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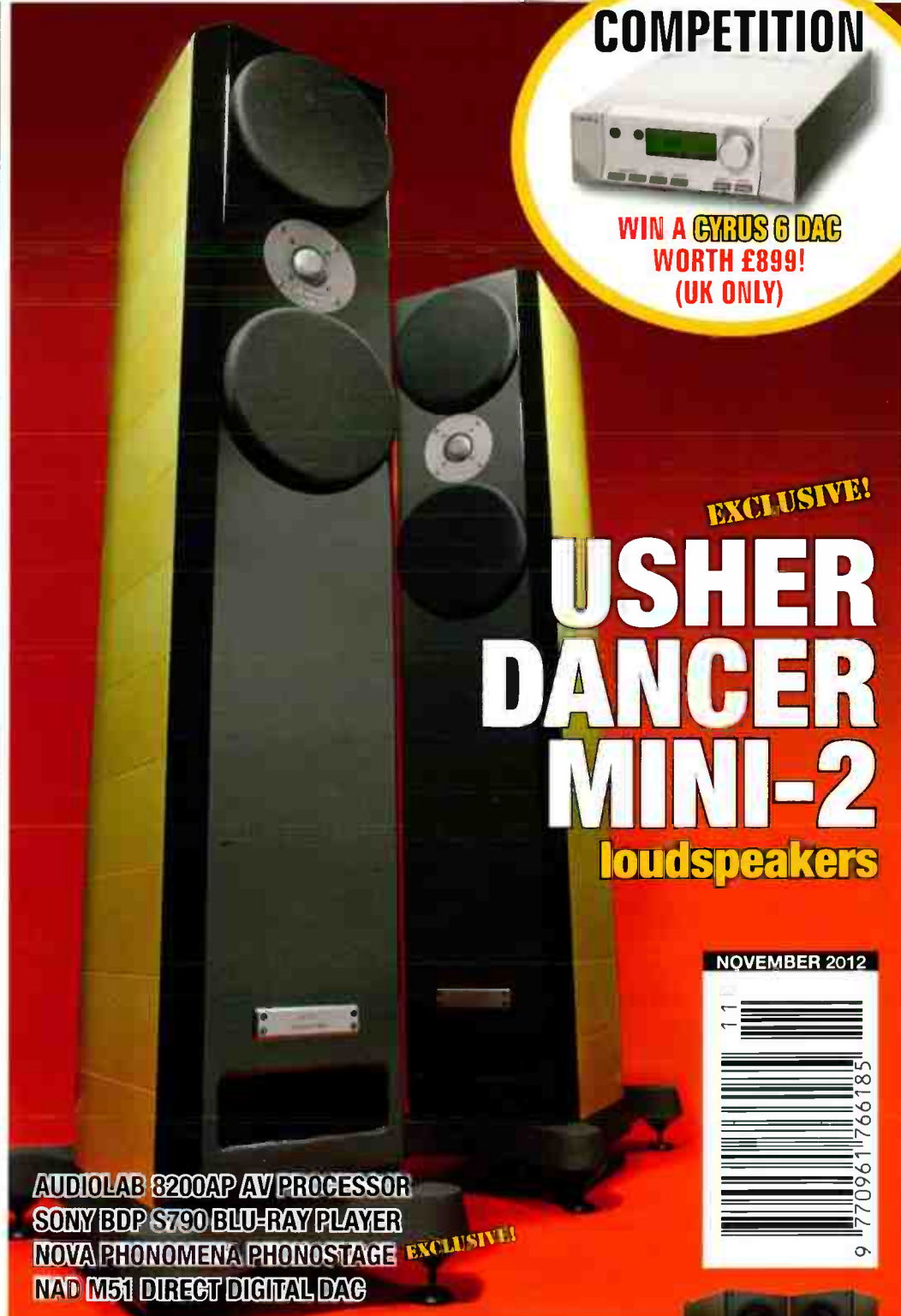
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7 PAGES OF LETTERS - THE BEST WINS A PAIR OF KEF Q100 LOUDSPEAKERS! (UK ONLY)

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World Radio History

welcome

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verdicts

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



Loudspeakers are never far from the headlines in this magazine and in this issue they illustrate the decline of British audio in the 1970s, as well as the rise of Far East manufacturing today. As countries industrialised around the world in the late twentieth century it was inevitable that competition from what were once low wage economies would rise. But Wharfedale as a brand has value and continues on today much as in the past, creating great new loudspeakers like the Denton 80th

Anniversary Edition - see page 50. These days, however, Dentons roll out of a factory in China, rather than one in Bradford. But they remain designed by Brits.

Meanwhile, a few hours flight away in Taiwan the huge Usher factory illustrates just how far audio has progressed in the Far East. With fabulous engineering and auditioning facilities, this company produce loudspeakers incorporating their own unique drive units, now including a laminated diamond tweeter. A unique tweeter, beautiful cabinet work and a price of £3500 add up to one very attractive package - read more about it in our Dancer Mini-Two review on p12.

Where Britain once came under pressure from Japan, now Japan comes under pressure from China, with the help of British engineers! Yes, Audiolab's 8200AP AV processor is designed in the UK, made in China and looks for a slice of the audiophile AV market pioneered by Sony - see p16. Sony don't intend to let their grip on home cinema slip away easily though and in this same issue we feature a new Sony Blu-ray BDP-S790 player that does more than seems possible for just £139. How much? See p64 where Martin Pipe takes a very close look.

While the technologically complex worlds of AV and network audio fight it out for tomorrow, yesterday stays with us in the form of Ortofon's amazing new MC Anna cartridge, price a mere £5000! See p89. And then we have the beautifully designed, built and finished World Design KT88 valve amplifier on p46, that you can buy built or build yourself. With winter fast approaching, why not? It's a great way to be entertained and stay warm at the same time!

I hope you enjoy what we have managed to put together for you in this month's issue. It looks far and wide to cover today's world of audio.

Noel Keywood, editor

testing (see www.hi-fiworld.co.uk for full explanations of all our tests)

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

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

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

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



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Ortofon MC Anna cartridge - a £5k wonder!



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NAD M51 844kHz PWM DAC - wow!



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BDP-S790 Blu-ray from Sony - it also plays SACD and costs peanuts.



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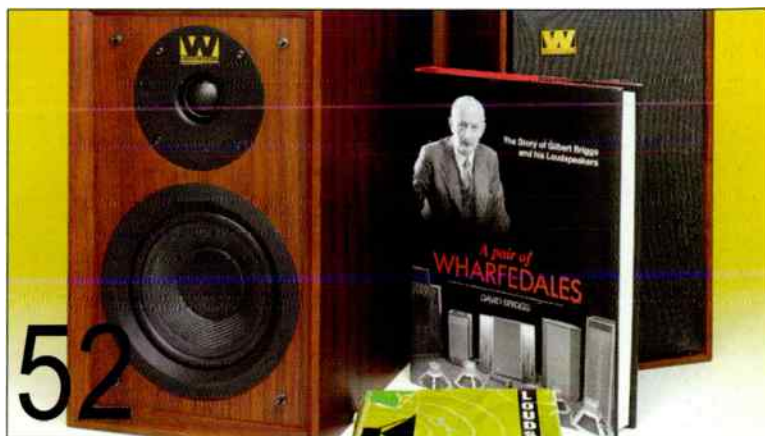
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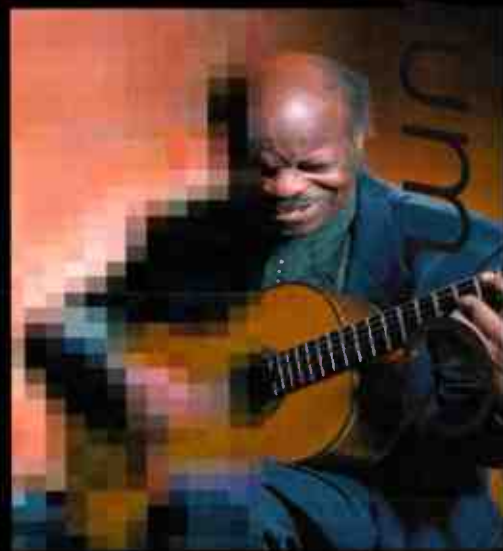
Kai Ekholm, Inner-magazines.com 2012

"Whatever you do, don't audition the Ultra Black. As I said before, once you do, there's no going back."

Steve Dickenson, Hi Fi Plus 2010

"The Iridium mines details other amplifiers only dream about"

Noel Keywood, Editor, HiFi World 2012



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QUADRAL'S NEW PLATINUM M

The Platinum M generation two is Quadral's latest line of Platinum series home and surround sound 'speakers. They feature a strong conical chassis braced by aluminium membranes, plus a high frequency ring transducer with titanium membrane and horn loading. The range includes the Platinum M50 (£1,270) featuring two, 18cm pressure chamber/bass units, two 13cm midrange cones and the new ring transducer. The Platinum M40 (£845) features a smaller pressure-chamber bass-reflex design, two conical chassis 17cm bass-midrange units and the ring transducer tweeter. The Platinum M30 (£589) uses the same tweeter and two 16cm cones: one for bass and the other for mid/bass. The reflex-constructed Platinum M20 (£309) and Platinum M25 (£385) feature 13cm and 17cm mid/bass drivers respectively with the ring transducer treble while the Platinum M10 (£425) Base central speaker includes two 13cm mid/bass drivers plus tweeter.

Click on www.quadralgb-ie.co.uk or ring 01785 748446 for more details.



QUAD PLATINUM

Quad has announced the launch of the Platinum DMP CD player/DAC/preamp along with two power amplifiers: the Platinum Stereo (150W) and Platinum Mono (180W), priced at £2,500 each.

The Platinum DMP (Digital Media Player) includes a CD transport plus twin Cirrus Logic 24-bit/192kHz Delta-Sigma D/A converters. There are

six digital inputs (three optical, two RCA and a USB) and four digital outputs (one optical, one RCA, a BNC and AES/EBU). Post-DAC filtering is carried out via linear phase active filters with audiophile-grade FET op-amps.

The Platinum power amps use direct coupling for each stage, enabled by the use of a DC servo, a circuit that compensates for any unwanted DC voltage and removes it without affecting the music signal. Both new power amps pay particular attention to the control of crosstalk and the flow of magnetic fields. A separate preamplifier, the Platinum Pre, will launch later this year. Call 01480 447700 or click on www.quad-hifi.co.uk for more information.



4 BY ONKYO

Onkyo is about to release two integrated amplifiers – the A-9050 (£400) and A-9030 (£300) – and a matching T-4030 DAB+/DAB/FM tuner (£250). Both amplifier models feature WRAT amplification boosted by Onkyo's Three-Stage Inverted Darlington Circuitry. The A-9050 features DIDRC dynamic noise reduction technology, a Wolfson 192 kHz/24-bit DAC and new PM Bass technology, which counters audio phase shifting by matching the phases of low- and mid-frequency sound waves. Onkyo says that it improves mid-range clarity and bass response.

The A-9030 and A-9050 features five analogue inputs and one output each, while the A-9050 adds three digital inputs for lossless PC audio (one optical, two coaxial).

The tuner offers forty presets for FM and another forty for DAB+/DAB and is constructed around a tough anti-vibration metal chassis with audiophile components within.



Onkyo is also offering a new six-channel Bluetooth and iPod/iPhone recharging/docking station featuring a new 3D sound processing technology. The RBX-500 iLunar Dock Music System uses a wave field synthesis processing chip from Swiss audio research company Sonic Emotion to radiate sound in all directions, creating the impression of stereo sound wherever you are located. Price is £300. Contact www.uk.onkyo.com for more information

ICON POWER

Icon Audio has announced the Stereo 60P Mk.III stereo power amplifier (£2,200). Using Low Distortion Tertiary (LDT) output transformers and KT120 valves, the 60P produces 80W per channel and is able to change from an ultra linear 80W amplifier to a 40W triode amplifier at the flick of a switch. 'David Shaw Signature' variants include Jensen copper foil oil-in-paper capacitors and premium valves (£2,680).

A new version of Icon Audio's 110W, MB845 mono amplifier has also arrived. The new MB845 Mk.III improves the power supply to produce lower noise levels, whilst a built-in bias meter aids valve bias checking and adjustment. Low leakage PTFE valve bases enhance performance and reliability.

Price is £6,000 for a pair and £7,150 for a pair of David Shaw Signatures. Call 0116 244 0593 or click on www.iconaudio.com for more information



TO THE CORE

Meridian Audio has announced its Media Core 200 Digital Media System, which forms a digital media product. A silent system, it can be operated by any network-based control system including Meridian's Core Control App for the iPad or iPhone, a computer running the Control PC or Control Mac application or a Meridian controller such as the Control 15. At the heart of the Media Core 200 is a new 1TB hard drive (increased from 500GB). Price is £2,000. Call 01480 445678 or click on www.meridian-audio.com for more information.



LITTLE SUPER DECK

The Funk Firm have released what they term a 'Little Super Deck'. Priced from £1,100 without a cartridge, the 2-speed, belt-driven turntable arrives with a fully adjustable new medium mass arm, known as the F5 (available separately for £550). Featuring a glass platter and felt mat, the deck is upgradable. Little Super Deck is available in various colour finishes, including solid wood trim. Click on www.thefunkfirm.co.uk or info@thefunkfirm.co.uk for more information

SENNHEISER HEADPHONES AND AMPS

Sennheiser has announced the launch of a batch of new headphones and associated headphone amplifiers.

Categorised under the Style Section of the Sennheiser range, the closed-backed, over the ear Momentum headphones offers a split-headband with minimal padding. Arriving with a 3.5mm stereo plug, there is an additional cable with an integrated smart remote and microphone. Price is £260.

Moving to the in-ear designs, the CX 890i ear-canal headset features a glossy finish with metal detailing. Arriving in black and white with a matching cable for each colour and a 3.5mm stereo jack, the nominal impedance has been reduced for connection to mobile players plus an integrated smart remote control and microphone. Price will be £120.

Next, the IE 800 are high-end in-ear models, featuring a specially developed Extra Wide Band (XWB) driver. With a diameter of just 7mm, it is the smallest wide-band sound transducer currently available in dynamic headphones. By using the company's patented dual-chamber absorber, the IE 800s reportedly overcome the 'masking effect' where very loud low-frequency sounds 'mask' very quiet sounds in the medium frequency range, a problem for in in-ear headphones. The new IE 800 will be available at for £600.

Moving to the headphone amplifiers, the digital HDVD 800 and the analogue HDVA 600 have a fully symmetrical layout to minimise distortion. The HDVD 800 features a Burr-Brown DAC offering a resolution of up to 24/192. Featuring a 6.3mm jack plug and an asymmetrical input socket, the HDVD 800 digital sources are connected to the rear of the unit as an AES/EBU input or S/PDIF (optical and coaxial). The digital version is featured with an ALPS, rotary gain switch and an extra USB input, which offers 24bit data transmission at 192kHz. The HDVA 600 is priced at £1200 and the digital HDVD 800 at £1500.

Call 01494 551 551 or click on www.sennheiser.co.uk for more information.



NEW YAMAHA STARS

Yamaha has a host of new kit on offer including a new DLNA music streaming unit with CD playback. The CDN-500 provides internet radio coverage via vTuner, a USB for phone and MP3 sources with file compatibility that includes FLAC up to 192kHz/24 Bit and Apple Lossless. The CDN-500 is phone/tablet app controllable.

Next is the new range of Avenge A/V Receivers. Featuring a new ECO mode, lowering power consumption by 20%, Virtual Presence Speaker technology for pseudo-3D sound, the latest

CinemaDSP HD3 variant plus support for DLNA and AirPlay networking. Prices include: RXA3020 (£1999.95); RXA2020 (£1499.95); RXA1020 (£999.95) and RXA820 (£849.95).

Also in the Avenge range is the BDA-1020 Blu-ray player. Supporting both SACD and DVD-A, the USB and network playback functions can handle FLAC 192kHz/24Bit as well as Apple Lossless formats.

The TSX-132 (£350) dock supports Bluetooth, CD, iPod, iPhone, iPad (via USB connection), FM radio, DAB and DAB+ while you can connect a source via USB. It arrives with an built-in alarm and clock.

Finally, Yamaha has announced a new range in headphones. There are 5 new models: the HPH-PRO300 (£150), HPH-PRO400 (£200), HPH-PRO500 (£250), HPH-MT120 (£100) and HPH-MT220 (£150). The Apple-friendly PRO Series incorporates a newly-developed Yamaha-proprietary driver design with

neodymium magnets with acoustically designed ear pads and an adjustable, reinforced headband with padding plus an in-line remote/microphone.

The HPHMT Series are designed as flat response headphones for studio or hi-fi use. They arrive with large earpads and a long, tangle free cable.

Click on www.youtube.com/user/yamahacorporation; www.facebook.com/Yamaha.IFA or www.facebook.com/luk.yamaha.av for more information.



SONY SPEAKERS FROM HEAD TO TOE

Sony has announced a range of headphones under the MDR moniker. Features include an enhanced Beat Response Control to target the 30-40Hz sub-bass region. Air vents, at the back of each driver unit have been enlarged for improved airflow, allowing freer diaphragm movement for enhanced bass.

There are three variants within the MDR family. The MDR-IR features a light and rigid 40mm Liquid Crystal Polymer Film diaphragm plus a new HD driver for wider spectrum playback

The included cable features tiny grooved serrations on its surface to cut friction between cable surfaces and reduces the source of tangles.

The MDR-IRBT is the Bluetooth variant of the design providing thirty hours of play time while Sony's One-Touch system provides easy Wi-Fi pairing.

Finally, the MDR-IRNC offers fully automatic 'AI' digital noise cancelling. Digital dual noise sensors – inside and outside the headphones housing – are teamed with twin digital noise cancelling software engines to reportedly reduce 99.7% of ambient noise. Battery life is twenty-two hours.

Sony also has a couple of speaker systems on offer. The battery-powered, portable SRS-BTM8 NFC and Bluetooth wireless speaker allows you to touch the speaker with your NFC-enabled smartphone to start streaming music with Bluetooth. Offering 4W of power, the unit is available in black and white.


On a more traditional footing, Sony has also announced a range of boxed speakers that can be used for surround sound (along with a centre speaker and sub) or 2-channel listening. The new SS-NA2ES floor-standing speakers feature a two-part enclosure construction: one for the woofer and one for the mid-range and tweeter. They are constructed from birch wood from Northern Europe and include the I-ARRAY System which features one main soft dome tweeter, supported by two smaller units to reproduce higher frequencies across a wider field.

Click on www.sony-europe.com or call 0844 8466 555 for more information.



DIAMOND 100

S E R I E S



The classic entry point to true high-fidelity sound, Wharfedale's legendary Diamond speakers have been delivering sonic excellence to music fans since 1982. Now, 30 years on, Diamond is evolving again as Britain's most famous loudspeaker brand unveils the Diamond 100 Series: an all-new range that takes Diamond's high performance, low cost concept to an extraordinary new level. Advanced drive units and superior cabinet design deliver a sound that is crisp, focused and spacious, effortlessly dynamic yet firmly in control, thus maintaining Diamond's long-held position as the sparkling jewel in Wharfedale's crown.

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Wharfedale



TROY TOY

A compact desktop speaker system, the Sonoro Troy offers two stereo 3.5mm sockets (one on the bottom and one under the top cover) for two sources to be connected at the same time, via the 3" front-mounted speaker drive unit, down-firing bass reflex port, two USB sockets, and integrated Digital Signal Processor. Volume and power on/off is controlled by the side mounted rotary control.

The wooden chassis features an angled holder on one side to hold tablet PCs at the ideal viewing angle. The Sonoro Troy is priced at £149 with a range of felt finishes in black, green, red and grey.

Phone or click on www.sonoro-audio.com for more information.



NAC SOUND GEMINOS SPEAKER SYSTEM

Featuring a built-in amplifier, the dual Geminos speakers arrive in spherical enclosures to, say the company, remove unwanted colouration. Incorporating reflex tubing and a rigid case, the speakers, which weigh 7kg, offer an output of 40W and include a 19mm neodymium tweeter and 142mm mid/bass unit. Compatible with any audio source featuring a 3.5mm jack, the Geminos provides a touch interface. Price is £629. Click on www.nacsound.com or www.geminos.co.uk for more information.

rLINK

A DAC upgrade for a range of digital systems such as a Sonos system, CD Player, Blu-ray player or Apple TV. Featuring a compact aluminium case with damped rubber base, the rLink includes an optical digital input, coaxial digital input and stereo phono output. Supporting sample rates up to 192kHz, it spans just 75x100x26mm and weighs 350g.

Call 01223 203 200 or click on www.arcam.co.uk for more information.



WOOD OF LIFE

Oscars Audio has a range of accessories on offer including this little turntable weight made out of one of the densest woods on the planet - Lignum Vitae. You may have seen it sitting atop the wicket during the England South Africa Test Match because they turn them into bails. This example has been fashioned into a spindle weight of around 390g and costs £65.

Click on www.oscarsaudio.co.uk or call 07910 876778 for more information.



PHIATON

The PS 20 BT in-ear headphone from Phiaton features Bluetooth v3.0 and OmniPair technology to allow two devices to be paired simultaneously while storing up to eight devices in memory.

You can take and make phone calls via the integrated microphone and echo-off digital noise reduction technology, which ensures background noise is virtually eliminated during calls.

Battery life is up to six hours in use. An oval-shaped remote is supplied sporting basic play functions. Price is £130.

Click on www.iheadphones.co.uk or call 01656 790 030 for more information.





Diamond dancer

Usher's Dancer Mini-Two with diamond tweeter is a gem of a loudspeaker loudspeaker, Noel Keywood finds.

Usher's massive Be-10 loudspeaker (June 09 issue, see our website) impressed us no end, as it seems to impress everyone worldwide, but it costs £10,500 and is big. For smaller wallets and rooms Usher launched the Dancer Mini-One, recently upgraded with a DMD diamond tweeter. I reviewed it in our March 2012 issue (see our website), provoking Ron Levine in Philadelphia, USA to e-mail us that he was "disappointed that you chose to review the Dancer Mini-One rather than the Mini-Two" because the Mini-Twos "might have provided a better frequency balance". He's right – they do.

We e-mailed Usher in Taiwan after his request and begged for a pair of Mini-Twos: here's the review.

As Ron noted in his letter, the Mini-Two has two woofers rather than one. Technically, this doesn't automatically mean it will have stronger bass. Usher have balanced it differently, toward the academic accuracy achieved by the Be-10 in truth. In the latest Dancer Mini-Two, for £3,500 you now get a loudspeaker closer to the Be-10 in design rationale, but for £7k less. It's a big loudspeaker that stands 1.2m high and weighs 41kgs (90lbs) with its heavy cast metal base attached, making it a two-person lift. Behind the circular cloth grilles lie a pair of 7in paper/carbon fibre bass/midrange units flanking a diamond DMD tweeter in what is termed a D'Appolito arrangement, making it a two-way loudspeaker. Usher make their own drive units by the way; they do not buy them in from outside suppliers, like Hi-Vi in nearby China.

The Mini-Two expects a lot from its bass/midrange units, as they must reach right up to 2.7kHz before handing over to the tweeter, and that – as well as midrange dispersion – is the big difference between the Mini-Two and Be-10 that has a dome midrange unit.

I was as impressed by this giant as I was by the Be-10 because it is

similarly imposing and beautifully built and finished. The cabinets are curved toward the rear, for strength and to disperse high frequency internal resonant modes, although curved cabinets still have a basic main mode no matter what their dimensions, or their manufacturer!

The veneers have a deep polish and the cabinet is absolutely dead when rapped with the knuckles. The Mini-Two is quite gorgeous against similarly priced rivals, as in this price band there are a lot of rivals nowadays, often with the same build quality and finish as sub-£1000 loudspeakers. The Mini-Two is way better.

For stability, Usher supply massive cast bases that are very heavy in themselves, and quite a lift. Needless to say, strong adjustable spikes are supplied. However, you get floor protectors, but you don't get foam port bungs, which I feel are needed.

Looking around the 'net at prices I see some confusion over the old and new Mini-Two loudspeakers. The model reviewed here uses Usher's relatively new diamond DMD tweeter; some ads. use the acronym DMD in their headline and then go on to catalogue a beryllium tweeter. Er – no! The beryllium tweeter was in the old model and DMD refers to the new model with its laminated Diamond-Metal-Diamond tweeter. So there are in effect two Dancer Mini-Twos, old and new, and many current reviews and ads refer to the old model.

As Usher say, diamond vapour deposition has been around for some time, but "many find their sonic performance compromised, due mainly to the relatively high mass of the diamond dome and also to the unfavourable resonance signature of the material itself". This was indeed the case with B&W's diamond dome, that peaked at 15kHz, giving treble a lovely sparkling presence but a one-note effect (Feb 2011 Issue - and see our website). Nice, but not right. To avoid this the Usher tweeter uses "a metal alloy base layer coated with

an amorphous diamond-like carbon layer, on both sides". Our frequency response graph clearly shows this works: there is no in-band peak; a lift occurs above 19kHz – too high to be audible.

The D'Appolito arrangement refers to the placement of a bass/midrange unit both above and below the tweeter. This evens up the vertical dispersion pattern to give a more consistent output. In effect it means sound fired down is the same as that fired up, and measurement confirmed



the loudspeaker's phasing was good. But then Usher are very heavily equipped in their massive factory and are perfectionist about what they do, so I'd expect this to be the case.

The massive cabinet is a large-volume bass reflex with forward firing port at its base: you can see it below the badge and just above the metal base. Like most big volume cabinet loudspeakers the Mini-Twos go low, very low, right down to 20Hz. This means they put out a lot of low frequency energy and will induce room boom. All big loudspeakers have this potential.

Whether a room does boom or not is difficult to predict. In an 18ft-20ft room I suspect subsonic bass will be attenuated and the Mini-Two

used a Sugden A21SE transistor amplifier and Icon Audio MB845 valve amplifier initially, but some complex interactions jumped out straight away. The Mini-Twos have powerful bass that runs deep and occasionally with emphasised bass lines, like Toni Braxton's 'Spanish Guitar', our listening room boomed deep down, at 24Hz. I swapped from the Sugden to an Audiolab 8200A with a high damping factor but this made little difference. Surprisingly, in spite of their low damping factor, the big Icon Audio MB845 MkII power amplifiers, on their 4 Ohm output, were most balanced and controlled. Running the NAD M51 DAC direct into them, using its volume control to avoid the use of a preamp, gave best results.

port produces a lot of acoustic power at 24Hz. I ended up using some acoustic foam to damp down port output a little and this was successful. A large Epos Encore 50 (May 2010 issue) behaved much the same, so this is not a condition unique to the Ushers by any means.

Bass lines were powerful and firm once the foam had been added, much as you might hope from a loudspeaker so big and heavy. With a cabinet tuned so low and a port that covers such a wide range, bass lines strode down the scale unhindered and here the big Ushers showed what they could do. It was only the occasional really deep note that excited our room and a 50% fill of foam cured this nicely, allowing the

"the rumbling deep synths that underpin Lady Gaga's 'Monster' shook our listening room and the corridor outside too, the Mini-Twos produce so much bass power and it runs right down to subsonic"

will have subtonics at just the right level for listeners to go "ooh, ahh!". Our 24ft room started to boom, as it is tuned close to the Mini-Two's port frequency. A 30ft room would probably be just about right, but this is a big room, at least, in the U.K. Ron Levine in the U.S.A. may well think this size normal!

I mention all this just to go over the eternal problem of low frequency room matching. Don't worry, manufacturers are as baffled and disconcerted by the issue as everyone else. Only low frequency equalisation in a DSP, using sensing mics, will ever overcome this problem to greatly improve bass quality (XTZ tell me they have just such a system – and yes, I am trying to get it for review!).

Bi-wiring is possible, as the rear connection panel carries massive binding posts able to take 4mm plugs, bare wires or spades, and has removable bi-wire links.

SOUND QUALITY

The Ushers arrived with us run in, but they were De-Tox'd for 24 hours all the same, using Monitor Audio's De-Tox disc. Ushers need a lot of running in, the manufacturers quoting up to 180 hours and this is down to their use of durable synthetic materials whose properties change little, especially the diamond coated tweeter. I

So, rather more than our measurements would suggest, the Dancer Mini-Twos produce prodigious bass power that excited our 24ft long listening room. Because of its size this is rare, as big volume rooms are intrinsically well damped by the air load – they don't boom easily. The reason was the Usher's

Ushers to reach down smoothly and powerfully. The rumbling deep synths that underpin Lady Gaga's 'Monster' shook our listening room and the corridor outside too, the Mini-Twos produce so much bass power and it runs right down to subsonics. The Mini-Twos got close to the 'untuned', even sounding bass of a big Tannoy like the Yorkminster and that's what you get with a loudspeaker like this. Note differentiation becomes clear and note pitch obvious in these conditions, a strength of a "good big 'un" – and nothing has changed with loudspeakers.

Although the ports fire forward I heard no boxiness from them, by the way. Indeed, I heard no cabinet coloration at all.

Unlike many modern loudspeakers the Mini-Twos come across as mild mannered across the midband, with vocals back in the plane of the loudspeakers, not pushed forward. This was most apparent at low levels and in this respect at least the Mini-Twos sound best when pushed a little bit, and run at decent volume. Then the midband came alive and the loudspeaker composed itself, becoming supremely even and accurate, as measurement suggests.

Better, it also became insightful too, intakes of breath from Eleanor McEvoy standing at the microphone singing 'I Got You To See Me Through' bringing a lovely atmospheric quality



to the performance. The Ushers sounded big bodied and smooth here, almost cuddly warm in a convincingly organic way, quite a strange quality these days where the 'crack' of synthetic cones breaking up is a hovering blight. The Ushers are super smooth with vocals and it was Renee Fleming singing 'O mio babbino caro' that brought home to me just how grown up these speakers are. Her voice projected beautifully, displaying all the pent up emotion and power she brings to a performance, but I hardly recall such a natural sounding balance, all surrounded by a sense of the acoustic captured by the microphone, with strings of the orchestra swelling behind her. The Mini-Two is a loudspeaker with real poise and here it is balanced differently to the Mini-One I reviewed some time ago.

It doesn't take long to hear how this loudspeaker is distinguished by its unique diamond tweeter. A few minutes of Nigel Kennedy's fiddling, as he does so well, lifted the Mini-Two above all. Apart from a rich swathe of detail that issued from the bow on some punished strings of his Stradivarius, the tweeter had a peculiarly lush quality and – again – a sense of rare evenness to it. What you get is intense detailing without emphases picking out one part or another of what is going on. Like B&W's diamond tweeter in their 804D, Usher's tweeter has a lovely crystalline quality that you'd perhaps expect from diamond, but Usher's tweeter does not ring like the B&W's, making it sound even and expansive.

The sound of bow on strings had real bite to it, but it wasn't challenging to my ear. As intense in its detailing as a ribbon tweeter, Usher's diamond tweeter had less incision and a little less of the residual colour of a ribbon tweeter, a more even quality but still with speed and bite. Needless to say, this made the strings of Nils Lofgren's guitar sparkingly clear, his playing of 'Keith Don't Go' shimmered with detail and I could hear the quality of the individual strings too, making for a deeply insightful view. Usher's diamond tweeter brings a quality to the Dancer Mini-Two that isn't available elsewhere and Usher have used it carefully and wisely, by keeping it in perfect balance. As a result the Mini-Two comes over as

supremely well integrated and balanced, which is why I said earlier it is a 'mature' design. Manufacturers with a new toy like to show it off, the reason many ribbon tweeter loudspeakers are overly bright. The Mini-Two doesn't shout like this, but I heard it clearly. This loudspeaker has quite spectacular treble.

