly taking me more into sound and vision, as the format is capable of super audio and video quality. This is something that plain vanilla DVD, with its heavy compression, simply can’t do. The sort of immersive, hypnotic musical experience that was dreamed of (but never truly realised) back in the nineteen seventies with Quadraphonic, at last becomes possible.

Now, when are Sony going to release ‘Dark Side of the Moon’ on Blu-ray?

David Price, editor

testing

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

Loudspeakers are measured using a calibrated Bruel & Kjaer microphone feeding a Clio-based computer analyser, using pulsed and gated sinewaves, in a large room to eliminate the room’s influence. Pickup arm vibration is measured with a Bruel & Kjaer accelerometer.

No other UK hi-fi magazine has in-house testing, and none has access to such advanced tests across all types of equipment. That’s why you can depend on Hi-Fi World reviews.
Onkyo's latest mid-price AV receiver meets NAD, Yamaha and Marantz rivals...

Kiingsound Prince II electrostatic loudspeakers.

Ant Audio's superb top of the range Kora 3T Limited phono stage.

Townshend Audio's brand new Rock R7 turntable.
NOEL KEYWOOD is left breathless by these barn door sized electrostatics!

JOHN BLUE JB4

Paul Rigby is charmed by these quirky single-driver standmounters.

PMC GBii

Noel Keywood has a blast with these big sounding floorstanders...

ARCAM FMJ T32

Steve Green is deeply impressed by the world's first DAB+ hi-fi tuner.

YBA YC-201

Adam Smith auditions this distinctive French CD spinner.

BENCHMARK ADC1 USB

Patrick Cleasby is beguiled by this high end analogue to digital convertor.

ASTIN TREW AT2000

David Price samples the first super integrated amplifier from this respected UK specialist.

YAMAHA CD-S700/A-S700

Paul Rigby enjoys his time with these entry level Japanese separates.

FOUR ON THE FLOOR

Noel Keywood explains how to get a surround sound system to really sing!

TWEAK PREVIEW

David Price explains how to tweak your existing hi-fi rather than buying brand new hi-fi.

TOWNSHEND ROCK R7

Adam Smith auditions this fascinating new flavour of Rock turntable.

A.N.T AUDIO KORA 3T LTD.

David Price is seduced by the mid-price, minimalist, solid-state phono stage.

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Tony Bolton remembers this long lost classic British superdeck.

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WORLD STANDARDS

Our favourite new hi-fi separates.
On stage and at home, Jools Holland's sound is pure Yamaha.

On the road and in the studio, Jools depends on his Yamaha piano for its clarity and purity of tone. At home, he enjoys the same standards of audio excellence thanks to Yamaha's total dedication to the listening experience. You can too. Visit www.yamaha-uk.com to find out more.

Powered by music

Products featured: CD-S1000 CD player and A-S1000 amplifier

World Radio History
HOT STUFF
Radiance is a new loudspeaker that blends leading-edge audio technologies, UK-tuning and opulent aesthetic design, says Acoustic Energy. Three years in the making, the four strong range sports “radical new technologies” and AE’s signature alloy drive units. Slim cabinets with extensively braced parabolic curved walls (to reduce standing waves) are used, reflex-loaded to maximise bass output. The floor standing variants (Radiance Two and Three) feature separate internal enclosures with individual port tuning for bass and midrange. AE’s signature alloy cone drivers with twin-wound aluminium voice coils are used. The Radiance ring-radiator tweeter assembly is a new unit using special flux stabiliser rings to significantly reduce motor distortion, and sports a unique waveguide that creates a calculated diffraction pattern that dramatically widens HF dispersion, the company says. Prices range from £599 per pair for the AE Radiance One to £1,499 for the floorstanding Radiance Threes. A sub and a centre channel speaker is also available. For more information, click on www.acoustic-energy.co.uk or call +44(0)1285 654 432.

BEACON BLU
Pioneer’s new BDP-LX91 is the company’s flagship Blu-ray Disc player. The player features unique technologies and is built with advanced components including a Pioneer-Renesas jointly developed core processor chipset. The newly developed 16bit video engine is said to provide impeccable video decoding, I/P conversion, video scaling and video adjustments. The new machine offers 7.1 channel Dolby TrueHD and DTS-HD Master Audio decoding, and bitstream output; there’s a dedicated power supply for the analogue audio board, eight Wolfson Audio DACs (one for each channel) and custom-made capacitors. Dual HDMI outputs allow separate audio and video signal transfer over dedicated HDMI terminals. The BDP-LX91 is the first Pioneer Blu-ray player to go through rigorous tuning at Sir George Martin’s Air Studios, with many hours of listening tests, adjustments and modifications by Pioneer engineers. The machine has been certified ‘Air Monitor’ status, indicated by the application of the Air logo on the front facia of the player. Exceptional build quality is claimed for it, with an aluminium chassis and ultra-rigid steel bottom plate, plus rugged TAOC insulators to dampen external vibration. For more information, visit www.pioneer.co.uk or call 0870 600 1539.

XT-RA B&WS
B&W is back with a new XT floorstanding speaker, crafted from aluminium and offering an attractive blend of audio excellence and contemporary styling, the company says. The XT8 package is designed to act as either a highly polished stereo pair or the front left and right speakers of a Home Theatre system. It sports an aluminium-dome Nautilus Tapering Tube tweeter, which is mounted outside the main cabinet to eliminate time smearing, and a woven Kevlar driver for midrange and Fixed Suspension Transducer technology, which helps to enhance definition, it is said. Two five-inch paper/Kevlar bass drivers handle bass duties. While the outgoing XT Series was only available in black, there’s now a natural aluminium finish available for the new XT range. For more details call +44(0)1903 221 500 or visit www.bowers-wilkins.com.
TRUE TYPE!
NAD Electronics has announced a new ‘Classic Series’ hi-fi stereo preamplifier and power amplifier combination, the C165BEE and C275BEE. The ‘Classic Series’ is said to be a highly affordable range of new products with the features and performance of far costlier components. The new £600 C165BEE Stereo Preamplifier, which also shares a lineage with the NAD Masters Series M3 Integrated Amplifier, features an MC/MM input with three-position resistance and capacitance loading for phono cartridges, an upgraded headphone amplifier and a heavy gauge steel chassis. It draws less than 1 Watt in standby mode, says NAD. The matching £750 C275BEE Stereo Power Amplifier delivers 150 Watts per channel and is bridgeable to 400W with the new matching NAD C375BEE Power Amplifier. A THD and IM distortion level of 0.005 percent reveals more musical detail, it is claimed. Other features include Automated Turn-On (ATO) Logic, and an eco-friendly power draw of less than 1 Watt in standby mode. For more details, call +44(0) 1279 501111 or click on http://nadelectronics.com.

M-PEOPLE
Meridian’s new i80P iPod dock is said to offer iPod connectivity with almost any audio system with analogue interconnects. Engineered and built at the company’s UK headquarters, the i80P is said to “elevate your humble iPod or iPhone to new musical heights.” The i80P employs proprietary analogue circuitry to deliver high performance from an iPod, and the pair of phono sockets on the rear of the i80P allows connection to almost any sound system, and also charges your iPod. Price is £195, available now. For more information, click on www.meridian-audio.com.

ROAD WARS!
UK specialist manufacturer Avid will be holding several ‘live’ events throughout 2009. One event is to be held at their manufacturing facility, and will give people the opportunity to visit the factory, see how Avid turntables are made and listen in the demonstration room. This is in the Huntingdon area; those able to travel are welcome, says Avid captain Conrad Mas. Alternatively, there are eight events planned around the UK, mostly at dealer premises. Dates and venues are to be confirmed, but the first event will be held in Norwich on Wednesday 28th February at Audioworkshop. For more details, click on www.avidhifi.co.uk/new.htm.

BIG HEAD
"The first serious headphone of the 21st century" is how the new Sennheiser HD800 is described by its maker. The £1,000 tour-de-force is hand made in Germany, and sports a radical new 56mm ‘RING Driver’ developed exclusively for this headphone. It is made out of stainless steel and aerospace-grade plastics, with Japanese Alcantara earpads and detachable silver-plated, low-oxygen copper cables. A claimed 6 to 51,000Hz frequency response and "vanishingly low" 0.02% distortion complete an impressive package. For more details, call +44(0)1494 551 551 or click on www.sennheiser.co.uk.

MAD CAP!
Not your average pair of loudspeakers, these! MyAudioDesign’s Royal Salute is described as "the most fascinating high-end loudspeaker ever made in British hi-fi history after the B&W Nautilus". The speakers are said to "advocate the original idea, emotion, passion and depictive expressions of the performer(s) and composers", no less! The handcrafted cabinets are made from MAD’s proprietary DRC compound, whilst "the finest components in the world such as the ATC Midrange dome, the ‘Nipple’ like supersonic tweeter and custom designer bass driver” are used. Royal Salute is available in any colour you like, and comes in both passive and active (800W RMS) versions. Prices range from £6,500 to £8,999. For more details click on www.madengland.com or call +44(0)207 839 8880.
NEWS EGG-stra!

Eclipse's new £1,700 TDS10 'Floor' Time Domain Loud Speakers are now on sale in the UK, following in the footsteps of the larger £4,000+ floorstanding Eclipse TD712z. The new TDS10 Floor delivers unparalleled clarity and signal accuracy in a more affordable format, Eclipse says, giving "very low colouration and acoustic interference when placed on a cabinet, furniture or wall shelf". The egg-shaped mineral-loaded resin cabinet of the TDS10 provides the most rigid form known to nature, while all unnecessary energy is earthed through the internal zinc-alloy structure to the D6 stand and through that to the floor. The use of the 10cm single driver avoids the time and phase distortion associated crossover circuitry and multiple drive units – a single full-range drive unit gives a “useable frequency response” of 45Hz–20kHz (at -10dB). For more information, call +44(0)20 7938 4499 or click on www.eclipse-td.net.

SILVER SERVICE

Pure silver audiophile interconnect cables have traditionally been the preserve of the ultra high end, often selling for £500 or more per pair, so it’s interesting to hear about these Artisan Silver Cables, which cost £149 per metre. Silver is the world’s most conductive metal, and in this case is sheathed in deliberately slightly loose-fitting Teflon, so that the conductors are partly surrounded by air, which is widely agreed to be one of the finest-sounding dielectric materials, the company says. They add in heavily silver-plated connectors, silver-rich solder and noise rejecting Litz-weave construction to give ultra-pure and sweet sounding cables. The cables can be ordered direct from www.artisanicables.com.

SNEAK PEEK

Here’s a taster for Arcam’s forthcoming new Blu-ray player, said to be named “FMJ XXXX” by our spy. This is one of the very first Blu-Ray players to emerge from a British hi-fi marque, and was developed from the ground-up by "the world’s only specialist manufacturer with the capability to do so", the company insider says. Said to have “performance that leaves Japanese high-end players in the dust”, it should be in an interesting design. It is due to be unveiled at the Bristol Show, at the end of February...

METAL WORK

Clearer Audio’s new Copper-line Alpha Shield Speaker Cable costs a wallet-friendly £5 per metre (or £9.50 bi-wire), with termination costing from £25 to £50. The new entry level cable draws from shielding systems used in its pricier products, said to be effective across the whole Electro Magnetic Interference (EMI) spectrum protecting the internal audio signal. The Copper-line Alpha Shield uses multisstrand 5N Ultra High Purity Oxygen Free Copper (99.9997%) conductors, and twisted geometry is used to help reduce any Radio Frequency Interference (RFI) that is already on the signal line. Polyethylene dielectric is employed, being one of the best insulators available offering an open and natural sound. Finally, the Copper-line Alpha Shield is terminated with new low-mass gold-plated copper alloy banana plugs, and termination is carried out by hand in-house using a crimping and soldering technique providing the best electro-mechanical connection. The same high content 5.5% silver solder as used in our higher-end cables is also present. The result is “a highly detailed and insightful sound”, the company says. For more information, click on www.cleareraudio.com.

SPOTTED:

Christmas 2008 in Beijing, and Editor DP makes an impromptu appearance on Chinese TV as a football pundit, of all things. He never did find out how they translated, “well, it’s a game of two halves isn’t it, Gary?”
Standing nearly six foot tall, Kingsound's Prince II is one electrostatic loudspeaker that makes a serious impact. Noel Keywood listens in...

Big electrostatics are rare birds, both in the UK and abroad. They are statements of the loudspeaker art - vast in scale, visually imposing and defined in form and function by their unusual transducer technology. They're rare too - right now Quad ESL-2905 and Martin Logan CLX are the only equivalents in this country - so when I saw the considerably less expensive £2,995 Kingsound Prince IIIs I was keen to find out how they contribute to this esoteric way of reproducing music...

Engineered properly, electrostatic loudspeakers are a fantastic listening experience, but can be a tricky domestic proposition. Why would you want to buy a loudspeaker that stands no less than 175cm (5ft 9in) tall? The answer is to get electrostatic levels of purity right down into the low bass region, and I can assure you that electrostatic bass is truly a different and intriguing experience. By covering the full audio range, these speakers avoid the conventional bass cabinet that smaller hybrid electrostatics employ. These are a mixed blessing, as they bring box bass to the sound - not nice - and they rarely integrate well; it's usually quite obvious that a boomy box is labouring to produce wallowy bass, whilst above it a super light mylar film panel is as active as a gnat on Viagra.

So the Prince II is a thoroughbred electrostatic, designed without compromise, but for many reasons a loudspeaker this size needs a large room. It needs one if it is to work properly acoustically, and it also needs one to avoid dominating the domestic landscape. Around 20ft long or more is ideal, available where a partition wall between two small rooms has been removed perhaps, to give 10ft x 24ft! At just 53cm (22in) wide the Prince IIIs won't intrude if stood close to or against a side wall, a beneficial position for an open panel dipole such as this, Peter Walker, founder of Quad, noted.

This is a push-pull electrostatic, like Quads but unlike the smaller Martin Logan panels that are single-sided because they do...
not handle large bass excursions. In a push-pull, the mylar film is sandwiched by perforated stators to give linear operation even at high excursions. You might like to know that the Prince IIs produced around twenty times less bass distortion than a conventional loudspeaker under test, so their linearity is real, not hypothetical. They really do produce pure bass, I found.

What Kings Audio have done is combine a narrow vertical treble panel with a wider bass panel, placing them side by side in a module. The narrowness of the treble panel smooths high frequency output, free from the cancellations and beaming that afflicts wide panels. The pairing forms an easy-to-manufacture module, Kings Audio say, important where precision assembly is necessary. Each Prince II loudspeaker comprises seven modules stacked vertically. As a result each loudspeaker has a narrow electrostatic treble panel 8cm wide and effectively 153cm high on its inside edge - they come in handed pairs. On the outside is a large 30cm wide and 153cm high bass panel.

This is a clever way of structuring an electrostatic and in practice I found it gave some fascinating characteristics. Unlike highly directional Martin Logan panels in particular, the Prince IIs are almost non-directional. Sound balance hardly changes wherever you are in front of them, from lying on the floor (yes, I tried it!) to sitting to standing, to walking around the room. Even more surprising was they pull off the same acoustic trick as big nxT panels; that is, they do not get louder as you walk toward them. And that was a little eerie!

All this was apparent in my lounge, in our office listening room and confirmed by our measuring microphone, which I could place almost anywhere and get a very similar result. The Prince IIs are one of very few loudspeakers I have encountered able to do this. In effect they seem to drive so much of the room in terms of area (solid radiation angle) that the room just gives up and says "oh, what the heck". It becomes totally dominated by the loudspeaker, which seems almost bizarre to someone like me used to thinking about loudspeaker and room interaction in a certain way. The Prince II rolls over the issue entirely, saying "this is what I do and this is what you'll get". Which can't be bad when what you get is so well worked out. The full audio range is covered, from 40Hz right up to 20kHz, by those electrostatic panels.

One of the scarlier features of early Quad ESL-57s and their Braun derivatives, was their delightful tendency to choose the gentlest musical moment, at the end of a peaceful late night listening session to suddenly arc over with a flash and a piercing crack! At which point the cat hits the ceiling, followed by its owner. Electrostatics work at thousands of volts internally and when things go wrong the outcome can be dramatic, and traumatic because a complex service is required. To prevent this, Kings Audio, like Martin Logan, make much of special protective stator coatings. Whether they also use secondary protection diodes like Quads I do not know. I pumped 32V into my review loudspeakers and there was not a spark anywhere, but things were starting to sound mushy due to amplifier overload, my Quad IIs-eights only managing 26V or so undistorted into the 17 Ohm load of the Prince IIs.

Yes, the Prince IIs are a bizarre load for any amplifier, 400 Ohms maximum and 6 Ohms minimum, and they are grossly insensitive. Although Kings Audio quote 84dB and 8 Ohms, we measured 73dB and 16 Ohms! Our in-house Anatek 50-R amplifier overloaded and cut out before I could get any sound pressure from these loudspeakers, and my own 28 Watt 300B amplifier was similarly unable to cope. They need at least 30V of voltage swing, so a 100Watt amplifier represents the bare minimum and around 200Watts is more like it. This conflicts with my preference for valve (tube) amplifiers. The impressive Electrocompaniet AW600 Nemo monoblocks I reviewed in our February 2009 issue would have been ideal but Electrocompaniet had sent Pickfords to collect them to correct Norway's trade deficit. Quad's lovely IIs-eights were suitable and drove the Prince IIs loud, if not very loud even when flat out. In a nutshell, the Prince IIs are grossly insensitive and a difficult load so a high power / high quality amplifier is needed to drive them. The high frequency panel is electrically separate from the woofer panel so bi-amping is also possible. A perforated steel mesh at front and rear protects the drive modules, and wooden side strips add a neat touch. Each loudspeakers weighs 21kgs and is solidly built, sitting on a small pedestal with adjustable spiked feet.

SOUND QUALITY
Airy and ethereal are two words that come to mind to summarise a typical good electrostatic, with a natural purity that transcends ordinary box loudspeakers - and those words apply to the Prince IIs. But where the Martin Logans are brightly balanced and quite fast, and Quads neutral, the Prince IIs are definitely easy going. No matter how they are angled or where you sit, the balance of these electrostatics is mild mannered and creamy smooth, but as our measurements show this has nothing to do with lacking treble.

I heard the wonderful delicacy of electrostatic treble in a short but delicate little arpeggio on acoustic guitar behind Jackie Leven singing 'Shadow in My Eye'. The quick succession of notes from plucked on gut strings was just a background detail, but its presence was supported with beautiful clarity behind Leven's deep Celtic tones. Both the twang of the strings and wooden body of the guitar were lucidly conveyed with a natural ease against a silent background.

*the Kingsound Prince II wasn't anything other than beautiful to hear...*
Electrostatics reveal low level delicacy like no other and the Prince IIs wasn’t anything other than beautiful to hear in this respect – revealing, but without artifice. Although ribbon tweeters measure better, I prefer an electrostatic in the end, for the Prince IIs conveyed the finest delicacies and details, from tinkling bells to the finest background whispers with a deliciously easily and unforced naturalness of tone that reminds me how contrived and, relatively speaking, leaden conventional loudspeakers sound in comparison. Of course, one reason is that there is no time delayed information coming out of a box, no boof, echo or other extraneous noise, and this alone accounts for the remarkable absence of colour.

Another peculiarity of electrostatics is that they tend to pull the production of a track apart, so I heard how various instruments had been layered into Gabrielle’s ‘Rise’ and I was constantly aware of production techniques, even the grumpy bass and crude mixing of old 1970s reggae albums! But a sharply timed and produced track like Heaven Seventeen’s ‘Lady Ice and Mr Hex’ shimmered with slickness; the different strands cut in and out with razor-sharp timing, devoid of overhang or slur, and certainly free of the hard edge that comes from metal cones, and even aluminium ribbons. The fast pace and tight timing of this track was beautifully revealed.

Colour is everything in conventional loudspeakers, defining their character, and nothing in electrostatics, especially so with the Prince IIs because being full range their uncoloured neutrality extends right across the audio band and affects - or doesn’t affect - all instruments, from bass guitar right up the delicate bells, not forgetting vocals in between. That allowed the textural qualities of instruments - the brassiness of horns, the woodiness of flutes - to come over very clearly, seemingly expanding textural contrasts.

Whilst the Prince IIs have even and smooth yet extended treble, their midband was simply dry and clear. Jackie Leven’s vocals had just enough chestiness to be acceptable, but only just it seemed to me. But as box loudspeakers euphonically reinforce deep male vocals with their own resonance I felt the Prince IIs were analytically correct. They lack euphonic addition and can come over as drier and less fulsome as a result, however. Again, the word ‘analysis’ comes into the picture here, which you cannot get away from with thoroughbreds like these. And it wasn’t always flattering. Groove noise fizzed sharply at the start of my older LPs and even with new QuieQ SV-P pressings surface roar was obvious the moment the stylus hit the groove. However, LP’s fuller sound worked better with these loudspeakers, I felt. Occasional distortions had me wondering whether amplifier overload might be occurring so I constantly monitored signal level and the distortions were in the recording or pressing (with LP). The Prince IIs reveal everything, surface noise, distortion and all...

Whilst 24/96 DVD-As sounded detailed their balance was dry and not especially alluring, and piano in Rachmaninov’s Piano Concerto No.2 on SACD, played by Lang Lang, lacked body and warmth. Yet with a well produced LP like Phil Collins ‘Hello, I Must Be Going’ tracks like ‘I Don’t Care Anymore’ sounded superb, drums rolling across the soundstage strongly, the lightest background hand drum standing out clearly even though well back in the mix. That electrostatics have no distortion or colouration I could believe in such moments; the Prince IIs could sustain the independence of the finest details amongst powerful front vocals and instruments.

And then there’s their imaging. Think celestial: a massive sound stage reaching right across the room, vocals coming slightly from above. The Prince IIs also have good image stability as the head is moved.

Dynamically, these loudspeakers were mild, even though deep bass was strong and had a lovely resonant quality that in particular gave drums a punchy presence completely free from boxiness. There was no bass heaviness, by the way, in spite of what our frequency response measurements suggested, something that is difficult to explain, but I can’t help suspect there’s so much surface area on the lightweight film that acoustic damping is much greater than usual, giving a tight, pure quality that also carries with it bass detail; even Interstellar Reggae Drive sounded dry and composed.

Playing music at modest volume meant swinging 5V-20V across the ‘speaker, and winding up to a high 30V increased loudness little. Perhaps that’s because power increased just 3dB or so, but I also wondered whether some protection, like secondary diodes, might have been coming into play. I would have needed a good 40V or so to test this, meaning an amplifier rated at 200W into 8 Ohms, which wasn’t available, so I cannot vouch for just how loud the Prince IIs can go and whether they might have seemed more dynamically forced if more watts had been available. What I did notice was that both a Marantz and Moon amplifier able to swing 30V sounded brighter in balance than the Quad IIs, and I suspect this is due to the large change in the loudspeaker’s output impedance interacting with the Quad’s output impedance. The Prince IIs drop from 45 Ohms at 200Hz to 10 Ohms at 2kHz and on the end of a valve amplifier with 1 Ohm output impedance (i.e. D.F. of 8) causes an -0.6dB response drop at high frequencies, just enough to give a subtly darker balance than a transistor amplifier with its lower output impedance. All the same, I stayed with the Quads, preferring their easy fluidity and sense of depth.
Solid-state amplifiers sound stark through electrostatics, if harder edged and with more forceful dynamics through the Prince IIs. Amplifier choice would come down to personal preferences with a loudspeaker such as this, but solid-state watts would be much cheaper and more domestically acceptable, because 200 Watt valve amps are vast affairs!

CONCLUSION
The Prince IIs are a very pure realisation of the electrostatic principle, cleverly wrought. They sound like they are too: dry and balanced, free from colour. Recording studios need a suitable amplifier can be assured that the Prince IIs are a stunning loudspeaker, quite other worldly in what they do.

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MEASUREMENT PERFORMANCE
A big electrostatic like this radiates from a very large panel area and drives a room differently. Room placement barely affected the Prince II and it drove so much forward volume our measuring microphone gave identical frequency response from 10cm to 2 metres away, there was so much distributed forward energy. However, our low 71ft ceiling inserted a dip into frequency response around 160Hz unless the mic was placed close to the floor (high pressure point), so the dip is a room effect, but valid as our mic height was at seated head height. Higher ceilings will insert a dip of lesser amplitude lower down in frequency.

Frequency response shows the usual short sharp undulation in output due to interference effects across a panel radiator. The balance for the Prince II is largely even up to 20kHz however, and that’s how it sounded with pink noise under test: silky smooth and even. Output rises to produce a large bass peak at 50Hz and this will strengthen bass, but without box boom. Drums in particular will be emphasised by this.

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Sensitivity was absurdly low at just 73dB from one nominal watt (2.84V) of input (Kings Audio quote 84dB). In truth that's because far less than a Watt was being consumed, impedance measuring a high 17 Ohms overall. Variation with frequency was massive, from 400 Ohms at 25Hz, down to 16 Ohms DCR at 0Hz and 2.5 Ohms at 20kHz. This makes the Prince II very reactive and a difficult load, demanding a high power amplifier of at least 100 Watts.

As expected from an electrostatic the 200mS decay spectrum was unusually clean, suggesting very low colouration. Also, distortion was less than 1% above 30Hz, falling to lower than 0.2% above 60Hz, much lower than box loudspeakers.

The Prince II is a classically well engineered electrostatic. It drives a huge forward area to give a very even sound at any listening position, even far away. It is room independent except for the height mode, but it needs a large room that resonates below its own resonance, meaning at least 18 feet or more being preferable, to achieve best bass. It also needs a very powerful amplifier (high voltage swing) that can drive heavy reactance and has sufficiently high intrinsic quality to suit such a low colouration, low distortion and high resolution reproducer.

ELECTROSTATICS - MEASURABLY BETTER
The wonderful sound of electrostatics is a part of hi-fi folklore. Ultra low colouration and distortion are commonly quoted. Well, here are our measurements of colouration and distortion for the Prince II and guess what - they are ultra low! The pretty colour graph shows sound decaying from top to bottom, bass at left, treble at right, level being depicted by colour. Basically, the quicker the decay into black - think of it as inky dark silence - the better. And the Prince II has the fastest decay we have ever measured. Often, the blue runs all the way down, but not here; the Prince II falls silent just as it should. There was almost no bass distortion compared to box loudspeakers either, with just 0.2% at 40% against 2% or so from a box, thus proving that electrostatics are demonstrably better!

VERDICT
Beautifully crafted electrostatic with many unique properties and an exceptional sound at the price, but tough to drive and hard to get to work in a room.

KINGSOUND PRINCE II
£2,995
+44 (0)116 2440593
www.icolaudio.co.uk

FOR
- lucidly clear
- delicately detailed
- uncoloured bass

AGAINST
- very tricky to drive
- imposing physical size
- sorry, large rooms only!
Music is a reflection of life.
A never-ending dance between your joys and sorrows, ups and downs and that all consuming can't-live-without-each-other love.
Music is our reality.

Nothing added. Nothing subtracted.
besmirched by the madness that is Home Cinema, where the power of explosions and dinosaur footsteps are all important, AV receivers have a bad reputation amongst audiophiles. In truth, they can do a very good job with music. A key point to remember is they are jacks of all trades, able to play LP and CD, as well as DVD-A and SACD, plus of course DVD and Blu-ray. Offering good sound quality they can be entertaining, especially if like me you enjoy music videos. Seen like this their Home Cinema functionality becomes a side issue, and that’s how I approached the four reviewed here...

