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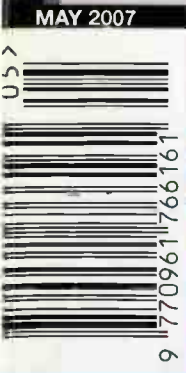
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welcome

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verdicts

●●●● OUTSTANDING
●●●● EXCELLENT
●●●● GOOD
●●●● MEDIOCRE
●●●● POOR
£ VALUE



Packed as this issue is with superb sounding separates, the most interesting product I've come across in a long time is the new Meridian F80 reviewed on p52. And strangely, it being a humble portable music system, it isn't even 'real hi-fi' at all, nor does it pretend to be. But I happen to believe it's an extremely significant product - not just for what it is, but for what it represents...

My formative hi-fi years were the nineteen seventies. This was when 'high fidelity' music reproduction grew from being a hobby pursued by those with soldering irons and circuit diagrams, to a mass market consumer phenomenon that became - for a time - the third most expensive purchase a family would make after a house and a car.

Back then, separates hi-fi was the only place to go for music fans such as myself who'd grown up with a humble Philips cassette portable. And ten years after I bought my first BSR record player, I had upgraded all the way to a Linn Sondek.

Now though, any music-obsessed fifteen year old with a passion to hear his favourites outside his portable (which is invariably an iPod) has a vast range of docks and PC speakers to choose from, not to mention Apple's own iPod Hi-Fi. So how is he (or she) supposed to come across real hi-fi equipment from the likes of Linn, Naim, Arcam, Cyrus or Meridian?

Thanks to the F80, he now has an aspirational entry point. He'll never have heard of Meridian before (or seen any of the stunning designs Allan Boothroyd and Bob Stuart have come up with since the mid-seventies), but you can bet your big end he knows Ferrari. He'll see this new Meridian in magazines and say to himself, "I want one"...

Avidly scanning every review in his local newsagent, our embryonic audiophile will begin to realise it was designed by Meridian together with Ferrari. He'll want to read more about the British hi-fi specialist, and will start looking at their serious hi-fi systems. Suddenly, he will find a way to hear music beautifully reproduced.

That's why I welcome the Meridian F80 with open arms. Cynics on internet forums will say it's a 'sell out', but I pray for them in their darkness. What the hi-fi industry needs is products like this, that appeal to a broad audience. Not everyone will approve of Meridian's Ferrari tie-up, but I'm all for taking the racing line.

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.



ELECTRONIC MAGAZINE

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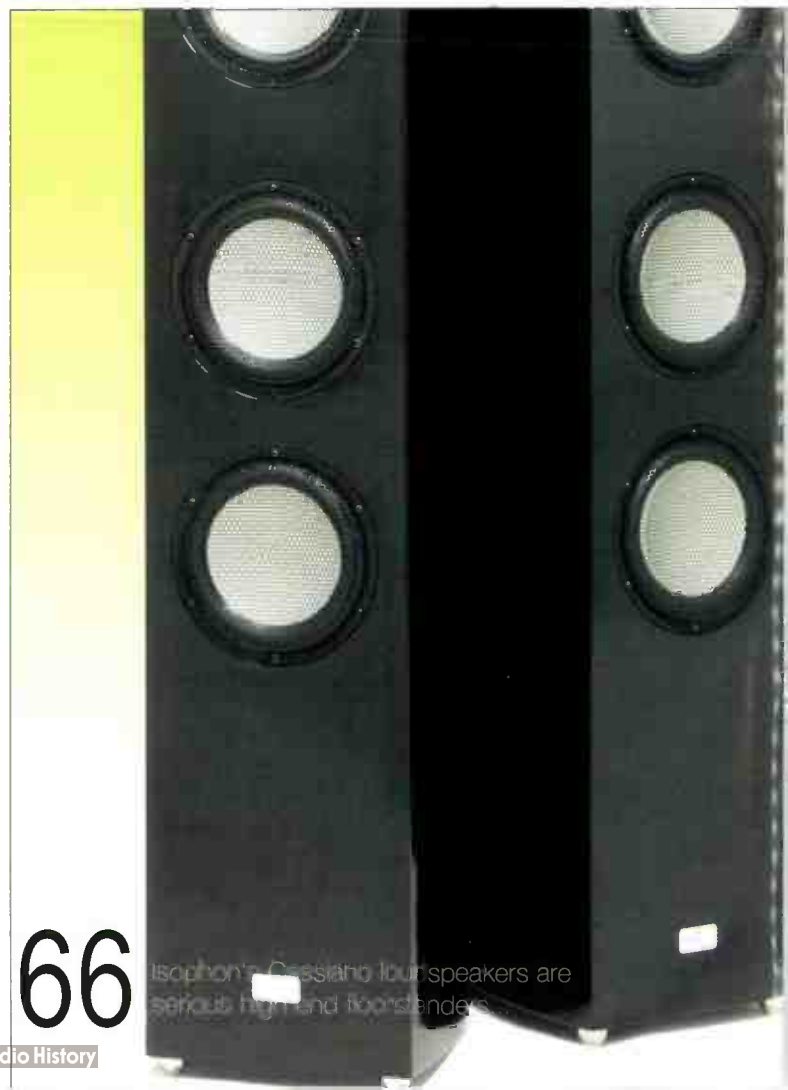
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What's remarkable about the new series of LP12 SE upgrades is not that it's taken 35 years to develop them, or that they can be retro-fitted to any Sondek LP12 turntable, but the fact that they retrieve even more music from your vinyl collection than ever before.



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For more information and details of demonstration events in your area visit www.linn.co.uk, or call 08000 277 181.

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news

SUPER, MAN!

Launched at the Sound & Vision Show, Bristol, the £2,350 Naim SUPERNAIT is the latest addition to Naim's reference series, and is claimed to deliver, "a stunningly realistic performance from its compact case". With 80W per channel and 400VA output transient capability, it can drive difficult loads, but also brings flexibility and convenience, says Naim. In addition to six analogue inputs, it includes five digital inputs with an onboard DAC accepting sampling rates between 32kHz and 96kHz. Six analogue inputs are fitted, and any input can be assigned to one of the six input buttons. The digital board is powered off when using an analogue input, and there's a combination mini-jack/ mini-Toslink input on the front panel that is auto-switching. There's also a full remote control and a front panel headphone socket. For more details, call Naim Audio on +44 (0)1722 332266 or click on www.naim-audio.com.



INTERSTELLAR

This is the new Leema Acoustics Antila, a new £2,495 CD player featuring the company's 'unique MD2 Active Differential Multi-DAC technology', employing twenty 24bit/192kHz multibit Delta-Sigma converters, and data pipelining to eliminate jitter. The Leema-designed FPGA (Field Programmable Gate Array) generates a fully balanced signal entirely within the digital domain. The machine is fully LIPS (Leema Intelligent Protocol System) compliant, allowing a press of the play button to power up a Leema amplifier from standby and select the CD input. For more details, contact Activ Distribution on +44(0)1635 291357 or click on www.leema-acoustics.com.



KICK OUT THE JAMS!

Roth Audio's Music Cocoon MC4 is a new £399 valve amplifier and iPod dock, pushing out a claimed 13W per channel. When an iPod is installed, it offers full remote control and iPod charging, or it will also accept any portable device through its 3.5mm mini-jack input, or any line level hi-fi source via the standard stereo RCA phono inputs. Overheating protection, speaker protection and fuse protection in the adaptor is provided. Vital statistics are 187x174x108mm and 1.8kg. For more information, click on www.rothaudio.co.uk.



BLUE FOR YOU

Marantz's £699 ST-1551 hybrid DAB/FM tuner is described as "beautifully built and finished". A high-performance 24bit/192kHz multibit, Delta-Sigma Analog Devices DAC is fitted and circuit architecture includes mirror imaged, short signal paths for minimum sound degradation. A display dimmer is fitted and there's a proprietary filter circuit that removes interference that often plagues analogue broadcasts. The dual band design uses the neat Gyro Touch dial, allied to an easy-to-read display which shows station, artist and track names, as well as additional information such as lyrics. The model exploits Marantz's low resonance, acoustically damped all-metal 15 series chassis - no screws are visible, a thick anodised aluminium front panel is fitted and also double-layer bottom plate and substantial shock-absorbing feet. Even the subtle "Marantz blue" backlighting operates on its own independent power supply to ensure no electrical noise interference. Both optical and coaxial digital outputs are fitted, plus a Radio Data Interface optical digital output which, it is claimed, effectively future-proofs the ST7001, allowing reception and decoding of future text, graphics and video data when connected to a suitable PC or set-top box. For more information, click on www.marantz.co.uk.



UNIVERSAL PICTURES

NAD's new T585 Universal DVD player offers both DVD-Audio and SACD decoding, plus processing of Dolby Digital and Dolby ProLogic and support for MP3, HDCD and Windows Media Audio formats. It also supports most popular blank media such as DVD+R, DVD-R,

CD, CD-R and CD-RW. Audiophile-quality 24bit, 192kHz audio D/A converters are used with high-speed FET output devices. Digital audio outputs are available in both coaxial, and optical (TOSlink) SPDIF formats, as well as I/2 S digital format via the HDMI output. The NAD T585 is also equipped with SRS's True Surround circuit, a high-grade surround virtualiser, and features a Dual Discrete Video Circuit for "the highest possible picture quality via the Component Video output" and a high-speed dual 12bit, 216-MHz video D/A converter. Price is £800, and it's available now in either grey or titanium finish. For more information, click on <http://nadelectronics.com>.



NEM RACKS

Looking very impressive at January's Manchester Sound

and Vision show were new equipment racks from NEM Hi-Fi. These make use of solid cherry wood for the frames, which are mortice and tennon jointed and glued. Each isolation shelf is made of 30mm thick polished and profiled granite 30mm thick which is supported by spiked dampers mounted in compliant rubber inserted in gold-plated bases. The three basic models consist of a four shelf rack with four legs, and three shelf units with either three or four legs. Prices range from £1,500 to £2,000 - we hope to bring you a review soon. For further details lease contact Steve Nemeth on 01623 740521 or visit <http://nem-hi-fi.mysite.orange.co.uk>.

TEAC TIDBITS

Teac's new £229 MC-DX220iDAB is a slimline 'hi-fi' system which combines DAB and an iPod dock, includes a CD player and plays through ultra thin NXT loudspeakers. A powered sub woofer delivers an extra 15 watts of extended bass. It sports a vertical CD load system with motorised door, and the remote has an LC display. The new RX-1 is the first radio from TEAC to employ NXT loudspeaker technology, bringing the product a futuristic appearance and fine sound to match. The side-mounted Aux input permits connection of any device with a standard 3.5mm output including iPods, MP3 players and other portable digital players. Power is 15W RMS and the RX-1 comes equipped with both DAB and AM/FM tuners. Available from leading electronics retailers now, the TEAC RX-1 is available in a choice of matt black and matt white finishes, priced around £149. For more information, click on www.teac.co.uk.



ESOTERIC STUFF

Fans of the brand that many believe make the best optical disc devices around right now will be interested to hear of the new P-03/D-03 transport/DAC combination. Taking the design concepts from the flagship P-01/D-01 system, Esoteric have applied new DSD signal processing to create the more "affordable" P-03/D-03 CD/SACD player combo. Said to be extremely versatile, it features multiple user selectable playback modes including CD audio (Red Book) playback, native DSD decoding, PCM upconversion and Esoteric's advanced PCM to DSD signal conversion. Digital signal transfer of DSD signals is now offered with an i.LINK interface, in addition to Esoteric's proprietary ES-LINK format. The heart of the P-03 is the "state-of-the-art" VRDS-NEO mechanism, a new version of which was developed exclusively for the P-03. A new Disc Tray Shutter mechanism was designed to shield the internal mechanism, reducing any mechanical vibration.



The dual chassis design of the Model P-03 forms an integrated one-piece body, which contains separate power supply and transport compartments. As for the Model D-03 Stereo DAC, it was developed from the Esoteric monoblock D-01 design and sports completely separate L/R channel components for power, analogue audio circuits, etc. Featuring AD1955 DAC devices, D-03 is capable of processing both DSD and PCM signal formats. Compatible with various source formats including CD, SACD and DVD-A, it can operate as high as 192kHz. For information, call Symmetry on 01727 865 488 or click on www.symmetry-systems.co.uk.

TIP TOP

Designed by Jonathon Carr and handcrafted by Yoshinori Mishima in Japan, the new Lyra Skala moving coil cartridge is the company's fifth generation product, and includes a new patent (pending). The MC has a brand new non-conductive and non-magnetic front magnet carrier, a new cantilever system, output pin design and output-pin carrier. The stylus guard is the same grooved easy slide-on affair seen on the Helikon and Titan, which allows the Skala to run permanently nude. While tracking ability has been improved over the Helikon, both output voltage and internal impedance should be the same. For more information, call +44(0)1727 865 488 or click on www.symmetry-systems.co.uk.

SPOTTED!

After three days of spinning discs in the Henley Designs room at the Bristol hi-fi show, superstar DJ Laurence Armstrong gets a little 'tired and emotional'... Nurse!



RUSSIAN REVOLUTION!

After a considerable absence, AAP-Tech has announced the return of the Russian firm RRR and their range of loudspeakers to the UK. Founded in Latvia in 1927, RRR started out making radios, but were later responsible for the first Soviet record player, first stereo record player and made their first transistor radio in 1961. Their loudspeaker line up comprises both surround sound setups and dedicated two-channel items. All components are built in-house, including speaker cones that are made using a special, time-consuming process that has been in use since 1940! The range culminates in the range-topping FS100, at the reasonable price of £1,055 and we hope to be reviewing these soon. For further information, please contact Arnis or Henry at AAP-Tech on www.aap-tech.co.uk or on +44(0)141 334 0294.



BEARING UP

Clearaudio's brand new Ceramic Magnetic Bearing design is claimed to avoid any point of load within a turntable, and so "eliminates bearing friction, wear and noise". All existing and previous Clearaudio turntables, except the Clearaudio Emotion, can be upgraded with a Clearaudio Ceramic Magnetic Bearing. New Clearaudio turntables may be ordered ready fitted with Ceramic Magnetic Bearings, replacement bearings can be purchased separately or the exchange scheme can be used to receive a refund upon return of the old bearing. Prices range from £215 for the Revolution to £725 for the Master Reference, and a refund of £100 is available upon return of the old bearing. For more information, call Audio Reference on +44(0)1252 702705.



New Yorke

The S9 turntable package is the latest creation from the Simon Yorke Designs stable. Handmade by a passionate and committed designer, it promises a unique musical experience says Adam Smith...

Before I begin, I have a confession to make, and it is a rather shocking one for a vinyl addict such as me. When speaking to Jack Lawson of the Audio Salon a couple of months back and hearing of a new Simon Yorke turntable, I made a comment along the lines that I was pleased to hear that he was returning to the production of hi-fi turntables, only to be told that he had never stopped - oops!

The reason for this is that Simon Yorke Designs (SYD) have possibly become best known over recent years for their serious transcription turntables. These are used in professional institutions for transcribing and archiving huge collections of irreplaceable analogue material from vinyl and shellac records of all sizes and speeds, and are quite different from the domestic units, which have been quietly racking up sales in the background.

To give an idea of their complexity, the models that are used exclusively by the Library of Congress in Washington are the S7 professional transcription model and incorporate such features as platters

up to twenty inches in diameter; variable speed, bi-directional drive systems that are variable from 10 to 120rpm, adjustable via an external computer and are housed in a separate enclosure on which the main turntable sits; a detachable record spindle to permit different items to be fitted to suit specific records; an Italian slate baseboard that acts as a high mass energy sink and the option of fitting up to two S7 tonearms, which are available in lengths of nine and twelve inches.

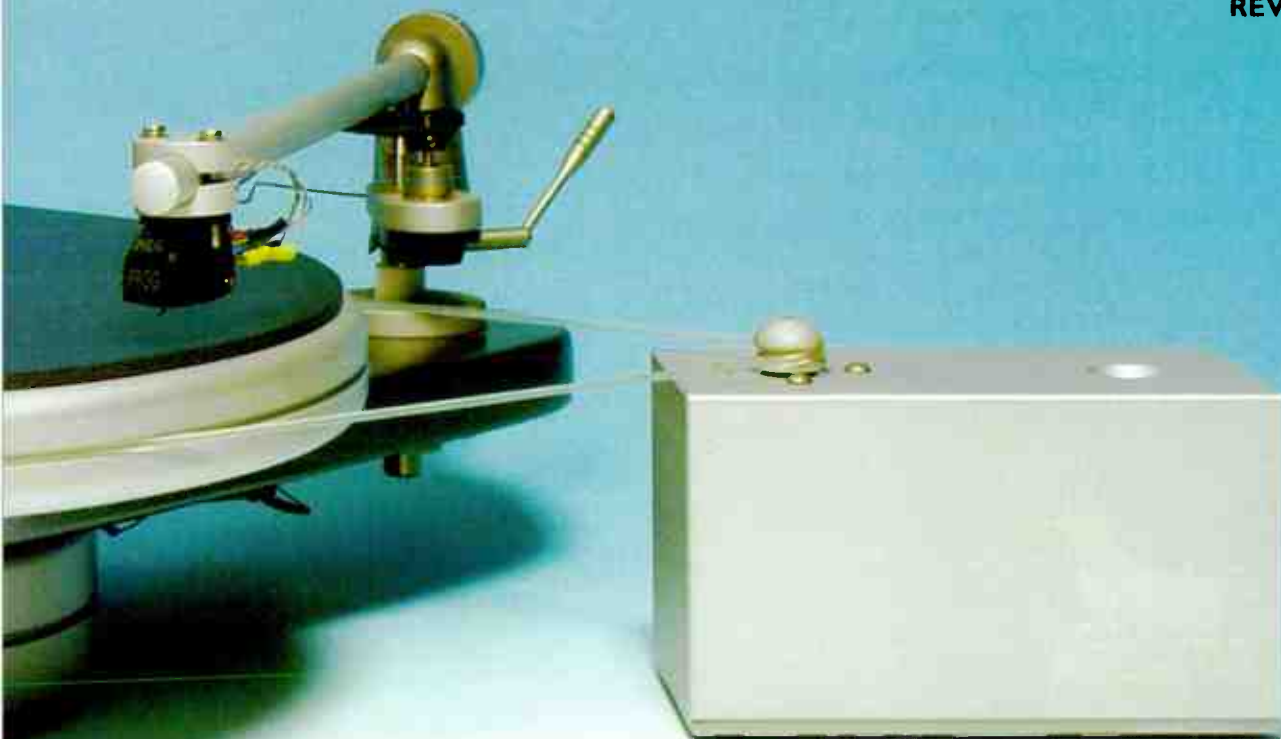
Clearly these are serious units, so much so that Simon Yorke himself is shortly embarking on a trip to Washington to supervise the move of his S7 units to a new location. To me, it seems something of a shame that these units are not available to the general public, but I dread to think how much they would cost if they were...

My first encounter with a Simon Yorke design was on the pages of a high end audio supplement around fifteen years ago and was the S4 model. According to the SYD website, this was in production from 1988 to 1994 and 110 units were produced. The lineage can be clearly seen in the simple but stunning

styling of the S9 but it has been comprehensively updated to bring it to the exacting standards required for an all-new model.

The turntable and arm are supplied as a single unit and are not currently available separately. The weighty platter is driven around its periphery by a polyurethane elastomer drive belt from a freestanding motor assembly that can be positioned as required around the deck. This takes its power from a supplied DC adaptor but the S9 is also provided with a 9 Volt battery fitted with a suitable connector so that it can be driven from a completely isolated power supply if required. Switchable speeds of 33 and 45rpm are provided, together with screwdriver-adjustable pots for fine speed setting.

A particularly nice touch is that these are of the multi-turn variety, allowing very fine control and eliminating that 'bit slower... whoops, too far, back a bit' element of fiddling that I have experienced on far too many occasions. The unit is supplied with a graphite mat for record support, and a weighty and beautifully machined record clamp that simply sits over the spindle to locate the



"...the S9 picked out every last nuance and minute detail..."

record securely to the mat.

The S9 tonearm is a unipivot device that has an elegantly simple design. The arm tube is straight and the 'headshell' consists of two circular plates - the cartridge is fitted to the lower part and secured around the arm tube to the upper item. This is free to move up and down the arm tube and also permits a small degree of horizontal rotation before tightening to set the required tracking angle. Tracking weight is easily set using the rear weight and a tracking force gauge, and both arm and cue lever height are easily adjustable.

Bias is applied via the good old (and best, in my opinion) thread and weight method, but the length of purple cotton thread and crimpable weights provided for this are the only less-than-high-tech aspect of the design, and I felt looked a little out of place on the unit. Whilst being picky, the lack of an arm rest is rather unnerving at times and means a stylus guard is an absolute necessity when the unit is not in use. It should also be kept well away from any inquisitive young fingers!

Needless to say, fit and finish of the whole deck is breathtaking (bias weight excepted) and it is clear that this is an item that has

been designed and made with true passion. I sincerely hoped this would be reflected in the sound and so connected it up to our system consisting of Eastern Electric Minimax phono stage, Quad QC24 and II-Forty amplifiers, and Spondor S8e loudspeakers. The S9 was auditioned with both the supplied van den Hul Frog cartridge as well as our Ortofon Rondo Bronze, and the Slatdeck Garrard 401/SME312 combo was also on hand for comparison purposes.

SOUND QUALITY

The S9 is not a cheap turntable, both in terms of price and construction quality, and this is immediately obvious as soon as the stylus hits the groove. The sound that immediately leaps forth from the loudspeakers is very polished and 'grown-up' for want of a better expression.

The first main thing that struck me was the superb sense of space and atmosphere around everything in the mid and upper registers. This was exactly the same effect that I noticed in April 2007's edition of *Hi-Fi World* when testing the Roksan Nima arm and it would seem to be that this is a common feature of unipivot arms. This is most definitely a good thing as it imparts the S9 with a grand sense of scale and depth to the soundstage.

Orchestral material such as 'Mars - The Bringer of War' from Holst's 'Planets' Suite offered a spaciousness to instruments that is seldom heard outside a concert hall. As the main shift of the music moved between instruments, the basis of the piece could be heard swapping between them with excellent precision. Detail retrieval from the groove was highly impressive and swift changes from soft to loud in either direction were impeccably handled. With many a modern television channel, it seems necessary to increase the volume during programmes in order to be able to hear dialogue, only to have to turn things down again very promptly when the advertisements come blaring out in between - listening to classical music on a lesser turntable can have the same effect, but the S9 coped with everything admirably, moving from a shout to a whisper with ease.

Next onto the turntable was Diana Krall's 'Christmas Songs' album and, yes I know it is spring, but this was a recent purchase and I refuse to wait another nine months in order to enjoy it! Spinning 'Have Yourself a Merry Little Christmas' had me sliding down the rear of the *Hi-Fi World* sofa in a haze of utter bliss, as Miss Krall's sublime vocals caressed

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my ears in a superb aural massage [ooh er! Ed.]. Her backing band sounded soft and subtle, yet the S9 picked out absolutely every nuance and minute detail offered by the album, and wrapped them around her, and me, like a big fluffy blanket.

Realising I was highly likely to lose most of the afternoon if I continued this way, I reluctantly removed Miss Krall from the platter, assuring her that I would return later, and cued up another new purchase, namely the 180 gram, 45rpm reissue of Dire Straits' 'Brothers in Arms'. The opening drums of 'Money for Nothing' were exactly what was required to bring me out of my reverie and they struck home with effortless impact. Once the main part of the track started, the S9 showed that it can do bass properly as well, and swept along with great gusto.

The S9 is a very capable rhythm machine on faster paced material and has a detailed and tuneful bass that digs pleasingly deep. Spinning Primal Scream's 'Screamadelica', I played 'Loaded', well aware that, when the bass guitar commences, the low frequency elements of the track can tend to become something of a blur on a less than capable turntable. Fortunately the S9 romped through, offering up depth, pace and detail,

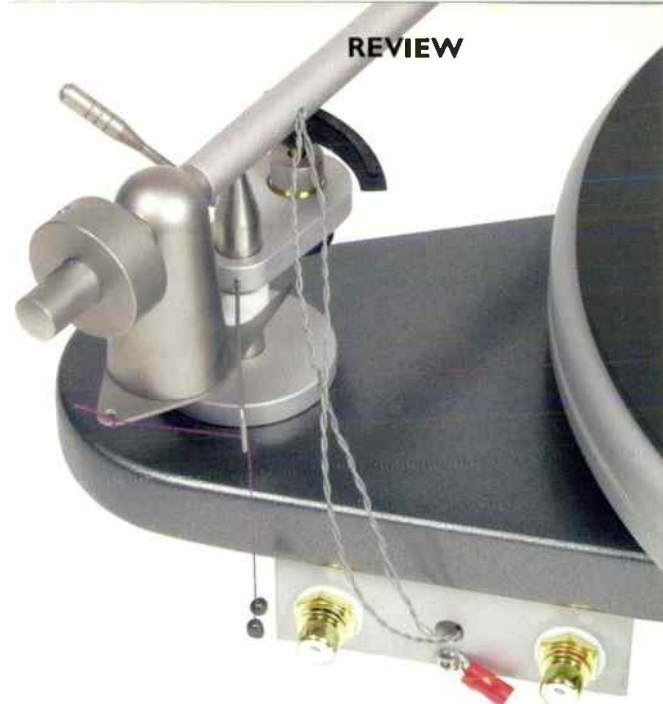
was quite uncanny to hear how, as the strings were plucked, the leading edges of the notes were stunningly presented. Shutting my eyes it was easily possible to perceive that there was a large harp right in front of me, where the review system had been moments before.

Finally, comparisons to the Slatedeck 401/SME setup proved interesting. Whilst the S9 could not match the sheer impact and stunning transient abilities of the Garrard in the bass department (I have yet to hear a deck that can...) the S9 offered noticeable improvements in terms of spatial abilities and soundstaging. The Slatedeck combo is not 'shut-in' at all, far from it, but it has a slightly more polite midrange and treble compared to the effortless atmospherics developed by the S9.

CONCLUSION

The best turntables I have ever heard always seem to have a definite design rationale behind them that makes them succeed, albeit usually in different areas. With the Garrard 301 and 401, I would say that their strengths come from the quality and scale of build that they incorporate; for the Michell Orbe, another of my favourites, it is the attention to detail and engineering excellence.

The Simon Yorke S9 is a new arrival to the list and this time it is the sheer



decks as "record players" rather than turntables, and this would seem highly appropriate given that it excels at purely making music. Although an oft-used (and misunderstood) phrase, what I take it to mean is that it inspires you to dig through your record collection rather than sitting and analysing the sounds you are hearing. On this level, the S9 succeeds completely.

In 1998 Simon Yorke was quoted as saying that he felt his achievements were based on, "a small amount of talent coupled with a large amount of bloodymindedness". Listening to the S9, I would say he has the balance spot on.

VERDICT ●●●●●

A superbly designed and engineered record player with formidable musical abilities, the S9 is a seminal combination of style and performance.

SIMON YORKE S9 £4,995
 Distributed by The Audio Salon
 +44 (0)845 4000 400
 www.recordplayer.com

- FOR**
- design and engineering
 - superlative sound
 - consistent musicality
 - styling

- AGAINST**
- bias weight!

"the S9 is a very capable rhythm machine"

lacking only the final degree of the astonishing grip of the Garrard.

For the final part of the listening session, and in order to wind things down a little, I dug out a Windham Hill Records sampler from 1989 and played Therese Schroeder-Sheker's track 'Credo of Ballymacoda'. This is an instrumental featuring solo harp and the level of insight that the S9 offered to this was impeccable. It

passion and conviction of the designer that makes it what it is.

The S9 is a fabulously conceived, designed and constructed unit that offers a whole new level of insight into music. Simon Yorke prefers to refer to his



MEASURED PERFORMANCE

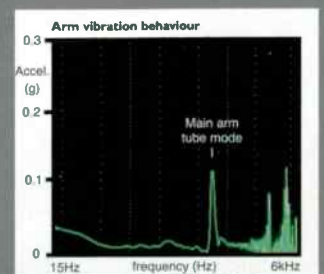
The results of vibration analysis on this arm, using a B&K accelerometer, clearly show it suffers significantly less from vibrational modes than most arms - a very interesting result considering its unusual construction. The main arm tube mode is at 700Hz, a very high frequency, suggesting this is a very stiff structure, in addition to being of low mass. The narrowness of the peak and its low amplitude both also suggest the tube is well damped. Generally, the absence of vibrational peaks up to 3kHz - main arm tube mode apart - suggest the Simon Yorke arm will give an exceptionally clean sound, likely with firm bass and a great stereo sound stage. It will 'time' well too, lacking overhang, and is likely to deliver much well differentiated fine detail, as the high frequency spectrum above 3kHz is also relatively well controlled.

The belt drive platter produced a low 0.07% IEC weighted Wow and Flutter figure. There is a peak at 1.5Hz which is a small mystery, as this is not a cyclic eccentric platter/disc component at 0.55Hz, nor a pulley component at much higher frequency. All the same it is at low level and low frequency so is unlikely to have

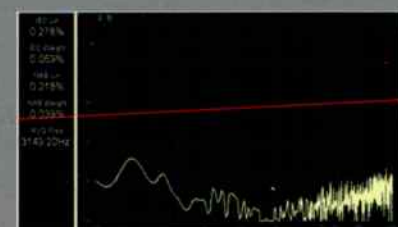
much subjective impact, hence the good weighted W&F result. Speed was accurate too.

All in all then, the Simon Yorke turntable and arm deliver a fine measured performance, better than usual. NK

ARM VIBRATION



WOW AND FLUTTER



New Resolution



Few digital disc players offer as much insight into both CD and SACD formats as Shanling's new SCD-T2000, says Martin Wolszczak...

SACD has the ability to reproduce music with a high degree of realism, resolution and detail. I don't own a turntable, but I have racks of SACDs - they're wonderful. So needless to say, when I was asked to evaluate the latest incarnation of the 3D Shanling SCD-T2000 Vacuum Tube two-channel Super Audio CD Player, I greeted it with enthusiasm.

The first generation of Shanling's Vacuum Tube Two-Channel SACD/

CD, the model SCD-T200C was reviewed thoroughly back in November 2004 by Editor David Price. The new 3D SCD-T2000 model is similar to the old one as far as looks, build quality, standard of finish and components are concerned. Nevertheless, there are several differences between them. The Shanling SCD-T2000 still relies on Sony key parts, like the latest edition KHM-280AAA laser, as well as Sony CXD2753R decoding chip. The new player SCD-T2000 sports

one hundred and twenty ventilation holes on the top of the chassis which, according to Shanling, improves cooling and aids long-term reliability.

The previous model used a dual-layer servo-board, where one layer was made by Sony, the other by Shanling. The new model uses a single 100% Shanling servo-board that allegedly improves reliability, readability and sonics. However, during my audition I came across a minor problem regarding this player's readability. I found out the Shanling

would not play a couple of tracks from various SACD albums at all and on a few other occasions was skipping them, while with the same tracks my Sony SACD/DVD Swoboda Mod DVP-NS 9100ES did not have any problems at all, nor the other players I have had at my disposal.

As far as looks are concerned SCD-T2000 reminds me of products of the prestige audio marque from Germany called T+A. Shanling's build quality and aesthetics are superb. For a full description, see David Price's original review of the SCD-T200C in the November 2004 issue of *Hi-Fi World*.

The original SCD-T200C and the new SCD-T2000 look almost identical. The new version is still finished in brushed aluminium, but Shanling gave up on the gold touches of some parts. At the front, there is an overly small display, this time in green, instead of blue. The rear panel remains unchanged. There are two RCA unbalanced outputs for the vacuum tube output stage, and two RCA unbalanced outputs for the solid-state stage, plus one coaxial digital output terminal. Both sets of unbalanced outputs, along with the headphone jack are situated on the right side of unit; they are attenuated by high-precision, digitally controlled analogue volume control. In the box I found - apart from nicely metal-crafted remote and impressive power cord - an interesting compilation SACD sampler disc.

The sole UK distributor of the hybrid Shanling SCD-T2000 is Matthew Jameson of Real Hi-Fi. Using a stock SCD-T2000 player manufactured by Shenzhen Shanling Electronic Co. Ltd of China, the 3D Acoustics modification incorporates a few vital key improvements, including 240V power transformers, Schottky fast-recovery diodes, Os-Con capacitors and tantalum resistors applied in crucial parts of the circuit. Above all the spinner comes with full factory one year UK warranty.

Straight out the box this player proved easy to use and great to look at. It gives you feeling of money well spent. So what about the sound then?

SOUND QUALITY

Since I began my journey with SACD I have collected about 170 discs. During my audition of this player, I spent a significant amount of time going back and forth between the vacuum tube and solid-state outputs listening mainly to Super Audio discs. As I did not audition the old Shanling SCD-T200C, I am relying on DP's view here. So although I cannot determine whether the new spinner

is a step forward or not, I can say the new Shanling SCD-T2000 is excellent.

Listening to a wide variety of SACDs, I found that with my amplifier and speaker combination, I consistently preferred the solid-state stage to vacuum tube output. There was a greater degree of articulation when listening through the solid-state output, with no loss of midrange magical presence or purity. The sound remained coherent and liquid throughout a whole audible range. The vacuum tube section seemed to soften both extremes, which did not complement my current set-up. The bottom end of the frequency spectrum was too relaxed and laid-back, if you like, via the tube output. I would only suggest that anyone interested in the Shanling audition both outputs to see what suits their system and tastes best. The great thing about this player is that you can select your preference with every disc as both outputs can be run to an amplifier or power amp at the same time. As DP said in his original review, you get two players in one.

On SACDs, the Shanling revealed its outstanding sound quality. In fact, this was one of the best SACD players I have ever heard. The SCD-T2000 delivered a deep and well-defined soundstage, with wonderful dimensionality, bloom and sense of air between instruments. Listening to Warren Bernhardt accompanied by Jay Anderson and Peter Erskine from the album 'So Real' (DMP SACD-15) I was impressed by the Shanling's ability to resolve individual instrumental lines during complex passages. Whether you concentrate on piano, bass or drums you hear a totally natural spatial presentation.

One of my favourite SACD recordings of all time, BluesQuest by Audioquest Music (SACD-1052), demonstrated the Shanling's musicality. Joe Beard was soulful beyond words and Sam McClain performing 'Too Proud' was just perfect - the powerful and fulsome

"the Shanling gives effortless insight into the capabilities of the SACD format..."

bass, the sparkling, lightning-quick top end, a midrange full of texture and flavour, and Sam's voice so smooth, intimate and palpable, hanging there between speakers. It was really wonderful. That Sam sings this number a little in his throat, as it were, is so evident via the SACD. Talk



about openness, clarity and detail - this is top drawer in every way.

Relaxing to the SACD version of Norah Jones's 'Come Away With Me' (BlueNote 724354174728) proved to a blissful and tranquil experience through the Shanling SCD-T2000. Its ability to convey her distinctive sultry voice was captured with a liquidity that was transparent and pure. Norah's impassioned 'Turn Me

On' had a lush, enjoyable portrayal through the Shanling, drawing out each element of the recording with a realism and ease that captivated my intellect and emotions. The Shanling gives effortless insight into the capabilities of this high-resolution digital medium.

ISOPHON SPEAKERS



Corvara

Model V Europa

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"With its high-tech appearance and exquisite attention to fit and finish, this is a stunning piece of work..."

Stepping away from SACD to conventional CDs, I was pleasantly surprised at how well the Shanling reproduced 16bit/44.1kHz format. Red Book discs were rendered with an extremely smooth, extended high-frequency response, maintaining that palpable midrange I enjoyed during my sessions with various Super Audio discs. These attributes were apparent while listening to Dire Straits 'On Every Street' (Vertigo 3426788). Mark Knopfler's vocals are the focus here and the Shanling reproduced the depth and subtlety of his performances magnificently; it was possibly the best I have ever heard from this recording. One predominant attribute of the Shanling is its ability to accurately replicate the attack and decay of various strings and percussive instruments. 'Heavy Fuel' was reincarnated with impressive power, dynamics, punch and speed. This is a common trait of the Shanling when playing back both CDs and SACDs formats.

CONCLUSION

To say the 3D Acoustic Shanling SCD-T2000 player is attractive would be an understatement. With its high-tech appearance, utilisation of superior parts and materials, and exquisite attention to fit and finish, this Shanling is simply a stunning piece of work. With both SACDs and CDs, the SCD-T2000 is a reference quality performer. SACDs sound superb, lending the music a sense of realism and palpability that is enthralling. On conven-

tional CDs, performance is equally impressive considering the confines of the format. Moreover the SCD-T2000 gives the user welcome flexibility with two output stages, vacuum tube and solid-state each with its own strengths and charac-

REFERENCE SYSTEM:
 YBA Passion 300 amplifier
 JM LAB Focal Micro Utopia Be loudspeakers
 LFD Spirolink IV interconnects
 Isotek Super Supreme power cables
 Townshend Isolda DCT speaker cables

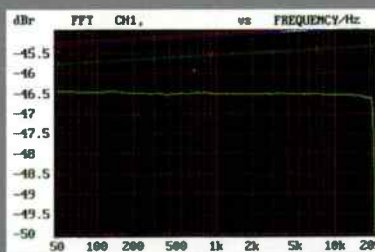
teristics. Connecting this player to a natural sounding amplifier will give you world-class performance at the price, and is thus an essential audition.

MEASURED PERFORMANCE

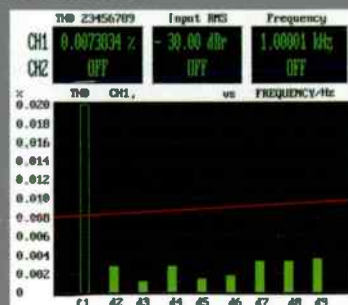
With CD the SCD-T2000's frequency response reaches smoothly up to 21.125kHz and you can see the smoothness of the characteristic in our high resolution convolved impulse analysis. With SACD the upper limit extended out to 36kHz (-1dB), whilst the lower limit stayed at a low 2Hz. The valve output made little difference to these figures and as CD and SACD technology goes they are a good result. Distortion levels were low on CD and - as expected - very low on SACD. The SCD-T2000 resolves signals down at -100dB with SACD, a level below that possible from CD. You can see from our figures that SACD is very linear. Our analysis shows a -30dB signal on CD, as usual, where a low 0.00073% was measured. The valve output stage inevitably introduces degradation, with 0.3% distortion at peak level (0dB) comprising mainly second harmonic, and a little more distortion lower down too, 0.18% at -60dB for example, but this comprised low order harmonics that should be aurally innocuous. In terms of noise, channel separation, output and dynamic range this player was up with the best. The SCD-T2000 measures well in all areas, on CD and SACD. Measurement suggests it will have a largely neutral tonal balance and SACD in particular should come across as smooth and pure. NK

SACD	2Hz-36kHz
Distortion (%)	CD/SACD
0dB	0.0014/0.0009
-6dB	0.0008/0.0007
-60dB	0.24/0.04
-80dB	2.8/0.81
-100dB	-/9.6
Separation (1kHz)	106dB
Noise (CD, IEC A)	-110dB
Dynamic range (EIAJ, CD)	111dB
Output	2.13V

FREQUENCY RESPONSE



DISTORTION



Frequency response (-1dB)
 CD 2Hz-21.125kHz

VERDICT ●●●●●

A stylish and very well made player that offer superlative performance on both CDs and SACDs.