CONCLUSION

All in all, the Dancer Mini-Two is a big loudspeaker with a big sound, yet it is basically very accurate and missing nothing, just as measurement suggests. There are no peaks to add unnatural sparkle, or push vocals forward, nor crossover dips to soften the midband. By carefully balancing the overall package, Usher have managed to make this a big hearted loudspeaker with vocals, gloriously detailed in its treble regions and strong in the bass. It's dramatic in an understated



fashion, as hours of listening revealed to me. Usher's diamond tweeter makes a special and unique contribution, making the Mini-Two a great loudspeaker at a relatively low price for what you get, compared to others in this price band. This is a loudspeaker to seriously consider – it has it all.

MEASURED PERFORMANCE

Frequency response of the Dancer Mini-Two measured flat right across the audio band, our pink noise analysis shows. Although forward output from the bass units falls away below 50Hz, like most ported loudspeakers, the port takes over and provides strong output down to 20Hz, the red trace of port output shows. Port output is broad so it damps the bass units well and this reflects back into the impedance curve, keeping the residual peaks small. All of which suggests strong bass of good quality, and likely firm subsonics.

Integration between the twin bass/midrange units and the Diamond tweeter was good with just the slightest dip at 4kHz revealing the high crossover frequency. This means the bass/mids cover a very wide frequency range but a 200mS decay analysis showed low levels of coloration generally, if an overhang at 3kHz likely from the dust caps. The tweeter in particular looks very clean in output and Usher have pushed resonance up to 19kHz – higher than that of rivals; the small lift at 10kHz is not due to resonance our decay analysis showed.

Phase matching of the D'Appolito arrangement was vertically consistent as expected; moving the measuring microphone up and down showed little change. Lateral dispersion was wide too so the Mini-Two will sound the same wherever it is heard.

Sensitivity was high at 89dB Sound Pressure Level from one nominal Watt of input (2.84V), if not as high as some large floor standers. A 4 Ohm bass unit has been used and so the impedance curve dips down to 4 Ohm minima. Overall measured impedance was 6.5 Ohms, so this is nominally a 6 Ohm

loudspeaker. There is some reactance in the midband that a Zobel network might usefully have cured but otherwise the Mini-Two is a fairly easy load, but it will draw LF current, like many modern loudspeakers so needs a robust amplifier.

The Mini-Two gets a lot from its two-way drive unit arrangement. The bass/mids run high and the Diamond tweeter's layered construction pushes resonance out to 19kHz; other Diamond tweeters resonate at 15kHz, giving artificially enhanced treble. The Usher tweeter avoids this effect. The Mini-Two has very wide bandwidth as a result and should deliver a smooth, clean and accurate sound in use. NK


FREQUENCY RESPONSE



Green - driver output
Red - port output

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- tonal neutrality
- low colouration

AGAINST
- no foam port bungs
- require long run in

A without V

Audiolab's 8200 AP AV preamplifier offers high resolution surround-sound, leaving video untouched. It gives great sound quality, says Noel Keywood.



Audiolab's 8200 AP (£1250) is an AV preamp for the audio buff who wants high fidelity surround-sound without the paraphernalia of an AV receiver. It needs additional power amps., unless this requirement is catered for by 'something in the attic'.

It comes with four pairs of analogue stereo inputs and a full 7.1 input, all through phono sockets; there are no balanced XLR sockets. The preamp's main output is through a set of 7.1 phono socket analogue outputs. These can feed an Audiolab

8200X7 seven channel power amplifier (£1600), Audiolab 8200M or MB monoblock power amplifiers, or any other combination. I used a Marantz SR8002 AV receiver, through its 7.1 inputs and power amps.

The 8200 AP basically processes digital audio through a DSP, in this case two Cirrus Logic CS494003s, then converts it to analogue through high resolution (24/192) DACs. Video passes through, from HDMI input to output; there is no video processing.

The Audiolab can handle 24/192 Blu-ray discs and I played many 24/192 music Blu-rays (from 2L of

Norway)) through the preamp, as well as concerts recorded in 24/96, such as John Mayer's 'Where the Light Is'.

As well as PCM, Dolby True HD and DTS HD Master Audio are decoded, plus all Dolby and DTS lossy compressed formats. You do not get SACD replay, but Blu-ray SACD players send out PCM that the Audiolab can handle, so this isn't a great drawback.

Digital inputs are plentiful: there are four HDMI inputs, three co-axial S/PDIF inputs and four optical S/PDIF inputs. One HDMI output goes to



the TV and an S/PDIF digital output could feed a DAC or digital amplifier.

The HDMI output has no Audio Return Channel, even though it is to 1.4a specification. To route digital audio from the TV to the preamp, so that Dolby Digital surround-sound from HDTV can be heard, the TV's S/PDIF output must be used, meaning another cable. Justifying this, Audiolab designer Jan Ertner told me "implementation (of ARC within HDMI) leaves a bit to be desired as the ARC shares its physical connection with the Ethernet connection! Ethernet = differential signal, SPDIF = Common mode signal".

This means S/PDIF gives better sound quality than ARC. I use S/PDIF to send TV Dolby Digital transmissions (surround-sound and stereo) back to my receiver so I have no experience of ARC yet.

Unlike AV receivers, the

analogue stereo inputs don't go to the ADCs unless processing into surround-sound is needed. To turn stereo into surround-sound Dolby Pro Logic IIx and DTS Neo 6 are fitted and selecting either turns analogue to digital through 24bit resolution at 48kHz sample rate ADCs. Our measurements showed good conversion quality, with low distortion and noise.

The digital signal is available at the S/PDIF output for digital recording of – say – LP or a VHF tuner.

The Audiolab has up to x5 (14dB) gain, so for 1V out to a power amplifier input sensitivity is 200mV, enough for most phono stages.

SET UP AND USE

Set up was complicated by the on-screen Set-Up menu being in analogue Composite video format only, unavailable through HDMI. I had

to take my TV off the wall to get at it's Composite input to use this; AV receivers send their set-up menus through HDMI.

The set up parameters account for speaker size (bass management), distance (phasing) and level (sensitivity). There's a noise generator to help set level by ear or with an SPL meter. Burled away in the 'Other' menu is an interesting DAC filter setting but, like Cambridge Audio digital filters, I could hear little difference between Fast and Slow, using high resolution music programme. Measurement showed the filter has little affect, altering attenuation rate slightly (and doubtless phase characteristics too) but differences are difficult to detect.





Index link

Machined from aluminium, the Index media player and Scamp amplifier from Chord Electronics are uniquely styled and beautifully built. Noel Keywood feels the finish.

This eye catching unit from Chord Electronics comprises a portable network player, the Index (top), with a small Class D amplifier, the Scamp. Held in the firm grip of an aluminium cradle topped by a lime green anodised carry handle, the idea is to offer a small all-in-one network music player that can be set up quickly and easily anywhere – let's say a kitchen or a child's bedroom. Just add a pair of loudspeakers and connect up through wi-fi and you are off. It weighs a meagre 1kg total and needs 20cm width and height clearance.

Index and Scamp cost £990 each and the carry case is – take a deep breath – £1290! But Chord have a re-worked 'coupe' carry case priced at £400. The Index and Scamp cases are extravagantly complex, solid items machined from an aluminium billet and this sets them apart in terms of build quality and standard of finish, but it adds to cost of course: cases like this don't come cheap. What you get, however, is a uniquely styled and bullet proof duo fit for a modern, network equipped home.

The Index connects through wi-fi or wired link to a home network and Chord Electronics (not the same company as Chord cables) say wired is the default. Wireless uses WEP or WPA security, so the home wi-fi must also use one of these protocols.

Via its network connection (DHCP or manual) the Index sees UPnP computer music servers, meaning Windows Media Player 9 or higher on a PC, or third party UPnP software on a Mac. I used a Mac Book Pro to check both wired and wi-fi compatibility, using EyeConnect from Elgato on Mac OS-X 10.6 (Lion) and Windows 7 with Windows Media player (running in Bootcamp), and all worked well. The small window of the Index and on-board selector are a tad simple, but you also get a nicely built remote control, again hewn from aluminium, fitted with an array of functions including volume and mute.

In addition to playing computer music files the Index runs the vTuner internet radio service so it can receive approximately 10,000 stations from around the world. Whilst a lot of internet radio is low quality, there are high quality streaming stations, including Radio 3 that came in at 320kbps (wma) and offered great quality, and even Absolute has started to play 192kbps files.

The last source playable by the Index is a USB key using the FAT32 file structure, compatible with both PC and Mac. The USB socket is

surrounded by approximately 2mm of aluminium and I had to push a fat Adata key to get a connection, whilst a slim LaCie Whizkey was loose in the socket, but both worked. Test files showed the Index could resolve a 48k sample rate WAV file, but not 24/96 files. Chord say a 96kHz sample rate update is due in the Autumn and will be free to all users. Compressed files in MP3, AAC, WMA and FLAC are all played, up to the 48kHz sample rate. Exactly the same

here.

In our system the Index was powered from the Scamp (12V), which itself works from an external power supply block able to deliver 12V at 8A, no less. This external supply adds to the bulk of the system of course and will find itself lying on the floor I suspect.

The Scamp amplifier offers 40 Watts per channel, into 4 Ohms as claimed, our measurements showed. As most loudspeakers have 4

"it sounded sharply etched on vocals, fast on transients and clear, plucked guitar strings on Nils Lofgren's 'Keith Don't Go' having real bite to them – nice"

results were obtained with ethernet/wi-fi.

The Index has an on-board digital-to-analogue convertor (DAC) and a pair of phono analogue output sockets, connectable to any hi-fi, plus both BNC and optical S/PDIF digital outputs. The BNC output will connect direct into an electrical S/PDIF input using a suitable cable; there are no compatibility issues

Ohm bass units this is what will be delivered in practice. Obviously, it is no headbanger, especially if small loudspeakers are used, because small speakers are always insensitive, but 40 Watts is enough to produce high volume all the same. The channels can be connected together in bridged mode to give 80 Watts, but then another Scamp would be needed for stereo.



At top, the Index network player carries BNC and optical digital S/PDIF outputs (left) on its rear panel. To their right lies a wi-fi aerial connector, analogue outputs, an ethernet socket and power input.

The Scamp Class D amplifier fits analogue inputs onto its rear panel, left of the gold plated speaker terminals. A small, push button bridging switch sits between them. To the right of the terminals lies a volume control, input selector switch, USB type B digital input and power connectors.

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In recent times there has been renewed interest in valve amplifiers for their musical qualities. Single Ended* designs are interesting as they strip away a whole layer of components including the "phase splitter" valve, leaving the bare essentials of a valve amplifier to work their magic. But until now the power of many of these amplifiers has been limited to about nine watts unless exotic high power triodes are used, which are out of the reach of many people's pockets. Now unless you are using very efficient speakers nine Watts is just too low for many modern speakers in an averaged sized listening room.

The recent introduction of the Tung Sol KT120 super beam pentode gave us the opportunity to design a new amplifier using only two valves to obtain power of 27 Watts in Triode or 27 Watts in Ultralinear configuration. Designed with equal emphasis on Triode and Ultralinear this amplifier will provide very good volume level with most loudspeakers having three times the power than a single 300B valve.

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Also on the 6 DAC are bi-wireable speaker terminals, a good quality headphone amplifier, pre-amplifier output (for bi-amping), large clear high quality LCD screen plus a powerful custom menu system that

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[1] What is the quoted peak power?
[a] 10 Watts
[b] Megawatts
[c] 190 Watts
[d] 40 Watts

[2] How many digital inputs are there?
[a] fifty
[b] five
[c] none
[d] one

[3] What screen technology is used?
[a] TFT
[b] Cinemascope
[c] LCD
[d] CRT

[4] What is the quoted RMS power?
[a] 40 Watts
[b] 190 Watts
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Kinda Kudos

Celebrating twenty years in design, Kudos is harking back to its first issue. Paul Rigby reviews the Super 10 loudspeaker.

Kudos didn't begin life as a speaker manufacturer. In fact, since 1991, it created quality, specialist speaker stands. Their first speaker design was the C10. The Super 10 is a redesign of that original, marking a total of twenty-one years of design experience for their MD, Derek Gilligan. Differences between the two speaker designs include a new tweeter but the cross-over, the cabinet and mid/bass units have been tweaked.

It's traditional, when reviewing speakers, to take a look at the cones first, as they are often seen as the principle sources of sound, giving the speaker its inherent personality.

Gilligan, however, wanted to talk about the cross-over unit, to begin with. He sees it as the heart of the Super 10 while providing a technological representation of his company.

"I always believe that the simplest solution to a problem is usually the best," said Gilligan. "If you looked at the cross-over in the original C10, you would see that the capacitors were made by Clarity. In the Super 10 we are using Mundorf Supreme gold, silver and oil caps. These are caps that you might find in the larger Wilson speakers or the B&W 800D. They are amazing components. That said, we don't always opt for the most expensive option because, like a football team, the best performance

often comes from expensive stars combined with hard working and niche players. You've got to balance things together because every slight change in a component has immeasurable effects up or down the line," he said.

The inclusion of the Mundorf components within the cross-over was an attempt to retrieve more detail but to do it in a 'kinder' way, "The Super 10 brings more to the party, making music more civilised," Gilligan explained. "The C10 can be much more ruthless."

Other improvements included Mundorf resistors and inductors. The cabling for the cross-over proved an intriguing problem, "We ended

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up using the same cabling as seen in the C10, the Chord Rumour. We tried to upgrade the cabling for the Super 10s, using a variety of different models, but often found the performance worse. For instance, we tried to install Nordost cabling. They can sound fantastic outside of a speaker but the moment that they went inside the results were poor. The requirements for cable use inside a speaker box are different from that outside. You've got more kinetic energy, vibration, magnetic fields and so on. The Chords are benign to the effects laid upon it inside the speaker. Even Chord's own, more expensive, Odyssey cable didn't work as well as the cheaper Rumour."

"For the cabinet of the Super 10s, all wood was sourced in Europe via Hornslet in Denmark and Timberworx in Sheffield, principally because of quality and consistency, reasons why these suppliers proved to be more sympathetic in aesthetic terms, the grain of the wood being more appealing and individualistic.

The cabinet is made from high density MDF. "It's more consistent than standard MDF," said Gilligan.

Damping is provided by bitumen-type pads of varying types with an acoustic foam, egg-box shaped padding, shaped as in an anechoic chamber, "We don't use bulky foam because we can use less of the egg box-type to do the same job. Also the foam tends to deaden the transients."

Moving to the business end and the SEAS-built, mid/bass unit which utilises a doped paper cone, "Paper offers the best balance of sonic characteristics," said Gilligan. "The likes of Kevlar only belongs within bullet-proof jackets. Generally speaking, if you move your finger along the surface of the cone you will hear a tone that is usually the character of the sound that is imparted upon it as it passes through the cone. Paper gives you a natural quality, it imparts less of its own character on the music than any

of the other materials. Aluminium, for example, is great while its being pistonic. The minute it hits anything complicated then it goes off like a bell. It's the same with beryllium and the like. Because paper has a natural flex if it moves out of its comfort zone, the effects of any break up are benign." The use of paper does depend on the doping, though, which is a sort of rubberised PVA glue. The Super 10 paper cone incorporated the same quantities as found on the driver within the C10.

Modifications to the standard SEAS driver includes a copper shorting ring which the voice coil passes over as it moves backwards and forwards. The tube has a natural effect of shorting out the eddy

currents generated by the moving magnetic field, removing distortion. Sitting at centre of the cone is an aluminium phase plug. The plug terminates the end of the shorting ring. This determines when the high frequencies are cut off on the bass unit.

The tweeter, another SEAS unit, is a revised Crescendo tweeter:

often seen as the best soft domed tweeter currently available but, as Gilligan says, "Everything can be improved. So we asked for a shortening of the voice coil plus a slightly different profile on the roll surround which then gives the entry to the dome a different profile. It

"the extra space available within the sound stage prevented sonic collisions, giving the music a sense of order and relaxation"

helps us to better match the mid/bass unit which then helps the cross over process. We'd prefer to naturally integrate the units rather than force it."

Again, Gilligan prefers the simple route, eschewing complicated materials. "Where soft domes really

excel is where the music is rich in harmonics – heavily distorted guitar, for example."

SOUND QUALITY

Auditioning began with my Avid Acutus reference turntable and an original copy of Ethel Ennis' 'This Is Ethel Ennis' on RCA from 1964. This jazz vocal piece provided a stern test for the Kudos which responded with a sound stage offering tremendous depth. More than that though, the track, which can sound rather modularised in its construction via some speakers, now had an organic feel to it. It was as if the Kudos speakers were pulling the drawer strings together from a range of disparate elements to form a cohesive whole and give the track a flowing, easy feel that was natural in flavour.

In fact, what surprised me most of all, considering that my reference speakers were a pair of One Thing modified Quad ESL-57 electrostatics, was that the Super 10s sounded very electrostatic in their personality and sonic approach. There was so much air and space in and around the presentation that the Kudos produced a tremendous sense of transparency and clarity. The difference was that the bass now had a degree of plumpness, being fatter and rounded in its delivery. The electrostatic feel extended to the vocal performance which was textured and perceptive.

Vocals also held a high degree of detail. The slightest twist and alteration of the Ennis vocal chords produced significant changes in the presentation of the song and its tonal variance.

The inherently open presentation also gave the backing instruments more freedom to express themselves. Hence, the strings sound lighter and yet were packed with expression, whilst bass had an extra bounce and

a sense of energy.

The recording itself has always had a rather strident tone due to compressive elements included during the initial mastering. Here, the Kudos were very forgiving, offering no upper mid emphasis. On the contrary, the Super 10s smoothed



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NOEL SAYS

Working my way through a suite of CDs, both Rock and Classical, first with our Sugden A21SE then with Icon Audio MB845 MkII valve monoblocks, showed me what the Super 10s can do. It was nice to hear them too.

Listening to Arcadi Volodos deftly playing Schubert's 'Sonata in E Major for Piano' exposed their wonderful midband clarity and delicious sweetness of tone. Seemingly clean beyond criticism they had unerring neutrality and the clarity of a sunbathed day, with an almost golden light. Every note on the keyboard sparkled clearly; this is a loudspeaker that makes all obvious, the sudden tirades of Volodos' right hand strongly described by stabbing dynamics from the Super 10s. It was lovely to listen to him on these speakers, his Steinway sounding convincingly large.

Larger orchestral works possessed more insight than scale though, the Scottish Symphony Orchestra sounding diminished playing Holst's 'Mars, the Bringer of War'. Kettle drums were less than obvious and unconvincing in nature; more a simulacrum of a drum than the actual beast, I felt.

That the Super 10 is brightly lit is obvious, but treble quality is so enticing it almost didn't matter. I say "almost" because quite often I was torn between enjoying the wash of detail from Nigel Kennedy's strings, for example, but less happy about the strength of their sheen. The Super 10 is on the bright side, that's for sure and it tries a little too hard to sound detailed, at the expense of general balance. But there was no

denying that Nigel's Stradivarius sounded real enough in Massenet's 'Meditation'. So with Classical I found a mixed bag: a sense of insight that brought performances close, nothing escaping the speaker's analytical gaze, but weak and generic bass.

Cranking volume right up with our Icon Audio MB845 MkII 100W monoblocks, Adele's 'Rolling In The Deep' had kick drum and percussion beating out a tightly controlled bass line, but cymbals had a sting and sibilance was, at times, lacerative.

Skin sang sweetly (!) from centre stage with Skunk Anansie's 'Hedonism', her raw delivery nicely captured. Vocals were consistently superb through the Super 10s, high resolution giving them great intelligibility.

With the valve amps a little boxiness appeared in the bass, due to their lower electrical damping, but bass grew a little in bulk. There's no subsonic bass and the port did bounce a little; meaning bass was 'vertically energetic'.

The strenuous bass line in Angelique Kidjo's 'The Sound Of the Drums' came across well, delivered with plenty of springy weight. As the walking bass line moved down the scale the Super 10s didn't lose it. They ran deep. However, treble is balanced to be obvious on this album and the Super 10s were too bright in this situation, possessing an obvious sting.

I found the Super 10s a great listen, they are outstanding in many, many areas, a great mini-monitor for smaller rooms. Whether some qualities appeal will depend upon taste and expectation. NK

out any sense of compressive spiking.

Turning to more beats-related vibes and DJ Food's 'Kaleidoscope' (Ninja Tune; 1984), it is dominated by bass and percussion which can result in general confusion and a lack of focus. The introduction, especially, is one long sub-bass tsunami. The Kudos managed to impose control upon it, which prevented tonal dominance.

Despite the impressive lower frequency response, that didn't mean that the midrange was ignored. Far from it: the mids were light on their feet. Bass could have swamped this portion of the frequency spectrum but there was enough air and space for all of the instruments to have their say.

Previous playback on competing kit has sometimes revealed a muddled presentation because so much is packed into the soundstage. Via the Super 10s, though, the in-track sampled voices were very clear and distinct. The extra space available within the sound stage prevented sonic collisions, giving the music a sense of order and relaxation. In fact, in general terms, the Super 10s showed a focused approach that added to the clarity of the performance while both timing and speed kept my ear supplied with new information. As such, blurring and bloom were non-existent.

Turning to my Densen B-475 CD player I span Stevie Wonder's classic 'Superstition' track. Wonder's Hohner

Clavinet was the focus of this piece and, with the Super 10s, the instrument was very sharply defined, helping toward establishing a sense of rhythm that in turn made the Kudos seem naturally focused. Although fast transients on this sequence added an etched perspective with crisp detail, there was no hint of any clinical coldness.

The Kudos' clarity also benefitted the bass area which now sounded almost breezy, bringing life and freshness to the percussion. There was no sense of the bass being dominant or overwhelming, but the lower frequencies certainly made their presence felt, providing a solid basis for the track.

CONCLUSION

The Super 10s are illuminating, letting life stream into the music. They offer high quality from a small package and are a fine upgrade of the earlier C10. If you want to hear a fine

small loudspeaker it is this one; they are well worth hearing.

VERDICT

The Kudos Super 10 loudspeakers bring a clean, sparkling clarity to music.

KUDOS SUPER 10 £3 495

Kudos

+44 (0)845 458 6698

kudosaudio.com

FOR

- dynamic
- smooth mids
- airy presentation
- incisive detail

AGAINST

- bright

MEASURED PERFORMANCE

Frequency response of the Kudos Super 10 had a substantial +5dB peak in the treble, enough to give it a bright balance and possibly excessive treble. Off axis, however, this lessened to give the plateau lift seen in our frequency response analysis. Treble is still +2dB above the midband, over a broad plateau, and this will ensure a bright demeanour, if not one that some, or perhaps many, listeners will find excessive. The Super 10 will sound best when pointed straight down a room, and not directly at listeners.

Small loudspeakers are commonly designed to work close to a rear wall, where the wall acts to return low frequencies to the listener, providing reinforcement. To counter this off-foot bass is rolled down and that is what Kudos have done with the Super 10. It is classically over-damped and will likely sound tight and controlled, but need quite a lot of power to make it come alive. However, in spite of a high overall impedance of 11 Ohms, because a 6.5 Ohm DCR bass units has been used, sensitivity was good at 88dB Sound Pressure Level from one nominal Watt (2.8V) of input. Amplifiers of 60 Watts or more are likely to suit best.

The port has broad output and will provide reasonable levels of acoustic damping, something the impedance curve confirms by its dip around 50Hz, which is where the port is tuned.

Expect well controlled 'fast' bass, but not subsonics.

Our 200mS decay spectrum showed a nice, even result with few signs of coloration. This again showed a well damped cabinet free from bass overhang.

The Super 10 is balanced in classic fashion for near wall use. Measurement suggests it will offer a clean, fast sound with punchy bass, but quite 'obvious' treble from its tweeter. NK

FREQUENCY RESPONSE



Green - driver output
Red - port output

IMPEDANCE



mail



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LETTER OF THE MONTH PRIZE



KEF Q100 LOUDSPEAKERS

For more advice see Letters from earlier issues at www.hi-fiworld.co.uk/letters

A pair of KEF Q100 loudspeakers are on their way to **DAVID A DEEKS**, Letter of the Month winner in our **SEPTEMBER 2012** issue.

Letter of the Month

LEAK TROUGHLINE SAFETY

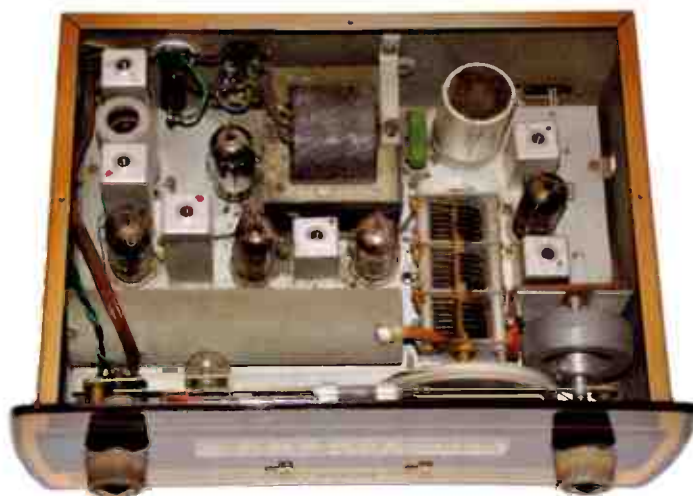
I have just read the feature article about renovating a Leak Trough-Line tuner in the October 2012 issue of Hi-Fi World. I am writing since I feel it needs comment.

I have been reading your magazine for a good number of years and I have always found the articles to be well informed and very useful. Indeed, I have bought a number of items over the years after reading the review in your magazine and then auditioning the unit. I also particularly liked the DIY Supplements that appeared in your magazine for a good number of years, but more of this later.

I know that you place great importance in the safety of your readership, and all of your DIY articles come with an advisory notice. However, I have to say that the photograph depicting the refurbished Trough-Line tuner is an excellent example of how not to do it. I am a Lead Engineer with BAE Systems, and one of my responsibilities is reviewing product safety prior to CE marking our equipment. The Trough-Line refurbishment fails to meet safety standards in a number of key areas regarding the 230V AC mains supply to the stereo decoder board.

The problems and possible solutions are:

- 1) Whilst the mains cable is double insulated (always advisable), it is not secured to anything and may be prone to damage by contact with sharp edges or hot items. It should be restrained using P clips or cable ties to the chassis.
- 2) The soldered joints to the stereo decoder board appear to be simple laid



There's a dodgy looking old brown mains lead at left and exposed mains connections. All this is unsafe says Stephen Condliffe.

on joints with no mechanical strength. If, over the course of time the solder joint dries out and fails, it will simply fall off. The bare end of the wire is then free to come into contact with anything in the vicinity. The wire should be secured to the terminal by looping the conductor through a hole or wrapping the wire around the terminal. It may be worth changing the pins on the PCB to something more suitable. Straight PCB pins are not ideal, and the circuit board manufacturer should use something more suitable.

- 3) The soldered joints are not sleeved. It is always advisable to sleeve soldered joints with rubber sleeve or heat shrink sleeve. This will prevent accidental contact and help to support the joint.
- 4) If using stranded wire, it is

important to ensure that it is impossible for any loose strands to come into contact with the case or other parts of the circuit. Adequate clearance is the key here.

5) The mains connections on the circuit board are in very close proximity to the top of the enclosure. If the live wire becomes detached, it could easily come into contact with the lid. If the lid is not properly earthed, then the lid will be live! The inside of the lid should be insulated using a suitable insulating material and the earth on the lid must be checked. Use a separate earth bonding wire to achieve a low resistance earth path.

6) It is difficult to see from the photograph, but there do not appear to be any mounting screws at the

transformer end of the PCB, which may allow it to flex and come into contact with the case. Air is a perfectly good insulator, but there must be a gap of at least 6mm and the PCB must be adequately restrained. However, it is always good practice to use a suitable insulating material between exposed PCB tracks and the case. This will prevent anything loose inside the case shorting the live PCB tracks to the case. Insulating tape is NOT a suitable insulating material. Rigid PVC plastic or fibre-glass board is suitable.

7) Again, it is not possible to see in the photograph what the wiring is like at the mains inlet, but the same rules apply. I think I would also be inclined to have a separate fuse for the stereo decoder board; the manufacturer should be able to advise you of the fuse rating.

With a little extra work and some understanding of electrical safety, this refurbished tuner will be perfectly safe and possibly more reliable into the bargain. Always make the assumption that if it can go wrong, it probably will and you won't go far wrong.

On a lighter note, I would like to make a request. I mentioned at the beginning of this email that I particularly enjoyed your DIY Supplements. Is it possible for you to collate all of the articles into one volume and market them either as a printed book or a CD/DVD ROM? I have virtually all of the supplements, but need to have a clear out and it would be really nice to have them all in one compact volume. Many thanks for a great magazine.

Yours Truly,
Stephen Condliffe
Lancashire

Since I did the upgrades last year, One Thing have changed the design of the decoder board slightly to make use of an external wall-wart mains transformer and therefore feed the decoder with low voltage AC via a supplied plug and chassis-mounted socket. The on-board transformer is no longer supplied. I think that will solve most of Mr Condliffes concerns.

The mains lead was not double-insulated. The original brown twin-flex seen in the pictures was replaced with a new twin mains lead, as the original on mine did look a bit worse for wear. Of course, every Trough-Line will be in a different condition and, as I mentioned, the first job will be to get it to a fully-working mono tuner again. I didn't want to change things too much as the purpose of the project was not to bring a Trough-Line up to modern safety standards to achieve

a CE marking(!), but to get it back to sounding superb and making it stereo!

To achieve modern safety standards, I should really have fitted an IEC socket, fitted a modern power switch, installed the whole chassis in a double-insulated case and so on. I think this would have destroyed the character of the Trough-Line.

I never leave my house without turning my Trough-Line and my WAD 300B PSE off!

The One Thing circuit board is well insulated around the mains side (it is not insulating tape) and a piece of plastic is also supplied (which doubles as a drilling template) that can be left in place against the metal case as an extra layer of insulation.

Photographing all the connections after it was completely finished with all the sleeving (I'm not a great fan of rubber sleeving, I use heat shrink myself) fitted wouldn't show much, so the photos show it in various stages of construction, which I felt would be more helpful.

I have a CD-ROM of the DIY Supplements the one that World Designs sold a while ago (and a very excellent CD it is) and I see it is still available on their web site!

Neville Roberts

Thanks for your valuable comments Stephen. Primary safety is a big subject and old products fail miserably to meet today's criteria. Worse, decay makes them even less safe than when originally designed. I find that old mains leads, especially when rubber insulated, decay and their internal soldered or mechanical (crimped etc) joints are commonly exposed / loose and whatever. As a bare minimum the mains lead should be replaced, the plug fuse made as small as possible (5A or possibly 3A) and earth continuity, from case to the earth pin of the mains plug, checked.

As you explain, there any number of ways a case can become live. If it is earthed properly at least the fuse should blow. But ensuring primary safety is up to scratch in the ways you describe is the proper way to go about ensuring long term safety and reliability.



Soldered joints should be sleeved and the cable secured, for safety.

As a final note, all users of old equipment should bear in mind that decay of insulants and capacitors means you should not leave old kit switched on and unattended for a long time. When I go out I switch my Trough-Line off. I even switch my WAD 300B valve amp off! It isn't that the amp is inherently unsafe, but that voltages are huge (500V) and currents in a short circuit condition potentially very high, enough to cause a fire. So better safe than sorry – and switch off!