AV receivers are intimidating, that’s for sure. There are so many facilities that can stretch patience, while set up is an extraordinary process - almost an act of worship at the shrine of AV madness! At the heart of all this is heavy duty digital processing, Onkyo claiming to use three Texas Instruments Aureus 32 bit DSP chips onboard their example. These decode compressed streams like DTS HD Master Audio and Dolby TrueHD, add all sorts of weird Hall and Stadium effects, turn stereo into surround-sound (Dolby ProLogic IIx, DTS Neo 6), synthesise sound for Back loudspeakers in 7.1 from the discrete signal fed to the Surrounds in 5.1, and so on. There’s almost no limit to what can be done by writing it into code for the DSPs.

This processing does not automatically mean the signal is being degraded. In essence an AV receiver accepts digital signals, processes them digitally, then converts them to analogue for subsequent amplification. Analogue sources can be sent to digital through an ADC, processed then converted back to analogue form, but this isn’t wise unless you want surround-sound from LP (no, you don’t!). To avoid quality degradation from such digital conversions it is usual to route analogue from LP and VHF tuner, for example, around the processors, sending it direct to the power amplifiers with a Direct or Pure Direct function that they all have. So an AV receiver, in spite of its humongous complexity, configures to become like a stereo amplifier when Direct mode is selected.

There’s a suspicion that AV receivers do everything badly, but our measurements show it isn’t the case. High quality AV receivers such as those reviewed here, are purposed to do a great job with audio. Their digital-to-audio converters are high quality types and so can sound dramatic when reproducing high quality digital such as Carlos Santana in 24/96 PCM from DVD-A, Nine Inch Nails in Dolby TrueHD from Blu-ray or Beethoven’s Pastorale symphony from SACD. It doesn’t matter what you want to play, from whatever source, AV receivers like those tested here can handle it...

As well as massive digital processing power, AV receivers also tote spectacular audio power, close to 2,000 Watts total with some models here. This is unlikely to be usable in most homes; 100 Watts per channel is sufficient. Most surround-sound mixes put little power into the rear loudspeakers. Only some Rock albums recorded in surround-sound put little power into the rear loudspeakers. Only some Rock albums recorded in surround-sound feature instruments in the rear channels playing as loud as the fronts and five channels pumping out 500 Watts total is quite enough; 2,000 is insanity. A multichannel system with good loudspeakers will go loud very cleanly, as each loudspeaker is relatively unstressed.

If you cannot accommodate more than two loudspeakers or do not wish to, you do not have to. Bi-amping uses four channels, leaving two to feed another room. I use various configurations including full 7.1, but find 4 channel satisfactory for music, with no Centre at front. There’s plenty of flexibility built in, allowing these receivers do a lot well, in whatever way you wish.
YAMAHA RX-V1900 £820

The RX-V1900 is a 7.1 receiver producing 256 Watts per channel, our measurements show, if you run 4 Ohm loudspeakers, which most are these days, so it has plenty of power. Yamaha rate the RX-V1900 at 130 Watts into 8 Ohms, so it reads to be less powerful than it will be in use.

Audiophiles will be interested to know that the two Back channels can be assigned to bi-amp the front Left and Right loudspeakers for better quality, and that if desired the Centre loudspeaker can be switched off. This is a common option nowadays and selecting it routes centre channel information equally to Left and Right loudspeakers to enable phantom centre images, as in normal stereo. The benefit of this is elimination of the often mediocre quality and poorly positioned surround-sound Centre loudspeaker that puts singers close to the floor. The front channels cannot be bridged to double power, as with the Onkyo.

Even though the handbook makes no mention of it (a royalties issue?), the RX-V1900 decodes DSD code from SACD. The front panel display lights up DSD when fed DSD data via an HDMI link and measured performance was good, SACD quality being well maintained. To do this you would need the likes of an Oppo DV-980H DVD player (£200 or so), which outputs native DSD via HDMI and which I used for tests.

The handbook also lists a 'Sophisticated FM/AM tuner' as a feature, but says nothing about the Phono input that caters for Moving Magnet cartridges and allows the Yamaha to match the Onkyo for the attentions of all those who might want to indulge in a little LP replay. A Pure Direct mode allows all processing to be bypassed and its displays shut off for this sort of quality analogue work, or Straight can be selected, leaving displays on.

The VHF FM tuner has a Radio Data System so programme type (e.g., traffic news, weather etc) can be selected, whereupon text data identifying station and programme are displayed. There are 40 station memories, available for FM and AM stations. As always, an external aerial is needed, but the tuner is a good one, as Yamaha claim, so it is worth taking seriously.

"there was no hint of sharpness; the Yamaha comes over as smooth and svelte..."

The rear panel carries arrays of digital inputs: four HDMI inputs, three electrical SPDIF phono sockets and four optical SPDIF connectors, plus one on the front panel. There are two HDMI outputs for TVs/monitors and two optical SPDIFs for recording purposes.

On the video side, the Yamaha accepts S-Video, Composite. Component signals and, as usual, the front panel input for camcorders is an old analogue S-Video connection, where HDMI is commonly used that uses an external microphone. It uses a seven band parametric equaliser in which gain and Q are adjusted. The lowest band is useful at 32Hz, one octave below Onkyo's 64Hz lowest adjustment frequency. The Yamaha can be manually adjusted too, so there is more leeway to correct problems in larger rooms, as 32Hz corresponds to the lowest mode of a 17ft long room, against Onkyo's 12ft room limit. AV receivers have the potential to correct room modes using their onboard...
processors but being aimed at the AV market this possibility hasn't really been recognised as yet. Yamaha's loudspeaker tuning in the TX-RV1900 is better than most and should be able to smooth things out in most rooms. There is also a graphic equaliser, lowest frequency 64Hz.

From Blu-ray and DVD the receiver also decodes Dolby TrueHD and DTS HD Master Audio soundtracks on Blu-ray discs as well as the complete slew of lower definition formats such as Dolby Digital Plus. Each channel has a 24/192 digital to analogue convertor code. NK

**SOUND QUALITY**

The Yamaha handled Benjamin Britten's 'Playful Pizzicato' by the Trondheim Soloists in 24/192 PCM, Dolby TrueHD and DTS Master Audio adeptly. This high resolution Blu-ray music disc has extraordinary dynamics behind plucked strings, plus intense internal detailing to bowed strings, and the RX-V1900 played it all well, Dolby TrueHD sounding least dry and with the broadest tonal palette. There was no hint of sharpness; the Yamaha comes over as smooth and svelte.

Moving on to a John Meyer's 24/96 Blu-ray, 'Where The Light Is', the opening Kick drum in Vultures had considerable subsonic weight and this feature of the amplifier popped up often, B.B. King's 'Three O'Clock Blues' on a 24/96 DVD-A having a weight behind kick drum that was settee moving.

With Rachmaninov's Piano Concerto No2 on SACD Lang's piano had lovely tonal colour and the sheer civility of the sound will certainly appeal to classical music lovers. I wasn't quite convinced that orchestral strings were as well separated as possible however, and there seemed to be a small element of muddle or smear in the midband. The Yamaha is a real smoothie, but it isn't as insightful as some.

The phono stage was silent and silky in its presentation, but with limited low end push playing Amy Winehouse's 'You Know I'm No Good'. Similarly, VHF radio sounded tidy and clean, if a little reticent in its low frequency delivery, lacking body as a result.

The Yamaha worked well in all areas and has a seamless delivery that is untiring - it's a surround sound smoothie.

**The RX-V1900 delivers 136 Watts into 8 Ohms and 256 Watts into 4 Ohms, so it is powerful with today's low impedance speakers.**

Input sensitivity (CD) is very high at 160mV and distortion very low at 0.014% at 10kHz. So the amp section is powerful and distortion-free.

The tuner measured well, with low distortion and a frequency response with just a bit of bass (+0.75dB) and treble (-0.4dB) emphasis, subtle enough to be enhancing, without overt annoyance. A pilot tone filter imposes a decent 15kHz upper response limit. Hiss was lowish at -68dB. VHF sound quality should be very good, both clean and lively.

With digital inputs the Yamaha gave very good results from CD (16bit/44.1kHz PCM) and from 24bit/96kHz on DVD and Blu-ray, distortion measuring a low 0.1% at -60dB and bandwidth to a satisfactory 36kHz. However, it didn’t like 24bit/192kHz PCM much, distortion measuring a poor 0.7% at -60dB - worse than CD at 0.21%. At present 24/192 recordings are rare, so this won’t have much impact. Although the handbook doesn’t mention DSD code from SACD, the Yamaha converted it with 0.1% distortion at -60dB, a fine result, and bandwidth to 36kHz - a fair result.

The phono input measured neatly, with accurate equalisation, low noise, adequate sensitivity and good overload.

The RX-V1900 produces a nice set of

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**VERTICALLY STACKED LOUDSPEAKER TERMINALS, NOT COLOUR CODED, BUT ABLE TO ACCEPT 4MM PLUGS AS WELL AS BARE WIRES.**

**FREQUENCY RESPONSE, 24/192**

**AMPLIFIER DISTORTION**

**VERDICT**: Easy to use and easy on the ear, with no weaknesses, the Yamaha is relaxing and suits Classical very well.

**FOR**
- compact dimensions
- smooth sound
- good midrange colour

**AGAINST**
- restrained dynamics
- slight muddle
- small display legends
NAD T755 £880

The NAD T755 is a weighty 18kgs and has a purposeful looking dark grey fascia with typically NAD functional styling. Unfortunately, although the T755 is powerful and contains some comparatively recent gizmos like Audyssey loudspeaker tuning, it is lacking a lot else...

Where other manufacturers have had to bite the bullet and install costly licensed technologies from Dolby and DTS in order to interface with Blu-ray players, the T755 remains without them. Its HDMI inputs are pass throughs; the T755 is unable to process audio from HDMI, a limitation that will, I suspect, count it out in the eyes of most consumers - rightly or wrongly. Its rivals here all process from HDMI, allowing them to connect up using a single HDMI lead carrying high definition audio as well as video.

Digital audio is piped into the T755 via S/PDIF only, electrical or optical. Whilst S/PDIF can carry 24/192 stereo into the T755 from video and audio DVDs (i.e. DVD-A) and the T755 plays it, our measurements showed there was no performance benefit to be had. The receiver’s internal converters are poor and are unable to exploit high definition PCM audio. A bandwidth limit of 24kHz suggests internal downconversion of 96kHz and 192kHz sample rate PCM to 48kHz before conversion to analogue, although NAD claim to fit 24/192 DACs on all channels.

Blu-ray players can of course be connected by S/PDIF but the T755 only accepts Dolby Digital and DTS compressed streams, including DTS 24/96; Dolby TrueHD and DTS HD Master Audio are off the menu as they need an HDMI connection. SACD cannot be handled via S/PDIF; the CD layer will be played. The only solution is to connect up multichannel players using the T755’s single 7.1 channel analogue input, using phono-to-phono cables, an outdated method.

Although the receiver has a 7.1 analogue input set, and the handbook refers to Back loudspeakers and 7.1 channel use, it is a five channel add to fidelity and introduce more cabling. All the same, since the T755 costs a hefty £900 and is missing HDMI audio too, this hardly improves its apparent value.

In a similar manner the T755 is DAB capable, but needs an external DAB module which must be purchased separately for around £120.

NAD’s onscreen set up menus look crude against competitors, and their modus operandi differ too, but they are usable. Loudspeaker distance, level and size can be set, but response equalisation is not applied during

"the NAD is best suited to big-hearted rock, where its bass power alone will impress..."

The handbook does not make this clear anywhere, only alluding on page 20 to the need to connect up an external stereo power amplifier to preamp output Surr-B sockets if full 7.1 operation is wanted. The loudspeaker set up menus flag Back loudspeakers so the onboard DSP has been programmed to accept them, explaining the unusual situation where 7.1 inputs and preamp outputs exist, but the necessary power amps are missing!

There is good justification for not using Surround Back loudspeakers; they carry only information synthesised from the Surround channels, fill in the rear rather than add to fidelity and introduce more cabling. All the same, since the T755 costs a hefty £900 and is missing HDMI audio too, this hardly improves its apparent value.

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NAD’s onscreen set up menus look crude against competitors, and their modus operandi differ too, but they are usable. Loudspeaker distance, level and size can be set, but response equalisation is not applied during.

On the video side analogue video can be input through Composite, S-Video and Component inputs, and there are equivalent outputs for TVs or monitors. Conversion between these formats is provided. There are three HDMI inputs and one output, so video sources can be switched through.

The front panel houses an array of inputs, optical digital, audio, Composite and S-Video, plus a mic input for Audyssey mic and headphone output.
The T755 offers NAD’s trademark sound, which is characterised by conspicuously powerful bass that runs deep, making the T755 sound eye-poppingly muscular. The big bass line at the start of Toye Marinet’s ‘Last Plane Out’ in 24/96 PCM on DVD-A rolled through the room like a carpet of thunder. Guitar strings were hard edged but vocals clear enough in eye-poppingly muscular. The big bass outline, if not fleshed out by insightful thunder. Guitar strings were hard line at the start of Toy Matinee’s ‘Last Plane Out’ in 24/96 PCM on DVD-A hi-fi amplifier.

Spinning Rock of various types I got much the same result, thunderous bass lines and explosively powerful drumming that shook the room, a reasonably tactile midband powerful drumming that shook the plane. The NAD’s excellent C315BEE subwoofer is the reason, the T755 lacking the sophisticated thunderous bass lines and explosively rolled through the room like a carpet Plane Out’ in 24/96 PCM on DVD-A hi-fi amplifier.

The VHF/FM radio displayed a similar balance, with a large, warm hearted sound characterised by strong bass and obvious treble. I did pick up a faint background drone from the hum identified by measurement, during

The NAD has a multipin input socket for connection of a DAB tuner module, seen near top left. Loudspeaker terminals lack colour coding, as do surround input and output sockets, but accept 4mm plugs. HDMI inputs are pass throughs.

The T775 produces 128 Watts into 8 Ohms and a healthy 210 Watts into 4 Ohms per channel, so it has plenty of power. However, this is a 5 channel receiver so total power is less than its seven channels rivals in this group. This isn’t especially consequential however, because with most music the front speakers do all the work. Both hum and noise were high, measuring -72dB IEC A weighted through the processor and -76dB in Bypass mode, poor figures below modern day hi-fi products.

Distortion levels were respectively low, even at high frequencies, so the T755 amplifiers should sound smooth enough. In processor Bypass mode their bandwidth extended to 34kHz. Via the input ADC bandwidth was restricted to a low 24kHz, so no benefit accrues.

The T755 measured poorly by hi-fi standards and by current receiver standards.

**NAD T755 £880 Armour Home Electronics C +44(0) 1279 501111 www.nadelectronics.com**

**FOR**
- massive bass drive
- powerful sound
- simple to use

**AGAINST**
- lack of refinement
- hum drone from tuner
- no hi-def audio decode
- no phone stage
- no HDMI audio
- 5.1, not 7.1 channels!

**VERDICT**
Lacking HDMI audio, the T755 is unable to exploit Blu-ray sound and is outdated. Hum in the tuner was unacceptable, and sound below par.
ONKYO TX-SR876 £950

The big TX-SR876 is simpler version of the TX-NR906 reviewed in last month's issue, lacking its networking function, so it cannot play computer files or receive internet radio. The 876 can, however, still play SACD, when fed its DSD code from a suitable DVD/SACD player like the Oppo DV-980H with an HDMI link, so it may appeal to anyone with a SACD collection that is gathering dust since Sony lost interest in the format. You get full surround-sound of course and, by selecting DSD direct, full SACD performance through dedicated DSD convertors without prior conversion to PCM, Onkyo assured us when specifically questioned on this issue.

Backward compatibility includes the ability to play LP too, since Onkyo include a Moving Magnet phono stage, and quite surprisingly for a Japanese receiver, it actually works rather well. Like most receivers a Pure Audio mode is fitted and best selected for high quality analogue pass through such as this.

As the TX-SR876 has 24/192 digital-to-analogue convertors, it can handle PCM digital up to 24/192, so will play CD, DVD and even DVD-A with a suitable player attached. Again, the Oppo DV-980H DVD player suits. As there are four assignable HDMI inputs a Blu-ray player can be connected alongside a DVD player, and as both optical (2) and electrical (3) S/PDIF inputs are also fitted CD transports and suchlike can be hooked up also. Measurement confirmed top CD quality is achieved, with very low distortion and smooth, wide frequency response. This was the case with DVD-A and SACD too: the Onkyo provides lower distortion than CD and wider bandwidth for better sound quality.

Like most modern receivers the 876 is classified as 7.1, meaning it has seven amplifiers onboard and can feed a powered subwoofer. This is for surround-sound with four rear speakers and three fronts, a home cinema arrangement. For audio use a simpler and more convenient alternative can be configured, comprising two front speakers and two rears (leaving one channel unused). The fronts can be bi-amped for better quality or bridged for more power, so audiophiles have plenty of options. And even without bridging, this receiver delivers no less than 290 Watts per channel into 4 Ohm loudspeakers, so it isn’t short of muscle. Bridge the fronts and you get around 500 Watts per channel! Just bear in mind that few loudspeakers can handle such power though...

Also fitted as standard is a decent VHF/FM tuner, plus AM medium wave section. Forty preset stations memories are available between them and the VHF section can be tuned by entering station frequency directly. There’s a mono button that lifts noise muting so weak stations can be obtained, and also a Radio Data System that displays text information and can sort stations by type, including weather and traffic. An external aerial will be needed for proper results, connected by a female coaxial plug.

"a focused and detailed sound, characterised by an easy-on-the-ear midband, innocuous treble and a generous bass..."
analogue connected SACD players are available. An automatic Audyssey and a 7 band graphic equaliser are preamp outputs and inputs, so old tweaked. It is usually best to do this.

The TX-SR876 might not look too pretty but it is well built and as thankful accept 4mm plugs as well the loudspeaker leads that simplify hook up, avoid- ing channel connection error. The TX-SR876 gives a focused and detailed sound, characterised as usual for Onkyo by an easy on the ear midband, innocuous treble that was quite subtle by solid-state standards and a generous bass that was obvious. As bass guitar kicked in at the start of 'I Got You To See Me Through', from Eleanor McEvoy's Yola album on SACD, it sounded a little inflated and plummy, but with a weight that will satisfy many ears, as it gives a welcome impression of scale. There was no harshness from CD, nor any top end glare. I was impressed by 24/96 code on DVD-A of Toy Matinee's 'Last Plane Out', that the Onkyo handled fluently, coming over as fast and sharply defined, but without the harsh clutter that it often induces. Guitars cut out of the mix, vocals were clear as a bell and treble had a nice light air with no hint of tizz, unusual for high rate PCM. Bass was large and a little grumbly though.

LP came over well, from our Ortofon 2M Black cartridge, sounding every bit as good as the digital sources, except with slightly leaner bass than I am used to. It was still a creditable performance though, with an easy clarity and good focus, surprising from a giant AV receiver.

The Onkyo's generous bass gave 'Whole Lotta Love' a firm underpinning when Bonham got going, and cymbals had a sonorous ring to them, listening to Radio 2 on VHF/FM. With plentiful bass, sweet treble and fine clarity this really is a good tuner section, in line with quality elsewhere.

The big Onkyo always possessed an easy clarity and good focus, plus generous bass. It provides great quality from all sources and impressed me in every area. It's a very tough act for its rivals to follow.

Horizontally aligned loudspeaker sockets are colour coded, Fronts red/white, Centre green, Surrounds grey/blue, Backs brown/buff and Onkyo supply colour coded labels for the leads to simplify hook up, avoiding channel connection error. HDMI inputs and outputs are at top, and S/PDIFs at left.

The TX-SR876 delivers a massive 170 Watts into 8 Ohms and 290 Watts in 4 Ohms. As most loudspeakers have 4 Ohm bass units this is what you can expect, which over seven channels amounts to 2kW, the SR876 has massive power capacity. Distortion levels were very low at 0.013% into 4 Ohms at 10kHz and 0.016% at -1dB below full output. With Pure Direct selected to cut out the ADCs, bandwidth extends to 100kHz (-1dB). The amp section measures very well and should sound smooth and big hearted.

The VHF tuner was flat to 12kHz before a 19kHz pilot tone filter rolls output down, so will have an even tonal balance. Distortion was low at 0.1% at 50% and just 0.15% at 100% mod. via L+R on stereo. With full gain at 850uV (p.d.) from the aerial and a good if not wonderful -65dB hiss level above this threshold, the tuner is a good one. Did a digital signal from CD (16bit/44.1kHz) through the optical input, frequency response was flat to 21kHz and distortion low at 0.22% - good figures. Via HDMI 23/192 PCM from DVD & Blue-ray extended bandwidth to 40kHz (-1dB) and lowered distortion to 0.15% at -60dB, again good figures, if not the best. DSD code from SACD managed 43kHz (-1dB) and 0.12% distortion at -60dB, with DSO direct selected in the setup menu. This improves slightly on PCM, as it should.

The TX-SR876 measures very well in all areas, and is exceptional in some. It is well honed in every aspect of performance, measurement shows. NK.

GROUP TEST

ONKYO TX-SR876 £950

Onkyo UK +44(0) 1494 681515
www.onkyo.co.uk

FOR
- generous bass
- excellent in every area
- good LP sound quality
- excellent with SACD

AGAINST
- unlovely appearance
- big and heavy

www.hi-fiworld.co.uk APRIL 2009 HI-FI WORLD 23
1688 Signature
Stereo Preamplifier

Select Audio
www.selectaudio.co.uk
E-mail: select.audio@tiscali.co.uk
Tel: 01900613064
B
e afraid - AV may be com-
municable from receivers to humans, much as
BSE is from cows. Well, that's what I started to
believe at the end of this
group test when I thought I may be
going mad as SACD played perfectly
through the Marantz SR6003 one-
minute, reverting to the rear channels
playing through the front loudspeakers
the next, then finally falling mute
and not playing at all! Difficult at the
times, they're a frustrating box of tricks to handle when they
start playing up like this, following no
logical pattern as some form of mad-
ness seemingly sets in somewhere.
In such cases, go to the last page
of the handbook and look for the bit
where they admit that if it all goes
wrong cannot be communicated from
receivers to the amplifiers. It would
not recognise SACD after
playing PCM from CD, for example,
unless I first played our two channel
Yola SACD, whereupon it would
detect the DSD stream and lock
on correctly and then play other
SACDs!

So is the SR6003 a duffer? Our
sample may have had a firmware
fault, for the other side to the coin
is that out of choice, on the basis of
sound quality, I use a Marantz SR8002
at home and have never suffered
such a problem when feeding it
DSD over an HDMI connection
from an Oppo DV-980H DVD
player. The SR8002 acts as my AV
benchmark and suffers the heavy
usage only a reviewer meets out
- being used in all modes, plugged
and unplugged repeatedly and
overloaded to cut out when the
Oppo occasionally squirts
through switching transients
whilst volume is up. And it still
works brilliantly.

By an easily perceivable
margin the SR6003's amplifiers
were the best of the group in
this test. Cohesive in a way the
others were not, drums sat on
the same stage as the other
instruments it seemed, where
this was questionable through the
other three models. The Marantz
had superior midrange dynamics
and insight, was detailed and
finely timed at low frequencies so
the thwack of a stick against drum
skin was concise and beautifully
conveyed. I would rate the SR6003
amplifiers ahead of many of those in
independent hi-fi amplifiers and have
no criticism to make in this area.
Both CD and higher rate PCM
(24/96 and 24/192) from Blu-ray and
DVD-A sounded very good through the
SR6003, much of this being
down to the amplifiers. Bearing in mind
few people will be expecting to play
digital SACD code through their
receiver, most users would never
encounter the peculiar difficulties I
grappled with. As such, in strict sonic
grounds, this is the winner and by
a clear margin in my view. I really
enjoyed listening to the SR6003 and
both visually and operationally it was
superb, bar that one foible.

Close on its heels is the vast,
quirk-free and easy on the ear Onkyo
TX-SR876, complete with phono
stage. Onkyo are AV market leaders
in the U.K. for good reason. Their
receivers do work incredibly well
and I thought the TX-SR876 was
impressive in every area. Its bass may
be a little heavy and detached, and
the midband less grippingly revealing
than the Marantz, but it has a sweet
air about it and plenty of bass oomph
to underpin musical proceedings. LP
played very well and the VHF tuner
was delightful. So, the Onkyo is a class
product that gets the best from all
formats and will delight. On balance,
it has to be the best package of the
group.

I was happy with Yamaha's RX-
V1900 as it offers an easy alternative
to the others at a bargain price. It
lacks sharp treble or any form of
tools to push out strong
subsonics, the Yamaha struck me as
ideal for classical music and very good
for Rock also, if a little less viscerally
engaging than the Marantz or Onkyo.

I'm sorry to say that NAD's
T75S trails behind the others of
the group by a long margin. Lacking
audio processing from an HDMI link,
it cannot process DTS HD Master
Audio or Dolby TrueHD sound
tracks from Blu-ray and is purposed
for DVD, being coupled digitally
via outdated S/PDIF. Sound quality
wasn't impressive and a drone from
hum harmonics through the tuner
was inexcusable. Frankly, I wouldn't
expect this from NAD - especially as
the company is very strong with hi-fi
stereo amplifiers and tuners.

So, be warned that AV can
drive you mad. But on the edges
of madness lies pleasure, gained
when you have a fine AV receiver
that works properly. If you're an
audiophile with a serious love of
music DVDs, for example, you'd be
wrong to dismiss products such as
this outright. Despite what the snobs
would have you believe, they're not
all bad, and on hi res source material
some can be downright impressive in
both stereo and surround modes. The
quality is variable though - so as ever
try before you buy!
Forget 5.1 channel and all the problems it creates - just change down a gear to 4.0 to enjoy serious surround-sound, says Noel Keywood...

To most people, having four loudspeakers behind the settee and three in front is conspicuous madness, and AV receivers are its standard bearers. This is Home Cinema though; AV receivers also handle all forms of audio well – and you don’t need seven loudspeakers. In this feature I will look briefly at the issues, and why AV receivers can make a lot of sense for those who enjoy music, from Rock to Classical, on LP through to Blu-ray. Only an AV receiver can handle them all, as well as movies of course.

**NUMBER OF CHANNELS**

Home Cinema was conceived to support DVD, whose soundtrack comprised five audio channels and one low frequency effects channel, mimicking the arrangement used in cinemas. At front lie Left and Right loudspeakers in a normal stereo pair; and between them lies a Centre loudspeaker, originally to lock dialogue centrally under the screen and close to the image for those in the cinema audience sitting at far left and right. At the rear in domestic 5.1, lie Left and Right Surround loudspeakers.

A specs war has pushed the channel count to 7.1, the extra two channels feeding Back loudspeakers. The signal to them is synthesised from the Surround loudspeakers, because 7.1 recordings do not commonly exist, nor are they likely to. The Backs just fill in the rear sound field, but they still demand extra power amplifiers and cables of course.

Seven loudspeakers and a subwoofer for explosions are unnecessary for music quite frankly — and also completely domestically unacceptable to most people, especially in crowded Britain. Manufacturers are aware of this so most receivers can be reconfigured in their set-up menus to alternative arrangements. The most common is to reallocate the Back channels to second room use, or to bi-amping front Left and Right loudspeakers.