FOR

- soundstaging and dynamics
- build quality
- CD performance

AGAINST

- some SACD readability issues

SHANLING SCD-T2000 £2,250
 Distributed by Real Hi-Fi
 +44 (0)870 909 6777
 www.realhi-fi.com



WIN A FANTASTIC ROTEL RB-1092 STEREO POWER AMPLIFIER WORTH £1,595 IN THIS MONTH'S GREAT COMPETITION!

QUESTIONS

[1] Which class of operation does the Rotel use?

- [a] CLASS A
- [b] CLASS B
- [c] CLASS AB
- [d] CLASS D

[2] What is the name of the power technology used by the RB-1092?

- [a] Cold Running
- [b] Chill Thrill
- [c] Draft Performance
- [d] ICE power

[3] What is the claimed output power of the RB-1092?

- [a] 5mW
- [b] 5W
- [c] 50W
- [d] 500W

[4] DP says it's a genuinely what sounding bit of kit?

- [a] "cool"
- [b] "hot"
- [c] "rough"
- [d] "svelte"

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

Here's your chance to win one of the best sub-£2,000 power amplifiers we've heard in a long time. The Rotel RB-1092 is an absolutely cracking product, and you can win it with *Hi-Fi World*. Here's what David Price said in his review in the April 2007 issue:

"Rotel is the latest big name to go the Class D way, the RB-1092 using the ICEpower technology first seen on its RMB-1077 amplifier. At £1,595 it's not cheap, but it promises a massive 500W per channel into 8 Ohms. There's also the RB-1091 monoblock design, retailing for just £995. Both are available in either silver/black, or black finishes. Measuring 432x92x407mm, the RB-1092 is sizeable device. Much of the Rotel's bulk (and weight) is actually taken by the visually impressive matt black heatsinking. Kicking off with Supertramp's 'Breakfast in America' CD, the Rotel showed itself to be a quintessentially Class D sounding device. The phrase 'massive reserves of clean power' springs to mind – the RB-1092 goes very loud, just as its spec suggests. Furthermore, it sounds smooth and even right across the frequency band. Bass is dry and strong and well articulated, midband expansive, detailed and dimensional

and treble was crisp and clean. Bass was very promising. It isn't overtly imposing – the amplifier doesn't keep reminding you of its barrel-chestedness – but was never less than strong and insistent.

The midband was superb. Kate Bush's 'The Sensual World' was a joy, with oodles of detail, fantastic control and composure, impressive dynamics and a strong stereo soundstage. Moving back to Supertramp, and Rodger Hodgson's voice (a tad shrill, through the wrong equipment) was very clearly depicted, lacking little in detail... Still, with its lovely taut and gutsy bass and smooth and expansive midband, the Rotel proved very satisfying to listen to. Even Dave Brubeck's 'Take Five' on vinyl was a warm and engrossing experience. It is a genuinely musically communicative bit of kit... a brilliant buy – it has an

extremely accomplished sound and massive reserves of power. I suspect that half a kilowatt is too much for any normal mortal, but it's the grace under pressure that the Rotel displays at lower levels than makes having this extra 'cubic capacity' under the hood worth having. It's a genuinely svelte sounding bit of kit, capable of making very nice noises with even the most demanding of loudspeakers. To do so much for £1,595 means it represents excellent value".

If you'd like the chance to win this great stereo power amplifier, then all you have to do is answer the following four easy questions. Send your entries by 30th April 2007 on a postcard to: **May 2007 Competition, Hi-Fi World magazine, Unit G4, Argo House, The Park Business Centre, Kilburn Park Road, London NW6 5LF.**

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

entries will be accepted on a postcard only

**FEBRUARY 2007 MARANTZ PM700KI SIGNATURE CD,
 SA7001 KI SIGNATURE INTEGRATED AMPLIFIER WINNER:
 Alan Roberts of Newcastle**

Heavenly

David Allcock finds the Blue Angel Mantis moving coil cartridge makes music in an other worldly way...

New entrants in the world of high end cartridges are rare. The new Blue Angel Mantis moving coil has caused quite a stir due to the obsessive attention to detail paid to each and every cartridge by designer Andre Hanekom. Virtually everything, bar the cantilever/stylus assembly and the wooden packing box, is manufactured from scratch by its designer, who also builds and tests every cartridge. To do this, Andre had to install his own lathe and milling facilities, then build his own tooling to facilitate manufacture.

The Mantis uses a wooden body into which is installed a plastic carrier, and it is within this carrier that the cartridge generator mechanism is located. This carrier is highly specialised, as the plastic used has been carefully selected for both environmental stability and resonant behaviour. The coils are very high purity copper, whilst high power neodymium magnets are used to ensure a healthy 0.35mv output. The cantilever/stylus assembly is brought in from Swiss specialist Fritz Gyger and uses a hollow aluminium cantilever to reduce moving mass, plus a fine line FG II profile stylus tip.

SOUND QUALITY

Handling the Mantis requires delicacy, as you might imagine, but installation was aided by the square body shape. Tracking weight is quoted between 1.8 and 2.0gms, and on my Graham tonearm I found 1.85gms offered the best sound balance. The Mantis sounds very good at 47k Ohm input loading, but I found the midrange was a little richer and vocals had more body at 2.5k or 1k Ohm.

Once optimised, this cartridge quickly established itself as being an outstanding musical performer. The high frequencies were notable for their astonishingly smooth, detailed presentation. Whilst obviously capable of very high resolution, the Mantis MC was very refined in how it presented this information, it just let the information flow, rather

than force it upon the listener. Cymbals and tambourines were smooth and focused, with just a hint of metallic shimmer.

The midrange showed richness in the lower range, whilst the upper midrange was superbly balanced, with excellent resolving ability, making this a super cartridge for vocals, offering stunning insight into the performance and the recording.

Bass was very good. Whilst not quite as extended as the Condor XCM, it was incredibly fast and tightly controlled, offering a level of agility I've only heard from one or two very high end cartridges in the £4,000 arena.

Dynamics were also good, as the Mantis could shift from a whisper to ground shaking loudness very quickly, and whilst not quite as unrestrained as the Lyra Titan, this cartridge is more than capable of shocking the listener on rim shots.

Imaging was superbly focused, with a fine rendition of stage depth, images precisely placed on a stage which laterally filled the listening room, whilst the rear of the stage extended far beyond the physical wall.

CONCLUSION

The Blue Angel Mantis MC is an excellent cartridge, its performance justifying its £2,495 price tag.



Imaging is superbly focused, transients are lightning-fast and the balance across the frequency range is excellent. Apart from lacking the last ounce of bass extension, and not quite having the massive dynamic range of the very best, the Blue Angel is a cartridge which is capable of a musical, fluid performance which is sure to capture your attention as it did mine.

VERDICT

Superbly engaging and fluid sounding high end moving coil, with a very endearing nature.

BLUE ANGEL MANTIS £2,495

Distributed by RPM Audio

+44 (0)1323 846410

www.blueangelaudio.com

FOR

- Excellent insight and detail
- Refined performance
- Build quality

AGAINST

- Bass extension

MEASURED PERFORMANCE

The Blue Angel has a smoothly rising frequency response on outer grooves, as the red trace in our analysis shows. Output peaks at +2.5dB around 12kHz, and this will ensure a bright balance. On inner grooves, where tracing loss takes effect, the Gyger II stylus shape introduces -1dB loss, reducing the peak somewhat, as the white trace shows. Like all moving coils, there is no upper midband generator loss, meaning the sound will have no artificial warmth and detailing will be strong.

Tracking ability was good, if not a match for the best; the cartridge remains in the groove but distorts. Channel separation was unusually low at 12dB, which will likely contract the sound stage in terms of width, but this effect can also subjectively strengthen images.

Vertical tracking angle was way too high at something like 40degrees - out of range of the DIN 45550 test disc. Distortion on vertical modulation (left and right images) was excessive as a result, reaching 10% (corrected) with CBS-STR110 at 45um.

The Mantis has quite a few

limitations. It works satisfactorily and may sound interesting, but rivals lack its drawbacks. NK

Tracking force	2gms
Weight	5.5gms
Vert. tracking angle	> 38degrees
Frequency resp.	20Hz - 20kHz
Channel separation	12dB
Tracking ability (300Hz)	
lateral	63µm
vertical	45µm
lateral (1kHz)	25cms/sec.
Distortion (45µm)	
lateral	1%
vertical	10%
Output (5cms/sec rms)	0.22mV

FREQUENCY RESPONSE



Red - Outer grooves
White - Inner grooves



Star Quality

Leema Acoustics is very much in the ascendant, with a range of impressive looking electronics to match their established loudspeaker line. The new Tucana integrated amplifier shines brightly, says David Allcock...

Leema Acoustics has, over the past five years, gone from a small loudspeaker company to a significant manufacturer in the British hi-fi constellation. The Tucana is their first electronics product, and makes an excellent first impression. Out of the box it is clear this is an exceptionally well built product, the chassis is very solid and even the heatsinks down each side are sufficiently substantial as to ensure they don't ring.

The front panel has only two large controls, a volume control on the left and an input selection on the right which allows three line inputs, a pair of multichannel inputs, a tape loop and an A/V direct input, which acts as a unity gain input for integration with a surround sound processor. Around the back are two pairs of heavy duty five way binding posts on the outer edge of the panel,

a single, centrally mounted IEC, nine pairs of inputs and outputs on high quality, gold plated RCA phono connectors, and a pair of connectors for Leema's LIPS system - an intelligent control protocol conceived and written in-house to make their systems very user friendly.

The Tucana is a full dual mono design utilising three transformers, one each for the left and right channels and a third which powers the control circuits, only sharing the power inlet to prevent any interference between channels and the digital data from the microprocessor control system. The output stage is said to be capable of massive current swings, up to 45 amps. By no means compact, the Tucana measures 106x440x305mm and weighs a hefty 19.4kg.

SOUND QUALITY

The Leema Tucana proved an excellent amplifier - period. The first thing that captured my attention was its transparency. Given the right combination of

source and material, it provided the listener with a connection to the musical event which few designs at any price are capable of - my only wish being I could have tried it with a fully balanced source. Give it a vocal performance like the under rated Nina Persson of The Cardigans, and it startles with its ability to place a vocalist in the room. The intimacy of her voice on 'Starter' was stunning, the close-miked vocals allowed every nuance of her breathy performance through. Given a similarly intimate, but very different, recording such as Diana Krall's 'I've Got You Under My Skin', the sumptuous richness of Krall's voice was almost tactile, such was its presence in the room.

Soundstaging was a little more forward than I hear from my usual Krell KRC-3/Bryston combination, generally a couple of rows closer to the stage. It was still natural, that subtle change in perspective combined with the transparency to draw the listener into the original recording in a way few amplifiers are capable of doing. In this respect the Tucana surpassed the performance of any integrated amplifier I've heard to date, as it was unnervingly close to my Krell/Bryston duo, and

"I can confidently recommend this amplifier to anyone who wants a sonically superb, fit and forget integrated..."



VERDICT ●●●●●

Powerful, detailed and engrossingly musical sound allied to superlative build makes this is a great British integrated amplifier.

LEEMA TUCANA £2,995
Activ Distribution
 ☎ +44(0)1635 291357
 www.leema-acoustics.com

- FOR**
- dynamic range
 - smooth yet resolved sound
 - current drive
 - build and finish

AGAINST

- no balanced inputs

MUSIC
 The Cardigans, 'Gran Turismo'
 Diana Krall, 'When I Look in Your Eyes'
 Marillion, 'Six of One'
 Kate Bush, 'Hounds of Love'

whilst I could hear a little more stage depth with additional air and focus with my established reference combination, the Tucana had a rare ability to convince the listener they were listening to a real performance, even using a digital source. The Diana Krall recording is outstanding, but the Tucana was able to lift it to another level above any other integrated. Spatial relationships between the performers on 'Devil May Care' were precise and completely natural. The Tucana was also sensitive to the scale of the acoustic, and did not try to impose itself on every recording.

Able to drive most loudspeakers to very high levels without a hint of compression, this integrated proved crushingly powerful. And whilst the Audiolab 8000S I reviewed a few months ago was capable of very fast transient response, the Tucana surpassed this with ease, requiring the likes of the NuForce Reference 9SE and Bryston 14B-SST to substantially better it. It was the perfect partner for the unique vocal ability of Kate Bush, whose performance on 'Man with the Child in his Eyes' not only moves around in the frequency domain, but also dynamically, leaving most amplifiers at best merely hinting at her true ability. The Tucana proved itself more than capable of keeping up with the shifts in Kate's voice with remarkable ease and with the kind of easy, effortless style heard from very few standalone power amplifiers, it tracked the shifts like a bloodhound following even the smallest variations in dynamics with ease.

The bass registers of this amplifier, even with a demanding load, are excellent. Whilst the ML Vantage uses an active bass driver, both the Leema Xavier and Hyperion HPS-938 loudspeakers demand a firm hand to get the best out of their respective bass drivers. The Tucana succeeded in extracting greater levels

of performance out of these speakers than almost any other amplifier I've heard, grabbing their bass drivers with absolute control. The HPS-938's reproduction of kick drums on Marillion's 'Uninvited Guest' was outstanding, you could not only hear the beater hitting the drum skin, but you could feel the bass note through the seat and floor; however the bass control was outstanding.

With all this sledgehammer wallop, the Leema was more subtle than you might imagine, allowing the delicacy of Diana Krall's vocals to come through unabridged. Kate Bush's voice on 'Running up That Hill' had stunning immediacy and speed, and her astonishing upper range brings us to the high frequency range, often a problem with integrated amplifiers. The big Leema was delightfully smooth and detailed, with triangles and cymbals having just a hint of metallic shimmer without undue prominence or exaggeration, whilst maintaining control and focus.

CONCLUSION

An outstanding design from a connectivity, versatility and performance perspective, the Leema Tucana should integrate easily into any system. This amplifier has outstanding drive capability for even the most challenging speaker loads, and avoids imparting its own personality on the music, allowing the source to speak for itself. A powerful bass performance is mated to a superbly balanced,

transparent midrange, whilst high frequencies are smooth and highly resolving. As such, I can confidently recommend this amplifier to anyone who wants a sonically superb, fit and forget integrated.

REFERENCE SYSTEM:
 Basis Gold Debut Standard/Graham 2.0/Benz Glider L2 turntable
 Klyne System 7 PX 3.5 phono stage
 Shanling CD-T300 Omega Drive CD player
 Krell KRC-3 preamplifier
 Bryston 3B-SST and 14B-SST power amplifiers
 Martin Logan Vantage loudspeakers
 Hyperion Sound Design HPS-938 loudspeakers
 Leema Acoustics Xavier speakers
 Isotek Titan and Nova mains filters

MEASURED PERFORMANCE

The Tucana produces 162 Watts into 8 Ohms and 272 Watts into 4 Ohms, goodly amounts of power and plenty enough for most loudspeakers and rooms. Distortion levels were low at all power outputs and frequencies, a little third harmonic appearing as the amp was pushed to produce high power at 10kHz. However, measuring just 0.05% worst case, delivering full power into 4ohms, the Tucana behaves well in this area. At low outputs, output stage noise dominated, but this was low enough to be inaudible.

Frequency response was wide, measuring 5Hz to 50kHz at -1dB limits, wide enough to do justice to SACD and DVD-A sources. Sensitivity was very low at 600mV and here the Tucana may not be the best choice with phono stages having limited gain, or old sources such as cassette decks. It has been modelled for CD players and such like.

The Tucana measures well. Leema say it has no protection circuits and the output must not be shorted, which

is slightly worrying, but assure that internal fuses prevent output stage damage and a trip circuit protects loudspeakers. NK

Power	162watts
CD/tuner/aux.	
Frequency response	5Hz-50kHz
Separation	71dB
Noise	-90dB
Distortion	0.005%
Sensitivity	600mV

DISTORTION



Broadcast News

Channa Vithana reviews the latest iteration of the Harbeth HL-Compact loudspeaker, now in 7ES-3 form...

Harbeth are not a conventional, mainstream British loudspeaker company.

Thanks in no small part to its founder Dudley Harwood's BBC engineering background, their biggest British customer is good old auntie Beeb. Otherwise, they sell well in Japan and China. Based in Haywards Heath, West Sussex, they can trace their roots back into the nineteen sixties, and have produced a range of quintessentially British sounding products, a little conservative in presentation perhaps, but still extremely able and often far better than their more popular rivals.

Now in 2007, Harbeth have just released a new version of their single-wired HL-Compact loudspeaker, called the 7ES-3, priced at £1,799. It has excellent build and is finished in a beautifully crafted light Cherry veneer as standard. There are other veneers available, including Eucalyptus, for about £1,899 to special order. Though called 'Compact', measuring 520x273x315mm and weighing 13.2kg apiece, the 7ES-3 by modern standards is a large two-way front-mounted standmount loudspeaker, and with its black cloth grill in place can be easily mistaken for a new-old-stock classic monitor from the sixties or seventies!

I quite like its chunky proportions, but it would be nice to see more of the front baffle – the grill looked difficult to remove, so it was left in place (which Harbeth recommend). Indeed, more attractive silver hex-head fixings could have been used instead of the ordinary cross-head ones across the rear panel, and those at the front baffle, for the nail-free, glueless "lossy joint which suppresses resonances". Additionally, it would have been more

attractive if they used a circular opening for the mid/bass driver. As such, some will be put off by this 'traditional' styling.

The 7ES-3 cabinet, says Harbeth, "quite literally breathes at the very lowest frequencies, as do the finest wooden instruments." A 25mm aluminium dome tweeter, which Harbeth have used for twenty years, is utilised because of its manufacturing consistency, and "needs no added damping (unlike fabric)." The classically BBC proportioned 200mm (8inch) Radial cone mid/bass driver is located into a glass-reinforced nylon chassis with a new rubber surround utilising "a softer smoother profile for improved damping". The front-mounted port has been tuned for better bass, while the cabinet has better internal

wall-damping and the new crossover has "improved the on-axis integration of the drive units and enhanced the vertical integration", so the speaker is less critical of stand height".

SOUND QUALITY

In the Harbeth User Guide it is recommended that the loudspeakers are placed about 75cm away from the





"they are BBC-style monitors in the classic and best sense of the word..."

bass delivery. However, when the composition got busier, with more complex drum patterns and guitar melodies vying for space with crunching rhythm parts, I noticed that the Harbeths could sound too restrained. There was a slightly 'controlled' quality that took some of the beautifully revealed timbral enjoyment away. Contrast this to a simpler composition like the mid-paced thrash-metal of the next track, 'Sad But True' and there were no such difficulties. Likewise, on Fleetwood Mac's 'Morrow Turning Over In His Grave', the music became a little more constrained, as the complex guitar parts sounded a little shut-in and less natural in their phrasing.

Compared to my reference floor standing Waterfall Victoria loudspeakers, which cost approximately £2,000, the £1,799 Harbeths had superior instrumental timbre, which was very convincing indeed. They also appeared to go deeper in the bass than the similarly specified Victorias. However, the Waterfalls sounded slightly less congested in comparison, especially during

rear wall, 2.5m apart and with a little toe-in (about five to ten degrees) - and I concur, as this sounds the best. After a relatively short listening period, it was obvious to me that the Harbeths have marked strengths - what they do well, they do very well. The key is their delicately balanced sound, with wonderful timbral acuity and the ability to convey the emotional impact of a recording. With the music from the Vivaldi, 'L'Amore per Elvira' recording by La Serenissima, the violin and harpsichord had very good phrasing, definition and clarity. The music was nicely expressed, in a very clear yet timbrally convincing manner, and there was excellent body to each

instrument. On 'What's The World Coming To' from 'Say You Will' by Fleetwood Mac, the Harbeths sounded bold and expressive, proving convincing and enjoyable. The groove-led bass lines were excellent in their composure, feel and extension while Mick Fleetwood's signature drum-track was a delight with crisp, clear and deep timbres. The pulsating opening bass line to Depeche Mode's 'Behind The Wheel' from 'The Singles 86>98' compilation was engagingly tuneful in extension, control and feel. The music as a whole was also superb with a powerful yet articulated sound that was very communicative.

The eerie mix of beautiful opening guitar melodies and menacing, growling bass lines to 'Enter Sandman' by Metallica was sheer delight. And just like Depeche Mode previously, the Harbeths showed a superbly tuneful

MUSIC

- La Serenissima, Vivaldi, 'L'Amore per Elvira' (2006)
- Depeche Mode, 'The Singles 86>98' (1998)
- Fleetwood Mac, 'Say You Will' (2003)
- Metallica, 'Metallica' (1991)

REFERENCE SYSTEM:

- Naim CDX2 CD player (£3,000 approx.)
- Unison Research Unico CD player, (£1,250)
- Moon Audio i-3 integrated amplifier, (£1,595)
- Waterfall Victoria loudspeakers (£2,000)

wayward or complex song structures, as on the Fleetwood Mac and Metallica recordings, and thus, the interplay of instrumental and vocal phrasing and timing of the music was preferable with them. For this reason, I think the Harbeths are ideal for delicate, subtle acoustic music, but less successful on highly modulated complex rock music - lovers of heavy metal should look elsewhere!

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SHAW SPEAKS

Channa Vithana talks to Harbeth supremo Alan Shaw.

CV: HOW DID YOU START OUT IN THE SPEAKER INDUSTRY?

AS: "I have been fascinated by loudspeakers (not really any other part of the hi-fi chain, I must admit) since I was about six or seven. In my teens, I became involved with what were the early days of BBC local radio, when it had a real community involvement. That experience showed me at a stroke, how a monitor speaker was a tool, not a consumer durable. That led to me reading every scrap of information on 'the BBC's way of speaker design'. Despite my enthusiasm at being an amateur speaker fan, it was clear that I needed to get a real career - but after some seven years at NEC, by fluke I was in London, had some free time and went to see Dudley Harwood - someone I considered famous from my BBC readings (he had been head of the department involved in BBC speaker development) - and I walked away from his tiny lock-up and said 'I have to continue this pioneering work'. That was twenty years ago..."

WHY IS HARBETH SO POPULAR WITH THE BBC, AND IN JAPAN AND CHINA?

"The Japanese and Chinese customers (our best two markets) took to us thirty years ago. We are exceedingly well known in those markets - right up there with the biggest loudspeaker brands in the world. It is no coincidence that [1] oriental homes are generally small, rather similar in size to a BBC control room, and [2] the listener is listening quite close to the speakers which greatly amplifies speaker artefacts, so they have to be of a low order or they are irritating and [3] oriental music, rather like speech and rather unlike electronic music is complex with exceedingly subtle micro-tones which most speakers just can't resolve. As for the BBC, the reason they like us is that our speakers 'tell it like it is' and are based on the BBC's idea of monitor speakers. This means that while they can't play super loud (like public address equipment), and they don't have earth-shattering bass, in the all-critical middle frequencies working with them is not like listening to speakers at all. It is the original 'source' material that is listened to, not the equipment. Most speakers would be extremely fatiguing if used as 'monitors', whereas at the end of an eight-hour shift the sound engineer has to be completely fresh: with Harbeth monitors, he is."



★★★★★
 Fine tonal accuracy and an engagingly tuneful bass make these highly accomplished monitors in the best BBC tradition, but they're not to all tastes.

HARBETH HL-COMPACT 7ES-3 £1,799
 Harbeth Audio Ltd
 ☎ +44 (0)870 803 4788
 www.harbeth.co.uk

- FOR**
- tonal accuracy
 - tuneful bass
 - build and finish

- AGAINST**
- traditional styling
 - rhythmic flow

HARBETH HISTORY

Back in October 1976, Harbeth founder Dudley Harwood co-wrote a BBC research department paper entitled, 'The Design Of The Miniature Monitoring Loudspeaker Type LS3/5a', along with M.E. Whatton, C.Eng., M.I.E.E and R.W. Mills.

As well as this involvement with the renowned LS3/5a, Harwood was also responsible for popularising and patenting the use of Polypropylene drive units in loudspeakers. According to Harbeth, Harwood, then a senior engineer, directed research work by the BBC into a coated plastic called Bextrene for better drivers to outperform the inconsistent manufacturing quality of paper units at the time. The need for superior drive units, say Harbeth, was to adapt to the more demanding new stereo broadcasts.

In the mid-1960s, Spencer Hughes, who later formed loudspeaker company Spondor, also worked on the BBC Bextrene project. According to Hughes' journal excerpts (see www.spondoraudio.com) his, "part as a laboratory technician in the operation, was to do most of the actual work both on the plastic investigation, and the development of the LS5/5 (monitor loudspeaker)". Also, according to Hughes, after this the 200mm (8inch) mid/bass driver using Bextrene (plus a Celestion HF 1300 tweeter) was used in the original incarnation of the now legendary BC-1 monitor loudspeaker.

About ten years later Harwood discovered polypropylene." This newer material says Harbeth was superior to Bextrene because it could go louder and didn't need to be doped or coated, and was therefore lighter and "for the first time, the drive unit could respond properly to rhythm and timing."

During the late eighties, just before Harwood sold Harbeth to Alan Shaw, he looked into a driver material bought from Audax called TPX, which says Harbeth, was based on research into Bextrene and Polypropylene - but was deemed superior by Harwood. Alan Shaw subsequently carried on further research which led into the formation of the patented Harbeth Radial cone drive units. Radial (Research And Development In Advanced Loudspeakers) like its Bextrene and Polypropylene predecessors is a type of plastic formation, and says Alan, is "a blend of four key ingredients that we, and the engineers from the Science and Engineering Research Council, blended for their acoustic properties. We conceived a material that had no discernible acoustic signature. That material is the Harbeth sound (or rather, lack of it!)"

CONCLUSION

No loudspeaker is a master of all trades, and the Harbeth HL-Compact 7ES-3 is no exception, but I found them exceptional in respect of their bass control, tunefulness and general timbral accuracy - they are BBC-style monitors in the classic and best sense of the word. The downside is that they are not rhythmically as free flowing as some, and don't flatter big, complex, over produced stadium rock music. If 'a good tone' in the archetypal BBC sense of the word is paramount for you, then few - if any - at the price can touch these loudspeakers.

MEASURED PERFORMANCE

The HL Compact 7-ES 3s have a very flat and well controlled frequency response, as would be expected from a traditional monitor type loudspeaker. There are no unpleasant peaks or dips anywhere in the frequency range and the overall trend of the response is downward with increasing frequency. This will endow the Harbeths with a warm sound and they will not be bright or sharp.

Bass response is good for a relatively compact cabinet with the bass driver rolling off around 50Hz and handing over to the port which is tuned to 40Hz. This is a front panel-mounted item and thus the Compact 7ES-3s will be relatively uncritical of close placement to a wall.

The impedance curve is smooth, with a measured average of 8.6 Ohms, dipping to a minimum of around 6 Ohms. The Harbeths are not a difficult load and will work on an 8 Ohm amplifier tap. Their measured sensitivity

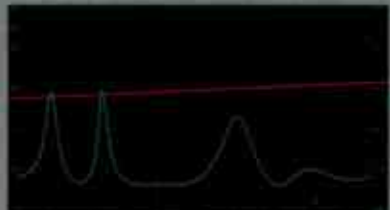
of 86.5dB means that an amplifier of around 50W is advisable for good sound levels. AS

FREQUENCY RESPONSE



Green - driver output
 Red - port output

IMPEDANCE



CD Duevel

... the fourth dimension ...



“ Unlike traditional speakers, which create an image that tends to recede between and behind the speakers, the Planets provide a soundstage that filled every inch of the listening room's width. Images outside the speaker cabinets were the norm, providing a truly exhilarating sonic panorama.

In short, the Planets offer a spatial performance nothing less than revelatory at the price, and its dispersion provides a surprisingly coherent sound. It is an excellent ambassador for the (omni-directional) genre. ”

Ian Harris, Hi-Fi News, April 2007

“ I was intrigued to hear really vivid soundstaging - the Planets painted a superb aural picture and it was possible to shut my eyes and hear my favourite band laid out before me.

I found the Planets eminently enjoyable to audition and, returning back to 'normal' loudspeakers afterwards was a bit of a comedown. They have superb abilities in terms of imaging and lifelike presentation, cast a much bigger soundscape than their size suggests and offer a unique and enjoyable perspective on all types of music... ”

Adam Smith, Hi-Fi World, April 2007

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World Radio History



Oehlbach NF12

Oehlbach NF14

Oehlbach NF214

Oehlbach have been manufacturing cables for over 30 years now and in that time have gained considerable expertise in the art of high end cable materials and design, under the tutelage of founder Manfred Oehlbach. Whatever your cable requirements, be they audio, video, computer network, firewire or USB, there is an excellent chance that Oehlbach will have an item to suit your needs, and your pocket.

All of Oehlbach's products come under their star rating system, which runs from three to five stars - the three star items mark their more entry level designs, although this is relative as they still incorporate high quality components including silver plated OFC wires and 24 carat gold plated contacts. At the top of the tree, the five star items use the highest possible technologies, such as pure silver or mono-crystalline HPOCC copper, along with diecast connectors.

The three items we have for review here come from the middle ground, four star, category and all three are phono to phono interconnects with reasonable price tags, considering their level of construction quality. The leads in question are the NF 214, NF 14 and NF 12, and cost £63, £84 and £96 for 1m lengths items respectively.

The NF 214 uses 384 silver plated inner conductors with silver plated braid shielding, nicely terminated into good quality gold plated phono plugs. Moving up to the NF 14 interconnects brings

better quality phono plugs and a 'symmetrical design' cable that features twin inner conductors plus braiding, rather than the single run of the NF 214.

Finally, the top step on the ladder, the NF 12, uses the same phono plugs as the NF 14 but uses silver-free HPOCC single crystal copper conductors. In fact, I found it quite interesting that the most expensive cables use no silver and are the thinnest of the three samples - clearly bigger is not always better!

Ever ready to suffer in the cause of audio research, I calibrated my ears using a pair of bog standard interconnects of the kind supplied with equipment as a 'get-you-going' step and then substituted each cable in turn between CD player and preamplifier.

For the first step, moving from the standard cables to the NF 214 proved how essential good interconnects are. Out went the slow and wallowing bass, to be replaced by a much tighter and more tuneful low end which made everything much more lively. Vocalists had better definition and instruments sounded more realistic, and less like a poor imitation of themselves. Oehlbach also promise "wonderful staging" for the NF 214 and this was indeed the case, as the whole sound field opened up considerably.

Changing to the NF 14 brought even more air and realism around vocals. Singers such as Norah Jones appeared to have moved closer to the microphone and sibilants were less spitty. Slightly less enthusiastic and dynamic than the NF 214, the

NF 14 is nevertheless a very smooth character and adds a nice degree of polish and sophistication to the sound.

The final change introduced the NF 12 and, for a mere £12 premium over the NF 14, moved things onto a different level. This time, bass became deeper and much pacier and allied itself to an exquisitely smooth midrange. The finest details in recordings were brought out superbly by the NF 12 and performances came across with real emotion and impact.

One final aspect that I should probably mention concerns the fact that Oehlbach state that both the NF 14 and NF 12 are directional, and mark the outer cable sleeves accordingly. If this is important to you then by all means follow the directions. However, I did listen to both items connected the 'wrong way round' and...well, let's just say my healthy scepticism regarding cable directionality remains intact!

In summary, the NF 14 has a rather smoother overall nature than the NF 214, which is more inclined to 'get down and boogie', albeit with a slightly coarser character, but either of their differing dispositions can be used to effectively fine-tune your system. The real star, however, is the NF 12 which is magnificently neutral and detailed and combines the pace and rhythm of the NF 214 with the sophistication and detail of the NF 14. Overall, then, all three of these cables offer excellent performance at reasonable prices.

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Silver Machines

Although you can buy a CD player for £20 at your local supermarket (that also plays DVDs!), spending a serious sum really yields benefits. In this month's supertest, Noel Keywood rounds up four sub-£1,000 models from Cambridge Audio, Roksan, Creek and Vincent...

Lovely as the analogue LP is, for most people Compact Disc is the only practical choice when it comes to listening to music in the home. All four players here give results that are a step up from the norm in audio quality, and genuinely provide a better listening experience. They gave us a less mechanical and sterile presentation than typical budget CD players, with a feeling of clarity and stage depth, a sense of solidity to singers and instruments and, in some cases, elimination of the piercing effects of sibilance. A common criticism of CD is that it sounds bright, sharp, hard and sterile, but the mid-price machines tested here address these concerns, although by no means equally...

Just how good can CD sound? If you are able and prepared to shell out thousands for a Tube Technology Fusion CD64 or Chord Electronics DAC64, then it gets very good indeed. The main reason these players sound so special - and different to the norm - is that they contain the unique Rob Watts WTA digital filter - and you pay for such a specialist item.

"these players are a step up from the norm in audio quality..."

Lower down the price ladder, the players here rely on more conventional parts, albeit high quality items, from a variety of semiconductor and drive manufacturers around the world. Unfortunately, no matter how much processing is crammed into CD players, such as the impressive degree of upsampling used in Cambridge's £500 Azur 740C, improvements do not necessarily address all

CD's limitations equally.

There's little useful work you can get a valve to do in a CD player, other than amplify the analogue signal before it reaches the output sockets, yet all the same they make a big difference to the sound - most would say for the better. Valves add a feeling of depth and spaciousness, giving music a more natural, organic sound if you like. Harshness is suppressed and stage depth magically seems to appear, helping to rid CD of its unidimensionality. The associated downside however, is a loss of the intense detailing that solid-state players like the Cambridge in this group can provide. Valves can add a darkening of the sound and a generally more louche air that forsakes the clinical correctness and sterility of solid-state for something a little more human, shall we say!

I could not argue that valve output players are more accurate, so much as they have a presentation that is worth hearing, simply because it makes music enjoyable. A small caveat is that not all valve equipped players are equal; they tend to come from smaller specialist manufacturers and their choice

of parts can be 'interesting' to say the least! I like and use an Eastern Electric Minimax, and it sounds quite different to the tube-equipped Vincent in this test. So as always, read what we say, bearing in mind we apply advanced measurements before listening, and then try and listen at a dealer if you can. CD is worth playing properly, and with £1,000 you can buy a fine design.





CAMBRIDGE 740C £500

The Azur 740C is very talented at the price. It acts not just as an upsampling player, but also a digital-to-analogue convertor.

Cambridge use Adaptive Time Filtering from Anagram Technologies of Switzerland, with digital signal processing carried out through an Analogue Devices Black Fin DSP to yield a highly processed digital signal running at a high 384kHz sample rate. This then passes through Wolfson DACs connected in differential mode for best noise cancellation. It's a lot of processing for a £500 player, but Cambridge also provide two digital inputs, each with an optical and an electrical (phono socket) SP/DIF connector. These can be selected from the front panel. Whilst CD plays only at 384kHz rate, external sources can be converted to 48, 96 or 192kHz at 16, 20 or 24bit resolution, with or without dither applied to reduce low level distortion. As Cambridge say, most CDs are dithered in any case nowadays to ameliorate the grotty sound of 16bit, so you don't need this when using the 740C as a stand alone DAC for a CD transport, so much as other digital sources.

The Azur 740C measures 430x315x115mm and weighs 6.4kgs. Audio outputs are phono sockets, and there are optical and electrical digital outputs too.

SOUND QUALITY

Perhaps predictably, the Azur 740C has an easy-going balance that initially comes over as gentle. Good upsampling players I have used in the past were

not dissimilar, I recall. But the player has a sophistication to its delivery that becomes apparent as you relax and spend time with it. There is less immediate force and impact than from the Vincent or Roksan, although in the longer term the 740C proved weighty and detailed, if with more foreshortened depth perspective than the other, considerably more expensive, models. Celine Dion's 'A New Day' was vastly detailed, as crisp as a winter morning and was underpinned by prodigious bass.

I admired the way the Cambridge mined information from discs and laid it out clearly; this is an upfront player across the upper midband, but it is less forthcoming across the lower midband, losing warmth and some atmosphere in the process. Here is a player to look right into what's on a CD; it places no gloss over things, displaying a degree of revelation that most rivals are unable to match. In its very own way, then, the 740C is great value.

MEASURED PERFORMANCE

The Cambridge has a classic frequency response characteristic, with slowly falling upper treble from a well damped time domain response. This tends to give a smooth sound, with no emphasis of upper treble, unlike the peakier response appearing more commonly nowadays.

There was no measurable distortion at -30dB, our measurement showing noise, another analyser revealed, not discrete distortion harmonics. Under these circumstances distortion measures a low 0.004%, and at -60dB it was again low at 0.24%, helping toward a fine EIAJ dynamic range value of 111dB.

Jitter measurement of the digital output returned a value of around 10pS over most of the audio band, with no programme-related components.

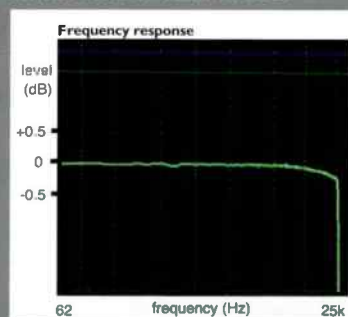
With wide channel separation, normal output and low noise this player measured well in all areas. It should sound smooth and easy going. NK

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

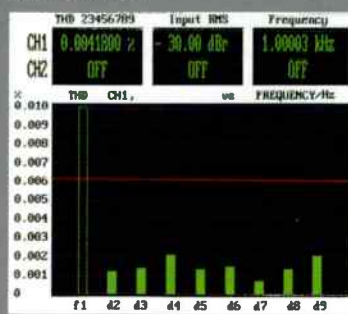
Distortion	
0dB	0.0007%
-6dB	0.00045%
-60dB	0.24%
-80dB	2.8%

-80dB dithered	2.3%
Separation (1kHz)	130dB
Noise (IEC A)	-114dB
Dynamic range (EIAJ)	111dB
Output	2.3V

FREQUENCY RESPONSE



DISTORTION



VERDICT ●●●● £

A vividly revealing player with rock-solid lower bass, if a frosty demeanour. Great value.

CAMBRIDGE AZUR 740C £500

Cambridge Audio
+44(0) 845 900 1230
www.cambridgeaudio.com

FOR

- extremely detailed
- insightful
- seismic deep bass

AGAINST

- lacks warmth

Minimalist masterpieces!