NK

DEPTH DIFFICULTY

Can you recommend a sub woofer specifically for hi-fi rather than home cinema. I have a pair of Monitor Audio Gold GX50 speakers and I love them dearly, but I sometimes feel just a little more bass could enhance their ability to convey the richness and warmth of instruments such as cello, double bass, bassoon, tuba, pipe organ, etc. The Gold GXW15 is too expensive for me. I have a budget of approx. £800 and I don't want to impede the GX50's accuracy, stereo imaging and stunning treble

Yours sincerely,

Russell Gibson.

Hi Russell. The subwoofers that come to mind are REL, as they have a history of making subs that meet hi-fi levels of performance. Tuned carefully and positioned correctly, RELs will give great subsonics, free of the one-note boom of cheap AV subwoofers. The T9 meets your budget and is flexible in application.

Bear in mind that if a subwoofer and loudspeaker overlap you get a bass peak and a boomy sound, so when tuning the crossover frequency, set it as low as possible first and then increase slowly until boominess sets in, then tune back down a little for a cohesive sound



The REL T9 subwoofer has line inputs (low level) and loud-speaker inputs (high level). It is adjustable for level and crossover frequency.

without boom.

Room position is critical too. A corner will excite all modes and give strongest bass, but boomy bass in most rooms, depending upon their dimensions. Moving a subwoofer along a wall will reduce boom from the width mode, but not alter length or height. Moving into the room will alter two modes, reducing boom even more, but to do this you must move the unit out in the room, say beside a settee, or under a coffee table. You cannot tune the height mode without a crane.

Experimenting with position like this by moving the subwoofer away from walls improves bass quality, at the expense of apparent level, but just increase subwoofer volume to compensate.

I have done a lot of subwoofer tuning, using a measuring microphone and spectrum analyser and find you can get great results, but tuning is quite a critical process and none too easy to get right by ear alone. Have fun! **NK**

DOUBLE TROUBLE

I had been looking forward to reading the XTZ 99.26 and PMC Twenty.2 reviews that appeared in your September edition as I am looking for a small(ish) stand mount loudspeaker, have heard the PMC model (and rejected it - see below) and in view of your enthusiasm for the original XTZ 99.26 was hoping that this could be the answer for me, and best of all at a very reasonable price. I am afraid that, unfortunately, I was disappointed with your reviews of both models.

As far as the PMC review is concerned, your reviewer does not mention the obvious flaw (to me at least) of a very obvious sheen such that it was frequently impossible to tell

whether one was listening to electric or acoustic instruments, let alone differentiate between, say an oboe or a clarinet (in the opening to Mahler I). I suppose if you choose to listen exclusively to pop or rock this might go unnoticed and it is certainly not clear whether your reviewer ever attempted to listen to anything other than this genre; if so, it is not mentioned in his review.

Yes, I agree that this 'speaker has many strengths but an inability (to my ears at least) to correctly reproduce acoustic instruments is surely such a fundamental issue that it cannot possibly be recommendable to anyone who wishes to listen to any classical or other non-electronic music.

I should add that I initially heard the PMC through a Naim system at the

Opus 21/Prima Luna 3/5 but the Cyrus set up is one I have spent many hours listening to and I know it well. I actually had the opportunity to purchase the PMC new at 50% of the list price but to me its defects were such that it was a completely unacceptable choice at any price, despite its strengths with rock/pop as highlighted by your review.

Turning to the XTZ, the original model was well liked both by yourselves and others, indeed it features in your "World Standards" as being "exceptional value for money". Other reviews have found that the updated model improves on its predecessor. I have looked in vain in your review for any attempt to compare the updated model with the original, to say how it builds (or otherwise) on its previous strengths. Surely this should be a prerequisite for any review of an updated model, particularly one which you have previously lauded. I am left uncertain whether this model is going to be worthy of audition, given the flaws described in bass response and the fact that it is compared – in some regards unfavourably - with the comparably priced Sendor S3/SR2. Scarcely "exceptional value for money any more in that case, is it?

Whilst I appreciate the desire to assess the tuning options available with the XTZ, are many of your listeners really going to be listening primarily to poorly recorded or compressed music, and is this one of the most significant issues to deal with in the review given that this tuning option was available also on the original model? Given the space constraints which inevitably arise, could we not have had a more thorough



You should have compared the XTZ 99.26 with the earlier 99.25, says Paul Williams.

dealer and then through a Cyrus system and the presentation remained the same through both, so I do not believe that this is an issue with the electronics. Unfortunately, as I was in the course of moving house, I could not listen to it through my own Resolution Audio

review of what the 'speaker sounds like with all types of music and, of course, how it compares with the original in that regard?

As a general point I would be interested to have your views as to whether you believe that one can

sensibly try to evaluate any loudspeaker listening primarily to electronic music. Surely, if we are talking about accurate reproduction of the original sound, it is essential to listen to well engineered acoustic music to determine whether what is heard is properly representative of the original performance. If "hi-fi" doesn't do this, then, to me at least, it can't be described as such, however much one may enjoy the presentation offered. I suppose that I am particularly disappointed in these reviews because you can, and often do, do this well and I am always particularly interested to read the views of Rafael Todes.

Blimey, I feel better for getting that off my chest. As I said some paragraphs ago, I am on the lookout for some stand mount speakers. I very much like the presentation offered by ribbon tweeters and I am sorely tempted by the Monitor Audio PL100s which I have heard and much enjoyed although they are at the



The PMC Twenty.21 is better for Rock than Classical, thinks Paul Williams.

upper end of my budget. If you have any other suggestions (if you are still reading at this point) I would be very pleased to hear from you.

Paul Williams
Knoydart
Scotland

Hi Paul. A proper side-by-side comparison would require us to keep all review product, or somehow obtain the outgoing model – and this isn't practicable. We do often reference back to earlier measured performances, which are all on file.

It is the absolute behaviour of the new model in the marketplace that is important, judged against current rivals. A new model is usually an improvement on an old one.

The adjustments available on the 99.26 are an important feature I feel. There are those who like an accurate sound, which brings a sense of neutrality, and those who like a loudspeaker that is a little more 'spectacular', shall I say. Truly



Accolade Audio Model 1 – Paul Rigby thought it sounded bright, Noel Keywood thought it sounded warm.

accurate loudspeakers, good with classical music, like the Quad ESL-63, are not great for Rock, although I used a pair for Rock for many years. But then I like a neutral sound, but

difficult business, even though sound quality differences are quite obvious. What people hear and what they like can differ greatly. So whilst Paul Rigby heard the treble peak of the Accolade Audio Model 1 (August 2012 issue, p39) I heard the overall fall in treble energy; he thought they were 'bright' I thought they were "warm". Measurement is vital to explain such differences, and this is why we measure using Clio (Audiomatica of Italy), an industry standard system. We also have a 24ft square acoustically treated in-house listening room and loudspeakers are auditioned before they are sent for review. This ensures at least two, sometimes three people listen, so opinions can be cross checked and our reviews are not just one unguided opinion, as so many are.

NK

And XTZ say ...

Comparison between the reviewed speaker ((99.26) and others can help a lot, although we think it can lead to some kind of confusion comparing very different concepts, for example a 2-way bookshelf speaker with a

understand that many listeners don't appreciate it at all! Adjustment gives a way of appealing to both camps. I'm surprised it isn't more common.

I take your point about classical music. Ironically though, we have had complaints about Rafael not using Rock music, showing how difficult this issue is. As a classically trained violinist Rafael has an amazing ear and is far and away the most astute listener I have ever met, meaning his reviews are second to none. But this great ability comes with constraints too; he isn't fluent with Rock. Conversely, those reviewers that use Rock, which appeals to most readers, commonly don't much appreciate Classical music.

However, I don't want to justify this as I feel it isn't too difficult to use both. We will have to buy Paul Rigby an old violin and ask Rafael to give him some lessons. And Rafael is due to get an electric guitar for Christmas!

Loudspeaker reviewing is a



Rafael Todes of the Allegri string quartet – not a Rocker.

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 DP David Price, editor; NK Noel Keywood, publisher; PR Paul Rigby, reviewer; TB Tony Bolton, reviewer; RT Rafael Todes, reviewer (Alegn String Quartet); AS Adam Smith, reviewer; DC Dave Cawley, Sound HI-FI, World Design, etc.

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huge 3-way floor stander, or, as in this case, a full-grown 2-way speaker against a quite particular speaker as the Spondor.

We think, one very important point to know about any speaker is for example what it was built for. We call it 99-series, as these speakers shall reach 99% of what the best high-end speakers can do, even if at a price that is a fraction of those.

Our technicians put an enormous amount of working hours in the development of the MkII version of our 99.26/99.25 model, which had been reviewed with success in Hi-Fi World some time ago. The goal we set to our technicians was to get it better at every point, thus frequency response, distortion, imaging, further optimised phase response, well, in short terms, everything that is important for a real high-end speaker.

Our technicians did hundreds of measurements (and listening tests) to improve the speaker, which actually they managed to do. It got different, steeper crossovers for both, tweeter and woofer, slightly different crossover point and also some tricky solution to handle this special ribbon tweeter at its best. Even if the final crossover was more expensive to produce, the listening tests we (and others) did, convinced us to go for this highly optimised MKII version.

For this reason, it would have been very interesting to see this version reviewed by the same author of the 99.25 review, as we are always interested in getting a feedback of what we're doing, to see whether our efforts get confirmed or less.

We'd like to thank Hi-Fi World again for giving us the possibility of this review, and especially for their highly professional approach, accompanying every review with extensive measurements, which we know is very labour-intensive, but can give a very good insight!

Olle Eliasson (CEO), in the name of everyone at XTZI!

LOW FREQUENCY EFFECTS

Thank you for an interesting and well written review on the RX-A3010, in the June 2012 issue.

Some additional questions though. Does the Bass Management of the 3010 do stereo bass with all left front/ surround channel low-pass on left sub and correspondingly on right with center LP and LFE divided between the subs?

In the text there was also talk about the direct DSD to analog capabilities of the DACs. Was it confirmed, also by measurement, that this is the case for multi-channel signals (in what mode)? If so, how many/what channels have the benefit of this, being



Yamaha RX-A3010 produced great results when tested with DSD. Is a "pseudo-approach" used asks Michael Sderback?

driven simultaneously and which DACs do the job?

While we are at it, do you know of other Pre-proc./AVRs or multiplayers that do this direct DSD to A in multichannel?

Seems to me that this is a rare commodity and if Yamaha do this at the price point, it's very rare indeed - that is to say, if not some pseudo-approach is involved here?

**Michael Sderback
Finland**

Hi Michael. Sorry to disappoint you but we do not engage Bass Management or assess it on AV receivers, so this aspect of the Yamaha was not tested. As a hi-fi magazine (i.e. not Home Cinema) we assess the abilities of a receiver when used with full range loudspeakers, not with small satellites and subs that demand bass management. In this circumstance you get stereo bass, not bass mixed and directed into a single subwoofer. Bear in mind that full range loudspeakers cost just £200/pair; it is unrealistic to use an expensive receiver like the Yamaha with anything less.

Nowadays, it is common to convert DSD code from SACD to PCM before sending it through the PCM DACs that feed all channels of a receiver. This often occurs within a Texas Instruments receiver chip and manufacturers may be unaware of it, since such processes

are buried within the small print of an Application Note. The Yamaha returned very low distortion with DSD, just 0.05% at -60dB, so either they use native DSD convertors of good quality or an effective conversion routine that would be a part of the receiver chip used. It is impossible to say quite what is going on internally, but our DSD code measurements show that RX-3010 delivers great results in this area and will give good sound quality from SACD. **NK**

FAST PLAYER

A few months ago I wrote to you asking advice on the purchase of a CD player, but whilst waiting for your reply to be published, I bought an Arcam FMJ CD 33 which has 'ticked all the boxes', but was not one of the machines that you advised.

In the meanwhile I have decided to treat myself to a new turntable (the first since my LP12 30 years ago) and thanks yet again to Simon Griffin of Hi-Fi Sound Ltd of Stockton-On-Tees I am the new owner of a Clearaudio Champion Level One turntable / Satisfy DW Tonearm / Ortofon Rondo Bronze and I would like to upgrade my phono stage in the next few months. At the moment I am using a NAD PP2 which is superb considering the silly price that it is (£80-ish) and I would like something with the same tonal sound (perhaps valves?) so your advice would be really appreciated.



Alfie Forcer couldn't wait and bought one of these - an Arcam FMJ CD33 and it "ticks all the boxes".



Get a Creek WyndSOR phono stage for great sound plus balanced inputs.

The rest of my system is Roksan Rok-L2.5 pre-amp / Beard P100 Monoblocks feeding Ruark Talisman II or Ruark Crusader II speakers using QED Genesis Silver Spiral speaker cable and Chord Chameleon 2 Interconnects.

In my last letter to you I praised local dealer Simon Griffin and I would like to praise him yet again for his help and patience in dealing with me (i'm a pest at times). A word to hi-fi buffs in the Teeside area, if you are looking for friendly advice or very reasonably priced 'gear', then give Simon a call.

Alfie Forcer

Hi Alfie. If you are after the same presentation as the NAD, but better, then valves may not be the way to go. I would suggest you consider the Creek WyndSOR phono stage we



Logitech Squeezebox Touch turned my CD into a "pretty sculpture" says Rupert Drescher.

reviewed last month in our October 2012 issue. It has a similar 'easy' sound as the NAD, only far better in terms of resolution and dynamics, as well as adaptability. It will suit your new Rondo Bronze and offers an upgrade path too, by having balanced inputs, rare at present. **NK**

EASY SQUEEZY

I use a Squeezebox Touch through a Rega DAC for all my music these days (the CD player is now just a pretty sculpture at the top of the rack). For 'speakers I use ProAc Response 1SCs which have a rated sensitivity of 86dB, 8 ohm nominal impedance and an amplifier recommendation of between 20 - 100 watts. Room size is small 3.5m x 5m.

For a while I had been unhappy

with the performance of my amplifier, so about a year ago, on a whim, I bought a Marantz PM-4 at a second-hand hi-fi shop for a couple of hundred dollars, just to see what something else might be like. The amp came with a 3 month warranty and I could see that there had been some refurbishment in the recent past i.e. replacement capacitors and upgraded speaker terminals, so I thought why not?

Back in 1979, when the Marantz was made, it was seen as a real beauty offering exceptional performance at a sharper price than most of its rivals. It could belt out 60W per channel in A/B mode and at the press of a button you could also run it in Class A mode at 15W per channel.

When I first got the Marantz home, I plugged it in and was amazed at the difference that the amp change had made. Everything had snapped into focus, imaging was sharply defined and perfectly placed. Bass was deeper, more tuneful and better controlled while treble was sweeter with less grain, while also being more extended. The overall sound remained a tiny bit fatiguing and grainy in the treble, but an upgrade to the power cable soon fixed that. Almost by accident, I thought I had found the perfect answer to my problems, that was until I pressed the button marked Class A.

All of the attributes that were there before were still there but more so: all instruments and vocals were suddenly standing out in their own space and sounding silky smooth without a trace of grain or harshness. The treble and

bass were further extended with the soundstage reaching beyond the walls and above the ceiling. The most subtle but beguiling change, however, was the new sense of tonal purity (almost beauty) with everything sounding just as it should: voices like real voices, guitars like real guitars, even drums like real drums and all of it sounding just so musical. Needless to say I have never gone back and consider myself a Class A addict.

Extended listening over the last few months has exposed a couple of issues though, namely a rather woolly bass quality and a lack of attack in certain music especially on drums, all of which brings me to my questions.

How can a measly 15Watts deliver such a beautiful sound to speakers of only average sensitivity? Is 30+ years just a bit too old to expect an amp to operate at its best, and if so should I think about upgrading to say a Sugden A21AL which should offer longevity as well as an extra 8Watts to play with?

Regards,

**Rupert Drescher
Melbourne
Australia**

As you say Rupert, Class A is something special and we have all heard much the same benefits as you. You may well be pushing the amplifier a little too hard and the woolliness you hear is muddle caused by overload. The Sugden will play louder, but not a lot louder. A Sugden A21SE is doing good service with us at present, although Rafael Todes, being used to sitting in an orchestra, cranks volume right up when he drops by and declares it "limited"! I don't listen at such levels though and don't run into the same problem - and I love it. For me, the Sugden and Tellurium Q Class A amplifiers are special, unless you demand high volume, then look elsewhere.

In your case, 'elsewhere' is China and Jungson, whose products are available in Australia I believe. I recall the JA-88D we reviewed in our May



For Class A power get a Jungson JA-88D perhaps? It produces over 100 Watts per channel, plus heat!

06 issue had quite 'obvious' treble but was glassy clear. It was also fast and punchy, so this may well be an alternative, since it kicks out over 100 Watts. **NK**

GLOWING REVIEW

On the strength of Tony Bolton's glowing review of the World Designs KEL84 (Hi-Fi World, May 2012) I decided that it was time for a new amplifier. I ordered a KEL84XL kit and decided to accompany it with another kit amplifier: the Graham Slee Genera phono preamp. Mindful of Graham Slee's burn-in recommendations, the Genera was built first and left plugged in while I set to work on the KEL84. A week or so later, the KEL84 was complete and tested. A minor initial problem was soon solved with the assistance of World Designs friendly and helpful Matthew Snell and it was connected up to my WD25aXL loudspeakers.

Initial impressions were good: nice finish, smooth volume control and relay-switched input selector and the generous provision of five switched inputs allows vinyl, CD, radio, tape and computer audio to be connected without extra switch boxes.

After several weeks of enjoyable listening, all I can say now is that Tony Bolton got it spot on – the midband is sweet, the bass is firm and extended, the treble is clean and extended and the KEL84 is a delight to listen to.

The Graham Slee Genera has been a pleasant surprise too: its sound is clear, warm and transparent, without a trace of transistor hardness or glare, and it manages to pull off the trick of producing detailed extended treble while at the same time reducing surface noise. (The standard input capacitance of 220pF suits many moving magnets but reducing this to 150pF gave best results for my Denon DL103 moving coil and step up transformer).

Building the KEL84 and the Genera has proved to be a very satisfying project and the sound quality they produce comfortably exceeds anything I expected for a combined cost of less than £1,000. Thanks for your excellent KEL84 review, which set the ball rolling for me.

Yours sincerely,
Alasdair Beal
Leeds

NETBOOK TIP

I have a Marantz KI Pearl SACD/CD player, which sounds sublime with every decent silver disc I put in it. I decided I would like to try using it as a DAC to play some high res. downloads from a computer to see whether it would sound even better with high res recordings. Unfortunately the Marantz only has an optical TOSLINK digital input and no



Tony Bolton got it right – "KEL84 is a delight to listen to", says Alasdair Beal.

USB.

I purchased a Musical Fidelity V-link asynchronous USB -S/PDIF converter for around £80, connected it to my old laptop with a Wire World USB cable and to the Marantz with Van Den Hul's Optocoupler. The Marantz and the V-link are specified up to 96/24 only, so I downloaded a couple of samples in 96/24 FLAC from Linn and HD Tracks to try out.

Next, what software player to use? I did some research and decided on the free Foobar Player which seems to play just about anything and gets excellent reviews. I downloaded that along with the WASAPI output support component which "Adds Windows Audio Session API exclusive mode output support, allowing bit-exact output and muting all other sounds on Windows Vista systems." It was easy to install following the instructions on the Foobar website.

Sure enough I was not disappointed. Bags of clarity and detail were the first thing I noticed and plenty of toe-tapping musicality too. The display on the Marantz was showing the actual bit rate of the tracks (I checked this by ripping a couple of CDs to FLAC to compare) so the WASAPI was working. Everything I played sounded pretty good!

Then I thought how good it would be to rip my entire collection onto my computer and be able to create playlists for different moods – yes I was hooked! Only problem was that my old laptop didn't have enough space on it.

I took a trip to my local John Lewis store and found a Toshiba NBS10 Netbook there with a 350 Gig drive for £210. I decided to buy it and that I would use it only as a music server to keep the signal as clean as possible. To cut a long story short, the little Netbook sounds superb with ripped CDs as well as 96/24 downloads and takes up minimal space. I have now ripped my entire CD collection onto the little Toshiba and there is still bags of room for more. Please note that the Netbook doesn't come with an optical drive so you'll need to rip your CDs on another computer and copy them over.

That has to be the best value for money £210 I ever spent on any hi-fi component and I heartily recommend it.

My system: Marantz KI Pearl SACD/CD player, Creek Destiny 2 Integrated Amplifier, Vienna Acoustics Baby Grand Loudspeakers.

Alan Miggin
Sheffield



Toshiba NB510 Netbook – "best value for money £210 I ever spent on any hi-fi component", says Alan Miggin.

new rate

NAD run their new M51 DAC at an enormous data rate, way higher than rivals. Rafael Todes listens to the result.



My first experience of the NAD brand came as a spotty schoolboy, drooling outside my local hi-fi shop, ogling the now celebrated 3020 amplifier. I eventually persuaded my father to buy one, and still remember the moment when I hooked it up to some Acoustic Research AR18 'speakers. It gave a level of reproduction hitherto unknown in my house. Now, years later, I found the new NAD M51 DAC (£1500) a polished performer too.

NAD's new DAC sports many useful features. It has a remote control with volume control, as it has a fully-fledged digital preamp on board. It shows the precise sampling frequency it has been locked onto, and it also has HDMI inputs, to convert the output of a DVD or Blu-ray player into two channel stereo.

An HDMI output enables video content to be sent to a screen, a nice touch to be sure, necessary to show disc menus on a TV.

An innovation NAD bring to the party is the way this DAC resamples all material into a pulse-width-modulation signal at a sample rate of 844kHz, controlled by a clock running at 108MHz. The theory behind this is that it eliminates the jitter arising from the conversion stage, and digital ringing is eliminated.

The unit has a sleek elegance to it. A full-width but half-height brushed aluminium case surrounds a generous blue vacuum fluorescent screen. There are only two buttons on the front panel; standby and input selector. To control volume, you must use the remote control.

On the rear panel there is the usual set of inputs: AES/EBU, Coax, Optical, USB (Audio Class 2) and as already mentioned HDMI. The inputs

are all capable of handling up to 24 bit/192kHz. There are both single-ended as well as balanced outputs. Due to the 35bit architecture employed, the preamp is capable of 66dB of attenuation before there is any loss of resolution. The remote gives the ability to change from fixed to variable output, change the screen brightness, as well as absolute phase inversion.

So all-in-all, the M51 has a lot of well-thought out features, with a particularly effective digital preamp thrown in. I had no difficulty downloading the necessary drivers from the NAD website to use on my Toshiba laptop.

SOUND QUALITY

Using my reference Bel Canto CD2 as a transport, feeding the NAD with a Chord Indigo Plus Digital cable, I listened to some of my reference CDs. The Solti/Decca 'Tombeau de Couperin' exhibited a very sweet-sounding treble. An exceptionally beautiful, smooth silky violin section lacked any hint of the harsh graininess that makes analogue worshippers run a mile. This alone would make the DAC a



number of friends on first hearing. The sound had a refinement to it, often found in DACs selling at several times the price. The soundstage had a fair amount of left-to-right information, and a little less by way of the front-to-back placement of an orchestra. Reasonable staging, but not outstanding.

In the bass department, timing was average, but not outstanding. In particular, cello pizzicato was more bloated than some of the cheaper DACs I've heard recently, such as the Rega DAC, reviewed a couple of months ago. Not terrible, just not up there with the best. I had a feeling listening to one of the more dance-like movements, that some of the micro dynamics were being understated a bit too much, and that the lilt of the musical line was being ever-so-slightly eroded.



The Beaux Arts Trio playing Mozart Trios can cause DACs great problems - particularly with the sound of a piano. Very often the percussive nature of the piano and the rapid transients yields a nasty 'ringing' sound, just after the

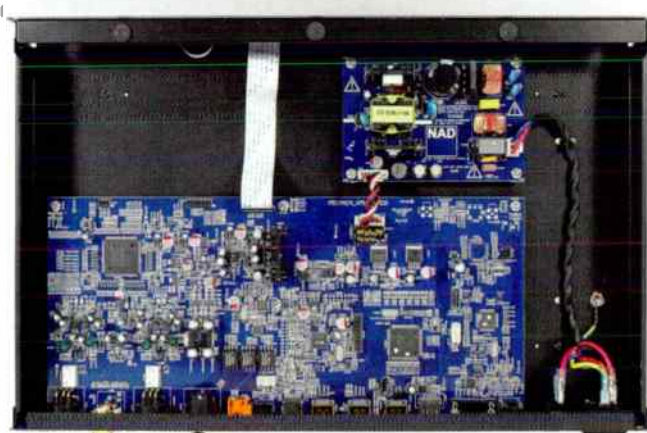
initial moment when the hammer has hit the strings. The NAD does quite well on this test, slightly better in fact than my reference Weiss DAC 202. The sound is wholesome, Isidore Cohen's Stradivarius violin sounds utterly believable. NAD effortlessly captures the silky shine of the violin, a sound not unlike a really fine wine - full of complexity and tonal depth, rounded and smooth with no brittleness to it. Listening to my reference Weiss DAC202, the string sound is a touch less rich, but it separates the three instruments more convincingly, spatially as well as the different textures of the violin and the cello.

Listening to 'Ray Gelato' skilfully recorded on the Linn label, yields a vibrant interpretation by the NAD, particularly outstanding is the realism of Ray Gelato's voice. There is an accuracy and naturalness which is up there with the best I've heard. The plucked double bass isn't the tightest I've heard, but

the overall effect is glorious, real quality, especially when Claire Martin joins the proceedings. The NAD particularly captures her presence and the sense of fun the two singers are having.

Turning to some High-Res material, Charles Mackerras conducting the Scottish Chamber Orchestra, again the NAD triumphed with a really sparkingly clean treble, which really suited this excellent Linn recording of Mozart's Jupiter Symphony. I have a strong suspicion that the USB/SPDIF bit of the DAC is doing a fine job. I had more difficulty in following the counterpoint when the basses and cellos were playing, as compared to the violins and violas.

This DAC has many special qualities to it. It has a rare beauty of sound to it that so many others lack, it has a superb preamplifier built-in, and may be the instrument of choice for those people who value



these qualities above all others. It does, like all hi-fi products, have areas of lesser strengths, principally in the bass and timing departments, as well as a less-than-holographic soundstage, and in these areas, the most discerning punters may be disappointed. I think the decision to buy will come down to individual preferences, but for its ability to beguile and seduce tonally, and in particular its ability to capture the human voice, it is well worth an audition.

REFERENCE SYSTEM
 VAC Auricle Monoblocs
 B&W802ds
 Chord Indigo Plus SPDIF cable
 Townshend Allegri Preamp
 Bel Canto CD2 Transport
 Tellerium Q Ultra Black Speaker Cable
 Weiss DAC202
 Metrum Octave

MEASURED PERFORMANCE

Frequency response measured flat to 21kHz with a 44.1kHz sample rate CD signal; there is no roll off or peaking. The same result was obtained with 96kHz sample rate. With a 192kHz sample rate test signal anti-alias filters imposed a peak above 50kHz, seen in our analysis, but subjectively this is unlikely to be consequential. The M51 will have an even tonal balance in use, or may have some sheen.

Distortion levels were on the high side with CD (16bit/44.1kHz sample rate) measuring 0.4% at -60dB with a 997Hz tone, where 0.2% is possible. With 24bit resolution the M51 was incredibly linear, distortion measuring just 0.012% at -60dB (96kHz sample rate). Similarly, EIAJ Dynamic Range was mediocre with CD, measuring 100.5dB where 102dB is expected, but 110dB with 24/96.

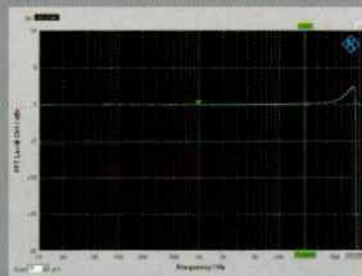
Noise was low at -123dB at 0dB, quantisation noise raising the figure to -100dB with 16bit and -111dB with 24bit, when using a -60dB test tone, notched out to lift digital-zero muting. These levels are inaudible of course.

Output was a high 4.8V from the balanced XLR sockets and 2.4V from unbalanced phono outputs.

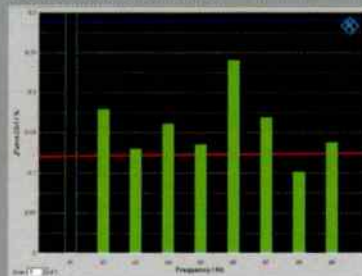
The M51 produces a good set of results, interestingly different from other DACs. It is unusually linear, as linear as DSD from SACD, and should give a silky sound. NK

Frequency response (-1dB)	CD	1Hz - 96kHz
Distortion (16/24bit)		%
0dB		0.01
-60dB		0.4/0.012
Separation (1kHz)		112dB
Noise (IEC A)		-123dB
Dynamic range (16/24bit)		100/110dB
Output		4.8/2.4V

FREQUENCY RESPONSE 192k



DISTORTION 16bit



VERDICT

A new technology DAC with great flexibility and impressive sound. A top performer, if with minor weaknesses.

NAD M51 DAC £1500
 Armour Home Electronics
 +44 (0)1279 501111
 www.nadelectronics.com

FOR

- super smooth treble
- wide range of inputs
- remote volume control

AGAINST

- large
- no ARC with HDMI
- bass timing



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Style Sounds

Style headphones continue to be popular. Paul Rigby reviews the latest exponents: the Philips Fidelio M1 and L1.

Headphones have entered into a renaissance all of their own, on the back of the tinny sounding ear buds so popular with portables. Philips aim to cash-in on the trend with two designs of their own, using a rigid plastic chassis, memory foam ear pads, leather band trim, neodymium magnet drivers and a quick-swop feature cable facility for mobile phones and volume controls.

The lightweight (0.16kg), closed-backed M1 portable headphones use a vented design to enhance bass response, while the more expensive, semi-open backed L1s weigh in at 0.27kg and include an aluminum trim.

For both models, comfort level was average. The padded earpieces were accommodating and soft on the M1 but the headband was a little hard and unforgiving on the top of the head. Of the two, the L1 proved rather more comfortable. Larger ear

pads added to the support while the thicker headband was less obtrusive, although not perfect.

SOUND QUALITY

Because of that vented design, the dominating characteristic of the M1 phones was the bass. Playing the jazz vocal Carol Kidd track, 'A Nightingale Sang In Berkeley Square', the introductory double bass tones were both strong and effective, giving the whole track a solid foundation. Low frequencies were both dominant and commanding which meant that previously hidden or overly subtle bass notes were now far more noticeable, giving the track a whole new dimension.

Bass notes were so strong, though, that they did tend to leak into the midrange areas, coating the acoustic guitar solo with a warming glow that took the edge off the guitar's attack. They also rolled off the Kidd vocal too early, making her sound like she was wrapped in cotton wool.

Turning to the highly compressed Sugababes track, 'Stronger', this rocking r'n'b song has a bass line that infuses the track with both weight and punch, having real impact through the Fidelios.

But the overly peak limited vocals were calmed by them; previously harsh upper mids were now listenable. Other pop-related CDs also benefitted from this strong low frequency bolstering effect while high energy rock, from the likes of Led Zeppelin and Iron Maiden, sounded big, bold and fun. The M1 headphones eschew the delicate and the precise and live for the mosh pit.