This can only be done with bi-wirable loudspeakers though, where it brings about a small improvement in quality.

In most homes, the only position for the Centre loudspeaker is below the TV — but this is a bad position for high quality music reproduction, channeling lead singers, drums and centrally placed instruments through a small loudspeaker close to the floor. It may be okay for cinema dialogue of course, but it certainly isn’t for music.

Worse, it commonly produces centre channel dominance, or Mono, which is an unfortunate contradiction to what surround-sound is meant to be about!

The simple, convenient solution to this is not to use a Centre loudspeaker, switching off the Centre channel in the set up menu. This directs the Centre signal to Left and Right channels equally, resulting in normal stereo with its phantom centre image.

Eliminating Back and Centre loudspeakers, and making the rear surround speakers small full range hi-fi jobbies, like Q Acoustics’ 1020is (£120) for example, results in a surround-sound system that is little more intrusive or costly than a stereo system. Cabling can be the biggest headache, as a door may be in the way to one of the rear ‘speakers, forcing a longer run around the other side of the room. A Quadraphonic system like this handles video soundtrack well.

In a system using full range hi-fi loudspeakers, for music a subwoofer becomes completely unnecessary. Specifying the Front and Surround loudspeakers as Full Range in the receiver’s set-up menu, and subwoofer as Off eliminates bass management, putting all frequencies, including lows, through the four loudspeakers. You will lose some subsonics from film soundtracks, so dinosaurs will develop a lighter step,
Another group of technologies are schemes to derive surround-sound from stereo. These allow CD and TV to give surround-sound. Some CDs respond well to this, and often TV (but not LP). Dolby ProLogicII and DTS Neo6 are two such schemes.

Finally, there are a whole slew of effects such as Stadium, Church, Night Club and what have you, best ignored if you’re an audiophile!

AV receivers purposed for quality audio replay must have all proprietary signal processing technologies onboard if they are to play everything - namely LP, CD, DVD, DVD-A and Blu-ray. Most receivers have a VHF/FM and Medium Wave AM tuner on board too. The Onkyo TX-NR906 I reviewed last month can also play computer files through a network connection, and receive internet radio.

A major point to note is that at present, only AV receivers are equipped to play high resolution digital audio, of 24bit resolution at 96kHz and 192kHz sample rates. This alone means they can deliver impressive sound quality.

Now that DVD-A and SACD are redundant formats, only Blu-ray is left to carry high definition digital audio, but as yet Blu-ray Profile 3 audio equipment is starting to arrive. The S/PDIF digital output of Bluray-As and SACDs is not adequate. But Blu-ray is the only format that can spin all silver discs, then one Blu-ray player will do it all.

The S/PDIF digital output of older DVD players will output CD and Dolby Digital (i.e. compressed) surround-sound, but often nothing else. Newer DVD players like the Oppo DV-980H output 24/96 and 24/192 stereo (but not surround-sound) via S/PDIF, but as these players come with HDMI outputs that replace S/PDIF this is best used.

With so much processing onboard and the need to appeal to audiophiles to widen their popularity, AV receivers have become complex and fiddly to use. Once set up though, with a little practice they can be mastered and have a lot to offer any music lover, because sound quality nowadays is very good - especially if you stick to four loudspeakers on the floor!

Oppo DV-980H DVD player also plays CD, SACD and DVD-A...
Trew Faith

Having established a bridgehead in the affordable audiophile market with its popular At3500 CD player, Astin Trew is hoping the matching At2000 integrated amplifier will emulate its success. David Price listens in...

It's not every day that a mainstream specialist hi-fi brand launches in the UK, but so it was that in 2005 we witnessed the birth of Astin Trew — the brainchild of Michael Osborne. With UK design and Chinese manufacturing, the new company very much followed the paradigm of mid-noughties specialist audio — although this is surely now being tested with rising labour rates in China and a falling pound, of course.

Still, these are but two of the many hurdles Michael has doubtless faced making his dream become reality — and so far he has done well considering the stiffness of the competition and the fact that specialist two channel hi-fi wasn’t exactly flavour of the month, even just a few years back (remember the AV boom? Ask your father where he was at the time!).

The At3500 CD player arrived like a thunderbolt from the sky, surprising yours truly by no small degree. Whereas there had been a trend for silver disc spinners to get ever cleaner and more forensic sounding, the new Astin Trew put on a pair of flared jeans, a belt with a big snake buckle and a Lou Reed T-shirt, on its way back to the seventies.

It was like the eighties had never happened — no forensic analytical digital here — rather we got what is without doubt the warmest, fullest and most euphonious sounding silver disc spinner under £1,500 (or more). It didn’t quite pass muster on the low frequency front, but the way it stringed together the big musical picture was (and is) exceptional.

With this in mind, the £1,349 At2000 integrated has much to live up to. Astin Trew say that they, “pay particular attention to the correct tonality of instruments and tangible sound stage - a sound stage that sits between and behind the speakers, rather than in front”. No mere PR puff this, as it describes two of the key characteristics of the aforementioned CD player well.

To translate this to the amplifier domain, the company has chosen to develop its hybrid MOSFET (single pair, "horizontal" type, as they sound better and are more robust, it’s claimed) power amplifier design stage, first used in the At5000 power amplifier. It incorporates a solid-state Class ‘A’ biased preamplifier stage, in combination with a ladder resistor network volume control.

Power supplies are critical to achieve a good sound, and the company has paid those of the At2000 serious attention, opting to use Never Connected power supply designs for several years, and so we find the latest generation employed here. In this case, it supplies power to the preamplifier, all balanced signal circuitry, headphone amplifier and combining sub-bass buffer amp. A high quality XLR balanced input is offered as standard, with "specialist studio quality balanced signal op-amps" fitted (the circuit being developed by Bill Whitlock of Jensen Transformers) and powered by Never Connected supplies. The result is that via good quality balanced cables,
Astin Trew says the amp will drive very long lengths of cable for multi-room use.

Indeed, the At2000 integrated amplifier is not an out and out minimalist design — there’s a range of facilities, all controllable via a high quality metal remote control or the front panel. A switched input to use the At2000 power amplifiers from an outside volume controlled source is fitted, allowing incorporation into AV surround sound set-ups, and there’s a buffered mono output for active sub bass. There are two front panel headphone sockets (6.3mm and 3.5mm), and a 3.5mm ‘MP3’ input. Switchable mute and an alphanumeric display complete the picture.

Stylistically, I do find the ‘2000 something of a mixed bag—especially placed beside that paragon of aesthetic purity, the Naim Nait XS. The black front panel sits awkwardly with the silver casework (so I’d suggest getting the silver front panel version), and the exposed screw heads on the top of the case begin to look cheap when sitting next to rivals from Naim, Cyrus and Sugden. Likewise, the switchgear does the job okay but is less than pleasant to use, and the display is visually unimpressive. None of these were major considerations with cheaper Astin Trew products, but at nearly £1,400 they’re in a different market sector, with higher standards of ergonomics and visual presentation...

**SOUND QUALITY**

It would have surprised me if this had been a spry and over analytical device — because that is not the way this company’s products are voiced. And so it is with the At2000 integrated; this amplifier errs — just — on the warm side of neutral, sounding in some respects eerily similar to the CD player despite it being a completely different type of component.

Badly Drawn Boy’s ‘About a Boy’ original sound track is about as good as a modern vinyl pressing gets — beautifully open and three dimensional with a truly varied tonal palette and lightning-fast transients; it represents the state of this decade’s LP mastering art as far as I am concerned (and the music’s great too). It’s always a great test of an amplifier, to hear just how much (or little) this massive recording is compressed and sullied by whatever is entrusted to play it. Well, it certainly spotlighted the Astin Trew’s nature very quickly — and I am pleased to say that it is a generally benign one.

Here we have a big hearted and expansive performer, with a gently musical nature. Rather like a unipivot tonearm, I found the At2000 not beyond reproach, but what it did do well, it did very well indeed. Musicality is the key here; those big plaintive piano parts flowing through the first side of this disc were carried with all their power and emotional purchase intact. Likewise, this amplifier proved more than able to express Damon Gough’s intricate guitar work, capturing both the leading edge of his beloved steel string classical guitar and a good deal of the instrument’s body too, with real skill. Best of all was the way all this was strung together.

The David Ball-produced lost epic that is World of Twist’s ‘Quality Street’ is another brilliantly recorded modern album, with a swaggering, stadium sound and true audiophile recording quality. ‘The Lights’ proved an excellent showcase for the At2000’s big, beguiling sound — the amp giving a commanding rendition of singer the late Tony Ogden’s superb vocals. Although this amplifier doesn’t quite have the speed of Naim’s new Nait XS, it showed that it could really pick up its skirts and run with
just for your musical bliss

KI-40L
STEREO INTEGRATED AMPLIFIER

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suitably expansive recordings. Here we had a good degree of subtle detail, quietly but convincingly bristling forth from the Astin Trew. By comparison, the Naim would sound things out just a little more clearly for you, giving a more detailed and grippy sound, but lacking the back ease of the Astin Trew at the same time.

ZZ Top's 'Legs' showed this amplifier's emotional commitment — again constructing a capacious soundstage and a generous bass sound (courtesy of those old analogue synthesisers and plain old bass guitar). Tonalty, it has a decently wide palette at its disposal, but there's definitely a degree of colouration, switch to Sugden's A21a S2 for example (£1,267) and you notice there's an obvious haze across the upper midband of the At2000 that simply isn't there with the Class S2, both of which are narrower soundstage, yet is considerably less opaque across the midband than the At and more sumptuous in the bass.

Of course, it's vital to get the right amplifier for your system, so I'd still recommend an audition, especially if you have the At3500 CD player (with which I suspect it will be a particularly synergistic combination), but it's fair to say that competition is very strong at this price point and the stock At2000 really has its work cut out. Interestingly however, Astin Trew have just announced a 'plus' package of choice passive component mods for under £200; this could really push their mid-price amplifier out in front, so watch this space for a review soon.

A Sugden. Likewise, Naim's Nait XS also has some distinctive colouration, but it's almost velvety and a little more agreeable than the slight 'fug' across the Astin Trew's upper mid. Still, every amplifier at this price (and beyond) is blessed (or afflicted, depending on your point of view) with some sort of colouration and the upside is that — unlike the glassy clear Sugden — it never pushes the system into brightness.

Donald Byrd's 'Lasana's Priestess' from his classic early seventies BlueNote waxing 'Streetlady' was fun through the Astin Trew. Whilst it can't muster the clarity of the Sugden, it can push out considerably higher levels and an altogether more muscular bass. I was also again impressed with how it proffered a particularly wide soundstage; there was some degree of flattening of the depth perspective, so some of the fan-back instruments moved a little far back instruments moved a little far back. Instead, it sounded a A fine amplifier this, but I wasn't quite as convinced by it as I have been by the At3500 CD player. Funnn enough they share a good deal in common, from a fairly warm bass (although the CD player is definitely the stand-out in this respect) to an expansive if slightly two-dimensional soundstage and a silky if rather summary treble performance. But the problem for the At2000 is its price rivals — the Naim Nait XS and Sugden A21a S2, both of which are brilliant and distinctively different from one another. The Astin Trew is neither, and not quite a good enough working compromise. The At3500 CD player is very special, doing a 'party piece' that no other rival can do at the price (or near it), but the At2000 doesn't stand out from the crowd in the same way. Probably the closest to it in nature is Leema's Sream integrated (£1,169.56) which has a fractionally narrower soundstage.
C'est Chic

Adam Smith enjoys the sleek sound and cool looks of YBA's YC201 CD spinner...

The relationship between the British and the French has not always been completely harmonious, and for that we have to thank various assorted historical events. Still, this is all water under the bridge now, and so it puzzles me why we don't have more Gallic hi-fi brands on sale here, just twenty two miles away from their country of manufacture. Aside from the likes of Focal JM Labs and Micromega, hardly any French hi-fi has ever made it across the English Channel.

This is a shame as, in engineering terms at least, whilst it's true that Continental designs can have their 'quirks', some of the lateral thinking applied to solve troublesome problems has been truly inspired in the past, as any classic Citroen fan will know. However, it appears things are finally changing, as Cabasse have announced that they will be exhibiting at the Bristol Sound and Vision Show this year, and I have been spending the last few weeks in the company of YBA's latest CD player, the YC201.

YBA are named after the initials of their founder, Yves Bernard Andre, and the company was founded in 1981. Their aim has been to gain the ultimate in sound quality but above all to faithfully reproduce the emotion in the music played, they say. As Yves Bernard himself admits, "technology is not an end in itself. The pleasure found in listening must be our only guide". As a result, YBA state that all of their equipment follows four main goals, namely musical quality, durability, purity and evolutionary ability.

Currently, YBA make four main ranges of equipment, which they refer to as their 'instruments': the Signature, Passion and Design ranges, and it is from the latter that the YC201 hails, alongside a stereo amplifier and tuner, DVD player home theatre processor and multichannel power amp, and a Music Server.

Personally, I feel the Design range is aptly named, as the YC201 is stunning in the flesh, with the design's minimalist look apparently inspired by the famous architect Ludwig Mies Van der Rohe. The brushed aluminium finish is mostly black, with a sculpted silver band around the bottom and you have to hunt for any sign that the thing is actually fixed together with screws. Build quality is superb and the whole thing feels solid and sturdy. Even more encouragingly, the remote handset is not an afterthought, but a chunk of veritable metal loveliness, arriving in its own little presentation box. Frankly, the whole experience is only spoilt when you open the disc tray, and a flimsy plastic item that looks like it came straight out of a PC wheezes and groans its way out to greet you - doh!

In typically mysterious Gallic fashion, the front panel switches are unlabelled, only gaining idents when the unit is powered up and the big, clear display above is active - then the appropriate legend appears above each control. The nine buttons cover play, pause, stop, open/close, track skip and search and repeat and it takes a little getting used to the symbols and layout, but it's quite a fun learning experience all the same. The YC201 offers digital and analogue outputs, both through phono sockets, plus a trigger socket and RS232 interface for control by an external driver. Internally, the machine has 24/192 upsampling ability and an "UltraLow Jitter" design ethos utilising a high-performance Wolfson WM8740 DAC. Unusually, the YC201 outputs only 1.35V rather than the CD standard 2V, which may be something to watch out for if you run a low-gain amplifier setup. Finally, the YC201 weighs in at 15kg and measures 130x390x390mm so it is narrow but deep. This is something else to consider, as its depth meant it only just perched on my rack.

SOUND QUALITY

Well, there had to be a quirk didn't there? I soon found it; namely some loud distortion when I returned to 'play' mode after fast searching through a track, which made me utter a rather surprised "sacre bleu!" Fortunately this appeared to be an anomaly that did not return after the player was thoroughly warmed up and I was greatly relieved, as I would have wanted nothing to spoil the rather lovely performance the YC201 turned in. This is quite a different sounding player to many on the market, certainly at its relatively modest price level. If you head for it looking for razor sharp transients, sizzling treble and visceral punch by the bucket load, then it may not be for you. However, if you effectively want a roaring log fire of a CD player, where the listening experience is akin to relaxing in a hot bath whilst a willing lovely massages your temples [I say, steady on Adam old boy, we're not in France now! Ed.], then this is exactly what you've been looking for. Do not get the impression that the YBA is a soft, wallowy and soggy performer; as it isn't. What it is though, is a CD spinner that turns in a fluid, effortless and, above all, emotive performance; one that can often plague CD.

Lead singers were spotlighted beautifully centre-stage by the YBA, surrounding them with instruments, although it did lack the pinpoint precision of placement that one or two other players at the price point have. However, what this meant was that there was a lovely swathe of music before me, with the lead action standing well clear. A perfect example was one of Within Temptation's
quieter moments, namely the track ‘Never Ending Story’ from the ‘Mother Earth’ album. Here Sharon den Adel sang right in front of me, with her backing piano’s notes shimmeringly vivid – I could easily hear the hammer strikes from the instrument as each one fell on its associated string.

This departure from the conventional CD sound continued at the extremities of the spectrum as well. At the top, the YBA is very well detailed but it is smoother, more effusive and rather less stark than most of the competition. On the odd occasion this did mean that a hard cymbal strike was ever so slightly muted, but generally it added a further sense of involvement and languid fluidity to proceedings, and certainly never came within a country mile of sounding harsh. When a high hat was struck, or a triangle tapped delicately at the back, it equally never took the opportunity to assault the ears – something that can all too often be a feature of less couth designs.

Down at the southern end, this player also offers bass weight and low end solidity that is very rare at the price. Unfortunately this did not come without a small penalty and I felt that the YBA could occasionally be a little too thunderous, especially when synth bass lines were involved, making these become a little indistinct at times. As an example, the processed bass notes from Mono’s ‘Life in Mono’ went massively deep, but lacked the control and causticity that I am used to from this track.

Equally, the deeper notes from David Crosby’s ‘Hero’ seemed to come out in distinct events – slipping the same CD into my reference Marantz CD94 revealed a proper tune at the bottom end, rather than a series of individual notes, which was what the YC201 seemed to suggest was present.

On the whole however, electric and acoustic bass lines were confident and generally nicely rhythmical; the YC201’s fine upper bass resolution capturing the essence of bass instruments very well and more than able to carry a tune. Harry Connick Jr’s ‘If Only I Could Whisper Your Name’ boogied along very nicely indeed, the YBA making light work of the bass guitar that underpins the track. Equally my traditional bass clarity and tunefulness test, namely the intro to Simply Red’s ‘Sad Old Red’ went into the YBA’s drawer and the result was one of the best renditions I have heard.

CONCLUSION
The YBA YC-201 is an unusual Compact Disc player, for sure. It forgoes the traditional qualities of CD slightly, by not being quite as hard, fast and precise as most other players and this could have easily resulted in a dull and sluggish result. Fortunately, YBA’s impressive engineering clearly extends beyond the stylish casework to ensure that it does not, and the YC201 is one of the most emotive, engaging and musically satisfying players I can think of in the sub-£1,000 bracket. Perhaps the Gallic technological invasion of these shores has finally begun – and like fine wine and French cuisine, it is a life-affirming thing.

MEASURED PERFORMANCE
Frequency response of the YC201 measured absolutely flat from 2Hz up to 21kHz, our analysis shows. The player would not play our usual Denon test disc providing a convolved impulse response, so our analysis shows a more conventional fixed tone sequence. Distortion levels were low at higher levels but deteriorated as level decreased, a poor 0.42% distortion result at -60dB causing EIAJ Dynamic Range to come in at just 104dB, 8dB down on the best. Separation figures were normal enough, as was noise. However, output was peculiarly low at 1.35V, meeting YBA’s spec. – but this is way below Philips standard of 2V.

The digital output was not providing a signal the analyser could lock on to. The YC201 was a little unusual in some areas and seemed disc sensitive but its upsampling may result in a decent basic sound quality. NK

VERDICT

FOR
- styling and ergonomics
- engaging warmth
- fine upper bass detail
- central image solidity

AGAINST
- soggy low bass
- nasty disc drawer

YBA YC201
£890
YBA Ltd
+33(0)160 12 51 00
www.ybadesign.com

Frequency response (-1dB) 2Hz-21kHz

Distortion (%) 2Hz-21kHz
0dB 0.02
-6dB 0.009
-60dB 0.42
-80dB 3.2
"... ONE OF THE FINEST PAIRS OF LOUDSPEAKERS I'VE YET AUDITIONED."

*HiFi-World, July 2008*

With its TENSOR Series, ADAM has set a new benchmark in high-end loudspeakers. They combine all of ADAM's technical innovations like the Accelerating Ribbon Technology (ART), praised by many professional engineers as the superior transducer technology available today. And so say the reviews.

What will you say?

**Tensor Series - Highest End**
button on the A-S700 amplifier saw the overall quality of the presentation improve again, along with a distinct broadening of the soundstage whilst retaining separation. Pressing the amp’s Pure Direct button cut out all of the excess noise on the amp, this time. From this point onwards, I left all of the buttons depressed!

Moving to the cultured tones of Carol Kidd’s new album, ‘Dreamsville’, and the modern reinterpretation of the classic ‘A Nightingale Sang In Berkeley Square’, I could still discern a touch of brightness across the upper midband and treble, but this combined with sharp transients to make for a very crisply etched and propulsive rendition of the track.

The Yamahas’ success in the upper registers carried onto Black Dog’s ‘Parallel’ from the album of the same name. A particularly pleasing performance, the Yamahas showed that they were more comfortable with the digital bass frequencies of this classic electronica piece than the organic complications of the double bass. Indeed, the wonderful instrumental separation that spread over the impressive sound stage gave the album a rare sense of grandeur.

Of the two Yamaha units, I felt the CD-S700 to be the less neutral. It is the one that adds the bright tonality to the combo, whilst the A-S700 is actually quite smooth and rich sounding with a strong bass. For example, moving to a more expensive Naim CDS CD player revealed the CD-S700 to be a little less controlled in the bass, and less accomplished at conveying timbral information from that difficult Carol Kidd track.

Whilst I tried this budget amp with my reference One Thing Audio modded Quad ESL57s, I didn’t feel it was a particularly synergistic combination. The Quads told me a little too much about the CD source. However, I found the system suited the Spendor S3/5R standmounters [Hi-Fi World, December 2008] to a tee.

With a T&A G10 tunable, SME M2-9 arm and Audio Technica AT10E driving it, I found LP a pleasant experience, if not a spectacular one. The Yamaha was nothing if not civilised and balanced and, whilst it couldn’t compete with the reference Trichord Dino phonostage for dynamics and detail, it proved a capable and worthy feature at the price.

Similarly, a USB memory stick loaded with MP3 and WMA files proved rewarding, music sounding clear and spacious.

CONCLUSION
A nice pair, as the saying goes, and one that offers fine build, particularly attractive styling and decent sound for the money. Competition is tough at this price point of course, thanks to the likes of NAD, Cambridge Audio and now Arcam, but I feel these Yamahas are more than able to hold their ground.

The amplifier is the stronger of the two, but the pair work very well together and proved particularly accomplished partners for my reference Spendor S3/5R loudspeakers. Not quite impressive as a full size Yamaha grand piano admittedly, but an awful lot more affordable and as much as much fun to play.

YAMAHA CD-S700 £399.95
Yamaha
©+44 (0)1908 366700
www.yamaha-uk.com

VERDICT
Slick, well made budget CD player with an enjoyably musical sound.

YAMAHA AS-700 £499.95
Yamaha
©+44 (0)1908 366700
www.yamaha-uk.com

VERDICT
Accomplished sounding, superb looking and well hewn do-it-all entry level amplifier.

REFERENCE SYSTEM
Naim CDS CD player
Quad ESL-57 (One Thing modified) loudspeakers
Spendor S3/5R loudspeakers
Chord Anthem 2 interconnects
Chord Epic Twin loudspeaker cables
Atacama HMS 1 loudspeaker stands
Atacama Equinox XLPro SE rack

FOR
- detail
- musicality
- build

AGAINST
- well lit upper mid & treble

VERDICT
- retro looks
- clarity
- dynamics

AGAINST
- nothing at the price

YAMAHA CD-S700 £399.95
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VERDICT
Slick, well made budget CD player with an enjoyably musical sound.

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VERDICT
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VERDICT
- retro looks
- clarity
- dynamics

AGAINST
- nothing at the price

REVIEW

MEASURED PERFORMANCE

YAMAHA CD-S700 CD player
Frequency response shows an unusual roll up at high frequencies, our analysis shows, measuring +0.1dB at 20kHz, small but 0.5dB or so more than most players, so the CD-S700 will sound bright and forceful in its treble. Otherwise, tonal balance is deadly accurate.

Distortion figures were normal enough all the way down its dynamic range and EIAJ Dynamic Range value of 110dB was good. Jitter was low at 10µs random across the audio band, and 80µs programme related on a 50µs, 1kHz tone.

The CD-S700 will have strong treble but otherwise measures well. NK

Frequency response 7Hz-21.2kHz
Distortion 0.001
-6dB 0.005
-50dB 0.224
S/N 42dB
Separation (1kHz) 104dB
Noise (IEC A) -127dB
Dynamic range 110dB
Output 2.15VA

YAMAHA A-S700 amplifier
The Yamaha produces 136 Watts into an 8 Ohm load and a healthy 225 Watts into 4 Ohms.

Sensitivity 220mV
Distortion 0.01%
Power 136 watts
Frequency response 2Hz-100kHz
Separation 60dB
Noise -108dB
Distortion 6.01%
Sensitivity 220mV
Damping factor 54
Disc
Frequency response 7Hz-60kHz

CD FREQUENCY RESPONSE

AMPLIFIER DISTORTION

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Pyxis is the most advanced stereo pre-amplifier currently available. Using a fully balanced topology, Pyxis offers a truly symmetrical signal path from input to output. Even the audiophile quality equalisation (tone control) circuitry remains in the balanced domain.

- Optional MM & MC phono-stage
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- Each input adjustable for gain, bass and treble
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When used with Leema power amplifiers such as Altair or Hydra, Pyxis may be set to provide a fixed high-level output, enabling volume control at the power amplifier using LIPS. This provides maximum resolution, dynamics and enhanced low-level detail at all listening levels.

Offering the ultimate in no-limits audio amplification, Altair monoblocks are the reference for high-end stereo and multi-channel audiophile applications.

Presentation is highly-refined and delicate even though massive power is on hand to ensure dynamics stay true to the most demanding recordings.

As with all Leema amplifiers, Altair takes absolute control of the loudspeakers to achieve a level of realism and musicality previously unheard.

The design uses a fully balanced ‘bridge’ topology to give minimum distortion and maximum headroom. Each amplifier offers two sets of WBT™ Next Gen™ gold-over-copper binding posts for bi-wiring.

Altair is fully LIPS™ compliant using Leema’s new LIPS2 system and may be controlled from Pyxis or home automation systems. For installers, remote trigger facilities are available.

Altair specifications

<table>
<thead>
<tr>
<th>Response</th>
<th>10Hz-100KHz +0.0/-3dB</th>
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<tbody>
<tr>
<td>Power 8 ohms</td>
<td>550 watts RMS</td>
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<td>Power 4 ohms</td>
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<tr>
<td>Power 2 ohms</td>
<td>1800 watts RMS (Short term)</td>
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<td>Current 20mS</td>
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<td>THD 1kHz</td>
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<td>Damping factor</td>
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<td>Dims in mm</td>
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<tr>
<td>Weight</td>
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BEAUTIFULLY ENGINEERED SOUND
From the company that brought you the world's first DAB tuner a decade ago, meet the Arcam T32, the world's first DAB+ hi-fi separate. Steve Green tunes in...

Arcam has a long history with DAB, as it produced the world's first ever Digital Radio tuner, the Alpha 10, which celebrated its tenth anniversary last autumn. Now Arcam has managed another DAB first, because the T32 is the world's first DAB+ hi-fi design. However, because of the disappointing progress that DAB+ sales have made since the new standard was unveiled two years ago, which has mainly been due to the portable radio manufacturers' reluctance to switch their existing models over to support DAB+, we're still at least a couple of years away from seeing the first full-time DAB+ stations being launched in the UK, which rather dampens the impact of this world-first, really...

At least owners of the Arcam T32 won't have to worry about their tuner being made obsolete when DAB+ does begin to take over, though. And T32 owners living within a few miles of the Leicester Square DAB transmitter in London could actually sneak a listen to DAB+ today if they're lucky, because there's actually a DAB+ test transmission going out from there at the moment, although how long it'll be transmitting for is anyone's guess!