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CREEK CLASSIC CD £850

The latest incarnation of Creek's mid-price CD player design is an evolution of the tried and trusted CD50Mk2, that impressed us back in the March 2004 edition of *Hi-Fi World*. Adhering nicely to the 'if it ain't broke, don't fix it' school of design, the Classic incorporates a few choice modifications over its predecessor in order to keep things competitive.

The most visible change, albeit one that is still quite subtle, is a slight restyle to the casework in order to ensure that the unit matches physically well with its Classic series brethren. Under the bonnet, however, the tweaking has reached higher levels by a few useful additions. Firstly, improved circuitry and shorter signal paths have been fitted throughout the player and the power supplies have been upgraded with improved, low noise regulators and resistors. Twin mains transformers keep the supplies to critical areas separate for good isolation and the audio signal passes through a buffer before passing into the DACs for good immunity to shock and vibration.

Measuring 430x70x317mm and weighing 6kgs, the Classic CD is a compact and neat design and has analogue and digital outputs (both optical and coaxial).

SOUND QUALITY

In contrast to the other players in this test, which have a definite tonal character to them, the Creek proved remarkably

neutral. No matter what source material was fed to it, the Classic CD remained composed, detailed and thoroughly enjoyable to listen to.

Soundstaging was excellent, with good detail retrieval from instruments and vocalists. Bass was pleasingly weighty and rhythmical without ever becoming wallowy or boomy, and high frequencies were smooth, sweet and tidy. Spinning Celine Dion's 'I'm Alive' once again revealed excellent weight to the sound and the sibilant nature

of the track was well represented without becoming unpleasant. With the Creek, pianos and other acoustic instruments had good realism and depth to them.

Ultimately, the Creek is an excellent and 'safe' option. It is a very unflappable player and, whilst lacking the capacious soundstaging of the Vincent or the bass grunt of the Roksan, also sidesteps their downsides neatly, never becoming disagreeable or harsh.

MEASURED PERFORMANCE

The Classic measures flat to 21.2kHz (-1dB) in its frequency response, with no roll down at all at high frequencies our analysis shows. Subjectively, it will not lack treble.

This player was very linear right through the audio range, producing little distortion. At -30dB it returned a figure of just 0.004%, our analysis shows, putting it up with the best. An even balance of spectral components exists, mostly noise another analyser showed. Resolution at low levels was good too, a dithered -80dB signal returning 1.8% second harmonic only.

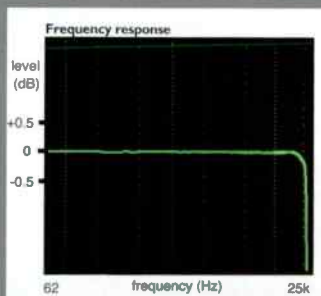
Jitter was unusually low right across the audio band and up to 100kHz, measuring less than 10pS. There were no audio related components, a sweep showed.

The Classic turned in an excellent set of performance figures. It should sound balanced, smooth and very clean, with no softening of treble. NK

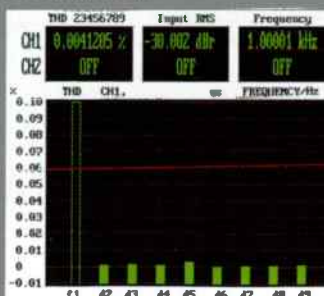
Frequency response (-1dB)	
2Hz - 21.2kHz	
Distortion	
0dB	0.0005%
-6dB	0.0005%
-60dB	0.26%
-80dB	2.7%

-80dB dithered	1.8%
Separation (1kHz)	108dB
Noise (IEC A)	-110dB
Dynamic range (EIAJ)	111dB
Output	2.1V

FREQUENCY RESPONSE



DISTORTION



VERDICT

A polished presentation, strong in every way: spacious, smooth and as natural as CD gets.

CREEK CLASSIC CD £850
Creek Audio
+44 (0)1442 260 146
www.creekaudio.co.uk

FOR
- superbly natural
- open and spacious
- transparency

AGAINST
- styling



ROKSAN CASPIAN £800

The Caspian is an all solid-state player of conventional design and construction: there isn't a valve in sight! Its solidity feels reassuring, both when handling it and when button pressing. Weighing in at 9kgs this is one of the heavier models within our group and it sat where it was put. It measures 88x432x300mm, and a comprehensive range of front panel controls allow it to be used without the remote. The rear panel carries no fewer than three digital outputs, optical, electrical (coaxial) and an AES/EBU balanced XLR signal. The latter is unusual, and generally considered to give best quality as it minimises noise pickup, which can fall through into the analogue domain as jitter in the absence of re-clocking. Inside Roksan use a Texas Instruments PCM1730 DAC with 24/192kHz internal resolution, an advanced item with good performance, and a rare choice.

SOUND QUALITY

This a suave and composed sounding player, that seemingly avoids strong character traits to give a convincingly natural delivery. It has well damped yet resonantly deep bass with real power to it; drums start and stop cleanly and with 'Copperhead Road' the opening drum rolls had a grippingly real sense of size and power as they rolled dramatically across the sound stage. The Roksan has a superbly grippy delivery that is polished in the extreme. Sibilliance in Celine Dion's 'I'm Alive' had an edge to it but didn't leave my ears ringing, as

it could with the other players. The Roksan gets things just about as right here as is possible from CD, unless you spend much more.

Celine Dion, however, sounded a little robotic. This quality became obvious with Vlado Perlemuter playing Chopin's Opus 48, No 1, where his piano had a hardness of tone that was difficult to resolve with the real life instrument. The Roksan is very correct, has good amounts of

stage depth, bass power and dynamic resolution, but it has a hardness of tone that can make music and singers sound a tad mechanical. The same recording on other players was more convincing: what I heard didn't clash with my perceptions of what a piano should sound like.

Overall, a very accomplished player that effortlessly justifies its price tag. It has poise, accompanied by a dynamism that many will love.

MEASURED PERFORMANCE

The Caspian had a neat response shape, with no peaks or dips. Reaching smoothly from 2Hz up to 21.1kHz (-1dB) this player is as good as it gets in terms of frequency response smoothness and extension.

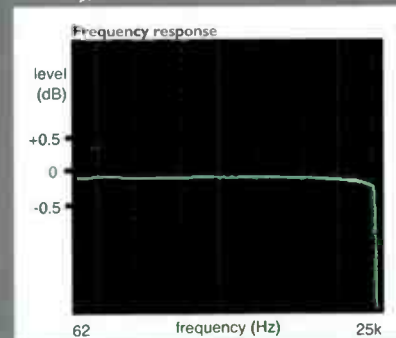
The Caspian was very linear right through the audio range, turning in an excellent set of distortion figures. At -30dB it returned a figure of just 0.0042%, putting it up with the best. Our analysis shows an even balance of spectral components, with no one dominating. Resolution at low levels was good too, a dithered -80dB signal returning 1.8% second harmonic only.

Jitter was low across the audio band, peaking randomly at around 30pS. There were no audio related components, a sweep showed. Output measured a normal 2.1V and EIAJ dynamic range was a high 111dB.

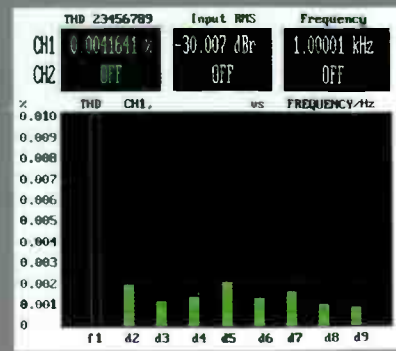
The Caspian turned in a good set of figures all round. It should sound balanced and smooth. NK

Separation (1kHz)	104dB
Noise (IEC A)	-112dB
Dynamic range	111dB
Output	2.1V

FREQUENCY RESPONSE



DISTORTION



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

Distortion	
0dB	0.0003%
-6dB	0.0004%
-60dB	0.22%
-80dB	2.3%
-80dB dithered	1.8%

VERDICT ●●●●

Composed and dynamic sound with peacy bass that's ideal for rock music.

ROKSAN CASPIAN £800
Henley Designs
+44 (0) 1235 511166
www.roksan.co.uk

FOR

- fast, powerful bass
- cohesive and balanced
- dimensional and convincing

AGAINST

- tonal hardness
- music dependent



VINCENT CD-S6MK £999

Like all Vincent products, this one is a hybrid that uses valves as well as solid-state devices, and you get the valves on public display in an illuminated window, no less! The remote control has a Dim function, but doesn't toggle valve illumination as on the SV-236 amplifier; instead it's the fluorescent display panel that has Bright, Dim and Off options. The valve is bathed in a strong orange glow from a set of LEDs, illumination being adjustable from bright to off by a four position rear panel switch.

This player uses Burr Brown PCM-1732 DACs with 24bit/96kHz resolution, as well as a Pacific Microsonics HDCD decoder, so the smoothness and air with HDCD discs can be fully appreciated. As always, the valves are output devices operating as cathode followers, which provide single-ended Class A operation by their very nature. The Vincent has a headphone output on the front panel.

There's no Direct output that bypasses the valves, but there is a balanced XLR output and measurement of output impedance suggested both this and unbalanced are derived from the output valves, explaining the use of three 12AX7 double triodes and one 12AU7 - four valves instead of the usual two. This is a better arrangement than using a convertor chip to derive a balanced output.

Of our group this player was the sturdiest and largest, measuring 430x125x330mm and weighing in at 9kgs.

SOUND QUALITY

The CD-S6MK was very 'obvious' in its sound, or characterful I could say. It has solidly delivered, punchy bass and, as measurement predicted, treble that was always bright and sometimes a little prone to sizzle. Playing the treble laden steel string guitars of Steve Earle's 'Copperhead Road' is my test for this and sure enough his close miked vocals hissed whilst the guitars bordered on lacerative. All the same, no one could come away unimpressed by the vast

sound stage of this player, and the way drums thundered across it as they were panned. The Vincent puts up a monster of a performance in terms of dynamics and it has great stage depth too.

With CDs having less high frequency energy, the top end emphasis had no effect; Vlado Perlemuter's piano had fantastic scale and a convincing timbre. The CD-S6MK was superb with classical music, sounding smooth and expansive - and convincing.

MEASURED PERFORMANCE

The Vincent has a distinctive lift in treble output on both balanced and unbalanced outputs, our analysis shows. It's enough to ensure the player has obvious treble, and possibly a sheen to its sound. The CD-S6MK is unlikely to sound warm.

Distortion levels were a little higher than usual and the distortion pattern, possessing higher harmonics, suggests this player uses a multi-bit convertor. The valves affected distortion less than usual, adding a little second harmonic. The Vincent does not match the best players available. Dynamic range (EIAJ) was affected by this, measuring a low 104dB.

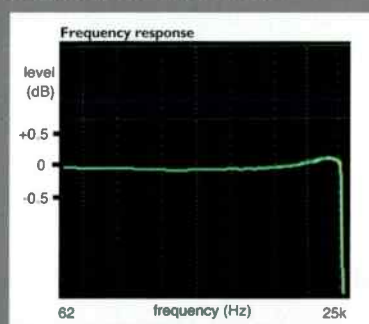
In all other areas the Vincent measured normally, possessing little jitter on its digital output (<30pS), wide separation, low noise and healthy output. NK

Frequency response (-1dB)
2Hz-21.3kHz

Distortion	Unbalanced / Balanced
0dB	0.18 / 0.027%
-6dB	0.002 / 0.014%
-60dB	0.28 / 0.25%
-80dB	2.9 / 2.8%
-80dB dithered	2 / 2.1%

Separation (1kHz)	113dB
Noise (IEC A)	-99dB
Dynamic range (EIAJ)	104dB
Output (unbal. / bal.)	2.4 / 4.8V

FREQUENCY RESPONSE



DISTORTION



VERDICT ●●●●●

Fantastic scale and imaging make this player impressive, but it can sound sharp.

VINCENT CD-S6MK £999
Distributed by Ruark Acoustics
☎ +44 (0) 1702 601410
www.vincent-tac.de

FOR

- capacious soundstaging
- extended dynamics
- timbrally convincing

AGAINST

- sharp upper treble
- bulky!



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Up to £500 or so, even well designed CD players give you that mechanical sound that audiophiles are so quick to criticise. I've measured and listened to enough of these players to know they measure well and are not doing anything too wrong in a technical sense. It's just that they rely exclusively on budget parts and this takes its toll on the sound. Every little bit, down to the last capacitor, is cost cut - that's just how it's done nowadays. Upsampling confers a benefit, but it is small if the rest of the player is cheap and cheerful. The entire package must be appropriately designed and specified if it is to deliver the sort of open and spacious sound quality players like those tested here provide.

Cambridge's Azur 740C player offers it all for a bargain price of £500 by acting as a standalone DAC as well as a CD player. In its own way, in the enormous amount of detail it is able to retrieve and a peculiarly powerful form of low bass that seems to rise up from below the floorboards, it is a talented design and fantastic value. Of all four players here, though, it was also the most characterful in its sound, an upper midrange sheen emphasising sibilant recordings, for example. A player like this works well with high quality programme material, but isn't so convincing with close-miked vocals, for example. This is a player for those who want real analysis, as most others are less forward and revealing.

Very close to each other in their basic nature were the Creek Classic and the Roksan Caspian. Of the two I found the Creek easier to live with, whilst the Roksan was more challenging and more forceful. Lovers of hard rock who

"here are four quality CD players, each of which has great strengths..."

like verve and pace, coupled with a bass delivery I'd describe as an iron punch, will take to the Caspian. It has fantastic composure, coming across as all-of-a-piece, and only slips back when classical instruments with rich timbral signatures enter the equation. It is here that the slick sounding Creek Classic moves gently but convincingly ahead. It might not quite have the pacy dynamics of the Roksan, but it is more even in its approach to all forms of music and, by any standards, is lovely to listen to. The Creek offers it all really: it is easy on the eye, easy to use, all but technology-free as far as an owner is concerned, but sounds open and spacious, tidy and relaxed. It offers a class performance whatever way you look at it, on the test bench or in a show off against the market's most adept rivals.

And that leaves the Vincent CD-S6MK. This player is Left Field; see it racing up the wing to score over the heads of all else with a fabulous presentation that leaves you asking "where did that come from?" The Vincent is breathtaking in a way that you do not really attribute either to valves or CD. It isn't as warm, even syrupy, as our resident Eastern Electric Minimax player, nor as bright and challenging as our Shanling CD-T80. Instead it constructs a panoramic sound with breathtaking dynamics that defies convention: this

isn't CD as we usually think of it. Okay, I heard its sharp treble at times, bringing a fizz to sibilance for example, but I suspect many would forgive its sins to enjoy its strengths.

So here are four quality CD players, each of which has great strengths. Hopefully amongst them, there's something that suits you

The standalone CD player hardly occupies centre stage in most homes any more. It is being jostled by lower quality sources like the iPod and Internet radio, and higher quality sources like SACD, which isn't dead yet. In this report we also looked at what you don't get from a £999 DVD-3930 DVD player when it plays CD and - more importantly - what you do get. The trade-off here is sound quality against breadth of purpose. I use a Denon DVD player at home and have come to see it as a thoroughly trustworthy work horse, able to play anything well and without fuss, from CD to SACD, DVD-A and video DVD. So what does Denon's new DVD-3930 offer from CD?

Measurement showed that playing CD it is a class act, delivering a specially processed audio signal (AL24) from its two channel output sockets, and standard unprocessed audio from the Front Channel surround sockets. Listening to it showed that Denon's AL24 eliminates shrillness from CD. It was a tad flatter in its sound staging than the more expensive players within this month's group test, but it was clean, tidy and inoffensive in its delivery and, as such, sufficiently entertaining for a lot - most? - people, I suspect. Counterbalancing this small limitation is its ability to play just about anything. Very good value then for the uncritical.

I cannot sign off this report without honourably mentioning the Russ Andrews DAC-1 USB reviewed this month. If you already have a player with a digital output, this is a fantastic upgrade for £599, possessing a sound quality that equalled the best players of our group or, if you like its smoothing properties, bettered them. It's a hot five globber! NK



Stadium Shocker

Few phono stages come more vast in size than the huge Aesthetix Rhea. Noel Keywood enjoys this sizeable slice of high end America...

They do it different over there. This is surely the biggest phono stage I have ever encountered, yet Aesthetix call the Rhea, "a smaller, less expensive version" of their Io product. This shows where the company is coming from. Aesthetix is a true American high end manufacturer, for people with houses to match the size of their hi-fi systems!

It is so vast that it barely fitted atop our Henley rack. With Imperial dimensions quoted as "18" Width x 17 5/8" Depth x 4 3/8" Height" you know this product hails from the USA, where a friend tells me his walk-in bedroom wardrobe is bigger than a typical UK kitchen! The size is accompanied by an equally capacious price of £3,175.

The Rhea shows just how much impression vinyl is making on the US high end scene. It is doubtless designed to play the expensive Creedence Clearwater 45rpm

an armful of Bo Diddley LPs the other night, I was told that LPs are "original music". He's the sort of avid collector who, alongside audiophiles, may spend thousands on a phono stage able to reveal every little nuance of an original recording. As he pointed out, his record collection is worth far more than the equipment he plays it on - at £30 a disc for audiophile pressings it doesn't take so many to equal the price of this phono stage! All the same, is it really worth 1,200 LPs?

Well, certainly in terms of size and complexity, yes. I have rarely encountered a phono stage that offers so many connections and adjustments. It has no fewer than three phono inputs for example, for those with three record decks [Handy. I'd only need six of them, then - AS]. Microprocessor control is built in, which demands all-electronic switching, so there are numerous

"this huge phono stage epitomises the US high end sound..."

reissues that sit beside me for example, or perhaps the recently released Dire Straits 'Brothers in Arms' 45rpm LP. The rise of old classics, remastered and recut onto modern, heavy (200 gram) Quiex SV-P virgin vinyl, for example, parallels the demand for high end tube phono stages such as this, which promises to extract the very best from them.

Assailed by a vinylista clutching

relays inside and every button press, on the front panel or the remote control (yes, really!) is accompanied by much clicking and the associated time delay.

A large, vivid blue LED display can be seen across the sort of room Americans owning a stage like this may well have. At switch on it shows, by default, the input selected. Gain can be set individually for each input,

and there's a wide range, from x110 for the highest output Moving Magnet cartridges through to a massive x6950 for the lowest output moving coils. But that's not all - because the Rhea has balanced outputs (XLR sockets) in addition to conventional unbalanced (phono sockets) outputs, from which the unbalanced output is derived, balanced output gives double the gain figures above. Using a balanced line can then give you a vast x14815 gain; under test a low 1mV in gave no less than 14.815V out. Phew!

Lacking input transformers I was expecting to measure noise (hiss), because valves are not as quiet as transistors, but this is an extremely quiet design, with an input noise value up with the best solid-state stages. Aesthetix say there are no solid-state devices in the signal chain, so they get very low noise from the Sovtek 12AX7LP input valves.

Input load can also be selected by remote control, so you can judge the affect on sound quality without jumping up and down from the settee and playing around with diddy DIP switches and the like. Aesthetix have dreamt up an arrangement that is totally new to me: the display window actually rocks laterally. Press the left side to decrease gain or load value; press the right side to increase it. More astonishment in Keywood towers!

The gain values are expressed



in dB, by the way, so $\times 10$ (+41 dB) is flagged up simply as 38, the 3dB discrepancy being unimportant.

Press Load on the front panel or remote control and you get the input load value. This is the resistive load only, not parallel capacitance which cannot be adjusted. Values available are 47k, 10k, 5k, 2.5k, 1k, 500, 250, 125 and 75 Ohms. Most useful are 47k for MM cartridges and 125 for MCs. I sometimes use 10 Ohms in my own preamp to damp a zingy sounding low-Z MC, so this preamp doesn't quite cover every option, and of course you cannot switch in capacitive loading for MMs, an option available on most dedicated phono stages. However, the Rhea has some other tricks up its sleeve. Strangest is a Demagnetiser, a slightly alarming idea since every cartridge relies on magnetism and would fall silent if this was to eliminate it! I presume it doesn't (and couldn't) generate anything like enough power to demagnetise the permanent magnet that exists in every cartridge, so it likely reduces residual magnetism in core materials to zero.

The Rhea is superbly built and extravagantly finished, featuring ornate triangular switches and a nicely machined fascia, with smoothly rounded corners and edges. The rear panel carries normal phono inputs (i.e. unbalanced). There are balanced outputs, driven by balanced internal valve circuits - the proper way of doing it - rather than a solid-state unbalanced balanced line driver.

SOUND QUALITY

Sound quality differences between the very best valve phono stages

get quite small, in spite of the large differences in circuitry, layout and components used. But to get this into context, I do mean super high quality valve stages such as this. Generally valves occupy a region that starts at around £600 and goes on upward. Expect a more capacious soundstage, one that stretches back to give instruments and singers room to breathe - and the Aesthetix managed this with ease...

It images very well indeed, although I felt my reference Eastern Electric Minimix phono stage sounded a little wider, with instruments more assertive at stage extremes. The Rhea pushed singers and instruments forwards a little, showing a small degree of midband forwardness that seemingly lit centre stage performers better. By way of contrast, it has creamy smooth treble that melts away seamlessly, to gently burnish down any top end sizzle from a cartridge. Tracey Chapman sang 'Fast Car' clearly from centre stage with the sort of startling presence only valves can achieve, whilst the bass rumbled pleasingly in the background.

Spinning Alison Goldfrapp 45s like 'Ride a White Horse' showed this stage has tremendous low end grunt. It compares with the very best and gets balance absolutely right. I used the unbalanced output through a Quad QC-twenty four preamplifier and both unbalanced and balanced cables through an ECS preamplifier, where I could conveniently switch between the

two. Via short cables, differences between unbalanced and balanced were small, as usual balanced exhibiting a small benefit in terms of clarity; this output will give most benefit with long lines I suspect. There is no balanced input I should add, the way in which my turntable is now wired.

I used the stage mainly with an Ortofon Rondo Bronze moving coil cartridge and felt the Rhea did a fine job, offering even more low frequency power and solidity than my reference whilst high frequencies were gently smoothed and less exuberant. Otherwise, the Rhea brought the wonderfully open sound staging of valves to LP. It was fractionally less clear and open than the Minimix, but was weightier in its bass and smoother too - which is better depends on your system and personal preferences.

CONCLUSION

The huge Aesthetix Rhea epitomises the US high end sound. Brilliantly powerful in the bass, lavishly smooth up top and with a crisp, engaging midband, it will flatter both old vinyl pressings and new. It offers tremendous flexibility too in terms of loading and input switching. Its extraordinary level of automation is another factor that will impress many. At this price, it is obviously not for everyone, and - no less importantly - it may be too big! If you've got a house and pocket to match however, it is an essential audition.

VERDICT ●●●●●
Impressively complex valve phono that gives fine results with moving coil cartridges.

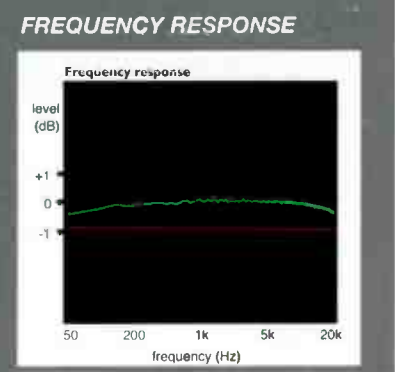
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 - connectivity
 - remote control
- AGAINST**
- physical size!
 - price

MEASURED PERFORMANCE

The Aesthetix Rhea is accurately equalised to the RIAA standard, our analysis showing a slight roll down at high and low frequencies through the unbalanced and balanced outputs. Precise figures are -0.5dB at 20kHz and -0.25dB at 20Hz, so deviations are small. The -1dB bandwidth we usually quote was a wide 5Hz-30kHz. There is no warp filter, so the lower limit cannot be raised. Input noise, IEC A weighted, was a low 0.6uV - as low as it gets. Input overload was satisfactory at 61mV, and output overload 25V (unbal), the former being important at low gain, the latter at high gain. Total gain range was $\times 110$ up to $\times 6950$, and double that through the balanced output - all anyone would need for the highest output MMs to the lowest output MCs. Input capacitance is 200pF and unadjustable. The Aesthetix measures well in every respect. NK

Frequency response	5Hz-30kHz
Separation	66dB
Noise (e.i.n.)	0.6uV
Distortion	0.02%
Gain (unbal)	$\times 110, 221, 440, 875, 1740, 3480, 6950$
Overload	61mV in / 25V out



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Do It All

Marantz's DV9600 is that rare beast in the audio-visual jungle, a DVD player that plays video superbly, yet handles all standard and hi res audio formats with equal skill, says Patrick Cleasby...

I have to confess a certain affection for Marantz products, as the first CD player I ever saw was a CD73 back in 1984. By 1990 I became quite attached to my CD50 but, since my adventures in high-resolution digital, I have only had my hands on the odd stereo SACD Marantz player. The £1,500 DV9600 universal player has a serious chance of becoming the solution to my eternal quest to find the best CD/SACD/DVD-A compromise...

The DV9600 has been on the market on both sides of the pond for over a year. Although its competitors are of a similar vintage, if you're more interested in hardcore 'download the latest 'Heroes' episode as DIVX as soon as it airs in the States' video, then its lack of ability to play such dubious wares natively off disc may be a downside, particularly when compared with the likes of the Arcam DV137.

Still, other than this, the DV9600 has all the tweaks and flexibility a videophile could wish for, and is right on the money in the HD upscaling of DVD stakes, going right up to 1080p and only lacking the Arcam's somewhat marginal 768p capability (although a lot of our screens are this native resolution, many of them won't negotiate outside the standard 720 and 1080i options).

Yet we're here for the audio aren't we? For the surround audio crowd using HDMI it may be a

disappointment that the HDMI is only 1.1 level here, so no native DSD will be going to your amp even if it is capable of decoding it. We do, though, have ingeniously designed analogue surround outputs, and for any of you who have a 2004-vintage high end AV amp with iLink/ IEEE1394/ Firewire connectivity you may stand a chance of getting the Marantz to talk digitally to it. Not having any such examples to hand I can't vouch for the DV9600's interoperability.

The Marantz negotiates its video connection over HDMI effortlessly, and is intuitive to set up and use, which is a good job as this review sample had lost its manual! As I run my Toshiba 32" LCD in 720p from Virgin V+ HD, I elected to set the Marantz to the same resolution. Unfortunately I do not yet have 1080p monitoring capability, but within the HDMI set up menu are a few little gems which set the Marantz apart from some of the competition. The one I particularly like is the 16:9 squeeze option over HDMI, as opposed to 16:9 wide, which means correctly flagged 4:3 extras on a 16:9 DVD display in their true ratio with pillar box sidebars while the main feature is still presented properly in anamorphic widescreen. This is the way any true videophile should want to watch such things!

Yet when the Marantz blurb talks of 'uncompressed video' going up the HDMI connection what they mean is that the video processor uses

clever chroma upsampling techniques (more commonly seen in pro kit) to extrapolate full 4:4:4 component chroma information from the DVD's compressed 4:2:0 colourspace (the same colourspace compression seen in PAL DV – SD 'broadcast quality' is the less colour compressed 4:2:2 found in Sony's, now legacy, Digibeta pro format). This is a 'pro' diversion which should simply mean you get a very nice picture from the 14bit 216Mhz video circuitry, if you use the HDMI settings advisedly.

SOUND QUALITY

Given that people will be buying this at least for some video capability (otherwise Marantz have some nice bespoke SACD players to sell you), I kicked off with a quick look at the video and found it very capable on my newest Harry Potter DVD video (I have kids, right!). Still, moving on to the main event, the DV9600 is one of those machines that shocks you with its musical ability the instant you slot that first CD into the drawer – it proved an all rounder beyond my expectations.

ABC's recent 'Deluxe Edition' remastered CD reissue of 'Lexicon of Love' showed its mettle. Whereas most DVD players, even at this price, offer a polite but perfunctory sixteen bit sound, the Marantz was taking real trouble to delve right into the disc, offering a highly musically insightful sound. The wide soundstaging was the highlight, the



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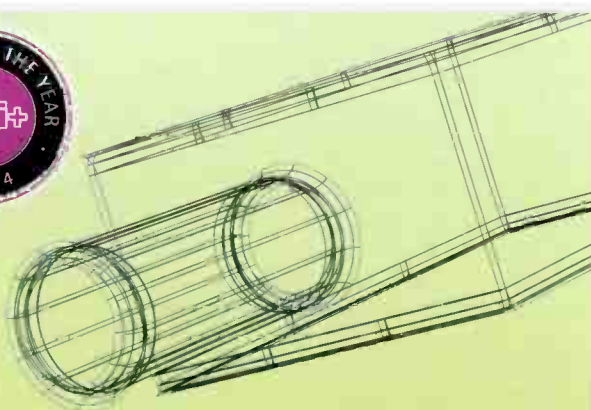
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right into the disc, offering a highly musically insightful sound. The wide soundstaging was the highlight, the DV9600 painting an expansive picture with loads of detail going right into the back of the mix. At the same time, it remained very smooth – its insight didn't come from undue forwardness.

It was plenty musical too. The recent solo single from Everything but the Girl's Tracey Thorn, 'It's All True' had a great analogue synth pulse groove to it and a lot of high range drum machine cymbals which could have easily been over-cutting, but they remained within safe, non-fatiguing listening bounds. That was followed by a nice healthy slab of Beth Ditto and The Gossip, which proved the Marantz had no less of a way with a raucous guitar ditty and real cymbals. Rhythmically engaging, tonally even and dynamic in equal measures, this is certainly the best quality CD playback I have heard at the price, among the myriad universal players I have tested.

Still, I must say the lack of HDCD decoding is a disappointment considering how great those Cirrus Logic DACs via analogue outputs sound. The DV9600 really excels with electronic music, making Japan's 'Gentlemen Take Polaroids' and the early works of Stephen Duffy sound as near to the lovely sound of editor DP's vinyl system as is possible via CD. Equally though, 'Modern Times' from the traditional elder rock statesman Bob Dylan, sounded warm and inviting. All of this was done using the 'Pure' mode which shuts down dimmer, video and digital output circuitry. It even makes the massively compressed 'A Weekend In The City' by Bloc Party sound musical, which is no small feat...

The usual hi res suspects yielded some extremely high quality results as well. As most universals I have previously tested came from the DVD Forum side of the fence originally they all tended to favour DVD-A, but the ultimate test of DVD-A vs. SACD fairness (Steely Dan's 'Gaucho' – both discs mastered by the same guy and converted direct to PCM or DSD off the new analogue archive surround master) yielded the most level result I've ever heard. Virtually indistinguishable, I still just about favour the DVD-A for a more integrated surround

soundfield and a less harsh high end, but I would say who wouldn't?

CONCLUSION

A highly desirable prospect on simple visual appeal and robust physical and technical design, once you audition the DV9600 you are bound to be impressed with the sympathetic even-handedness with which it plays all music. But the real selling point for me is that you get that sound whichever of the three audio formats you are using. Vintage CDs sound blissful and modern compressed monstrosities are rendered just about listenable. For once, equivalent DVD-As and SACDs are uniformly excellent and virtually indistinguishable to the ear. A real feat, and only achieved just before both formats hit the slab, I fear!

Of course £1,500 is a lot to pay for a DVD player to watch films on, particularly given that 'The Man' is probably going to persuade you to lash out on a high def player in the next couple of years, or at least a PlayStation 3. However, even if you're



REFERENCE SYSTEM:
 Toshiba 32" LCD TV
 TCI Viper 6 analogue interconnects
 Denon AVC-A1SRA AV receiver
 Monitor Audio GR20 loudspeakers

not particularly into DVD-A and SACD, but have a large library of DVDs and CDs and a decent audio and 1080p capable playback system, then this is among the very best mass market 'does everything before HD' players around. Heartily recommended.

MEASURED PERFORMANCE

CD frequency response was flat and wide, as our analysis shows, reaching 21.9kHz. SACD was flat to 50kHz (-1dB) and DVD-A reached 54kHz, so the DV9600 gives good results with all three audio formats.

Distortion levels were also class leading, at -60dB measuring 0.27% with CD, and 0.06% with both SACD and DVD-A. Both the latter produced -100dB tones, with around 4% distortion on this player - a very good result. Jitter performance on the digital output was superb, measuring a low 20pS, with no programme related components.

Results were excellent in all other areas, on all three formats, showing the DV9600 is very well designed.

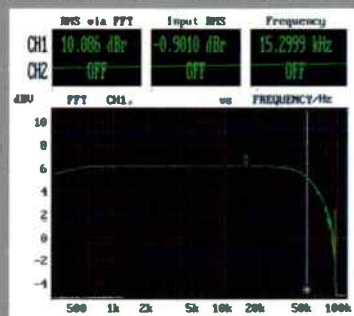
This player gives a superb measured performance from CD, SACD and DVD-A. It will likely have 'obvious' treble with CD, judging from frequency response, but SACD should be more neutral and DVD-A fast and dynamic. NK

Frequency response (-1dB)	
CD	2Hz-21.9kHz
DVD-A	2Hz-54kHz
SACD	2Hz-50kHz

Distortion			
	CD	DVD	SACD
-6dB	0.0004%	0.0003%	0.0003%
-60dB	0.27%	0.06%	0.06%
-80dB	2.9%	0.8%	0.5%
-100dB	-	4.4%	3.6%

Separation (1kHz)	112dB
Noise (CD, IEC A)	-122dB
Dynamic range	111dB
Output	2.04V

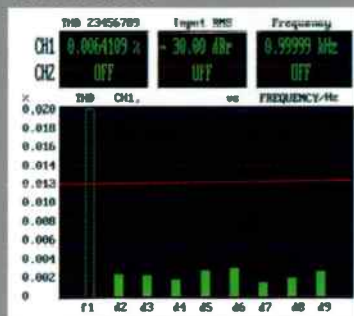
DVD FREQUENCY RESPONSE



CD FREQUENCY RESPONSE



DISTORTION



VERDICT

Highly accomplished with Compact Disc, SACD, DVD-Audio and video alike, this is an exceptional do-it-all disc player.

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Black Magic

Russ Andrews' DAC-1 USB is a cracking new upsampling digital to analogue convertor with a twist – it takes USB inputs. David Price listens in...

Although always sonically effective, some Russ Andrews electronics I've tried in the past have been less than lavishly presented. I think 'utilitarian' is a kind way to describe some of the little black boxes I've come across. So it was with not inconsiderable surprise when I pulled the new DAC 1-USB out of its packing, that I found a beautifully finished, superbly built bit of kit that frankly wouldn't disgrace a Japanese high end product.

The 212x55x290mm box comprises an immaculately finished thick black brushed aluminium front panel and neat, crisply folded pressed steel case finished in matt black. The fascia comprises an on-off switch, rotary source selector and 192-BYPASS switch, which alludes to the 24bit Delta-Sigma DAC inside, with 192kHz upsampling option. Inside there's an AKM4395 DAC chipset, with sixth-order digital filter and 'Asynchronous Sampling Rate Conversion' accepting anything up to 24bit, 96kHz signals, plus a specially designed clock circuit employing a PLL (phase locked loop) said to make for extremely low jitter. The analogue output stage is full Class A, a claim substantiated by the not inconsiderable amounts of heat coming out of the unit, and a sizeable toroidal transformer is fitted.

The action of all the switches is superb, the sort of thing you used to get from a top Nakamichi tape

deck. At 3.5kg the unit also feels far heavier than it has a right to be, considering its modest size. Needless to say, its pedigree speaks volumes – halfway through the review period I learned that it's built by April Music in South Korea, home of the excellent Stello range of 'affordable audiophile' separates. Indeed, it transpired to be exactly the same as the Stello DA100, with the exception of a Russ Andrews-designed power supply.

For me, the build of this £599 machine was its most striking feature, but for the marketers the headline grabber is supposed to be the little USB legend on the far right of the digital input selector. That's because, as well as one coaxial and two optical digital inputs, this DAC accepts USB digital audio signals from computers (PCs and Macs). Effectively then, you can hear all that music on your computer (and if you're like me, then it's a lot) without it having to go anywhere near your computer's internal DACs and analogue output stage (yuk)! The unit is very well packaged, and comes complete with a high quality Russ Andrews Powermax mains cable, plus a usefully long USB cable for computer attachment.

SOUND QUALITY

Kicking off with a high quality low jitter signal from a Trichord Clock 4 modded high end Sony CD spinner, the DAC-1 USB proved a most impressive performer. Indeed, I have

to say it's one of the most revealing DACs I've heard near the price, so much detail did it throw out, and with such precision...

Beginning with the processed pop of the Inspiral Carpets' 'Move', and the Russ Andrews DAC provided a spry sound, with oodles of midband information and a crisp, well ordered treble. The hi hat cymbals had real bite, but weren't crunchy or hard, while the vocals were a treat – this DAC really connects with human

"thumbs aloft for this little black box - it is almost good enough to eat..."

voices, and tells you all about their every last inflection. Bass wasn't overly generous, but was taut and tight like few others I've heard under £1,000.

Clicking the 192kHz upsampling in, and there was quite a dramatic effect. Subjectively, the treble and upper midband move 'back' a fraction, and with it comes a good deal of extra 'space' – there's no other word for it. The upper mid smoothes out just a touch, and there's no doubt - you don't want to go back to the non-oversampling option. With greater finesse to the treble, I could more clearly hear that the drummer was using triggers on an electronic kit, rather than hitting acoustic drums

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– suddenly the reverb on the snares was obviously artificial. The majesty of 'Morning Child' from the wonderful new 4hero album 'Play With the Changes' was a joy. The superlative production values of this new disc were shown up in sharp relief. There

Mahler's Symphony No.10 (Berliner Philharmoniker, Simon Rattle) showed up the DAC-1 USB's superb midband

REFERENCE SYSTEM
 Sony CDP-X303ES/Trichord Clock 4 CD player
 MF Audio Passive Magnetic Preamplifier (silver)
 Rotel RB-1092 power amplifier
 Yamaha NS1000M loudspeakers
 Black Rhodium interconnects/cables

feed from the CD spinner, but the result was still unexpectedly musical. Again, the upsampling is the icing on the cake, adding just a touch of silk to the treble, and some air and space to the mid and high frequencies, letting that fantastic midband really breathe.

CONCLUSION

An excellent product then. Typically quirky (just as you'd expect from Russ Andrews), yet brilliantly built (as you'd expect from April Music), the DAC-1 USB is an extremely clean and detailed sounding device, with excellent timing and tonal accuracy. The icing on the cake is the USB input, something I imagine most audiophiles don't think they'll ever use. Well, I found I did, and interestingly it wasn't so much for playing back my music collection (I already have a perfectly good set of discs for that), but for listening to internet radio – where excellent results can be had. Overall then, thumbs aloft for this little black magic box – it's almost good enough to eat.