Like the M1s, the L1 headphones enjoy a thick slice of bass output. On the Kidd jazz vocal track, the double bass was commanding but also tighter. It provided strength but also an understated character that resulted in

a far more believable presentation. A side effect of this was that, instead of swamping the upper midrange, the L1 opened up the midrange to retain an appreciable level of clarity that better illustrated the sharp, metallic sheen of the acoustic guitar. Similarly, the shimmering treble of the cymbals provided a satisfying lustre giving the track an extra dimension and better overall balance. Kidd's vocal delivery was open which improved her enunciation and encouraged a delivery that exhibited a greater degree of subtlety.

Over to the Sugababes' 'Stronger' and the tighter, punchier bass proved beneficial for the pace of this track, driving it forward. Again, because the bass knew its place and didn't infuse into the upper frequency areas, the upper mids were far more lively and spacious. That said, there was enough roll-off on the upper mids to avoid any harshness from the compressive effects.

CONCLUSION

Well made, presentable lifestyle headphones, the Philips models don't have the élan of the B&W P3 or the sound quality of the BlueAnt Embrace but they do offer solid performance for niche markets. The Fidelio M1s are ideal for those looking for high energy Rock and r'n'b with a party-oriented sound style, while the L1 'phones provide a better balance ideal for use with mobile systems such as a smartphone or laptop.



Philips Fidelio L1



Philips Fidelio M1

VERDICT ●●●●

PHILIPS FIDELIO M1 £160

Ideal for mobile use, the Philips Fidelio M1 headphones respond well to lively music and party.

FOR

- rock friendly
- compact
- lead attachment

AGAINST

- comfort
- bass bloom

VERDICT ●●●●

PHILIPS FIDELIO L1 £230

Offering balanced overall sound reproduction, the Philips Fidelio L1 headphones are ideal for good quality sound in a mobile environment.

FOR

- flexible usage
- pleasing overall sound
- lead attachment

AGAINST

- no sonic highlights
- bulky design

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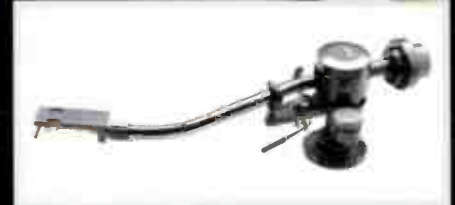
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Pro-Ject Xpression III

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Ortofon Cadenza

An award-winning, high-end series of Moving-Coil cartridges that replaced the extremely popular MC Jubilee and Kontrapunkt models. All-new processes now combine to make a market-leading range.



Ortofon MC Anna

The brand new flagship moving coil from Ortofon boasts all of their finest technologies in one attractive shell. Endorsed by the world-renowned operatic soprano, Anna Netrebko.

Phono Stages and Accessories



Pro-Ject Phono Box S

Brand new phono pre-amp inspired by the world's most popular budget phono stage - the Phono Box. This S version combines great sound and features for MM & MC cartridges at an attractive price.



Lehmann Black Cube Decade

Lehmann Audio equipment is made for music enthusiasts, by music enthusiasts. The Black Cube Decade was designed as a celebration of the cult Black Cube phono stage's enduring success in 2005.



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KT88 kit

Build your own valve amplifier? You can with the World Designs KT88 kit. Tony Bolton looks at the options and listens to two finished models.

Back in the May 2012 edition of this magazine I got acquainted with the World Designs KEL 84 amplifier. While looking at their website I noticed that the KEL 84 had a bigger brother, the WD KT88. This unit is also available as either a kit or ready built for an additional £375. There are three options to choose from: a single input power amplifier (£1275), a five input integrated model (£1295) and the XL upgraded version for an extra £199 (costing another £45 if bought ready made).

I opted to review the pre-built version of both the standard

integrated and the XL model.

Visually there is nothing to tell between these amplifiers until you peer inside. Then you will find the 'tuned' XL equipped with Schottky diodes for both the main rectifier and heater supplies, Pi filter DC heater supply, Soniqs ICT signal cables along with Soniqs SAX signal path and Rifa low ESR power capacitors.

The external casework comes with a black powder-coated chassis and a brushed alloy front panel. This balances visually with the black bodies of the transformers, each of which are topped with chrome plated covers. No valve covers are provided so a little care is needed

when moving the unit. Apart from the Golden Dragon KT88 valves which give this amplifier its name, the top of the chassis is populated by two JJ ECC833 input stage valves, and a 5687 phase splitter/ driver stage. There is an option of using Svetlana 6550 output valves should you prefer, at no extra cost.

The power switch is at the back of the unit, alongside the gold plated phono sockets for the line level inputs and tape output, and the four pairs of speaker terminals, which allowed me to bi-wire my loudspeakers in my usual manner.

Front controls are limited to the rotary input selector and an

Alps Blue volume control. These are operated by nicely weighted, chromium plated, solid brass knobs. After switching on, the LED on the left of the fascia glows red while the heater voltage is applied to the valves. This changes to orange as the amp warms up, and then to yellow when it is ready to use. If the light glows either green or red while in operation it indicates that a fault has occurred.

I started my listening with the standard unit powering the downstairs system. Although the 4 Ohm Charios are rated at 91 dB efficiency, their twin subwoofers make them quite current hungry. The minimum recommended power requirement is 60 Watts per channel, so I was pleasantly surprised at the amount of volume available, given this amplifier's relatively modest rated output. A comfortable listening level was achieved with the volume control at just past the ten o'clock position.

The first track was Garbage's 1996 CD single of 'Stupid Girl'. It starts with a deep and powerful bass and drum line that, through this amplifier, pulsed into the room in a rather firm handed manner. It sounded assured and even handed, not taking over the space but leaving the listener in no doubt as to its presence. Part of its appeal lay in the speed and lack of a perceived overhang of the notes. This track has a reasonably fast gait, with a bit of a roll to it, and the swing of the rhythm can very easily fall apart if a part of the system is not reproducing it cleanly. The WD KT88 relayed the music in a precise and balanced

manner, getting into the groove of the beat, but keeping things well under control.

After this I played the Motown classic, 'The Tracks Of My Tears'. Smokey Robinson's distinctive vocals sobbed out of the speakers, backed by the Miracles, grouped around him in close harmony. Whilst the soundstage was not the widest that I have heard it was quite deep and seemed to be very well defined. I felt that there was a slightly authoritative hand drawing the sonic picture for me. The shapes sketched out with deft but firm strokes.

The same presentation worked very well with Dave Brubeck's version of the track 'At The Darktown Strutter's Ball'. Recorded in the same year as the groundbreaking 'Time Out', the LP, 'Southern Scene', contains more conventionally timed jazz versions of American folk songs and spirituals.

This first pressing, American stereo, 6-eye Columbia disc has survived in very good condition, and the combination of the seeming simplicity of the orchestration, combined with the down to earth presentation of the music by the amplifier, suited each other well. Gene Wright's bass bopped along on the left hand speaker, with Brubeck's

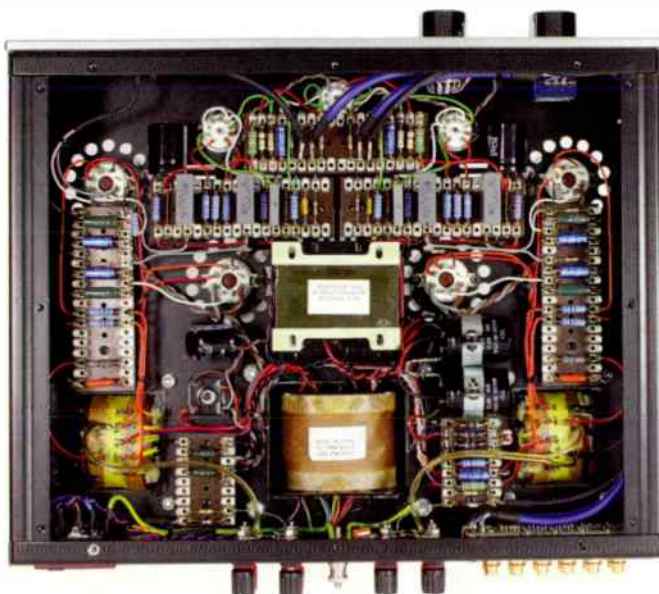


"I liked the rock like solidity of the sound, from deeply growling double basses, to triangles that rang with the mass of solid metal"

piano on the right. Paul Desmond's saxophone swung out centre stage, appearing out of nowhere as though someone had suddenly flicked a spotlight on him. It all sounded effortless and quite believable.

My last choice was a compilation of recordings by Neville Mariner and the Academy running through a few Baroque and early 20th Century string pieces. The 'Prelude' was a pleasure to experience. The preciseness of the image and the almost earthy nature of the tonality helped to make the sound very engaging to listen to.

After this I changed over to the XL version of the amplifier and played my way through all of this music again. There was obviously a family resemblance in the sound between the two units, but the XL seemed to offer a more defined and even better shape to the music. I felt as though the lighting had improved so that I could now see a little



The WD KT88 uses tag boards for hard wired components, to make construction easier. Input switching is through inert gas filled low signal relays.

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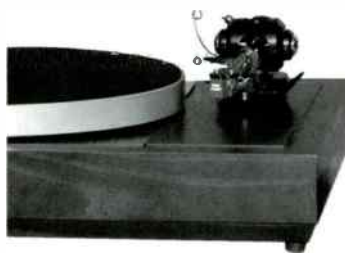
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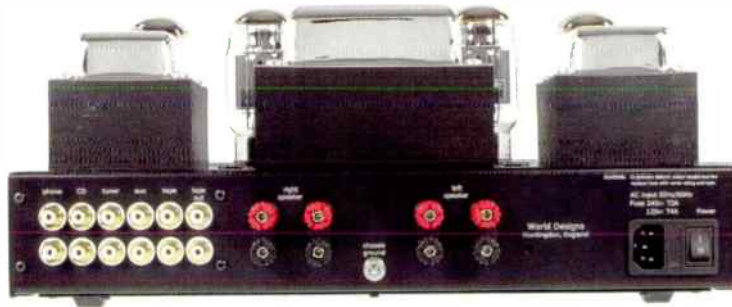
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further into the mix, and that all of the sounds had been fleshed out a little more. I would say that the extra £199 that this costs would be money very well spent. In standard form it is a very good amplifier. The XL version becomes something a little special.

I moved this amp upstairs to the far friendlier (95 dB, 6 Ohm) load of my Kelly KT3s and played the Greig again. Not having to work quite so hard suited the moderate power output of the WD KT88 XL, and the music seemed to be presented in a more liberated and open way. The extra headroom offered by higher efficiency speakers really let this unit sing, and it seemed to offer whole new layers of colour and tonal texture for me to explore. It also seemed to be a bit faster when playing the Brubeck LP again. I was already impressed with the way the



the power supply circuit. Matching them with higher efficiency speakers really paid dividends, resulting in a level of openness to the sound that I would usually associate with far more expensive units.

I would imagine that they would be delightful with horn loaded speakers.

I liked the rock like solidity of the sound, from deeply growling double basses, to triangles that rang with the mass of solid metal. It felt fuss free, uncomplicated, yet very detailed. Some amplifiers seem to offer a sound that is very glitzy and glamorous, but somehow lacking a little in substance, this was more organic in presentation, but still sophisticated. Think tweeds and sensible shoes rather than stilettos and designer dresses, but worn in a very 21st Century way

by Kate Moss. For those who wish to try making their own amplifier, the instructions are comprehensive and well furnished with pictures and diagrams. If not, the extra cost of

having it built still makes it very good value. The WD KT88 amplifier, in both forms is excellent, but I would spend the extra on the XL version. It is superb.

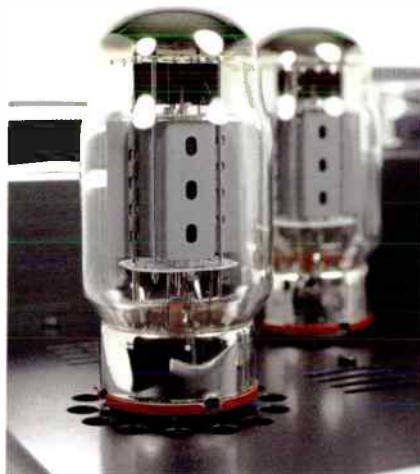
SYSTEM USED:
 Clearaudio Master Solution turntable/ Magnify arm/
 Benz Micro Wood SL/ cartridge.
 Leema Acoustics Agena phonostage/ Antilla CD player.
 Chario Ursa Major loudspeakers.
 Linn Sondek turntable/ Hadcock 242 Cryo arm/
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VERDICT ●●●●●
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FOR
 - full and rich tonality
 - very grounded sound
 - XL version good value for money
 - good power reserves

AGAINST
 - nothing at the price



bass could stop and start, but the XL model took this up to a greater level of accuracy, with the result that the music appeared to move more naturally and to flow in a more lucid manner.

I have really got to like this pair of amplifiers. There was a maturity in the sound that was both commanding and reassuring. I never felt that either amp showed any strain, even when driving the Charios to quite loud volumes, which demonstrates the quality of both the transformers and

MUSIC USED:
 'The World Of The Academy Vol. II'. The Academy Of St-Martin-In-The-Fields directed by Neville Mariner. Argo Records. SPA/A 163. 1971.
 Dave Brubeck Quartet, Trio and Duo. 'Southern Scene'. Columbia Records. CS 8235. 1959.
 Smokey Robinson and the Miracles. 'Greatest Hits'. Tamla Motown Records. STML 11072. 1968.
 Garbage. 'Stupid Girl'. Mushroom Records. D1271. 1996.

MEASURED PERFORMANCE

The World Design KT88 kit amplifier developed 26 Watts into 8 Ohms and 33 Watts into 4 Ohms, so its untapped secondary is load matched to a low load, as it needs to be to suit modern loudspeakers, most of which have 4 Ohm bass units. Distortion is higher into a 4 Ohm load but as the WD KT88 produced almost exclusively small amounts of third harmonic under all conditions, this isn't of any great consequence. The reason for using a single secondary winding is to improve coupling efficiency between primary and secondary, but the optimum power transfer must occur into a 4 Ohm load, not 8 Ohms, and the WD KT88 looks well designed in this respect.

Frequency response measured flat to 20kHz at all volume control positions. There is a +4dB sinusoidal bass peak and this is due to the proportioning of coupling capacitors in the amplifier and the feedback loop. Increasing coupling capacitor values to broaden open loop gain will eliminate this peak. Subsonic gain isn't such a good idea in a valve amp as it promotes subsonic core saturation in the output transformer.

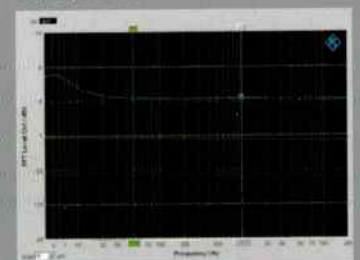
Distortion levels were very low, especially at high frequencies, measuring less than 0.1%. Third harmonic was dominant and there were no high order components. The transfer function was remarkably stable, so the amplifier will sound very smooth and free from muddle too. Damping factor measured 8, quite high for a valve amplifier, so bass will not be soggy.

The WD KT88 measured very well in all areas and obviously uses quality

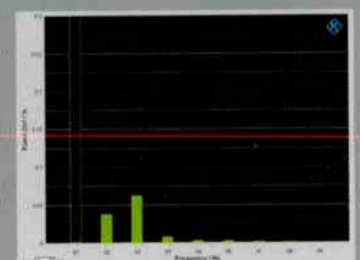
output transformers. A few coupling capacitors need re-proportioning to eliminate the bass peak, but this is easily done in a kit. Otherwise WD KT88 is beautifully made and finely crafted with quality components. NK

Power	33 Watts
CD/tuner/aux.	
Frequency response	20Hz-28kHz
Separation	72dB
Noise (IEC A weighted)	-102dB
Distortion	0.07%
Sensitivity	400mV
Damping factor	8

FREQUENCY RESPONSE



IMPEDANCE





Yesterday today

To celebrate its 80th anniversary Wharfedale has launched the Denton 80th Anniversary Edition loudspeaker. But can it cut it in today's market? Jon Myles finds out.

In this brave new hi-fi world of streaming audio, iPods, hard disc storage and what-have-you, it takes a company with a certain chutzpah to release a product harking back 45 years. But then again not every company is Wharfedale – with all the heritage that famous name brings with it.

What better way for the iconic loudspeaker brand to celebrate its 80th anniversary than by revisiting one of its most popular models? The new, limited-edition Denton compact standmounter does just that.

The original Denton hit the market in 1967 and became one of the then Yorkshire-based outfit's

biggest-selling models – bringing a taste of high fidelity to those who couldn't afford Wharfedale's more exotic (and expensive) speakers.

In fact, there's more than a few of the originals still in use, as a quick look at any number of internet auction sites will testify.

What you get with the new Denton is a decidedly retro looking loudspeaker boasting a beautifully veneered Mahogany cabinet, inset front baffle and traditional cloth grille. But beneath that 1960s fascia things inside are very different indeed. The original model's paper cone mid/bass unit is replaced by Wharfedale's own 21st century 125mm woven Kevlar

driver while the tweeter is a bang-up-to-date 25mm textile soft dome.

Round the back are a pair of small rear ports and sturdy off-set bi-wire terminals.

Sensitivity is quoted at 86db with a 6ohm nominal impedance.

The whole package measures 320x200x305mm – slightly deeper but not too far off the originals. The new Denton may hark back to the past but there's no doubt it looks and feels fantastic.

SOUND QUALITY

Wharfedale's ownership has passed to the China-based IAG group – but that 80 years of experience means

making damn fine loudspeakers is imprinted in their DNA.

I was initially expecting a period of readjustment with the compact Dentons, because they followed the large and seriously impressive Epos Elan 35 floorstanders into my listening room. That the period lasted less than five minutes tells you just how good this new Wharfedale is. IAG's head designer Peter Comeau says he voiced the 2012-specification Dentons to reflect the sound of the original model: "Musical but with a touch of warmth." And, in short, that's exactly what you get.

Fire them up and the first thing you notice is the impressive timing and amazing amount of detail they manage to excavate.

The Clash's take on the reggae classic 'Time Is Tight' positively bounded from the speakers – and the Dentons had no difficulty delineating the occasional burst of saxophone buried so deep in the mix it can sometimes be barely audible. It's this sense of detail that makes the Wharfedales sound significantly more expensive than their £500 price tag.

Elizabeth Fraser's vocals on Massive Attack's 'Teardrop' are pitched just right while you can hear Nick Cave maliciously smacking his lips together with fiendish menace on 'Song Of Joy' from Murder Ballads. It's this detail that means dense, complicated tracks fare extremely well – the Dentons letting you follow individual instruments with ease.

Bernard Sumner's little guitar flourishes from New Order's Brotherhood collection are a case in point. Where these are glossed over on some similarly sized and priced speakers, they are clearly defined on the Dentons, adding a refreshing depth to the music.

Integration between the mid/bass and tweeter is also exemplary. The high-frequency textile dome is extremely civilised with no hint of a screech. It all adds up to a package that has fine overall smoothness yet doesn't miss any of the musical message, whatever is being played. Jazz, rock, classical – whatever your tastes the Dentons handle it all with a refreshing aplomb.

And if you're perhaps harbouring any fears that recessed 1960s-style front baffle may restrict imaging then you can put them to one side immediately.

The Dentons do what modern small speakers are renowned for by delivering impressive out-of-the-box imaging. Stereo definition is precise and solid – anchored firmly between the speakers with admirable depth. Music really **does** seem to be

projected well into the room with realistic height and weight.

On that note I also tried them with the grilles both on and off and couldn't notice any significant difference – so left them on as, frankly, they look better that way.

So, what don't the revised Dentons do? Well admittedly they don't run deep (just not possible for



a speaker this size). But that warmth Peter talks about does give the

subjective impression of tracks having a little bit more bass than is actually there.

Luckily, though, it's not the tuneless thud-thud-thud served up by some inferior models. Instead upper bass is tuneful and solid, meaning you never get the feeling anything is missing from the music.

It's a very careful balance. The Dentons never give the impression they are emphasising one part of the music to the detriment of another yet still manage to avoid sounding overly dry and clinical. Instead they just make music sound fun – whether you want to delve deep into a mix or simply let it flow over you.

They are also fairly forgiving on positioning and power levels. Positioned close to walls the small port size means there's minimal boomy bass. But yes, they do sound better with a little free space around them.

And they have no trouble being pushed hard. Wharfedale

recommend amplifiers of 25-100 watts. I cranked up the volume with 80 watts of Naim amplification and it was only at unsociably loud levels that they really started to show any strain. That's undoubtedly a consequence of the quality of cabinet construction and drive units employed. Even pushed relatively hard they remain civilised.

CONCLUSION

The Wharfedale Dentons' 1960s retro look will inevitably be a matter of taste. Personally, I love it. But taken on sound quality alone there's no argument: Wharfedale have produced a very impressive, sophisticated, detailed and musical speaker here at an almost bargain price of £500. They combine class-leading levels of detail, coherence and a toe-tapping factor that just demands you keep listening. You could easily spend a great deal more and end up with much less than the Dentons deliver.

Factor in the superb build quality and there's no doubt Wharfedale has done a fine job of updating a classic from its illustrious past.

VERDICT ●●●●●£
Warm, extremely detailed and very musical, the new Wharfedale Denton is a superb speaker for the price – highly recommended.

WHARFEDALE DENTON 80TH ANNIVERSARY EDITION £500
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☎ +44 (0)1480 452561
www.wharfedale.co.uk

FOR
- detail
- supremely smooth
- retro look
- build quality

AGAINST
- retro look?

MEASURED PERFORMANCE

The Wharfedale Denton 80th Anniversary Edition measured flat on-axis, grill on or off. Slightly off-axis (i.e. pointing straight down a room and not at the listener), with grill on, it gave the result published. Taking the grill off made little difference, even above 10kHz where wavelengths are short, and off-axis balance differed little from on-axis so dispersion is good. Phase matching was also very good, response varying little with height. Although looking retro, the Denton was in fact better than most modern loudspeakers in these important areas. The drive units are very high quality.

Absence of a midband crossover dip will result in plentiful detail and a sense of definition, whilst the slow roll off in upper treble will ensure the sort of smooth sound older loudspeakers were known for. This is a loudspeaker that will not screech, yet it is tonally very accurate, more so than most.

The bass unit reaches down to 70Hz and there is some peaking around 100Hz. The two small ports are broadly tuned (red trace) and effectively damp the bass unit so the Denton 80th has good bass control and will not boom or sound sloppy. Although port output reaches down low, small ports do not reduce much acoustic power; their SPL was just +2dB up on forward output at 80Hz.

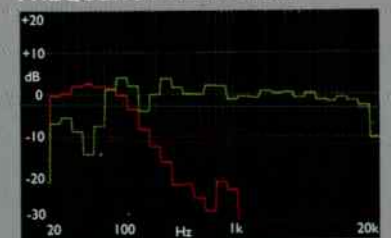
Our 200ms decay spectrum (not shown here) was clean, even at low frequencies; the cabinet is not 'hot' and will not overhang or boom. The drive units are relatively uncoloured too.

At 86dB sensitivity was high as

small loudspeakers go, largely because a 4 Ohm bass unit has been used and, below 500Hz, this is a 4 Ohm loudspeaker our impedance curve shows (5.7 Ohms overall). This curve also confirms excellent bass unit damping by absence of residual peaks either side of the anti-resonant port system. The load is largely resistive, another plus point, as energy is not returned to the amplifier.

The Denton will have strong upper bass and a full bodied presentation, with smooth treble and plenty of mid-range detail. Bass looks controlled and should be of good quality. This is a very modern, well executed design. Only the cabinet is trad. NK

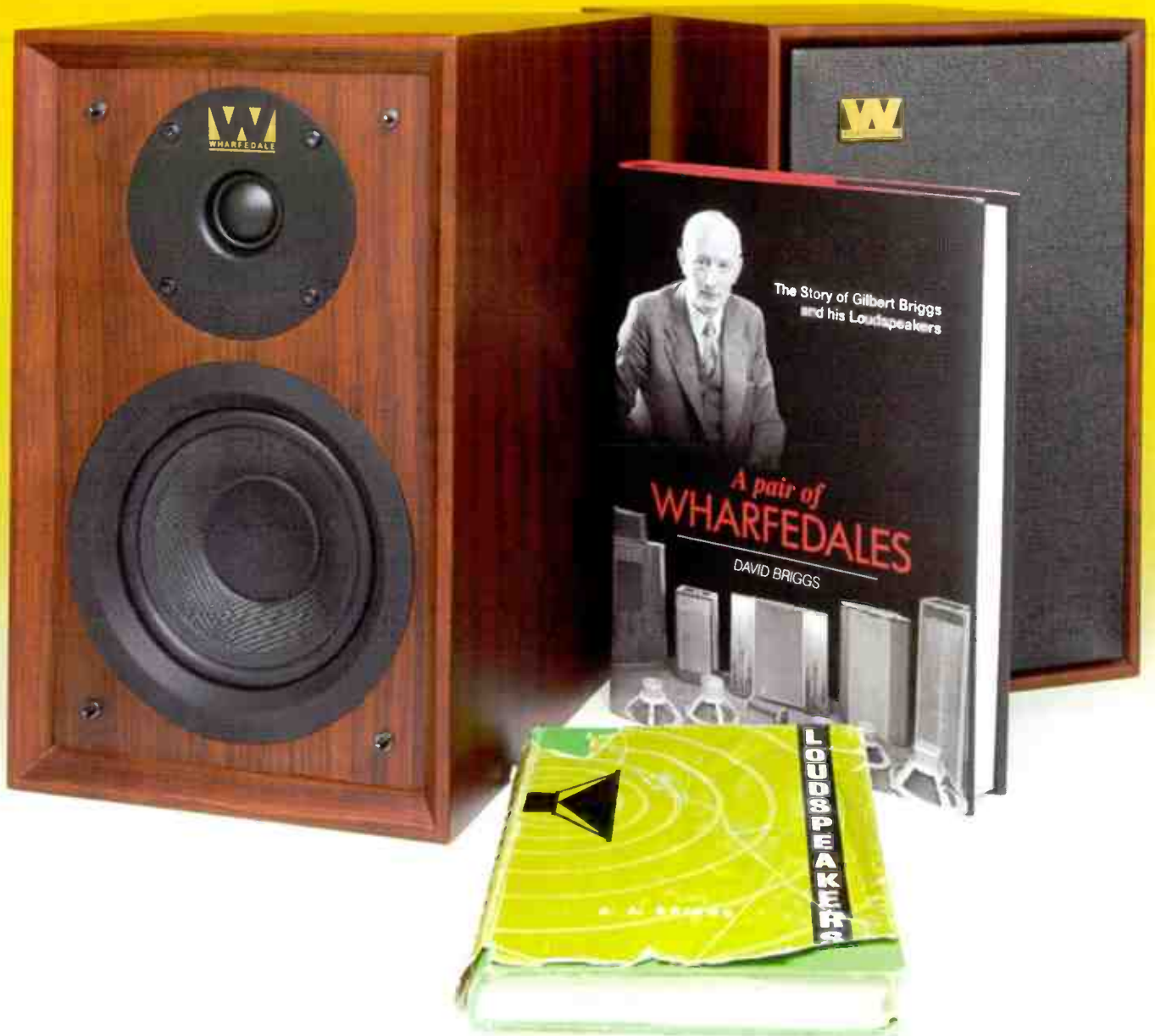
FREQUENCY RESPONSE



Green - driver output
Red - port output

IMPEDANCE





'A Pair Of Wharfedales'

Wharfedale live on, but their early history was quite different to today's. This is a book about Gilbert Briggs and the company he started, reviewed by Noel Keywood.

I am too young (!) to have known Gilbert Briggs, but as with Harold Leak, these early pioneers of high fidelity left a massive historical wake, in which thousands have since been caught up, including myself.

Gilbert Briggs started his loudspeaker company in a small basement premises in Bradford, around 1934, with a staff of a few people. When I last visited Wharfedale (2011), their loudspeakers were being made in a huge Chinese factory employing thousands of people, including British design and quality control engineers I must add. Equally impressive during this visit was a huge reception held for Chinese hi-fi dealers by Sino Wharfedale Trading, one of China's largest audio distributors whose home market alone totals a mere two billion people.

This illustrates just how far the name has come since Gilbert

"depth of research is obvious in the many fascinating pictures of brochures, adverts, pen charts, family photos, concert hall photos and what have you."

Briggs started the Wharfedale Wireless Works. The book 'A pair of Wharfedales' covers the history of the company in fine detail, commercially up until the last Wharfedales were produced in 1977 at a massive factory in Idle, Bradford, UK.

I well recall visiting that factory and seeing a giant cabinet making machine that consumed huge sheets of MDF, sawing, V grooving and wrapping them into glued boxes. Wharfedale loudspeakers had risen from a few people to a plant employing 1100 people producing a thousand units a day for export around the world, the book explains. And that is why the name is well known around the world, giving it great intrinsic value. So the name lives on, Wharfedale loudspeaker manufacturing lives on and Gilbert Briggs, being a great writer, salesman and publicist, also lives on in his books and his legacy, of which 'A pair of Wharfedales' is a part.

The book has been meticulously researched by author David Briggs, a family relation of Gilbert as you might guess, and in good modern fashion it is very broadly compiled. By this I mean you get more than just a well researched timeline of

Gilbert Briggs and the company. The introduction lists worldwide sources for the book, including U.S. libraries. Depth of research is obvious in the many fascinating pictures of brochures, adverts, pen charts, family photos, concert hall photos and what have you. Much of the advertising material produced by companies such as Wharfedale (and Garrard and Leak) was, in retrospect, beautifully conceived and produced in artistic terms and this book displays it all.

You don't get crossover circuits or technicalities, but you get everything up to that point, including wonderful pictures of the legendary concerts Gilbert Briggs had the courage to hold, where live music was compared to music through his loudspeakers. From this alone you can see where the notion of accuracy and high fidelity came from, something lost in today's commercial cynicism.

As well as all this fascinating

graphical material 'A pair of Wharfedales' also lists all of Gilbert Briggs' 22 books, with a precis of their contents and a colour picture of their cover. I was depressed by this, because I have been a keen Briggs book collector, having eight books bought at various jumbles over the years. 'Loudspeakers' started it all and is a wonderful example of Gilbert Briggs gentle, humorous and engaging writing style. His books are a joy to read, yet sufficiently technical to hold your attention if you have more than passing interest in the subject. But there are 22 to collect I learn, and I have just eight – oh shame!

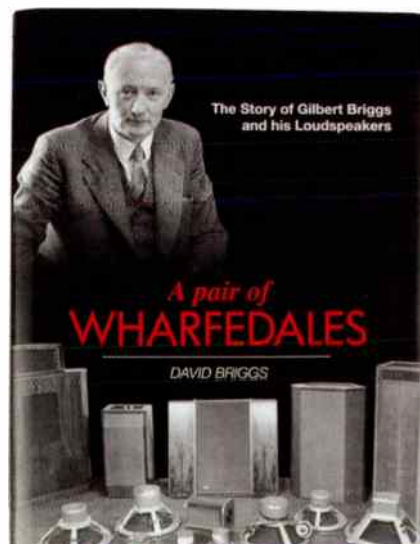
Where Gilbert refers briefly to his early experiences in books like 'Loudspeakers' (and publishes pictures a cones eaten by rats!), 'A pair of Wharfedales' goes into meticulously researched detail. But it isn't just a book on a loudspeaker company so much as a look back at how British companies

started out in domestic electronics in the 1930s and became global brands in existence worldwide today. It doesn't cover the awkward subject of what went wrong and how Wharfedale ended up in China, but then there's little said about the rise of the Japanese electronics industry and the fall of British companies like Pye, Ferguson, Thorn EMI, et al. Only 'Setmakers' delves into this, showing a Rank Radio bus during 1978 with the Rotel brand prominent and Wharfedale and Leak brands as also-rans. How times change.