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Digital is all well and good (at least if sonics aren't your priority), but FM still provides superior listening ability compared to DAB, and so I was pleased to hear that Arcam has returned to implementing FM using analogue components, after it had provided FM using software-defined radio on its DT91 tuner, which didn't quite live up to the company's usual high standards in sound quality terms. On the digital side, rather than jumping ship to Frontier-Silicon, which produces around 75% of all the DAB modules sold in DAB receivers in the UK, Arcam has stayed faithful to Radioscape, and the T32 uses the company's RS223 DAB/DAB+ receiver module, which means that in total the new tuner supports the DAB/DAB+ (Band III and L-band), FM with RDS and the AM radio formats.

Digital to analogue conversion on the T32 was handled by Wolfson's 8740, which is the same DAC chip that Arcam uses in its respected DVD players. The analogue output circuitry uses Burr Brown OPA2134 op-amps, and the tuner uses separate power supplies for the digital and analogue sections. All circuitry is fed from a toroidal power transformer and multiple low-noise regulated DC power supplies, and components are mounted on double-sided fiberglass PCBs.

Out of the box, the T32 was robustly built. On the front panel, the controls were similar to those found on most DAB/FM tuners, consisting of the ubiquitous rotary tuning knob, along with preset buttons, and buttons to control the display, to bring up the menu and to select items from lists. The wide two-line display was excellent, as the bright green text could easily be read both from a distance and from a wide angle. The tuner also includes an interface to allow the attachment of Arcam's rDock or rLead, which are Arcam's iPod dock and iPod interface cable set, respectively, but which have to be purchased separately. The T32 is available in either black or silver. Arcam supplies a 'universal' remote control with the T32, which can control up to eight devices altogether. Although there were a lot more buttons on the remote control than were needed to operate the tuner, it was still easy to operate the remote via the remote control was a piece of cake, as the buttons were well laid out, and the remote was well built and well-balanced, so it sat comfortably in the hand. Entering stations into the preset slots via the remote control was a piece of cake, as the tuner was well built and well-balanced, so it sat comfortably in the hand. Entering stations into the preset slots via the remote control was a piece of cake, as the tuner was well built and well-balanced, so it sat comfortably in the hand. Entering stations into the preset slots via the remote control was a piece of cake, as the tuner was well built and well-balanced, so it sat comfortably in the hand. Entering stations into the preset slots via the remote control was a piece of cake, as the tuner was well built and well-balanced, so it sat comfortably in the hand. Entering stations into the preset slots via the remote control was a piece of cake, as the tuner was well built and well-balanced, so it sat comfortably in the hand. Entering stations into the preset slots via the remote control was a piece of cake, as the tuner was well built and well-balanced, so it sat comfortably in the hand. Entering stations into the preset slots via the remote control was a piece of cake, as the tuner was well built and well-balanced, so it sat comfortably in the hand. Entering stations into the preset slots via the remote control was a piece of cake, as the tuner was well built and well-balanced, so it sat comfortably in the hand. Entering stations into the preset slots via the remote control was a piece of cake, as the tuner was well built and well-balanced, so it sat comfortably in the hand. Entering stations into the preset slots via the remote control was a piece of cake, as the tuner was well built and well-balanced, so it sat comfortably in the hand. Entering stations into the preset slots via the remote control was a piece of cake, as the tuner was well built and well-balanced, so it sat comfortably in the hand. Entering stations into the preset slots via the remote control was a piece of cake, as the tuner was well built and well-balanced, so it sat comfortably in the hand. Entering stations into the preset slots via the remote control was a piece of cake, as the tuner was well built and well-balanced, so it sat comfortably in the hand. Entering stations into the preset slots via the remote control was a piece of cake, as the tuner was well built and well-balanced, so it sat comfortably in the hand. Entering stations into the preset slots via the remote control was a piece of cake, as the tuner was well built and well-balanced, so it sat comfortably in the hand. Entering stations into the preset slots via the remote control was a piece of cake, as the tuner was well built and well-balanced, so it sat comfortably in the hand. Entering stations into the preset slots via the remote control was a piece of cake, as the tuner was well built and well-balanced, so it sat comfortably in the hand. Entering stations into the preset slots via the remote control was a piece of cake, as the tuner was well built and well-balanced, so it sat comfortably in the hand. Entering stations into the preset slots via the remote control was a piece of cake, as the tuner was well built and well-balanced, so it sat comfortably in the hand. Entering stations into the preset slots via the remote control was a piece of cake, as the tuner was well built and well-balanced, so it sat comfortably in the hand. Entering stations into the preset slots via the remote control was a piece of cake, as the tuner was well built and well-balanced, so it sat comfortably in the hand.

"put simply, the Arcam T32 is the best DAB/FM tuner I have heard to date..."
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always started out from the main menu after tracks had finished playing, which is different to how the iPod does things. All the information you would expect to find on a DAB tuner was available, such as scrolling text, the bit rate, the type of content that a station plays, and it also used a very effective bar graph to display the signal strength on both DAB and AM. On FM, the station name was displayed for stations supporting RDS, along with the frequency.

The rear of the unit housed an on/off switch and power socket, along with the standard Belling and F-type connectors for the FM and DAB aerials respectively, plus a connector for an AM loop aerial. Two pairs of phono audio output connectors were provided rather than the typical single pair; and there were a pair of phono auxiliary inputs and an R5232 connector, which are both used when connecting the rDock iPod dock or the RLead to the tuner. Finally, although we can't receive this in the UK, there was also a connector for 'Sirius Radio', which is the American satellite digital radio system, because the T32 has been designed to work either with DAB/DAB+ or with Sirius, and the appropriate receiver module is fitted depending on where the tuner is purchased.

In terms of reception quality, Noel's measurements showing that the Arcam was only mediocre in terms of sensitivity were borne out in practice. This means that the tuner wouldn't have problems receiving FM stations that have a medium or high signal strength using the supplied wire aerial, but I would echo Noel's advice that to get the best out of the tuner it should be fed by an outdoor aerial. This advice applies generally to all tuners, but it is especially relevant for higher quality tuners such as this. Reception quality on DAB was very good though, as I didn't hear any bubbling mud on any of the multiplexes I could receive. AM reception and sound quality were also relatively good, although with almost all AM stations also being transmitting on DAB, AM is rather superfluous nowadays.

**SOUND QUALITY**

Arcam's move back to using analogue components to implement FM has certainly paid dividends, because its performance on FM was sensational. One of the most striking things about the T32's performance was that once it had locked onto a signal, the tuner managed to squeeze out an incredible amount of detail, and its performance was amongst the best I've ever come across in this regard. This led to the tuner delivering the higher quality FM stations with wonderful definition, and the stereo imaging was superb too.

Another special thing was the Arcam's level of refinement, which combined with the tuner's naturally balanced delivery to give the sound its own unique character. In my experience, although tuners in the £200 to £400 price bracket have all been impressively precise, it is this added personality to the sound that sets the more expensive tuners apart from the rest of the crowd. My personal favourite in terms of the character of its sound was the Creek T50, which is the same price as the Arcam, but the Creek is analogue-only, unfortunately, and most people expect DAB to be included nowadays.

This new tuner was also a class apart in its delivery of the more mediocrе-sounding FM stations, which some rivals can struggle with, especially when the quality of the sound being broadcast by the station hasn't been particularly well engineered. However, due to its ability to squeeze so much detail out of the signal, the Arcam gave these stations a huge lift, and transformed the quality of some stations that lesser tuners did little to improve.

The Arcam's performance on DAB was also one of if not the best I've experienced to date. The low bitrates used by DAB stations hugely favours the speech stations – because speech is far easier to encode than music – and the Arcam delivered the likes of Radios 4, 5 and 7 very well indeed. It also added more energy and detail to the sound of music stations than other DAB tuners have been able to, although straight A/B comparisons with the same stations on FM still showed how superior analogue is in terms of quality. Regarding the issue with the dynamic range compression on Radio 3 FM, this seems to be largely down to personal taste, but I personally prefer the fact that FM at least delivers the sound that's fed into the system (the compression is applied before reaching FM transmission) accurately, whereas DAB does not. This is in no way excusing the BBC for applying compression on R3 FM, though, especially in the evenings...

Although Arcam's 'rDock' iPod dock has to be purchased separately, using it with the T32 acting as a playback device certainly delivered excellent quality via Apple Lossless, so I feel it would be a worthwhile purchase for T32 owners who also have an iPod.

**CONCLUSION**

Put simply, the Arcam T32 is the best DAB/FM tuner I've heard to date, and the fact that it also supports DAB+ and has an interface that supports Arcam's own iPod dock are icing on the cake. A superb product, and one that deserves to succeed both today and tomorrow.
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Drop Top

It's already common for archive digital recordings of vinyl to be done at 24bit, 96kHz resolution, but the Benchmark ADC1 USB has the promise of making 24/192 needle-drops an easy reality. Patrick Cleasby listens in...

Several years ago I started playing with top quality analogue to digital conversion – at the time primarily as a means of capturing SACD and HDCD for iTunes/iPod purposes. The then state-of-the-art was the 24/96 M-Audio Delta 1010 PCI card with external convertor unit, but as we have moved to higher performance laptops and USB 2.0 connections, so the 24bit, 192kHz-capable Benchmark ADC1 USB presents itself as a very neat solution for those wanting to digitise music...

My main areas of archiving interest are now stereo SACD and vinyl, because HDCD can now be turned into 24bit FLAC using dbpoweramp software with the HDCD.exe plugin, and just about any player (such as a Linn DS) or a DAC can be transcribed your vinyl collection to 24bit FLAC using Audacity application into dealing with 24/96 (although export options are less iTunes friendly). Appropriate PC solutions would include WaveLab, Audition and the like...

The Benchmark ADC1 USB is simple to use - the forbidding array of LEDs is easily decoded using the manual, and a few flicks of the mode button puts the device into 24/96 mode. Red lights warn of digital clipping, but I found a zero gain setting with the line level gain set at 20dB gave me a good signal with enough headroom.

For testing I elected to record the SACD of Depeche Mode’s ‘Exciter’, the penumbral tones of which were ideal to sample the delicacy and soundstaging the Benchmark was reputedly capable of capturing. And so it proved, with the ADC1 recording levels of detail and separation which the likes of the E-Mu 0202 are simply not capable of matching. It proved a smooth, subtle and detailed performer, bringing supertative levels of musicality at its top 24/192 setting.

I would say that this Benchmark analogue to digital convertor is every bit as desirable as the DAC1 USB previously reviewed by DP, but they do make a pricey pair don’t they? That said, Benchmark really does mean that desirable 24/192 AES/EBU output via both coaxial BNC and Balanced XLR for the high end or studio minded, S/PDIF (and ADAT) over optical, and the all important Type B (Printer type) USB connection for the computer hook up, thankfully driverless for both PC and Mac. There is also a secondary coaxial output simultaneously capable of variable (i.e. lower) resolutions – i.e. for pro musicians’ safety CD_R copy-type uses.

My recording machine of choice is the trusty MacBook Air, and as a Final Cut Studio user I have the benefit of the excellent Soundtrack Pro application for recording. Other Mac users would do well to investigate the 24bit capabilities of the new Garageband ’09 (Garageband ’08, while 24bit, insists on flipping your Audio/Midi settings to a default of 24/44.1, so be vigilant), or you can always try and bully the free Audacity application into the main leap up for me, in moving to Benchmark territory, is that where once I needed phono to 1/4” jack leads, now I needed phono to XLR leads – and as for any other inputs (other than external clocking) that’s your lot!

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Verdict

State-of-the-art conversion solution for the high-resolution digital enthusiast, but with a price point to match

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SHOUT TO THE TOP!
Dear David,
Thank you once again for a fine publication, and I would like to refer to your ‘Opinion’ article on page 89 of October 2008’s HI-FI World. For me personally the format situation has been a war, and is still a war, because quite simply Dr. Digital is trying his very hardest to wipe out any other formats – that’s why we see a small cheap record player advertised for sale trying to get people to download onto MP3, iPod, etc. The digital brigade would love to see all things analogue disappear overnight. Let’s take the BBC radio and the push for DAB, and in this so-called free enterprise, free market, where are the people pushing analogue radio, etc.? Most of the people who download music onto MP3 don’t care about real hi-fi, rather they care about their home, cars, etc. They love the best things in life, but when it comes to audio the mainstream media pushes things that are only average. At hi-fi shows, I see many hi-fi anoraks like me, but the thing is that most of them now are becoming middle aged – or older. We have no new blood, or very few coming through – and we could have. The recession could easily kill off many a fine audio company, and this worries me somewhat as I’d hate to see good manufacturers go under because people don’t keep up with the times.
I’d say 95% of the population of the UK have never heard a great separates audio system, 90% don’t know what a Linn LP12 or Michell Orbe is, and it’s not because of poor advertising, it’s because the advertising of downloading music, MP3, iPods are in their faces everywhere – every high street has four or five shops at least, whereas most towns cities have only one or two top class audio shops, so it is hard for them to compete.

What we need to do is take quality audio to the customers, and actually show them how good the other stuff is. I’m trying to organise a small all vinyl show near Weston-Super-Mare (Hutton), this is not in competition with you or your magazine, etc., but I do believe unless we do something it’s going to die and it could do so very fast now that we have another recession upon us. There are many schools and universities throughout the UK and I’d say nearly 100% of the pupils and students talk of MP3 but almost none know what a Linn LP12 is - let alone any of the other stuff. I say go to the schools and colleges and universities and show them what you have, do a music demonstration!

Here is a question for you all out there singing the praises of digital – has digital been able to stop this recession from happening?

Jeremy Simon Ridsdill

Should the hi-fi business be doing more demos like this where we demo’d Tannoy Westminster Royal SEs and B&W 801Ds?

What an excellent letter, Jeremy, even if I think you lost me a bit with your last sentence. All the same, you’re spot on about what’s happening to hi-fi. I look at it like this – if the supermarkets have been able to enthuse a nation that (when I was growing up in the nineteen seventies) thought enjoying fine ‘cuisine’ was about as effeminate as Liberace in purple hot pants, then how come the hi-fi industry hasn’t been able to ‘turn’ the general public to the joys of fine sounding music? To any seventies child, the idea that our TV diet (if you pardon the pun) thirty years later would be comprised of food programmes presented by cheeky mockney celebrity chefs and eccentric public schoolboy chicken campaigners, would be preposterous. Yet so it is – Britain is now a nation of foodies. However, hi-fi it seems has gone the other way; we were very receptive to the delights of fine hi-fi three decades ago (so much so that it was the third largest purchase after a house and a car), but now it’s about number ninety nine in people’s
DP found this modern shopping mall in Shanghai with its entire top floor packed with hi-fi dealers, selling mostly British brands!
Why can’t we do the same in this country, he asks?

SPEAKING OF WHICH
In the mid nineteen seventies, when the annual hi-fi fest was conveniently staged in Harrogate, I spent entire weekends looking and listening to manufacturers’ demonstrations. I thought that the best dem by far was in the Tannoy room, when Westminster Royals were being driven (by an unknown but very small amplifier). I returned to hear and feel them playing, and subsequently bought a pair of Tannoy 12 inch Dual Concentrics which I am still using as my main speakers.

In your October group test of speakers you write that Dynaudio have “domestic” and “professional” transducers, you write of KEF “Reference” models and you write elsewhere of “studio monitors”; so presumably the terms “loudspeakers” and “transducers” are interchangeable and the meaning is the same. The “reference” is the top-of-the range model and the “monitor” is also a loudspeaker but usually to be found only in a studio, so it’s “professional”. It would be interesting if Hi-Fi World reviewed some of the “professional” loudspeakers that could also be used domestically.

Paul Metson

Loudspeakers are a type of transducer, which is to say they transfer one form of energy (electrical) into another (mechanical). Of course, pickup cartridges and microphones are transducers too, but effectively work the other way around. The term “professional” refers to a product being made for the pro audio market, namely recording studios and suchlike. However, it is much misused by manufacturers wishing to confer exalted status upon their products which are basically consumer oriented. Ask any musician whether...
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HI-FI WORLD APRIL 2009
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of connector (on both interconnects and speaker cable) will also affect the ultimate performance of a cable.

This reply hardly scratches the surface of a subject that had fascinated me for almost twenty years.

With best regards.

NIGEL FINN, TECHNICAL DIRECTOR, CHORD CO.

MOD RIGHT?

My current vinyl comes via a Technics SLQ3 turntable, Cambridge Audio Azur 640P phono stage, Technics A900/2 amplifier and Castle Windsor floorstanding loudspeakers. Cables include Chord Crimson and QED Silver Anniversary Bi-Wire, and I’m using a Rega Bias 2 cartridge as I’ve heard an Ortofon 2M red would be too high for the arm VTA. Having read what can be achieved with a SL1200 as regards modification, I was wondering if the same could be applied to my SLQ3? On the whole I’m pleased with this set up but some guidance will be appreciated.

Dick Coulthard

Hi Dick — in a word, no. Just because the SL1200 is highly upgradeable, it does not automatically follow that all Technics decks are. Indeed, in this respect, the SL1200 is a one-off. The Q3 was a good late nineteen seventies quartz locked direct drive deck, and no more. It was a semi-automatic design, with a medium mass S-shaped tonearm and a fairly insubstantial plastic plinth. The SL1200 by contrast is a massy affair built from a rubber baseboard and stocky aluminium chassis/top plate, with a detachable arm. As you’ve found, the stock Technics EPC207C phono cartridge can be usefully upgraded, but aside from getting the SoundDeadSteel Isoplatmat there’s not a lot you can do to your Q3 except enjoy it. It’s a fine deck for the price and for its day, but nothing special I’m afraid.

Direct Drive Deck, Technics SLQ3

PIVOTAL MOMENT

Hi David and Adam - in your September issue you advised me to mount a Roksan Nima on my Technics. This piece of advice was spot-on! The soundstage is huge, mid and treble are glorious and the bass, although a little less tight and hard hitting than with the Origin Live Silver, is generous and very atmospheric. So it’s an unalloyed success!

Jan Grineert

Belgium

Hi Jan - our pleasure! A unipivot arm on a Technics SL1200 is about as esoteric as you can get for an ‘affordable’ turntable – you don’t see many like that.

Dick Coulthard

DISC SLIPPAGE

Although not of the dinosaur persuasion, I love my vinyl collection and would like to transfer it onto Compact Disc. My question is, what would be the best CD recorder on the market that I can purchase to do the job? I have about £500 to spend but could stretch to a bit more if needed. My system is as follows: Michell Gyro SE with DC motor and NC power supply, Tecno arm, Dynavector DV20X cart, Sonneteer Sedley phono stage, Sugden A21a (1990s vintage) amplifier, Castle Eden loudspeakers, Nakamichi DR2 tape deck and Cabletek interconnects. Although I have made a lot of wonderful tapes, I would like to try recording on to CD, so your advice would be very much appreciated.

Johnson Phillips

Right now, there are precious few CD recorders still available to buy new – our preference would be the Sony RCD-W100 at around £250 which although not perfect works well and is helped by its Super Bit Mapping facility when recording from its analogue inputs.

Alternatively, if you wanted a used, but more high end machine then Yamaha’s CDR-HD1500 was a fine machine – but make sure you buy a good one that’s had only light use.

DP

SLIPPING DISCS

I have an old Denon DCD 820 CD player which is giving a lot of trouble reading Compact Discs. For example it will read PC recorded various discs of low quality (Maxell, Prince, some sorts of Verbatim), but half of the time it will not read original discs - mostly Blue Note albums. Should I simply change the laser or is there some kind of adjustment for the whole mechanism mechanically? Is it possible to upgrade it in some way other than a Cambridge DAcMagic, like changing output op-amps?

Nikola

Serbia

Hmmm... tricky one, that. Firstly, it’s obviously your laser that’s playing up. Try taking the case off the player (with the power switched OFF), and cleaning the laser with isopropyl alcohol and a cotton bud. If this doesn’t work – and you’d be surprised by how many times it does – then you’re due a new laser. Fortunately, the Sony KSS-210A laser pick up that your Denon uses is still readily available – do a Google search and you’ll find a number of places selling it for around £70. Get your local Denon authorised service centre to fit (it’s not really a DIY job unless you’ve got all the calibration equipment) and hey presto, you’re back in business! After this, a new Cambridge Audio DAcMagic would be a brilliant upgrade for around £200.

DP

Nikola’s ailing Denon CD player very probably needs one of these – a new laser pick up!

V-FETISH

I have just started reading your magazine after a break of a couple of years during which none of my book sellers were carrying it. It’s good to read you again. There are too few interesting audio magazines here in the USA! I’d like to add some comments on the Sony WFET amp David Price mentions in his column in the January

Roksan’s Nima unipivot arm – real balance for a Technics SL1200.
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its selling price. You only had to look
have been produced commercially for
overbuild the first examples. Witness the
was always rated about 80W a side.
anywhere that low in any review I read.
up as used in Noel Keywood's
bass loading as used in Noel Keywood's
2009 issue and comment on aperiodic
loading used in the WD25A speaker,
2009 issue and comment on aperiodic
I first saw in some 1970s McIntosh
designs from IMF and Ferrograph
big chestnut of an idea, equalising
the bass unit in a small cabinet to
produce earthquake frequencies.
Loudspeaker engineers immediately
get involved with cone excursion,
distortion and the things they know
about and can, to some extent,
successfully tackle. They don't
consider issues like box return from
rear radiated energy, impossible to
contain in a small cabinet, especially
at the very frequencies trying to be
attained - and very audible I find.
If a system doesn't want to do
something, then don't try forcing it I
believe.
On impedance curves, if I
understand it correctly Transmission
Lines should, in theory at least, give a
flat impedance characteristic, even if
they rarely do in practice. There are
other ways of achieving this, such as
stagger tuned twin bass chambers.
Being in the USA you won't hear
the wails of despair issuing from
Huntingdon, from the designer (not
me) of the World Design WD25A
loudspeaker. So, over to Peter
Comeau. NK
First a bit of trivia about the Sony
TA5650 amp. It was advertised at 50
Watts a side but it never measured
anywhere that low in any review I read.
It was always rated about 80W a side.
Sony often seemed to do something like
this when introducing a new technology,
overbuild the first examples. Witness the
SACD I player which couldn't possibly
have been produced commercially for
its selling price. You only had to look
at what was inside it and how it was
constructed.
Secondly I found David's comment,
'which to my ears are about as close
to the thermionic tube that solid state
has ever come' especially interesting. I
had a good friend who did a great deal
of interesting and unique work in all
aspects of audio who explained some
tings to me about the Sony power
V-FETs. He said that unlike other solid
state devices power V-FETs are triodes.
And the Sony devices are not only
triodes but very good ones with curves
like a 2A3 tube, one of the best triode
output tubes. And unlike a tube they
were available as complementary pairs.
Think of it: If they had stayed around we
might have had high power, solid-state
amps that sounded like a good 2A3
amplifier. What have we lost? We'll never
know. And the power MOSFETs that
seemed to replace the power V-FETs
were not triodes and nothing like those
short lived V-FETs...
I'm fairly familiar with the aperiodic
loading used in the WD25A speaker,
the old Dynaco A25, the IMF Super
Compact, the Ferrograph speaker from
the 1970s, etc. And I always seem to
see aperiodic defined as non-resonant. I
don't see how that's true. The impedance
curve shows a rise at the same point a
woofershow in a closed box. I
understand that this loading does lower
the amplitude of the peak making it less
resonant and in a lower system Q and
thus better bass damping, but the
resonance rise in the impedance curve
is still ultimately there. I'd love to hear
some comments from Noel on this.

The only bass loading I know of
that shows no impedance rise and thus
could be called non-resonant is one that
I first saw in some 1970s McIntosh
designs and later in a few other
designs such as the Nearfield Acoustics
Pipedream. This format uses a woofer
in a very small, closed box along with a
powerful, dedicated amplifier. The box
is so small the resonance is very high
and the woofer is crossed over below the
resonant point. Of course the bass is
now rolling off at 1.2 dB/octave. But
equalisation is built into the system to
compensate for this and to hold up
the response to a point the designer
chooses. A nice feature of this concept is
that a woofer in a box below resonance
is very tightly dynamically damped and
just wants to stop so control is totally
electronic in the hands of the woofer
so bass overhang can be extremely low.
Another nice feature of this format is
that the woofer transfer function can be
completely defined by the equalization
curve chosen by the designer. Indeed he
can design multiple transfer functions
with a selector switch allowing the user
to pick the system Q that most pleases
him.

Allen Edelstein
New Jersey, USA

Thanks for the observations, Allen.
I think you're spot on about V-
FETs; what a shame the MOSFETs
reared their (comparatively) ugly
heads when they did and change the
course of electronics history. Before
everyone goes bonkers chasing V-
FET amplifiers like the Sony, I should
point out that the V-FET packs are
no longer available - meaning when
they go, and they will, the amp will
be fit for the dustbin only. However,
if you do come across one, they're a
fascinating listen -- and very valve like
as solid-state goes; most full Class A
amplifiers using conventional power
transistors sound like running a rusty
nail up and down a pane of glass, by
comparison! DP

On solid-state devices of all
sorts I strongly suspect high current
densities, have no dielectric
and also possess secondary emission;
they are vastly different to solid-state
devices. These differences best fit
with my measurements and listening
experiences.

Vertical Field Effect Transistors
- the Holy Grail of solid-state?

insensitive appreciation of what is
important.
On solid-state devices of all
sorts I strongly suspect high current
density results in colouration, and
the colouration is related both to
the conductor and the dielectric - as
in cables. Tubes work at very low
current densities, have no dielectric
and also possess secondary emission;
they are vastly different to solid-state
devices. These differences best fit
with my measurements and listening
experiences.

Measurement suggests transfer
function does not fully explain sound
quality differences; solid-state amps
can produce predominantly second
harmonic distortion but they still do
not sound like valve amps, although
they will often sound smooth. And
valve amps often possess all sorts of
odd order distortion but they still
sound like valve amps, if somewhat
ropey ones. What I hardly dare say
is transistor amps of all sorts are
coloured, their flat and undynamic
nature (I'm not talking about big
bass grunt, but midband and treble
dynamics) is gruesomely consistent
I find, relating only weakly to most
measurable properties. Of course,
anyone who has done any "tube
rolling" will know that tubes are
coloured too, but in a different way.
Big subject this, and time to stop!

Similarly, loudspeakers can be
'forced' electronically to do all sorts
of extraordinary things and, listening
to such loudspeakers, I'm always
struck by the fact that that is the way
they sound too - electronically under
the cosh!

Why? Well, let's take that old
chestnut of an idea, equalising
the bass unit in a small cabinet to
produce earthquake frequencies.
Loudspeaker engineers immediately
get involved with cone excursion,
distortion and the things they know
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Being in the USA you won't hear
the wails of despair issuing from
Huntingdon, from the designer (not
me) of the World Design WD25A
loudspeaker. So, over to Peter
Comeau. NK

Well, aperiodic means exactly that,
'without period' or 'non resonant'.
So Aperiodic designs will always be
described as non-resonant. How
far this actually is true in practice is
down to the design.
So the so-called aperiodic
designs from IMF and Ferrograph
were based around the work that
Bailey instituted for a 'non-resonant'
 loudspeaker system in the classic
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Wireless World article that, many years later, led to the Transmission Line concept. Bailey used the ‘non resonant’ description because of the impulse tests that he carried out using high intensity sparks on his prototype speakers. With these he was able to show that a driver loaded into a long, heavily damped, line would enable the driver to behave without overhang.