VERDICT ●●●●●
 Truly accomplished sound allied to fantastic build and the added boon of USB make this a stand-out product at the price.

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- FOR**
- detail
 - rhythmic drive
 - build, finish, features
- AGAINST**
- nothing at the price



was a deep, tuneful and taut bass, wonderful soaring strings with a delicious timbre to them and ultra-tight percussion. The DAC-1 USB threw out a wide and controlled soundstage, with excellent left to right precision. Those fantastic female vocals were quite mesmerising – especially with the upsampling switched in, female voices had crystalline clarity yet were never harsh or searing.

Rhythmically, the Russ Andrews DAC-1 was spot on. With The Stranglers' 'Duchess', that super-detailed midband made sure that every last accent of the electric guitars, keyboards and drums was caught. This is a badly recorded, largely impenetrable track that most CD players seem to trip over on, but this little black box seemed completely in control. Once again, the soundstage was wider than most, but I got the impression of an ever-so-slightly curtailed stage depth – just about the only blot on an otherwise immaculate copybook – and the only aspect where its immediate Benchmark DAC-1 (£650) rival truly betters it.

A 24/96 DVD-Audio disc of

again. Driven from a budget Marantz DVD spinner, there was a superb sense of power, beautiful instrumental timbre, and – especially with the upsampling switched in – a satisfying spaciousness to the recorded acoustic the like of which I only normally encounter on vinyl.

Now it was time for this little box's party trick. I picked up my Mac PowerBook G4, sat it next to my hi-fi rack, plugged in the USB cable and clicked on my iTunes library. Most of my music is Apple Lossless or 320kbps CBR AAC, and even on the latter compressed file format, the music sounded impressive through the DAC-1 USB. Obviously, you get a slight lack of detail and dimension running AAC compared to a pure 16/44 PCM

MEASURED PERFORMANCE

A distinctive feature of this digital-to-analogue convertor (DAC) is gently falling upper treble output, our high resolution convolved impulse analysis reveals. This will ensure it sounds smooth, lacking CD bite, and it tends to make for a cohesive sound, as treble is subjectively pulled back into the sound field. Together with very low distortion figures I would expect this DAC to come over as smooth, clean, easy going yet cohesive in basic presentation. Interestingly, switching from Bypass to 192kHz upsampling reduced the noise floor by 6dB, although it did not affect frequency response or distortion figures. Dynamic range also improved by a few dB, reaching a high value of 111dB.

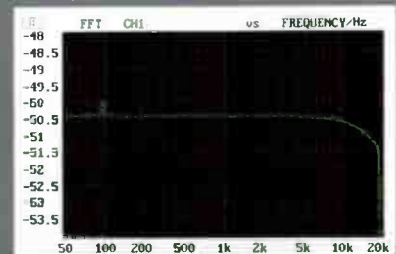
The Russ Andrews DAC-1 is nicely engineered, measuring and working well on the test bench. It should sound good. NK

Frequency response (-1dB) 2Hz-20.2kHz

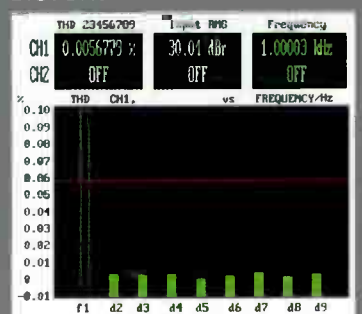
Distortion (%)	
0dB	0.04
-6dB	0.018
-60dB	0.22

-80dB	2.8
-80dB dithered	3.2
Separation (1kHz)	112dB
Noise (IEC A, 192)	-107dB
Dynamic range (EIAJ)	111dB
Output	2.6V

FREQUENCY RESPONSE



DISTORTION





At nearly five thousand pounds, Origin Live's brand new Enterprise tonearm has a real fight on its hands, says David Price...

Starship Trooper

Some ten years back, Origin Live came up with a brilliant £75 'structural modification' which gave the Rega RB300 a considerable fillip. Suddenly this venerable fifteen year old pickup was back on the map, with a much more 'easy' and relaxed sound thanks to its superior counterweight arrangement. Internal rewiring options also took out some of the tonal dryness, and suddenly this arm was challenging giants like the SME Series V (if carefully set up) in several respects...

Origin Live then took their idea and ran with it. A range of tonearms was launched, all basically variations on the Rega RB theme. We had the OLI (a Rega RB250 rewired and with various structural modifications), the Silver (a far more tweaked RB250), then the Conqueror, Encounter and Illustrious. Each new variant moved the design further away from the original Rega, and the sonic voicing

of each new arm took it even further away from the RB300, to the extent where the Conqueror, for example, is totally unrecognisable – it sounds closer to a Hadcock than a Rega, in my humble opinion! In truth, the Enterprise is as far away from a Rega RB300 as the 2007 997-series Porsche 911 is from a 1938 Volkswagen Beetle.

The Enterprise is the ultimate expression of the Origin Live philosophy, with myriad technical differences between it and the already superb Conqueror. By any standards, it's a beautifully built bit

"a great mix of tonal accuracy and rhythmic flow..."

of kit, but its main problem is that £4,500 is a massive amount of money to spend on a tonearm, and so it lays itself open to challengers from every direction. If it is not comprehensively

better than the SME Series V, Linn Ekos SE, Cartridge Man Conductor, Graham Phantom B44 and Tri-Planar Precision Tonearm, all of which are under half the price, its value for money is surely questionable.

To make matters worse, tonearms are so subjective, as well as being very system-dependent, and open to matching/synergy issues with their host turntables and/or cartridges they're tracking - that it's a tricky thing to come to a definitive position on whether the arm is right for you. Still, nothing ventured, nothing gained!

What's less open to question is the Enterprise's superb construction (and frankly, at this price, it should be nothing less). The Enterprise features a completely new armtube

incorporating bi-metallic technology "to reduce resonance and increase rigidity", and there's a low friction, stable dual pivot bearing design for vertical movement, with two single points in sapphire cups, widely spaced to mimic gimbal bearing stability but with much lower friction. The bearings for horizontal movement are highly specified low friction items, conventionally oriented. The tonearm features inbuilt VTA height adjustment, and a counterweight designed for low vertical inertia and high transverse inertia, which Origin Live's Mark Baker says is advantageous for holding cartridges steady. Finally, the "highest grade wiring" is used throughout, with deep cryogenically treated internal Litz wiring and silver bullet plugs.

Setup was straightforward, the Enterprise fitting a standard Rega mounting hole (like all Origin Live arms). Close examination of the comprehensive set-up instructions shows two points that don't apply to other OL arms. First, backing off the top two tiny allen screws on the back face of the arm by one turn releases the transit bolts – which is a must for decent sound. And secondly, Mark Baker recommends that the height adjuster should be only very lightly clamped – if at all. This helps to decouple the arm from the turntable to which it is fitted, an idea for which Mark is a keen advocate.

SOUND QUALITY

Having had a range of high performance arms in my GyroDec of late, I was fascinated by how this would sound. Using my usual van den Hul Frog MC reference, I was greeted by an exceedingly fast and open performance. Kicking off with The Associates' 'Party Fears Two' from their early eighties classic 'Sulk', I was amazed at how the Enterprise scythed through this murky mix. It laid down a big, strong, slightly warm bass with a wide midband and deliciously subtle treble. Billy MacKenzie's vocal theatrics were quite arresting – he had a special voice, not to everyone's taste, and it felt eerily real through my system. The way it hovered outside and

above the instruments was something I've not heard before. Even with the Cartridge Man Conductor, which threw out a slightly wider soundstage, the vocals were less emotive.

The Crusaders' 'Street Life' is my staple high quality hi-fi test disc, and I was reminded why with the Enterprise. The opening few bars were superbly articulated, with one of the most vivid midbands I've heard from vinyl. Randy Crawford's breathy vocals were again quite delicious, tremendously expressive and sumptuous too. Tonally, the Michell Orbe and GyroDec are especially gifted in carrying the 'timbre' and 'tone' of voices and instruments, and the Enterprise was particularly good at showcasing this. When the drums kicked in, I was treated to a mesmeric performance, with fulsome bass, great insight across the midband with wonderful filigree detailing on strings. There was an immensely satisfying rasp to brass

and hi-hats which sounded like they were in the room with me.

The Enterprise is a real music maker too, although rhythmically it is a long way from its cheaper Origin Live stable mates. Genesis's 'Mad Man Moon' showcased Phil Collins' drumming to fantastic effect, the kit sounding tremendously powerful and dynamic, yet having a lilting rhythm that sounded more Naim ARO than SME V. Once again, the hi-hat work was a joy, the cymbals having a crisp tone and tremendous attack. Moving to Kraftwerk's 'Computerwelt', the Enterprise's rhythmic ability shone once again – throwing out a hypnotic groove that surpassed even the TriPlanar Precision tonearm.

Moving to my DG pressing of Beethoven's Pastoral Symphony (Karajan, Berliner Philharmonic), the Origin Live threw out a tremendously impressive

recorded acoustic, just a little narrower than the Cartridge Man Conductor left to right, but deeper front to back. Tonally, the Enterprise sounded clean right up and down the frequency band, but there was a gentle bloom in the upper bass which made this rather sterile recording sound more listenable. The GyroDec, by modern standards, is an ever-so-slightly warm sounding turntable, so it is likely this is what I was hearing here.

CONCLUSION

Overall, this is a superb pickup arm with a grippingly musical sound and lovely rhythmic ability. It has wonderful tonal shading (an SME Series V sounds monochrome, by comparison) and deep soundstaging with masses of detail.

It's not quite as expansive as the Cartridge Man Conductor in terms of left to right staging, but overall it's an exceptional performer – one which offers a brilliant mix of tonality and rhythmic grip.

Still, £4,500 is a heck of a lot of money, and this is my only real criticism, as there is so much competition below it - not least Origin Live's own Conqueror, which will be all most people should ever need. The Enterprise is subtly but obviously better, but many would find the additional outlay better spent elsewhere - of course, this point is pertinent to all high end products, not just this. Those in the fortunate position to contemplate purchasing it might be interested to know that Origin Live do a one-month 'money back guarantee'. Personally, I doubt that they find the need to honour it very often.

REFERENCE SYSTEM
 Michell GyroDec/vdH The Frog
 Note Products PhoNote
 MF Audio Passive Pre (silver)
 2xNuForce Reference 9SE
 Yamaha NS1000M

VERDICT ●●●●●
 One of the most explicitly musical tonearms around, it nevertheless faces stiff competition at the price.

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FOR
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 - dynamics

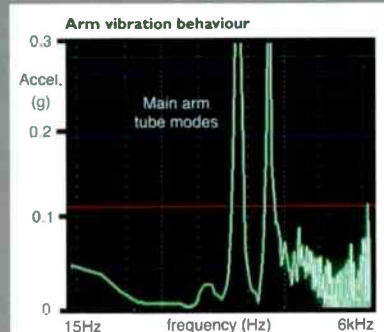
AGAINST
 - price

MEASURED PERFORMANCE

Our vibration analysis of the Enterprise clearly shows the presence of two large peaks, so high they leave the top of the trace, thus exceeding 0.3g. The first is at a high 400Hz and is the main arm tube mode. Its frequency is greater than the usual 200Hz or so of normal tubes, and so is its amplitude. This shows the Enterprise has a very stiff tube, but with little damping. At this frequency, and with reasonably narrow bandwidth hars quality may well seem taut and controlled, but it is likely the Enterprise will have some character and possibly some smearing of general detail in the midrange. A second, slightly smaller peak at 750Hz may well contribute to the effect. The headshell shows signs of higher

frequency modes, suggesting it will sound lively.

The Enterprise is likely to sound fast and clean with a bright delivery I suspect, perhaps heard as some sheen. It will probably sound entertaining. NK



Race bred

The F80 portable home entertainment system is one of Meridian's most interesting products since the company's inception, some thirty years ago, says David Price...

Way back in 1974, one of the most striking pieces of industrial design the hi-fi world has seen surfaced - in the esoteric shape(s) of the Lecson AC1/AP1 preamplifier/power amplifier combination. At a stroke, the two men behind it, Allen Boothroyd and Robert Stuart, marked themselves out as one of the greatest design partnerships in the British audio industry.

In 1977, when the Meridian brand was launched on an unsuspecting world, the Boothroyd/Stuart partnership again showing itself as capable of conceiving one of the world's most arresting combinations of form and function, in the shape of the 101/105 pre-power amplifier. This combo sounded superb by the standards of the day, and looked, worked and felt like absolutely nothing else on the market - its stark minimalism a dramatic contrast to the massive, button-festooned amplifiers coming out of Japan, for example.

Meridian went from strength to strength, the company becoming one of the most successful British specialist names, and has never been anything less than highly respected since, with a copper-bottomed reputation for design and build.

As an ex-owner of a Meridian 101B/103D pre-power, and a real fan of Boothroyd-Stuart designs, I personally feel the brand has had its eye slightly off the ball for the past few years. There's no question it has been doing great things with DVD, but I have found some of the visual 'freshness' that the early designs showed has gone from Meridian's latest range of rather conservative looking but highly competent products. What they've needed, in my view, has been something as radical as the Lecsons or 100 series, to breathe what car journalists used to call 'edge design' back into a mature, stale hi-fi market.

Well, here it is. The Meridian F80 is not a serious 'hi-fi separates' product, and anyone who reviews it as such is missing the point. It is

here to serve two functions. First is to put Meridian on the cultural CE map. As editor of a hi-fi magazine, I often find myself explaining the industry to casual acquaintances. Whilst such 'civilians' will invariably have heard of brands like Ferrari or Aston Martin, mention the words Meridian or Linn and they'll look at you blankly. To me, this is the biggest problem our industry faces - we don't have any big global brands that transcend 'mere' audio equipment, and we should have.

By doing a joint venture with Ferrari, who supplied some of the

construction technology, Meridian will be in markets it

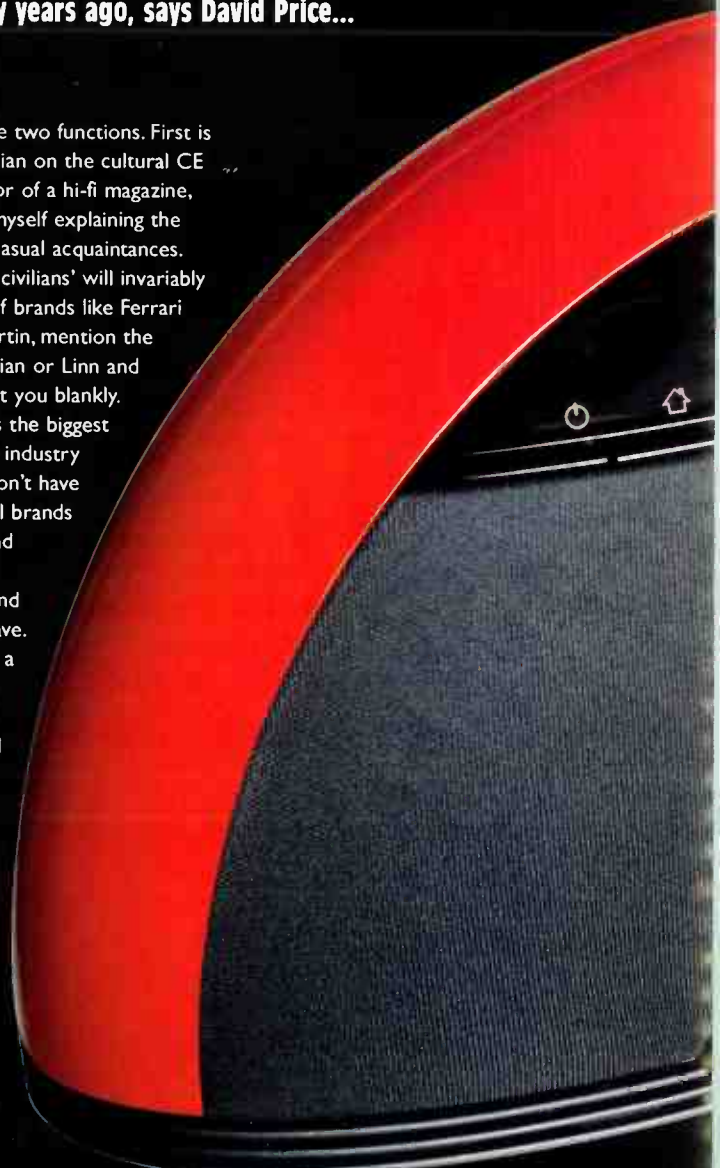
could never previously have reached. It is an excellent idea from Bob Stuart, but I have to ask why he didn't do it fifteen years earlier - he and Allen Boothroyd are precisely the people who could come up with 'a design for life', in my opinion.

The other raison d'être for the F80 is to give people the option of buying a very high quality portable music (and movie) centre. Basically, it's a glorified table radio with DAB/AM/FM and silver disc (CD, CD-DA, CD-R/RW, MP3, WMA, DualDisc, DVD-V and DVD-R/RW) functionality - but this is to understate what's inside, and what it can do. This is no pale Bose imitation, but hi-fi in miniature, with all the technology that Meridian use (albeit in on a larger scale) in their separates. The

elliptical shape is striking yet simple and elegant, and comes in five official Ferrari colour options, while limited edition luxury finishes will be unveiled later this year.

This is not designed to replace a home hi-fi, but to complement it. The idea is that users of high end audio systems used to hearing serious sound will be able to enjoy the F80 in their spare rooms, studios, holiday homes or even hotel rooms. Meridian says it has built the F80 in the tradition of a proper 'home wireless': one that would be a focus for ears and eyes and fill a room with sound.

Inside its high quality (408x230x185mm) plastic shell, the 6.5kg F80 sports a solid diecast metal base, and three loudspeakers





mounted in separate, inert enclosures created from a special alloy-injected composite. "It was within this field of materials technology that Ferrari's close co-operation and specialist expertise proved invaluable", say Meridian. The electronics are impressive – there's a DAB/FM/AM tuner with built-in

station name, bitrate, stereo/mono mode, radio text and the station names of one bank of presets. Press the right hand arrow button and it displays the station names programmed into the next bank of presets. Switch source to disc, and it shows the track and time information, and the display above the row of buttons changes to offer other options. The idea, then, is that there's an 'adaptive interface' – the lower display section, in conjunction with six unlabelled buttons in the centre of the row, operates all the functions necessary. It works very well, requiring very little acclimatisation, and the only other control on the whole machine is a rotary volume knob on the bottom right hand side of the case. The other key point is the F80's connectivity. Around the back, there are sockets you'll never find on any other 'table radio'. There's a 3.5mm minijack stereo input, optical digital input and output, a 'dock' input (for a forthcoming bespoke iPod dock), plus composite and S-

Video outputs for the DVD player. All this means that the F80 does a better than average job of connecting up to the outside world.

TRACK TESTING

Of course, this is not – repeat, not – designed to compete pound for pound with a £1,495 separates hi-fi. However, in two respects at least it is far better, as the F80 is a joy to use and to look at. Sonically, I found this half moon-shaped Meridian to be like most hi-fi – it sounded mediocre cold, out of the box. Given a good few 'warm up laps' however, things really shifted up a gear, and I could hear that the company has put serious work into the audio performance of the F80. It really does sound rather good, which makes it quite unlike any other product of its type I've heard so far, even including the likes of the B&O BeoSound One (£850) which is its closest obvious rival.

Like all modern Meridian kit, it has a very clean midband, with

lots of detail and a sense of finesse that shows its high end origins. It is dry tonally – don't expect the rich sound of an old valve table radio – but by no means stark. Rather, the F80 makes more than a half-hearted attempt at trying to reproduce accurately and in an uncoloured way, what's on the disc (or radio). The Meridian impresses by giving real midband insight, yet doesn't sound thin. The rear mounted subwoofer sees to that, by offering real bass reinforcement, but doesn't seem boomy or semi-detached either.

With a decently recorded CD, you get a genuinely musically enjoyable sound, and this is even when you've just been listening to a serious separates system. – it is taut, controlled, punchy and clean. Placement is of course an issue, and the sorts of locations the F80 is likely to find itself may not flatter it sonically. It's best of all in open space in the centre of a room, but even shoved in a corner sitting at an angle, it still fills a decent sized room with sound (and the system has a range of DSP settings to compensate for room placement). Even when you 'hit the loud pedal', the Meridian remains clean and undistorted, showing the benefit of what must be very rigid internal construction' – there are no rattles or hums here.

Downsides? Well, it's just a tad veiled in the treble (what do you expect, they are full range speakers!) and there's the slightest hint of

"with a decently recorded CD, you get a genuinely musically enjoyable sound"

sibilance sometimes, when you've just switched on. The video isn't amazing – a bespoke £200 DVD player does better, but it's still a great feature to have for bedrooms with small TVs, for a spot of casual viewing. My only real criticism is that I'd like it to have been wireless enabled, like the MagicBox Imp Wi-Fi radio – what better way to listen to the music on your laptop?

Overall, this is a product that is very hard to argue with. Sure, it is expensive, but its target customers won't really be too bothered about that. Brilliantly conceived, superbly executed and eminently 'fit for purpose', I hope it's the beginning of many more interesting 'out of the box' thoughts from Messrs Boothroyd and Stuart.

antenna for local radio reception, and dual connections for external antennae.

To give you an idea of the detailed thinking that lies behind the F80, these are individually assignable so you can use one for AM and the other for cable radio, for example. The speakers are all under digital signal processing control, with three power amplifiers delivering 80W to the two front speakers, plus an integral rear subwoofer. The loudspeakers themselves are special full-range designs, custom-made with powerful neodymium magnets and cones fashioned from magnesium and aluminium alloy.

This is all well and good, but for me it's the display and control interface that are really going to sell the F80, and it is interesting to say the least. The front of the unit has a superb fine-pitch dot matrix 'organic LED' display, which gives extremely comprehensive information. For example, in radio mode, it shows the

VERDICT ●●●●●
One of the most interesting products to hit the market for years, this is a brilliantly designed and made compact music system.

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Evolution Rush

Channa Vithana assembles a racy looking digital source-based £3,000 separates system from Creek, Design e and B&W...



There's more to audio nirvana than sticking a pile of 'five star' reviewed separates in the same room and expecting them to give great sound. This is even more the case at mid-price level, where there's a dizzying variety of componentry to choose from, and 'mixing and matching' becomes a fine art. In light of this, I have been fortunate to assemble a superb and distinctly different CD-based combination for just under £3,000.

The latest affordable, fully remote-controlled Creek Evo electronics now feature 12mm thick aluminium front panels, much better casework and stylish - rather than 'agricultural' - design in comparison to their predecessors. The Evo amplifier uses a Burr Brown PGA2311 microcontroller controlled stepped-attenuated resistor volume control, operable in eighty 1dB graduations. It is finished externally with a 40mm thick solid rotary knob that along with the precision steps of the encoder is a delight to operate. The claimed power output looks good at 85W into 8 Ohms and 160W into 4. The power supply uses a 250VA transformer with separate windings for analogue and digital sections. Features include four line inputs, one for optional MM or MC boards, separate tape selection and preamp output. The dimensions for the Evo amplifier are 430x80x340mm and 8.6kg weight.

The Evo CD player uses a Phillips VAM1201 laser assembly and a Burr Brown PCM11738 DAC with custom designed software to control the servos and functions. For the power supply, Creek says the Evo CD player uses a single high current C core mains transformer fed from the mains via a custom designed common mode filter. To stabilise and isolate the voltages to the various analogue and digital circuits, the Evo sports eight voltage regulators. Digital and analogue supplies are kept separate and the master clock uses its own supply. The Evo CD has electrical and optical digital outputs. Its dimensions are 430x70x340mm and weight is 6kg.

Design e was formed in 1996 and is run by Ian Webster and Hugh Tomlinson. Trained in Automotive Design at the influential Coventry University degree course, where one of his tutors was Simon Saunders,

design. The spherical enclosure, says Design e, is made from polyurethane for a consistent 8mm thickness and superior finishing surfaces. Ian Webster says, "Hugh (Tomlinson's) research demonstrated that the sphere eliminates a lot of the problems associated with the traditional oblong box loudspeaker housings. This also revealed that damping material wasn't needed and the quality of sound is enhanced by the clean interior of the housing. The (rear) port has some damping material around it because it is the only long straight piece within the spherical housing. Hugh therefore decided that it would benefit from the material and testing proved him correct".

A finely turned solid oak upstand forms textural contrast, though a matched all-black polyurethane GT3 stand is optional. A 28mm cloth dome tweeter and neodymium

"an attractively different yet tune-ful alternative to the mass produced norm..."

designer of the radical Aerial Atom, Ian Webster went on to work for Mitsubishi and Ford in car design. Webster's spherically designed £745 GT3 loudspeakers are actually more conservative compared to his avant-garde floorstanding GT1

magnet are used within a solid oak separate enclosure, above. The mid/bass driver is a 6.5 inch sandwich cone, while the crossover uses air-cored inductors and foil-wrapped capacitors. The review samples were finished in a very attractive metallic

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Podium prefer to leave it to others to talk on their behalf.

Hi-Fi World wrote ...

'..... demonstrated a new range of "flat horn" loudspeakers called Podium-1, whose manufacturers say it does not use ribbons, subwoofers or electrostatics. The Podium-1s look vanishingly thin in profile. Approximate retail price is in the £3,000 to £4,000 range and their sound was outstanding – they had a deep and wide presentation to worry Quads at twice the price...'

An owner wrote:

'The Podiums really do rewrite the rule book of loudspeakers! An ultra-low colouration, full frequency range panel with massive bass extension, which images over most of the listening room and is insensitive to position. Oh - and looks stunning.'

Stereophile wrote:

"..... with a money-back-if-not-satisfied guarantee; and it delivers a sound with a very generous and convincing sense of scale." & " its ability to generate impressive dynamics was both intriguing and very persuasive indeed."

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'Mocha', and the other standard finishes are White and Magenta Pearl. If you don't have stands, a GT3 set is available for £250. The GT3s are dimensioned at 510x300x300mm and weigh approximately 7kg. Claimed measurements are: 8ohm impedance, 50-20kHz frequency response and 87dB sensitivity.

With vivid detailing and a lively midband and treble, the system proved a real ear opener – and a very promising one too. However, in my room I found that bass reinforcement was helpful, and this led me to add a £950 B&W PVI subwoofer. This really made the system gel, showing the superb tempo and rhythms of the Creek Evos off to best effect. The Creek components can never be described as harsh or bright, but when matched to the very revealing GT3 loudspeakers, they really benefited from the sub.

The B&W has to be one of the few sub woofers you don't want to hide. It features a 500W Class D active amplifier inside the flawlessly crafted aluminium enclosure, with the aluminium acting as a heatsink. According to B&W the spherical shape was inspired from, "deep-sea diving bells (PV stands for Pressure Vessel), where their characteristic curved form resists pressure differences on each side of its walls to a much greater degree than flat panels". The sideways firing dual drive units (diametrically opposed and in phase) were preferred because they, "pressured the cabinet more evenly over a greater frequency range as well as providing higher output levels. This arrangement also has the added advantage of creating a structure that is inherently balanced and does not require additional spikes to create a solid foundation to the floor".

The two 200mm diameter

drivers are made from a concave aluminium structure with a mica cone and an expanded polystyrene core. There is more technical information at, www.bwspeakers.com, including a downloadable white paper. Volume, low-pass filter, bass roll-off alignment, phase and on/off/auto sensing are all adjustable via a neat set of controls at the rear of the cabinet while there is a discreet green/red operation

light at the top. The PVI dimensions are 335.5x289x347mm and 20.5kg weight.

SOUND QUALITY

With the system finally right, it was set up carefully, run in and warmed through, and things began to really sing. Proof of this was the fact that the 'Bach Trio Sonatas' by Paldian Ensemble had a superbly balanced overall presentation. The music was revealed in a very natural manner, and all the instruments had convincing timbre. The GT3 and PVI loudspeaker combination showcased their very revealing qualities in opening out the layers presented by the Evo electronics within 'The Bach Trio Sonatas'. The PVI then provided discernible body to the lower-mid frequencies, especially with the cello. With 'A Meeting By The River' featuring Ry Cooder and V. M. Bhatt, the music was beautifully rendered – the interplay between Cooder on 'Bottleneck Guitar' and Bhatt on 'Mohan Vina' was stunning, and the interlinked guitar phrasing of these two players was finely revealed. With the powerful and dynamic tabla on 'Ganges Delta Blues', the music was deep, bold and expressive in the lower frequencies. Here the precisely phrased intricacies of the two lead instruments were entirely unaffected by the deep bass thrusts of the tabla. Additionally, due to the excellent tempo and rhythmical ability of this system, the delicate fingertip percussion from the tabla was revealed with definition and precision, sounding cohesive rather than dislocated.

Moving to hard rock in the shape of 'S&M' by Metallica, the system remained clear, expansive and powerful with excellent resolution to the horns and violins

of the hundred-piece San Francisco Symphony. As 'The Ecstasy Of Gold' faded seamlessly into 'The Call Of Ktulu,' and the opening guitar parts developed into the thrash-metal section, the transition was superb. Its epic structure was revealed brilliantly, thanks to the system's excellent instrumental separation and lack of compression.

The dance-pop of 'Outside' from George Michael's 'Twenty Five' compilation was clear and musical with real scale and bass power. The effortless low frequency grooves were impressively revealed via the GT3 and PVI partnership, while higher-frequencies from the Evos had finesse and impact. Instrumental separation was excellent, revealing the many layers of funk guitar sounds, multi-tracked vocals and keyboards.

CONCLUSION

There are one thousand and one different ways of putting together a £3,000 separates system, but this one certainly stands out as a particularly strong combination, and quirky too! The Creek Evo CD player and integrated amplifier give an excellent, affordable basis, and are easily good enough to be partnered with the more expensive Design e GT3 loudspeakers and B&W PVI

MUSIC

Paldian Ensemble, 'Bach Trio Sonatas' (1995)
Ry Cooder & V.M. Bhatt, 'A Meeting By The River' (1993)
Metallica, 'S&M' (1999)
George Michael, 'Twenty Five' (2006)

subwoofer combination. Whereas the Creeks are businesslike, and are 'all go and no show', the loudspeakers form a dramatic centre point to the system. The flawlessly built B&W PVI sub being an excellent match for the beautifully crafted GT3 speakers – which themselves are much more than just a pretty face (I have used them, without a PVI, in a high-end £9,000 Densen B-400XS/B-200/B-350 CD/pre-power system where their inherently revealing and rhythmical qualities worked superbly). Together, this £3,000 system offers an attractively different yet tuneful alternative to the mass-produced norm.



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Pre, Eminent

David Price auditions a most distinguished sounding high end preamplifier from European Circuit Solutions, the ECS Pre...

The best preamplifier is no preamplifier, something that hardly makes you predisposed to splashing all your cash on one – you can sometimes live without a preamp, but not a power amp, source or speakers! As far as this particular part of your hi-fi is concerned, it's very much a case of 'less is more'.

But the simple fact is that anyone who lives with two or more music sources is going to have to submit to buying a switching unit and volume control (i.e. a preamplifier) and as anything is going to degrade sound to an extent, the better it is the less sound degradation you get. In the case of the ECSpre you see here, you'll need to spend £5,500 – and for that you should expect very little deterioration indeed...

Despite the considerable bulk and weight of this product, the key to its design is the short signal path philosophy. Said to comprise only one Single-Ended bipolar amplifying stage in a "novel configuration", operating without loop negative feedback and with a "super high quality" air gapped

output transformer, this is not a conventional solid-state preamp. ECS says, "such a circuit would be unthinkable without a massive design effort in respect to power supplies, since the gain topology relies totally on the design of the supply system to fully exploit the potential quality of the amplifier circuit." Interestingly, the power supply is licensed from 'NeverConnected' and "custom tuned by ECS for optimum performance in this application".

NeverConnected employs unique FET commutation circuitry to create a 'virtual battery' supply. Further stages of isolating regulation, operating with critical choices for passive components, especially the decoupling capacitors, are featured.

The output transformer also enables both balanced and single ended outputs, and via a high quality, remotely controlled relay, user control of absolute phase. Due to the unique nature of the circuit, users can use a chosen output regardless of the type of input they use for various other sources.

The ECSpre is a very large,

heavyweight affair, with distinct 'art deco' styling which I am afraid wasn't really to my taste, simply because it imposed itself on my room rather more than I was comfortable with. Still, each unto their own, and ECS are to be congratulated for at least daring to be different. The two tone satin black and brushed metal fascia is dominated by 20mm green LED displays, showing left and right volume levels respectively – again these were far too big in my opinion, although ECS say they are deliberately so, in order to be readable from a distance. Well, I suppose if you can afford £5,500 for a preamplifier then you can afford a vast room to go with it!

It's a well built machine alright, but it would not compare well in its volume control action, for example, with similarly priced Japanese high end, I am sorry to say. The busy rear panel sports six RCA phono inputs and one balanced XLR in, plus two balanced outs and one RCA phono output. The preamplifier has a one hundred step volume control, using a ladder attenuator under micropro-



cessor control. This is operable by a supplied learning remote, as is balance, input selection, muting and absolute phase. Again, at the price, I would have liked a more swish remote control.

the ECSpre was even better in these regards. Yes, 'Owner of a Lonely Heart' was the first record on the turntable, and I couldn't help but be impressed by what the MF Audio was doing. Through my current reference

system, it threw out a tremendously big, bold and musical sound, with superb dynamics and detailing.

Substituting the ECS, and by the end of the first bar I could hear it was something to be reckoned with. When the song kicked in there was a whole extra layer of detailing. Most profound was the reverb on Jon Anderson's voice; it was there to be heard with the MF, but the ECS showed just how much of it there was, and I could hear his words echoing all around, seemingly with one second delays. It was quite an ear-opener, as the ECS was unpicking extra layers of detail the MF was

"most high end systems simply won't be good enough to show this preamp's superlative transparency..."

SOUND QUALITY

Regular readers will know that I have been using the MF Audio Silver Passive Pre in my system for many months now, and it is one which I hold in extremely high regard. At less than half the price of the ECSpre, I feared that in value for money terms at least, this was going to be something of a rout...

The ECSpre is without doubt an immensely capable device. Back to back with the MF Audio Silver, it was the first preamplifier I've ever heard that was able to tell me what was going wrong with the MF. That said, I have to say that the MF still held its own very well – and extensive A-B tests only left me with increased regard for both products!

Given that the MF Audio Silver is one of the most transparent and revealing preamplifiers around, it was something of a surprise to find that



// the singularly most addicting
piece of gear I have ever heard"

10 AUDIO REVIEW

"A new benchmark for musical communication" STEREO TIMES

"One of the truly special products I've reviewed in the past 18 years" STEREOPHILE

Winner of Stereo Times magazine Most wanted component of 2005 award

"The best tonearm I've heard" HI FI WORLD



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Since I've been listening to turntables professionally for 32 years and am aware of the pitfalls of ultimate proclamations, I hesitate somewhat to make this statement. Nevertheless, it is true. The level of musical communication available from the Illustrious/Aurora Gold is in a class by itself. It sets a new reference."

STEREO TIMES on the Aurora gold turntable & illustrious tonearm

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- 23 Lamlash, Arran, The Aldersyde Hotel
- 24 Glenmavis, The Kirksyle Inn
- 25 Milgavie, Fraser Centre
- 26 Galashiels, The String Jam Club
- 27 Donnington, Off The Tracks Festival
- 28 Brighton, The Greys
- 29 Leigh on Sea, Hoy at Anchor Folk Club

"First class songs sung by a genuinely soulful singer. Spare, clean arrangements and respectful covers. I think that about ticks all the boxes" - Maverick ★★★★★

"Irish chanteuse finds the grit on fifth album" - Uncut ★★★

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"Bags of class, 'Out There' has several striking tracks. McEvoy earns plenty of respect for her multi-instrumental skills & also her writing gets better & better" - Daily Telegraph

"Take the best of Yola and the power of Early Hours and you still won't get close to Out There. There's vinyl on the way, but the SACD is so darn good you should get it now, because this is one album you don't want to be waiting for.

Recording: 10 Performance: 10" - HiFi+

All Eleanor McEvoy albums available at The Heathrow High Fidelity 2007 Show from Diverse Vinyl

MOSCODOISC

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www.myspace.com/emcevoymusic

simply glossing over.

I have to say I was quite stunned, as normally, comparisons with the MF and other preamps produce the opposite result. I know that the ECS is twice the price, and so should be doing all this, but to date the MF has been so capable that such commonsense rules don't apply.

In other respects, the ECS had the legs on the MF, with a substantially more expansive soundstage. The MF seems to pull the whole recorded acoustic towards the centre of the speakers, whereas the ECS pushed it wide to the left and right extremities of the room. Likewise, the stage depth fell back substantially better, and within this there was more light and shade. The sense of physical space the ECS achieved was superb.

Tonally, it was also seriously impressive. 4hero's 'Morning Child' on CD was a joy, with a better lit midband. The MF Audio Silver was a tad 'dull' across the upper mid and treble in comparison, and the ECS managed to provide a better sense of space and air without ever sounding harsh. There was also a real sense of listening to the instruments' natural timbre; glassy piano recordings sounded glassy, warm ones warm. Again, there was a very slightly wider variety to the ECS's tonal palette.

However, the ECS didn't have it all its own way. The bass on the MF was more 'of a piece'; ever so slightly stronger, it was also more fluid and just seemed to flow more convincingly. The ECS was workmanlike and dutiful at the low end, giving a tight and taut bass sound but not really showing any signs of relish. On my vinyl pressing of UB40's 'King', the MF seemed more emotionally engaged with the song. The ECS, despite supplying a breathtakingly wide soundstage and startling insight into the minutiae of the recording, simply didn't seem to be having as much fun. Falling back on the dreaded car analogies, we seemed to have a case of a massive Yank muscle car trying to follow a smaller European sportster on twisty roads...

Most obvious was the MF Audio's dynamic alacrity. The ECS proved in no way deficient, it's just that on musical peaks, the MF seemed to be able to signpost the power and exertion the musicians were putting in, whereas the ECS took a more relaxed approach.

Interestingly, on dynamic crescendos in classical music, the ECS was obviously in more control, letting more detail through even when the entire orchestra was pressed into action, but still the MF Audio went louder and seemed less compressed.

CONCLUSION

By any standards, this is a sublime sounding preamplifier, and one that will delight its purchasers. It is uncannily, remarkably clean and precise across the midband and treble, with an ability to scythe through music that I've never heard before. Its sense of physical scale and proportion is also excellent, and quite special in the great preamplifier scheme of things.

However, nothing is ever simple in high end hi-fi, and I have to say that it not quite so accomplished in every department. Rhythmically it is very adept, especially across the midband, but its bass is a fraction slower and less well articulated than the MF Audio. It has a more even-handed and less emotional character which some will love, and others will not – and this is particularly noticeable on dynamics, which aren't quite as convincingly carried as the MF. However, the sheer clarity and composure on dynamic peaks is obviously superior, and many will be happy to trade one for the other.