The book's Epilogue on p320 could have delved into this but was cursory – a pity because key personnel, such as Stan Curtis and Farad Azima, are still available to explain how the brand transitioned.

The story stops abruptly at 1977. 'A pair of Wharfedales' looks at Gilbert Briggs era rather than the longer term picture. But it is extensively researched and a great 370 page read. The only substantial omission is a product guide of the sort found in Stephen Spicer's 'Firsts in High Fidelity - the products and history of H.J. Leak & Co'. This will disappoint collectors and also misses out on an opportunity to interview remaining engineers like Alex Garner who contributed to Wharfedale products during the Rank period.

Mechanically, the book is well made, with strong board covers, 20cms wide x 25cms deep, a dust jacket, and printed on nice thick, high whiteness paper. It is definitely one for the library.



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WORLD STANDARDS

Your guide to the best products we've heard that are currently on sale in the UK...

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MICHELL GYRODEC SE 2005 £1,138
Design icon with superlative build and finish. Sound is beautifully smooth, effortless and exceptionally expansive. No longer peerless at the price, but still a brilliant platform.

MARANTZ TT-15S1 2005 £1,299
Cracking all in one deck/arm/cartridge combination, this must surely be the best sounding 'plug and play' package at this price point.

ROKSAN RADIUS 5.2 2011 £1,450
Although getting expensive, the latest Radius is a highly grown up package with a flowing yet engaging nature; a fine package.



AVID DIVA II SP 2010 £2,000
New twin belt drive and power supply make this a more commanding performer, although there's a substantial price hike. Speed, dynamics and detail are hard to beat anywhere near the price.

INSPIRE ECLIPSE SEV2 12 2010 £2,349

Finely engineered, smooth and detailed sounding deck offering valuable twelve inch tonearm compatibility.

NOTTINGHAM ANALOGUE HYPERSPACE 2010 £2,390
Deliciously spacious, lyrical and beguiling sounding turntable, but lacks ultimate grip.

MICHELL ORBE 1995 £2,500
The top Michell disc spinner remains a superbly capable all rounder with powerful, spacious sound that's delicate and beguiling.

DR FEICKERT WOODPECKER 2010 £3,445

Elegant deck with great low frequency solidity, coherent soundstaging and a precise midband.



LINN LP12SE 2010 £3,510

Surely hi-fi's most iconic turntable, the legendary Sondek goes from strength to strength. New Keel subchassis and Radical DC motor add precision and grip to one of the world's most musical disc spinners. Expensive, though.

ACOUSTIC SIGNATURE STORM 2011 £3,612
An excellent high end design with a smooth, solid, open and lyrical sound and razor sharp styling and build.

FLETCHER AUDIO OMEGA .5 2010 £3,699

Charming high end turntable that's a fitting testament to the late Tom Fletcher.

PALMER 3 2010 £3,750

Eccentric hand built high end turntable with a pleasingly smooth, sweet and lucid sound.



E.A.T. FORTE S EVO 12 2010 £4,750

Excellent premium price turntable with power, precision and passion aplenty, but relaxed and easy going by nature too. Great value package with the Pro-ject Evo 12" arm option.

ACOUSTIC SOLID ONE 2007 £4,050

Huge turntable, both in terms of sheer mass and sonic dynamics. Fit up to three arms and enjoy, just don't damage your back moving it...

SME MODEL 10A 1995 £4,556

Exquisitely engineered deck and SMEV tonearm combo that's an extremely accomplished performer with classical music.

AVID VOLVERE SEQUEL 2007 £4,600

Stylish high end vinyl spinner with industrial strength build quality and a sound to match. Exceedingly neutral yet powerful sound is edge-of-the-seat stuff.

BRINKMANN BARDO 2010 £5,845

Unique high end direct drive turntable with amazing grip and focus, albeit not the most romantic of natures.



McINTOSH MT10 2008 £8,995

Big, expensive, controversially styled and glows more than some might consider necessary, but an astonishingly good performer.

EAT FORTE 2009 £12,500

Lavishly finished two box, two motor turntable with gorgeous Ikeda 407 tonearm bundled. Exceptionally stable and unfussy performer with a relaxed but highly enjoyable gait.

TONEARMS

REGA RB251 2009 £136

Capable way past its price point, the new 3-point mount version of the classic RB250 serves up a taut and detailed sound. A little lean for some tastes, but responds well to rewiring and counterweight modification.

MICHELL TECNOARM A 2003 £442

The late John Michell's clever reworking of the Rega theme, using blasting, drilling and rewiring! Surely the best overall performer under £500.

ORIGIN LIVE SILVER 3C 2010 £599
Excellent mid-price tonearm with a clean and open yet lyrical sound.



HADCOCK GH-242 EXPORT 2010 £770
Consummately musical, lyrical sounding tonearm, but needs the right turntable. Excellent value.

SME 309 1989 £767
Mid-price SME comes complete with cost-cut aluminium armtube and detachable headshell. Tight, neutral sound with good tonality, but lacks the IV's pace and precision.

FUNK FIRM FXR II 2010 £1,175
Clever reworking of the ubiquitous Rega platform, the FXR II gives a wonderfully musical, almost unipivot like performance.



AUDIO ORIGAMI PU7 2007 £1,300
The classic Syrinx PU3 updated to spectacular effect. Hand made to order, with any mass, length and colour you care for. Fit, finish and sound truly impressive.

NAIM ARO 1987 £1,425
Charismatic unipivot is poor at frequency extremes but sublime in the midband; truly emotive and insightful.

HELIUS OMEGA 2008 £1,595
Stylish and solid lump of arm with fabulous build quality, that turns in a dynamic and weighty performance.

SME SERIES IV 1988 £1,620
Offers nine tenths of the SMEV's magic at just over half price. Exquisitely built and finished, and a design classic. Faces stiff competition these days, but lovely nevertheless.

SME 312S 2010 £1,750
Twelve inch magnesium alloy armtube plus SMEV bearings makes an impressive transcription tool with an insightful yet composed sound. Superlative build completes the package.



GRAHAM PHANTOM 2006 £3,160
Sonically stunning arm with magnificent bass dexterity and soundstaging. Build quality up to SME standards, which is really saying something!

TRI-PLANAR PRECISION 2006 £3,600
Immaculate build, exquisite design and one of the most naturally musical and lucid sounds around.

SME SERIES V 1987 £2,389
Vice-like bass with incredible weight, ultra clear midband and treble astound, although some don't like its matter of factness!

LINN EKOS SE 2010 £3,700
Subtle mods over the years, including revised bearings and the recent new wiring has kept it a serious contender in the superarm stakes. Has a commanding musicality all of its own.

OL ENTERPRISE 3C 2010 £4,500
Few if any pivoted arms come close to this arm's combination of liquid musicality and forensic grip.

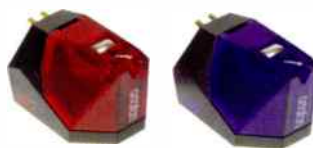
CARTRIDGES
AUDIO TECHNICA AT-95E 1984 £25

Great starter cartridge that's detailed and musical beyond its price. Superglue the stylus in for better sound!

AUDIO TECHNICA AT-F3/III 2010 £189

Great value entry level moving coil with detail and grip you just can't get from similarly priced moving magnets.

ORTOFON 2M RED/BLUE 2007 £60/£120
Modern, high resolution budget moving magnets that are always an engaging listen.



GOLDRING G1042 1994 £239
One of the best MMs going, with sweet and extended treble and punchy, muscular bass.

ORTOFON VIVO BLUE2011 £275
Super new budget moving coil cartridge from respected Danish manufacturer; a real step up from previous efforts.

DENON DL103R 2006 £295
Awkward to get working properly with a poor mounting arrangement, yet it rewards with a musical performance that makes similar priced cartridges sound cold.

DYNAVECTOR DV10X52003 £295
Distant descendent of the classic Ultimo 10X, this has warmth and sweetness in spades, allied to a punchy bass. Beats G1042 comfortably.

ORTOFON 2M BLACK 2007 £350
Staggeringly good high-end MM that uses a stylus from the MC Jubilee and easily rivals similarly-priced MCs

DYNAVECTOR DV20X-H2003 £395
Deliciously sweet sound with fantastic get-up-and-go makes this a great value budget MC. High output version works a treat with valve phono stages too.



AUDIO TECHNICA AT-OC9MLIII 2010 £399
New stylus and cantilever breathe life into this feisty, punchy and detailed performer.

ORTOFON RONDO BRONZE 2005 £500
Excellent mid-price moving coil with real rhythmic alacrity and a decent deal of finesse!

LYRA DORIAN 2007 £649
Incisive and musical, this baby Lyra is one of the most powerful and revealing MCs at its price point. Beware the sharp treble, though!



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

ZYX R-100H 2005 £799
Exceptionally tight sounding and detailed cartridge with the musical skills to match, this is up with the best at the price, with a presentation all of its own.

TRANSFIGURATION AXIA 2007 £890
Musically adept and highly resolute cartridge with impressive tracking abilities. Top end lift means careful matching required, however.

BENZ MICRO WOOD SL 2010 £945
Highly finessed Swiss moving coil that plays music with riflebolt precision.



ORTOFON CADENZA BLUE 2009 £1,000
Musical, out of the box sound, allied to real finesse, makes this a great do-it-all high end moving coil.

ORTOFON CADENZA BRONZE 2010 £1,350
Smooth and engaging high end MC with a slightly warmer and more relaxed presentation than its superb bigger brother.

ORTOFON CADENZA BLACK 2010 £1,650
Ultra incisive, transparent and dimensional moving coil with grip and punch aplenty.

ORTOFON MC WINDFELD 2008 £2,250
Ortoton's new flagship MC is a sophisticated and alluring performer that takes the vinyl experience to a new level.

KOETSU RED K SIGNATURE 2007 £2,399
The new K Signature adds a hefty dose of insight and finesse to the already impressive Red and the results are fabulous.



DIGITAL SOURCES**MUSICAL FIDELITY V-DAC** 2010 £170

Clear, concise, low distortion sound belies giveaway price. Superlative value for money.

CAMBRIDGE AUDIO DACMAGIC 2010 £230

A flexible new DAC, this is an impressively rhythmic and detailed performer.

ARCAM rDAC 2010 £300

Cracking budget DAC sporting a fulsome and musical sound with gorgeous build and styling.

MUSICAL FIDELITY MI DAC 2010 £400

Surprisingly sophisticated upsampling DAC with oodles of detail and air, but bass isn't quite as powerful as it could be.

STELLO DA100 SIGNATURE £750

Superbly finessed sounding DAC at the price, with strong driving bass and plenty of air and space.

**CAMBRIDGE AZUR 840C** 2006 £800

Well built CD player with a silky, yet detailed sound and a whole host of useful facilities. Excellent value for money.

NAIM CD5i 2008 £895

Naim's new italic 'i' variant improves even further on the original mid-price classic, offering super tight, grippy and musical sound.

ROKSAN KANDY K2 CD 2010 £900

A charmingly musical performer at the price, this is a surprisingly sophisticated CD player for the money.

BENCHMARK DAC-IS 2009 £930

Power, precision and poise - allied to real seat-of-the-pants musicality, this DAC justifies its premium price.

MUSICAL FIDELITY M3 CD 2011 £995

Excellent mid-price machine with slick slot loading and an open and inviting sound.

ELECTROCOMPANET PD-1 2011 £1,250

Quirky but highly capable digital convertor with an effective wireless radio option (£250) and balanced outputs.

SIMAUDIO MOON 300D 2010 £1,290

Lovely fluid sounding DAC with a deep, dark, velvety tonality.

**CYRUS CD8 SE** 2008 £1,350

Bespoke Servo Evolution mech makes this the most musically engaging machine at the price, with super smooth tonality to boot. Optional PSX-R adds bass and dimensionality.

DENON DCD2010AE 2010 £1,700

Powerful, open sound allied to a rich tonality and satisfying subtlety make this an excellent mid-price buy.

NAIM DAC 2010 £1,995

Superb high end digital convertor with a probing, punchy and forensically detailed sound.

MERIDIAN G08.2 2011 £2,400

Everyman's modern high end CD player, the stylish, well made Meridian has an extremely enjoyable yet refined and accurate sound.

MARANTZ SA-KI PEARL CD 2010 £2,500

Finely honed affordable high end silver disc spinner, this has a musical lucidity that's unexpected at this price.

**LEEMA ANTILLA IIS ECO** 2011 £2,995

Stable and smooth yet superbly detailed and musically engaging, this is class of the £3,000 CD player field.

CHORD QBD64 2008 £3,000

Bespoke architecture gives a uniquely musical sound that's beguiling yet proffers dizzying incision and grip.

ELECTROCOMPANET EMC-IUP 2009 £3,450

Quirky yet extremely capable high end upsampling CD spinner, with a musical fluency that beguiles more than it impresses.

**ACCUSTIC ARTS CDP1MK2** 2007 £3,985

Styling not to everyone's taste but build quality is impeccable and the performance is stunningly musical.

ESOTERIC X-05 2010 £4,495

Superlative 'affordable high end' CD/SACD spinner with excellent build, massive detail and great poise.

WEISS DAC202 2010 £4,600

Brilliantly open and insightful sounding DAC with a range of useful features.

ELECTROCOMPANET EMP-1/S 2011 £4,650

Epic in scale, lavish in tone and exuberant in its musicality, this is a memorable SACD spinner. Quirky in operation and modest in finish, though.

NAIM CDX2-XPS2 2003 £4,950

A fine high end machine, but add an XPS2 and it becomes one of the most charismatically engaging 16bit machines we've ever heard. Plays music with such passion!

NAIM CDS3 2003 £7,050

The most polished Naim CD to date; tremendously capable and musical, but lacks the Rottweiler quality of the cheaper CDX2-XPS2.

dCS DEBUSSY 2011 £7,500

Compact, stylish DAC bringing the gloriously smooth, svelte, spacious sound of dCS to a wider audience.

ACCUSTIC ARTS DRIVE I MK2/TUBE DAC 2 2007 £7,980

Superbly built high end CD transport and DAC combo that shows just what the format can be capable of. Very tangible, musical sound with wonderful dynamics and glistening harmonics. Only curious styling and clunky build detract from its brilliance!

DCS PAGANINI DAC £9,599

Digital rarely sounds better; dCS's bespoke Ring DAC makes for power, punch and insight on an epic scale. Add clock and upsampler for an even more profound experience.

**NAIM CD555/555PS** 2006 £14,000

Very probably the best CD player yet made - certainly the most expensive; a digital *tour de force*.

**NETWORK****NAIM HDX** 2009 £4,405

Interesting one-box network enabled hard disk music system gives superb sonics together with impressive ease of use.

LINN KLIMAX DS 2007 £9,600

Landmark network music player, offering brilliant sonics at up to 24/96 resolution from hard disk/NAS. Expensive, but you can hear why...

PHONO STAGES**CAMBRIDGE AUDIO 640P** 2009 £99

Excellent entry level design that raises the bar for budget phono stages. Crisp, smooth yet brightly lit sound on both MM and MC that's a vast improvement on most budget inboard designs.

GRAHAM SLEE ERA GOLD V 2004 £370

Warm, open and musical nature makes this a great budget phono stage.

ICON AUDIO PS1.2 2007 £599

Excellent valve phono stage with good range of facilities and fine imaging abilities.



CHORD CHORDETTE DUAL 2010
£799

Well presented mid price designed with detailed sound and USB input for archiving.

ASTIN TREW AT8000 2010 £880

Expansive, detailed, powerful sound makes this a leading sub-£1,000 contender.

A.N.T. AUDIO KORA 3T LTD 2010 £995

Exceptionally musical and natural sounding all discrete transistor phono stage, with highly lucid, valve-like presentation.

AVID PULSUS 2010 £1,100

Powerful, propulsive, expansive sound puts this right at the top of the £1,000 phono stage tree.

QUAD QC24P 2007 £1,200

Dynamic performer that can be used on its own as a complete phono-level preamp.

ICON AUDIO PS3 2008 £1,500

Super sounding valve phono preamplifier, with an expansive, engaging and organic nature that makes vinyl sheer joy!

SUTHERLAND 20/20 2010 £1,999

Well engineered, smooth sounding solid-state phono stage with a charm of its own.

EMILLE ALLURE 2010 £2,495

Just as the name suggests, this is a lovely way to play LP with an exceptionally open and lucid sound.

**AVID PULSARE** 2010 £3,800

This superbly built, well specified phono stage has a powerful and authoritative sound that bristles with detail and energy.

WHEST PS.30 RDT SE2011 £4,500

The least solid-state sounding Whest we've heard, this builds on the family strengths of precision and grip but adds a welcome poise and fluidity.

NAT AUDIO SIGNATURE 2011 £5,633

Sophisticated sounding, unusually engineered MM and MC phono stage, but faces stiff competition at this lofty price.

AMPLIFIERS**ICON AUDIO STEREO 40/III**
2010 £1,200

Excellent starter tube integrated, with plenty of detail and an expansively musical sound.

**AUDIOLAB 8000S** 2006 £400

In another life, this sold for three times the price, making it a stand-out bargain now. Very clean, powerful and tidy sound but not the world's most beguiling.

NAIM NAIT 5i 2007 £725

The italic 'i' version remains one of the most musically competent and dynamically engaging integrateds at the price.

CAMBRIDGE 840A V2 2007 £750

Version 2 addresses version 1's weaknesses to turn in a mightily accomplished performance, offering power, finesse and detail.

SUGDEN MYSTRO 2010 £1,225

Sugden's first Class AB integrated in a long time surprises; rollickingly good fun, it loses surprisingly little in smoothness to its Class AB siblings.

NAIM NAIT XS 2009 £1,250

With much of the sound of the Supernait at half the price, this is powerful, articulate and smooth beyond class expectations.

CREEK DESTINY 2 2010 £1,445

Beautifully voiced integrated amplifier with a distinctly seductive, tube like sound. A solid-state superstar!

SUGDEN A21A S2 2008 £1,469

Crystalline clarity, dizzying speed and forensic detailing makes this seminal design the most musical at the price, but power limited so needs sensitive speakers.

**CYRUS 8XPD** 2010 £1,500

A quality integrated that suits all genres of music providing insight and clarity in a compact but flexible package.

ANATEK A50R 2007 £1,600

Simple integrated amplifier with super bass grip and effortless dynamics.

VINCENT SA-236MK 2010 £1,749

Big, powerful and expansive sounding hybrid transistor amplifier, with a lively, musical nature.

NAIM SUPERNAIT 2007 £2,475

Integrated *tour de force* from Naim that combines impressive functionality and connectivity with super sound.

AUDIO RESEARCH VS160 2009
£3,298

Load of tube power allied to a strong bass and smooth open midband makes this a grin-inducing listen.

LEEMA TUCANA II 2010 £3,495

Polished high end integrated amp that combines power, detail and genuine musicality with a good range of facilities.

**SUGDEN IA4** 2007 £3,650

Goody amount of Class A power, icy clarity and a breathtakingly fast, musical sound make this one of the very best super-integrateds.

QUAD II CLASSIC 2010 £4,500

Beautiful retro styled integrated amplifier with a subtle, supple sound - although needs matching to speakers that are easy loads.

QUAD II CLASSIC INTEGRATED
2010 £4,500

Thoroughly modern music maker with classic style and great pedigree, this amp sings with gentle music but is no headbanger!

SIM AUDIO MOON 6001 2010 £5,750

Sturdy build, useful facilities and a wonderfully relaxed, seamless and even-handed sound will win this many friends.

MUSICAL FIDELITY AMS351 2010 £6,000

One of the best high end integrateds we've come across, this combines hear-through transparency with musical get-up-and-go.

DARTZEEL CTH-8550 2010 £16,500

Charismatic and quirky high end solid-state integrated amplifier with superb sound and a charming visage.

HEADPHONE AMPLIFIERS**FIDELITY AUDIO HPA 100** 2011
£350

Great little headphone amplifier with a lively yet refined and open sound.

MUSICAL FIDELITY X-CAN V8 2008 £350

Open and explicitly detailed sound plus serious bass wallop and the ability to drive anything to very high levels makes this a great partner for most mid-to-high end headphones.

PREAMPLIFIERS**CREEK OBH-22** 2008 £350

Brilliant value budget passive, with remote control, mute and input switching, plus an easy, a neutral sound.

ICON AUDIO LA-4 2011 £800

Uses early 6SN7 triodes for liquid sound, has plenty of gain and remote control.

NUFORCE P-9 2007 £2,200

Impressive two box preamp with superb resolution and an engaging sound.

**DPA CA-1** 2010 £2,650

Excellent solid-state preamp with a meticulously detailed and propulsive sound, but a deep velvety tonality.

MELODY PURE BLACK 101D 2007 £3,295

The clarity and openness of valves plus firm grip and fine detail make this a preamplifier masterclass.

MF AUDIO CLASSIC CII SILVER
2010 £4,500

One of the best preamplifiers we've heard at any price, this transformer coupled marvel does very little wrong; its powerful, clean, open yet delicate sound is unmatched at or near the price.



MODWRIGHT 36.5 PRE/PSU
2010 £5,995

Exceptionally open and expansive, yet musically expressive sounding high end preamplifier.

MUSICAL FIDELITY PRIMO
2009 £7,900

Seriously expensive, but one listen explains why. Wonderfully exuberant sound that can only come from a top quality tube design.

POWER AMPLIFIERS**XTZ AP-100** 2010 £520

Decently smooth yet usefully muscular, this power amp punches way beyond its price point in sonic and value terms.

QUAD 909 2001 £900

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

NUFORCE REFERENCE 95E V2
2006 £1,750

Brilliant value for money monoblocks with massive power and super-clean, three dimensional sound.

**DPA SA-1** 2010 £2,850

Pacey, engaging and rhythmic almost to a fault, this solid-state power amplifier isn't the world's most powerful but is none the worse for it.

QUAD II-40 2005 £3,230

Modern tube monoblock power amplifiers with plenty of power, liquid and open mid-band and spacious, airy treble. Explicit, engaging sound, but not as euphonic as some.

ELECTROCOMPANET NEMO
2009 £4,450 (EACH)

The Norwegian power station is as cool as a glacier tonally, yet impresses with its sheer physicality and fleetness of foot. 600W per channel makes for a massive bang per buck.

ICON AUDIO MB845 MkII 2010
£5,500

With 120W from big 845 valves right down to low frequencies, this power amplifier has massive dynamics and bass swing, yet is easy on the ear.

**QUAD II-80** 2005 £6,000

Quad's best ever power amplifier, this is a dramatic performer with a silky but dark tonality, blistering dynamics, serious power and a compellingly musical sound. They don't come much better.

MUSICAL FIDELITY AMS50
2010 £7,000

Mighty, assured high end full Class A integrated proffering icy clarity allied to real musicality. Lacks the lucidity of the best tube amps but redeems with power and punch.

LOUDSPEAKERS**Q ACOUSTICS 2020** 2010 £140

Great little standmounters with a friendly, fun yet surprisingly refined gait. Excellent value starter speakers.

ACOUSTIC ENERGY NEO I
2007 £199

Tidy and well balanced standmounters with pleasing clarity and detail.

MISSION MX2 2011 £200

Sophisticated sound alloyed with real musical insight makes these small standmounters super value for money.

ACOUSTIC ENERGY NEO I v2
2010 £225

Civilised sounding speaker with fast and tuneful bass.

B&W 686 2007 £279

B&W's new baby standmounters offer a sophisticated and mature performance that belies both their dimensions and price tag.

WHARFEDALE DIAMOND 10.3
2010 £290

Great small standmounters for audiophiles on a budget; dry punchy sound with impressive soundstaging at the price.

MORDAUNT SHORT AVIANO 2 2010 £300

Classy sounding standmounter at a still affordable price.

KEF IQ30 2009 £330

Beautifully built, classily styled standmounters with exceptional image projection and a very clean, detailed sound.

**USHER S-520** 2006 £350

Astonishingly capable budget standmounters that offer detail and dynamics well beyond their price and dimensions.

XTZ 99.25 2010 £640

Disarmingly open and refined at the price, these standmounters bring unexpected civility, refinement and insight to the price point. Exceptional value for money.

**ACOUSTIC ENERGY AEI CLASSIC**
2006 £845

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

SPENDOR S3/5E 2004 £950

A natural successor to the BBC LS3/5a, whose impressive neutrality, imaging and evenhandedness makes this a superior, if less charismatic, loudspeaker.

MY AUDIO DESIGN MY1920 2011 £1350

Exceptionally smooth, spacious and refined mini monitors that beguile and excite in equal measure.

ELAC BS243 2010 £1,000

More transparent and spacious than they've a right to be at this price, these refined mid-price standmounters represent top value.

RRR FS100 2007 £1,055

Mind-boggling amount of loudspeaker for the money. Big and sturdily built with serious bass and awesome soundstage scale. A real bargain.

**ONE THING AUDIO ESL57**
2007 £1,450

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

GURU QM-10P 2007 £1,595

Quirky but adorable standmounters that are way off the pace in respect of detail and power, but well capable at playing a tune and pulling you in to the music.

USHER BE-718 2007 £1,600

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

MARTIN LOGAN SOURCE
2008 £1,600

Brilliant entry level electrostatics, giving a taste of loudspeaker esoterica for the price of most moving coil boxes. Tremendous clarity, evenness and delicacy, although not the world's most powerful sound.

SPENDOR S8E 2008 £1,895

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

**ISOPHON GALILEO** 2007 £2,100

Big standmounters that really grip the music and offer quite startling dynamics and grip.

MONITOR AUDIO PL100 2008 £2,300

The flagship 'Platinum' series standmounter has a lovely warm and delicate sound with superlative treble.

EMMINENT TECHNOLOGY LFT8B 2010 £2,300

Brilliant ribbon/moving coil hybrid with seamless, delicate and expansive yet tremendously musical nature.

PMC OB II 2008 £2,950

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

MY AUDIO DESIGN

MYCLAPTON SE 2010 £3,299
Powerful, dynamic, musical yet refined, this unconventional point-source design yields dramatic sonic benefits.

MAD MY CLAPTON GRAND MM 2010 £3,599

Distinctive coaxial standmounters with wonderful soundstaging, bright lucid midband and true musical insight.

YAMAHA SOAVO 1.1 2009 £3,000
Musical, transparent large floorstanders with impressive dynamics and cohesion. Excellent build and finish.



MOWGAN AUDIO MABON 2007 £3,995

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

B&O BEOLAB 9 2007 £5,000
Technically impressive and visually striking loudspeakers with sound quality that more than matches their looks.

TANNOY DEFINITION DC10T 2010 £5,000

Wonderfully wide and open, super fast and amazingly engaging to listen to.

ECLIPSE TD712z/2 2011 £5,100

Flawed genius, and wilfully so. These loudspeakers don't do everything well, but what they can do is profound and enthralling; rhythms, dynamics and soundstaging.

ARS AURES M1 2006 £5,995

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



QUAD ESL-2905 2006 £5,995

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

SPENDOR ST 2010 £5,995

This classy sounding, superbly presented big floorstander will appeal to those seeking high end sonics with subtle looks.

REVOLVER CYGNIS 2006 £5,999

Revolver pull out all the stops and show what they can do with this magnificent flagship loudspeaker. A superb monitor that is like a mini B&W 801D in many ways.

VIVID V1.5 2010 £6,000

Breathtaking transparency, superlative coherence and dizzying speed make these one of the best standmounters ever made - providing you like their 'studio sound'.



GERMAN PHYSIKS LIMITED II 2011 £7,800

Don't be fooled by the austere looks; this is a superbly enjoyable omnidirectional speaker with a wonderfully fast, expansive sound.

USHER BE-10 2009 £10,500

Clever high end moving coil design with immense speed and dizzying clarity allied to epic punch. Needs the best ancillaries to fly, though...

B&W 801D 2006 £10,500

In many respects, the ultimate studio monitor; dazzling clarity and speed with commanding scale and dynamics.



ISOPHON CASSIANO 2007 £12,900

Drive units featuring exotic materials allied to superlative build quality result in an immensely capable loudspeaker. Not an easy load to drive, however.

REVOLVER CYGNIS GOLD 2010 £15,000

Vast in scale with effortless dynamics and an easy, barrel chested bass, these big bangers are great for lowish power tube amps. Large room needed!

MARTIN LOGAN CLX LINEAR 2010 £15,990

Meticulously crafted electrostatic that's free from traditional limitations, this is one of the very best loudspeakers money can buy.

ACCESSORIES WADIA I701 2010 £349

The first iPod dock to extract the music digitally, letting you hook your little Apple direct to a DAC for superior sound.

ISOTEK AQUARIUS 2010 £795

Highly accomplished premium priced mains conditioner that delivers the sonic goods, unlike so many others.

TOWNSHEND MAXIMUM 2003 £800

Classy ribbon supertweeter with flexible level settings and cool styling - you'll be amazed at the difference it makes, especially with Quad electrostatics.

HEADPHONES JAYS V-JAYS 2010 £49

Wonderful little budget over-ear portable phones with a clean, smooth sound to beat the best of the rest at the price.



SENNHEISER MX-550 2005 £19

Our unqualified recommendation for those seeking a serious sounding pair of in-ear phones. Smooth, detailed and musical.

SENNHEISER PX-100 2002 £29

Cracking pair of lightweight open back cans ideal for personals, but good enough for real hi-fi use. Superb build allied to a smooth and engaging performance make them the spiritual successor to the HD400s.



GOLDRING DR150 2006 £70

Excellent build and fine sound makes these budget cans superlative value for money.

SENNHEISER HD-590 1998 £199

The company's best real-world cans to date. Open and smooth with plenty of detail. Brightly lit midband makes them an ideal partner for a valve headphone amp.

SENNHEISER HD-650 2004 £250

A super all round reference design with crisp, detailed and even sound allied to superlative build and comfort. Cable upgrade yields great results.

SENNHEISER HD800 2010 £1,000

The ultimate expression of the Sennheiser philosophy offers massive speed, clarity and insight, although lacks some of the charm of the softer, more beguiling rival Staxes.



STAX SR-007T OMEGA II/SRM-007T 2006 £2,890

Simply the best headphones we've ever heard at any price, these sweetly translucent electrostatic ear-speakers are like no other headphone, or loudspeaker for that matter...

INTERCONNECTS

TELLURIUM Q BLACK 2010 £276/3m
A deep, dark, velvety performer that's nevertheless highly musical, it represents excellent value as mid-price cables go.



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

WIREWORLD OASIS 5 2003 £99/M
Excellent mid-price design with a very neutral, silky and self-effacing sound. Superb value for money.

CHORD COMPANY CHAMELEON 2 £90/M
One of our favourites, these are musical performers with a smooth yet open sound.



DNM RESON 2002 £40/M
Neutral and transparent - a steal!

VDH ULTIMATE THE FIRST 2004 £260/0.6M
Carbon interconnects that help you forget the electronics and concentrate on the music. Miraculous transparency. Tight and tuneful bass mixed with air and space results in a cracking cable for the money.



TCI CONSTRUCTOR 13A-6 BLOCK 2003 £120
Top quality 'affordable' mains outlet block, with fine build and good sonics. Well worth the extra over standard high street specials, which sound coarse and two-dimensional by comparison.