And this, I believe, is the fluid test. Only if you look at the impulse response of the speaker can you see whether it is aperiodic. In my own experiments I’ve found that the damped line system which found its way into commercial speakers, like the IMFs, was not truly aperiodic. This occurs largely because the behaviour of these speakers is closer to a damped reflex port, basically because the designers wanted more bass than the aperiodic design normally gives. Similarly most commercial Transmission Line speakers behave more like extended port reflex speakers and don’t exhibit aperiodic behaviour.

However the Dynaco A25, and our own WD25 designs based around this principle, are very, very close to being truly aperiodic. What the impedance curve shows is that there is still a mass/spring effect at work due to the mass of the cone, the compliance of its suspension and the compliance (springiness) of the air in the enclosure. What matters is that this is critically damped to the point where, yes, the mass/spring effect still aids the bass unit motor in doing less work at this frequency - so bass response is maintained - but that overhang is kept to an absolute minimum.

In the factory test of the Dynaco A25 an impulse test was used to define the resistance of the aperiodic port for minimum overhang for each batch of bass units. With modern methods of manufacture we no longer need to modify the defined resistance as the bass units are very consistent from batch to batch and we use a porous foam of precision manufacture for the aperiodic port resistance. The result is a very lucid, controlled, but still powerful bass performance, as any listener to the WD25 speakers will attest.

What you are describing, with the sub LF driver/large amplifier/ small box system, is a goal which the WD25 speakers will attest. Although it seems to be an interesting exercise to drive a bass unit below resonance with ever increasing amplifier power, this brings its own set of problems. First of all the drive unit is being exercised well beyond its linear area of motion as the cone excursions below resonance become enormous in order to produce any sound output at all. Secondly what is the amplifier doing when asked to drive, and control, the back EMF derived from a driver with such a high cone inertia? I think you would find that the audible distortion generated by such a device, when subjected to music signals, would be many factors higher than a bass drive unit in a large, critically damped, closed box driven normally.

These technical exercises are good for the ‘wow’ factor at exhibitions but have little place in the domestic hi-fi system unless space really is at a premium.

In my view it is about time we got over this unrealistic quest for zero distortion, maximum power, nil resonance and ever smaller containers for music playing equipment and looked again at ways of reproducing music in the home that sound realistic and emotionally involving. There is absolutely no point in chasing ‘perfect’ measurements if all they do is realise equipment that makes music soulless and uninviting to listen to. That doesn’t mean that we shouldn’t still strive for the ‘state of the art’, just reassess what the ‘art’ really is all about. PC

THANKS SPORT!

The December issue of ‘Hi-Fi World’ has just arrived in Australia. I browsed the contents in the shop and decided to buy it when I saw the information on Martin Bastin. I read the letters section in detail when I returned home and realised that the information you had provided was in response to my email enquiry, which you published! This was an unexpected surprise! Thanks very much for your words of advice and encouragement in relation to my Quad 401 and SME V. I’ll give Dr Bastin a call. Keep up the good work with the magazine. It’s a great read. In recent years, your monthly reviews and recommendations have played no small part in my hi-fi purchases, which have become very worthwhile and enjoyable investments. These include restored Quad ESL-57s, Quad 2905s, a McIntosh 275 valve amp and DNIM solid core cables.

John Thompson

Thanks John. As you say, the right products are investments, going up in price rather than down and your Quad ESL-57s must be one good example. The trick is to spot the classics and buy before everyone else does, so driving the price up! NK

RUBBER SOUL

I read with interest Adam Smith’s article on old turntables and his comments on belt replacement. There are a few methods that I have used in the past to make belts for old turntables that might be of interest.

A new belt can be made for a Revolver, or any turntable which has a round belt, from a length of round rubber that can be bought from most hardware stores and auto shops. It comes in various diameters, is generally used to make rubber O-rings and seals and is sold by the metre. From the same shop you can also buy the special glue, but super glue can be used (my dad is still using a Revolver with a belt I made with super glue several years ago).

I recently also made a flat type belt for an old friend who wanted to play a few records but didn’t want to spend the money on a new belt. In this case I used a length of the rubber which goes round the inside of the rim of a wheel of a bicycle to prevent the spokes from damaging the inner tube. Firstly I marked the rubber and carefully cut out, using sharp scissors, a strip of the correct width, but I cut the ends to length with a craft knife as it cuts more square. Then I glued the ends together end to end (not overlapping), with a good quality super glue. When making a
belt it is important that the cut rubber ends are not perfectly square and that the ends are lined up perfectly when gluing. Also, not too much glue should be used as it sets hard and excess bulging out of the joint will make a noise as the belt rotates.

For toothed belts the drive belt from an old scanner can be used if you are lucky enough to find one that has the required tooth spacing. Also various tooth belts are used in video, DVD and CD player repair, so with a bit of searching you should be able to find the tooth spacing you need.

A good tip for lining up the ends for gluing any belt is to use a PVC cutting board to lean on, as the glue does not stick easily to it. Then apply a really small amount of glue to one cut end of your belt making sure the glue is even across the joint. Now place the belt onto the board and gently slide the ends until they touch together. Hold like this for a couple of minutes then carefully lift away from the board. The ends should now be joined, but do not be tempted to use the belt for a couple of hours as the glue needs to set really well for a long lived belt. If your belt is made with care, in this manner they can work surprisingly well and last a very long time.

Anon

A-O-KAY!

Nice write up on the Jelco SA750D (HFW Feb 2009) Adam old fella, I still owe you a cold beer. I had been eagerly awaiting your verdict on this tonearm with the view of purchasing one to put on my modded Tek 1210, rightly thinking that £375 plus cost of a cable would be value item of the year. But shock, horror and where’s me bottle of hooch, on going to Sound Hi-Fi’s web site I was possibly better if in good finish and enquire about rejuvenating my old Black Ittok II just lying there in its box doing FA. Well, the black Tek will be rejuvenated by AO for far less than what a Jelco would cost me and will look at least different on my Tek 1210. Give a guess and let me know what it would/could sound like with a 1042 bolted in?

The black Ittok was supposedly made by Linn in Scotland so my arm would be making a home visit of sorts!

My Linn LP12 has had a complete rebuild incorporating a little known subchassis supermod called ‘The Sole’ from Analog Innovation. This is a well engineered super bonded aluminium/MDF laminate and has really done wonders for the venerable LP12. You should look into this one, lads, seeing as you don’t walk the walk that the other hi-fi mags of the realm do - I guess that’s why I buy your mag and not nourishing food. My Linnny will be fettled (lovely word lads) with my Ekos Mk1 with a rewire and rebuild from AO J7 once again after Johnny sorts out a Linn dealer’s ham-fisted grub screw fitting to the arm pillar. Needless to say, I now shy away from dealers and think that finding a good one is like finding a billiard ball with hair. My Ekos will become an AOkos causing the SE version to look over its shoulder, methinks. Got to go now as I have vinyl to clean, music to listen to, and wine to drink. Happy 2009 all!

Ron Edley

Happy new year to you too – and all our other readers! I’d just like to take this opportunity to do a bit of housekeeping and state the bleedin’ obvious, which is that – as Ron points out – the Pound has fallen off a cliff in the past two months, thanks to the international money markets not believing our lovely Chancellor when he said, “Britain is uniquely well placed” to get through the recession... So, the result is that all imports have suddenly got considerably more expensive, very quickly. So guys, please don’t have a go as importers – they’re hurting as a result of this. I’d also ask the various incredibly helpful souls who’ve been emailing or calling in with words to the effect of, “in the January issue you said a doobrey whatsit cost £1,000 and I’ve just checked on the internet and it’s £1,300 – so please get your prices right”, to desist. This is because it takes up to six weeks for the mag to get to press – not six nanoseconds it takes on the net – and as we can all see, events are moving apace!

Bert Halliday
Creek OBH-22 "just that little bit too good for the amount of money charged for it," says David.

NuForce P8 (£845) and you'll get more bass, and more commanding and vibrant presentation and extra treble air and space, but it's not three times better, despite being nearly three times the price! Obviously, you'd expect the NuForce to be better, but my point was that with most hi-fi products, spending fifteen to twenty percent more will bring obvious rewards, whereas the Creek requires you to spend dramatically more than this before you get a comprehensive all round improvement.

As for obvious partners, the Rotel RB-1092 is a giant killer. For £1,595 you get 2x584W RMS, which is enough to drive anything, along with a tremendous sense of music ease and a smooth, velvety tonality. It's a Class D power amplifier, which is not to everyone's taste, but one of the most listenable of the breed is not to everyone's taste, but again the point is that it does so much — offering a tidy, detailed, unassuming yet engaging music, treble air and space, but it's not three times better, despite being nearly three times the price! Obviously, you'd expect the NuForce to be better, but my point was that with most hi-fi products, spending fifteen to twenty percent more will bring obvious rewards, whereas the Creek requires you to spend dramatically more than this before you get a comprehensive all round improvement.

For obvious partners, the NuForce P8 (£845) and you'd have had to pay many thousands of pounds to buy an MP3 player - I know the model I want to buy, so no arguments there, it's the new Cowan S9! I also want to play FLAC/lossless audio music files through my hi-fi system. I am also thinking of buying a Benchmark Media DAC USB so I can download music and play uncompressed files by plugging in the Cowan into the USB DAC. I want to know if I will be wasting my time here? I would prefer not to buy another PC if possible.

Lately I have been disappointed with my Copland CD player and reading into all this lossless audio stuff has my brain fried. I want to know if this will be a genuine improvement on CD sound. Buying a new CD player at present seems a little stupid as the music industry is on its knees and people are not buying CDs anymore. The other thing I considered was buy a Bel Canto/Chord DAC and be done with it. Look forward to hearing your advice!

Raymond Deasy

Hmmm... well you seem both very sure about what you want to do, but not entirely sure about why you've chosen this particular route, Raymond. Obviously, you can play FLAC files from any existing computer, either wirelessly via something like a Roku Soundbridge or via a USB equipped DAC like the Benchmark — you don't need to buy an MP3 player as a source component if you don't want to. Moreover, the Cowan only has 8GB of memory (at the time of writing), which isn't an awful lot of uncompressed music, I'm afraid. My feeling is that you should run your FLAC files from a computer and use the Cowan for portable duties. By all means invest in a Benchmark DAC USB, it's one of the best DACs of its type at the price — although good results can be had from the Cambridge Audio DACMagic at a quarter of the price. For ultimate fidelity, and with unlimited cash, you should be looking at the Chord QBD76 however — it's £3,000 but probably the last digital converter you'll ever need to buy. It would provide a massive improvement over your Copland CD player.

You could of course use the Copland as a transport, so you could retain your CD source if you wish. DP

NEEDLE TALK

My system comprises a Pink Triangle Export G7i turntable, used with an Achromat and an RB300 arm that has been upgraded with the Incognito rewire and a Michell counterweight. This is fed through a Project SE phono stage to the Alchemist Farseti integrated amp. My speakers are Rega R3s and my cables are Black Rhodium five speaker wire and Tara Labs interconnects. The room I use is 25ft square with solid wood floors (on concrete).

I also have a Cambridge Audio CD45SE, a Technics tape deck and a Denon tuner which get occasional use. Listening tastes vary, ranging from rock to acoustic and folk, but recently I prefer a more relaxed and bassy sound. I've been using a Grado Gold for some years which initially I loved for the warmth and depth, but now feel it's a tad comfy and too much bloom and sometimes fails to excite me. That said, my previous cartridge was an Audio Technica ATOC9 (mk I) which I found amazing and insightful on some material but brash and irritating on others...

So I'm wondering what I should replace the Grado with, or should I persevere with the Audio Technica? I know...
you chaps are big fans of this cartridge, is the mk II more of an all rounder than the mark I? My local dealer has suggested I try the Ortofon Samba as somewhere in the middle, are there any others you'd recommend up to £200?

My other concern is that my phono stage sits between my amp and turntable on the same shelf (although all units are isolated via their own slabs of marble, spiked feet and Sorbothane feet) and I am concerned that an MC may pick up hum due to the proximity of the amp (the Alchemist has twin toroidal transformers inside and delivers 100w RMS) at idle according to the manual. So if I went for an MC cartridge such as the Ortofon or the Audio Technica, would these be more prone to hum/interference?

Lastly, I know you also are in favour or using step up transformers for MCs and I came across an old Ortofon STM-72 step-up transformer, would I be better using this in the short term or using the MC input on my phono stage?

Andrew Simpson

It's true that the latest ML version of the OC-9 is a little more smooth than the earlier eighties incarnation of this cartridge, but it's still not the world's most mellow performer. The trouble is, for £200 you're not going to get much — if anything — in the way of moving coil cartridges at all, especially now the AT has gone up in price due to the parlous state of the pound. Actually, I'd suggest the Goldring G1042 — it's an old fave at this magazine and is, if anything, bassy and full sounding; much more so than the AT-OC9. Being a moving magnet, it should also allay your fears about hum pick up.

Step-up transformers can be superb, but it's all down to the quality of the windings; the old Ortofon design you mention is only so-so: it will be better than budget solid-state moving coil stages, but a good valve phono stage will have better transformers and sound considerably superior.

SINGAPORE FLING - SECOND TIME AROUND

I'm in a quandary — what to do? My amplification is valve based, with self built preamp and power amplifiers. The preamp is Aikido (ESN7) c/w a moving magnet circuit based on the Marantz S, with valve and choke/regulated HT supplies. Power amplifiers are either monoblock 6550 PF affairs with transformer phase split/6N7 driver/GE37 valves, or a 6V6 single ended UCCBS driver/EZ81 and choke HT with MOSFET Source follower regulator. I have Monitor Audio GR20 loudspeakers, and the whole lot is fed by a Cyrus CD8 SE where I live in Singapore. I go to the Adelphi shopping centre here, which is the place for audiophiles, but each shop says what's best based on his stock! So I'd like your independent advice — do I go for a more expensive Ortofon MM or try a high output MC? I am prepared to pay about £300. What would I gain with a high output MC on my system? I read the reviews and listen in shops but most of them turn the nose up when Technics are mentioned — how could it possibly be any good! So all in all what do you recommend based on experience, I suppose really I'm looking for more insight and something to grip me and draw me into the music.

Anon.

Singapore

Cyrus CD-8SE "brings silver disc real close to the vinyl".

PSX-R (a real upgrade — there was an instant difference over my old CD8X which I traded in). The Cyrus CD player brings silver disc real close to the vinyl sound, which has more than anything prompted me to change my cartridge, as I find I like to listen to the new CD player more now than the old one. My turntable is a Technics SL1200 MKS with Origin Live Silver Tonearm and Ortofon 2M Red cartridge.

There's a big choice of cartridges

Not a picture of a pickup cartridge - but Singapore at night.

but yours truly got his wires crossed and didn't answer the question properly — so here goes again! The problem is that there isn't exactly a wealth of superb moving coil cartridges on your budget — normally we'd recommend you spend at least twice that much on the likes of a Lyra Dorian or Ortofon Kontrapunkt B. However, if the Singapore dollar has held up better than the British Pound, then you could be in luck.

The latest ML II incarnation is more dynamic sound. Thankfully though, the latest ML II incarnation is more mellow than the blood-and-guts original eighties version, so you should find it's just about smooth enough for your upfront sounding SL1200. Indeed I imagine that together, it would be a highly effective package — and certainly as entertaining as your new Cyrus CD front end. Also, don't forget to upgrade the platter mat to the Sound Dead Steel Isolimat, for under £100 — this works a treat on the Technics, bringing a smoother and more lyrical presentation, with even better bass than standard.

DP
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Tweak Preview

As the credit crunch deepens, there’s never been a better time to tweak your existing hi-fi rather than buy brand new. With that in mind, Musical Fidelity have come up with an interesting scheme, which David Price explains...

The science (pseudo or otherwise) of carefully modifying existing hi-fi components is not a new idea, and indeed regular readers will know that it’s something very close to our hearts here at Hi-Fi World, and has been since this magazine’s inception, way back in 1990. As such, we’ve devoted large amounts of page space to everything from tuning World Audio Design valve amplifiers with ‘designer label’ passive componentry to valve rolling – the mysterious process of substituting one brand of tube with another of exactly the same type (if not the same vintage) in a bid to improve sonics. Likewise, we’ve also tried modified CD clocks from Trichord, Audiocom and Njoe Tjoeb, and even the great Marantz CD63 KI DP which involved a ground-up audiophile rebuild of a classic budget Marantz CD player.

Factor in features on everything from turntable tweaking to getting the best from the ubiquitous Technics SL-1200, and you could say that it’s something of a passion of this magazine! With this in mind, I was intrigued by a phone call I got from Antony Michaelson at the end of October, when he announced he was starting a “factory rebuild” scheme of his amplifiers. The idea started, he told me, as he noticed an increasing number of his amplifiers being returned for repairs which had been “tweaked”. Actually he didn’t quite use this phrase, choosing instead to use the present continuous tense of a four letter word and then the adjective “wrecked” instead... Mr Michaelson believes trenchantly, it seems, that a lot of DIY hobbyists and/or tweakers who charge money for their services don’t know what they are doing, and can often ruin the amplifier and/or make it electrically unstable and/or downright dangerous. With this in mind, he told me, “seeing as we know our amplifiers better than anybody, we thought we would offer a blueprinting service for virtually all of our products, past and present”.

Whereas some tweakers choose to reel out a shopping list of individual passive components which are inserted, with designer names such as Black Gate, Schottky, etc., Musical Fidelity aren’t going this way. Instead, just as a racing engine builder would disassemble an engine and meticulously rebuild it to much finer tolerances, and where appropriate use better components (but only where appropriate, rather than just for the sake of it), so MF are offering this service to owners of their products. He emphasises that, rather than just getting a long list of designer componentry thrown in on a wing and a prayer, his service is a ground-up, holistic (for the want of a better term) “blueprinting” of the original design. It’s not a case of wholesale changes to the architecture or componentry of the amplifier, it’s a case of time-consuming realignment to much finer electrical tolerances than would normally be possible in mass production conditions.

The price for this service is £399 (including carriage), and the claim is that it will provide dramatically better sound to almost any of Musical Fidelity’s “legacy” range of products [see box]. At the time of writing, there is also a plan to offer this to MF CD players too – along with the fitting of superior clocks – and even an official Musical Fidelity factory rebuild service of the pre-1997 Audiolab 8000a amplifier. Antony is a big fan, telling me that Audiolab is “the only rival brand that I rate, ever”, and confided to me that, “when we first saw this amplifier, we pulled it apart and wondered how they could make any money from it – so good was the design and so decent were the components – and we came to the conclusion that they couldn’t”. The service also extends to the Audiolab 8000C and 8000P models too.

All well and good then, but what of the specifics? Well, your £399 buys you a complete strip down of your amplifier, and then a rebuild...
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which involves matching the output transistors, sometimes swapping them around or replacing them when necessary. A copper "belly band" is then placed around the power supply, including capacitors and mains transformer and the volume control motor. The toroidal transformer is then rotated to give the lowest noise, and together these mods significantly reduce mains mush into the amplifier. At the same time, some power supply capacitors are bypassed (if possible) and all internal coupling caps and path capacitors are replaced using polyester or polycarbonate where appropriate. The amplifier's internal loudspeaker cabling is then replaced with LC Oxygen-Free Copper type and the output choke inductor windings are redone, winding them manually to get them exactly right for the particular amplifier in question.

Then there's the socketry, which is cleaned up (obvious, but it makes a big sonic difference), and the amplifier's bias is "precision set". Some op-amps are replaced with "professional spec types" and "we may replace some of resistors in the final stage of the power amplifier if we can see signs of thermal changing", he tells me. This is another key point - he says that some amplifiers come back to the factory having been "canned", run at near maximum output level for long periods and this can over the long term have deleterious effects, which this tuning process then eliminates. The amplifier is then soak-tested on the bench for two weeks, after which it is "measured from top to bottom".

If it passes muster, it is issued with a certificate. Before the testing, the strip-and-rebuild process takes over through at the hands of an Augustus. A particularly vigorous warming through the hands of an Augustus Pablo LP and some B&W 801D loudspeakers on fully paid up party duty. The poor little 70W RMS per channel Musical Fidelity kept things together rather better than my ceiling, which developed a two metre long hairline crack in the plaster where it met the top of one of the room's sidewalls, and my ears were never quite the same again (pardon?)!

Lest we forget, the X-150 was an excellent little half size integrated, purposefully designed with a beautifully finned black painted alloy casing acting as heatsink. A dual mono design, it sports two line level inputs in addition to a phono stage, an ALPS volume pot, and pre-out sockets for bi-amping. My original review called it, "deceptively capable", noting its "smidgeon of warmth and weight", plus a propensity to be "just a tad warm and full in the bass". I concluded that it serves up a sound "big, expansive, three dimensional, warm, smooth and extended in the treble". For £799, I had no complaints, although in absolute terms I felt the Nait Nait Si had the legs on it in terms of control and grip, whereas the Sudgen A21a was an altogether more transparent and open sounding device - albeit with considerably less power, of course.

The tweaked X-150 was quite a surprise in two ways; first it showed how much better it was over the original in many ways, and second it represented a very stiff challenge to any new £1,200 integrated. The improvement wasn't subtle; it's true to say that stone cold and not run-in, it sounded better than the original ever did no matter how well warmed through it was allowed to get. The difference was clear as the nose on your face - a dramatically cleaner and more transparent midband being the headline. It felt like the noise floor had dropped considerably, and instead of listening to a warm and slightly mushy transistor design, I was now hearing a very open sounding amplifier with a considerably more dimensional sound. Whilst the original's expensive stage sound was there for all to hear, inside this instruments were far more accurately located, left to right and from back.

I also noticed quite a change in the bass; gone was the big but soft character, and in its place an altogether more regimentsed, grippy performance, faster on its feet and more dynamically expressive. The spaces between the notes were more apparent, the leading edges more explicit. I also noticed an improvement in general tunefulness, making the amplifier more natural and organic sounding. It's true to say that the tweaking didn't change the amplifier's original character fundamentally - that expansive, capacious sound that I liked was still there in all its glory, but it now felt far less artificial.

The improvement in focus didn't in any way lessen the musical enjoyment, which had been a fear of mine as sometimes tuning electronics can give you more of one good thing and less of another. Up top, the treble was considerably smoother, almost making the newly tweaked X-150 sounding 'dull', although this was due to a lack of unpleasent grain rather than a fundamental change in tonality. It had a cleaner feel to it, with less ringing and a greater sense of air which again added to the sense of a natural musical event.

CONCLUSION
There are myriad ways to tune or tweak an integrated amplifier such as this. And I don't doubt for a minute that those with the requisite electronics skills will also be able to effect a great change. However, what Musical Fidelity offer is an integrated package with a clearly defined modus operandi designed to 'blueprint' the original amplifier to give of its very best, whilst keeping it in relatively standard trim. As such, the unit's reliability will be enhanced and its longevity assured. I think it's an excellent idea, and the amount of sonic improvement offered for a flat rate of £399 is a considerable one.

Obviously, I cannot speak for every other individual Musical Fidelity product - or indeed the forthcoming Audiolab 8000 package - but certainly the improvement garnered by this upgrade would be worth the expenditure, especially if you consider the cost to sell your existing amplifier and then upgrade to another as good as this. So, if money's too tight to mention, then consider giving your existing amplifier an employment extension!
The One Show

Can a low-cost bookshelf speaker offering a single drive unit deliver the all round musical goods?
Paul Rigby investigates...

If you're a fan of big multiple driver loudspeakers, best turn the page now! The John Blue JB4 sports single 'full range' drive units that cover the entire audio band on their own. Of course, this is an unconventional route to tread in today's hi-fi world, and has its pros and cons. On the positive side, full range speakers don't need crossovers, which can cause more problems than they solve if not perfectly executed - not least colouration and phase gremlins. The downside is the limited performance at frequency extremes. The devil is in the detail, of course. No speaker design is necessarily right or wrong - it's all about the best working compromise.

The JB4 arrives in cherry livery with a hand-polished satin sheen, and the cabinet size, of bookshelf dimensions, measures 292mm high, 188mm wide and an expansive 264mm deep. The front of the cabinet carries a very slim, wide front port which has been designed to enhance bass. The four inch, full range driver comes complete with a resin cast waveguide and anti-fungus treated paper 'whizzer' cone (a supplementary inner cone attached to the voice coil but without suspension) and is of John Blue design.

The published 30W power handling figure isn't exactly going to impress your average 'Metal Hammer' reader. Instead, the JBs are designed for lowish output valve amplifiers, thanks to high quoted 89dB sensitivity [see MEASURED PERFORMANCE].

SOUND QUALITY

As one might expect from 'point source' full range drivers with no crossovers to jigger the phase, stereo imaging proved excellent, throwing out a soundstage very securely between the speakers.

While the JB4s bit on the Sugababes' album as you might bite into a lemon (you wince due to the mastering's peak limiting-induced brightness), the speakers did provide a calculated exposition of the entire midrange, whilst managing to calm the recording's loutish treble extremes. This had a positive and negative effect on the performance, especially when compared to the horn-loaded, equally sensitive Amphion Prio S10s (£900) I had on hand for reference. On the downside, the controlled treble did mark the JB4s as a little less exciting than the Amphions and even a touch slower whilst, on the plus side, the JB4s offered considerably more midrange detail. For example, a steady percussive synth beat was masked by the Amphion's bright treble but brilliantly highlighted by the JB4s. Also, whilst bass definition and fullness couldn't compete with the Spendor S3/5R (£725), which offer Tardis-like bass extension for such a small design, the JB4s held their own, presenting a tight upper bass and a greater extension than the more expensive Amphions - impressive at the price.

Spinning Can's excellent eighties master of 'Yoo Doo Right' from 'Monster Movie' (Mute), I was impressed by the JBs' tonal accuracy, tracking as it did Jaki Liebezeit's varied drum kit with alacrity. The sound stage on this well mastered disc was very orderly. Fresh and well behaved, it felt like a group of cleaners had invaded the stage, tidied up the furniture, hoovered the floor, washed the dishes and dusted the corners free of cobwebs.

Still, I found that it was only when playing Carol Kidd's jazz vocal piece, 'Dreamsville' (Linn) that the JB4s really relaxed. Their elevated midrange easily tracked both acoustic guitar, piano and drum rim shots. Whilst the JB4s didn't have the same high degree of transparency and sheer sparkle as the Amphions, the JB4s did exhibit an uncluttered musicality and a sense of ease. There's no indication of a forensic aural examination taking place here, despite that excellent midrange detail, yet the JB4s kindly supplied enough information to give the Kidd vocals both nuance and subtlety.
On to vinyl, and Yes’s ‘Yours Is No Disgrace’ foxed these speakers due to that track’s dependency on bass to provide both rhythm and mood. The JB4s were a little lost, trying to locate the lower bass resonances that flowed all over the ditty from the drums to the unique bass lines of Chris Squire to the heavy, rich vibrations from the Hammond organ. As such, the progress of the track’s dynamic build-up was hampered, whilst the bass guitar - which provided suspense during quieter moments - seemed absent without leave.