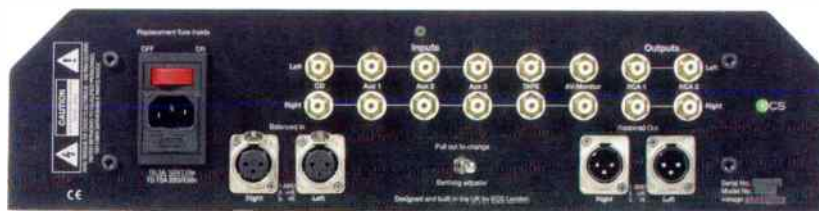
I won't say the ECSpre is cracking value for money at this price (I don't think any piece of hi-fi is for

REFERENCE SYSTEM

- Michell GyroDec/Michell TecnoArm a/vdH The Frog
- Note Products PhoNote phonostage
- MF Audio Passive Magnetic Preamplifier (silver)
- NuForce Reference 9SE monoblock power amplifiers
- World Audio Design K5881 (modded) power amplifier
- Rotel RB-1092 power amplifier
- Yamaha NS1000M loudspeakers
- Quad ESL 989 loudspeakers
- Black Rhodium interconnects/cables

this sum), I can see why it is selling for this, and I can also appreciate why people are buying it. I am awarding it four globes, because I think its bass isn't quite as good as it should be against the diminutive MF Audio, but I came very close to giving it five – so stunning is it across the mid in terms of detailing and depth perspective.

As a caveat, I actually think most people's systems won't be good enough to show this superlative transparency up. My Quad 989 electrostatics missed all the extra reverb around the vocals on the Yes track, and it was only when I moved to Yamaha NS1000Ms that it flooded out. If you're running £14,000 Apogees, you may well find that only the ECSpre will do, but back down in the real world, the MF Audio will do it all for half the price or less. Overall then, in some respects, the best preamplifier I have heard, and a total joy. At this level though, whether you should buy it depends entirely on you, your finances, your tastes and the rest of your system. Go find that dealer and decide for yourself!

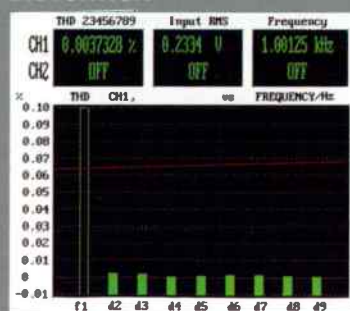


MEASURED PERFORMANCE

The main point of note about the ECS is that its simple circuit topology offers little gain: just x1.2 from the normal unbalanced phono socket CD input to the phono socket output. The balanced output gives double this and it's the most on offer. Via the balanced input to balanced output gain measured just x1.5. This is fine for matching CD, SACD and DVD players to most (but not all) power amps, which need just 1V in, but things get difficult if you use, say, a quality phono stage with limited gain. Otherwise, frequency response was wide and distortion low. Input noise was high in absolute terms, but still low enough to be inaudible. So the ECS measures well, but it has little gain. NK

Frequency response	6Hz-100kHz
Separation	99dB
Noise (e.i.n.)	-90dB
Distortion	0.003%
Gain (unbal./bal.)	x1.2 / x2.3
Overload	6.5V out

DISTORTION



VERDICT

Startling soundstaging, clarity and composure make it one of the best preamps in the world, but less expressively musical than some – and finish lacking at the price.

ECS PRE £5,500

ECS amplifiers
 ☎ +44(0) 208 743 8880
 www.ecsamplifiers.co.uk

FOR

- sublime detailing
- breathtaking soundstaging
- supreme cohesion
- tonal acuity

AGAINST

- absolute dynamic ability
- bass articulation
- imposing styling
- finish

Progress Report

Vinyl replay has come a long way since the 1970s, with new developments seemingly every month. Ortofon's brand new 2M Red and Blue moving magnets are the company's latest cartridge offerings, promising far superior sound to the old 520 range. So how do they compare to a thirty year old classic budget MM, such as Nagaoka's MP11? Noel Keywood couldn't resist finding out...



It is not everyday that Ortofon announce a new range of budget moving magnet cartridges. In fact, the last time this happened was well over a decade ago, and whilst the brand has been very strong with moving coils, their MMs never really made the same impact. In fact, you need to go as far back as the late nineteen seventies, when the likes of the FF15E and VMS20E were automatic choices for those seeking high quality affordable moving magnets, to find Ortofon leading this particular market.

Britain is a tough retail environment for cartridge manufacturers, as local boys Goldring have a small range of easy to use and inexpensive moving magnet cartridges that sound superb - and it is this brand that has caused Ortofon trouble of late. Back in the eighties however, the must-have budget moving was the Nagaoka MPI I. This was a really decent little device, but seemed to disappear from view in the nineties. So when we spotted this old name on the Musonic website, we were surprised to say the least.

At £30 it is about as cheap as they come - so inexpensive that you might wonder whether it will damage your records - but many moons ago I found Nagaoka cartridges were clever designs and was impressed.

The surprise realisation that they were still on sale here in the UK meant that a reappraisal was hard to resist, and what better product to put these brand new 'state of the art' Ortofons in context?

Was the current MPI I a true unreconstructed oldie I wondered (Denon DL103 style), or had Nagaoka tweaked it here and there to keep up form? Only tests would tell. Nagaoka (and Denon) may well be content to offer today products they were making last century, but others have moved on. The Ortofons are bang up to date in their sound. Their price is a little more serious too, at £60 for the 2M Red and £120 for the 2M Blue. So we're not quite comparing like with like in this little review, so much as taking a close look at what you can get without spending a fortune and asking whether the march of progress actually brings any benefits. As cartridges have now become acceptable second-hand buys on eBay, our letters pages show, this review also identifies what to expect from an oldie.

Cartridges are characterful things with their own strengths and drawbacks, as any user of a Decca London Blue can attest. At this budget level I tend to ask myself whether a cartridge masks or reveals

the loveliness of LP played properly - and whether it causes damage or not! And whilst I choose to use an Ortofon Kontrapunkt b moving coil with an Eastern Electric Minimax valve phono stage, I have a lot of time and regard for moving magnet cartridges, being something of a Goldring fan. They may not have the see-through clarity of MCs, nor the delicacy of reproduction, but good ones can be a lot of fun to listen to, yet cost peanuts, as this review shows...

ORTOFON 2M RED AND BLUE

Both Ortofon 2M cartridges have neat synthetic bodies, with parallel sides that facilitate accurate alignment in the headshell. The area behind the stylus is sculpted away. They are compact designs that will physically fit any headshell easily, and the weight is right too, at 6.5gms being a value any arm can balance out. The stylus assembly has a removable cover, that removes easily when you know how; it takes a little study.

As in any moving magnet design, the stylus is removable to enable easy replacement. Ortofon suggest you remove the stylus assembly before fitting the cartridge, but the cover is usually sufficient if you have an arm with a removable headshell and steady hands. Another useful

feature is that the 2M bodies have tapped holes for fixing screws, eliminating the need for fiddling with small spanners and nuts, and making fitment easier.

The budget Red has an elliptical stylus mounted on a rondel to distance the stylus cantilever from the record surface so that fluff and rubbish don't collect easily, to cause mistracking. The more expensive Blue is for those who can afford an LP cleaner and are likely to use it as well! The stylus is 'nude', meaning it is bonded naked to the cantilever tube. This makes the cartridge more sensitive to dust on discs, but it isn't a problem if they are given a quick wipe before use. The benefit is lower tip mass and better tracking, although the Blue isn't enormously better than the Red in this respect.

The most significant feature of these new cartridges was revealed by measurement: frequency response is such that they will possess none of the warmth in their sound of old designs. As is common, the less expensive model, the Red, has been engineered for a less bright and more forgiving sound than the more expensive Blue, but by any standard do not expect either to sound warm. You can expect the Blue to have better resolved treble too, from a more sophisticated stylus profile.

SOUND QUALITY

Listening to this little group, there was no doubt which were the new 'cutting edge' cartridges, and which was the nineteen seventies classic. The difference in presentation was marked, and throws what Ortofon are trying to do with the new 2M series into sharp relief. The 2M Blue is a cartridge that reveals what's on a disc with a ruthlessly forensic approach that is a world away from the classic Nagaoka, or most other cartridges if it comes to that.

This £120 moving magnet gave me Tracey Chapman in vivid detail, close in front of me

singing 'Talking 'Bout a Revolution.' There was seemingly little I could not hear of this performance.

Bass was tightly controlled and there was plenty of timbral character to be heard within instruments, instead of the generous but not especially informative bass of the Nagaoka. As usual I felt the cartridge worked well in the Rega RB250 arm we use for budget designs, its rigid tube ensuring the 2M Blue gave good stereo across the lower midband, as well as firm bass.

With Phil Collins 'Hello I Must be Going' album there was a brightness to backing horns that ensured they cut through the mix with a vigour that you will not hear elsewhere at this price, if with some lightness of body about them. Not surprisingly cymbals had a ringing presence too. Here I get to an interesting caveat with this cartridge: it possesses little ability to gloss over mediocre recordings.

With a modern cut like The Scissor Sisters 'I Don't Feel Like Dancin', from an album that spins at 45rpm no less, I got the freshest delivery I've ever heard, short of a moving coil. This track had a clarity in its vocals and a speed to its bass that defies price rivals, but whilst the 2M Blue's balance suits such material, it's less flattering with run of the mill oldies that are less than perfect.

For example, I spun The Waterboys 'Preparing to Fly', from their 1993 album 'Dream Harder' - not a paragon of good sound quality, granted - and it sounded light in its bass, although extremely well resolved in its vocals. Moving to 45rpm singles with accentuated bass, such as the Goldfrapp 'Ooh La La', another modern pressing with good recording and cutting quality, and the Blue delivered the most



composed and tightly ordered sound I've heard from any moving magnet cartridge.

So Ortofon's new 2M Blue is very much a modern day, high resolution cartridge, especially suitable for modern recordings. It stands in stark contrast to a golden oldie like the Nagaoka MP11, which would gloss over the poor balance of the Waterboys album when the Blue tells it like it is. The MP11 is not a revealing cartridge - quite the reverse

VERDICT

2M RED
Ultra modern design that brings new levels of detail to the price, but lacks richness that some crave.

- FOR**
- ease of fitment
 - tracking
 - detail

AGAINST
- lacking in richness

VERDICT

2M BLUE
Exceptional insight and smoothness allied to fine tracking makes this a great buy for those seeking a modern sound.

- FOR**
- ease of fitment
 - tracking
 - superb insight

AGAINST
- lacks warmth

ORTOFON 2M RED £60
ORTOFON 2M BLUE £120
Distributed by Henley Designs
☎ +44 (0)1235 511166
www.henleydesigns.co.uk

MEASURED PERFORMANCE

A notable feature of the new Ortofon 2M Moving Magnet cartridges is a frequency response that tilts slowly upward as frequency rises. I have never seen such a trend before in any cartridge. It suggests they will sound forward and detailed, certainly lacking the traditional warmth of MMs. The £60 budget Red has a little less upper treble than the Blue, so the latter will be a tad more incisive and revealing.

Midband tracking was much the same with both, the top torture track being negotiated, but only just, with a little mistracking on one channel. In the midband, the Blue has a more obvious advantage, due to the lower tip mass of its stylus assembly, where a nude diamond is used. Vertical tracking angle was high with both, which raised vertical modulation distortion to 5%. The Blue was a little better here measuring exactly 30 degrees against 33 of the Red. Output was high from both models, measuring 7mV at 5cms/sec rms.

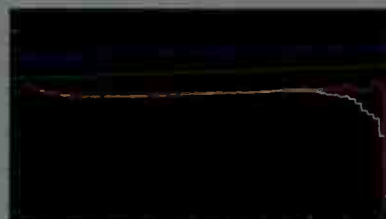
Expect a forward, highly detailed sound from these cartridges, possibly with some brightness. They measure well, following modern trends toward a bright balance that delivers detail and insight. NK

Tracking force	1.8gms
Weight	6gms
Vertical tracking angle	
Red/Blue	33/30degrees
Frequency response	20Hz - 20kHz
Channel separation	25/23dB

Tracking ability (300Hz)	
lateral	80µm
vertical	45µm
lateral (1kHz)	
	20/23cms/sec.

Distortion (45µm)	
lateral	Red/Blue
vertical	1.4/0.8%
Output (5cms/sec rms)	
	7mV

FREQUENCY RESPONSE
2M RED

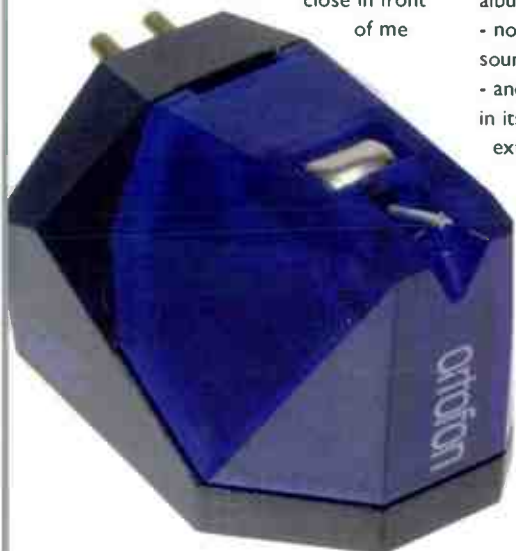


Red - Outer grooves
White - Inner grooves

FREQUENCY RESPONSE
2M BLUE



Red - Outer grooves
White - Inner grooves



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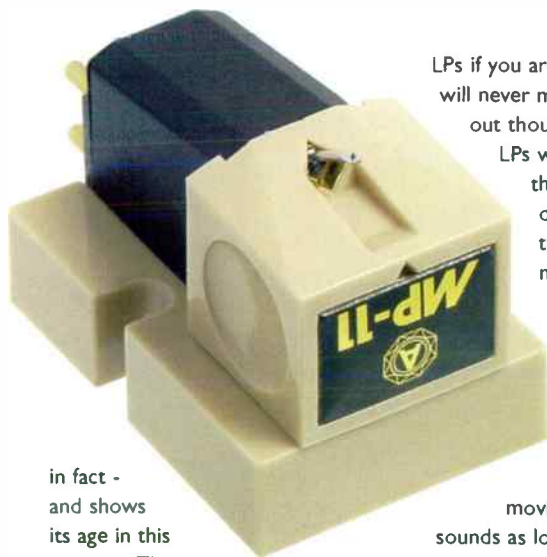
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whestTWO *west-tōō, n* musical, detailed; radical



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in fact - and shows its age in this company. The new Ortofon really do show how vinyl has moved on, in recording quality as well as replay ability.

The inexpensive Red was a very interesting proposition at its low price. It lacks the top end bite, but also top end detail of the Blue's stylus, yet it still comes over as clear and open in its sound, with a fine tone on good material. Surprisingly, it also has more powerful low bass, making it muscular and weighty on well recorded discs.

In a nutshell then, the new Ortofon 2M Blue and Red moving magnet cartridges offer a thoroughly modern sound that suits today's albums. Both are highly revealing and an engaging listen that is nothing other than very impressive at the price.

NAGAOKA MP11

One look at the MP11's bodywork is enough to convince any potential buyer that this little cartridge is from the functional design school and not a candidate for any Museum of Modern Art. Never mind though, as those boxy parallel sides are just what is wanted for accurate alignment in an arm's headshell. Skew in the headshell raises distortion considerably, from around 1% up to 2% or more, so the MP11's boxiness is no bad thing. Weighing in at 6.8gms it is also a perfect match for the balancing system of every arm, as all can cope with 6-10gms.

At the price the Nagaoka's MP11 comes in simple packaging by Shure standards, but this is of little consequence in itself, as it's the cartridge that matters and here Nagaoka, I found, have maintained standards. Tests showed that at the recommended tracking force of 2gms - very close to Goldring and Ortofon's use of 1.8gms, note - the MP11 sailed through all tracking tests with an ease that few can match at any price. Consequently, the MP11 is a fine choice for preserving valuable

LPs if you are cash-strapped, as it will never mistrack. I ought to point out though, that if you play old LPs with a new cartridge like this you may well hear the damage imprinted into the groove walls by the mistracking of previous cartridges.

SOUND QUALITY

As we've shown, the Nagaoka MP11 is no match for either of the Ortofon 2M moving magnets, but it still sounds as lovely as ever. It is truly romantic sounding device, giving a sepia-tinted, soft outlined picture rather than an in-your-face presentation, 2007-stylee. The class of its act is very apparent in some areas. It comes across as superbly relaxed and in control, a real effortless delivery that demands a visit to the port cabinet and perhaps ignition of a big, fat cigar (I don't touch either, but somehow it all seems appropriate) as you relax to listen to your record collection.

There's no edginess or insecurity to be heard here, largely as a result of its fabulous tracking ability and that rolled off treble, at least, through an Eastern Electric Minimax valve phono stage with no additional capacitive loading applied. In an SME M2-10 arm there was oodles of bass and its quality wasn't too bad. I might say slightly fulsome and rounded, but not as gloopy as I have heard. I suspect the Japanese like large bass though, as the MP11 reminds me a little of the Denon here. Stereo images were firm and stably positioned on a stage that was wide. However, the warmth of the sound was apparent and there was no great focus to images, just believable solidity. Nor was there any great detail in the treble to be heard.

Some might say the MP11 lacks real pace, but what you lose on the swings you simply get back on the roundabouts with this design. It is creamy smooth sounding, admittedly a bit opaque by modern standards, totally relaxing and supremely confident. It also clean and dynamic in a most unchallenging way. Much like Shure's

similarly long-in-the-tooth M97xE the smooth sophistication of the sound is a treat, if not for the critical of ear. This is one to go with the carpet slippers. As such it is £30 well spent insofar as you will relax and enjoy what you hear, although it is a long way off what is possible from a £120 Goldring quite frankly, and in a different world to the analytical Ortofon.

Run through a solid-state Trichord Diablo phono stage with 400pF loading applied internally across the input sockets the MP11 predictably sounded brighter, but still opaque and less smooth. Some may prefer it but the MP11 doesn't become a Koetsu. Those with a soldering iron and a few 400pF capacitors may like to try this all the same.

CONCLUSION

I really liked the sound of this cartridge. It was blissfully smooth, broad staged and dynamically powerful. You don't get high levels of insight or detail, but all the same for £30 there's plenty of enjoyment to be had. In summary then, the Nagaoka MP11 proved a dramatic counterpoint to the new Ortofon 2Ms - residing at opposite ends of the scale. One is warm, fluffy and romantic, the others are forensically revealing and intensely communicative. One is already a classic, while the other two deserve to be so in thirty years time.

VERDICT ●●●●£

Budget classic with fantastic tracking and cuddly, warm sound. A starter cartridge that cannot be beaten.

NAGAOKA MP11 £30

Musonic (UK) Ltd.

+44 (0)208 950 5151

www.musonic.co.uk

FOR

- confident, relaxed sound
- superb tracking
- low price

AGAINST

- lacks insight

MEASURED PERFORMANCE

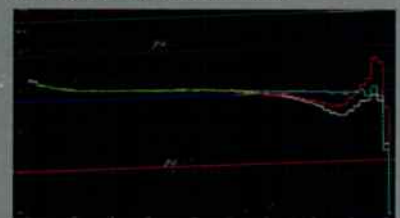
The MP11 has amazing tracking ability for a budget cartridge: it cleared all test tracks with ease, even torture tracks few cartridges can manage, with a secure and undistorted performance at 2gms downforce in an SME M2-10! It will sound confident and relaxed even on loud vocal passages. This will be helped by a warmth in its sound imposed by the falling treble due to generator losses, as our frequency response graph (red trace) shows. Here, the MP11 betrays its age; modern MMs like Goldrings don't suffer this anymore. However, with 400pF loading, the frequency response measured ruler flat (green trace), so the MP11 can be tweaked to become unusually accurate in its basic tonal balance.

A vertical tracking angle of exactly 22degrees resulted in unusually low distortion on vertical modulation (left and right images), making this a low distortion cartridge overall. Output was high at 5.4mV and channel separation also high at 33dB.

The MP11 measures exceptionally well. It is a superb cartridge at the price and will give a fine sound if properly loaded. NK

Tracking force	2gms
Weight	6.8gms
Vertical tracking angle	>30degrees
Frequency response	20Hz - 20kHz
Channel separation	32dB
Tracking ability (300Hz)	
lateral	90µm
vertical	45µm
lateral (1kHz)	25cms/sec.
Distortion (45µm)	
lateral	0.85%
vertical	1.3%
Output (5cms/sec rms)	5.4mV

FREQUENCY RESPONSE



Red - Outer grooves
White - Inner grooves
Green - Outer grooves + 400pF

Black Run

Loaded up with high tech materials, the German Isophon Cassiano loudspeakers feature some very innovative technology. Adam Smith listens in.

Isophon is a name that will be familiar to some, as makers of automotive loudspeaker drive units. However, this part of the company is under the French electronics giant, Thomson, who owns the original trademarks and designs but no longer manufactures under this name. The range of high-end loudspeakers that include the Cassiano are the brainchild of Dr. Roland Gauder of Acoustic Consulting, an independent company that designs a variety of high-end electronics, turntables and loudspeakers. Dr. Gauder commenced his career in Berlin with Isophon in 1989, and was granted permission to market under the Isophon brand name when the company was split up in 1997.

All models in the current Isophon range are manufactured in Acoustic Consulting's facility and custom finishes made to customer's requirements can be accommodated without any problems. Indeed the company's website boasts of over 200 finishes available on the Cortina, Corvara and Cassiano models, so there should be something in the portfolio to please everyone!

The Cassianos, and their larger brothers, the Arabbas, mark a new departure in design, however, as they make use of ceramic-coned bass and midrange drivers sourced from Theil in Germany. The Arabba comes with a diamond dome tweeter as standard, whilst the Cassiano can be specified with either a diamond or ceramic type - we are testing the diamond version here, but the ceramic version will save you around £4,000. Incidentally, the Arabba was awarded the coveted "Best Sound in Show" award for the January 2007 CES exhibition, so its younger brother has a lot to live up to.

Named after the San Cassiano ski resort in the southern Tyrol, the Cassiano is an attractively styled loudspeaker with a sleek and well profiled cabinet that does go some way to disguising its size. With dimensions of approximately 110 x 21 x 41cm (H x W x D) and each 'speaker weighing in at 30kg, they are not diminutive shrinking violets by any means. This is aided by the sandwich construction of the cabinet which features a layer of damping sand in between, along with extensive internal bracing. The gloss black finish of our review samples commands a £400 premium but is utterly fabulous and Isophon provide no less than a can of Steinway polish to keep them shiny.

One single set of WBT terminals are fitted to the Cassianos and they also have jumper links to set lower bass equalisation to flat, +1.5dB or -1.5dB in order to optimise performance in various positions in the room. All of these items are fitted to the bottom surface

of the loudspeakers, which further adds to their clean lines. Driver complement consists of two seven inch (175mm) ceramic bass drivers, one seven inch ceramic midrange and the 0.75in (19mm) tweeter. These are connected together using a crossover that is unique in offering filter slopes of no less than 50dB per octave - fourth order slopes of 24dB per octave are considered steep in the audio world and so these are positively precipitous!

Isophon say that the use of a low

string having superbly defined leading edges and a beautifully judged and natural decay. In fact, all instruments sounded astonishingly real.

The rare and expensive materials used in the midrange and tweeter also prove their worth with every track played. Vocalists have sumptuous detail and atmosphere to their performances, with each intake of breath between lines almost uncanny. The Cassianos have a rare ability to take those

"for realism, spatial abilities and soundstaging, these are amongst the best non-electrostatic loudspeakers I have encountered"

order crossover leads to overlap of driver output over a wide frequency band, giving rise to poor separation. On the other hand, steep crossover slopes have in the past been accused of robbing music of its dynamics and emotion, however, Isophon assure us this is not the case with the Cassianos.

In order to confirm this, the Cassianos were duly inserted into our test system of Quad QC24 and II-Forty amplifiers, a Cambridge Azur 840C CD player and an Eastern Electric Minimax phono stage. Vinyl sources included our Pioneer PLC-590/SME M2-10 and the Slateldeck Garrard 401/SME 312.

SOUND QUALITY

'Big' is not only the name of a 1988 Tom Hanks film, but also the word that kept popping into my head during my time auditioning the Cassianos. Whilst it can also be used to describe their height (and price tag...) it is most aptly applied to the soundstage that they generate - make no mistake about it, for realism, spatial abilities and soundstaging, these are amongst the best non-electrostatic loudspeakers I have encountered. No matter what music I played, I could shut my eyes and be transported straight to the concert hall, studio or even dance tent where it was recorded.

The Isophons' bass is immensely deep and powerful, yet exhibits pace, fluidity and a lightness of touch when required that belies their dimensions. Stringed bass instruments, whether acoustic or electric had real depth and emotion, with each plucked

effects that often lurk somewhere in the background of music and bring them right up to augment the main events of a track. Until you hear your music collection through loudspeakers like this, I suspect you will not be aware of what you are missing.

The Isophons also have immense dynamic abilities. They do not miss anything even at low volumes, but during listening I found myself inching the volume control higher and higher to enjoy their sheer power and control - there was never any sense of compression or strain. Whilst the Quad II-Forty amplifiers drove them beautifully, I did occasionally gain the impression that the Cassianos almost had a sense of 'is that all you've got?' about them, and more power would not go amiss. Whilst they do not specifically need a powerhouse to drive them, they really blossom as the watt count rises.

CONCLUSION

Whichever way you look at it, nearly £13,000 is a lot of money to spend on a pair of loudspeakers and it is not unreasonable to expect superlative performance for this sort of outlay. Fortunately if your purchase happens to be



Isophon Cassianos then you are unlikely to be disappointed. They have a formidable combination of dynamics, control and emotion that makes any music style an eye-opening experience.

They incorporate some very innovative technologies and exotic materials, and these sum to give a superlative result. From a purely personal point of view, I find myself needing to rearrange my own 'all time favourite loudspeakers' top ten, as I now have a new entry to fit in there...

VERDICT

Magnificent loudspeakers that possess qualities of imaging, scale and dynamics that few others can match.

ISOPHON CASSIANO £12,900
(as tested)

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+44 (0) 23 9271 7628

www.isophon.de

FOR

- Immense scale and soundstage
- Effortless dynamics
- Build quality

AGAINST

- Not the easiest of loads to drive

MEASURED PERFORMANCE

Frequency response of the Cassianos is commendably smooth and even across their entire bandwidth, with no major peaks, dips or anomalies to speak of. Treble starts to roll down gently from around 15kHz, meaning that the Cassianos will not be harsh.

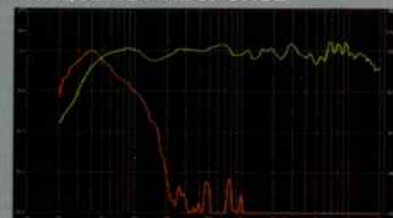
Bass output is very good. With the crossover jumpers set to 0dB, the main drivers operate down to 60Hz, augmented by the downward-firing port, which operates at around 40Hz. These aspects should confer upon the Cassianos a good, weighty, yet even character

Sensitivity is good at 87dB but measured impedance shows that the Cassianos will be something of a tricky load for many amplifiers. Electrically well damped, they have an average measured value of 4.7 Ohms, which tallies well with the manufacturer's 4 Ohm rating. However, the Cassianos dip down to a minimum of around 2 Ohms at low frequencies - just where most power is generally required.

Consequently an amplifier of at

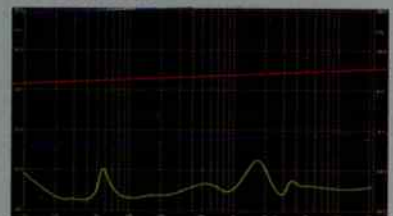
least 60-70W that operates into loads as low as 2 Ohms will be required to get the best from the Cassianos. AS

FREQUENCY RESPONSE



Green - driver output
Red - port output

IMPEDANCE



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Jailhouse Rock

All the way from Memphis come the Eggleston Works Isabel loudspeakers. Adam Smith dons his blue suede shoes and takes a listen.

When thinking of great names from Tennessee, Elvis Presley and Graceland would immediately spring to mind, possibly closely followed by Jack Daniels. I suspect, however, that loudspeaker manufacturers would not be high on the list for many of us here in the UK, but this could well be ripe for change.

Since 1992, Eggleston Works have been manufacturing loudspeakers, and are rightly proud that their factory in downtown Memphis is very close to "the birthplace of Blues and Rock 'n' Roll". Each loudspeaker is built almost entirely by hand, making use of top quality materials, assembled with great care and attention to detail. As an example, each cabinet is constructed using two MDF panels, each of which is five-eighths of an inch thick and glued together with viscoelastic damping material.

All loudspeakers are then hand-finished in an eight hour process that uses over a dozen different specialised polishing and finishing tools. As if this was not enough, the finishing touch is a granite slab carefully aligned and affixed to each side panel. This confers superb rigidity to the cabinet and is aimed to virtually eliminating cabinet colouration.

With a range currently consisting of eight loudspeakers and stretching up to the impressive 'Ivy', weighing in at no less than 360kg and sporting a rather astonishing twenty three drive units (only eight of which are visible!), Eggleston Works can offer a comprehensive selection of models to suit virtually all pockets and rooms. However, our pockets are quite shallow here at Hi-Fi World, so we elected to listen to the babies of the range, the Isabels. With a price tag of £2,299 these are compact

standmounting loudspeakers that include matching bases in their price.

A two way design, the Isabels make use of Eggleston Works' universal six inch (150mm) bass/midrange driver that features a polypropylene cone, double magnet motor unit and a three inch (75mm) voice coil for good power handling and reduced distortion. Most unusually, it is run full-range with no crossover, which requires a very careful design in order that the cone does not become aurally offensive when it enters its breakup region (which, of course, a crossover filters out).

This is mated to a one inch (25mm) soft dome Dynaudio Esotar tweeter, filtered via a simple hard-wired crossover. A single set of input terminals are provided and, thanks in no small part to those granite side panels, the Isabels weigh a considerable 25kg. Connected up to our test system that includes Quad QC24 and II-Forty amplifiers, a Cambridge Azur 840C CD player and an Eastern Electric Minimax phono stage fed by vinyl sources including our Pioneer PLC-590/SME M2-10 and





is to ensure that it is supported well on a sturdy and acoustically inert stand. Unfortunately things did not get off to a promising start with the Isabels as their bass was boxy with a noticeably 'honky' nature. Kevin Akam from Signature Audio advised that mass loading the bases was a good idea, which did indeed improve things. However, for review purposes I set the 'speakers up on a pair of conventional 60cm Sound Organisation stands and this elicited the best results from them.

As suspected from the measurements taken [See MEASURED PERFORMANCE] the bass from the Isabel loudspeakers was not the deepest around, even given their cabinet size. Fortunately what was there was tight, punchy and tuneful, and they never sounded lightweight. This integrated well into the higher frequencies and it was here that the granite side panels paid dividends as the midrange was very clean and detailed with no boxy colouration.

The soundstage set up by the Isabels was surprisingly capacious and they offered a sense of scale that one generally only experiences with larger loudspeakers. Listening to Emmylou Harris's 'Jerusalem Tomorrow', her vocals had a rich fluidity to them and she was sat perfectly centre stage, with the accompanying double bass thrumming gently away behind her.

Treble was very sweet and clean, yet well detailed, the rise in output towards 20kHz clearly helping here. Percussive effects such as cymbals were

free from any unpleasant 'zing' but had good realism and body to them. Once again the clean nature of the midband came to the fore and worked well with the higher frequencies to ensure that all details were retrieved and presented well.

Steve Earle's 'Copperhead Road' recording can become quite harsh and muddled through some loudspeakers but I was pleased to hear that the Isabels did not fall into this trap, remaining composed and unflustered throughout the CD. On a couple of occasions it would have been nice if they had let rip a little more but, on the whole, their innate sense of polish and precision is enjoyable.

CONCLUSION

The Eggleston Works Isabels have a very poised nature and they excel on acoustic and atmospheric music. They also seemed to suit vinyl very well, thanks to their expansive soundstage.

The only area in which they seem to hold back somewhat is when the pace of the music steps up a gear or two, as they are not the 'rockiest' speakers around, despite those granite sides! That said, they never became jumbled or congested, as I have heard some loudspeakers do, they just never seemed to dig totally into the heart of the rhythm.

Ultimately, however, the Isabels are a well considered design that have a very enjoyable sound. Their accomplished and sophisticated performance speaks volumes for the technology used in their cabinet construction and driver technology, especially given the crossover-less nature of the main drive unit.

the Slatedeck Garrard 401/SME 312, I was ready to rock.

SOUND QUALITY

One of the vital aspects of obtaining good sound from a small loudspeaker

VERDICT ●●●●

Stylish and well designed loudspeakers with an impressive soundstage. The Isabels perform consistently with a wide variety of music.

EGGLESTON WORKS

ISABEL £2,299
 Distributed by Signature Audio
 ☎ +44(0) 208 480 3333
www.egglestonworks.com

FOR

- Build quality and finish
- Excellent soundstaging
- Well balanced performance

AGAINST

- A little polite at times
- Perform better on stands other than those supplied

MEASURED PERFORMANCE

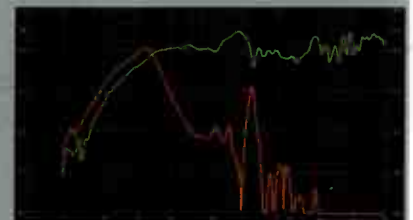
The Eggleston Works Isabel loudspeakers have a slightly uneven nature to their output but not in areas that cause concern. The lift in midrange output from 600Hz to 1kHz will add presence and details to vocals, but the flat response just above this should minimise any harshness in this area. Treble output rises steadily above 10kHz which will add detail and sparkle to the sound.

Bass output starts to roll off at 150Hz and the port is tuned to around 100Hz, meaning that earth-shattering bass will not be on the agenda. That said, the port is rear-mounted and so will enable fine tuning via judicious positioning.

Measured sensitivity was fine for a small loudspeaker at 85dB and the impedance curve shows a smooth and well damped response. Average impedance is 9.1 Ohms, dipping to a minimum of 7 Ohms. The Isabels will not be difficult to drive and should work

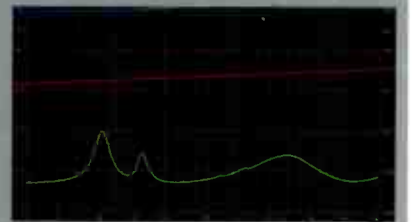
well with around 40-50W. AS

FREQUENCY RESPONSE



Green - driver output
 Red - port output

IMPEDANCE





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World Radio History

"subwoofers can work very well when carefully operated"



adam smith

The annual Bristol Hi-Fi Show took place on the weekend of the 23rd to 25th February and, as can be seen from our show report on page 90, there was some very nice equipment there, making some impressive sounds. I have been attending this show since the late 1980s when I first graciously allowed my father to chauffeur me there for the day and I have only missed one or two since then. It was interesting to be working the show from the 'other side of the counter' as it were, for the first time and it was nice to meet so many keen Hi-Fi World readers in person.

From my new perspective, it appears that attendees cover a wide spectrum. For every few people who wander round with wide eyes and a childish enthusiasm for the shiny things on display, there is a healthy cynic casting a Roger Moore-style raised eyebrow over things. I am also informed by one or two manufacturers that there are a few punters whose sole purpose for visiting seems to be to tell them where they are going wrong in their design/marketing/sound quality, but I like to think that none of our fine readers fall into this bracket!

From my own perspective, I have always enjoyed the show and listening to the equipment on demonstration. There are inevitably both good and bad demonstrations to hear, but I cannot help noticing what appears to be a depressing trend developing; namely the curse of bad subwoofer bass.

Since the first tentative steps taken by multi-channel surround sound setups in the early days of Dolby Surround, the subwoofer has been an integral part of a multi-channel system. In the early days, quite a few were little more than big drivers in floppy boxes that rumbled your sofa suitably during explosions, but there

has been an increasing drive towards more competent units in recent years.

The growth of the home cinema section of the industry has seen many people throw out their old music centres, midi systems and the like, and replace them by one or two boxes that will handle multi-channel DVDs as well as good old fashioned stereo CDs, DAB and FM radio. As a consequence, the set of surround sound 'speakers now has to be of sufficient quality to cope with two channel music and the subwoofer has moved up greatly in importance from its main role as sofa-shaker.

So, it is now possible to wander round a show such as Bristol Sound and Vision and listen to glorious stereo sound from these all-singing and all-dancing surround systems, correct? Well...it would appear not. This is now the second year running that I have been thoroughly depressed by the wallowy, soggy, limp and occasionally downright boomy bass coming from a great deal of the rooms. I have spent time both designing and listening to subwoofers and I know there are some good ones out there, but I am not surprised that a great number of the hi-fi fraternity frown upon them judging by many at Bristol this year.

Leaving aside the designs themselves, a great deal of the problem is in the integration of the sub to the main loudspeakers and its positioning. I remember an episode of Channel 5's "Gadget Show" a year or so back that was testing surround sound systems of various price levels. The thing that depressed me the most was the presenter saying that the position of the rear 'speakers is vital in such a system and insinuating that the subwoofer could be dumped virtually wherever you like. I personally feel he put these two precisely the wrong way round and it is no wonder that the portion of the general public who are less hi-fi aware think that real bass involves boom, thump and not much else.

The rear loudspeakers in such a setup carry comparatively little information, yet the subwoofer carries the signal that underpins ALL of the other channels, be there another four, five or even six. Things become even more critical in stereo where the subwoofer not only has to provide suitable low frequency accompaniment to the stereo 'speakers but needs to effectively 'disappear' whilst doing so. If the bass is wrong, then there is a reasonable chance that a fair chunk of the frequency range will be wrong. Now at this point many people will rightly point out that a hotel bedroom is hardly an ideal location for a hi-fi or surround sound system setup and I would agree up to a point. However if this were the absolute truth then there surely every single system at such a show would sound bad, which is simply not the case.

It seems to me that some dealers (and even the odd manufacturer...) could do with a lesson in subwoofer setup and integration as they should be - like children - seen and not heard! If you can sit in a demonstration, shut your eyes and tell which direction the bass is coming from, then the subwoofer is not doing its job properly, and I can recall only two rooms at the 2006 Bristol show where I heard spot-on integration - a rather saddening statistic.