MISSING LINK CRYO REFERENCE 2008 £375
Currently our favourite 'affordable high end' interconnects, with a deliciously smooth, open and subtle sound without a hint of edge or grain. Superb value, inasuch as it's as good as some designs at three times the price.

TUNERS

DENON TU-1500AE 2006 £120
Excellent entry level analogue tuner; slick sonics and fine feature count make it a bargain.



CAMBRIDGE AUDIO 640T 2005 £250
Sweet sounding digital/analogue hybrid with fine build and finish at the price.

ARCAM FMJ T32 2009 £550
Excellent hybrid FM/DAB+ tuner with a smooth, engaging sound. Factor in its fine build and it's a super value package.

CREEK CLASSIC TUNER 2006 £550
No tuner offers better sound per pound; wonderfully three dimensional and smooth from bottom to top.

MICROMEGA FM-10 2010 £750
Don't let the modest proportions fool you, this is a state-of-the-art modern analogue tuner with bespoke internals giving a warm, expansive sound.

MYRYAD MXT-2000 2005 £800
Sumptuous sound and excellent build is all most will ever need in a tuner; superb.

MAGNUM DYNALAB MD-90T 2010 £1,295
Exceptionally able, but commensurately priced, audiophile tuner that cannot fail to charm.

MAGNUM DYNALAB MD-100T 2006 £1,895
One of the best ways to hear FM that we know; superbly open and musical sound in a quirky but characterful package.



SYSTEMS

YAMAHA CRX-M170 2007 £200
One heck of a lot of quality performance on DAB, CD and FM for £200! Optional matching £120 NX-E300 loudspeakers aren't too shabby either.

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



NAD C-71SDAB 2008 £429
Small, neat looks cover a truly capable system that shows just what a compact design can achieve.

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

SHANLING MC-30 2007 £650
Quite possibly the cutest all-in-one around with fine performance from the CD player, tuner and MP3 player input. Very low power, though.



PEACHTREE AUDIO IDECCO £1,000
Excellent sounding iPod dock, impressive DAC and fine amplifier section make this an excellent one box style system.

ARCAM SOLO 2005 £1,249
Excellent all-in-one system, with a warm, smooth and balanced sound to match the features and style.

LINN CLASSIK MUSIC 2008 £1,250
Neat update of the original and best one-box stereo system; superbly musical sound beats equivalently priced separates.

NAIM UNITIQUITE 2010 £1,350
Great little half width one-box system with truly impressive sound allied to a wealth of source options.



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



AURA NOTE MUSIC CENTRE 2007 £1,500
Lovely shiny CD/tuner/amplifier with fine sound quality and dynamic abilities.

NAIM UNITI 2009 £1,995
Uniquely versatile one box music system with excellent ergonomics and sonics to match. A landmark product for Naim.

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



MERIDIAN SOOLOOS 2.1 2010 £6,990
Thanks to its crisp styling and bright, colourful touchscreen, plus excellent search facilities this is one hard disk music system with a difference. Best partnered to Meridian active loudspeakers.

MARANTZ 'LEGEND' 2007 £22,000
The combination of SA-751 disc player, SC-752 preamp and MA-952 monoblocks delivers jaw-dropping performance.



Drop into one of our **Top 20**

The Music Chain

Much is written about music and the musicians who entertain us, and we rightly exalt great musicians. But there is an interlinked chain of participants, two of which are I believe are crucial to our music scene in today's world. For centuries the music chain was a very short one – composers or songwriters, musicians and listeners, and the judgement on quality was immediate. Recording technologies have changed all this exponentially.

Today, we listen to most of our music from a recording and this gives recording engineers the opportunity to avoid poor acoustics, duff notes and off days. This, of course, means the chain has grown to include the recording engineers, the music distribution system (retailers or downloads), hi-fi manufacturers, hi-fi sellers and the hi-fi purchasers, the latter being the listeners.

I should start by saying that hi-fi has become an adulterated term that no longer has its original meaning because it's applied to much equipment that certainly should not be termed high-fidelity.



It's said that a chain is only as strong as its weakest link. However, I believe there are two particularly strong links that, if removed from the chain, would seriously damage the quality of recorded music. These are the audiophile, or hi-fi connoisseur, and the specialist hi-fi

retailer, the latter in nearly all cases also being the former because it's their interest that has driven them into their particular business. These are the people who most appreciate how exciting and involving music can be and how it can deliver an emotional experience.

Hi-Fi Connoisseurs

So why is the hi-fi connoisseur so important to the music industry? By their nature, audiophiles are generally avid music lovers who enhance their enjoyment through listening to music at its very best quality level, which means playing great recordings through hi-end hi-fi to achieve the most outstanding results. Without the audiophile, the main driver for quality would probably be removed from the chain. Let's be honest, over

recent years the majority of music listeners now settle for MP3 convenience and, therefore, mediocre sound quality, that is 'pre-ruined' music. If the pendulum ever swings so far that all but a few listen to highly compressed formats such as MP3, music producers will not waste their resources on producing high quality recordings because it would be commercially unnecessary, even if their recording engineers wanted to achieve the best they could. After all, an MP3 or AAC file, the iTunes default format, downloaded at 128 kbps (the most popular download speed), is about one-eleventh the size of a full resolution CD track, 1411 kbps, so the quality is inevitably far inferior. Information is irretrievably lost and the full dynamic

range is lacking. Using an iPod while jogging does not really raise a quality issue but playing low-resolution tracks through an iPod docking station that feeds into a decent hi-fi system, is a disaster area. It's rubbish quality made louder. Fortunately, there is still significant demand from audiophiles committed to sound quality to sustain the production of high quality recordings, but it would be a tragedy if there weren't. For example, most classical recordings downloaded as an MP3 or AAC file are a complete waste of time because there is so much information missing that they are reduced to just the essence of a tune.

Specialist Hi-Fi Retailers

Just as essential a link in the chain as the hi-fi connoisseur is the specialist hi-fi retailer and the two are rightly dependent on each other. Without the specialist retailer the hi-end hi-fi manufacturer would have to rely on the internet and hi-fi magazine reviewers to try and assess the relative merits and performance of their products against that of their competitors – a notoriously unreliable decision making process. Specialist hi-fi retailers are constantly being offered new products for assessment and potential stocking and, as it is also their hobby as well as their livelihood, they are greatly interested in achieving the best performance and seeking out the most outstanding products and combinations. More than that though is their relationship with audiophiles for, if they are to stay in business, they must satisfy the most discerning customers in the industry. The reality is that audiophiles and specialist hi-fi retailers are essential to each other.

UK Hi-Fi Dealers near you

Future of Recorded Music

What are the future prospects of maintaining high quality music recordings? We must hope that audiophiles, or hi-fi connoisseurs, or perhaps most accurately described, music lovers, will continue to drive the demand for quality. But another important reason for hope within the mass-market is that there is no longer any over-riding reason for MP3 and AAC to have such a following. These formats were designed to overcome very slow download speeds and expensive memory capacity. These are not significant factors for most people now. Full resolution audio streaming, as well as CD quality downloads, are already available and will become the norm as the wider public becomes aware of the tremendous quality benefit. This has happened with HD TV so we know this awareness can grow rapidly. In the meantime, we must highly value hi-fi connoisseurs and specialist hi-fi retailers, of which the ones listed on this page represent the UK's finest. Specialist dealers know how to choose the products that combine as a superb system and how to get the best out of it by expert installation in the home. If there's a price premium over an internet purchase, it's probably a small one, but it's unquestionably worth the difference.

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FACILITIES.....	★ ★ ★ ★ ★
VERDICT.....	★ ★ ★ ★ ★



OUR TOP 20 UK HI-FI DEALERS

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SOUNDCRAFT HI-FI
 40 High Street.
 t: 01233 624441
www.soundcraft-hifi.com

Chelmsford
RAYLEIGH HI-FI SOUND & VISION
 216 Moulsham Street.
 t: 01245 265245
www.rayleighhifi.com

E. Grinstead
AUDIO DESIGNS
 26 High Street.
 t: 01342 328065
www.audiodesigns.co.uk

Kingston-upon-Thames
INFIDELITY
 9 High Street,
 Hampton Wick.
 t: 020 8943 3530
www.infidelity.co.uk

Maidenhead
AUDIO VENUE
 36 Queen Street.
 t: 01628 633995
www.audiovenue.com

Norwich
MARTINS HI-FI
 85-91 Ber Street.
 t: 01603 627134
www.martinshifi.co.uk

Rayleigh
RAYLEIGH HI-FI
 44a High Street.
 t: 01268 779762
www.rayleighhifi.com

Southend-on-Sea
RAYLEIGH HI-FI SOUND & VISION
 132/4 London Road.
 t: 01702 435255
www.rayleighhifi.com

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www.audiovenue.com

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www.oandlhifi.co.uk

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www.obrienhifi.com

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 t: 01225 333310
www.audience.org.uk

Exeter
GULLIFORD HI-FI
 97 Sidwell Street.
 t: 01392 491194
www.gullifordhifi.co.uk

MIDLANDS

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OVERTURE
 3 Church Lane.
 t: 01295 272158
www.overture.co.uk

Birmingham
MUSIC MATTERS
 363 Hagley Road, Edgbaston.
 t: 0121 429 2811
www.musicmatters.co.uk

Coventry
FRANK HARVEY
 163 Spon Street.
 t: 024 7652 5200
www.frankharvey.co.uk

Leicester
CYMBIOSIS
 6 Hotel Street.
 t: 0116 262 3754
www.cymbiosis.com

Nottingham
CASTLE SOUND & VISION
 48/50 Maid Marian Way.
 t: 0115 9584404
www.castlesoundvision.com

NORTH

Cheadle
THE AUDIO WORKS
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www.theaudioworks.co.uk

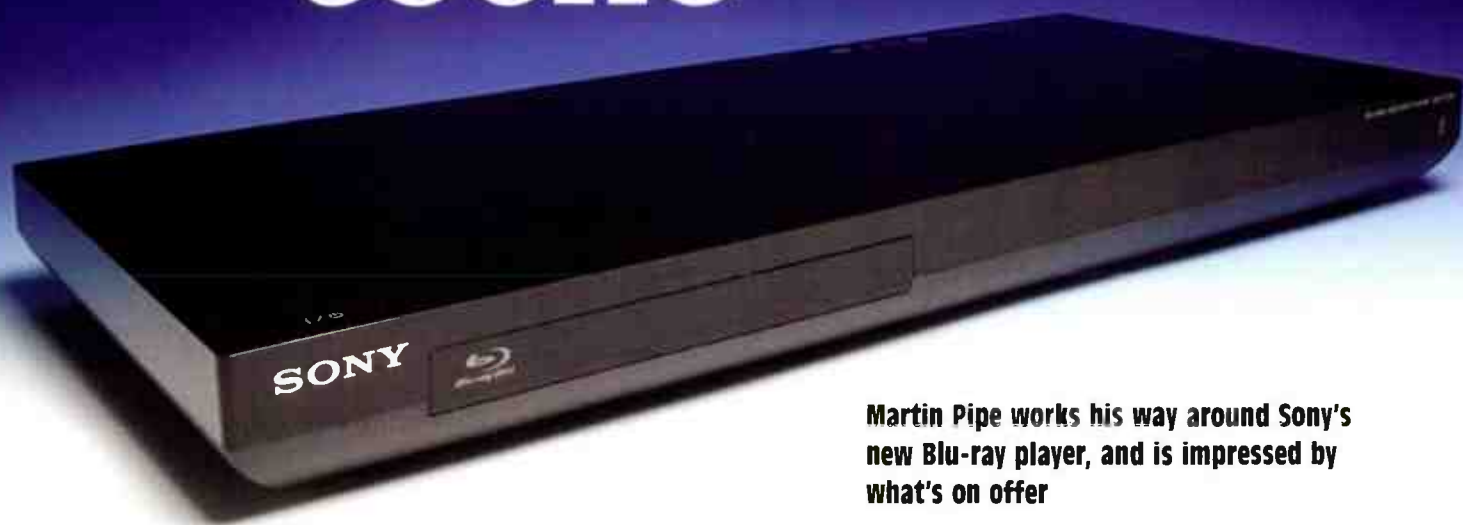
Chester
ACOUSTICA
 17 Hoole Road.
 t: 01244 344227
www.acoustica.co.uk

Hull
THE AUDIO ROOM
 Savile Street, Hull
 t: 01482 891375
www.theaudiroom.co.uk

York
SOUND ORGANISATION
 2 Gillygate.
 t: 01904 627108
www.soundorg.co.uk

These specialist dealers have been selected because they are known to do an excellent job in guiding customers towards hi-fi that will give years of musical enjoyment and total satisfaction.

Tonic for techs



Martin Pipe works his way around Sony's new Blu-ray player, and is impressed by what's on offer

Hard to believe now, but not so long ago a disc player did just that - play discs. To see how things have changed, one only has to examine Sony's BDP-S790. Despite selling for a mere £239, this slimline Blu-ray player tops the company's line. And sure enough, the 790 will play discs - DVDs, CDs, Blu-rays (2D and 3D), CD-ROMs containing MP3 files and a plethora of recordable and rewritable media (excluding DVD-RAMs).

Oh, and we mustn't forget SACD; the 790 is currently one of the cheapest routes into this format, although multichannel discs need home-cinema amplification with HDMI - the 790's analogue audio output is only two-channel. With DVD-As only the 'compatible' (DVD-Video) sections will play. In other words, this isn't a 'true' universal Blu-ray player in the way that recent examples from Cambridge, Oppo and Denon are.

But given all of the formats it is compatible with, the 790 is already shaping up to be a bargain. Which leads us neatly to that other 'stuff' hinted at in the opening paragraph. For

this, we can thank its networking capability - essential to Blu-ray, as it allows player firmware updates to be administered and on-line content (e.g. BD-Live) to be accessed.

Like some competing products, the 790 also harnesses networking to pull multimedia content from DLNA-compliant servers. An alternative is to feed it in via one of the two USB ports; FAT32 and NTFS devices are supported. Oddly, the 790 will play VOBs 'ripped' from DVDs. WMV, MPG-1/2, AVI, AVC-HD and MPEG-4 AVC are also supported. AAC (with an M4A wrapper), MP3, WMA and LPCM (WAV) audio files will play; it's a shame that FLAC is ignored.

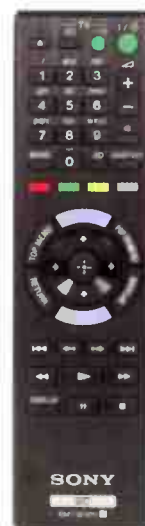
But it's in the online realm that the 790 really scores. It goes much further than most Blu-ray/universal players. Like most contemporary Sony AV products, the 790 employs the company's proprietary 'XRoss Media Bar' user interface. This 'X-Y' menu system intuitively organises its various functions into horizontally-arranged sections that can be explored vertically until the desired feature is found.

IN USE

In addition to a comprehensive 'setup' section are categories for video, music and photos. Scroll through these, and you'll find any present

disc/USB device, network servers and a host of online content. For 'video', the latter includes BBC iPlayer (which supports HD), YouTube (which doesn't), Wired, Sky News, Eurosport, Demand Five and AOL-HD. Streaming movie services like LoveFilm and Netflix are covered too. Among the 'music' entries are Internet radio (the worthwhile 'vTuner'), and free rock concerts courtesy of Moshcam.

Your choice of 'photos' is restricted to local storage devices and home networking. Much of the online variety is down to the partnerships that Sony has forged with third parties; the same breadth of material is also available to users of Sony's smart TVs - as is the Sony Entertainment Network (SEN) that also makes an appearance here. Some content (e.g. SEN, Berlin Philharmoniker; LoveFilm/Netflix) is chargeable, but most is free.





A separate 'network' category gives you Facebook, an apps store and Skype. Yes, with a USB webcam you can even use your Blu-ray player as a videotelephony system. In short, you could spend nearly every spare hour exploring those free portals and functions. Fate-tempting stuff, considering that Sony makes money selling films on Blu-ray and owns a major record label; this is a 'disc player', after all...

It's a responsive and friendly drive, although the player did 'crash' on no fewer than three occasions – the first of which prompted a firmware upgrade. More positively, configuring the 790 is fairly straightforward. It's good to see that Wi-Fi is built in, rather than reliant on clumsy USB dongles. This is perhaps just as well, as for all its cleverness you'll need a rear-panel USB stick to cache BD-Live data.

Also advantageous, certainly to those considering 3D, are the two HDMI ports. If you have an older AV receiver without 3D passthrough (HDMI 1.4), you can arrange for the video to be sent to a 3D TV via one, while high-resolution soundtracks feed your amplification via the other. Oddly, considering how expensive the handful of compatible displays are, 4k2 video-upscaling is supported.

Those with SACD loyalties will appreciate that the 790 can stream or convert DSD streams into multichannel LPCM. Not all AV receivers can deal with DSD via HDMI. Even if yours does, it's worth experimenting with the settings; some amps internally transcode DSD into PCM rather than decoding the streams directly. You might find that the Sony does a better job, with positive implications for sound quality.

PICTURE AND SOUND QUALITY

But let's start with pictures. Simply put, the 790 does a remarkable job at extracting information from those 120mm platters. I loaded (within 35 seconds) a Blu-ray of the silly but fun 21 Jump Street, a movie based loosely on the 1980s US TV series. The 790 did full justice to this recent film's vivid colour palette, dynamic range and intricate texturing. No lip-sync inconsistencies were noted, and it must be said that the punchy DTS-HD Master Audio soundtrack was reproduced to a commensurate standard with my Onkyo TX-NR906

receiver and Rogers GS6/GS5/C33/ASB60 speaker system.

Some of the online video (notably BBC iPlayer) held up well in visual terms, although given the lower bitrates it's hardly surprising that artefacting is noticeable on occasions. The accompanying soundtracks tend to be pared down to the bone, and this can be quite obvious when they're auditioned on AV systems rather than computers or TV speakers. A rather thin and recessed sound certainly spoilt some of Moshcam's intriguing concert material.

It's thankfully a different story with SACD; given high-quality music material the 790 can sing along quite nicely. A personal favourite – Act of Free Choice, from Australian musician David Bridie – was conveyed in all its melancholy glory. Orchestrally-backed album stand-out The Deserters was treated to a sympathetically-subtle soundstage over which Bridie's gut-wrenchingly moving vocal never struggled to be heard.

After this, something a little more upbeat – the multichannel SACD remaster (by the legendary Bob Clearmountain) of Roxy Music's 'Avalon'. This album, which makes rather more of SACD's multichannel potential, also proved to be a good listen with the 790. On Take A Chance With Me, the combination of acoustic and electronic percussion was dealt out with bite and panache. Although the surround remix deliberately floats guitars around the soundstage rather than pinning them down, the effect is enjoyable – and effective. Switching to closeout track Tara found Andy Mackay's sax work to be as seductive as ever. Switching between the LPCM and DSD bitstream modes (the Onkyo can deal with both), I came to the conclusion that the player does a surprisingly-musical decoding job.

With PCM material, specifically two-channel CDs, the 790 is better than you have any right to expect from a machine that isn't first and foremost a CD player. Basslines are punchy yet lean, while percussion is taut. Such characteristics also applied to the two-channel analogue output, as auditioned with a Naim Nait 3 and Acoustic Energy AE109 floorstanders. Dedicated budget-to-midrange CD players may offer a tad more insight and authority, but the 790 reveals most of the picture.

CONCLUSION

The 790 can be held up as an example of how features need not compromise performance. Admittedly, those gimmicks are software-implemented and thus kept away from the picture and sound processing. For what is – by hi-fi standards – a 'budget' product, this player is well worth considering, especially if you looking to replace an ageing SACD player while, at the same time, cautiously-stepping into the realms of Blu-ray. Its online functionality is icing on the cake. I hope those occasional 'crashes' are addressed by firmware updates.

VERDICT

A thoroughbred movie machine, the BDP-S790 also exceeds budget expectations in terms of SACD and CD playback; its streaming features are entertaining too!

Sony BDP-S790 £139

Sony

+44 (0)844 8466 555

www.sony.co.uk

FOR

- wi-fi built in
- SACD playback
- exceptionally well-featured

AGAINST

- review sample 'crashed'
- no 5.1 analogue output
- lack of low-frequency 'slam' with some material

MEASURED PERFORMANCE

Frequency response from CD through the analogue outputs was flat to 21kHz and with 96kHz sample rate digital was flat to 48kHz, our analysis shows. With DSD code from SACD frequency response reached a high 66kHz, these results being similar to earlier Sony Blu-ray players.

Distortion at low levels (-60dB) was influenced by noise, the best result being a poor 0.5% with 24bit PCM. CD and SACD returned 1% at -60dB. Noise measured a high -90dB. It won't be audible as hiss, but will swamp fine detail and may make the analogue output sound a little bland.

Jitter from S/PDIF was very low, a 1kHz, -60dB tone producing 25pS of signal related jitter, whilst random jitter hovered around 8pS across the audio band, and low rate clock drift was a very low 22pS. Output was a normal 2V.

The BDP-S790's analogue output gave good results from CD and 24/96 PCM (DVD & Blu-ray), as well as DSD from SACD discs, so analogue connection will be of good quality. Noise may well erase fine detail though. NK

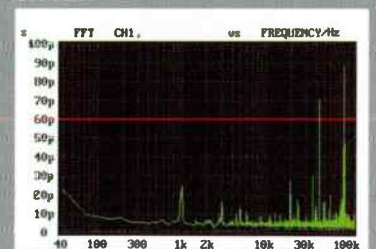
Frequency response (-1dB)
CD, 24/96, DSD 2Hz - 21/48/66kHz

Distortion (%)	DSD, 24/96, CD
0dB	0.004, 0.007, 0.001
-60dB (24bit)	1, 0.5, 1
Separation (1kHz)	108dB
Noise (IEC A)	-90dB
Dynamic range	98dB
Output	2V

FREQUENCY RESPONSE



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Haden Boardman uncovers a forgotten Dutch Delight, with a highly unusual circuit....

Philips has always been a bit of an innovator: Compact Cassette, CD, owner of Mullard valves, etc. The giant Dutch company can trace its roots back to 1891 and jokes about this 'light bulb' maker I feel are unfounded; there is no area of electronics the company has not been involved with. CD would not have happened if it were not for Philips laser technology developed for the Cold War!

Of more interest to us is the prodigious amount of work done in the audio field – valves in particular. Philips purchased Mullard valves back in the nineteen twenties, purely as a marketing platform. Of course Mullard in the UK had developed their own unique identity, but Philips was 100% behind the company. Famous tubes such as the EL84, EL34 and GZ34 were directed/designed from Eindhoven.

As a teenage kid in the nineteen eighties, trying to find out anything about valve amplifier design was near

impossible. People thought me mad (most still do!), even broaching the subject. One of the first text books I discovered on valves was written by an engineer called E. Rodenhuis, published in 1960 by the Philips' Technical Library, and entitled Hi-Fi Amplifier Circuits. Read cover to cover at the time, this little blue book covers all the classic Mullard 5-10 /20 circuits and pre-amplifiers, as well as covering the SEPP (Single Ended Push Pull), it offers comprehensive discussion on all aspects of valve amplifier design. My only experience of the SEPP circuit at the time was a not too successful product in the form of a Philips 'Philicorda' electronic organ, which utilised the design for the organ's amplifier.

The SEPP circuit had the advantage of 'doing away' with the output transformer, the single most critical component on a valve amplifier chassis. The two output valves for the recommended circuit are a pair of Philips own EL86, a low

impedance pentode. The drive circuit is a twin triode ECC83, using a massive amount of 'forward feedback' to get the required gain to drive the output stage, which in turn uses quite a high amount of 'negative feedback' to achieve the measured results of very low distortion, especially at lower levels. Without the output transformer, bandwidth is enormous, Rodenhuis measuring -3dB 7Hz to 200 kHz!

There are design difficulties in feeding from a constant power supply, and an issue of safety with the load (the loudspeaker), Philips settling on a capacitor coupled output stage. A double wound anti-phase choke was used to allow both output valve screen grids to remain constant in AC (signal) and DC voltage. All clever and quite complex stuff.

This design was clearly a bit of a passion at Philips. The circuit needs to see an 800 Ohm load, somewhat restricting its use to dedicated loudspeakers! Luckily, Philips produced some real gems,

including the "A" version of the hugely underrated 9710M full range loudspeaker.

The AG 9015 featured here, is my first experience of a SEPP output high fidelity amplifier. Built in Holland and dating from around 1964, it is an integrated design. The amp features two EF86s as a dedicated gramophone RIAA amp (usable with crystal and moving magnet type cartridges). Line sources Tape and Tuner were fed directly to the volume control, then on to an ECC83 valve which acts as amplifier for passive tone controls. Finally the signal went to the SEPP power amplifier section described above.

To make the AG 9015 more universal, the anti-phase SEPP choke is assembled on a 'C' core former, and an 'audio-autotransformer' is incorporated on the same core, to drive eight and sixteen ohm loudspeakers (impedance selected on the small panel located between the four output valves; 'up' is eight ohms, 'down' sixteen).

Output connections are a bespoke Philips 3-pin connector for the 800 Ohm circuit, and normal four millimetre plugs will fit the conventional low impedance output.

Input connections are awkward. Another time-forgotten connector from Philips, a flat 5-pin connection is used for Gram and Radio inputs. It actually looks OK, but I have never seen anyone else use it, and it certainly is not compatible with my Chord Company cables! On this example of the amplifier, someone at one point in time has wired a 5-pin DIN socket to match the tape input, there is plenty of space to fit some phono sockets if so desired.

One major warning here: Philips chose to fit this amplifier with a loudness-compensated volume control. I agree with the theory, but the practice is stupid. It totally kills the sound and is best removed. Two simple snips with a pair of cutters on the 'odd' two tags hanging on the



Rear connections; note speaker impedance selector between output valves.

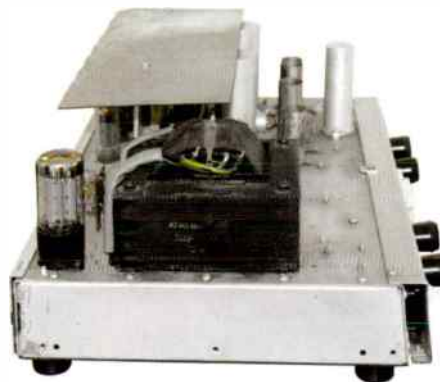
back of the volume control potentiometer restores 'normal' behaviour (see picture). Full valve complement is a GZ34 rectifier, four EL86 output pentodes, four ECC83 twin triodes, and two EF86 pentodes.

Looks wise, this machine is best described as industrial (it matches my table top dishwasher). A mix of odd motifs, odd colours and no visible valves! This design is more 'unit audio' rather than being designed along British lines for a radiogram cabinet. It was never going to win a beauty contest. Controls are not over the top, especially considering the era. There were no filters or unnecessary controls. The bass control offers +/- 10dB of cut or boost at 50Hz, the treble control +/- 10dB at 10kHz. Quoted output power is 15 Watts per channel via the direct 800 Ohm output, dropping to 12 Watts per channel using the in-built auto transformer for 8 and 16 Ohm 'speakers'. The amp. was incredibly sensitive: 40 mV line level would give full output.

Condition wise it is pretty clear

my example had been very well used; most of the legends on the controls had been rubbed off and although the amplifier was far from battered, it had clearly enjoyed a full life.

As always with a unit in unknown electrical condition, a visual once over of the internal components was given, which revealed no potential



Quality transformers and valve rectifier.

problems, so the amplifier was powered up from 35 Volts to the full 240 Volts over a twenty four hour period on a 'variac' transformer with a temporary solid state rectifier fitted.

Internally, the layout looks a bit of a rat's nest, QUAD levels of neatness being notably absent. Amazingly, not one single passive component appears to have been changed on my amplifier in its near 50 years. Amazingly it needed not one thing doing to it; I have yet to see a single UK amp of this era that did not need most of the passive components replacing. Another thing I did like about the design was the number of hard wired fuses Philips had used. If anything did go wrong at a serious level these fixed devices would clearly blow and protect the more expensive (wound components) on the amplifier.

So how does it sound? I used a mix of the Celestion Ditton 15s, and a set of Eagle FR4 speakers (Fostex



Cover removed, all low level signal valves fully shrouded.

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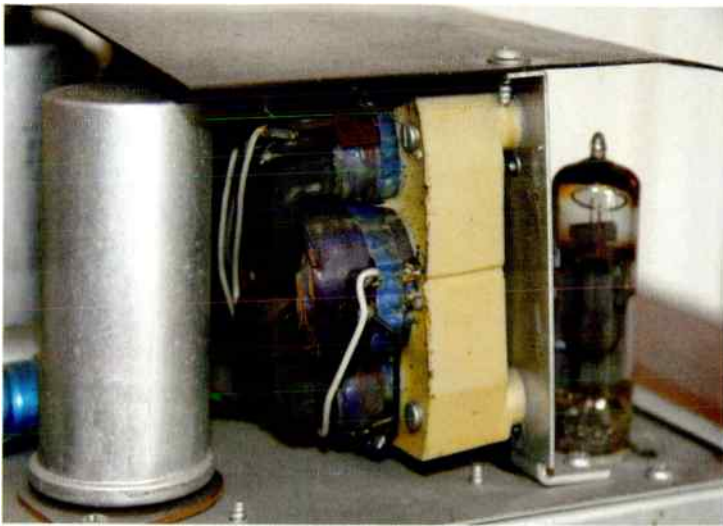
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“C” core choke/audio auto transformer and EL86 output valve.

Fe103s with bigger magnets!) and was very pleased at the sound. I would have loved to try the 'direct' 800 Ohms taps, but trying to track down a set of the 800 Ohm Philips 9710AM units has so far proved impossible.

Music for auditioning came mostly from a Slim Devices Squeezebox computer server, modified TDA1541 DAC, and vinyl via Toshiba SR370/Mission 774/ Nagaoka MP30. From the digital computer server, the amp was very quiet, much cleaner than most other vintage amps I have heard. There was little detectable hum or hiss, and the amp had clear control of the loudspeakers.

By vintage standards I was impressed with the bass. It was very clean and flowed. There was no wallow or float, plus quite rigid control. Even the Jimmy Smith classic album (and torture tracks for some) The Cat could not catch it out.

Its midrange was smooth and lacked any real sonic signature to talk about. Playing through a goodly selection of artists, all performed

almost faultlessly.

The last 18 months has seen me exposed to quite a lot of live opera, courtesy of a certain Richard Wagner, and OK, a pair of 4" speakers and 12 watts per channel are never going to give you the full "FFF" of the third act of Die Walküre, but still it was impressive. Treble seemed a little soft, but it was actually quite extended. There was a real smoothness here. The amp did seem to lack a touch of life and air in the higher frequencies, but was far from dull or unpleasant.