The Spendors were just grist to the JB4 mill. An easy synchronicity between each element of the frequency spectrum, which surely has to be down to their crossoverless single driver design. This meant that music played through the JB4s never felt strained or forced, and as such they are perfect for jazz and classical fans who love a sweet sound. Of course, the design philosophy has its downsides too, so don’t go expecting them to give a PA-like rendition of Metallica’s ‘Enter Sandman’. A fine, quirky and interesting loudspeaker for valve amplifier inclined, easy listeners.

**REFERENCE SYSTEM**

- Avid Acutus/SME IV/Benz Glider turntable
- Icon PS3 phono stage
- Naim CD5 CD player
- Aesthetix Calypso preamplifier
- Icon Audio MB845 monoblocks
- Quad ESL-57 (One Thing modified) loudspeakers

**CONCLUSION**

The John Blue JB4 speakers are pleasant to listen to – and that’s not damning a fine pair of speakers with faint praise. In fact, to elaborate, what the JB4s do brilliantly is construct an easy synchronicity between each element of the frequency spectrum, which surely has to be down to their crossoverless single driver design. This meant that music played through the JB4s never felt strained or forced, and as such they are perfect for jazz and classical fans who love a sweet sound. Of course, the design philosophy has its downsides too, so don’t go expecting them to give a PA-like rendition of Metallica’s ‘Enter Sandman’. A fine, quirky and interesting loudspeaker for valve amplifier inclined, easy listeners.

**MEASURED PERFORMANCE**

The small single drive unit has a parasitic centre dome instead of a dust cap that radiates high frequencies (it is not a fixed phase plug). These things usually give very uneven output to 20kHz and correspondingly ragged sounding treble, but the JB4 MkII drive unit works quite well in this area our third-octave analysis (not shown) indicates, with flat treble to 20kHz. Our published sine wave response shows resonant peaks and troughs but an even trend, so the JB4 MkII will have extended treble but it will likely sound a little spiky. The loudspeaker’s midband is very prominent and low frequency output rolls away, some peaking around 60Hz suggesting it will excite small rooms well if placed against a rear wall. Facilitating this is a front port that peaks at 55Hz to augment bass. Unfortunately, this port also outputs box noise, seen as red peaks, at quite a high level, likely to add boxy colouration. However, counter-balancing this were short (10mS) and long (200mS) spectral decays that were cleaner than most loudspeakers, the JB4 MkII is an interesting design, whilst not fundamentally accurate, it is nevertheless very strong in many areas. I suspect it will sing as a wallstander in a small room, driven by a high quality low power valve amplifier.

**FREQUENCY RESPONSE**

- Green - driver output
- Red - port output

**VERDICT**

- beguiling presentation
- detailed midrange
- fine soundstaging
- finish

- lacks bass muscle
- nebulous treble

**REFERENCE SYSTEM**

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Designing Loudspeakers

PT 24
Transmission Line or Non-Resonant Aperiodic? Peter Comeau investigates...

In our letters section this month is a question regarding the concept of Aperiodic designs which I felt required a little more examination than I was able to give in a short paragraph reply.

While waiting for further developments on the open baffle front (apologies for the delay) I'm not sitting idly by, so this treatise can form the start of the next speaker design series project – the thorny subject of Transmission Lines.

Now I know, from past experience, that Transmission Lines are the darling of many a speaker constructor, and more than one has torn his hair out trying to get the design right! So here goes on my own view of TLS, Aperiodics and everything in between.

If I say 'let's start with the Aperiodic design' you may wonder what this has to do with Transmission Lines? The answer lies in the basis of the TL concept and its history as outlined in Bailey's original Wireless World article.

There were actually two Wireless World articles on Bailey's concept and, not surprisingly, the first one which predates the 'Transmission Line' article by seven years has been largely ignored.

The 'Non-Resonant Loudspeaker' design originally published by Bailey in Wireless World, October 1965, drew on work originally investigated in the 1930s and then called the 'Acoustic Labyrinth'. The concept is simple – load the rear of the drive unit with an absorbent line so that the acoustic energy from the rear of the cone is absorbed without reflection.

Such an enclosure would be the ideal as far as the 'disappearing' enclosure is concerned and has found its way into the B&W Nautilus, to name but one famous design based on this principle. The B&W Nautilus is a true acoustic transmission line, not an acoustic labyrinth as such but a curved, tapering, absorbent filled line aimed to absorb a drive unit's rear sound without reflection.

But look at most TLs and you'll find a 'port' or opening in the line at its end. Bailey's experiments showed that, with the line closed, bass response was 'weak' and the drive unit was working very hard at low frequencies. By opening the line with a 'port' the bass response was 'improved to become approximately flat' and 'cone excursion was greatly reduced' around the 30 - 50 Hz area.

In a correctly loaded line the bass unit is mass/resistance loaded over almost its entire range of operation. Without the usual transition to stiffness loading we can concur that the system is non-resonant or aperiodic over its working range. Only at very low frequencies does the mass of the air in the pipe couple to the compliance of the drive unit cone to give a fundamental resonance.

'TRANSMISSION LINE' OR 'NON-RESONANT OR APERIODIC'?

The title 'Non-Resonant Loudspeaker' came about because of the results that Bailey confirmed when testing his 'transmission line' with a spark impulse. To investigate the absorption of the line he vaporised a copper wire with a high voltage capacitor discharge and captured, with a suitably placed microphone, the sound reflections from the line.

These reflections were found to be minimal, compared with the same test applied to a bass reflex cabinet which showed considerable resonances for more than 5mS after the initial impulse. Bailey therefore called his line 'non-resonant'.

At this stage the experimental speaker utilised a 'F.E.F. B139 Base Driver' (sic) and a Celestion HF1300 tweeter; (clearly the type setter at WWW had neither heard of KEF nor of Bass)!
"The real star of the show for me, however, is the Phono3 as it is particularly astonishing in its abilities, especially at its modest price."

Passive RIAA EQ
Based around a triple gain stage of ECC83 valves, this phono preamplifier utilises passive RIAA equalisation (zero feedback) for the finest sonic performance from any turntable. A separate power supply removes all sources of hum and noise from the Phono3S case for optimum clarity of sound.

MM and MC inputs
WDPhono3S offers you two inputs, selected on the front panel, for MM and MC cartridges. MC inputs feature high performance step-up transformers for the lowest noise, clearest output from any cartridge. Each input has individual impedance matching to obtain the best sound from the cartridge of your choice. In addition you can select the subsonic filter characteristic to give the optimum results from your turntable, arm and cartridge.

"So there we have it, a preamplifier capable of driving any load and maintaining its linearity no matter what cables or partnering equipment you prefer to use."

The Active Preamp principle
This 5 input line level preamp is essentially an SE triode power amplifier in concept. WDPRE3 uses an ECC82 double triode arranged as input voltage amplifier and power output amplifier stages, the latter driving oversize 20:1 output transformers.

Active vs Passive
Many enthusiasts assume that a 'passive' control unit (essentially just a volume control and switching system in a box) is the ideal 'preamplifier'. However this assumption takes no account of the interface between the source and the power amplifier, let alone the effects of partnering cables. The WDPRE3 effective isolates the source from the power amplifier and provides the correct terminating impedance to optimise the musical performance.
end of the pipe is nearly in phase with the drive unit (the phase shift reaches 90 degrees at the quarter-wave frequency). At the quarter-wave frequency itself the air in the pipe is doing most of the work, the driver diaphragm only having to move by a small displacement to produce considerable output.

Left unlagged a 'quarter-wave' pipe will resonate at all the harmonics of the pipe's fundamental resonance causing a clearly audible series of harmonic colourations right up to the seventh harmonic. For a pipe tuned to 30Hz you can therefore expect humps and dips, and corresponding audible resonances, to 210Hz.

Filling the pipe with absorbent material reduces these harmonic resonances but also reduces the efficiency of the 'quarter-wave' output. Clearly, then, the designer has the choice of making the line entirely non-resonant and having a smooth but gradually falling bass response, or allowing the line to resonate at its quarter-wave frequency and absorb the harmonics as best as possible, giving a flatter bass response with just a few humps and bumps.

'TRANSMISSION LINE' OR 'REFLEX'

What also seems to have been largely forgotten in TL history is that Bailey and Radford patented the 'Non-Resonant Transmission Line' and that Radford Audio produced several loudspeaker designs using the absorbent line principle. In the Radford examples I've been able to investigate the line is carefully loaded with teased out long-hair wool. Usually the midrange unit is also loaded by the line to help with absorbing its rear output too, though also subjecting the midrange cone to some extra displacement by air pressure in the line from the bass unit.

That the output of the bass unit from this damped line gradually sloped down below 100Hz was accommodated by placing the speakers closer to the rear wall and on the floor thus improving the polar power response of the speaker in the room at low frequencies.

The story of the Transmission Line loudspeaker then developed, first with the introduction of the IMF Monitor range, later to become TDL, and the Cambridge Audio R50 while, currently, the TL principle is being kept alive by companies such as PMC.

Investigating the construction of many of the commercial designs there is one factor which seems common to most of them. Looking at the absorbent filling of the line, one typically encounters the use of a lining of dimpled foam. This does not fill the line in the way that long hair wool does but, instead, adds absorption along the walls of the line.

In this way the line is left open and unhindered along its length. I believe that this aids the efficiency of the quarter-wave resonance such that the output from the line is at a higher acoustic level than if the line was filled with long hair wool. Certainly the listening evidence suggests that the IMF TLS designs and their counterparts sounded very full in the 30—50Hz region and, perhaps, a little weak through the 100Hz area.

As IMF's designer John Wright progressed with the TL designs at TDL he eventually ended up with a lower cost compromise design called 'RTL' or 'Reflex Transmission Device'.
Subscribing to our eco-friendly e-edition of Hi-Fi World and receiving a 50% discount:

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This was more honest in its design concept in that the line now becomes an extended reflex port.

I say 'honest' because, along the way, a number of so-called TLs or Acoustic Labyrinth designs crop up that clearly are not true 'Transmission Lines' in the Bailey sense. I cite the SMC AL range and similar commercial examples which, if you look at their behaviour, are simply reflex loudspeakers where the tube behind the reflex port is replaced by a line, albeit lined with foam to absorb harmonic resonances.

Then there are the oddities like the Ferrograph SI and B&W DM2a which have short 'eighth-wave' lines which are filled with damping material. Again these lines behave in a similar way to extended reflex ports which are then resistively loaded with the aim of reducing resonance and approaching an aperiodic performance.

By contrast we have the DIY approach which veers towards the Bailey Non-Resonant TL concept epitomised by two seminal designs, the Hi-Fi Answers Transmission Line Monitor Speaker and the Hi-Fi For Pleasure Pro-9TL, both by Chris Rogers. In addition the Hi-Fi News Daline - a 'Decoupled Anti-Resonant Line Loudspeaker' by Robert Fris showed how a small cone could utilise the line to extend and add power to the bass response. All of these DIY designs use a line stuffed with absorbent, Chris Rogers being bent on the 'complete' absorption principle actually describing that 'a very slight rumble may be heard from the mouth of the duct at very low frequencies; but this is of such a small extent that it can be forgotten'.

**BOOM, WOOF OR RUMBLE**

So which is correct – which TL concept yields the best results?

Well, it all depends on whether you want your speaker to boom, woof or rumble. I don't think there's any doubt that a shortened line, foam lined or otherwise, will just act as a reflex port. All you have to do is inspect the impedance curve to see the sharp 'Q' of the system resonance to see how the speaker behaves.

There's something to be said for this type of 'Reflex Transmission Line'. It generally gives less 'chuffing' than a typical port due to its lower air velocity and resistive lining of the 'port'. But you can expect it to boom, in the nicest possible way, as all reflex speakers do.

So what about the commercial TLs, like the IMFs and those that follow similar principles? For whatever reason, whether publicity driven or otherwise, the IMFs outsold the Radford offerings by a considerable margin. Could it be that the buying public preferred the trouser-flapping 'woof' offered by these underdamped lines?

Which brings us back to the home constructed TLs designed according to the Bailey Non-Resonant Line principles. These produce a subterranean rumble (Bailey refers glibly 'windows being easily rattled at 30Hz') when called upon to do so by extended bass frequencies in the music but otherwise seem to do little to excite the TL lovers.

In fact you might just wonder where that big box is keeping all that bass potential apparently hidden. That is until you start living with this type of design. Then you might just discover that even, articulate, well balanced and extended bass is exactly what a high fidelity loudspeaker should be producing. Which is why, in future articles, you'll find me exploring the Non-Resonant or Aperiodic Transmission Line principle for my next design!
WORLD
STANDARDS

These are the best products we’ve heard that are currently on sale in the UK, complete with the date they were originally launched and their current retail prices.

**TURNTABLES**

**PRO-JECT RPM1 GENIE 2007 £125**
An absolute masterpiece of ‘if you don’t need it, don’t include it’ engineering. What’s left is superbly made and turns in a staggeringly good performance, regardless of the low price.

**REGA P1**
2008 £189
Rega undercut their own P2 with this new entry-level deck. Easy to set up and fine sound quality.

**REGA P3**
2000 £298
Great affordable audiophile deck with fine bundled tonearm. Tweakable, and responds well to careful siting on a Base platform.

**TECHNICS SL1200/H 1973 £295**
Stylish and very well built vinyl spinner that measures well and sound spectacularly neutral and vivid.

**MICHELL TECNODEC 2003 £575**
Superb introduction to Michell turntables on a budget. Top quality build and elegant design make it the class of the mid-price field.

**PRO-JECT X PACK 2005 £650**
Decently musical sound, fine build and blistering value for money turntable, arm and MC cartridge package.

**ROKSAN RADIUS 5 2003 £750**
Fantastic value allied to intelligent, interesting and ‘out of the box’ design makes for a wonderful entry-level superdeck. Open and musical sound is more inviting than Michell TechnoDec rival, and the bundled Nima Unipivot arm is a superstar.

**OL AURORA MKII 2007 £750**
Semi-Novice entry level high end deck showing obsessive attention to detail. The result is an extremely wide open and natural sounding machine.

**FUNK FIRM VECTOR 2006 £760**
Innovative attempt to produce the best sounding turntable at the price; highly musically enjoyable.

**MICHELL GYRODEC SE2005 £970**
Design classic with superbly smooth build and finish. Sound is beautifully smooth, expansive and effortless but lacks bass grip compared to some rivals now.

**MARANTZ TT-1551 2005 £999**
This, the most musical sub-£1,000 turntable package, includes a fine tonearm and MM cartridge; plug and play vinyl at its best.

**ACOUSTIC SIGNATURE CHALLENGER 2006 £1,269**
Heavyweight turntable in more ways than one; massively focused soundstage allied to vast dynamic range makes it outstanding at the price.

**VPI SCOUT/90” JW ARM**
2006 £1,295
With a massive, solid and focused soundstage, superb transients and excellent musicality, this turntable is exemplary at the price.

**PROJECT RPM 10 2006 £1,500**
Brilliant ‘fit and forget’ deck that gives everything it plays a clean, warm, enjoyable sound — but not quite as effective in absolute terms as some price rivals.

**REVOlVER REPLAY 2007 £1,500**
Revolver springs back into the vinyl market like they’ve never been away, with a stylish and solidly built LP spinner. Welcome back!

**SCHEU ANALOG BLACK DIAMOND 2007 £1,500**
Stylish and highly capable turntable with seriously impressive bass. Comes with tweaked RB250 and high output Benz Micro MC cartridge; as a package - superb value for money.

**CLEARAUDIO SOLUTION/SATISFY 2006 £1,650**
Wonderfully big, powerful and enthusiastic sound is tempered by a little over exuberance. Super value, with a great upgrade path.

**THORENS TD2030 2006 £1,895**
Excellent design and a supplied Rega RB100 make this a highly capable vinyl spinner. Blue tint to the Perspex base is rather pretentious.

**MICHELL ORBE SE**
2002 £1,916
Ultimate evolution of the Gyro adds myriad design tweaks and two-stage isolation. Fantastically capable all rounder with commanding, powerful, detailed sound that gets the best from almost any arm and cartridge.

**LINN LP12SE 1973 £3,510**
New Keel subchassis is not cheap but brings the LP12 firmly into the 21st Century, with pace, dynamics and low end grunt.

**SME MODEL 10A 1995 £4,556**
Exquisitely engineered deck and SME V tonearm combo that’s an extremely accomplished performer with classical music.

**CLEARAUDIO REFERENCE 2003 £4,000**
The company’s best value vinyl spinner; good enough to get the best from almost any tonearm and cartridge combination. Brilliantly open and neutral sound; superlative pitch stability; stunning build and styling — Michell Orbe does most of this at half the price, however.

**ACOUSTIC SOLID ONE 2007 £6,000**
Huge turntable, both in terms of sheer mass and sonic dynamics. Fits up to three arms and enjoy! Just don’t damage your back moving it...

**MCINTOSH MT10 2008 £8,995**
It’s big, expensive, controversially styled and glows more than some might consider necessary! Fortunately it’s also an astonishingly good performer...

**TONEARMS**

**REGA RB250 1984 £112**
This is capable far beyond its price point, with a tight, lean and detailed sound. Responds well to counterweight modification, re-wiring and general tweaking.

**MICHELL TECNOARM A2003 £299**
John Michell’s brilliant reworking of the Rega RB250 theme, using blasting and drilling techniques usually seen in motorsport! The result is the best sounding arm at £400, and as good as some at four times the price.

**ORIGIN LIVE SILVER 2006 £599**
This expertly finished Rega boasts a superbly even, transparent and tuneful sound. Gives away only a small degree of finesse and dimensionality to top arms.
LATEST, but sublime in the midband; truly
finish and sound truly impressive.

AUDIO ORIGAMI PU7 2007 £ 1,300

Offers nine tenths of the SME V's magic at
over half price. Exquisitely built and fin-
cut aluminium armtube and detachable head-
mass, revised geometry and better finish.

Exquisite.

the mould of the late, lamented Zeta, plus
A modern superarm with battleship build.

CHARISMATIC UNIPOV 1998 £ 495
Awkward to get working properly with a
mass, length and colour you care for. Fit,
but lacks the IV's pace and precision.

Mid-range SME comes complete with cost-
cut aluminium armbase and detachable head-
shell. Tight, neutral sound with good tonality,

SME 309 1989 £ 767

Stylish and solid lump of arm with fabulous
dynamics and clarity. A real bargain

The best modern budget MC combines
detail allied to real vim. Loves making music!

LYRA DORIAN 2007 £ 695
Inclusive and musical, the Dorian is one of the
most revealing cartridges at the price.

ORTOFON KONTRA “B1999 £ 720
Surprisingly articulate performer by Ortofon
standards. All the brand’s usual polish and
delicacy to its own.

SAMBA 1989 £ 1127
Mid-range SME is up with the very best at the price, with a
exceptional tight sounding and detailed car-

DELTA V 2007 £ 300
A distant descendent of the classic Ultimo
with a musical performance that makes simi-
larly-priced MCs look poor... Ortofons 2M Black
uses a stylus from the MC Jubilee and easily rivals
McWielded with incredible weight, ultra clear
dynamics and clarity. A real bargain

GOLDRING G1042 1994 £ 135
One of the best MMs going, with sweet and
tended treble and punchy, muscular bass.

HFW’s best tonearm of 2007 is a deriva-
tion of the classic Syrinx PU3 updated to
spectacular effect. Hand made to order, with
any mass, length and colour you care for. Fit,
but lacks the IV's pace and precision.

SME SERIES IV 1998 £ 1127

CAMBRIDGE AZUR 840C 2006 £ 800
Well built CD player with a silky, yet detailed sound and a whole host of useful facilities.

Excellent value for money.

NAIM CD5i 2008 £ 850
Naim’s new italic ‘i’ variant improves even
further on the original, offering superb per-
formance in a very well built package.

EASTERN ELECTRIC MINIMAX CD 2005 £ 925
Highly accomplished tube-equipped all
rounder with a clean, open and musically
lucid sound; superb value.

Musically adept and highly resolveable cartridge with impressive tracking abilities. Top end lift
means careful matching required, however.

ORTOFON KONTRA™ £ 2004 £ 1,000
The most secure tracking MC we’ve heard
its super clean, fast, detailed and neutral
sonics make it a brilliant partner to warmer
sounding turntables.

NOTRE DAME MC WINDFELD 2008 £ 1,799
Ortofon’s new flagship MC is a sophisticated
and alluring performer that takes the vinyl
experience to a new level.

KOETSU RED K SIG 2007 £ 3,399
The new K Signature adds a hefty dose of
insight and finesse to the already impressive
Red and the results are fabulous

DIGITAL DISC PLAYERS
CAMBRIDGE AUDIO
640C V2 2006 £ 250
Superb entry level CD player; crisp, com-
posed, musical sound plus fine build and
ergonomics.

MARANTZ CD6002 2008 £ 299

Revealing and open budget CD spinner, once
the menus have been navigated to set the
player up optimally!

REGA APOLLO 2006 £ 498
Highly rhythmic and beguiling performer,
although lacks some warmth of tone. Superb
ergonomics and design.

RUSS ANDREWS
DAC-1 USB 2007 £ 599
Not just a USB gadget, but a truly accom-
plished upgrade DAC that makes the best of
CDs, MDs and digital radio.

CAMBRIDGE AUDIO
640H 2005 £ 999.95
Fine sonics and decent build make this our
favourite affordable HD music server.

MARANTZ SA7001K SIG2006 £ 600
Brilliant CD/2ch SACD spinner with a big,
sweet, analogue-like sound - CD is totally
competitive at the price with the best dedi-
crated machines.

AUDIO LAB 8000CD 2006 £ 650
Ultra clean and transparent sound with
amazing detail retrieval; just a tad bright and
analytical for some, though.

SHANLING CDT-80 2005 £ 650
Very impressive mid-price machine with a
big, sumptuous, expansive sound – better still
when tubes are changed.

CARTRIDGES

Audio Technica AT-110E 1984

The first new budget MM designs for many
years. Ortofons 2M Red and Blue are high
resolution designs that are an engaging listen

ORTOFON 2M RED/BLUE 2007 £ 660/£120

The first new budget MM designs for many
years. Ortofons 2M Red and Blue are high
resolution designs that are an engaging listen

ORTHOFON RONDO BRONZE 2005 £ 500
Excellent mid-price moving coil with real
rhythmic alacrity and a decent deal of finesses.

ZYX R-100H 2005 £ 625
Exceptionally tight sounding and detailed car-
trudge with the musical skills to match, this
is up with the very best at the price, with a
presentation all of its own.

BENZ MICRO GLIDER L2 2008 £ 650
Crisp, clean and detailed MC; particularly
impressive at both ends of the frequency
spectrum.

TRANFIGURATION AXIA 2007 £ 890

STANDARDS

HADDOCK 242 SE 2000 £ 649
Latest of a long line of unipivots, with added
mass, revised geometry and better finish.

Musically like no others at the price.

SME 309 1989 £ 767
Mid-range SME comes complete with cost-
cut aluminium armbase and detachable head-
shell. Tight, neutral sound with good tonality,

SME SERIES IV 1998 £ 1127
Offers nine tenths of the SME V's magic at
just over half price. Exquisitely built and fin-
ished, and a design classic. Faces stiff compe-
tition these days, but lovely nevertheless.

AUDIO ORIGAMI PU7 2007 £ 1,300

HFW’s best tonearm of 2007 is a deriva-
tion of the classic Syrinx PU3 updated to
spectacular effect. Hand made to order, with
any mass, length and colour you care for. Fit,
but lacks the IV's pace and precision.

SME SERIES IV 1998 £ 1127

TRANFIGURATION AXIA 2007 £ 890
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ORTHOFON KONTRA™ £ 2004 £ 1,000
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sonics make it a brilliant partner to warmer
sounding turntables.

CAMBRIDGE AUDIO
640C V2 2006 £ 250
Superb entry level CD player; crisp, com-
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ergonomics.

MARANTZ CD6002 2008 £ 299

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AUDIO LAB 8000CD 2006 £ 650
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amazing detail retrieval; just a tad bright and
analytical for some, though.

SHANLING CDT-80 2005 £ 650
Very impressive mid-price machine with a
big, sumptuous, expansive sound – better still
when tubes are changed.
NAIM CD555/555PS 2006 £14,000
Very probably the best CD player yet made - certainly the most expensive; a digital tour de force.

STANDARDs

CYPRESS CDI 2005 £1,000
Highly incisive, engaging, gritty and dynamic sound, but needs careful matching to smooth ancillaries. Optional PSX-R adds bass and dimensionality.

BENCHMARK DAC-I US$2007/999
Pro-biased DAC with useful range of inputs and impressive headphone outputs, too. Save £50 if you don’t need the US$-equipped version.

ELECTROCOMPANIET PC-1 2008 £1,034
Tidy and polished-sounding CD spinner with strong bass and an assured sense of confidence

EXPOSURE 3010 2003 £1,200
One of the most ‘analogue’ CD players, second only to the Shanling. Wonderfully beguiling balance leaves you looking for the tube output stage.

REGA SATURN 2007 £1,398
Wacky looks surround a highly accomplished CD spinner that marries a smooth midband to excellent bass grip.

EDGAR CD-I 2007 £1,350
Quirky Slovakian CD spinner with all-valve output and a truly spine-tingling performance.

STELLO DP-300 2004 £1,495
Brilliant do-it-all upsampling DAC preamp

MARANTZ DV9600 2006 £1,500
Impressively accomplished universal disc player, that performs superbly on CD, SACD, DVD Audio and DVD Video

RAYSONIC CDI38 2007 £1,599
Spaceship styling and fine build around a highly competent mid-priced CD spinner means a feast for the senses.

CHORD DAC64 2005 £1,995
Bespoke architecture gives a truly unique musical sound that’s beguilingly musical in nature, if a tad tonally dry. Superb build and aesthetics too!

SHANLING SCD-T2000 2007 £2,350
Updated version of original SCD-T200C standardises upgrades optional on the older model and adds a few more tweaks for good measure. The result is a stylish player that works superbly with both CD and SACD

TUBE TECHNOLOGY FUSION 64 2006 £2,200
Unique digital and analogue audio engineering makes for an exceptional CD player that, on some programme material, is peerless.

NORTH STAR MODEL 192 TRANSPORT/EXTREME DAC 2006 £2,918
Superbly finelyessed and logocuous sound allied to excellent build and finish make for a brilliant value high end box.

ACUSTIC ARTS CDI MK2 2007 £3,085
Styling not to everyone’s taste but build quality is impeccable and the performance is stunningly musical.

NAIM CDX2-XPS2 2003 £4,950
A fine high end machine, but add an XPS2 and it becomes one of the most chartistically engaging 16bit machines we’ve ever heard. Plays music with such passion!

LINN UNIMIDISK 1.1 2004 £6,500
Surely the ultimate universal DVD player: superb in every department, but its CD playback shines brightest considering it’s not a bespoke Red Book machine.

NAIM CDS3 2003 £7,050
The most polished Naim CD to date; tremendously capable and musical, but lacks the Romwater quality of the cheaper CDX3-XPS2.

ACUStIC ARTS DRIVE 1 MK3/ TUBe DAc 2 2007 £7,980
Superbly built high end CD transport and DAC combo that shows just what the format can be capable of.

ESOTERIC X-01 2005 £8,995
Breath-taking feat of digital audio engineering, and surely the best sounding combination CD/SACD spinne can buy.

NAIM CDSS5/S55PS 2006 £14,000
Very probably the best CD player yet made - certainly the most expensive; a digital tour de force.