Contrary to what some die-hard audiophiles would have you believe, subwoofers can work very well when carefully operated and are more than just glorified explosion makers. In many ways they can be like vinyl, in that the more time and care is taken with their setup, the more they will reward. It is a pity that comparatively few users have the inclination to explore their abilities and settle for copious quantities of boom and thud. Mind you, quite a few appear to enjoy this, so perhaps I should stop interfering... ●



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World Radio History

"we could see a genuine revolution
in wireless loudspeakers..."



dominic todd

If ever there was a divisive issue with hi-fi separates, it would be cables. Some believe they make a huge difference, others none whatsoever. Most of us take the middle ground and realise that wires help fine tune a system and can make a discernible difference, but not to the extent that their value should exceed the cost of the original hardware – as, unsurprisingly, advocated by some cable manufacturers...

Yet there's another issue here, and that's that some people don't like the idea of wires at all. When I worked at the 'coal face' in hi-fi retail, the number of system sales I saw fall through because of disapproval from the significant other was... significant. Disapproval came, as many of you will know, not from the sound of a system but its size, aesthetics, colour and, yes, the tangle of wires involved. To maintain cohabitation then, a compromise often has to be struck. So it was with interest that I viewed the latest selection of wireless products at the recent Bristol hi-fi show.

Wireless speakers aren't a new phenomenon, but I noticed a more serious presence this year than ever before. Before Wi-Fi, wireless speakers used infrared or radio frequencies and were, let's face it, pretty awful sounding. The advent of Wi-Fi has made a big difference, and a few years ago we began to see home cinema system designs launched. Rather than awful, the sound quality was now just about tolerable. Whilst these loudspeakers were a long way from what would be deemed acceptable by an audiophile, by comparison with their peers, they weren't all that bad.

Now we have the audiophile wireless loudspeaker - or at least that's what the manufacturers claim. Whilst at Bristol I came across two

floorstanders that offered wireless connections. The eagerly awaited Canton CD3500s sign in at £2,000 a pair. This is hardly budget territory, and puts them straight up against the likes of the hugely impressive (wired) Yamaha Soavos. So how did they sound? Well, not too bad actually. Bass was strong and there were decent levels of transparency. The only problem with these German boxes is that they use aluminium treble, midrange and bass units with, erm, an aluminium cabinet and base plinth. As you can imagine the sound quality is rather metallic at the best of times, and certainly on the bright side of neutral. In conclusion, the CD3500s sound like a decent pair of £500 floorstanders, but are not a true rival for the best wired rivals at this price.

Offering a completely different sonic perspective were the intriguing Free loudspeakers. Like the Cantons, these compact floorstanders offer built-in digital amplification, thereby negating the need for further amplification. Finished in satin white or black, it's not hard to see the Apple market as a major potential customer. Yet, unlike the vast majority of the Apple coat-tailers, these speakers showed considerable audiophile potential. Designed to work with the Apple Airport Express or Sonos ZP80, the Free 'speakers are actually built by the highly respected PMC.

With a single, cast magnesium chassis bass cone and soft dome tweeter, the sound quality was a million miles away from the Cantons. Whilst not quite as explicit, it was smooth, harmonious and exceptionally well integrated. The bass couldn't match the Soavo, but considering the smaller size, this is no great surprise. Considering the limitations of wireless transmission, they actually sounded quite good.

Granted, a typical wired speaker at £2,000 would still sound better, but the Frees certainly more than hinted at the technology's potential. Consider the cost saving from not having to buy an amplifier, loudspeaker and interconnect cables, and I could see how these will appeal to a small, but significant, section of the hi-fi market.

Now we come to the major downside. Of course, although both these designs purport to be wireless, they are in fact anything but. Both use active amplification and therefore require mains cables to each box. The Frees have the power socket underneath so that if one was to rewire from scratch one could place a mains socket beneath each box, thereby giving the effect of a totally detangled speaker. Yet, this could be a costly solution, and one that many wouldn't be prepared to stretch to. In short, it's not the sound quality limitations - which are improving all the time - which limits the appeal of wireless loudspeakers, but the mains cables. Late last year the boffins at the Massachusetts Institute of Technology announced that they were working on a wireless power transmission system. At the moment the system is still at the theoretical stage and many believe they are a long way from actually implementing the technology.

Were this to ever get off the ground, we could see a genuine revolution in wireless loudspeakers, much as we did with Digital cordless phones a few years ago. Could this be the end of the road for the traditional amplifier and loudspeaker cable? Well, I think we're a long way off that yet, but the advent of the decent sounding, entirely wire-free loudspeaker is now less of a figure of science fiction than ever before. Watch this space...●



Lucy just couldn't understand Tom's sudden lack of interest in an early night



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"why limit ourselves by the original pressing, which is not always great to begin with?"



paul rigby

For fans of audiophile vinyl records, there exists a rift. It may be not dramatic and has yet to result in violence, but it's still very much there.

On one side of the fence are those music fans who believe that an old recording, if reissued in an audiophile wrapping, should retain the original sound, essence and atmosphere. That means the original processing and effects – EQ settings, compression and the like – that were laid upon the production masters to form the post-production or mix master that became the final sound the public heard at the time via their transistor radios and Dansette record players.

What these fans want is, in effect, a new original. Almost as if they were stepping back in time and buying the original record when it was released in 1963, or whenever. One such advocate of this philosophy is Bob Irwin, MD for the audiophile record label Sundazed, based in the USA. He loves his original mono versions of the Byrds, reissued in 2005, "Each record offers a unique listening experience in mono. I feel as though we perfectly captured the feel, warmth and texture of the original mono Columbia 1A pressings of these records. Also, the artwork closely mirrors the original album covers – that, too, is a part of the equation that we take very seriously."

That's fine, if you like that sort of thing. The problem is, we live in the twenty first century and we can do wonderful things with music now that they could not do back in the 1960s.

Audiophile record label, Speakers Corner' MD, Kai Seemann, based in Germany, sits on the opposite side of the fence. In fact, when he is about to

remaster an old original, unlike many other labels, he refuses to introduce an original copy of the record into the studio to act as a reference. A move I am wholly in favour of – and this is why...

"I try to avoid the A-B comparison with an original album because the studio engineers may want to copy what the original mastering engineer had done in the past – consciously or subconsciously. I want my mastering engineers to make the best out of the original master with their currently available equipment. I don't want to make a copy of the original. Maybe the original was good – maybe not. Sometimes it was equalised very heavily to accommodate the turntables of the time but that's not what I want. I want the engineers to listen to the tapes and make the very best of it for today's turntables."

To labour the point, it was as if Wes Montgomery and Jimmie Smith, whose 'Dynamic Duo' vinyl LP I review in the audiophile vinyl column in this issue, had recorded their album this year and took their master to the top US-based mastering engineers, Acoustech, who are now using only their judgement and latest equipment, nothing else, to master the album.

"This is a record which is not dramatically rare – you can buy it for \$20-\$30 on eBay," added Seemann. "What sense would it make to produce a new reissue that sounds exactly the same as the original? We can bring something new to it, why shouldn't we do that? If you want the original then it is not that difficult to find an original in good condition. If you want to listen to the original sound then that's fine, do it."

The Speakers Corner philosophy

is that, in the 1960s, if the engineers could have mastered records with the technology that we have now, both the original and reissue would sound the same. The artists would have backed them up 100% too. Of course, it is not always possible to do that because original masters are not always available or are damaged or worn in some way but, if we can do better, why not do better? Why limit ourselves by the original pressing which is not always great to begin with?

Take the current generation of cutting lathes, for example. The models cutting engineers use today were first built during the 1980s, so they're not exactly current technology. However, the better lathes, Neumanns for example, are mechanically very rigid, much more rigid than anything available in the 1960s. This means you can introduce much higher sound levels and more dynamics, "As it was," said Seemann, "in the sixties, the standard of recording was much higher than the standard of reproducing so the energy and information was already in the tape but they were not able to reproduce records properly. In a lot of cases they made very large compromises to get this energy on the record without the turntable, which would track the record sooner or later, distorting or jumping. The record deck, at the time, was the big bottle neck."

American-based audiophile label Classic Records has a favourite slogan: 'remember the sound'. "What we want," concluded Seemann, "is more like 'remember the feeling' because that is what is in the tape. If we can extract more of that feeling that is in tape, why shouldn't we do that?" ●

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Basis Audio 2500 Signature



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



Hørning Agathon Ultimate



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



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



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Walrus' New Mascot

"the UK rushed into launching digital terrestrial TV"



steven green

The public service broadcasters and some of the TV equipment manufacturers and retailers have launched a campaign called 'HDforAll', with the aim of "lobbying Ofcom, Government and other stakeholders to ensure that enough spectrum is reserved to enable the BBC, ITV, Channel 4 and Five to broadcast in high definition [on Freeview]."

The spectrum in question consists of fourteen UHF channels that will be freed-up once analogue TV is switched off in 2012/2013, and the dispute is over the fact that Ofcom wants to auction this spectrum to the highest bidder, and the broadcasters fear that the mobile phone networks will outbid them for it.

The crux of the disagreement is that Ofcom says that the 'big 5' TV channels could transmit in HD on Freeview, but the broadcasters say that this could only happen if there is "a significant reduction in [the] quantity and quality" of existing standard-definition TV channels.

HDTV channels are expected to use bit rate levels in the region of 8 – 10 Mbps once developers have gained more experience with the new MPEG-4 H.264 video codec that is used for HDTV, so to transmit the 'big 5' TV channels in HD would require 40 – 50 Mbps of capacity.

Once analogue TV has been switched off the transmitter powers for the Freeview multiplexes will be increased, which will lead to the overall Freeview capacity to increase from the current 120 Mbps to 144 Mbps. Also, ITV now owns the multiplex on which pay-TV service Top-Up TV transmits, so it will be able to reclaim all of that capacity when Top-Up TV's contract ends

in 2010; the BBC has quite a lot of spare capacity on its multiplexes; and there are some channels that, in my opinion, are simply wasting space, such as E4+1, which is just E4 delayed by an hour.

So there will be sufficient capacity to allow HD versions of the 'big 5' TV channels to launch once analogue TV has been switched off, which suggests that the broadcasters have an ulterior motive for wanting this spectrum – apart from the obvious reason that if the government gives it to them it's cheaper than having to bid for it in an auction.

First of all, the BBC, ITV, Channel 4 and Five inherently favour Freeview, because their channels account for the vast majority of all Freeview viewing, whereas on Sky and cable their share of viewing is much lower due to the large number of channels available. So, personally I think they want this additional spectrum because it will allow them to transmit some of their other channels in HD as well as the 'big 5', and they hope this will discourage users from switching to Sky or cable to get their fix of HDTV.

The BBC also has an additional and important reason for favouring Freeview. This can best be explained by considering Greg Dyke's candid admission that the rationale behind the launch of Freeview was to flood the UK market with set-top boxes that don't have card slots, because the absence of card slots rules out subscription payments, which is an alternative means of funding the BBC; so this would ensure that the BBC could hang on to secured funding via the Licence Fee for another decade or more.

I'm very much in favour of HDTV, but I think it would be

wrong to donate this spectrum to the broadcasters for a number of reasons.

Firstly, the "sweet spot" for mobile applications consists of the frequency range from 300 MHz to 3 GHz. So terrestrial TV is consuming around 400 MHz – or 15% – of this prime spectrum even though it could be transmitted at far higher frequencies.

Secondly, the UK rushed into launching digital terrestrial TV and used the '2K' DVB-T mode (DVB-T is the standard used for Freeview) when they could have waited just a few months to use the '8K' mode, which would have allowed the spectrum to be used far more efficiently than at present. So is it right that the broadcasters should be bailed out because they've made bad technology decisions in the past?

Thirdly, the BBC R&D department recently published results of tests using a technology called 'MIMO' along with DVB-T – which could form the basis of a new DVB-T2 standard – and the results indicate that the capacity on Freeview could be doubled, albeit that users would need to install a new aerial.

This last point seals it as far as I'm concerned, because a doubling of the capacity would allow around 30 – 35 TV channels to broadcast in HD on Freeview, so the freed-up spectrum could be used for applications such as mobile TV and mobile broadband Internet instead.

If the backers of the HDforAll campaign want this extra spectrum to launch more than 30 – 35 HD channels so that Freeview can better compete with the other digital TV platforms they should collectively bid for it in the auction. If they lose, they didn't value it highly enough. ●

Some decisions are just so simple

WHAT HI*FI?
SOUND AND VISION

AWARDS 2006

PRODUCT OF THE YEAR

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"I love the past, but I don't feel it is better..."



noel keyword

It was the April 1993 edition of *Hi-Fi World* that featured a Garrard history, along with the revival of my Garrard 401 turntable. It was serviced by Dr. Martin Bastin and fitted to one of his sturdy plinths, along with a new SME312 12in tonearm. That issue sold out.

To this day I use the same turntable and arm; it sits in the lounge next to me. I have a Leak Troughline, tuner now in need of a service I have to admit, so not in everyday use. You might think then, as I know many do, that I am a real classic hi-fi enthusiast, but I am not! Quite the reverse, in truth. A lot of engineering from the past is best preserved, as a reminder of how things were, to give us some appreciation of how far we have progressed and how much better products are today. And that includes old hi-fi.

I love our industrial past, as many engineers do, and you'll catch me staring in awe at, for example, the S.S. Great Britain (see www.ssgreat-britain.org) that we visited recently whilst exhibiting at the Bristol Sound and Vision Show. I thought this would be a rusty hulk, with a bit of black paint applied to the exterior and a few unconvincing wax dummies inside wearing traditional clothes. It turned out to be much more than that, giving a fascinating glimpse, for example, of how people survived travelling to Australia in steerage - that's the poor bit - as well as a walk around the hull beneath the waterline, with Brunel's massive propellers overhead.

Hi-fi doesn't date back to 1843 like this ship, but amplification and the valve do; Oliver Lodge is one name that springs to mind, born 1845, and early radio equipment such

as his was pretty crude, as basic in the way it was put together as the Great Britain.

The market for high quality audio began to develop in the 1960s and it's from this time that old classics I have used - and soldered - have come. Most notable was a Quad 22/11 amplifier. This dear old thing does have a lovely sonic flavour: measure it as I did after restoration and you soon find out why. The small output transformers really aren't up to much by modern standards. Peter Walker openly admitted they limited low frequency output (i.e. would not produce much bass) to protect the Quad ESL57 loudspeaker. At least, that's what he said... I sometimes wondered whether he simply found justification for the stringent cost cutting often used by Quad, behind the expensive fascias. If this was the case, then it was only the spirit of the time, because the nasty tin plated input sockets and multi-pin power connectors used on this amplifier were found everywhere else too. I well know how lovely the 22/11 sounds and I should really have a pair in the loft, but I don't. Mine departed to an eager owner long ago.

Wind on to the 1970s and you still find most electronic equipment peppered with this stuff. Tinny input sockets and those horrid shabby loudspeaker screw terminals that some factory in Japan was making for the whole world it seemed, were the acceptable standard of the time.

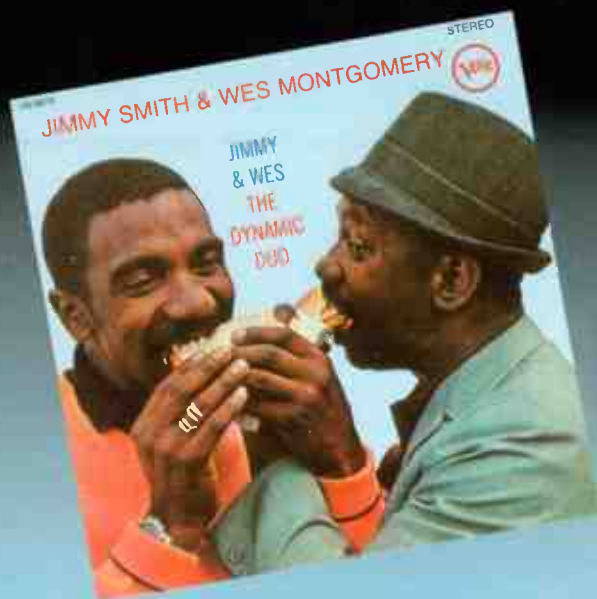
This was also the age of that thing from the dungeon of high fidelity, the DIN loudspeaker socket. This was a step too far backward even for the period, I recall. Why Germany, proud of its engineering standards today, should come up with this little horror (see <http://en.wikipedia.org/wiki/>

[DIN_connector](#)) I don't know, but it somehow captures the *Zeitgeist*.

Dusting off an old JVC CD-4 decoder not so long ago I was reminded of how bad it was generally in the seventies with product from Japan. The detail engineering wasn't there. All the action was at device (transistor) level, the connections could go hang. And here we encounter another limitation: even Quad eventually admitted that poor electrolytic capacitors seriously compromised their early amplifiers, such as the 405. Electronic components were often little better than the shabby connectors used.

You are on the look out for an old cartridge? Why? Inside lie two prodigious coils of fine wire, 'fine' meaning thin, not good. It wasn't selected for its 3ns purity twenty years ago, but was wound on copiously to compensate for the weak magnets of the time. Now, with Neodymium magnets and better magnetic circuits today's cartridges don't need coils inside to rival those the Great Eastern once carried, when laying the foundations of modern communication. That's why today's MM cartridges don't suffer 'generator losses' and have a nice, clear midband. The stark contrast here is perfectly illustrated by this month's comparison of a Nagaoka MPI 1, a classic from the past, with two new cartridges from today. The past wasn't unequivocally better. It may have merit, but decent products of today are better in engineering terms.

There are a few golden oldies around that do a great job even today, like the Garrard turntables, but otherwise I feel today's products are better engineered and less expensive than most oldies. I love the past, but I am not romantic and don't feel it is better. ●



JIMMY SMITH & WES MONTGOMERY
Jimmy & Wes:
The Dynamic Duo
 Speakers Corner/Verve

This album was the result of a large session. In fact, so large, two albums were created from it. The second was called 'Further Adventures Of Jimmy And Wes'. Kai Seemann, MD for Speakers Corner, explained that, "we initially tried to make a double album featuring both records but a lot of tracks were damaged on the original tape." Now comes the spooky bit. To create the two albums, the original record label Verve didn't just cut the session in half, assigning the first half to one album and the second half to another album. What happened was that the label actually filtered through each track and, for example said, 'the first track is for album X, the next two are for album Y, the next one is for album X, the next one is for album Y' and so on. However, strangely, "all the tracks for the first LP, which we have now, have survived and almost none of

the second album has survived. So our initial double album plan had to be stopped. I have no satisfactory reason why this has occurred because I have used other tapes from the same supplier, recorded at the same time and probably stored next to each other".

Jazz-based conspiracy theorists could have a field day with this one, although I'm reliably informed that the Verve studios never contained a grassy knoll. 'The Dynamic Duo', excellently mastered at Acoustech in the USA, is a superb album and a must for any jazz fan, the pair compliment each other superbly. Smith, who revolutionised the Hammond organ in jazz, smooths out Montgomery's biting guitar runs but there's lots of time and space for crowning solos that take the breath away. Genius.

STEVIE RAY VAUGHAN
Texas Flood
Pure Pleasure/Epic

This is not the first Stevie Ray album from Pure Pleasure. 'Couldn't Stand The Weather' sold so well and was

so well received that a 'sequel' was always on the cards. This release utilises the original master tapes, direct from Sony's archives in the USA. However, masters are not allowed to leave the country so, said Pure Pleasure MD Tony Hickmott, "Sony actually created a flat copy for me onto a fresh reel of analogue tape. The original, which was laid down in 1983, was in good condition so the copy was quickly made for me". Originally, Vaughan would have recorded the album to a multitrack tape. This tape would hold the bare musical information, without any studio enhancements. From that, the engineer would change the balance of the instruments, add any effects and then commit that to another tape known as a post-production or mix tape. This mix tape is the copy that Hickmott was given to work with, "I then passed that tape onto my mastering engineer, Ray Staff at Alchemy, based in the UK. His job is to either equal the quality of the original or surpass it."

Vaughan's best album, this release started the eighties blues

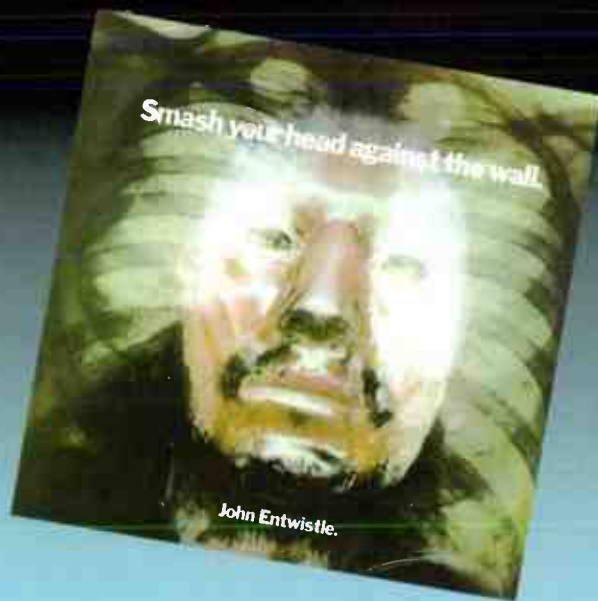
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revival. The final release is up to Pure Pleasure's high standards. In fact, it has that classic seventies rock album feel: warm, tight bass with vocals allowed to distort on occasion, 'tingy' cymbals and the odd screeching guitar. Intriguingly, this edition is a double album - disc 1 is the original album whilst disc 2 is an analogue version of the bonus tracks released with an earlier CD release. This is the very first time the bonus tracks have ever appeared on vinyl.

MIGHTY BABY
A Jug Of Love
Sunbeam Records/
Blue Horizon

The keyboard player for the original band, Ian Whiteman, who now lives in Spain, revealed that he owned a master tape for this particular album. Sunbeam MD Steven Carr was delighted. "He didn't have the original master. I think the multitrack was mixed down to a 2-tracker and he probably had the safety copy or something - which was more common at the time. The condition wasn't bad, I was quite surprised. It played straight through. I've done stuff, using tapes from Abbey Road, where the edits have popped like nobody's business. This one was fine, though." The master tape was given to Nick Webb, an experienced mastering engineer and ex-Abbey Road employee.

In fact, both Carr and Webb may be familiar to Naim customers because the pair handle all of that company's vinyl too. Michael Evans, Mighty Baby's bass player, sat in attendance during the mastering - although he offered no assistance.

Carr is not a fan of supportive band members. "The last thing you want is a band member being of practical help, because they tend not to be. Most musicians have got cloth ears and the rest are half mad. Band members also want whatever they've done to sound the loudest."

Toting progressive and psychedelic licks and with definite West Coast vibes: a thread of beautiful harmony here, a Jerry Garcia-like guitar solo there, the English derivation is, however, stamped onto the work. This is the band's final album, sounding almost like 'Meddle'-era Pink Floyd. It rambles on a bit but this is still an excellent disc, presenting enough colours and tones to keep you interested. The vinyl is contained within a sturdy gatefold which features an interview printed on the inner sides with photographs and other record illustrations.

JOHN ENTWISTLE
Smash Your Head Against The Wall
Earmark/Track Records

One of the most important and distinctive bass players the world has ever known, before him bass players were part of the stage wallpaper. Entwistle was the calm amongst the storm that was the rest of The Who yet his bass work was musically complex and physically demanding. As The Who's guitarist and songwriter Pete Townshend said, "you quickly got the feeling that, yes, he's playing the bass but he's not really playing the bass. This is something else. He realised that he had the power to change the f*cking

instrument!"

Entwistle had shown his song writing credentials during his time in The Who with the likes of 'Boris the Spider', 'Whiskey Man' and 'My Wife'. This, his first solo album released in 1971 was his best. Not surprisingly, the album had a strong Who sound and influence. It also allowed Entwistle to spread his wings. For example, in 'Pick Me Up' he plays the whole horn section - many fans were unaware that Entwistle had been trained to play the French Horn at a young age along with the piano!

In many ways, it was a dark album but with superb melodic lines. This Earmark release has been mastered onto 180gm vinyl and set within a gatefold cover. It features the original album only so doesn't include any extra tracks, such as the Repertoire 1996 CD issue which adds 'Cinnamon Girl'. The Earmark release is big and bold with drums and bass to the fore and the vocals hovering over the instruments. It's not so much heavy rock as big rock. The cut is pretty quiet too which is welcome. All in all, this is a recommended release, especially as original vinyl copies are not too thick on the ground.

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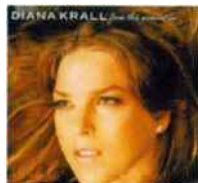
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Presto!

With nearly 5,500 stations, fine sound and freedom from DAB woes, the MagicBox Imp is an automatic choice for radio fans, says Steven Green...

Just like the Acoustic Energy Wi-Fi Radio with which it shares seemingly identical dimensions, the £129 MagicBox Imp is very compact, measuring just 4.5in square on its base. It's very attractive too, with an iPod-esque white plastic and aluminium colour scheme and that eye-catching tapered front-panel housing a blue display and scroll wheel.

Setting up was quicker and simpler than I had expected, consisting only of switching the radio on, scanning for Wi-Fi networks and entering the security key for my wireless network (both WEP and WPA are supported), with the whole process only taking a couple of minutes before I was free to start listening to radio stations.

The Internet radio stations available are sorted alphanumerically by genre or by location, but with around 5,300 stations available, searching for individual stations was a chore, as the lists are so long. However, a new feature called My Stuff has been added that largely obviates the need to do a lot of scrolling through these station lists. My Stuff allows users to add their favourite stations and the URLs of streams that aren't already listed to the My Stuff section of their account at Reciva's Internet radio portal (www.reciva.com – Reciva is the company that produces the modules for all of the currently available Wi-Fi Internet radios), and these stations then appear as if by magic the next time you visit the My Stuff section of your radio.

A very impressive feature was that the radio's firmware could be upgraded by the single press of a button, with the radio then looking on the Reciva website, and if there was a newer version of firmware available it downloaded and installed

it – both the My Stuff and a vertical scroll feature appeared following such an upgrade. This feature will allow Reciva to deliver support for more audio formats in future as well as to improve the operability of receivers.

In operation, the Imp performed reasonably well when connecting to most radio streams, but there were occasions when I felt it took too long in comparison to the time it took my PC to connect to the same stream.

The other side of the Imp is its media player, which allows you to stream audio wirelessly from your PC. Music started playing on the media player quickly once requested, but one drawback was that it inexplicably paused for a couple of seconds mid-track occasionally. Another slight grumble I had was that as the radio only supports the MP3, WMA, Real Audio, MPEG-2 AAC and WAV audio formats, this means that 95% of the audio on my PC wasn't supported! So I would hope that Reciva adds support for other commonly used formats shortly, such as FLAC, MPEG-4 AAC/AAC+ (file extensions .mp4 and .m4a), Ogg Vorbis and MP2.

SOUND QUALITY

When playing high bit rate MP3 files from my PC the sound quality was unusually excellent for a device with such a small speaker, delivering a pleasingly crisp and punchy sound. The radio performed best in the bass and midrange, but a slightly shrill treble let things down occasionally. As you would expect, the audio quality of Internet radio stations was highly dependent on the bit rate used, with the higher bit rate streams providing higher audio quality, and vice versa.

The one negative issue as far as



WHAT IS IT?

A Wi-Fi Internet radio that works like a normal mains-powered radio, but which gives access to over 5,300 Internet radio stations from around the world, including over 500 from the UK. The Imp also allows you to play audio streamed wirelessly from your PC. To use an Imp you need to have a broadband Internet connection, and a Wi-Fi router (if you need to buy one, the wireless router that seems to be almost universally recommended is the Netgear DG834G).

sound quality goes was that 128kbps WMA streams that use a technology called Intellistream were only being received at 32kbps, so the audio quality was reduced accordingly, but Reciva assured me that this issue will be solved in the near future.

Overall, I love this radio and the concept of Wi-Fi Internet radios in general, because it was a breath of fresh air not to be limited to the choice of stations available on FM and DAB, and the ability to stream audio from my PC to a portable radio was just the icing on the cake. Furthermore, as the firmware of Internet radios can be so easily upgraded, I'm inclined to be a little more forgiving of any current problems it has with the expectation that they will be solved in the near future...

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TIMESTER T200 MK £379

Unashamedly an eccentric specialist hi-fi product in the mould of the Flying Mole amplifier and Zu Druid loudspeaker, this is a small triode tube amplifier offering around 3W per side from two 6N3P02s (5670) and two EL8402s. Ostensibly, the importer calls it a 'multimedia' amp, by which they mean it is designed to work with (shock horror!) iPods and PCs. It has a single stereo line input via RCA phonos (for your digital portable or full size CD player), plus a USB input for a PC or Mac. It has one set of loudspeaker outputs, and a 6.3mm front panel headphone jack.

The USB input is an interesting feature (the Russ Andrews DAC-1 USB reviewed on p47 also has one, so it must be catching on), the idea being that you can plug your computer in, set the T-200 as a audio output device in your operating system's 'Preferences' menu, whereupon the Timester will play all your computer audio files.

The basic version reviewed here costs £379, and there's said

to be a version with UK-made output transformers costing £429 available any day now. One year's manufacturer warranty is offered. This diminutive (238x138x148 mm, 5.5kg) little thing is surprisingly well finished, especially considering its Chinese origin. The Perspex front panel is clean, the switches move nicely and the rear panel is robust. There's a chrome plated cage for the valves, and the output transformer cover is a quality item. Timester quote 600mW from the headphone amp. Inside, there is Burr-Brown PCM2702 Delta Sigma DAC for the USB connection. Given that there is an internal DAC, it would have been nice to access this by more conventional means, such as a TosLink input too. A standard IEC mains input is fitted around the back, and there's a decent set of loudspeaker binding posts.

Switch on and it's a veritable sight for sore eyes – each tube is uplit by a blue LED, which gives a pleasing effect. There's little in the way of hum or hiss, and

after about fifteen minutes the Timester is making sweet music. This is precisely what it is – soft, warm and mellifluous. Disciples of the Naim Nait 5 college of music making won't like it. The Timester is an unashamedly old school valve amplifier, and you can never forget it. You'll need speakers with over 90dB sensitivity (such as Revolver R16s) for any sort of decent level.

Kicking off with Supertramp's 'Child of Vision', and I was surprised how pleasant this little amp was to listen to. It is a sugary sounding device, coloured in the traditional tube sense of the word (everything is given a sepia tint), and the effect was very pleasant. Most impressive was the way it hung vocals out in space, the loudspeakers seemingly disappearing into my listening room. Treble was as silky as you'd expect, the midband proved a tad opaque but very spacious, and bass soft and warm but with little in terms of drive. Again, by solid-state standards (Onkyo's A-933 being my favourite at this price), there was very little power or drive, but the Timester's sound was such that this didn't seem to matter. It is beguilingly musical in its way, with a nicely lucid midband that makes transistor rivals seem frigid.

Power is very limited of course, so don't buy this for anything more than small rooms – dens and bedrooms are where this amp was designed to reside. I was able to get decent listening levels before the output transformers saturated, but switching to the USB input resulted in a marked drop in volume level. It made quite a nice noise via its internal DAC when driven from my Mac PowerBook G4, with lots of detail, clarity and a most propulsive rhythmic sound, but it was hampered by lack of gain. The headphone section sounds very good indeed, but it's certainly not from the Musical Fidelity X-CANS school of headphone amplifiers (i.e. clean and precise), preferring to add its characteristic euphony to the clinical sound of my Sennheiser HD650s. Overall then, an unlikely thumbs up for this loveable little thing – for those wanting sweet sound in small rooms, it represents cracking value for money.

Contact Lamplitube on +44 (0)1322 334033 or email info@minitubeamps.com.

Metallica

Dominic Todd pens a paean of praise to his favourite classic loudspeaker, Celestion's SL600...



First shown at the 1981 Harrogate Hi-Fi Show, and launched the following year, it is fair to say that Celestion's SL6 revolutionised the loudspeaker market.

What made this speaker special was the scale of sound available from such a compact cabinet. Rather like the Wharfedale Diamond had done just months before, the SL6 proved that a large cabinet wasn't required to create a decent sound. At the time, the SL6 was one of the most thoroughly researched speakers ever produced and used the then new-fangled laser velocity analysis to measure driver and cabinet performance.

Such research proved invaluable. At a time when most speaker cabinets flexed like a Rolf Harris wobble board, the SL6 used a highly rigid, internally braced cabinet. Even more intriguing was the electro-formed copper tweeter. This was unique at the time and played its part in spreading metal dome tweeters across the hi-fi industry. As it turned

out, using copper did nothing to help the horrendous inefficiency, but it was free from much of the 'grain' of later aluminium designs.

Matched to this was a 165mm Kobex coned woofer with integrated and inverted phase cap. This seems unexceptional now, but was quite something at a time when most manufacturers still used paper and glue. Matched to a substantial magnet and PVC surround, the woofer gave exceptional bass weight. At least it gave exceptional bass weight when matched to a powerful amplifier for, at 82dB the SL6 was one of the most inefficient speakers ever made.

Celestion soon realised this and it wasn't long before more work with laser velocity analysis produced the SL6S. This swapped the copper tweeter for an aluminium one, the chipboard cabinet for MDF, and gave the woofer a new two piece surround. The combined effect not only improved efficiency to a heady 84dB, but also granted the SL6 a brighter balance, with less congestion in the bass.

In late 1988 came the final

version, the SL6Si. This time around, the main changes were to the crossover, which became biwireable and fitted with rather nice Michell-type gold-plated terminals. With the advent of the Si range, Celestion also launched the rather awkward SL12Si. Effectively this was an SL6Si with an extra bass unit and it sounded muddled - to put it politely. It's not the best representative of the SL family and probably the only one worth avoiding.

THE NEXT STEP

Launched just two years after the SL6, the SL600 took speaker technology to new heights. At a time when most loudspeakers, including the then current SL6, used chipboard, the SL600 was fashioned from high-tech aluminium Aerolam. As the name suggests, this was a material developed for the aeronautical world and used an aluminium honeycomb sandwiched between aluminium sheets. Material costs were huge, and accounted for the SL600's hefty price tag of £700 - a lot of money in the early '80s.

It was worth it. The exceptionally light cabinet was also particularly rigid and free from colouration. To provide suitable damping, the cabinet was filled with layers of varied densities of foam. The original Kobex woofer and copper tweeter made it across from the SL6 but, in this case, they were hand selected. The hardwired crossover was matched to a specific tweeter, thus ensuring correct alignment with the 21kHz compensation network. Like the SL6, the first SL600s used simple 4mm speaker sockets – making banana plugs essential.

Unlike the SL6, the SL600 came without a grill. This was because the cabinet would lose rigidity if drilled further for grill mounting points. Yet, with its smart Nextel paintwork and diecast metal faceplates, few customers would want to cover the SL600. Let's not forget, this was seriously hi-tech stuff in 1984!

Celestion obviously received complaints about its lack of grill, as the next version, the SL600Si featured one (cleverly attached to the existing faceplate bolts). Skipping the 'S' improvements altogether, it was only in 1988 when the SL600 got its first upgrade. Like the SL6, the new Si included a revised crossover with biwiring and some cosmetic tidying including a new, harder wearing, paint. Interestingly, the SL600 never got the aluminium tweeter or the dual density woofer surround (they were destined for the even posher SL700) but perhaps this was no bad thing as it meant that, for better or worse, the SL600 never lost its original character.

SOUND QUALITY

Celestion SL600s divided audiophile opinion like few other loudspeakers ever made. Detractors criticised the 'sat upon' sound, slow bass and tragic efficiency, whereas supporters loved their eerie transparency. Taking the nay-sayers first, there is no doubt that the SL600s are woefully inefficient - 82dB rules them out for use with many amplifiers. In addition to this, they also tend to be system and room fussy. They require plenty of space from a rear wall and, believe it or not, decent room temperature – that PVC woofer surround moves very little when it gets cold! Against modern speakers, bass can also justifiably be labelled as 'off the pace' or 'turgid'. Yet, just before you write them off, take a closer listen...

When properly set up and matched with sympathetic ancillaries, the SL600s produce a wonderfully holographic soundstage that can rival a Quad electrostatic for transparency.

Furthermore, there's a seamless flow from bass to treble that, even today, is impressive in its even-handedness. That copper tweeter may have been inefficient, but it suffered none of the gritty and spiky characteristics that many later aluminium domes suffered from. Instead, it provided good detail and, crucially, a level of upper mid that enabled it to blend with the woofer. Precise, subtle, seamless and transparent: the SL600 was, and perhaps more remarkably still is, all of these.

Differences between the standard and Si model are slight. The treble has perhaps a touch more detail, but there's not a lot in it. If you're in the fortunate position to bi-amp however, then the biwiring terminals of the Si make it a must-have option. Incidentally, either pair benefit from a pair of heavy 20-24" high stands. Whatever you do, though, don't use top spikes, as these pierce the delicate cabinets!

As with most speakers, tweaking brings out some benefits in sound. Probably the greatest difference can be made by simply changing the internal 'speaker cable'. The standard cable is not the best, and a decent modern cable really opens the sound up. If you do take this course, do watch the tweeter, though. The solder connection to it is fiddly and a mistake could damage the unit. Personally I'd leave the crossover and internal damping foam well alone. However, if you don't mind the odd looks, then removing the bass faceplate is an easy way of improving the imaging. Whilst you're there, don't forget to tighten up the woofer's bolts. Like any speaker, these work

loose after a while, and affect the speed and impact of sound.

BUYING SECOND-HAND

Although far from universally loved, the SL600s still have a cult following. Unlike the SL6, prices for the SL600 are higher than you might expect for a twenty year old design. Whereas as little as £30 to £150 should find a pair of working SL6s, you need more like £200 to get hold of a pair of the '600s – and this would be for a tatty pair. For a mint and boxed set of SL600Sis, with grills and possibly even stands you could be looking at anything up to £500.

Although not cheap, these

SECOND THOUGHTS

As eighties as red braces, Golf GTis and Filofaxes, the SL600s hailed from the days when loudspeakers were as characterful as a tipsy Boy George on the Parkinson Show. In 2007, where so many boxes are well-honed variations on a theme set many years ago, the original SL6s were a breath of fresh air. Small two-way 'speakers with unusual styling, 'space-age' computer aided design work to their drive units and the first copper dome tweeter ever, they were certainly different. The 82dB efficiency was outrageous even by the lowly standards of the previous decade, meaning that only the likes of a Krell could truly light them up. The SL600 added the 'high tech' metal cabinet, and made the SL6 package sound like no other boxed loudspeaker around - by comparison, the likes of the Acoustic Energy AE1 was boxy and wooden. Me, I hated the SL600s and still do – they're far too 'Radio 3' for my tastes, but several classical music lovers I know hold them in even higher estimation than the Quad ESL57s and 63s they sold to buy their SL600s. Different strokes for different folks, but I'll concede this was a speaker that genuinely moved the game along and radically transformed the eighties speaker scene. DP

speakers are extremely long lasting. That PVC and Kobex woofer may be inefficient, but boy does it last well. The copper tweeter is similarly robust. It's good to know that the SL600s can still be serviced - Celestion themselves no longer support the model but there are specialists such as DK Loudspeaker Services (+44 (0)1708 447344) that can help.