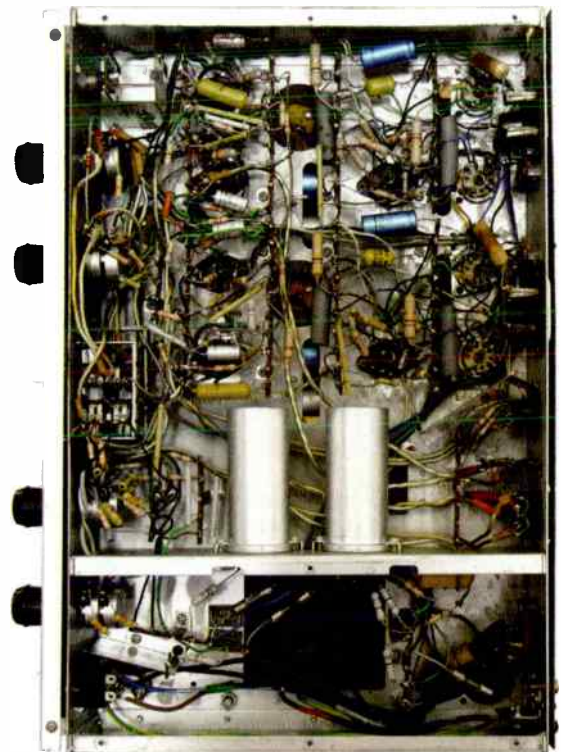
Stereo imaging was good, but not outstanding, the sound stage I felt to be mildly compressed. However, it has to be remembered this unit is 100% 1960s original, complete with tone controls etc. Frankly to achieve such sonic delights in stock form is pretty amazing.

The phono stage needs a healthy MM cartridge to perform. Of all the EF86 gramophone preamps, I think this has to be the best single stage design I have encountered, but it is simply not designed for today's lower output cartridges. Run it with a

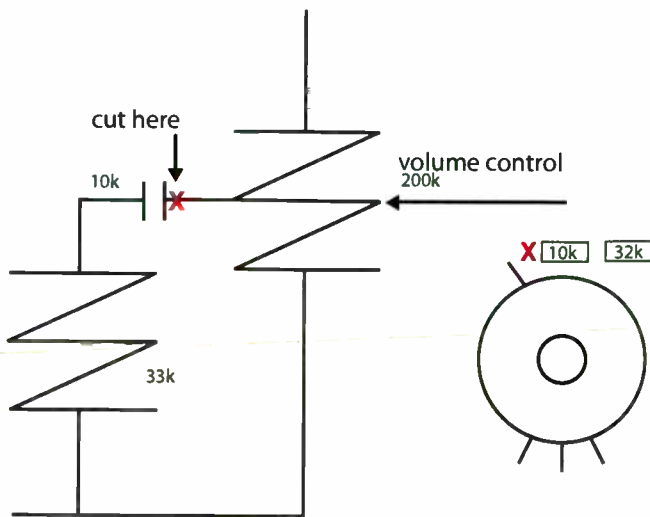
Pickering XV15 and it will come alive, my Nagaoka barely worked.

The sound from line stage has been good enough for me not to want to do the 'usual' tone control bypass. In this amp it would be very easy to move the power amp's section input (the balance control) across to the volume control, or even go 'direct in', as the power amp requires little more than 40mV for 10 Watts. I do feel this would make a major difference and a major gain in sonics.

Comparing this amp to 'equivalent' British models is hard. I can find very little written about it in the UK. The Dutch giant had rescued PYE and perhaps left the British hi-fi market to them. The first mention of Philips hi-fi amplifiers comes with a transistorised unit in 1966.



Underside, 100% original, no prizes for neatness though.



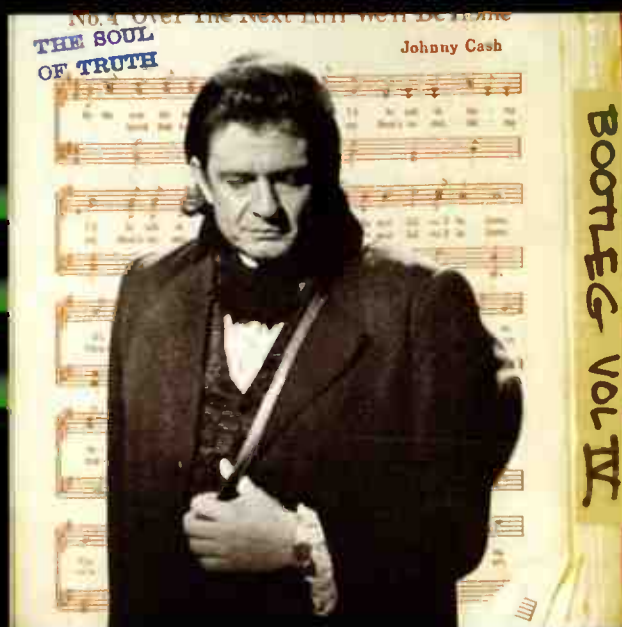
remove the "loudness" circuit

Philips' AG 9015 is no looker, and has no reputation; £100 was paid for the example shown here. I am uncertain how popular these amplifiers were, but technically it has been very interesting product for me to pull apart and measure. Parts wise, all major components are fuse protected, and there are plentiful stocks of EL86s for no money at all. EF86s are more difficult.

A fabulous design, snip out the wretched 'loudness' compensation and for no effort at all you have a delightfully decent sounding amplifier of novel design – a real classic in other words.



Treasure Isle
PIECES
OF EIGHT



TREASURE ISLE
Pieces Of Eight
Trojan

In a way, this package is a sequel or follow-up to a CD review that appeared in the August issue of *Hi-Fi World*. On that occasion, the double CD set offered forty tracks. This time, the package provides something far more atmospheric, more emotive and more collectable for reggae fans. Trojan (www.trojanrecords.com) is offering eight 7" singles, presented in simple brown card sleeves and in a 'dinked' format. 'Dinked' is the removal of the centre spindle holder for use with commercial jukeboxes. To enable you to play the 7" singles on your hi-fi, however, the record label has thoughtfully included a plastic spindle holder that can be quickly inserted and transferred.

Arriving with a glossy sheet of liner notes plus a registration insert (that makes you eligible for a range of future perks), the box set features tracks like The Zodiacs, The Abab Brooks Band, The Rio Grandes, Alton Ellis & The Flames, The Sensations, Justin Hinds & The Dominoes, Roland Alphonso, The Techniques plus Tommy McCook & The Supersonics. All were produced by Duke Reid.

The box set, created via an analogue delay, includes Alton Ellis' 'Don't Trouble People', a torrent of cultural politics that criticised the

Rude Boy: a street boy, usually up to no good. This preaching continued until Ellis was paid a visit from one or two vociferous Rude Boys of his own.

Also look out for Tommy Cook's 'Portrait To Don', Don Drummond, the ska trombonist who was convicted for murdering Marguerita Mafood in 1965, another artist on Treasure Isle. Drummond was locked away in Belle Vue mental hospital for the final four years of his life.

A fun, involving and highly affecting suite of tracks, this box set cuts a slice of Jamaican life and presents it to you in an unadulterated form.

JOHNNY CASH
Bootleg Vol. IV: The Soul Of Truth
Music On Vinyl

The label (www.musiconvinyl.com) has now brought this fascinating series of vinyl, official bootleg packages to an end with Johnny Cash's take on the gospel genre which stemmed from his own faith (as the dignified photograph with evangelist, Bill Graham, within the nineteen-page included booklet, shows). The 'soul', as it were, of this album, is Cash's devotional journey and his commitment to his faith, his regard for the gospel tradition and his love for religious music.

What do you get? Listen closely,

it gets a little complicated. Spread over three vinyl slabs, this slip-cased package holds fifty-one tracks over three albums. The first album, spread over sides one and two and part of three, is the 1980 release, 'A Believer Sings The Truth' which Columbia eventually released but only after some hard lobbying from Cash and not before Cash released the LP on his own Cacher label the previous year. Four of the remaining five tracks on side three did appear on the album, 'I Believe' (1984) while the final track, 'Truth', is a true rarity. This album was sought-after, even when it was released commercially, as it didn't receive broad distribution.

You also get the unreleased album 'Johnny Cash - Gospel Singer', which sank when the CBS gospel imprint, Priority, died a death. Ten of the fourteen tracks destined for that album subsequently appeared on 'Believe In Him' on World Records in 1986. The remaining four appear here for the first time.

Finally, you get an additional twelve tracks which were apparently slated for an album (which has no title) of their own but (apart from two of the tracks) were never released commercially, until now.

Created via a hi-res digital delay, the sound quality is top notch, with a very quiet cut enhancing the well recorded studio dynamics.



JIMMY BRYANT
The Fastest Guitar In The Country
Sundazed

When I first placed this vinyl record upon my Acutus reference deck, I sat down to let the guitar vibes wash over me. Ten seconds into the first track, I then got up, thinking that I'd set the record speed to 45rpm, only to discover, as I was reaching for the speed change, that I was actually listening at 33 1/3. Boy this guy plays fast. His fingers rip the guitar strings so quickly that you really do feel that there has been some trickery within the tape master. But, no, nothing of the sort, apparently.

Bryant was a dragster of a guitar player that left everyone else standing in terms of sheer speed. Although heavily devoted to country, Bryant did explore jazz and country's variants such as western swing, boogie and the polka.

Bryant didn't begin as a solo artist. In fact, he was part of a nippy guitar duo along with the aptly named Speedy West (who was the very first pedal steel guitarist in country music). Bryant left to become solo, partly because of an increasingly heavy drinking problem.

It's possible that Bryant approached the guitar the way he did because he was a fiddle player, at heart, only changing to the guitar

during his army career, after being wounded. Bryant obviously felt that he had a lot of playing to catch up on because he speeded through performances and albums at top speed. This album is now reissued for the very first time and a mighty album it is too. Remastered direct from the original Imperial master tapes and via an analogue delay, the LP has been well produced by Sundazed (www.sundazed.com), allowing the free flowing Bryant to jump off the vinyl.

JOHN BARRY
Follow Me!
Harkit

Released in 1972, 'Follow Me!' revolves around a British banker (played by Michael Jayston whom I last saw telling Del Boy and Rodney that they'd found a rather expensive watch in their lock-up) who hires a private detective (Topol) to follow his potentially cheating wife (Mia Farrow). Topol's inept tracking skills leads to a meet, a friendship and, yes, they become the 'item' that Jayston was afraid of in the first place. What larks.

An average film, the music is the stand-out, composed and conducted by John Barry, famous for his range of superb James Bond soundtracks among other classics such as 'Born Free', 'The Ipcress File', 'Zulu' and

many more. Here, Barry takes a pastoral theme with plenty of strings and folk-tinged vocals.

A real find for John Barry fans, one of his more obscure releases and one that has been unavailable for far too long because the rather evocative sound quickly becomes engaging.

Cut via GZ, the album utilises a hi-res digital delay. GZ did use the low-res Klark-Teknik digital delay until February 2010 but, since then, have adopted the higher resolution PrismSound PC mastering system so audiophiles can rest easy.

Also look out for other Harkit (www.harkitrecords.com) titles including a tenuous link with John Barry. The sound track to the film, 'Modesty Blaise' (1966), a comedy spy film based on the comic strip of the same name. It was one of many James Bond spin-offs, with music composed by British jazz legend, John Dankworth. 'Lady In Cement', starred Frank Sinatra (as PI, Tony Rome) with Raquel Welch, and music was composed and conducted by Hugh Montenegro, better known for his reworkings of Spaghetti western sound tracks. Another Harkit title was Paul Revere And the Raiders' 'Like, Long Hair', the band's 1961 debut featuring reworkings of music from the likes of Gershwin and Rachmaninoff.



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"there's way too much out there to tag any of them as 'filler' "



paul rigby

What makes a top notch compilation? I don't mean the ten-a-penny jobs you see in bargain bins which take all of five minutes and two button presses to create, but the quality stuff that involves in-depth research and expert knowledge.

I got talking to Bill Dahl, at his home in the USA, about his mammoth project for Germany's Bear Family (www.bear-family.de), 'Electric Blues: The Definitive Collection!' that is spread over four, multi-gatefold digipak volumes and twelve discs and roams from 1939-2005.

Dahl compiled and annotated the series. A mighty job indeed because each box set also arrives with a 160-page book fixed inside including biographies, illustrations, original release info, and rare photos.

"It was pretty daunting," said Dahl. "There's tens of thousands of songs that you could put on there. I was trying to come up with the most representative, other people may have gone in other directions. I wanted to include the cornerstones like 'Call It Stormy Monday' by T-Bone Walker, B.B. King's stuff and so on.

There's stuff you have to have on there. There's other items that were my favorites that I think should be heard. That instrumental disc, for example, features pretty obscure tracks. I did it chronologically with electricity getting brasher and bolder as time moved onwards."

To produce the collection, Dahl delved into his large musical collection and undertook lots of hard work. If for no other reason than, "I had to make sure that I didn't leave anybody out so that somebody might come back and point a finger. Also, with an artist

who might have hundreds of songs, to pick one representative song is a challenge in itself."

As ever with compilations, Dahl couldn't get every track that he wanted due to copyright problems. Jimi Hendrix was a case in point along with selected tracks such as Johnny Rivers' 'Seventh Son', for example.

"In many cases, though, I had alternatives to slot in," said Dahl. "There's way too much out there to tag any of them as 'filler'. If you're only able to include twenty to twenty-five blues rock songs per CD and you can't get three of them because of copyright, then there's still thousands more to pick from. It's not like you're covering a specific artist where, if you miss certain tracks, you might ruin the entire compilation. Here, there is still plenty of important music."

Some of the included tracks picked themselves, partly because they had never appeared on CD before. Take Rufus Thomas' 'All Night Worker', for example, "Steve Cropper's guitar solo was just perfect. Talk about not wasting a note. It had always been overlooked in the past. There were other Rufus Thomas' tracks that I could have put on there but I felt that this track summed up both artists well. Just a terrific record," said Dahl.

There were some unexpected surprises on this CD which Dahl stumbled upon. For example, 'Royal Earl Shuffle' by Royal Earl & The Swingin' Cools was, "...astounding! So much energy. They were going for blood. Take it as fast as you can for two minutes and play as much as you can. For a record from 1960-1961, it was amazing. No-one knows much about him. It was a regional record from down in Texas somewhere, didn't sell at all. I thought, 'Man, we gotta have this

thing'."

There were a lot of instrumental records too from the fifties and sixties, "A lot of those guys never received their just due," said Dahl. "Every one of them were great players. A lot of people will be exposed to them for the first time. There's a track on there, Jody Williams' 'Lucky Lou', which became one of the founding songs of Westside Chicago Blues. Otis Rush got a lot from that one."

Dahl also felt that there needed to be a selection of soul blues from the sixties and seventies. Lots of blues fans who are principally into Led Zeppelin, for example, often overlook this sub-genre that includes stars such as OV Wright and Tyrone Davies. "The tracks didn't work mixed with the rest; it would have been weird listening so I produced a soul blues CD on its own for the set", explained Dahl.

Still not satisfied, Dahl even sought out other amplified instruments, apart from the guitar. The harmonica being one example "People overlook the 'harp' as being electrified too. You've got Big Walter Easy, one of the best amplified 'harp' players I've ever heard, working with Sun's Sam Phillips, pushing up the volume with more echo. It was astounding. Talk about innovative."

The only problem Dahl encountered with this compilation was the relative lack of women in the genre. There were a few...just not enough. Another problem, noted by Dahl was the modern take on electric blues that, in Dahl's opinion, really isn't following the genre at all and is just self-indulgent guitar solos gone mad but, as Dahl says, "It's hard to make money as an electric blues guitarist today." Looking at this superb series of electric blues compilations, I don't see Bear Family having the same problem. ●

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"I was pleasantly surprised at how good it sounded, especially for £118"



tony bolton

One of the things that makes you realise that you are getting older is seeing children grow up. Especially friend's children that you don't see very often, where they seem to jump from merrily gurgling baby to spiky-haired teenager in double quick time. The son of an old school friend of mine has just turned 13, and is currently discovering his father's 70s punk singles. This has resulted in him wanting his own record player. Having been told that if he wanted one he would have to earn the money for it, he marched off and got himself a paper round.

A couple of months later I got a phone call from a very excited young man telling me that he had saved £100, so could I get him something that he could play records on, and could it be separates, like his dad's, and could he play DVDs through it as well? Don't want much these kids, do they?

After further discussion it was agreed that new was out of the question, and that a retro 70s or 80s set up would be affordable (and go with his current, vertical haircut).

One of the advantages of living in an area for a number of years is getting to know the proprietors of the local second hand emporia. They have supplied a vast acreage of my record collection over the years and some very nice bits of equipment on occasion. I made a few phone calls and a couple of weeks later got a call from one of the shops to say that they had got a stereo in stock from a house clearance.

It turned out to be a Sharp Optonica system, that, I would say, dated from the early to mid 1980s. There was a receiver, cassette deck,

an auto-return turntable with the typical S-shaped arm, and a pair of wood grain formica covered, chipboard, loudspeakers.

A quick examination revealed that they were suffering from terminal cone rot and they were consigned to the skip. The rest of the equipment seemed to look tidy enough. It had obviously been treated with respect all of its life, so £15 changed hands. I took it home and plugged it in.

The cassette deck lit up and made a few whirring noises, but refused to move any tape around. This was no great loss since it wasn't required, so that was also consigned to the local dump. The turntable seemed to make all of the right noises, but the platter wouldn't revolve. This turned out to be caused by a tired drive belt. A quick check on eBay revealed that replacements could be had for £4.99, so one was ordered.

The receiver turned out to need one new bulb for the backlit tuning dial (also supplied by eBay) and to have a crackly volume pot. Otherwise, it worked very nicely, seeming to have reasonable power in reserve when driving the Chariots, and to pick up a good range of radio stations. Rather than replace the pot, I took a gamble that it just needed a clean, gave it a good spray with DW40, and rotated it a lot (I have been advised by various people who restore old kit that switch cleaning fluid can be a bit harsh on pots, and that WD40 has a lubricating effect that helps preserve the tracks).

It worked and the receiver settled down to run quite happily over the next couple of days. By this time the new drive belt had arrived, was fitted, and the turntable then worked, holding, according to it's

inbuilt strobe rings, perfect speed. The Audio Technica AT95 cartridge seemed to be in good fettle, so I checked its alignment and tracking weight and otherwise left well alone.

A phone call from another of the local junk shops produced a pair of very nice condition Celestion Ditton loudspeakers and a pair of 20 inch high Acoustic Solution speaker stands for £20.

The next mission was to get some cables with which to wire it all up, so after a bit more searching of eBay, I managed to source three secondhand pairs of Van Den Hul 'Name' interconnects and eight metres of matching 'The Bridge' speaker cable for a total of £75. I took everything over to my friend's house and we proceeded to set it all up.

One of the pairs of interconnects was used to link a Playstation to the amp. This has three duties; gaming, CD replay and DVD player. Another pair hooked up the TV audio out sockets to the input of one of the two tape loops (the other loop being connected to the laptop via its headphone socket). The third duo replaced the lead from the turntable. In common with a lot of budget '70s decks, the signal lead was connected via a pair of internally mounted phono sockets, so replacing the bootlace-type wires just required the bottom of the plastic case unscrewing for access.

The results of all of this were greeted with huge grins and shouts of joy by their new owner, and I must admit that I was pleasantly surprised at how good it sounded, especially for a total outlay of £118. You would certainly have to spend several times that amount to match the sound with new equipment. ●

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World Radio History

"companies like Wolfson Micro get 'design wins' in products around the world, including those from Apple"



noel keywood

The decline of Britain's consumer electronics industries from the late 1960s onward was fairly rapid, as Japanese televisions, radios and hi-fi flooded in, offering great quality at affordable prices. British consumers dumped their Pye and Ferguson TVs and bought Sonys instead. I was reminded of this battle when thumbing through the book 'Setmakers' recently, researching my review of the book 'A Pair of Wharfedales'.

In electronics British products were either technically inferior to imports, or less reliable, or both. The situation with hi-fi amplifiers was lamentable. Quad would seem to be an honourable exception, but in truth their costs were excessive I was told by those that acquired them, and they had problems with component quality adversely affecting performance.

In Quad's case their designs were novel, but execution was questionable, as I remember when taking apart my ESL-63 electrostatic loudspeakers. They were poorly made and I knew Peter Walker was prepared to cut manufacturing costs in ways considered injudicious today. He told me the Quad II amplifier's output transformers were deliberately made small so they would saturate (overload) early in the bass, to provide a measure of protection to the Quad ESL-57 loudspeaker. What, I thought? Peter had a wry sense of humour, but he was only half joking. And it was this sort of thing, plus a dogged belief that all components were the same and sounded the same, that wore down the company's reputation at the time. And Quad were a relative success; others were worse.

Such cynicism wasn't rare at the time. There were a lot of what seemed to me peculiar beliefs, and head-in-sand attitudes, not just

at Quad. Few remember today products like Pioneer's PL12D turntable that heaped shame on Garrard's SP25. UK products were getting long in the tooth, including the SP25. Idler drive auto-changers reigned, as far as Garrard were concerned, and they were unable to move out of the market, even as it collapsed around them.

The situation with loudspeakers was less clear cut. Whilst Wharfedale and Leak were absorbed by Rank and slowly sank, perhaps as the rest of the world industrialised and eroded the overseas markets they once enjoyed – especially the USA and Australia – other newer companies started up.

Mission was one, with a brand new, high technology factory in Cambridgeshire. Mission, like Cambridge Audio before them, produced contemporary designs, used tighter cost control and a more efficiently run factory than earlier British manufacturers. They did, after all, start up forty years or so later, during the 1970s, after the tidal wave from Japan had taught the UK many painful lessons about the need for reliability and stringent quality control. Even the Americans would joke about Joe Lucas electrics, for heaven's sake, showing just how far the spectre of unreliability travelled.

In the end, The Verity Group, a holding company for Mission, bought the rights to Quad, Leak and Wharfedale brand names, parcelling them up and moving them on to IAG of China. I am simplifying the situation here. Who bought what, and did what to whom, is one of those stories that can only be told when all the participants are dead, because they'll all contradict each other and disagree whilst alive, making anything resembling the truth impossible to determine! And I could not relay the juicier bits about the antics of some.

I find all this fascinating because, apart for being a real, live commercial Punch & Judy show, it also threatens to inform us of the past so that we don't make such mistakes in future.

But it turns out the past was very different from today, to such an extent that little of what happened then seems relevant now. Japan did 'run off' with our industries. But now others are running off with theirs. It's a fast moving and brutal world. I've sat in on conversations in China and Taiwan about the rising costs of labour in the region and how it is impossible to stay competitive. And you should see how low their costs are; working conditions in China can be very basic. Britain cannot easily compete in labour intensive, low skill operations like loudspeaker cabinet making.

Meanwhile, back in the UK, although we are far away from having wafer fabs, companies like Wolfson Micro get 'design wins' in products around the world, including those from Apple. You'll see their chips in a lot of home grown audio products too.

Low power processors are the stuff of tomorrow, and ARM (www.arm.com) from Cambridge is more than a little successful here, its intellectual property forming the basis of iPhone computing power.

Much of today's digital audio is processed in software and chips produced by companies like Mediatek (Taiwan) and Broadcom (USA). They currently rule the roost in today's home technology products and Britain has nothing like them.

What the country did retain was brands. 'Setmakers' reminded me that we lost Pye and Ferguson. However, few audio brand names disappeared, and that is why Wharfedale, Mission, Audiolab, KEF and Celestion live on today. So in retrospect, perhaps it didn't turn out so badly. ●

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I first began auditioning by placing all three cones under my reference T+A G10 turntable. The principle

change in sound was the new focus within the lower frequencies.

On DJ Food's 'The Ageing Young Rebel', Ken Nordine's voice is rich in bass tones. Before adding the pods, his delivery was suffered blooming. Adding the pods not only added precision to his vocal delivery but also produced tighter, faster sound that was light on its feet.

Greater improvement was gained when the pods were placed underneath a Rega Brio-R integrated amplifier. The rhythm guitar became leaner and tighter which allowed the accompanying cymbal work to effectively emerge for the first time. The extra space also made room for new sonic detail. For example, within the cymbals, treble was now fuller and more varied, with an enhanced reverb tail.

Also noticeable was eradication of upper midrange stridency during vocal and instrumental crescendos. Double bass now emerged from the previous muddy sound to not only

play more of an active role but to lend active support as a foundation to the whole track.

With a Cambridge Azur 650C CD player one pod was placed directly under the drive unit and the others shifted to a variety of different positions to best find the isolation sweet-spot. While playing Stevie Wonder's 'I Don't Know Why', I had no idea just how many unruly frequencies were coming from the Cambridge until the Oricon corralled them into some sort of order. Not only did they enhance the CD player's focus but the cones improved the clarity of the system as a whole. Wonder's vocal delivery moved from being a little shouty to finding a sense of order, enhanced by improved detail recovery.

These cones are ideal for audiophile tweekers and those looking to enhance the sound quality of their hi-fi quickly and efficiently. **PR**

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soundbites

ORITON R33 AUDIO SUPPORT SYSTEM £1,021.40 (1 LEVEL); £2139.60 (2 LEVELS); £3317 (3 LEVELS); £4,471 (4 LEVELS)

A shelf/platform system, initial construction was made more difficult by the unfriendly single sheet of text-only instructions. There really needs to be illustrations with lots of close-ups to provide clarification of the potentially confusing construction process. I did better by dumping the sheet and working it out for myself. Despite one or two false starts, construction proved fairly logical.

Another early criticism are the colour variants. The basic premise is good but the bright colour selection looks very 'Early Learning Centre' that trivialises and cheapens the product. Classy colours are urgently required.

In tests, via Stevie Wonder's 'Uptight (Everything's Alright)' on my reference Cambridge Azur 650C CD player, the R33 cleaned up the midrange spectrum. The noise level immediately dropped resulting in lots of air and space appearing between percussive instruments such as the tambourine and the high

frequency tones of the rhythm guitar. Without the platform, the guitar and tambourine combined to become a clashing noise that blurred and splashed.

The lowering of the noise floor also allowed the bass to mature in its presentation which, on this early, mid-rich, Motown mix was a bonus, adding a much needed balance.

Adding the Rega Brio-R to the platform continued the progressive calming of the entire hi-fi chain while increasing clarity of the general presentation. The most obvious single improvement was the enhanced diction of the Wonder vocal that made his performance more coherent.

Playing DJ Food's 'The Ageing Young Rebel' and adding the T+A G10 turntable to the platform, the improvement was quite remarkable. Firstly, the stereo image appeared to be more secure and better fixed into the very centre of the sound stage, providing more order to the complex mix. The wide variety of jazz-infused instruments were finally comfortable within their allotted space, previously they seemed to play from any

random area they happened to find.

Ken Nordine's bass-rich voice was no longer just a resonant instrument but now seemed to gain a richness that added to the atmosphere and, in this fantasy noir song, proved to be even more portentous and threatening.

Bass had almost 3D depth, low frequency tones moving with authority. Reduction of the noise floor provided a crisp, detailed midrange where treble was both light yet sharp in its attack.

Despite the early reservations, the Oricon platform proved to be a superb support for my reference hi-fi chain, bringing the best out of the music on offer. It should be at the top of your demo list. **PR**

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A for BRIO

Rega's venerable Brio amplifier has undergone major changes. Paul Rigby reviews the Brio-R



The problem with the Rega Brio, the original Brio that is, was that it was almost too good. In the past, Rega had tried to change it, sometimes dramatically,

but without success. The amplifier hit an almost unfathomable sweet spot that defied major change. "We always wanted to try to have the cheapest possible, high quality, simple amplifier that a hi-fi novice could have coupled with a turntable and a pair of speakers. The Brio has always filled that area," said Rega owner and co-founder, Roy Gandy.

Over the years, the amplifier has received tweaks to enhance its core design. "For the Brio 3, everyone loved the sound quality but it was getting to the point where a remote control was demanded. We were considering giving the Brio a refresh

but we were faced with demands which boiled down to: retaining the sound quality and adding a remote control but without adding to the price." A tough request.

Adding a remote control option that would not impinge on sound quality was going to add £100 of anyone's money onto a future Brio update. So Gandy looked towards the company's new DAC for guidance and found it in that product's small physical footprint. "We thought that people would want an amp to partner the new DAC. If that amp could be a Brio then we could halve the case size, shrinking the Brio into the smaller case via the utilisation of surface mount technology, thus saving the required cash to retain the price point".

Job done then, eh? Well, not quite.

Enter Rega's electronic designer and inveterate tweeker, Terry Bateman who, in addition to fulfilling the brief for a new project, will often present a range of additional options. In the past, these have taken the form of alternative designs. Gandy wasn't surprised to find, sitting alongside the basic, shrunken-boarded Brio, an additional, simple, aluminium box. Bateman piped up with, "Can we also listen to this?"

Gandy did just that and was disappointed. He liked the sound of the experimental variant but Gandy knew, without peering inside the box, that Bateman had squeezed a couple of valves inside to produce that signature, analogue sound. Knowing that Rega, as a company, was not set-up to commercially exploit valves just yet, Gandy was about to let Bateman down as gently as he could when

he then listened to a familiar piece of music through the experimental box, one that Gandy knew would trip up any valve amp. "Playing this track, however, I was gobsmacked because it made the music sound even clearer. I then found out that the box didn't hold a valve amp at all. It was fully solid state. It shocked me."

Bateman had, in fact, used the experimental Brio design to implement a theory, one that Bateman had read about in an old electronics magazine from 1969, that proposed a concept for a Class A circuit using transistors that didn't produce the usual amount of heat. At that time, the design was only conjecture but Bateman decided that the time had come to see if the premise could match practice. Gandy believed now that it could and decided to dump the original Brio 'tweak' to mass produce Bateman's theory-buster.

The result is the 50W Brio-R, a Class A/AB or quasi Class-A amplifier. "Basically, the driver transistors are working in Class A but the power transistors are working in A/B. That's the simple way of describing it," said Gandy.

On the inside is a motorised ALPS volume control for the new remote that sits next to a combination of standard and surface

Brio-R features a volume pot, input selector and power switch. On the rear are five inputs plus an MM phono connection and a single pair of speaker connectors adjacent to a power plug.

SOUND QUALITY

My listening tests began with vinyl and the original 1964 RCA LP, 'This Is Ethel Ennis', played on a T&A G10 turntable fitted with an Audio Technica AT-440 cartridge, connected to a Trichord Dino external phono stage. The first impression of the Brio-R via the jazz-vocal piece, 'He Loves Me', is its clarity. There is an open and spacious way that the Rega presents music to the ear. I felt that each instrument within the backing orchestra could

"the Brio-R gave his delivery an innocent simplicity that contrasted well with the power of the percussion and the firm, passionate bass line"

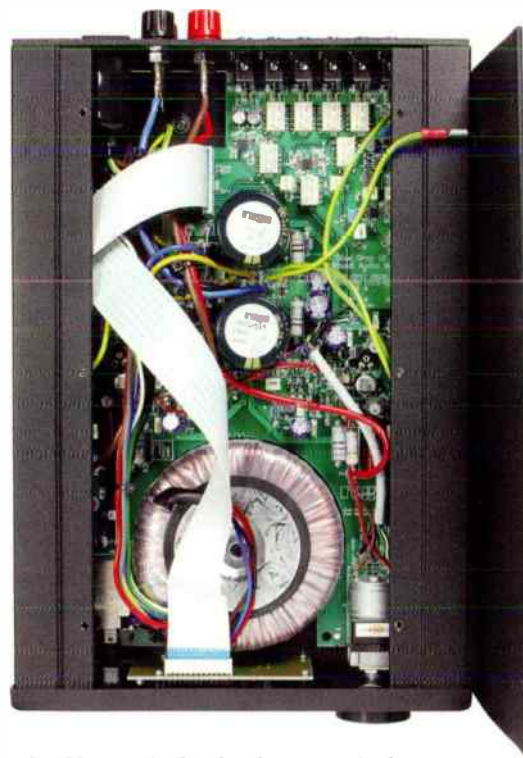
not only be heard in full but that all angles of each instrument were on view. This was partly due to a reduction in 'distortion', removing the noise that often fills in the gaps. With this removed, the sound stage was able to present the instruments in a more articulate manner, adding space and a supreme sense of order that Brio-R brings to music. It gave the amplifier a calming, unhurried presentation.

mounted components. The toroidal transformer is surrounded by electrolytics (they're not in the signal path), polyester and polypropylene capacitors. "Every path is thought about in terms of sound quality and value for money. Polypropylene caps are also large, so the small case might not allow them to be used. In which case we use electrolytic," said Gandy. To keep the distortive noise down, Rega has thought about the proximity and screening of low voltage parts of the amp to the transformer. Tough in a small case, "In the Brio-R, the transformer features a bespoke design supplied by a company that used to share our factory space. We tested around 20 toroidal prototypes."