DIGITAL RECORDERS

SONY RCD-W3 2002 £250
Usual superb Sony ergonomics make for no-nonsense budget buy. Fine direct digital copiers, but analogue input poor. Middling sonics, but there’s a digital output!

YAMAHA CDR-HD1300E 2002 £600
HD means MD-style ease of editing, but compromises recording quality even so slightly. Add decent CD replay and it’s a fine all rounder nonetheless - top value.

PHONOSTAGES

PROJECT PHONOBOX LE2004 £99
Great little box that improves on most bundled phono stages found in budget integrated amplifiers; adding detail and definition and a measure of smoothness too.

TRICHORD DINO 2002 £299
Great all rounder with switchable MPPP, Fast, fluid and smooth like no others at the price.

TENIDA J99 2006 £400
Hybrid tubed/olid state phono stage with a good range of adjustability. Excellent value for money and a fine, dynamic sound.

GRAHAM SLEE ERA GOLD V 2004 £660
Wonderfully warm, open and musical nature makes this an essential audition for those wanting a top value mid-price phono stage.

LEHMANN BLACK CUBE SE2006 £495
Clean, smooth and even right across the frequency range, this phonostage represents superb value for money.

PURESOUND P10 2007 £690
Guy Sargeant’s new PM phono stage is an absolute belter. Simple but very effective.

AQVOX PHONO 2 CI 2006 £598
Brilliantly versatile yet affordable phonostage with a beguiling sound, but careful matching essential. Balanced operation of real benefit.

ICON AUDIO PS1.2 2007 £999
Excellent value Luxman phono stage with good range of facilities and fine imaging abilities.

CLEARAUDIO SYMPHONO+ 2006 £899
Superb high resolution phonostage with a tight, grippy and engagingly musical sound.

ANATEK MCI 2007 £850
A spectacularly good MC phono stage that offers value like insight, underpinned by seriously impressive bass.

EASTERN ELECTRIC MINI MAX PHONO 2006 £1,099
A stunning phono stage with superb clarity and impeccably dynamics, allied to the atmosphere of valves. Can hold its own with even more expensive designs. A veritable bargain.

LINN LINTO 2000 £900
A musical and incisive performer, with more speed than the Delphi at the expense of detail and tonal colour.

QUAD QC24P 2007 £995
Dynamic performer that can be used on its own as a complete phono-level preamp.

TRICHORD DIABLO + NCPSU 2006 £1,198
Highly musical performer; this is one of the best phonostages at or near the price, but lacks the polish of the rival Whets.

AMPLIFIERS

NAD C315BEE 2008 £710
A cough and highly polished budget amplifier with NAD’s typically useful loudspeaker driving abilities.

MARANTZ PM6002 2008 £299
Revealing budget amp with fine phono stage and tight, rhythmnical bass.

ONKYO A-9755 2006 £700
Beautifully built, usefuly versatile and truly enjoyable sonics make this a brothergh good, affordable audiophile product from Onkyo. 

NAIM NAIT 5i 2007 £725
The italic ‘f’ version remains one of the stage musically competent and dynamically engaging integrated ampls at the price.

CAMBRIDGE 840A V2 2007 £750
Version 2 addresses version 1’s weaknesses to turn in a mighty accomplished performance, offering power, finesse and detail.

JUNGSON JA-880 2006 £899
Stunning value for money Class A monster integrated; extreme power and clarity at a puzzlingly low price.
ANATEK ASOR 2007 £1,600
More power and greater transparency improve even further on the already impressive A21 to give truly impressive results.

AUDIO NOTE OTO SE 2000 £1,199
This baby tuber is beautifully sweet and creamy, but lacks solid-state's clarity, detail and incision. Low, low power means speaker choice critical.

SHANLING STF-80 2007 £1,199
Well built and surprisingly muscular valve choice critical. and incision. Low, low power means speaker creamy, but lacks solid- state's clarity, detail.

CREEK DESTINY 2006 £1,200
Tremendously musical and lithe sound with the worse for it.

ELECTROCOMPANIET PI-2 2008 £1,430
Engagingly musical.

AUDIO NOTE SORO 5E2000 £1,699
Wonderfully out-of-the-box sounding tube middleweight is all about sweetness and fluidity. Limited power and loose bass, but little worse for it.

UNISON RESEARCH 6S2002 £1,625
Tremendously musical and lithe sound with real finesse and subtlety too. Very slightly upper mid forward encourages careful partnering with ancillaries (Revolver R45s are ideal), but overall fantastic value for money.

MOONI-M3RS 2008 £1,890
Grippy and clean performer with fine sound-staging and build quality.

SUGDEN A21SE 2005 £1,995
Brilliantly musical hear-through sound makes this one of the best transistor amplifiers ever made, but be prepared to work carefully.

RED WINE AUDIO SIGNATURE 70 2007 £1,995
Battery powered, single input Class D mono integrants that work superbly well. Sound most un-digital!

COPLAND CA229 2006 £1,998
Unfailingly sweet, sophisticated and smooth - both to listen to and look at - this is a truly desirable high end integrated.

NAIM SUPERNAIT 2007 £2,350
A technological and sonic tour de force from Naim that combines impressive functionality and connectivity with superb sound quality.

SUGDEN A21A 52 2007 £1,299

SUGDEN IA4 2007 £3,499
A goodly amount of Class A power and a breathtakingly fast and musical sound make this a high-end integrated to be reckoned with.£2,895

NAIM NAP282/NAP200 2004 £4,000
Wonderfully taut bass, lightning midband and incisive treble makes for an enthralling listen; this cracking combination looks great and is superb value too.

ARCAM AVR1350 2006 £1,500
Superbly accomplished do-it-all AV receiver package, with an uncommonly warm, natural and musical sound. A winner goes from strength to strength.

DENON AVR-4308 2007 £2,000
Huge behemoth retooled with facilities and sockets, plus two remotes! Fortunately it's a brilliantly flexible and powerful performer.

NAIM AV2/NAP 150/150P 175 2002 £4,190
Brilliant audiophile multichannel pre-power amplifier combo; not as good with music as a two-channel! Naim set-up at the same price, obviously, but surprisingly close. Elegant control layout plus a strong, clean and brilliantly engaging sound make this a serious crossover product. Ultimately lacks power compared to similarly priced Arcam gear, but is more musically involving.

MUSICAL FIDELITY X-CANS V3 2003 £249
Mr. Michaelson's best headphone amplifier to date, with an extremely open and explicitly detailed sound plus serious bass wallop and the ability to drive any phones to very high levels. Errs towards brightness with some headphones, so match carefully and use smooth cables.

SUGDEN HEADMASTER 2003 £600
Unusual combined preamplifier and headphone amplifier, this boasts a surprisingly smooth and open sound.

PREAMPLIFIERS

CREEK OGH-12 2000 £220
Brilliant value budget passive, giving little away in sonics to far more expensive designs. Connectivity and build aren't great, but what do you expect at this price?

MF AUDIO PASSIVE PRE2003 £1,500
Novel and effective pre with switchable gain via a transformer, and balanced operation. Open and incisive sound, yet makes most active rivals sound edgy by comparison. Silver version at the twice the price adds eerie transparency and is superlative.

MODWRIGHT SW19.0SE £2,000
Captivating sound quality that will transform your system. Build quality is equally impressive and value top-notch. Highly recommended.

MELODY PURE BLACK 101D 2007 £3,295
One of the best preamplifiers we have ever heard. Takes the clarity and openness we expect from valves and adds a stepping level of grip and detail. Stunning.

POWER AMPLIFIERS

ROKSAN KANDY LII 2008 £600
Fine budget power amp that punches well above its weight and can embarrass more expensive designs.

QUAD 909 2001 £900
The latest current-dumper has a smooth and expansive character with enough wallop to drive most loads. Not the most musical, but superb value all the same. Lovely build, finish and Quad's legendary service are nice.

NAIM NAP150 2002 £795
Driven by a decent source and a NAC112, this gives highly enjoyable results - providing you like the Naim sound! Taut, fast and feisty despite its relative lack of power.
their price and dimensions that offer detail and dynamics well beyond belies both their dimensions and price tag.

ACOUSTIC ENERGY NEO 1

Aston Martin and it’s very hard to say no...

B&W’s new baby standmounters offer a

Grass and well balanced standmounters with an ethereal soundstaging and delicious Awesome output transformer-less valve

amplifiers in a neat, small package.

Audio D100 2005 £ 1,595

KT88 based power amplifier offers dramatic

Clean and musical Class D monoblock power

amplifiers with sound quality that more

sophistication and poise.

REVOLVER RW451 2006 £ 1,199

Large standmounters with impressive mid-

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YAMAHA SOAVO 2 2007 £ 1,200

Just as capable as their floorstanding breth-

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driver. The result is subtle, smooth and emotive.

SPENDOR SSE £ 1,895

Beryllium tweeters work superbly, allied to

USHER BE-718 2007 £ 1,600

Beryllium tweeters work superbly, allied to a fast and punchy bass driver. The result is subtle, smooth and emotive.

SPENDOR S8 £ 1,895

Generously large, silky smooth delivery; this dynamic sounding floorstander is an excellent all-rounder.

MORDAUNT SHORT

AVANT 9141 2007 £ 300

Another pair of storming budget floorstand-

ers from Mordaunt Short. Detailed, punchy and crisp.

B&O BEOLAB 9 2007 £ 5,995

Impressive dynamics and cohesion. Fine build and finish.

REVOLVER CYGNIS 2006 £ 5,999

Rock loudspeaker. though.

YAMAHA SOAVO 1 2006 £ 2,000

Wonderful modern transparent floorstanders with impressive dynamics and cohesion. Fine build and finish.


domestic audio classic.

KIBRI NAIMA 2007 £ 1,550

Unusual-looking omni-directional loudspeakers with an absolutely captivating performance. Huge soundstage and bags of clarity — brilliant!

USHER BE-718 2007 £ 1,600

Beryllium tweeters work superbly, allied to a fast and punchy bass driver. The result is subtle, smooth and emotive.

SPENDOR S8 £ 1,895

Generously large, silky smooth delivery; this dynamic sounding floorstander is an excellent all-rounder.

MORDAUNT SHORT

AVANT 9061 2006 £ 350

Dynamic and impressive floorstanders with excellent insight and a lively nature.

REVOLVER RW16 2004 £ 400

Outstanding standmounter with tonal accuracy and speed that totally belies its price; good sensitivity for a small box makes it great with valve amps too. A budget audiophile classic.

LEEMA XERO 2007 £ 650

Superb mini-monitors that belie their modest price tag with a bold and finessed performance.

ACOUSTIC ENERGY AEI CLASSIC £ 845

Brilliantly successful remake of an iconic design; not flawless, but surely one of the most musical loudspeakers ever made.

LEEMA CUBIC 2006 £ 1,095

Very musical floorstander that's clear, concise and truthful, whilst being exceptionally amplifier friendly - a dreamboat for valves.

ONE THING AUDIO ESL72007 £ 1,450

One Thing Audio’s modifications keep the good old ESL57 at the very top of its game.

KIBRI NAIMA 2007 £ 1,550

Unusual-looking omni-directional loudspeakers with an absolutely captivating performance. Huge soundstage and bags of clarity — brilliant!

USHER BE-718 2007 £ 1,600

Beryllium tweeters work superbly, allied to a fast and punchy bass driver. The result is subtle, smooth and emotive.

SPENDOR S8 £ 1,895

Generously large, silky smooth delivery; this dynamic sounding floorstander is an excellent all-rounder.

Isopon galileo 2007 £ 2,100

Big standmounters that really grip the music and offer quite startling dynamics and bass agility. Trickly to drive, however.

MONITOR AUDIO PL100 2006 £ 2,300

The MA boys pull out all the stops for their flagship 'Platinum' series standmounter with stunning results.

MARTIN LOGAN CLARITY 2003 £ 3,095

Supremely transparent and open, if dynami-
cally limited, with middling bass punch, but that’s not the point – that deliciously fluid and intricate midband wins great respect.

PHC OBII 2008 £ 2,950

Cleverly updated floorstanders give scale and solidity in slim and well finished package.

MOWGAN AUDIO MABON 2007 £ 3,095

Massively capable loudspeakers that offer dynamics, scale and clarity in an elegantly simple package. Wide range of finishes, too.

B&O BEOLAB 9 2007 £ 5,000

Technically impressive and visually striking loudspeakers with sound quality that more than matches their looks.

ARS AURES II 2006 £ 6,995

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

QUAD ESL-2905 2006 £ 5,995

The old 989 with all the bugs taken out, this gives a brilliantly neutral and open sound like only a top electrostatic can; still not a natural rock loudspeaker, though.

REVOLVER CYGNIS 2006 £ 5,999

Revolver pull out all the stops and show what they can do with this magnificent flagship loudspeaker. A superb monitor that is like a mini B&W 801D in many ways.
In many respects, the ultimate studio monitor; dazzling clarity and speed with commanding scale and dynamics.

**ACCESSORIES**

**B&W 801D** 2006 £10,500
In many respects, the ultimate studio monitor; dazzling clarity and speed with commanding scale and dynamics.

**ISOPHON CASSIANO** 2007 £12,900
Drive units featuring exotic materials allied to superlative build quality result in an immense-ly capable loudspeaker. Not an easy load to drive, however.

**MONITOR AUDIO IDECK2006** £200
Superlative build quality result in an immense-ly capable loudspeaker. Not an easy load to drive, however.

**TECHLINK WIRES XS 2007** £20
Highly accomplished interconnects at an absurdly low price. Stunning value for money.

**STAX SR-007T OMEGA II/SRM-007T** 2006 £2,890
Simply the best headphones we’ve ever heard at any price, these sweetly translucent electrostatic earspeakers are like no other head- phone, or loudspeaker for that matter...

**TEAC DR-H300DAB** 2008 £329
Nicely built and styled mini with fine perfor- mance on all sources that even plays DVDs!

**NAD C-715DAB** 2008 £429
Small, neat looks cover a truly capable system that shows just what a compact design can achieve.

**ARCAM SOLO MINI** 2008 £650
Half the size and two-thirds the price of a full-sized Solo, the Mini gives very little away in terms of performance to it bigger brother.

**ARCAM SOLO** 2005 £995
Excellent all-in-one system, with a warm, smooth and balanced sound to match the features and style.

**LINN CLASSIK** 2002 £995
The best one-box stereo system money can buy; superbly musical sound beats equiva- lently priced separates.

**MERIDIAN F80** 2007 £1,500
Fantastically built and versatile DVD/CD/ DAB/FM/AM unit, designed in conjunction with Ferrari. Ignore nay-sayers who sneer that it isn’t a ‘proper’ hi-fi product; most see sense when they listen to it...

**LINN CLASSIK MOVIE** 2007 £2,250
Superbly built all-in-one that offers excellent sound across all formats and is surprisingly easy to use.

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As most audiophiles know, the importance of a good mains supply can never be underestimated. After all, many turntable motors run on a synchronous AC signal derived from the mains, and amplifiers directly use the signal to generate the Watts that power loudspeakers. Consequently, any noise or rubbish coming up the mains lead will have a direct effect on what passes down the loudspeaker cables, and the result is unlikely to be beneficial. Having been converted to the benefits of mains conditioning by my review of the Advance Electronics ASR250 unit I reviewed back in 2007, and which has remained in my system ever since, I was intrigued to know just what a difference another unit, costing over four times the cost of my Advance Electronics unit, would bring...

The MIT Z-Powerbar boasts six mains outlet sockets that will run a total of 1,800W. One is permanently live, four are switched and one incorporates additional isolation, designed specifically for digital equipment. All these sockets share the same technology internally however, namely "multiple patented, parallel tuned filters operating over the widest bandwidth, engineered to remove noise from your AC power line" according to MIT. This means that the Z-Powerbar works slightly differently to my own unit, by stabilising, filtering and optimising the incoming signal using a parallel circuit configuration, rather than the more common series type.

Plugged in and warmed up, I was pleased to note that the MIT is absolutely silent, unlike my ASR250, from which a slight transformer hum can be heard on occasion. When the music played, the MIT convincingly leapt ahead of the cheaper unit, things being more effortless and unstressed, as if the amplifier was working less hard to achieve the same results. The dynamic headroom appeared to have increased, and everything I played grew in both stature and authority. In the midband, singers and instruments were more vivid within the stage and bass lines gained better focus and I was strongly reminded of my recent times with the Roksan Kandy K2 amplifier, as its uncanny background silences suddenly appeared to have been effectively transplanted into my own setup.

Overall, I was quite taken aback at the changes the Z-Powerbar made to my system, as the unit is very effective at what it does. Cheap it certainly isn't however, so this is recommended for high end systems, of course. AS

Sennheiser IEs £249.99

The top in a new range of 'in ear monitors' (also comprising the IEs at £119.99 and the £169.99 IEs7), Sennheiser describe the IEs as, "very high quality and accurate ear-canal headphones". They also take the in-ear headphone breed to a landmark high price point – giving audiophiles-on-the-move something new to aspire to, and rivals from Shure and Audio Technica something new to worry about!

They are single driver designs; Sennheiser are insistent that these give superior results to multi-way designs by circumventing the associated phase and distortion problems that crossovers bring. One neodymium transducer per side does the job, and this brings efficiency benefits. Effective in-ear isolation comes from a range of different types and sizes of ear-adaptors; double flanged to offer better fit, giving 26dB (20dB with the IEs6 and IEs7) of attenuation, Sennheiser claims. As you'd expect from this company's top model, build is impeccable; we particularly liked the weighty metal body. Each headphone is equipped with a metal case, small cleaning tool and a cable clip.

Although not the lightest in-ear phones ever made, that extra weight isn't an issue, as it is still a matter of grammes. What's more important on a product such as this is the fit achievable with the supplied ear adaptors. This can be variable with in-ear phones, but was excellent on these high end Sennheisers – an encouraging sign as it will make or break the sound quality on the move.

It's no fun having to keep poking the things back in again all the time, and this is ultimately why many people give up on in-ear phones completely.

Sonically, the IEs are superb – but they do sound like Sennheisers, which means an ultra clean, precise and detailed sound that some won't find especially relaxing to listen to. Treble extension was exceptional, the IEs giving a beautifully atmospheric hi hat sound from my freshly rebuilt Sony Walkman Pro cassette machine, and sledgehammer bass that needs to be heard to be believed. Between the two frequency extremes was an incredibly clear and lucid midband with enormous amounts of detail and a very neutral tonality.

Be warned though, these are so neutral that your iPod will sound quite poor through them; the Sennheiser IEs simply tell you what's going on with the source and the recording like no other in-ear phones, and in the case of the iPod that means quite a harsh and unlovely sound.

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After a seven-month delay, the BBC has finally begun testing its live Internet radio streams at higher quality, and both the test streams and the BBC’s on-demand radio streams are now using the AAC/AAC+ audio codec.

For both the live and on-demand streams, the BBC is using 96kbps AAC+ for all of its national stereo stations, and it is using 64kbps AAC+ for Radio 3, as it’s only in mono. However, according to the BBC there was a mistake, because Radio 3 was meant to use 128kbps AAC, but at the time of writing the BBC hasn’t had a chance to correct this yet because the new streams were only launched last night. The important thing though is that all of the BBC’s live and on-demand Internet radio streams are, or will be, at higher quality than on DAB. The only ‘national’ station that hasn’t started using AAC+ yet is the World Service, but it too will start using AAC+ within the next few months as well.

To put the level of audio quality into context, listening tests have shown that AAC/AAC+ is twice as efficient as the MP2 codec that’s used on DAB. For example, Radio 3 will be using 128kbps AAC for its Internet streams, and that provides the same level of quality as 256kbps MP2. As Radio 3 only uses 192kbps MP2 on DAB, the Internet streams will provide higher quality.

The improvement in quality is more dramatic for the other stereo stations though, because they use 128kbps MP2 on DAB, which provides poor audio quality, but with 96kbps AAC+ providing equivalent quality to 192 kbps MP2, that provides a big jump in quality relative to what they’re available at on DAB. In addition, the Internet streams for Radio 4, Radio 7 and the Asian Network are permanently in stereo, whereas these stations either occasionally (Radio 4) or permanently broadcast in mono on DAB.

The new AAC+ on-demand radio streams are already available to everyone, but the live test streams are only currently available to BBC iPlayer Labs testers, so if you’d like to listen to the test live streams, you have to visit www.bbc.co.uk/iplayer/labs and click on the pink button near the top of the page that says, “I want to be a Labs tester”. Be aware, though, that because they are test streams they won’t necessarily be using the bitrates or even the codecs mentioned above!

However, although it is obviously welcome news that the Beeb is providing its Internet radio streams at higher quality than on DAB, the BBC actually reduced the bitrate levels they’re using for the on-demand radio streams when they switched from using MP3 to AAC/AAC+, and I totally disagree that they needed to do this.

The BBC originally said that they were doing this because AAC/AAC+ is more efficient than MP3, so reducing the bitrate levels wouldn’t lead to a reduction in audio quality. But looking at it from an alternative perspective, they have effectively reduced the audio quality relative to what it would have been if they had only switched to using AAC/AAC+ and left the bitrate levels unchanged!

The BBC also tried to justify this by saying that lower rate streams are more reliable, but I suggested that if they used a large buffer size for the on-demand streams they could make those streams very robust. But the BBC ignored my advice, didn’t even increase the buffer size, and reduced the bitrate levels anyway.

The only other reason why the BBC would want to reduce the bitrates of the on-demand streams would be to save bandwidth. However, the iPlayer TV streams were already consuming eight times as much bandwidth as the radio streams by last August. Furthermore, HD streams are going to be launched on the iPlayer this year that will use a bitrate of 4Mbps, which is around forty times higher than the bitrate used for the radio streams!

The BBC also wants to allow people to watch iPlayer TV streams on their TV sets, which Anthony Rose, who is in charge of the BBC iPlayer, said could lead to the bandwidth required increasing ten-fold over the next year or two. So they obviously don’t need to save what is a very small amount of bandwidth in comparison to what the iPlayer TV streams are using now, let alone what they will be using over the next year or two.

In my opinion, the BBC wants to limit the bitrate levels they’re using on both the live and on-demand Internet streams, because if they used the same rates with AAC as they were using with MP3, the quality would completely outclass that provided by DAB. We will see over the next few months whether this is true or not, because there is no legitimate reason to limit the bitrate levels, so if they do continue to do this, I would say that it would prove once and for all that the BBC is biased against the Internet radio streams because they’re biased towards DAB."
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"a big electrostatic is near the end-place in audio, but needs a place the size of a castle to work..."

still dream of owning a castle that sits atop a distant crag, far from civilisation. With neighbours many hours away I'd have time to flee any mob of malcontented citizens out to disconnect the Tannoy Westminster Royal SEs that I'd use to the fullness of their abilities. As Tannoy also make foghorns I'm not sure distance would do much to lower the sound pressures assailing local hamlets and falling nearby sheep, but as this castle is remote I'd have time to leg it on my scooter with the Westminsters held on the back by elastic straps before the mob appeared.

A difficulty would come in selecting which loudspeakers to leg it with, however. Because with big rooms, solid walls and likely great acoustics aided by magnificent wall hangings, the Tannoy's would occupy only one of the castle's many rooms, perhaps the main banqueting hall, where roast sheep would head up the menu. In other rooms would sit at least one pair of electrostatatics like the Kingsound Prince Ils reviewed this month. This isn't to rule out either Quad 290Ss or Martin Logan CLXs which may do an equally good job, but a big electrostatic would have to have its own place in my castle, because whilst Tannoy's are all about scale, electrostatatics are about analysis - and what analysis!

Heating the castle would be no problem because it isn't wise to run either loudspeaker from anything other than a valve amp. Admittedly, with Westminster Royals you don't need much of an amp: a 19 Watt single-ended would do and would probably be my first choice. A peculiar difficulty I ran into when using Yorkminsters was that they consumed almost no power and Westminsters need even less than no power, a difficult proposition. A few Watts generated by a waterwheel in the castle's basement would likely be enough, only occasional peaks needing the headroom that something like 19W or so would provide...

Running at a few Watts means you end up listening to the 'dirty' crossover region of an amplifier and solid-state amplifiers show their limitations if you use them like this. They're great if you want a bit of welly from a small package at a reasonable price, as most people do, or seem to think they do, but Westminster Royal SEs are best driven by something of greater refinement and it's safest to opt for an amplifier that lacks crossover distortion altogether, meaning a Single-Ended design. Done properly, SEs are sheer heaven but, with an output transformer of enormous weight to withstand DC magnetisation, only a castle built on the firmest of granite foundations, like a rocky crag, will do.

Clay soil, like that somewhere beneath me at this very minute, part of the London basin, goes wobbly wobbly very quickly and isn't where you want to be if you if you have any serious desire to own a top quality hi-fi system. As it took four of us to manhandle Westminster Royal SEs into position at the Manchester Show in 2007 when we chose to demonstrate them, total system weight is prodigious, so London isn't the best place to position them. Argyllshire comes to mind perhaps - it sounds right - or even the solid granite of Dartmoor.

The warmest room in the castle would be the one housing the big electrostatatics. Well, if they were Prince Ils, as I note in the review these need massive amounts of power and a suitable valve amplifier will be enormous, with lines of output tubes running in parallel push-pull pairs, Audio Research come to mind, as they make devices akin to thermionic power stations, but then they leave it when I see I will be listening to banks of 6550s! Nicer sounding tubes exist. A good valve amp able to swing 40V or more, equivalent to 200 Watts, will have to be shipped into my castle, on a large cart hauled by lines of oxen in this dream...

Whilst the Westminster Royals will disturb hamlets for miles around, the Prince Ils will bring me something less physical and more ethereal, arranging a heavenly rainbow of sound across the end of a large room, sufficient to accommodate a choir of angels. The Prince Ils have the purity to do this convincingly; I don't want my angels tied down to the earthly constraints of a wooden box.

This is in the ante chamber, where I would go when all the riotous rollicking in the main banquetting hall, driven by the Tannoy's, becomes too much to bear. It's a place of thought and reflection, of beauty and charm, of the emotions that music can inspire. Because electrostatique loudspeakers of massive ability, like the Prince Ils, in the right environment, deliver music in a way that is spell binding. You know why you started out wanting better sound quality in the first place when you hear them, because a big electrostatic is somewhere near the end-place in audio, but to work it also needs a place the size of a castle.

The sheep are safe and the hamlets can sleep peacefully because this is only a dream. And good loudspeakers and amplifiers are a dream to most too, as it is so difficult to accommodate them. Who lives in a castle after all? But I know I'd love to be able to sink into a world where music could sound so good and carry me away. Some of the biggest and most esoteric loudspeakers, like the amazing Prince Ils in this issue, get close to managing this.
New KEF iQ

Innovation in the pursuit of reproducing recordings, so perfectly they are indistinguishable from live performance, has been the KEF philosophy since Raymond Cooke founded the company in 1961 and remains at the heart of every KEF product today. Not least with the Q Series, each generation of which has received accolades and awards from the International Press.

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"I love attending hi-fi shows, and have done since I was a child of fourteen..."

adam smith

The double thud of something interesting falling on my doormat this week heralded the arrival of a season to which I greatly look forward each year. And no, this wasn’t a letter from a friendly cuckoo announcing the arrival of spring – far from it, judging by the snow outside the door – but the first press packs that mean the hi-fi show season has begun...