Apart from the drive units, the main consideration when buying a pair of SL600s is the cabinet. Whilst Aerolam is very rigid, it's also rather soft. Dented cabinets aren't unusual, and are not something that can be patched up with wood glue and plastic wood! Small dents won't affect the sound but anything larger effectively relegates the speakers to the role of parts donor. Cosmetically,

"a seriously engineered design that radically transformed the eighties speaker scene..."

the early SL600s mark very easily. My own pair are covered in scratches where careless guests have placed car keys on the top. The Si version used a much tougher paint, but it can still be marked. The good news is that, if cosmetic appearance concerns you, they're easy to respray.

To sum up, if you enjoy a transparent sound and have a fairly powerful amplifier, then the SL600s could suit you well. Find a pair in good condition and they'll not only sound surprisingly able for their age, but also provide years more service. You can also be rightly proud in the fact that they truly "don't make 'em like this anymore"!

Show Time

David Price and Adam Smith round up their faves from the Bristol Sound & Vision Show



PIONEER

Pioneer were exhibiting a welcome return to two channel audio with their new PD-D6-J SACD/CD player along with the A-A6-J and A-A9-J amplifiers. Combining sleek styling with a wealth of audiophile features, all items were making some very promising noises through Pioneer's own TAD-branded loudspeakers.



QUAD

Quad were exhibiting their superb ESL-2905 loudspeakers using prototypes of their brand new II-Eighty monoblock power amplifiers. Taking the already superb II-Forty amplifiers as a starting point, the new items increase the valve count and thus the power output to 80 watts, more than enough for the most demanding loudspeaker. Interestingly, playing a visitor's requested Robert Miles track, this setup more than disproved the old notion that 'electrostatics don't do bass'...



SPENDOR

Spendor were showing samples of their new flagship loudspeakers, the ST-1s, which they estimate will sell for around £5,000. The ST-1s feature brand new drive units, housed in a stylish gloss black cabinet which has a contrasting panel down the front. This contrasting front panel will be available in a wide variety of finishes, including wood, leather and metal of differing types.



HENLEY DESIGNS

Henley Designs had a party atmosphere in their room all weekend thanks to their lava lamps and a certain individual mysteriously known only as 'Billy the Fridge'! Supplying suitable sounds were two Pro-ject and Roksan based systems, one of which was running the brand new Ortofon 2M Blue moving magnet cartridge. Initial responses were very positive from the Hi-Fi World team...



NEAT

Neat Acoustics were demonstrating their new Momentum 3i and 4i loudspeakers, the former being a stand-mounter that retails for £1,745 and the latter a floorstander retailing at £2,695. Both make use of isobaric bass loading and the 4i is particularly interesting as it uses two 6.5 inch bass units in this configuration, and hidden from view. Watch this space for a review...

**ARCAM**

One of the most interesting new Arcam products for years was the FMJ MS250 Music Server. £3,000 is a lot to pay, but it's a very sophisticated beast and with superb sound too!

**REGA**

Rega's resident vinyl boffin Terry Bateman's fingerprints are all over the new Rega MC Stage - a full on audiophile phono stage with highly adjustable loading and sensitivity. Rega also had their new Apheta MC cartridge on show too...

**LINN**

About time too is what we say - a brilliant evolution of the Sondek! Some weren't quite so sure, but there's no doubting the latest LP12 SE is tighter, cleaner, faster and more modern sounding. Again, wait here for the definitive review...

**LEEMA**

Following our rave review of the baby Xen a few months back, it was interesting to hear a cheaper evolution of them. Diminutive, but with a fantastically clean and musical sound, they could be one of the best mini monitors on sale when they hit the shops next month...

**ONKYO**

Onkyo started life as a speaker manufacturer, and the D-TK10 - produced in association with high end guitar specialist Takamine, shows they haven't lost their touch. Amazing sound from tiny cabs, but they do cost \$2,000...

Famous for the legendary D200 power amplifier, GamuT now offers a superb complete music system.

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GamuT is one of the very few companies that can offer a **FULLY "SORTED" SYSTEM** with equally high quality components in every category – in our opinion. Well, maybe not just ours:

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GamuT's latest arrival, the CD3 CD player, completes a **SUPERBLY MUSICAL SYSTEM**, everything in its place and sounding "right".

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GamuT have merged their excellent D3 preamp with the legendary D200 power amp (an earlier Editor's Choice), making the Di150, an impressively **CAPABLE AND TRANSPARENT** integrated amp.

Hi-Fi Choice's view on the GamuT Di150: "This is clearly a gorgeous amplifier" – another Editor's Choice.

GamuT make three speakers – the stand-mount L3 and two floor-standers – all cut from the same cloth and using superb drive units such as the Revelator tweeter.

Comments on a GamuT system: "The CD3, Di150, and L-7 just flat-out worked for me. Music was alive and filled with the little pleasures that make you smile, nod, tap your foot, or even boogie." (Stereophile)

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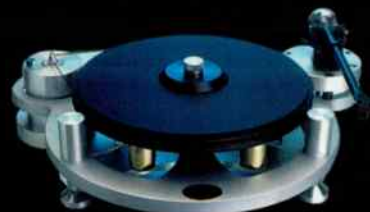
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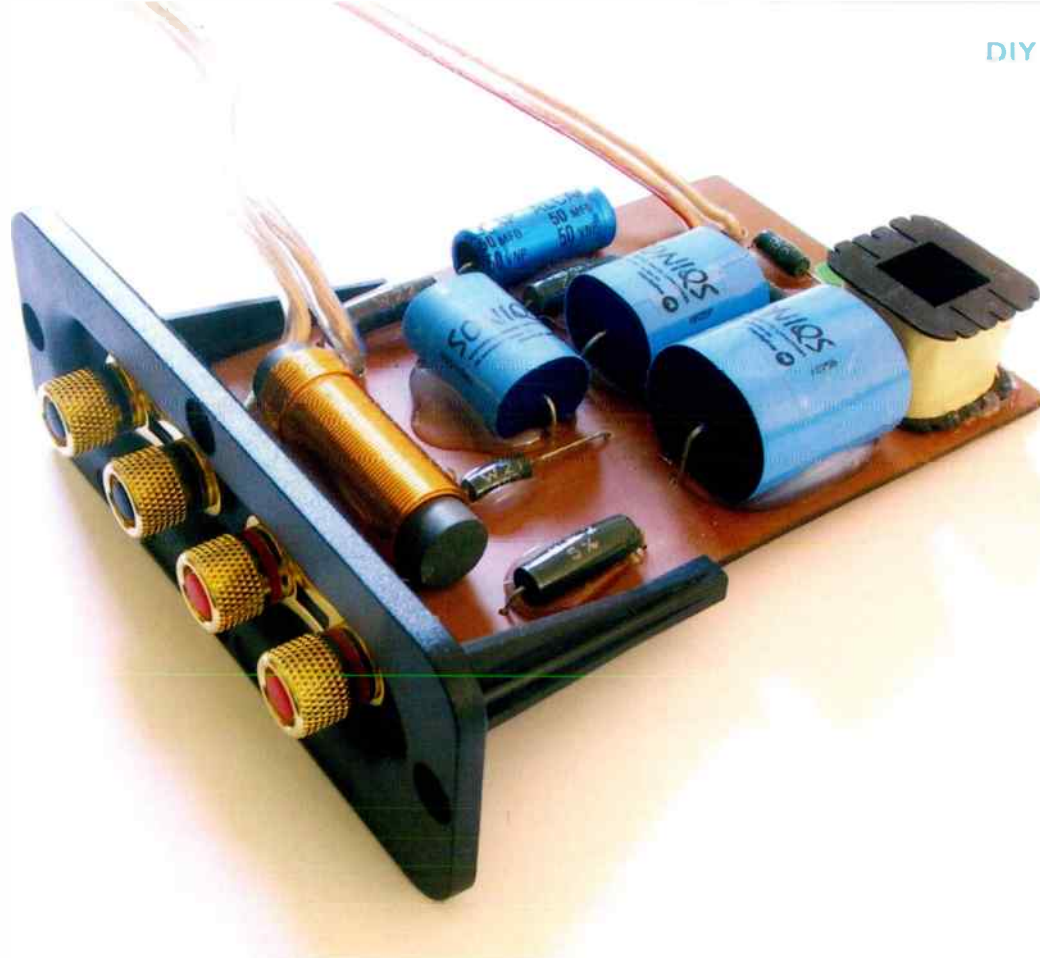
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Designing Speakers

Part 6 Crossover Design

Crossovers are the 'bête noir' of loudspeakers, but do they really cause more problems than they're worth? Peter Comeau explains...

Of all the aspects of loudspeakers, Crossover Design is possibly the most contentious. Do you stick with the First Order brigade who claim that anything else mucks up the phase response, or do you join the Fourth Order protagonists who argue that drive units need to be tightly bandwidth limited to avoid acoustic distortion?

If you don't know what I'm talking about then don't worry, I'm about to explain all!

FIRST ORDER

First of all why do we need to crossover at all? To see why, you really need to have a listen to one of the full range drive units that are the 'fave rave' of the DIY speaker fraternity. Listen to a Fostex or a Lowther in comparison to a two-way speaker and you'll be immediately aware of the lack of bass power and treble extension, as well as honky, clappy, tubey, papery colorations in some areas of the midband.

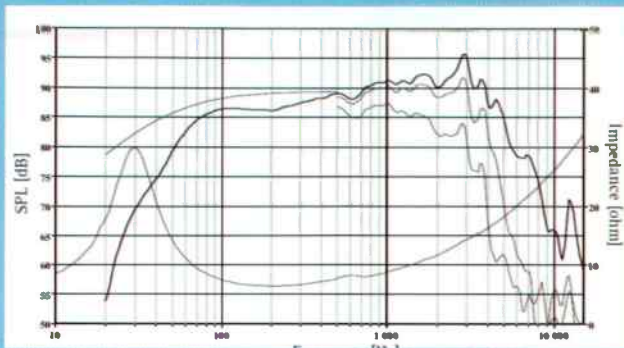
Now before I get a raft of letters and e-mails from DIY speaker

builders I will own up to a liking for full range drivers and their coherence through the midband. But for most listeners their colorations and bandwidth limitations rule them out.

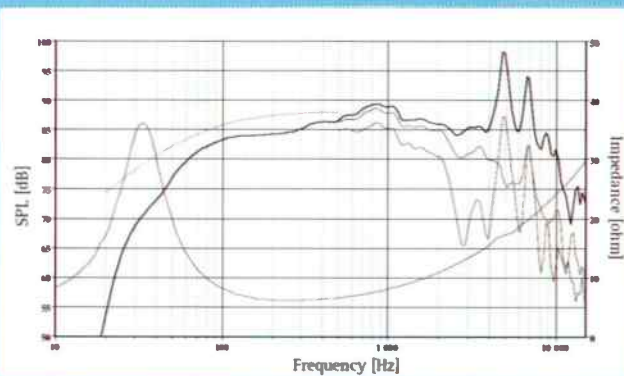
So why can't we make a full range drive unit that really works well? The problems lie in the physics of turning electrical impulses from your amplifier into acoustic energy in the room. If you have read the previous articles on enclosure design you will have realised that, to do a good job, bass units need to be relatively large. This makes

'Breakup' modes are caused when the drive unit stops behaving like a piston. Part of the diaphragm starts to move independently and this can be audibly noticeable.

You can see the 'breakup' modes as ripples in the frequency response that match with those in the impedance graph.



Look at the graph and you'll see a kink in the impedance plot which matches the beginning of dips and peaks in the frequency response at 600Hz.



By comparison a very stiff, cast magnesium cone stays pistonic over a wide frequency range and pushes the 'breakup' modes higher in frequency. However the rigidity of the cone eventually results in a strong resonance at 5kHz. This resonance can be successfully 'dialed out' by clever crossover techniques.

diaphragms heavy and the large dimensions narrow the area of sound dispersion as frequencies get higher.

If you look at full range drive units you will see that they have lightweight diaphragms (which restrict bass power and extension) and emit high frequencies in a narrow beam (so they have to be pointed towards the listener).

Another problem is that drive units do not maintain their pistonic performance over a wide frequency range. For a cone this means that, although the whole drive unit is moving at low frequencies, at midrange frequencies the centre portion of the cone starts moving independently of the outside of the cone, and at high frequencies only the very centre of the cone is moving.

The behaviour as the cone 'breaks up' is part and parcel of its acoustic character. Too many 'breakup' modes and you hear lots of colorations. There again if there is just one, severe, 'breakup' mode it can be clearly heard as a resonance.

To avoid hearing the colorations and distortions due to this less than ideal drive unit behaviour we should feed musical energy to drive units over the useable part of their frequency bandwidth.

So, for example, if we have an 18cm bass/midrange unit with a relatively coloration free bandwidth up to 2kHz then we can cross over to a 25mm dome treble unit that can do a much better job of driving treble energy into the room from 2kHz upwards.

FIRST ORDER

So far so good. This is the basis of the classic 'two-way' loudspeaker. The problem then becomes just how do we cross over from one drive unit to the other?

The simplest method is to use an inductor in series with the bass unit and a capacitor in series with the treble unit. The inductor increases in impedance as the frequencies rise, resulting in less treble energy 'getting through' to the bass/midrange unit.

The capacitor increases in impedance as the frequency drops, so less midrange energy is fed to the treble unit whilst all the high frequencies are 'let through'.

We call this a 'first order' crossover. It is the simplest, and the easiest to manage, type of electrical crossover and has many adherents. Its two primary attractions are that it is easy to experiment with and there is no phase shift between the drivers throughout the crossover region.

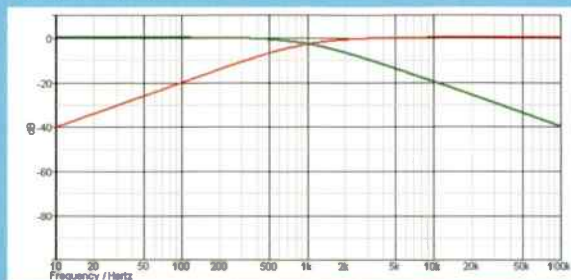
For these reasons many DIY speaker builders stop there. They can tinker with the values until they get good performance just by listening to the results. All you need are two 'perfect' drive units and a handful of inductors and capacitors.

So why aren't all speakers made this way? Well the problem is that there are very few 'perfect' drive units that meet all the first order requirements. Look at the graphs and you'll see that the drive units have to behave impeccably for at least three octaves beyond the crossover frequency. In other words unless they are free from colorations, resonances and distortions and have a smooth frequency response over the majority of the audio band you will not be able to design a clean, transparent sounding loudspeaker.

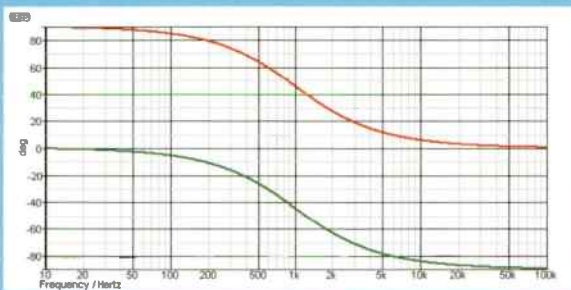
As for the attractions of 'linear phase' this demands that the drive units maintain their frequency and phase response for three octaves beyond the crossover frequency. Think about it. If you cross over at 2kHz your bass/midrange unit has to have a bandwidth up to 16kHz. Even worse your treble unit has to be useable down to 250Hz!

Now drive units with this sort of behaviour are few and far between. The upshot is that using first order crossovers with normal drive units results in performance restrictions. You may be aware of colorations from the bass midrange unit through the upper midrange and treble region and you will certainly notice distortion from the treble unit at lower frequencies.

Furthermore if you can measure the frequency response you will find huge deviations from what the theory tells you. This is because the theory is based on the drive unit having a linear impedance beyond the crossover frequency. If you look at a typical bass unit impedance you will see that, due to the inductance of the voice coil, the impedance rises rapidly through the midrange. This means that, in combination with your series crossover inductor, the impedance increases dramatically as the frequency goes up. In fact it often



First order slopes are very gentle at just 6dB/Octave attenuation below the crossover frequency. So the use of first order crossovers requires exemplary drive units with good behaviour over a very wide frequency range.



Phase response from first order filters is electrically in perfect synchronisation (HF red, LF green). But the phase response of real drive units will not be such a good match.

goes up so fast that, in combination with the falling response of the drive unit, the resulting 'acoustic' crossover approximates to a third order slope!

Worse is to come with the treble unit. Common sense dictates that, in order to have a wide bandwidth, we should choose a treble unit with a very low fundamental resonance (F_0). But sling a series capacitor in series with these types of treble units and you will find that the midrange output drops dramatically through the crossover region.

It's all because the electrical crossover slopes are too shallow. To compensate for the droop in at mid to high frequencies from the treble unit you lift its sensitivity and then it sounds too 'bright' in the treble range. For these reasons it is easier to work with real drive units using higher order crossovers.

SECOND ORDER

The next step up from first order is, of course, second order. Here we add a second 'leg' to each inductor and capacitor. The series inductor to the bass unit now has a capacitor across the bass unit. This capacitor 'shunts' some of the treble energy away from the drive unit (remember – a capacitor's impedance falls as the frequency gets higher).

Similarly there is an inductor

across the treble unit to 'shunt' away some of the midrange energy. The overall result is a 12dB/Octave electrical slope. So far, so good, but the theory of second order crossovers shows that the phase shifts by 180° through the crossover region. This means that we have to reverse the connections to the treble unit.

Now this would be all well and good if we could maintain the phase response of the bass unit and treble unit either side of the crossover. But

real-world drive units don't behave like this and very often the combined phase response of the electrical output of the crossover and the acoustic performance of the drive unit result in phase discrepancies which wreck the smooth crossover we are aiming for.

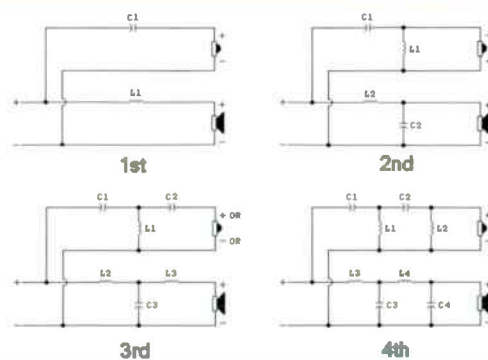
THIRD ORDER

Typically the use of second order electrical crossovers combined with the falling response and phase and impedance characteristics of real drive units results in a third order acoustic performance. So it is best that we concentrate our energies by looking at the benefits a third order crossover gives us.

Let's start with slopes. A third order slope is 18dB/Octave so, at last, we are starting to be able to 'hide' the out of band colorations and distortions of our drive units. Now we only have to make sure that our drive units behave themselves for little over an octave either side of the crossover frequency!

Phase response is, in theory, shifted by 90° through the crossover region but this, as we'll see when we start measuring 'real' loudspeakers, isn't the problem that it first appears to be. Theoretically we need to add a third element to each crossover leg – another series inductor leading to the bass unit and a second capacitor in series with the treble unit. You can see that there is a 'block/shunt/block' action going on here which increases the rate at which electrical energy is filtered to the drive units.

However, as we have said, there isn't always the need to add this third element. For example the impedance of many bass units rises so fast above the crossover frequency that they achieve a 6dB/Octave acoustic slope naturally. Add this to the 12dB/



Diagrams of electrical 1st order, 2nd order, 3rd order and 4th order crossover networks. These are theoretical electrical crossovers. Practical circuits designed to work with real drive units may differ from these, but the basic arrangement of the components will remain the same.

Octave of a second order electrical crossover and, bingo, there is your third order acoustic crossover.

So you will often see what initially looks like a mismatch of second order and third order crossovers in commercial speakers, but bear in mind that you are only looking at electrical slopes. It is the final, acoustic slopes that we are more interested in.

ACTIVE CROSSOVERS

From third order we can go on adding elements to take us to fourth order electrical crossovers, but now things start to become rather unmanageable. Imagine, if you will, juggling the values of all those elements to try and achieve the desired acoustic crossover. As you change the value of just one component it can affect the performance so much that you need to adjust the values of all the other components to 'balance' the result.

It is difficult enough doing this with third order crossovers. Adding the complexity of a fourth element in each leg is asking for trouble. In addition, as the filter slope increases, the 'ringing' of the filter becomes worse. Unless carefully managed this affects the transient response and adds 'hardness' and 'sharpness' to the sound through the crossover region which can become fatiguing.

Every time we add elements to the crossover the reflected impedance to the amplifier runs the risk of looking worse. The swing of capacitance to inductance through the crossover region can upset even the most well behaved amplifiers. So it is in our interest to try and keep the overall system impedance looking fairly benign, otherwise the speakers will sound very different in character depending on the amplifier they are partnered with.

For these reasons the role of higher order crossovers is often kept in the electronic domain. There is a persuasive argument for coupling a power amplifier to each drive unit and putting the crossover in the preamplifier section. To start with the amplifier can control the drive unit more accurately if it doesn't have the impedance of the crossover in the way. Then we can build a high slope into an electronic crossover, with fewer problems than attempting it with passive components, and achieve the desired acoustic response by 'mapping' the drive unit characteristics to the required filter slopes in an 'active' crossover design.

If speaker designers had their way then I suspect that most speakers would be 'active' designs.

But the complexity, and expense, of adding an amplifier for each drive unit and moving the crossover design into the preamplifier are often beyond the amateur designer's capabilities. Commercially it is something of a non-starter as it moves the 'mix and match' approach that is typical of the separates hi-fi market into a 'system' approach from each manufacturer. That is why you are likely to find successful active speakers only from the 'system' brands such as Bang & Olufsen and Meridian.

CALCULATIONS

OK, so where are the calculations, you know, the ones to select the right values for our crossover elements? Sorry to disappoint you, but they don't exist! Yes, I know that you can look up spreadsheets and calculators that give you theoretical values for a given crossover frequency. But look at what they ask you. What is the impedance of the drive units?

Indeed, just what is the impedance of the drive units? A bass unit may be 8 Ohms at 250Hz but it is likely to have an impedance of 22 Ohms at 1kHz. It is a variable, not a fixed, impedance and your crossover calculator cannot possibly take a guess at the component values for an impedance that varies with frequency.

So just how do you get started? The old way, and for many the best way, was to take the prototype

Then back into the chamber again to find out what damage you had done to the desired frequency response and so on.

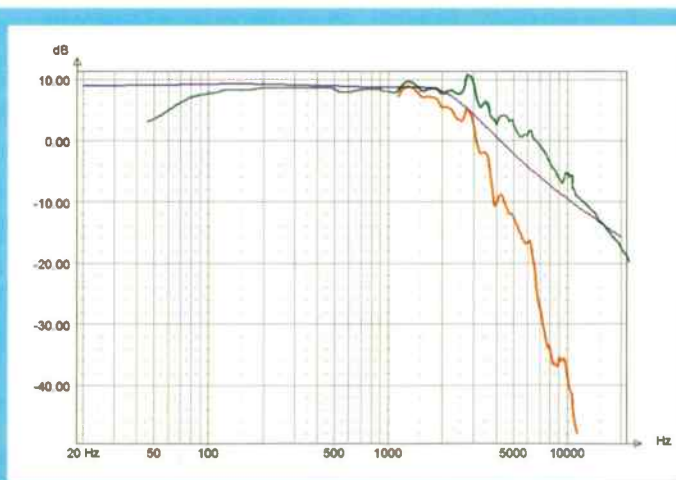
This process of iteration between measurement and listening is very time consuming, but it is a path you have to follow if you want to design accurate, clean, transparent speakers. To do it by listening alone is very, very frustrating as you really don't know where you are in terms of ironing out problems.

SHORTCUTS

Occasionally we see loudspeakers come in for review that have, fairly obviously, been designed by ear without recourse to, or perhaps ignoring, the requirements for a smooth frequency response. Generally they have one or two 'problem' areas which show up on audition, perhaps a 'gap' in the upper midrange which leads to a 'dulled' presentation of detail or a 'peak' in the treble region that makes them overbright.

Let me tell you it is much easier to iron out all the frequency response anomalies and then 'fine tune' the acoustic performance than to just 'play it by ear'.

Now this may be a disappointment to you budding speaker designers, but don't become downhearted and give up yet. Next month we'll look at ways that you can use a computer to run your own



Combine a drive unit with a first order natural roll-off (green) to a 2nd order crossover (blue) to achieve a 3rd order acoustic crossover (red).

speaker into a measurement chamber with a bucketful of crossover components and start plugging in values until the response looked reasonable.

Then you took the prototype speaker and crossover into the listening room and fiddled about with it until it sounded half reasonable.

measurements, and you don't even need a measurement chamber!

We will also look at how you can 'shortcut' your crossover design to cut the months of iteration between measurement and listening.

Next month: Measurement techniques

WD Phono 3

Part 5

Moving Coil Cartridge step-up – Head amp or Transformer? Peter Comeau explores...

When it comes down to a choice of cartridge to play your treasured vinyl, most enthusiasts have no doubt that the moving coil remains king.

To my ears the attributes of a moving coil cartridge are greater finesse and detail retrieval of information from the groove and superior presentation of the musical performance. Now that's not to say that there aren't some great MM cartridges out there, and I would be happy to use many of them, but I generally get a bigger buzz from music relayed via a Moving Coil.

However, the downside is that 99% of the great and good MC cartridges are low output. If you don't know what that means, I am talking about signal levels that are scaled in microvolts.

Now we have a difficult enough job amplifying the millivolt levels that are generated by Moving Magnet cartridges whilst avoiding noise and distortion. But bringing MC cartridge output up to the signal levels that a preamplifier can handle is a tough job indeed.

HEAD AMP OR TRANSFORMER?

When Moving Coil cartridges were first introduced in the '50s the classic method of matching them to Phono preamplifiers was to use a transformer. Many of these transformers were based on microphone transformer design and were physically small. In fact Ortofon, in their classic SPU-GT cartridge, introduced a version with transformers built into the cartridge body.

You can imagine that many of these transformers were not optimised for the wide bandwidth, highly dynamic signals that were coming out of the cartridges. As a result the MC step-up transformer found itself with a bad name.

The '70s saw a raft of MC cartridge head amplifiers appearing. Typical head amp designs of this period used multiple, parallel transistors as the initial gain stage in order to reduce impedance and noise, and coupled this to high levels

of loop feedback to keep distortion low. Some designers opted for the use of high power transistors, where the larger junction area reduces the base-emitter impedance, to try and effect a better match to the low impedance of the Moving Coil cartridge. Latterly the availability of very low noise op-amp integrated circuits has made the whole design process simpler, though not necessarily better!

In any case, having experimented over more than two decades with all types of head amp circuit designs, and having tried most of the commercial designs on the market, I have come to one conclusion. There is nothing like a good transformer.

OK, so a transformer is prone to picking up hum from nearby power supplies. But other than that it is totally noise free and, by choosing the construction carefully, distortion can be kept low too. As usual with transformers the bandwidth is dependant on the mechanical design, but if cost is not restrictive then this can be managed effectively.

LOAD MATCHING

The major advantage accruing to a transformer as a step-up device is that it matches the impedances correctly. It also helps that the series self inductance of the generator coil is matched to the inductance of the transformer. A Moving Coil cartridge is a very low impedance device, typically 5 - 25 Ohms as a generator, so we really struggle when trying to design a transistor (or valve) circuit to match the cartridge impedance for efficient signal transfer.

Specify your transformer correctly, however, and you achieve the ideal match between the phono amp and the load specified for the cartridge. As we are building the MC transformer into the WDPhono3 we can easily provide the necessary load matching.

For our MC transformer we decided on using two primary coils with a 1:20 turns ratio to the secondary. By connecting the primaries in parallel we keep the



WDPhono3 prototype with MCT step-up transformers fitted.

1:20 ratio, whereas if we connect them in series we obtain lower gain from a 1:10 ratio. Which you choose depends on your cartridge output. We can then adjust the matching impedance by selecting a secondary load.

For a transformer the impedance of the primary is equal to the impedance of the secondary $\times n^2$, where n is the turns ratio. Typically a Moving Coil cartridge works well into a 50 Ohm or 100 Ohm load. If we do the calculations based on 100 Ohms then we will require a secondary load of 10K Ohms for the 1:10 ratio of the primaries in series. For the higher gain 1:20 ratio the secondary load becomes 40K Ohms. If you prefer a 50 Ohm load for your cartridge then just halve the load resistances.

All we have to do, now, is to switch these values into our WDPhono3 input circuit when we link up the step-up transformers. But we decided to go one better than that. For WDPhono3 we have integrated input switching relays so that we can switch between two inputs on the rear. These can easily be designated MM and MC, with the transformers fitted to the MC input. The required load resistors are then connected to the secondaries of the transformers and automatically switched in when the MC input is chosen via the front panel switch. You can use WDPhono3 to switch between two turntables if you want to – how cool is that?

Next month: On Test

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Letter of the Month

MIXED UP

Firstly I must say, Hi-Fi World has been coming up with some great articles that are of real use to me at the moment, in particular around the subject of direct-drive turntables. I have been pondering the matter myself for a while following the theft of two Vestax PDX-2000 turntables, a Vestax PMC-25 mixer (which was my pride and joy - I have kind of replaced it with a PMC-250 which is something of a consolation), a Nait 3 and a Marantz CD63 which at the time served my needs spinning tunes together and generally having a ball. I should mention that since then I have made myself a pair of Studio Monitors from Wilmslow Audio with upgraded tweeters, caps and wiring which I am happy enough to live with for the time being. However, I have been suffering greatly with the sound from an old Dual 505 and a Denon combo thing that some friends passed on to help me out; it works, but it is definitely not music as I know it.

Now having accumulated a reasonable sum of money, I am trying to reconcile houseparty DJ'ing with budding audiophile tendencies kept mainly in check previously by spending far too much on music. My girlfriend is getting sick of the sight of magazines with photos of 'wires and things'. The article on the Vestax deck recently was interesting but swung me away from the brand to look at the alternatives. A custom made Brinkmann Oasis with added pitch control would be lovely but sadly I am a nurse and not a footballer.

Ideas began to coalesce after reading about the Origin Live mod to allow a replacement arm onto SL1200s and the more I have thought about it, the more determined I have become to follow this path, adding OL Silver 2s, SDS platters, some decent oil and perhaps Isonote footers to provide some basic isolation until I can afford to address proper support furniture at a later date.

You seem very keen on the Goldring 1042 cartridge at the



Nicked! Two Vestax PDX-2000 turntables. How do you replace them?

moment. I had been thinking about the Reson Mica from previous experience. How would you describe subjective differences between the two and do you think it would be enough to make a comparison (and the extra outlay) worthwhile? (I am not into backspins and aggressive cutting; they'll be treated with respect!). I am looking forward to seeing what you've done with the power cable, isolation pads and plinth - lots of detail and pics please!

In terms of CD player, I am very pleased with the sound of the EERA DLI player from France and think that I will have one, though of course thinking about spending so much on a format that seems to be in decline does make me wince (just a bit...). Also, do you know of any shops in the London area that sell the Vincents? I have sent an e-mail to Ruark but not received a reply so far. I have been struggling to come to a conclusion about amplification and I'm looking at a budget of £1.5k or thereabouts. I have thought about going back to Naim and have listened to a Musical Fidelity A5 which sounded pretty okay, but wasn't entirely convinced by build or looks. I have to say that I have been rather tantalised by Adam's 'glowing' review of the Vincent

monoblocks, they certainly seem to cover my preference for controlled, deep bass, power and sweeter upper-bands, as I could really do without the sonic gritting I get every time with the current combo. No real comments about build quality or reliability though?

I had been thinking about an integrated amp at first but then figure I could afford something like the Vincents if I use the Vestax as a pre/control. I kind of know that this is the weakest link amongst the other gear and am wondering, firstly, whether I am being completely mad and, secondly, what can be done to maximise its performance? The most obvious place (to me) to start is at its power supply, a wall-wart job with a very weedy detachable cord, so I'm wondering if you know of any engineers who might be able to replace this with a more robust arrangement and perhaps also have enough knowledge to take a look around inside to see if there are components that could be upgraded to beef things up? Close proximity to London would be a great benefit.

I had also (in a daydream) wondered if any benefit could be had from converting the mixer to run off 12V batteries? Is that a straightforward

thing or what issues hinder it? Any advice respectfully received, hope you can help in some way,

Gareth Richards

Upgrading the Technics as you suggest is a fine idea and would definitely improve your audio quality. However, if your houseparty DJ-ing is carried out at places other than your home, it might be worth considering a couple of standard Technics or Vestax decks for this purpose and then have a dedicated hi-fi deck at home. This is the route I have taken, and there is a lot to be said for not

seem an ideal candidate for some upgraded internal wiring, ALPS pots and posh capacitors. Equally, a power supply upgrade would only bring improvements but I am not entirely convinced that battery power is strictly necessary. I have visions of you lugging a car battery around to parties with you, which would not exactly make life easy! **AS**

Gareth - I have had problems with the Technics SL1200 project plinth fabrication, so the feature has been delayed. Regardless of the plinth situation, I will soon be running the



Technics SL1210 - one alternative to the Vestax for home and DJ use.

having to worry unduly about a pint being spilt over my SL1210 or PDX-A1, whereas if either were my main deck, I would be more concerned! I have not personally heard the Reson Mica cartridge, but the Goldring 1042 is a superb unit for a similar price - an audition would be mandatory here.

The Vincent SA-T1 and SP-T100 amplifiers are a superb combo that impressed me considerably and are well worth seeking out. It might be a good idea to give Ruark a ring on 01702 601410 if they're not answering their e-mails too promptly. The Vestax mixer is a well made unit that should perform respectably well in a hi-fi system, but the dedicated Vincent preamp will be much better. Obviously it is difficult for us to comment on equipment's long-term longevity as it generally passes through our hands fairly quickly, but the Vincents are very solidly made and weighty - if their internal construction is anywhere near as good as their externals, then you should have no worries.

Interestingly, the idea of modifying a mixer for better sound performance is something that has crossed my mind before, with internal components and controls prime targets for upgrading. If my addled brain serves me correctly, the Vestax PMC-250 has rotary controls rather than sliders and so this would

to the attention of your many readers who still rate FM Radio as one of the finest of sources.

Mike Rodway.

Hmm! Your letter sounds like a disguised Press Release of the unsubtle kind Mike. All the same, a One Thing decoder did arrive at *Hi-Fi World* towers recently and is awaiting our reverent attentions. We will likely have a review of it in the next issue.

NK

CARTRIDGE CONUNDRUM

I'm in a quandary! Some time ago my now retired bank manager, a generous hi-fi fan, gave me an Entre moving coil cartridge (Graham, if you see this, please feel free to contact me and we can resume our chats about hi-fi). Although I've been unable to find out much about it, I'm led to believe that in its day, it was a reasonably expensive and good piece of kit. Once fitted it was obviously superior to the Rega MM cartridge it replaced and I've been very happy with its performance, but I will need to replace it in the not too distant future and the question is, with what?

Have I been horribly spoiled and need to spend £500 plus (which I can't afford) to match its performance, or have times moved on and a less expensive replacement may be in order? I listen to a lot of accessible jazz such as Dave Grusin, Jaco Pastorius, George Duke and other quite musically complex material including Joni Mitchell, Steely Dan, Tears for Fears and Little Feat. To be honest I can't really justify spending more than around £100 and I realise (unless I can pick up another used one) my choice will be limited.

My present number one system comprises; Rega Planar 3, RB300 with Michell TecnoWeight conversion, Audiolab 8000A amp (and its MC input) into MS 208s via VDH 'the Clearwater' cable. Digital is provided by Arcam Alpha Plus and Arcam Delta Black Box.

Also another question, is there a direct link to the love of motorcycles and hi-fi? I've seen several references to bikes

SL1200 with heavily tweaked Rega arm, Isoplatmat and the latest Isonote feet, and will be reporting in due course. **DP**

CRACKING THE DECODE

March *Hi-Fi World's* article on GT Audio's Leak Troughline updating to stereo using a "modern Decoder" was of interest. I think you'll find that *One Thing Audio's* Decoder blows Graham Tricker's away, and including realignment at about half the cost! Am I right to think that if the decoder is fitted inside the Troughline, the sound quality and separation would suffer due to heat stress? Would it not be much better to use the *One Thing* decoder in its own external case? You could then use the same decoder with more than one tuner.

Perhaps you could bring this matter



Leak Troughline goes stereo with the One Thing external decoder. But is it better than GT Audio's?

in your magazine and mail my friends who like hi-fi but also own bikes (I ride a ZZR 1100).

Terry Symonds

Used cartridges are something of a minefield, Terry, as you can never be sure exactly how many hours the stylus has under it, or what sort of conditions the records that is has played were in. For your £100 budget, the immediate candidates that spring to mind are the new Ortofon Tango and Denon DL103 if you really want another MC, or if you don't mind going 'back' to the MM stable, we



For £100 or so try a Tango,, a good budget moving coil cartridge.

have all been extremely impressed by the Goldring 1012GX.

Although I have not heard an Entre MC, I agree with you in that it was supposed to be a rather good item in its day and, consequently, I suspect you would have to move up the price scale to around £300 and splash out on the likes of an Ortofon Rondo Red or an Audio Technica AT-OC9MLII to improve on it. The helpful chappies at Needles and Spins (www.needles-and-spins.co.uk; +44(0)115 877 0781), Musonic (www.musonic.co.uk; +44(0)208 950 5151) or Mantra Audio (www.mantra-audio.co.uk; +44 (0)1757 288652) stock these, plus more besides. **AS**

Motorcycles aren't an unknown means of transport in the hi-fi world. I regret my biking days are over, at least for the time being, as scootering around London makes more sense. Boo hoo! But every time I see the lovely Triumph 675 I'm sorely tempted. **NK**

Having owned over thirty motorcycles myself in my younger days, from Honda mopeds to big BMWs, I'd say that yes, there's a curious cosmic connection. There are loads of spooky coincidences, from

Chris Frankland, ex-editor/publisher of Hi-Fi Review, who went on to launch International Motorcycling Review (if I remember rightly), to our very own publisher Noel Keywood who, a few years back, could be seen shredding the Westminster tarmac on his Triumph Thunderbird Sport! Much as I love cars (and still have the Triumph, Rover, Jaguar and Lotus bits in my shed to prove it!), I think bikes are truly special, as is hi-fi. The 'better half' of Graham Tricker (of GT Audio fame) may disagree though, as he recently had a nasty 'off', parting company from his motorised steed at high speed. I bet he's had worse shocks from valve amps though... **DP**

FORUM OR AGAINST 'EM?

Although a subscriber, this is my first letter to you, so I hope this doesn't ramble on too much. My reason for writing is Dominic Todd's column and David's comments in Letters, both in the Jan 2007 issue. Dominic's thoughts on the extreme views on forums echoed my own, as I had recently signed up to a forum very close to you and had started posting replies to some threads. I suppose I thought these forums would be made up of erudite enthusiasts (more House of Lords than House of Commons) where I would learn insights and tips to enhance my system and discover the meaning of life. I really was rather excited! However, what I discovered was a bunch of overgrown schoolchildren shouting about how great their systems were!

I have to own up. I have a Lingo'd LP12 which I had upgraded with a Hadcock 242 and Music Maker cartridge. Well, as this wasn't a Garrard 301/401 it was rubbish. I defended my deck as I am attached to it and don't feel the urge to spend more money on a different but not necessarily better sound. When I stated that I didn't want to rush out and replace it with an idler drive, tuts all round. After admitting that I had heard the arm and cartridge on a Michell Gyro with Orbe updates and didn't hear any difference to mine that was it! Impaired hearing and the taste of a Big Brother contestant! A bit depressing really.

On to the Cartridge Man Musicmaker. David said it didn't do it for him. I was jumping up and down in agreement. It's very fine but in my system just seemed boring and the vocals appeared recessed. My system is a Croft Epoch pre, VTL ST85 power (EL34s) and Monitor Audio Studio 20s so you would expect a bit of boogie. I restored my old Denon DL304 (do you hate these as much as the DL103s?) and bought an MC step up from Noteworthy Audio to use with the Croft MM stage. Brilliant! Until I played

around with the cantilever and killed it.

This letter was going to be what cartridge should I buy next? I put the Music Maker back on but it sounds different. The bass is stronger, instruments more natural, especially acoustic, and vocals fine. I don't know if I have set it up better but it is a marked improvement. I miss the brightly lit midband of the Denon but not the increased surface noise. It now boogies! I still wonder about a new cartridge but only because like wine tasting I want to see if there is anything better.

As a final piece, having read comments by Noel, I rewired my listening room which was a necessity not an experiment, with 4mm twin and earth from RS Components (6mm won't fit in to MK sockets). As I had a lot of cable left over and was bored one afternoon, I swapped my van den Hul CS122 speaker cable for the twin and earth. I haven't changed back. I use vdH interconnects which I've kept after substituting different makes so this is down to what works in my system as opposed to better etc. Makes you think, doesn't it?

Really finally! Are you going to be testing the new SE mods for the Linn LP12? They seem very pricey. Thanks for a fun and stimulating mag.

Steven Slawthe

Ah the good old forums - I must confess to spending more time than is probably good for me perusing a few of these and I have always felt that most should be viewed chiefly as a source of entertainment that occasionally turns up some very useful snippets, rather than being a plethora of accurate information! Remember that if you like your equipment, then what business is it of anyone else to cast aspersions on what you have? Certainly the LP12 is a fine deck and whether it is better or worse than the Garrard 301/401 is a matter of personal opinion. Whilst, as a 301 owner, my allegiance is clear, it is worth remembering that the LP12 is second only to the Technics SL1200 in terms of production longevity, so it is certainly no duffer.

I have experienced a similar cartridge situation to yours a couple of years back when I stumbled across a secondhand AT33 moving coil. On first trying it, I found it to be harsh, spitty and fairly unpleasant and it went straight back into its box. Moving forward a year or so brought along a house move and so equipment set up in a new room - all sounding fine with the exception of the turntable which sounded dull and lifeless. After checking setup for the umpteenth time I suddenly



Linn LP12 - a great turntable that improved even further recently with a whole series of upgrades.

remembered that little box. Needless to say the AT33 injected just the right amount of verve into the setup and found itself being used for a good year or so until an AT-OC9 came along and made everything rather more sophisticated. By all means try out a few other cartridges, but beware of change for change's sake, especially if you find you have taken a liking to the Music Maker. **AS**

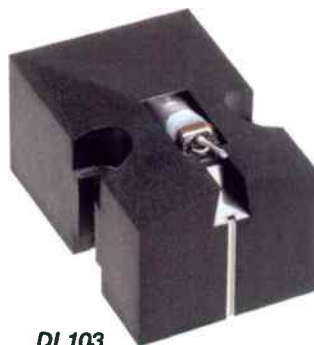
Hi Steve. We like the LP12 and have nothing against belt drives either, which generally sound clean and spacious. The Garrard 401 I use is simply very convenient, is a firm platform that can accept any arm and has a pacy and grippy sound with great - almost breathless - timing, plus deep bass. I suspect, however, that a good Direct Drive could manage as well, or perhaps better. Also, the 401 isn't perfect; it has a slightly grey midband, and here the LP12 is superior.

I feel pickup arms remain grossly misunderstood design-wise and that there is a long way to go here. The only starting point would be some sort of computer based structural analysis to see whether current structures and materials are sensible. I suspect they are not - and our measurements tend to bear this out. A good arm will provide better results overall, so as better arm designs come through, as I am sure they will, this will be the largest determinant of sound quality.

We don't hate the Denon DL103 moving coil cartridge either! It's good enough at the (low) price and has a strong following. Measurement showed it is a great tracker too. All the same, I feel there are better experiences to be had at the

price, preferring Goldring MMs, for example. Put a 1012GX, 1022GX or 1042 in a Rega RB300 and you have a great combo, at an affordable price, that has real verve. **NK**

I'm for 'em! There's nothing wrong with anyone having 'the oxygen of publicity', as Mrs T once famously put it - it's just that you have to use your brain and suspend disbelief when you read some people's posts.



DL103



DL103R

Denon DL103 and DL103R - fine moving coil value at £99 and £199 respectively.

First, who is likely to be posting on forums? Casual observers, middle-of-the-road folk, people with very wide experience of hi-fi? Or opinionated, tendentious zealots? Well, you never know. I would politely suggest that most denizens of hi-fi forums have an extreme interest or passion for the subject, and this may 'colour' their views. The operative word is 'may' as this could also make them exceptionally well informed. For example, some of our readers' letters show stunning insight and experience, others something of a misunderstanding of the topic - and you just **never know**.

The other point is that many

forum posts are quite aggressive - for example, blithely dismissing your use of an LP12 and implying you must be stupid for owning one. Well I've heard a good number of great turntables, and for some types of music I've still never heard anything better. In other instances, I wouldn't touch it with a bargepole, but my point is that if I was a full-on jazz fan, for example, I'd be running one now and not a GyroDec and/or Pioneer PL-L1000. The longer I do this job, the harder I find it to laugh derisively at other peoples' systems - generally enthusiasts have evolved their set-ups into something that does it for them. Forum-goers, I would argue, often have a more simplistic and less three dimensional view of life...

As for your cartridge, I am afraid the MusicMaker didn't float my boat. I must confess that (like Noel) I'm a fan of the subtlety and insight a serious moving coil can bring. Moving magnets such as the MusicMaker are just too veiled in the treble and opaque in the midband for my tastes, although it is excellent in other respects, as its name suggests! I personally would go for an Ortofon Rondo Bronze (£500) which will give you the clarity and bite of the Denon 304 with a good deal more finesse. It is slightly less warm though, but your Linn LP12 should add a little

welcome colour!

The LP12SE mods will be done in full, very soon. Rest assured we'll be handling the subject with love and affection for the Sondek, and not just looking for a chance to deride it! At the Bristol show, my first impressions were wholly positive, although there were some there who rather missed the 'romance' of the old deck. We'll see! **DP**

SPEAKING BRIEFLY

Just a very quick question: did your magazine ever do a test of the B&W 803D loudspeakers and, if so, what were your experiences of them?

Raymond Van Rompaey



B&W 803D - now with diamond tweeter.

Raymond, we have not covered this particular model. That said, I did spend a while with a pair of pre-diamond tweeter 803s and liked them - they had the typical B&W qualities of accuracy, good detail and bass depth and I would imagine that the diamond tweeter will only improve on this. It is difficult to comment on whether you will like them, however, without knowing your musical preferences and the rest of your system. **AS**

We've only done the B&W 801D so far, and I chose to review this above the 803D for the former's massive 15" bass driver (the 803D uses three 7" cones in parallel). I've heard the 803D sound very impressive, with a clean, measured, detailed monitor sound, but personally, the 801D did something that the '3 didn't - which is to move air with effortless grunt. It is truly charismatic in the best sense of the word, and the best B&W speaker I've yet heard. **DP**

INDEXING

I am currently re-reading my collection of hi-fi magazines, with the claimed goal of making an index of the articles I have found useful/of interest in order to be able to quickly find them again. In fact, I am suspicious that this is just a pretext as I enjoy reading the magazines again!

However, re-reading articles from different magazines over a long period (15 years) has made me aware of some general 'tendencies':

- a piece of equipment doesn't need to measure well in order to deliver the goods
- the revival of vinyl and valves
- the 'boom' of what was in the past considered as secondary accessories (if ever) such as cables, mains filters,

connectors, add-on power supplies etc.

- the 'loudspeakers set-up' concept
- followed by the 'turntable set-up' concept, followed by the 'arm/ cartridge set-up' concept, etc.
- as opposed to the above the 'listening room acoustics' concept has made a more timid appearance
- the concept of 'synergy' when assembling two or more components
- the use of French words or expressions in English audio-related literature is also relatively recent. It has started first in the US, then appeared on the internet, and finally reached the UK hardcopy press too. As with any trendy fashion it is sometimes misused and/or misspelt (i.e. 'faites accompli' in HFW June 2006, p68)

An obvious conclusion is that hi-fi is definitely an industry and that the hi-fi magazines reflect it. After all the press is an industry too, and a big market, especially for cable manufacturers. As far as HFW is concerned, I have noticed a net improvement since the 'DP/NK' editorship in general and that the word 'couth' has made a very new but often-used appearance as an adjective in the reviews. I also feel that maybe I need to start a special index 'DP and the NS1000'! Overall HFW would be my hi-fi mag. of choice if I had to read but one. In particular, the editorial tone, the articles 'on a theme', the comparisons between 'old and new', the Mail and the DIY sections are what makes your magazine far above the others. However, I would like to add my contributions to some audio-related topics if I may:

(1) Vinyl vs. CD vs. master tapes: generally, people are comparing apples and oranges. There is not one master tape - there is the master tape for vinyl, another one for CD and sometimes a third one for radio. The first aim of mastering is to adapt the final mix to the medium the work will be released on. If an album has to be released on vinyl and on CD there will be two different master tapes (or digital files) created. If tracks X and Y have to go on air for promotion there will a third master made for tracks X and Y.

It is therefore in general irrelevant to compare a vinyl to a CD as the latter has been made using either the record as the master (the worst case) or the master tape (mastered for vinyl). Only when the mastering has been done using the final mix has the CD a chance.

For reference: The Who 'Live at Leeds' on vinyl (1970), on CD (1987), on remastered CD (1995) and on remixed and remastered CD (2001). As the CD versions are improving with time I guess that the 1987 version used the vinyl as the master, the 1995 version very likely used the vinyl master tape and the 2001 version obviously used the

original tapes since it has been remixed.

I am not comparing analogue vs. digital playback, I am just trying to point out that a huge amount of CDs had been made using a masters custom-made for vinyl and therefore are flawed from the start from a sonic point of view.

(2) DP and the NS1000: apart from the fact that you need to keep your Yams intact as it serves you as a reviewing tool, have you ever considered driving them multi-amplified? Let's say with the NuForce for the bass and your modded WAD for the medium and treble? A second-hand computer (you don't need great speed for the purpose) equipped with a 4-output soundcard and some audio software is all you need to make a digital crossover and it is easier to do and cheaper than to build a WAD kit! On the other hand you can use a Behringer DCX2496, just ask AG to rebuild the power supply as the stock one is hopeless.

(3) CV and speakers using tuned cabinets: besides the Waterfall, Eclipse and Bösendorfer please have a listen to models from Ocellia (www.ocellia.com), OSH (www.osh-antimis.com) and Auditorium23 (www.auditorium23.de).



Ocellia Calliope loudspeakers - reviewer Channa should have a listen, says reader Jean-Christophe Xerri.

Not only do they make use of tuned cabinets and they sound 'natural' but also they are very efficient, crossoverless and just love low-powered valve amps (don't forget to invite NK!).

Finally, there are a couple of topics I would like to read on: firstly a mains-isolated system. There are already turntables, phono preamps, portable digital recorders, computers, DACs, line preamps (and TVCs), integrated amps with battery-powered PS. Why not building an entire system free from the noisy mains corruption?



Yamaha NS1000 (again!) - benefit immensely from a set of custom-made stands.

Secondly, digital room correction. There are already existing products (Lyngdorf, Tact, DEXQ) as well as DIY attempts on the net that do not cost an arm and a leg. Wouldn't it be a good thing to experiment what the mixing engineer attempted to do without transforming our listening room (which is also the family living room for most of us) into a studio suite spoilt with absorbers, diffusers and Helmholtz resonators?

That's enough for now. Keep up the good work!

Jean-Christophe Xerri

Hmm, I am not entirely sure that it is true that a piece of equipment does not need to measure well in order to sound good. Very often any irregularities in measurement can indeed be heard but the important point is whether their resulting effects are objectionable or fairly benign. Ultimately, however, we do tend to find that the best-sounding equipment that we audition does indeed measure fairly well as well. Just to confuse things even further however, we do sometimes find that a set of good measurements do not necessarily guarantee a good sound...

I don't think anyone could have predicted fifteen years ago how some aspects of the current audio industry, such as valves and vinyl, would have developed. Others, such as proper setup, system synergy and suitable accessories, seem to be a natural progression to me and I am surprised that it took so long for someone to realise that the best place to site their loudspeakers was not actually plonked down beside the sofa with

a pot plant on top of them. Hi-fi is an immensely rewarding pastime, but is not really a fit-and-forget activity, especially if you like those valves and vinyl!

As to the use of French, I suspect that, deep-down, we feel it confers a sense of the exotic and mysterious upon us when we use it. Of course, slipping into the realms of Del-Boy Trotter is always a danger, so we shall have to monitor these more closely in future. Mangetout!

AS

Au contraire Rodney - I mean Adam!

Sometimes we need to use French to describe situations or sensations for which adjectives or phrases don't exist in English.

No excuse for the odd typo admittedly, but using foreign words is accepted English practice, and useful too - as anyone who's ever tried to describe déjà vu in English will know!

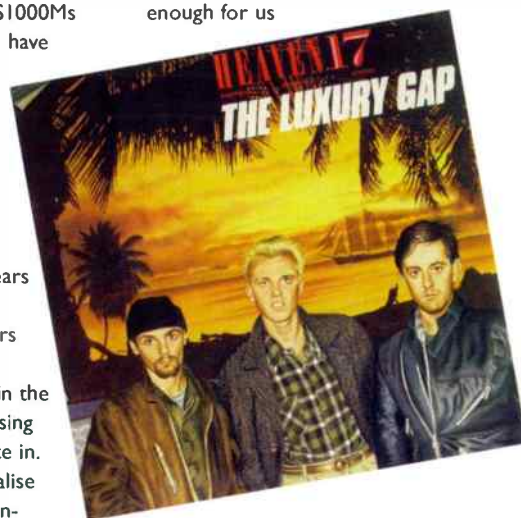
As for the Yamaha NS1000Ms and myself, I now realise I have spawned a monster. I use them because I've yet to hear more transparent loudspeakers (from any era), but I admit they are flawed in some ways (like every other speaker). The trouble is, after twenty years in the wilderness (in this country at least), it appears that every single English-speaking NS1000 owner in the world picked up on me using them and decided to write in. Apologies for this, as I realise it is terminally dull for non-NS1000 owners - maybe we should introduce a ban, like the French once tried with English words in la langue française! Given what I've just said, I shall not divulge my plans to run my Yams with Marantz electronic crossovers... **DP**

There were some glorious examples of CDs being derived from LP cutting masters, Heaven Seventeen's 'Luxury Gap' being a classic example. But I am not aware this was ever a common practice/ mistake. Quite the reverse in fact: the recording business was excited by the introduction of CD and the lack of any need to derive a special cutting master, due to CD's intrinsic accuracy. Back then, digital

was inarguably perfect, remember?

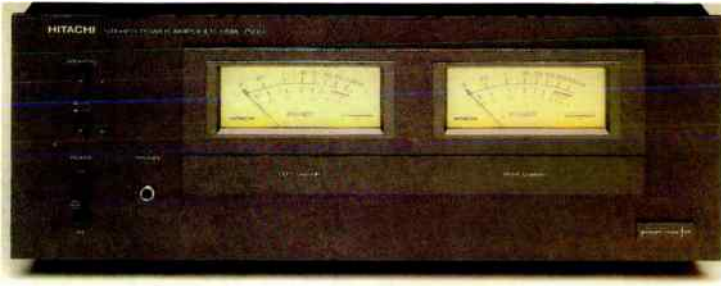
Early CDs were flawed for a variety of reasons. Engineers were told CD had 96dB dynamic range, but that they must not run into overload at the mastering stage (digital has a strict headroom limit). So music was transcribed at a low level, in the belief that 96dB gave more than enough headway. What few realised was that digital was only 'perfect' at full level; at low levels it was very imperfect, distorting heavily in a way LP had never done. This greyed and coarsened the sound of early CD. This behaviour, as well as poor A/D convertors and jitter, hampered sound quality. Modern recordings are a lot better all the way along the signal chain and you can hear it. It is certainly the case that LPs and CDs are usually from different master tapes and therefore not directly comparable, but I compare them in any case! It's always interesting.

The issue of measurement is a little complex. Yes, products that measure badly can sound good, but that really depends upon what it is that measures badly. Not all measurements say much about sound quality, channel separation being one; much above 23dB is good enough for us



CD and LP come from different master tapes, so they cannot be compared. Heaven Seventeen's 'Luxury Gap' CD demonstrated what happens when you use the same master, in this case the LP cutting master.

to perceive stereo. Distortion is another controversial one: second harmonic distortion (a signal at twice the frequency of the stimulus) is also subjectively innocuous. Third harmonic adds sharpness, but at low levels gives the sound incision and a hard edged quality that some like, as it seems to 'sharpen things up'. Much above this however and the ear starts to hear distortion not as a change in quality of the music, but



Hitachi HMA-7500 amplifier - measured perfectly back in 1979, but didn't sound that way.

as a separate interfering signal. Then there's the modulation pattern of the distortion, or whether it is correlated with the music.

Cartridge mistracking is interesting is an illustrative example; just before mistracking a pickup cartridge produces lots of distortion, but it isn't heard as such. As soon as the stylus lets go, the signal starts to take on a modulation pattern as higher harmonics join lower ones (that characteristic zzz... zzz) and this the ear hears immediately. Digital distortion is often uncorrelated with the music and possesses components that may be of fifteen times higher frequency than the stimulus; the ear detects this as something totally removed from the music, as greyness, hash, hardness and what have you. So there's distortion - and distortion! Some is innocuous, like 5% second harmonic, but some is not, like 1% digital quantisation distortion. So products can measure badly, but sound quite good all the same.

The converse is more difficult to explain: products that measure well and sound bad. This is where argument breaks out! My oft quoted example was one of the first MOSFET amplifiers, launched in the late 1970s, the Hitachi HMA-7500. This was distortion-free, even at high frequencies, and measured perfectly in every other respect, yet there was no sound quality benefit. The reverse in fact: it had a peculiarly unengaging sound, characterised by a lack of stage depth and a slightly opaque quality. It was lifeless and unengaging to listen to; one reviewer said amplifiers like this sounded "boring" and, in a nutshell, he was right. Yet it measured perfectly, so here was a total contradiction. Why?

Many people have put forward reasons, but to this day I am unaware of any measurable proof. Some amplifiers today, often based around MOSFETs, still measure perfectly and yet seem to benefit little, if at all, in sound quality. The general suspicion is that excessive feedback is the culprit, and, in the case of the HMA-7500, poor 1970s component quality.

These days component quality has improved and so has sound quality, but still it is difficult to measure any difference between then and now, so what the ear is hearing, heaven knows! Thankfully, this situation, where a product measures perfectly but doesn't necessarily sound so good, mainly affects amplifiers and we just have to live with it. It doesn't negate the value of measurement, but it does suggest that with amplifiers the measurements we use are best at determining general operability rather than ultimate sound quality. Unfortunately, whilst this contradiction between measurement and sound quality exists with amplifiers there will always be room for argument, the most common being that our subjective assessment is flawed, not the amplifier. If this was the case then an awful lot of people around the world are deluded. All the same, at Hi-Fi World we endeavour to have more than one person listen to a product, often under different circumstances and always without prior discussion, to ensure there is consistency of view.

Generalising then, if a product measures well then there is a good chance it will sound at least respectable. If it measures badly then the reason why is the issue when it comes to influence upon sound quality. In this case measurement usefully warns that sound quality traits are due to measured imperfection, avoiding the unfortunate situation where a reviewer hears the effect, likes it and declares the product a winner. Doh!

What studio engineers do with equalisers and all the other gadgets they have available to them nowadays is a little different to improving room acoustics. We recommend more sumptuous furniture rather than treatment panels, although Studiospares have a good range of all those ugly things you list that can help. Helmholtz resonators? Try a tall bookcase in a corner - much more effective.

Hasn't French always been a part of English, even if Wikipedia says our

roots are West Germanic (who said hi-fi is confusing?). Start worrying when we turn to Gaelic. **NK**

Go raibh maith agat ar do litir. **SM**

HEADING NORTH

I have read and subscribed to Hi-Fi World since issue 14 and I admire your comments on hi-fi as we both think very much along the same lines. I, like yourself, purchased a brand new Garrard 401 turntable in 1970 which I fitted into a Howland West plinth with a Neat G30B tonearm and a Shure M75ED cartridge. This was amplified by my first amplifier which was a 45W (RMS) Nikko TRM1200 and it fed a pair of Wharfedale Unit 5 kit speakers (3 way units with a 12in bass driver). In 1976 I upgraded the arm to an Acos Lustre GST1 and in 1981 the cartridge was changed to a Goldring G900 IGC. The rest of my system was upgraded to a top end Rotel 1010 setup complete with tuner, tape deck, 100W pre/power amps., complete with a spectrum analyser with an on-board pink noise generator, condenser mic. and a matching graphic equaliser to control it, all housed in its matching metallic brown and glass cabinet. Excellent!

After lots of careful auditioning the speakers were changed for a set of 15in Tannoy Berkeley Dual Concentrics. All of this only had moderate use up until 1983 when I purchased (wait for it) a Philips CD104 CD player. This lasted until the mid nineties when it was replaced with a Marantz CD63 to which I later added a Micromega Duo BS2 DAC that turned out to be quite a smooth and detailed combo, for CD anyway! I then found a second hand Meridian 200 transport and 263 Delta Sigma DAC advertised in Hi-Fi World by a high-end dealer in London for the modest sum of £399. I quickly phoned them up and was lucky enough to secure a deal. When they arrived I unpacked them and was stunned to see the condition they were in. Immaculate! They were also supplied with a van den Hul digital interconnect. I could not believe my luck.

I sent the transport off to Meridian for a check-up and service. Meridian contacted me and asked if I would like to have the unit upgraded as well. For the service and upgrade they wanted the princely sum of £35 so I snapped up their offer. When it arrived back I connected it up and what a difference. Deeper, tighter bass and more detail, well worth the small outlay. Thank you Meridian.

Long ago I discovered the joy of valves but could not decide what to buy because a lot of the better products were out of my price range. Then along came the WAD kits that I could afford.

Having had some past experience of building hi-fi I decided to go for it. I phoned up and ordered the three Pre II units. I then saved up and purchased a pair of 300B PSE monoblocks which I started to build but unfortunately had to put on hold due to health reasons. This

3 channels. A Pioneer DVD player with SACD and DVD audio feeds these into a Pioneer PDP-434 HDE 43in plasma TV. The speakers are two BK Electronics 10in active subs (these are superb by the way), a B&W CC6 centre and Mission 752 fronts. I will be replacing

results are good - and I am sure they will be - I will modify the 752s as well. I would urge any hi-fi nut with an ounce of DIY skills to have a go at this as it is really enjoyable.

These recent activities have inspired me to start building the valve umps again and also upgrading other equipment - which leads me to where I would like your advice. Having read Adam Smith's article on the Slatdeck/401/SME312/Rondo Bronze set up I have made the decision that I want some kind of slate plinth (probably a DIY Cumbrian green slate version as although I would love a Slatdeck my funds will not run to it), with an SME312 and I am thinking of using a Music Maker III cartridge in place of the Rondo Bronze as I know of a good second-hand one at a reasonable price and I don't have step-up transformers in my Phono-II. As always I will value opinion and would be most grateful for your answer.

Thanks to you and all your team for a great magazine that I have enjoyed and will hopefully enjoy for many years to come.

Graham Taylor,



Something to drool over - and it looks better in real life! The WAD Slatdeck with Garrard 401 turntable and SME312 12in arm. Heaven.

led to me having to give up work and because of this and a few other reasons we decided to sell up and move from Kent to north west Cumbria where my other half is from.

The upside of all this was that I could afford to buy a large, detached Victorian house with 18in thick walls, solid internal walls and doors, 9ft 6in high ceilings and - most importantly - my own wife-free A/V room complete with open fireplace, large (9ft long) sofa, with a handy glass shelf to place my wine/beer glasses fixed to the wall next to it and an in-room chiller to keep it in. An audiophile's dream set up I think!

Since I moved up here five years ago I have set up an A/V system using mainly second hand equipment such as a Rotel RSP985 THX processor hooked up to two Rotel 2 channel power amps. and a Rotel 6 channel amp. bridged to

the Tannoy 628 rears with a pair of Mission 751 units that a friend of mine had blown up and was going to take to the dump. I rescued these and after inspection found that two bass drivers and one tweeter were dead, but the crossovers were both okay. I phoned Mission and a very helpful lady called Nikki said that she could supply me with original bass drivers and a butterfly repair kit for the tweeters. The total cost would be £89.35 for all four units inc. p&p so I placed an order. I have since restored these and once again they are singing.

I enjoyed doing this so much that I have decided to upgrade the crossovers and with the help of Peter Comeau and Nick Holland at Arena Electronics I have changed the internal wiring with better cables and will be replacing all the capacitors with their SAX type. If the

Hi Graham. It is difficult to know quite what to say about the Music Maker III cartridge as a second-hand deal without a price - and age. As always though, you need to be sure it has some life left in it, and is not worn out - or going that way. Two new Ortofon moving magnet designs have just arrived however - see our review this month - and more top quality moving magnet cartridges from a well known and respected manufacturer are due out soon, so don't act hastily!

Like your house by the way - sounds great, much better than my 1910 piece of London Victoriana that has - er - structural limitations shall we say, in contrast to what you have found in Cumbria (meaning the walls are crap and the roof leaks!). NK

Billy Vee
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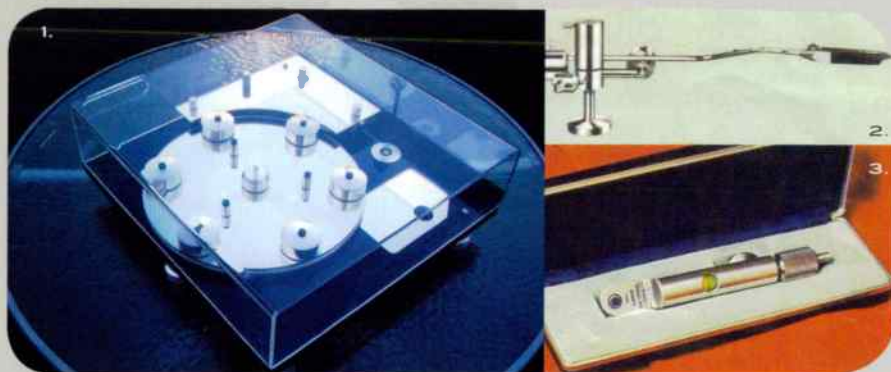
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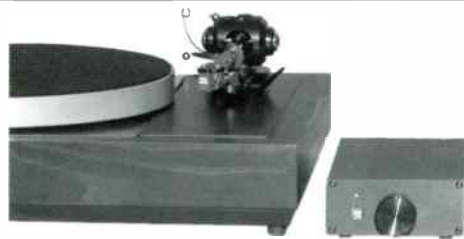
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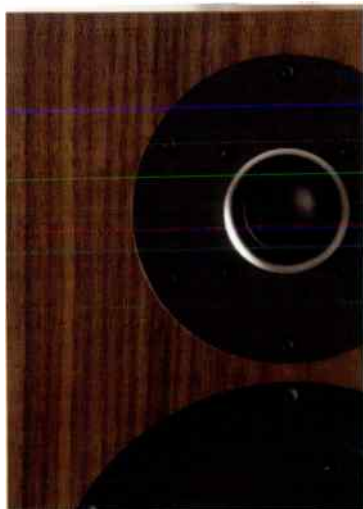
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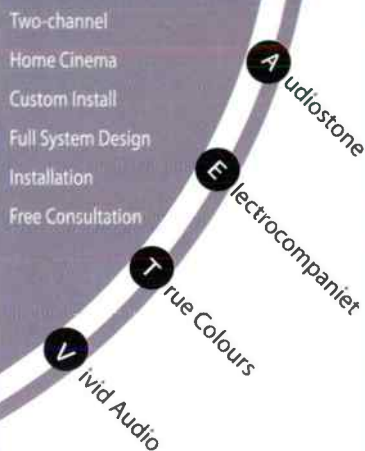
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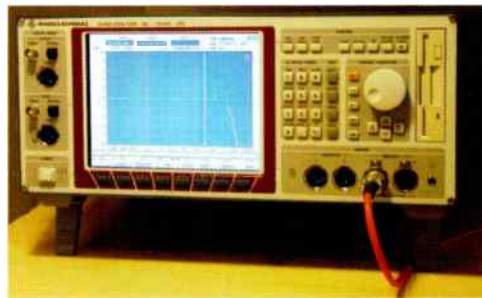
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USHER 1.5 Power amp. 150 watts per channel. Class A. (£1500). Selling: £850. Buyer collects. Townshend Isolda speaker cable, 2.5 metres, £185. Tel: 01491 614 325

DYNAUDIO AUDIENCE 62 for sale. 4 years old, cherry finish, good condition. £400 ono, demo available. Contact Jeremy 07977254160

MUSICAL FIDELITY A1000 pure Class A amplifier and p.s.u. Near mint condition. £595 ono. Tel: 0794 117 4804 (Berks)

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PIONEER CT91A cassette deck £250. Pioneer F91 tuner £200. Thule A1.100 amplifier £250. Mitsubishi separates, mini-system 1980's, offers. Trio KA501 amplifier £50. Trio KD3100 turntable £50. All very good condition. Tel: 01224 646 473

CREEK T50 FM/AM high quality tuner. Superb sound. Only 20 months old. Mint condition with box and instructions. Cost £595. Will accept £300 ono. Buyer collects or by arrangement. Tel: 02380 274 494

WDKEL84 Valve Amplifier Kit

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

The WDKEL84 features a pair of EL84 valves in Push Pull configuration per channel, providing two channels each 18 Watts into an 8 Ohm load. Available as a 5 input integrated amplifier with ALPS volume control.

WDKEL84 kit £369

WDKEL84 built and tested £544



WD88VA Valve Amplifier Kit

"It proved itself to be an engaging valve amplifier that measured well and sounded superb. Quite simply it plays music, and plays it extremely well."

Adam Smith, Hi-Fi World Dec 06

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

WD88VA Integrated Amp kit £849

WD88VA built and tested £1099



Headphone II Valve Amplifier Kit

"Headphone II is a single-ended design with the power pentode wired up in triode configuration for added purity and is as quiet as a mouse"

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

Headphone II kit £275

Headphone II built and tested £404



WD25A Standmount Speaker Kit

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

Cabinet kit (pair) £179

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

WD25A STD kit (pair) £215

WD25A XL kit (pair) £398



WD25T Floorstanding Speaker Kit

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

Cabinet kit (pair) £398

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

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

WD25T STD kit (pair) £279

WD25T XL kit (pair) £459



AUDIO ZONE AMP-1 integrated amplifier outboard power supply superb sound mint condition £800. Tel: 07765 808 374

KRELL KSP7B preamp £500 (£2600) (new) Sumo Athena II preamp £350. Tel: 01509 230 694 (anytime)

NAKAMICHI CR7, mint condition, instructions, remote, boxed. £650. Rogers LS3/5A 15ohm, good condition. £550. Audio Research SP9, superb phono stage, boxed, immaculate. £450. Rega Planar 3. £120. Tel: 0772 962 0621

RMS REVELATION One. Unusual standmounted speakers, curved metal cabinets, external crossovers, £350. IPL Acoustics S3TLM ribbon Mk2 transmission line floorstanders, ribbon tweeters, aluminium mid bass, crown white ash, £400. Tel: 01202 298 447 or 0777 387 6019 or Email: paynetar@lineone.net

REGA PLANER 3 Elys cartridge £150 Rotel RC870 pre x2 RB870 power amps boxed £240. TDL RTL 3 speakers £130. Tandberg TCD 440A spare pinch rollers manuals £230. Tel: 01903523375

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CROWN IC150 preamplifier, DC300A power amplifier; 150wpc £500. Lecson AC1 preamplifier, AP2 Tower of Power 100wpc design classic (offers). Buyer collects. Preston area. Tel: 01772 864 684. Email: james_cragg@yahoo.co.uk

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MONARCHY SM-70 Pro 25watt, mint, box, manual, (£900) £360 plus carriage. Quad 306, Quad serviced, mint, box, manual, £160 plus carriage. Tel: 01903 247 779

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ARCAM 8 Delta 90.2 Intergrated Stereo amplifier £100. Arcam Delta 70.2 Compact Disc player £100. Arcam Delta Black Box Digital Audio Interface £100. Arcam Delta 80 AM/FM Stereo Tuner £100. Email: snagaitis@hotmail.co.uk

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GUIDELINES FOR BUYING AND SELLING SECOND-HAND EQUIPMENT

FOR THE BUYER

1. Not everyone is honest - Buyer Beware!
2. Don't send cash!
3. Accept no verbal guarantees.
4. Have you heard the item or something similar? If not, why do you want it?
5. Don't pretend to have knowledge - it's your fingers that will get burnt!
6. Is it working? If not, why not?
7. Has it been modified and, if so, have notes been kept?
8. Was it any good in the first place?
9. Don't send cash!
10. If you are in the slightest doubt, arrange an audition (see point 5) If it's too far, wait for another time.
11. Either buy it or don't: vendors are excusably impatient with 'consultation' exercises.
12. Don't send cash!

FOR THE SELLER

1. Not everyone is honest - Seller Beware!
2. Make no verbal guarantees.
3. Even 'nearly new' is still second-hand. If the manufacturer's guarantee is no longer in force, your price should reflect this.
4. There is very little intrinsic value in second-hand hi-fi; it's only worth what someone will pay for it.
5. The best guide to pricing is last month's Classifieds: that a 'classic' was worth £xxx a year or two ago is no guide. Values fall as well as rise.
6. Amateur second-hand dealing is not a big money game: you win some, you lose some.
7. Be prompt with despatch. If in doubt about buyer's bona-fides, either wash out the deal or send C.O.D.
8. There will always be timeswasters; be tolerant within reason!



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JUNE 2007 - 5TH APRIL 2007

JULY 2007 - 9TH MAY 2007



JEROME KERN SONG BOOK

ELLA FITZGERALD
1963



"the Song Book series is an ideal method of dipping your toes into the cream of the songwriting crop"

The Verve years were great for Ella Fitzgerald. She had moved on from Decca where she struggled with patchy material – some excellent but too many of them novelties. Her Song Book series at Verve launched her star into the stratosphere where it has stayed ever since. Her 'Cole Porter Song Book', for example, became one of the biggest selling jazz records of all time. Fitzgerald began recording the Song Book series for Verve in 1956 with Rogers and Hart, and the last was undertaken in 1963 with Jerome Kern.

Speakers Corner began covering the Song Book series back in the year 2000, with the 'Cole Porter Song Book'. It was at this time that the label had the idea to publish all seven of the original series because the initial set sold so well. The label then issued a second series with consistently high sales – and so the series has continued with the new release of the 'Jerome Kern Song Book' featuring standards such as 'A Fine Romance', 'Can't Help Loving That Man', 'The Way You Look Tonight' and 'I'm Old Fashioned'. It is a beautiful release, superbly mastered by Acoustech in the USA.

Rather than a complete unit of song books, the audiophile has to look at the series as a suite of linked yet separate albums. Some of the albums were recorded in mono and some in stereo. To that extent, Speakers Corner produced the very first stereo versions on vinyl of Song Book songs with the few tracks that

appeared on the largely mono Rogers and Hart production.

The final vinyl volume will be the Harold Arlen Song Book which will be issued either late this year or early next year. CD fans should hunt down the song books on the Verve label. The ambitious can even purchase the entire series as a magnificent box set of sixteen discs. Vinyl fans who happen to be Fitzgerald completists may have to make some tough decisions too. Mainly because the CD versions of the song books included an array of extra tracks. As the MD of Speakers Corner, Kai Seemann, explained his vinyl versions, "sometimes include the extra tracks. If there was enough space on the LP we did. Sometimes there was no space left. For example, if a track was deemed too long for an album side, the sound quality would degrade so I wouldn't feature it."

Speakers Corner sometimes found themselves with a spare fifteen minute track but it was too short to include on an extra 33rpm record or even a double sided 45rpm vinyl. So why didn't they include it on a supplementary 10" or single sided 45rpm disc? "We are not able to manufacture 10" vinyl discs to the thickness we require. I could have done it with a single-sided 45rpm disc but I feel uncomfortable where one side is completely blank. It's unattractive. When Classic do it they have an entire album on one-sided discs. Oddly enough, we tried that route but our customers didn't

appreciate it – maybe we have different customers."

There are no extra tracks on the new Jerome Kern release but, then, there are none on the older CD version either. In fact, Speakers Corner didn't utilise the CD sets for comparison, to see what extra tracks were out there; the company instead depended on the tape library at Universal and for that library to say that, 'well on this tape we're giving you, there are extra tracks'. Some might call this approach rather blinkered and less than diligent whilst others might say the company wanted to give the public the best sounding product available and so only worked with the best tapes, instead of mooching around on the floor looking for bits and pieces to add to the end of an album.

As individual records, the Song Book series is not perfect. The arrangements (on Cole Porter and Rogers and Hart, lovely as they are) can rightly be accused of being a little plodding which was restrictive to Fitzgerald. The heights were reached on the Gershwin and Duke Ellington Song Books where Duke Ellington and Nelson Riddle respectively created arrangements more suited to Fitzgerald's style. Taken as a whole, however, the Song Book series is a *tour de force*, an essential item for any fan of the popular song and an ideal method of dipping your toes into some of the cream of the song writing crop. **PR**

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