Actually, the show season had already begun at the end of January with the Northern Sound and Vision Show in Manchester, but sadly I was unable to attend. At the time I was actually on holiday with my wife on a winter ‘Bodycare’ spa break, but I can assure you that, whilst I was laid back with invigorating patches over my eyes, being massaged to within an inch of my life and pondering which of the evening’s main courses to go for, I was secretly pining for the corridors of the Manchester Radisson Airport Hotel, honest...

The press packs that arrived for me were actually for my two favourite shows – the Bristol Sound and Vision Show and the daddy of them all, the Munich High End Show. Both were very informative but I have to say, the Germans did trump the Bristolians in this case, including in their small box (not envelope!) bus and train timetables and maps, a restaurant guide leaflet and a comprehensive guide to the city of Munich. The Bristol pack was smaller but no less informative, although I couldn’t help smiling at the disclaimer below the list of local restaurants saying, “we accept no responsibility for the quality of the food at any of these establishments”!

I love attending hi-fi shows, and have done since I was a child of around fourteen, attending my first one. There is always an excellent atmosphere at such events I find, and as an enthusiast it was always nice to meet the faces behind my favourite manufacturers and indeed magazines. Now I’m on the other side of the fence and I thoroughly enjoy chatting to readers and receiving their feedback, so do remember to say hello if you pass me in a corridor, heading to the next listening session [or bar – Ed].

It seems that there are a good many people who feel like me and treat shows as an enjoyable day out. Manufacturers and magazines alike put on demonstrations and set up special displays to attract the punters and it seems that the least we can do is get into their rooms and enjoy them. Of course there will be sounds that we don’t like, equipment that doesn’t gel for one reason or another, and maybe even the occasionally acerbic designer who doesn’t take kindly to close questioning (mentioning no names!) but this is all part and parcel of the whole experience...

The trouble is, there are a hardcore few who have nothing but disdain for such events. They view the whole experience as a waste of time, saying that you cannot possibly obtain a decent sound in such a grotty location as a hotel room, that manufacturers are wasting their time and don’t know how to match systems properly, and that the music they play is simply dreadful. Consequently, they would rather stay at home, possibly logging onto their preferred hi-fi forum to have a whinge about the whole thing.

I have to say, as a regular on more than one of such forums, such people are definitely in a minority and most participants are far more open minded, but they still lurk, popping their virtual head above the parapet now and then to have a rant. One or two people have even been provoked to say to them – do you think you could do better?

Well, it looks like the time has come to find out, as my second show of the season, the weekend after Bristol, is going to be a little different. Last year, the owners of Hi-Fi Wireworld were approached by Chester Group, well known for their London, Manchester and Scotland hi-fi shows, to ask if the members of the forum would be interested in putting on a show of their own. Naturally we all said yes and the upshot is that, on Sunday March 1 at Scalford Hall in Leicestershire, around fifty ‘Wammers’ including yours truly, will be setting our systems up in those ‘dreadful’ rooms and inviting the general public in to see if we’re all doing it better!

It’s going to be quite a departure and whilst there is the slimmest chance it could be a failure, I personally think and hope that it’s going to be a resounding success. Because we will all be using our own systems, there will be equipment old and new, budget and expensive, exotic and commonplace – and all in between. The Wigwam is a friendly place and I’m looking forward to putting some faces to names and having a chat with everyone, plus hearing feedback from show attendees as to what they think of it all – it’s going to be an interesting experience.

So, as the show season gets into its swing, do give coming along a thought. Failing that, I look forward to seeing many of the regulars at Bristol, and indeed at the London High Fidelity Show at the Park Inn, Heathrow at the end of March. Finally, if you’re not currently a show-goer, why not give one of them a go? Come along with an open mind and be prepared to enjoy it – who knows, you soon could be a regular too! •
TOWNSHEND ROCK R7 100
Adam Smith auditions this fascinating new flavour of Rock turntable.

A.N.T AUDIO KORA 3T LTD. 105
David Price is seduced by the mid-price, minimalist, solid-state phono stage.

NEW TESTAMENT 109
Paul Rigby samples Genesis's superb '1970-1975' box set release...

DUNLOP SYSTEMDEK 112
Tony Bolton remembers this long lost classic British superdeck.

IT'S A PLEASURE
UK-based Pure Pleasure has three new releases covering both blues and jazz, Lonnie Johnson's 'Portraits In Blues' shows why Johnson is a blues guitar legend.

Georgie Fame's 'Cool Cat Blues' blends his jazz tones over contemporary fare such as Van Morrison's 'Moondance' and the standard, 'Georgia On My Mind'.

Finally, Smiley Lewis' 'I Hear You Knocking' features a compilation of his best material including his first national hit, 'The Bells Are Ringing'.

THE CLASH
A previously unreleased Clash concert, the October 13th, 1982 date at Shea Stadium, New York City, has now found its way to vinyl: restored, remastered and resplendent on 180gm vinyl.
I CAN HEAR CLEARLY
Produced via Classic Records' superb Clarity process that features an advanced flat vinyl profile, a new groove guard, semi-automatic pressing to improve the sound and clear vinyl that removes the magnetic carbon black from the records, this issue of Cannonball Adderley's 'Somethin' Else' is the best version of the record ever produced. Especially so as the recording has been issued on four 45-rpm discs and placed in a heavyweight and sturdy, pizza-style box with a paper-band that tops the whole package off nicely. Luxury indeed!

MAMMA WOULD LOVE IT
Direct from Italian shores are a range of imports covering jazz and soundtracks. 'Diggin' With The Miles Davis Sextet' (Doxy) features Sonny Rollins, Jackie McLean, Walter Bishop, Tommy Potter and Art Blakey from an October 1951 session that shows unmistakable Charlie Parker resonances. Also from Doxy is the 'Miles Davis Quartet', taken from two sessions from May 19th 1953 and March 19th, 1954 and featuring Charlie Mingus, John Lewis, Max Roach and Percy Heath. It mixes haunting and blue mood jazz. Starring the unlikely triumvirate of Stacey Keach, Pia Zadora and Orson Wells, Ennio Morricone's 'Butterfly' soundtrack has emerged from Dagored. No matter what you might think of the film, the soundtrack is a cracker with typical Morricone noises: subtlety and nuance.

I SEE NO SHIPS
Recently released via Navigator Records is Bellowhead's 'Marachin', a quirky release mixing strings and brass giving a folk/big band sound.

Also, Joan As Police Woman's 'To Survive' features the former Antony and the Johnsons violinist Joan Wasser and a dark, yet mature, singer-songwriter release. Emotions are revealed but Joan's not into chest beating.

'Before The Ruin' is a collaborative affair from Kris Dreyer, John McCusker and Roddy Woomble. Also featuring the CD album in the same pack, this contemporary folk release also features Radiohead's Phil Selway and Teenage Fanclub's Francis MacDonal.

Dean Owens' 'Whiskey Hearts' also includes the full CD album. The ex-Pelsons front man mixes Scottish singer-song writing with Nashville.

LETS ROCK
Two new vinyl issues from SPV will be of interest to rock fans. The first, Saxon's 'Into The Labyrinth', marks the band's 31st anniversary with a classic Saxon sound that plugs right into the band's roots and is pleasantly consistent. Kreator's 'Hordes Of Chaos' presents another intense display of growing thrash metal with razor-like guitars and brisk, to say the least, tempos.

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DAMAGED GOODS
Ex-Thee Headcoatees vocalist Holly Golightly, has recently released her latest album on Damaged Goods. Called 'Dirt Don't Hurt', this is the second release to feature the collaboration with the Brokeoffs (actually one chap on his own, Lawyer Dave) presenting an entertaining Americana mix. Also released is Graham Day and the Gaolers' 'Triple Distilled', who drop a veritable and compelling bomb of British contemporary garage, in the original sense, plus loud and raunchy guitar...
No one should be surprised to find out that a number of manufacturers, traditionally occupying the high end sector of the market, are currently designing more affordable versions of their products, in a bid to maintain sales during these awkward economic times. Townshend has been one of the first off the mark in this respect, with what you see before you here — the £999 Rock R7.

Of course, it's not the first time Townshend have offered a cheaper high end deck, as some will remember the Avalon of the late eighties, but the new Rock 7 is certainly the first affordable Townshend vinyl spinner for a while. The new 7 is very well finished and an incredibly sturdy made turntable, of skeletal design. The base sits on three of Townshend's 'bellows' springs, which are a conventional spring encased in a rubber sheath, with a tiny air hole at the base. This means that the deck is sprung and can move to counteract any low frequency vibrational events, as the air inside the case is free to move in and out of the hole, but any sudden movements are arrested as the hole becomes resistive to the sudden attempted rush of air. It's a clever system and it works.

On the left-hand side of the main base is an outrigger from which a substantial weight hangs, and this can be loosened and positioned in order to balance and level the chassis, once the arm is mounted. Townshend also supply an additional weight for this, in case your chosen arm is especially massive.

The motor is a freestanding Rega-sourced unit, driving a small, white high density Polyethylene subplatter on which sits the main platter, made from the same material. Those of you who saw early prototypes of the deck last year will recall they had black platters, but Max found that these offered inferior sonic performance and marked very easily, so he has stuck with the white material as used on...
the Rock V. The bearing on which this rotates is a one-piece precision-ground steel shaft with a hardened bottom-end resting on a steel ball; all lubricated with synthetic oil. This sits in the bottom of a brass bearing sleeve which is fixed to the main chassis. The bearing shaft extends through the subplatter and the main platter, emerging at the top to form the spindle. This is also threaded to accept a Townshend clamp; an optional extra for around £90.

Naturally, a Rock wouldn't be a Rock without a damping trough, and this is available as an optional extra complete with mounting hardware and add-on paddles for your arm, for £499. Other peripheries available include an improved and more powerful motor allied to a 'Merlin II' power supply for £1,200, and a plinth base and lid combo which had yet to be finalised at the time of writing, but Townshend expect it to retail for 'a couple of hundred pounds'.

Arm-wise, the deck can be supplied with armboards machined to Rega, Linn and SME cut-outs, or anything else that the owner desires, to special order. As per its bigger brother, set up is a little time consuming but the concise instructions help to explain each step, combined with clear photographs to guide you along the way. All in all, it took me around an hour and a half to get the deck up and running, complete with trough and paddle attached to the end of my Audio Technica AT ¥ 30 arm.

SOUND QUALITY

Dgressing to the big Rock V for a moment, this is a deck which provides a master class in control across the frequency range. The trough, platter material and suspension system have all
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made even more sense as a £1,000 deck, despite some subtle sonic changes. Most prominent was across the midband, where the soundstage gained a pleasant sense of warmth and pulled images out of the speakers a little better than before. Nanci Griffith’s ‘Late Night Grande Hotel’ was the first track I chose to spin with the deck in both guises and with the trough taken out of play, Nanci’s vocals were just that touch more emotive and atmospheric. Whether this was those evil resonances sneaking back into play I am not sure, but suffice it to say I actually preferred the deck sans trough in this respect.

Where things took a turn for the worse slightly was at the bottom end. Interestingly, the deck seemed to have found a few extra Hertz, but suddenly those fantastically vivid bass lines had a veil thrown over them slightly. Still very good, and still clear of most of the competition, but this bass was found lagging behind the silicon-damped version of the Rock 7.

CONCLUSION

Another fine turntable from Townshend then, and I can see many long-standing Rock enthusiasts welcoming it with open arms. My only slight reservation is its attempt to be two decks at once. On the one hand it’s a worthy £1,000 contender, but while adding the £499 trough certainly tidies everything up in the bass magnificently, somehow some of its enjoyable lilt is masked. Whilst the full-blown Rock V is likely to find itself inserted into a highly sensitive and revealing high end system which will balance this out, further down the price range I wonder if some people will, like my friend, find the trough-equipped 7 a little overcontrolled. As always, personal audition is the key, and overall I was musically rewarding companion. That, as they say, is what it’s all about.

VERDICT

- a little introvert at times
- upgrade options
- superb upper bass detail
- clean musicality
- wide soundstage

AGAINST
- tight rhythms
- excellent value for money

WHEELS
- £1,499
- £999

REFERENCE SYSTEM
- VPI Prime phono stage
- Naim SuperNait amplifier
- Ferrograph S1 loudspeakers (modified)

www.hi-fiworld.co.uk APRIL 2009 HI-FI WORLD 103
There is a welcome, comparatively recent, trend that has seen the release of new, luxurious, vinyl box sets, presenting the black plastic in with high production values in both mastering and packaging that oozes care and attention. These modern classics have hit the ground running. The Doors’ recently released discography in a box, via Elektra, offered fans the best available Doors mix currently on the market whilst the Bee Gees’ The Studio Albums: 1968-1968 set new standards for both detail and mastering quality, for example...

Now, as a welcome follow-up to the CD box set of the same name, the vinyl version of Genesis’ ‘1970-1975’ has been released as a five album box set and is, without doubt, set to become a future classic. Arriving in a sturdy, thick slip case, each album (i.e. ‘Trespass’, ‘Nursery Cryme’, ‘Foxtrot’, ‘Selling England By The Pound’ and ‘The Lamb Lies Down On Broadway’) arrives in their original packaging as thick, card sleeves. Genesis fans will be happy to see that both ‘Trespass’ and ‘Nursery Cryme’ feature the old pink scrolled Charisma label while the other albums feature the customary Mad Hatter label and ‘The Lamb...’ has custom-made labels for each B-side. Genesis fans will be happy to see that both ‘Trespass’ and ‘Nursery Cryme’ feature the old pink scrolled Charisma label while the other albums feature the customary Mad Hatter label and ‘The Lamb...’ has custom-made labels for each B-side. I was intrigued to notice that, on the cover, the ‘frame’ of ‘Selling...’ is a more greenish hue, compared to my original which is yellow-ish. Apparently, the first pressings featured the green tinge.

Each stage of the production process has received due care and attention, right down to plastic coated inners to prevent any physical scratching. It is a shame that ‘Lamb...’ retains card inners, as per the original release. Surely, a plastic-coated inner, inner, as it were, could have been supplied? As for the vinyl itself, it weighs in at a stocky 200gm per disc whilst the music has been half-speed mastered at Metropolis, cut by one of the world’s experts in the process, Miles Showell along with Crispin Murray. Anyone unsure of this fact needs only to gaze upon the run-off of each album. There, clearly etched is a ‘M’ logo with ‘Miles’ adjacent and the words ‘The Paradigm 1/2 Speed Process’ underneath.

That care and attention has been observed right down the line, even before the mastering took place, as Showell explained. “It is important to have a well-maintained and calibrated machine for the source, for example. We cannot underestimate this as it is imperative that the bass response of the analogue machine is as uncompromised as is technically possible. The entire signal path has been optimised for low frequency amplitude and phase linearity and extension.”

You may have to pay a pretty penny for this set but, you can be sure that half-speed mastering is not only the best way to place music upon a vinyl platter, it is the most expensive. Largely because of the investment in equipment to do the cutting in the first place but also because the process is time consuming...

“The cost to cut the master lacquers half speed is approximately three times that of cutting ‘real time’,” advised Showell. “However this is of course a one-off cost and when divided by the production run is largely insignificant. We also strongly advise our clients to get their records pressed at a good plant on high grade, preferably classical grade, vinyl.”

Even if you have – and are very happy with – the original albums, playing the original mixes, you should buy this box set. Mainly because it uses alternative mixes, handled by both Nick Davis and the band itself.

In producing the new mix the original master has been well implemented, is effective and is very informative. It is, of course, impossible to produce a straight A-B comparison between the new vinyl master and the originals because they are in effect different records. In addition, not everyone is going to like the new mix, either, it has to be said. As Davis himself admitted, “I think if you change something some people will always be unhappy.”

Yet, think of the new remix as offering you a different viewpoint to that original music – imagine that you’re sitting in a different part of the auditorium. As such, you will be surprised and delighted to hear new details bubbling up from the original master tapes, despite the fact that nothing new has actually been added to the masters themselves. I believe the new mix is valid, worthwhile and definitely worth a place in your collection. Well mastered, well packaged, this is worthy entry into the Genesis canon. Boxing clever, you might say!
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**Cartridge Selection**

<table>
<thead>
<tr>
<th>Manfacture</th>
<th>Model</th>
<th>Price (Ex)</th>
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<td>M 97 XE</td>
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<td>Samiko</td>
<td>£229</td>
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**Replacement Stylus**

- Swans - Quality (Diamond Styli)
  - ADC XLM Ma III | £17
  - Akai 5, AN 60 | £13
  - AN 2, AN 70 | £15
  - Audio Technica PT-100 J | £13
  - JVC 5D, 6L 60 | £19
  - National EPS 24 CS, P 30, P 33 D | £13
  - Ortofon FIS15, MS 200 E, DJM 510/10/20 | £17
  - Pioneer PN 120/220/240 | £13
  - Shure N7S/CMS-6, SC7SC | £13
  - N5SE/DJ T2 N7S-3, NS6ED/EJ | £17
  - Sony ND 143/150 G, ND234 | £13
  - ND 143/150/200 G | £15
  - Stanton D 661 EEE | £21
  - **Over 500 Styli Types Stocked***
  - **EDE prices may vary without notice**

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- **Goldring**
  - DR 50 | £35
  - DR 120 | £62
  - DR 150 | £70

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- ARTcessories USB Phono Plus PrsAmp £85
- analogue-digital computer interface
- MillyPro Super Exstatic Brush £14
- Shure SF62 stylus force gauge £24

**Replacement Stylus**

- Swiss Diamond Quality
- ADC XLM MA III
  - £17
- Akai 5, AN 60
  - £13
- AN 2, AN 70
  - £15
- Audio Technica PT-100 J
  - £13
- JVC 5D, 6L 60
  - £19
- National EPS 24 CS, P 30, P 33 D
  - £13
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  - £17
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  - £13
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  - £13
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  - £17
- Sony ND 143/150 G, ND234
  - £13
- ND 143/150/200 G
  - £15
- Stanton D 661 EEE
  - £21

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**Ex-demo and second hand items**

<table>
<thead>
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<th>Item</th>
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<td>1425</td>
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<td>47 Labs Flatfish MKII Transport S/H</td>
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<td>47 Labs Progression DAC x-demo</td>
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<td>47 Labs PiTracer Transport x-demo</td>
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<td>dCS Purcell non fire wire Upsampler S/H</td>
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<td>dCS Delius DAC EEE1394 x-demo</td>
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<td>Preampifiers</td>
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**Cables and Accessories**

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**Tuners & Tape decks, power supplies**

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<td>Magna Dynabab FTR remote/Tuner for Elide S/H</td>
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<tr>
<td>Magna Dynabab MD1067 Valve Tuner x-demo</td>
<td>3600</td>
<td>2499</td>
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**Pioneer A400X amplifier £75.** Castle Durham 3 speakers £175 & Dynaudio Audience 42 speakers £300. (unused). Boxed. Tel: 07900 866 232 (Yorkshire)

**MERIDIAN 504 tuner.** Nice condition, no box, £480 including delivery. Tel: 0191 417 1669 after 6pm

**FOR SALE:** Sugden Masterclass pre-amplifier £925. Isoex Orion mains filter £185. B&W DM605.2 speakers with integral 130 watt sub-woofers £200. All ono. Tel: Peter 01642 559 078

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**OPERA SECONDA speakers (cherry) £825.** Unison Research Hybrid valve equipment: Unico Secondo 120wch integrated amplifier £780. Unico FM/RDS/AM tuner £475. All 1/2 price Chord Rourm 4 bi-wire speaker cable 2 x 9m £180 (£430). Tel: 023 8073 8935

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**OLIVE GREEN** Naim 250 amplifier (olive green). £72 pre amp v.g.c. (chrome bumber). £32.5 preamp (olive green) Naim 102 preamp with remote control. Lector (2 box) valve input CD player matching Lector valve pre amplifier. Erta from G.T. Audio CD player. Voted best CD player Hi-Fi Plus 2007. Cabbase 100 watt monoblock amplifier. Croff. (Special) pre amplifier (as new). Tel: 020 8524 2181

**THORENS TD 280 Mk4 turntable £85.** Pioneer A400X amplifier £75. Castle Durham 3 speakers £175 & Dynaudio Audience 42 speakers £300. (unused). Boxed. Tel: 07900 866 232 (Yorkshire)

**TOPICS FOR SALE:** UNICO MM/MC. Superb sound. £30. (Oxford) MAIN ISOLATING transformer, many tappines, £65. Quicksilver valve monoblocks, upgraded, revalved, demo, £650 ono. Conrad Johnson valve preamp, PV12AL, immaculate, boxed, demo, £650 ono. KT88 integrated £500. (London NW) KEF SPEAKERS Units. Two B200 units, two T27 units. £40. (West Midlands) THORENS TD 280 Mk4 turntable £85. Pioneer A400X amplifier £75. Castle Durham 3 speakers £175 & Dynaudio Audience 42 speakers £300. (unused). Boxed. Tel: 07900 866 232 (Yorkshire)

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**LINN NEXUS speakers, perfect condition, £100.** Tel: John 01494 451 089 (Bucks)

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**EXPOSURE 17 Super 18Super amps offer.** Tel: 07716 139 026

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**MUSICAL FIDELITY X-LPS phonostage for sale.** Switchable MM/MC. Superb sound. £50. Absolutely mint condition. Sale due to upgrade, £75 ono. Tel: Peter 01729 822 480 after 3pm (North Yorkshire)

**FOR SALE:** LEAK 2075 speakers £600 ono. JBE Slate Mk3 direct drive turntable £600 ono. EAR 934P MM/MC valve phonostage £450ono. B&W 1800 speakers £150 ono. reconnice@bdifs.freeserve.co.uk or 01798 813133.

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SNELL J2b speakers walnut very good condition £325 keft concorde 4 speakers £120 concordant excelsior pre-amp very good condition £495 tel. 01902675050 (w midlands)

MARTIN LOGAN Clarity Speakers Musical Fidelity A3.2 Pre-power Amps Shanling CDT 100 Fantastic system in mint condition £3,300 Naim 421475

FOR SALE: SME IV £750; Dynavector XXI-L Cartridge £200;00;Voyd Valdi Two Motor Belt drive Turntable £200; Kinshaw Phono & PSU £150.00; deafness causes sale! Tony 020 7394 1271

MINT PAIR of Martin Logan Vantage speakers. Maple finish used under 50 hours. Kept covered when not in use, non smoking house. Extremely reluctant sale. demo. £350.00 Paul oz_paul_white@yahoo.co.uk

CELESTION A2 cherry veneer, owned from new, all original packaging. Mint. £500. Phone Leigh 07739386776 E-mail: ls.faulkner@virgin.net

B&W CDM 1NT stand mount loudspeakers Rosewood complete with original packaging and owners manual £800 when purchased. Offers around £400 considered. Matching B&W stands available at £50 Also Michell FOCUS turntable fitted with SME series 11s arm/ Goldring 1012GX mm cartridge (as new) Offers around £350 considered. Boxed. Both exc. condition, and can demonstrate if required telephone 01353 749057 mobile 07930 159930 anytime. No timewasters please

GARRARD 401 with DME arm and Decca cartridge all housed in a SME wooden case, excellent condition sensible offers please. davemanx@sky.com

VAN DEN HUL D501 silver hybrid tonearm cable (2008). As supplied with SME V tonearm. 1.2m RCA to SME 90 din plug. As new, £50 inc postage. London, (07818) 421475

WANTED: Top quality Hi Fi separtes and complete systems, Naim, Linn, Cyrus, Meridian, Arcam etc. fast, friendly response and willing to travel/pay cash. Please call me on 07771 508444 or 01205 722000


PAIR OF Krell KMA160 mono-blocks in excellent condition. Happy to demonstrate. £2000 (10,000 new) Buyer collects. Transparent Audio Super Balanced interconnects mint in original packaging £400 (£1,200 new) Terry 07571264809

DANI MEGALINE Alpi Finnish (£30,000) £11,000ono Subwoofers to match £1,200ono. Lyngdorf Millennium amplifiers as new (£10,000) £4500 Esoteric DV505 Audiocom modifications (£6500) £2200 ono 07980 211447 Troy@runbox.com

FOR SALE: AKAI GX365 Reel to Reel Tape recorder 4 speed, auto-reverse. £260 ono. Tel: 024 76327293.

SOUNDSTYLE FINEWOODS’ TV/Hifi stand. Will accept up to 60kg in weight and up to 50cm. Absolute mint condition, Delivery possible. £95, 07904 309202 or 01253 734075

GRAAF 13.5B II preamp, mint, boxed. Superb three dimensional sound. Over £4000 new, selling £1,600. Tel: 07984 855776, email: mark.dunthorne@tch.org.uk

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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!

GT AUDIO
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Leak Troubleshoot specialists.
Also Quad and most classic tuners, radio, and amplifiers restored, repaired.
Tel 01989 833099
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Pair Quad ESL57s bronze, late models £400. All in good working order.
01923 237769
Wastford

WANTED FAULTY or non working Quad 44 preamps.
Quad 33 preamp or boards, scrap Quad fm4 decoder, panel decoder for Quad fm2 decoder.
Contact Mike 01758 613790.

ROTEL CD Player Inc remote £60. Excellent condition.
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TEAC / ESOTERIC DV-50 black d/v player good condition.
£2.500p phone 01708-709431 or paul.gilligan1@ntlworld.com

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Naim Arriva floorstanding loudspeakers 2005 cherry finish vgc £475. Chord Chorus 2 interconnects RCA 0.5m, mint £109 p. Odyssey 2 speaker cables 4m, mint £89 pr.
martinb@btinternet.com

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NEXT MONTH

As the green shoots pop their little heads up above the soil, proving that spring has finally sprung, the new hi-fi season blossoms with a wealth of new products. May’s Hi-Fi World leads with EAT’s new high end Forte turntable, with a tonearm courtesy of IKEDA (Fidelity Research) no less, but we’ve a garden full of goodies from Acoustic Energy’s Model One speakers to the Moon Audio i3.3 integrated amplifier. Factor in pages of your letters, extensive news, views and reviews and it’s a veritable bumper issue! Here’s just some of what we hope to bring you:

- AUDIO RESEARCH DAC7 DIGITAL TO ANALOGUE CONVERTOR
- ACOUSTIC ENERGY MODEL ONE LOUDSPEAKERS
- B&O BEOSOUND 5 NETWORK MUSIC SYSTEM
- AIRSOUND ORBITSOUND SPEAKER SYSTEM
- MOON AUDIO i3.3 INTEGRATED AMPLIFIER
- SONY WALKMAN ANNIVERSARY FEATURE
- TEAC REFERENCE 380 MICRO SYSTEM
- ORIGIN LIVE CONQUEROR TONEARM
- PHILIPS NP1100 NETWORK PLAYER
- CYRUS CD-XT SE CD TRANSPORT
- OLDE WORLDE: MARANTZ CD94
- MARANTZ SA8003 AV RECEIVER
- GRIMM EXTERNAL CD CLOCK
- EPOS ELS8 LOUDSPEAKERS
- DR FEICHERT TURNTABLE

[pictured] EAT FORTE TURNTABLE

PICK UP THE MAY 2009 ISSUE OF HI-FI WORLD ON SALE MARCH 31ST, OR SUBSCRIBE AND GET IT DELIVERED TO YOUR DOOR: p82
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Kevin Galloway Audio - Ayrshire, Scotland - 015 63 57 41 85

Service Centre
NSS Ltd, London - Tel: 020 88 93 58 35

Midland Audio X-Change - Belbroughton - 015 62 73 11 00
Rowles Music Limited - Sussex - 019 03 53 00 05
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