Available in black and silver, spanning 80x218x325mm and weighing in at 6kg, the front of the

Rega Brio-R amplifier. The front panel is black with a silver volume knob and input selector. The rear panel features a power switch and five input jacks. The internal components are visible through a clear window on the right side of the case.

Rega's bass was not especially stronger or more impressive quality wise than a reference Cambridge Azur 650A but the Brio-R did present a detailed and fully formed suite of low frequencies. Drums exhibited more



An Alps motorised volume control can be seen bottom right, and to its left a big toroidal mains transformer. Input relay switching is used.

character and tonal information, while the mids were incisive. Sax and trumpets were crisp but also retained impact during their attack, while strings were swathed within a blanket sweetness.

Treble was remarkably light and ethereal in its approach. Cymbals tended to float over the soundstage yet the cymbal strike was notable for its crisp nature. All this was impressive for an integrated amp within this price point.

Playing DJ Food's 'Kaleidoscope' and 'The Ageing Young Rebel', this beats-orientated electronica track utilised old samples to form a musical concoction based on modern bass beats and bass-heavy vocal speech from the unique delivery of Ken Nordine. The latter was both distinct and clear in its presentation making the articulation of the vocal far clearer than many other amps in this price point. The lowering of the noise floor meant that the vocal subtleties were noticeable, improving intelligibility.

Bass may not have been heavier or appreciably stronger in its inherent form but what it did have was a sense of focus that allowed the lower frequencies that were already present to be more easily recognised.

What was also noticeable was that bass didn't fight or attempt to encroach upon the mids. Mids were, in themselves, informative and well structured within the sound



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The small rear panel carries 4mm speaker terminals and a small row of phono socket inputs, including Phono MM.

stage. Higher frequency synths were clean and tight with plenty of space to manoeuvre while cymbal work was both fresh and firm in its attack.

Moving to CD and Stevie Wonder's 'I Was Made To Love Her', the pedigree of the Brio-R was apparent from the first few notes of Wonder's harmonica. Instead of hearing the normal compressive emphasis on this track that can sometimes give this song a brighter tone, the Rega calmed the waters due to its low distortion approach to music. The space afforded to the soundstage also produced a clearer and more recognisable presentation. Instrumental separation on this early mix not only gave the vocal a richer and more emotional delivery but also teased apart the backing band into a more individual instruments.

Moving to Porcupine Tree's 'Buying New Soul' from the 2001 'Recordings' album, the cello present on the introduction was placed in an atmospheric environment, its woody resonance providing a rhythmic generosity to the track.

Lead vocalist Steve Wilson's voice is not the strongest or most emotive but the Brio-R gave his delivery an innocent simplicity that contrasted well with the power of the percussion and the firm, passionate bass line. The amplifier was also able to keep its head during the turbulent crescendos, retaining good instrumental separation.

Plugging the turntable into the Brio-R's built-in MM phono amp instead of the Trichord Dino was intriguing. The Brio didn't have the richness of the Dino and, in comparison, there was an element of midrange strain in the Brio-R but this was nitpicking. Considering that the

Brio was up against a high quality budget phono amp, it performed remarkably well. The Brio-R's phono amp retained dynamic events and my interest in the midrange. There was enough fragility in the treble area to add a layer of filigree detail. Strong bass textures imbued the amp with a sense of low frequency authority.

CONCLUSION

The Rega Brio-R only offers a small footprint but still manages to provide a full suite of inputs

and associated features. More importantly, however, the sound quality is remarkably good for an amplifier at this price point. It is no exaggeration to say that the Brio-R would sit easily within a more expensive hi-fi chain and would not sound out of place. Hence, for those looking to upgrade their kit in the future, the Rega provides a solid basis or heart to a more expensive hi-fi chain. Offering great value for money, the Brio-R represents the very best in budget amplifier design.

MEASURED PERFORMANCE

<p>The little Brio R produced 55 Watts into 8 Ohms and this rose to a healthy 90 Watts into 4 Ohms. As most loudspeakers now use 4 Ohm bass units the Brio will be able to deliver 90 Watts maximum and will go loud. Damping factor was very high so bass will be very tight, and not fulsome.</p> <p>Distortion levels were low at low and high power outputs, right across the audio band. Our quoted value of 0.1% is for 1 Watt output at 10kHz as this is where crossover distortion makes itself known, but with second and third harmonics dominant, as our analysis shows, and maintaining a steady pattern relative to each other, the Brio R will sound smooth and free from coarseness.</p> <p>Frequency response was band limited at both ends of the spectrum, rolling down below 20Hz and above 24kHz, via Aux etc.</p> <p>The MM phono stage was accurately equalised, but a warp filter rolls off bass below 30Hz and treble again rolls down above 20kHz. Rega are consistent in this design approach as it removes what they see as unwanted signals. MM sensitivity was quite high, measuring 2.3mV.</p> <p>The Brio measured well all round. It is band limited like all Regas and this does give a tidy, clean presentation. There is plenty of power for so small a package too. NK</p>	<table border="0"> <tr> <td>Frequency response</td> <td>20Hz-kHz</td> </tr> <tr> <td>Separation</td> <td>87dB</td> </tr> <tr> <td>Noise</td> <td>-89dB</td> </tr> <tr> <td>Distortion</td> <td>0.1%</td> </tr> <tr> <td>Sensitivity</td> <td>220mV</td> </tr> <tr> <td>Damping factor</td> <td>127</td> </tr> <tr> <td>Disc MM</td> <td></td> </tr> <tr> <td>Frequency response</td> <td>Hz-kHz</td> </tr> <tr> <td>Separation</td> <td>68dB</td> </tr> <tr> <td>Noise</td> <td>-73dB</td> </tr> <tr> <td>Distortion</td> <td>0.1%</td> </tr> <tr> <td>Sensitivity</td> <td>2.3mV</td> </tr> <tr> <td>Overload</td> <td>100mV</td> </tr> </table>	Frequency response	20Hz-kHz	Separation	87dB	Noise	-89dB	Distortion	0.1%	Sensitivity	220mV	Damping factor	127	Disc MM		Frequency response	Hz-kHz	Separation	68dB	Noise	-73dB	Distortion	0.1%	Sensitivity	2.3mV	Overload	100mV
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FREQUENCY RESPONSE

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FOR

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- clarity
- detailed mids
- small footprint

AGAINST

- dim display LEDs



Euro star

From Denmark comes Ortofon's new star cartridge, the £5000 Anna. Tony Bolton gets a treat.

Over the years Danish cartridge manufacturer Ortofon have built an enviable reputation for making some truly exquisite high end cartridges and here we have the latest in the line. Named in honour of Russian

opera singer, Anna Netrebko, the Anna is Ortofon's new flagship cartridge, costing a not inconsiderable £5,000.

If weight is anything to go by, then at least this cartridge is heavy enough to make you feel that you have something substantial for

your money. It weighs 16g, most of this being accounted for by the titanium body. This is made by Ortofon's Selective Laser Melting process, in which fine particles of titanium are welded together, layer by layer, to build a one-piece body. It was pioneered by the company

when developing the MC A90, SPU 90th Anniversary and Xpression cartridges, and offers precise control over the density of body material, allowing for high levels of internal damping and a very rigid structure.

The bottom of the body is made of a Thermo Plastic Elastomer, and internally there is a patent pending magnet system which combines materials such as neodymium and cobalt. Internal wiring is described as ultra-pure oxygen free copper, which is attached to a non magnetic polymer based armature. This extends beyond the coils where it interfaces with rubber dampers which sandwich a small, but heavy disc of platinum.

A short boron cantilever protrudes from the bottom front of the body and is tipped with Ortofon's Replicant 100 stylus. This polished nude profile has also been used on the MC A90, Xpression and Windfeld cartridges and is claimed to be the closest in shape to the record cutting stylus, thus offering more accurate groove tracing.

I set up the Anna on the Clearaudio Magnify arm which will, luckily, accommodate cartridges weighing up to 22g. However a lot of other arms struggle with anything weighing more than 10g so I would suggest contacting your arm manufacturer to see if heavier counterweights are available.

The instructions recommend an impedance of greater than 10

providing the most balanced sound on this system. For once I found little difference between the sound of the cartridge when brand new and after about 25 hours of use. Even fresh out of the box there was none of the 'new-needle ratty'ness' that can make running in a cartridge a bit of a chore.

In fact the sound was so stable and consistent that I started listening more critically far earlier during my usual running in period than I would normally do. As part of this process I worked my way through all five records of Wagner's 'Tristan Und Isolde' and was struck by the sheer



Complex three-D body shape is built up by Laser Selective Melted titanium. The shape may diffuse body resonances, but lack of parallel edges makes accurate headshell alignment difficult.

to the system and analyse the sound, and instead, to find my focus had moved onto an appreciation of the transmission of those subtleties of emotion, that separate the very good

"the Anna excels in building sonic pictures, be they full of flashing colours and moving shapes like the Shpongle, or indulging in intimate conversation with a wrecked hippy!"

fluidity of the sound. I normally cherry pick tracks rather than play the entire opera through, but found the sound from the Anna all too persuasive.

After about five hours of listening I reached the famous Leibstod. This final aria was performed superbly by Birgit Nilsson in this 1966 "Grand Prix De Disques" recording, and the Anna proved up to the task of transmitting the mixture of sadness and longing as Isolde describes her vision of Tristan risen again. The opening lines "Mild und leise" (Softly and Gently) accurately described the almost lace-like delicacy of the sound of both Nilsson's voice and the music, before both rose in intensity, and then the final long slow notes where the voice tailed off with the line "hochste Lust!" (utmost joy!). It was an apt phrase to describe this listening experience.

Throughout the opera I was impressed with the quite self effacing way that the Anna seemed to work. I found it very easy to forget to listen

from truly first class audio equipment.

Despite the best provocation that Wagner had to offer, the Anna's sonic manners seemed to be unflappable. The tonal balance of both vocals and instruments seemed excellent, avoiding exaggeration at the frequency extremes and with good midrange separation. The soundstage was almost holographic, requiring little effort from my imagination to picture the performers as physical entities in front of me.

After such an intense listening session, the next day, I found myself in the mood for something a lot lighter, and settled on a compilation of Jelly Roll Morton tracks. This particular disc was originally owned by Capital Radio and has survived very well, bearing only a few minor scuffs. The Anna negotiated these with consummate ease, a family trait shared with every Ortofon cartridge that I have used, and got on with the business in hand, that of playing some hot '20's jazz.

Early recordings can be an Achilles heel for some cartridges, leaving the listener more aware of the limitations of the recording process than the music. In this case the reverse was true. I knew I was listening to 80 year old tracks, but



The lower body section is a polymer, housing a powerful magnet system. Ortofon use a short boron cantilever tipped with a Replicant 100 stylus.

Ohms. After experimenting with the various settings available on the resident Leema Acoustics Agena phonostage I settled on 50 Ohms as

the quality of the transfer from 78 was good, and the Anna made the most of this, producing a strong and sold sound, driven along by a fast bass. Any rough edges from the original recording, or damage to the disc were mentioned in passing, but not made a fuss of.

Later on I played some Janis Joplin, recorded live in Calgary in April 1970. This recording of 'Ball And Chain' goes from the opening wailing guitars through to Janis having a spaced, but meaningful ramble to the audience, just talking. Her voice



is one of the more difficult ones to reproduce without sounding unnaturally harsh, or glossing over its natural rawness and power. It is a delicate line to walk, but the Anna seemed to manage it with the same panache that it applied to digging up the micro-detail that filled out the Morton tracks. I felt very close to the moment, almost watching the shambolic figure hanging onto her microphone stand in my mind's eye, rather than just listening to her.

Space within the soundstage was ably demonstrated during 'Dorset Perception', the opening track of Shpongles's second LP, 'Tales of the Inexpressible'. Starting with twinned Spanish guitars, the track builds quite rapidly with a mixture of Asian and European instruments along with samples, synths and effected vocals. In common with a lot of electronica, part of the presentation of the music are the games played with stereo placement of sounds, and Simon Posford and Raja Ram are masters of the art. Given the Anna's proven ability to get in the groove with rhythms, I was unsurprised to find that dance music was played with a vitality and energy that suited the genre. Again I found myself immersed in little micro-details of musical information presented in a very smooth and well mannered way, that built a sonic picture in my mind.

That is what the Anna excels in, building sonic pictures, be they full

of flashing colours and moving shapes like the Shpongles, or indulging in intimate conversation with a wrecked hippy! In a lot of ways it is a very 'hands-off' sound. I kept forgetting that I was assessing sound quality and got thoroughly lost in the music, which is a compliment in itself.

This is a very difficult cartridge to fault. Its behaviour had the smooth sophistication that would pass muster at the ambassador's ball pictured in the well known Ferrero Roche adverts, yet it still managed to make Joplin's gravely tones sound both realistic and unpolished. Despite my best efforts to provoke a negative response with both musical material and record condition, it seemed to be pretty unfazed by whatever I required it to play.

Surface noise was superbly suppressed without seeming to restrict high frequency performance, and it seemed to provide vast amounts of macro and micro musical detail.

The one thing that it didn't do was to push itself forward, and those with reserved sounding systems might want a little more incisiveness to spice things up a bit, perhaps instead looking to the products of Lyra or the Clearaudio Da Vinci that I reviewed last month. Compared to the latter, the Anna is 25% more expensive (you can buy my Benz Micro Wood SL with the difference in cost). I could draw a comparison between a certain pair of Royal Princes. One seems to manage to negotiate life's hurdles without causing ripples, whereas the other is capable of excellent behaviour, but has a slight tendency to mischief. The Da Vinci has more inbuilt adrenaline, the Anna has the supreme

MUSIC USED:
 Jelly Roll Morton 'West End Blues'. Meteor Records. MTM - 005. 1985.
 Janis Joplin 'Joplin In Concert'. Columbia Records. CG31160. 1972.
 Wagner 'Tristan Und Isolde'. Karl Bohm conducting the Bayreuther Festspiele. Nilsson, Windgassen, Ludwig, Talvela, Waechter. Deutsche Grammophon. 2713 001. 1966.
 Shpongles. 'Tales Of The Inexpressible.' Twisted Records. TWSLP13. 2001.

poise of an elegant well bred lady. Both worked superbly in my system, although the Anna proved the more forgiving listen, gliding through the music with royal decorum.

In short, it is excellent. If you can afford it, then buy one. If you can't afford it then start saving now!

SYSTEM USED:
 Clearaudio Master Solution turntable/
 Magnify arm.
 Leema Acoustics Agena phonostage,
 Tucana II amplifier.
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FOR

- smooth, effortless sound
- 3-dimensional imaging
- fast and detailed
- good tonal palette

AGAINST

- weight
- difficult alignment

MEASURED PERFORMANCE

Frequency response of the Anna measured flat all the way up to 20kHz, our analysis shows. With just a small peak around 5kHz and a plateau of around -1dB above that, the sound will have plenty of midrange bite but no sharpness. Inner groove loss from the Replicant 100 stylus was minimal, our red trace shows, amounting to just 1dB or so. Tonal balance is well maintained right across a disc and distortion on inner grooves will not be emphasised – a problem with peaky cartridges.

The short boron cantilever used on this cartridge sits at a steeper angle than most Ortofons, resulting in a high Vertical Tracking Angle of 30degrees, increasing distortion on vertical modulation (left and right images). Most Ortofons meet the ideal value of 22degrees so it seems Ortofon have decided to go for cantilever shortness and stiffness for a 'fast' sound rather than optimise VTA, a fair trade off as the latter has less audible benefit.

The cartridge body is not easy to align in a headshell and needed realignment before a low lateral distortion value of 0.5% could be achieved.

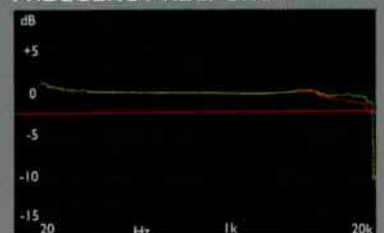
Tracking was fair but not excellent, at the recommended 2.6gms VTF. Again, it was below Ortofon's usual high standards, suggesting a trade off. This is usually against output, but in this case the Anna produces very little output – again unlike most Ortofons – measuring just 0.28mV at 5cms/sec rms. On strong vocals the Anna may

well get edgy as distortion rose sharply close to mistracking.

As Ortofon MCs go the Anna breaks with the breed. It is enormously heavy at 16gms (few arms accept a cartridge heavier than 10gms), the VTA is a high, output very low and tracking good but not exceptional. As Ortofon know how to engineer a better result I assume there have been some deliberate trade-offs made here for the sake of a particular presentation. The Anna will sound very smooth and likely highly detailed and insightful.

Tracking force	2.6gms
Weight	16gms
Vertical tracking angle	30degrees
Frequency response	20Hz - 20kHz
Channel separation	25dB
Tracking ability (300Hz)	
lateral	60µm
vertical	45µm
lateral (1kHz)	18cms/sec.
Distortion (45µm)	
lateral	0.5%
vertical	6.5%
Output (5cms/sec rms)	0.28mV

FREQUENCY RESPONSE



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Full charge

From the USA comes the novel Nova Phenomena battery powered phono stage. Tony Bolton enjoys its qualities.



The concept of powering audio equipment by batteries is nothing new. The benefits can be substantial, avoiding mains hum and interference, producing a far quieter background to music.

Musical Surroundings, based in Oakland, California, have been making battery powered phono stages for a number of years and the current line-up includes the Nova Phenomena under review here. The unit is housed in a quite compact (254 x 276 x 76mm, w x d x h) metal case that includes the two rechargeable NiMH dual mono battery packs. These are recharged via the supplied wall mount transformer.

Setting up is very simple. Input and output leads are plugged in to the appropriate gold plated

phono sockets at the back, and suitable gain and resistance values are set for the cartridge via the dip switches located below them. Although these are labelled, it is worth consulting the manual since the four gain switches can be used in combination to provide 13 levels of gain between 40dB and 60dB. In the same way, the eight input loading switches can be combined to offer 17 different impedance settings. All of this allows the user to fine tune the response of the phono stage to suit their equipment and ears. It should be noted that the instructions recommend turning down the amplifier before making any changes and allowing a minute for the circuit to stabilise before recommencing listening.

Since the designer, Michael Yee,

has avoided the use of op-amps, the circuit uses 17 transistors on each channel. This circuitry, along with the weight of the batteries results in the unit tipping the scales at 2.27kg.

The front panel is bare, except for a light sensitive Infrared Detector which shows red when the unit is operating on mains power, flashes red when charging and changes to green when running off the batteries. Moving a hand or finger in front of the light sensitive switch will change the unit from mains to battery power.

I set the Nova Phenomena up with a Clearaudio Concept MC cartridge mounted on a Linn Sondek turntable and, after a little experimentation, settled on 100 Ohm impedance and 60dB of gain.

I started listening by playing my way through Haydn's Oratorio 'The

Creation'. The opening representation of chaos was majestic and immediately involving as it led into the creation of light, accompanied by the chorus, Robert Tear (tenor) and John Shirley-Quirk (bass). As the Creation story unfolded and the music expanded and grew more complex, I found myself totally immersed in the sound. It seemed to combine both power and delicacy, swelling up from a deep and dark cavern, where well formed bass strings underpinned the music without overwhelming the vocalists, or the detail of the mid and upper range instruments.

All of this was portrayed on a very large soundstage that not only spread out sideways well beyond the speaker boundaries, but extended forward into the room by quite a considerable margin. I felt that I was able to perceive the space that the soloists occupied even when the sound of the orchestra and chorus swelled around them. This was an improvement over the last battery powered Phenomena phono stage which I reviewed a number of years ago. It had a similar smoothness and detail in the sound, but seemed to run out of steam when an orchestra rose up to a crescendo, leaving me feeling a bit disappointed at the tailing off of the full potential impact of the sound. The Nova Phenomena avoided this drawback, taking me on an exhilarating musical ride.

Later on I had changed musical gear and was playing a 1968 mono Atlantic pressing of 'The Immortal Otis Redding'. Donald 'Duck' Dunn's rather funky bass line on 'Hard To Handle' romped along in an enjoyable manner, although it was not the most energised performance of this record that I have heard. It played in a smooth manner that was enjoyable but I felt that the smoothness had taken a little precedence over the driving energy that characterises the more up-tempo Redding tracks.

I noticed the lack of a mono/stereo switch, with odd bits of extraneous surface noise appearing at the extreme left and right of the soundstage. However, I will say that this phono stage generally acquitted itself quite well when playing mono records, producing a full and detailed sonic image that exhibited multiple layers of sound for me to explore.

I stayed in the '60's for my next choice, but moved over to jazz, playing 'Duke Ellington Meets Coleman Hawkins'. It was recorded in 1962 and released the following year by Impulse Records. This copy is the 1982 re-release on Jasmine Records and

is in near mint condition. I was impressed by the vividness of the reproduction. I felt as though I was very close to listening to the actual performance, rather than a recording of it. Again the soundstage was big and open, encouraging me to focus on the differing musical textures on display. An impressive achievement at this price point.

If I had to be churlish I would say that there was a slight lack of impetus to the rhythm. It was very

de Gaia's third LP 'Big Men Cry' to see how electronic sounds fared. The first track is called 'Drippy' and opens with a synth, which is then joined by vocal samples. This is then augmented by a rhythm set up by the sound of a drip hitting water, the placement of which moves around the soundstage. From this point on, the music gradually gets more complex as various samples and sounds are brought in to create a wall of beats. On top of this are chorussed vocal



Miniature surface-mount components are used, together with discrete transistors for the audio circuits. A rechargeable NIMH battery provides silent power.

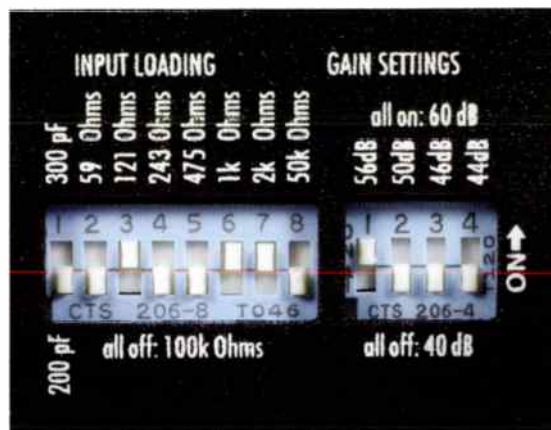
subtle, but I came away from listening with the same sensation that I had had with the Otis Redding LP. The timing was quite tight and precise, but lacked a certain element of energy that would have made the difference between tapping my feet along to the beat in a pleasant manner, and feeling an urge to get up and boogie around the room to it.

Apart from this, I thoroughly enjoyed listening to this record. The inflections of Hawkins' tenor saxophone were well described, and the slightly rasping tonality of the instrument was not glossed over or smoothed out. In the same way, Ellington's piano sounded realistic, the multiple harmonics of a note sometimes hung in the air in front of me, and the speed of the attack, and the linger of the decay seemed convincing.

Having explored conventional instruments I turned to Banco

effects and samples. The presentation was excellent, with each sound appearing in a precisely marked spot. The layering effect of the music was built in a steady manner, but with enough definition that even when the full plethora of sounds was in play, I was still able to find and follow the initial opening drip sounds. This is not normal in my experience of phono stages at this price. I usually find such small details get overwhelmed by the complexity of sounds surrounding them, but here I felt that equilibrium was maintained at all times.

Equilibrium seems to be the appropriate word to sum up the Nova Phenomena. It retained



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equilibrium regardless of the complexity of sounds being fed into it, and as such, performed in a way that I normally associate with phono stages costing quite a lot more. I enjoyed the spaciousness of the sound, and being able to follow very small details through the mix without them being overshadowed by more obvious instruments and voices. The soundstage was one of the largest that I have heard without spending double the price on the phono stage. It produced as big and as open a soundstage as the Creek Wyndson, costing £1500, that I reviewed last month.

There are a couple of drawbacks. There is enough gain for the majority of MC cartridges but affordable models such as the Goldring Legacy and the Denon DL304 have too low an output to be usable with the Nova Phonomena. The other thing I found was an ever so slightly upright approach to rhythm. The timing was very precise, with an almost metronomic air that worked with electronica but seemed to lack a little of the freedom of movement that jazz and funk beats require. Classical music fans will love it and, at this price point, it would be very hard to beat when playing such music.

I would rate the Phonomena as a very good phono stage that improves in a lot of ways over the previous model and – cartridge matching aside – would certainly recommend it. It offers a taste of high end definition and poise that I have rarely come across in equipment costing under £1000 and in a lot of ways can hold its own above that price point too.

SYSTEM USED

Linn Sondek/ Hadcock 242 Cryo/
Clearaudio Concept MC
Bent Audio TAP - X passive pre
2 x Quad 303 power amps
Kelly KT3 loudspeakers

MUSIC USED

Haydn 'The Creation'. David Willcocks conducting the Academy of St Martin's-In-The-Fields, Kings College Choir. Cambridge. Heather Harper, Robert Tear, John Shirley-Quirk. EMI Records, Angel Series. SLS 971. 1974

'Duke Ellington Meets Coleman Hawkins'. Jasmine Records. JAS 1. 1962.

Otis Redding. 'The Immortal Otis Redding'. Atlantic Records. 587 113. 1968.

Banco De Gaia. 'Big Men Cry'. Planet Dog Records. BarkLP025. 1997.

MEASURED PERFORMANCE

The Nova Phonomena offers a single amplifier per channel for both MM and MC cartridges, gain and load switched. The input device was quiet enough for MM cartridges, but measuring $0.18\mu\text{V}$ equivalent input noise (IEC A weighted) not as quiet as most, a typical noise value being $0.08\text{--}0.1\mu\text{V}$. So for MC cartridges this stage is +6dB noisier than rivals. This may not be noticeable with many high-ish output MCs (0.7mV), but it will be with some from Linn, Goldring that manage just 0.2mV or so output. With a maximum gain of $\times 1122$ (61dB) the preamp doesn't have enough gain for low output types, where 70dB or more is required.

Gain is likely kept low to avoid output overload that occurred at just 3V, due to the low operating voltages imposed by using batteries. Most preamps swing 10V out, so the Nova Phonomena is well behind the norm here. With the lowest gain value of 40dB selected ($\times 140$ or 43dB in practice, measurement showed) this resulted in an input overload value of just 21mV and modern Ortofon 2M Series MM cartridges produce 35mV on musical peaks.

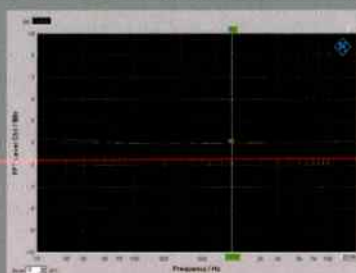
Equalisation was accurate, with just a small lift in the $3180\mu\text{s}$ time constant that serves to raise bass by +0.5dB – a small amount but it will likely add just a bit of weight to the

sound. There is no subsonic warp filtering, full gain being maintained to below 10Hz.

The Nova Phonomena has some limitations. It overloads early and this may become apparent if high gain is judiciously used with a high output cartridge. Input noise is too high for low output MC cartridges. The use of batteries avoids hum, earth currents and what have you and usually makes a useful contribution to sound quality. Within its limitations the Nova Phonomena measures well enough. NK

Frequency response	10Hz-20kHz
Separation	72dB
Noise	$0.3 / 0.18\mu\text{V}$
Distortion	0.002%
Gain	$\times 140 - \times 1122$
Overload	3V

FREQUENCY RESPONSE



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- substantial bass
- precise imaging

AGAINST

- may not suit all cartridges
- no stereo/mono switch

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Let It Flow

Hoping to improve the performance of the much vaunted SME arm by replacing it with a new phono amp cable, Paul Rigby reviews Origin Live's new Linear Flow 2 SME cable.

You can lead an arm to music... but how much it drinks depends on that lead. I reviewed Origin Live's Shielded Linear Flow 2 cable technology cable back in January 2011. It gave obvious sonic improvements, so I was pleased to hear that the technology had now been brought to bear upon the cable of my SME IV tonearm which sits upon my reference Avid Acutus deck.

The cable itself is a fully balanced design, although you can use it with unbalanced systems with no problems. Inside, you will find a twisted pair of leads that help to reduce inductance. The action of twisting a cable to reduce this effect is not unusual. In fact, in my recent 12-cable group test of speaker cables, just about every one employed the same idea. What is unusual here is the use of a combination of over five dielectric insulators to ensure an even response. High purity copper is used at the heart of the cable for a reported increase in natural tonal balance.

Anyone looking to buy a pair of Linear Flow 2 cables will notice that you can buy them either Unshielded or Shielded. The Shielded form is promoted as being sonically superior. As such it is also costlier. Origin Live says that it protects low level signals from the ever increasing RF interference present on the airwaves, helping to reduce noise and increase clarity. Add a screening of 95% nickel-plated copper braid shield with an attached earth lead and you have an intriguing, yet neat, cable.

So how did it sound? I hooked up the SME to my Icon PS3 phono amp and gave it a whirl.



SOUND QUALITY

Playing the jazz vocal LP, 'Chet Baker Sings', the difference between the standard SME cable and the new Origin Live was immediately apparent. There appeared to be a dramatic drop in distortion via the Origin cable. This effect produced a quieter background that provided a solid base for the music, allowing more detail to pour forth. Also, a previously annoying upper midrange bloom, that could be heard during the trumpet solo, was now absent.

Crescendos from brass instruments were just a little severe via the standard cable. The Origin Live alternative provided a richness and midrange flavour, as well as improving focus of the trumpet. In fact, that focus was noticeable over all frequencies.

The midrange benefitted because more emotive elements were now associated with the piano and percussion. This greater maturity of presentation, evident within the midrange, was also present in the bass which possessed more character and complexity.

For the prog rock oriented King Crimson track, 'Three Of A Perfect Pair', the lower distortion was the fount from which all of the positive aspects of the cable emerged. This

meant that this highly compressed vinyl album, which could be a little grating, sounded less harsh, especially on vocal crescendos, while the normally strident, complex guitar sound effects work on the middle eight was less clamorous.

Lower distortion also provided a background of silence that enabled subtle effects to have a more dominant role within the mix. Before, ground noise was of such a level that these self-same subtleties were just drowned, making them almost inaudible to the ear. Bass guitar now was easier to hear, having life, zip and even a cheeky bounce.

Clearer upper mids made for a more passionate sound and this combined well with greater instrumental separation, so that multi-tracked vocal sequences sounded like a collection of individual performances instead of a sonic mish-mash.

CONCLUSION

The new Origin Live SME cable provides a high degree of focus to the overall presentation. It's almost as if a camera lens had been turned a touch, improving focus. The sound gained a clarity the standard cable could never quite match. So here is a great way to squeeze more quality from the venerable SME arm.

VERDICT ●●●●●

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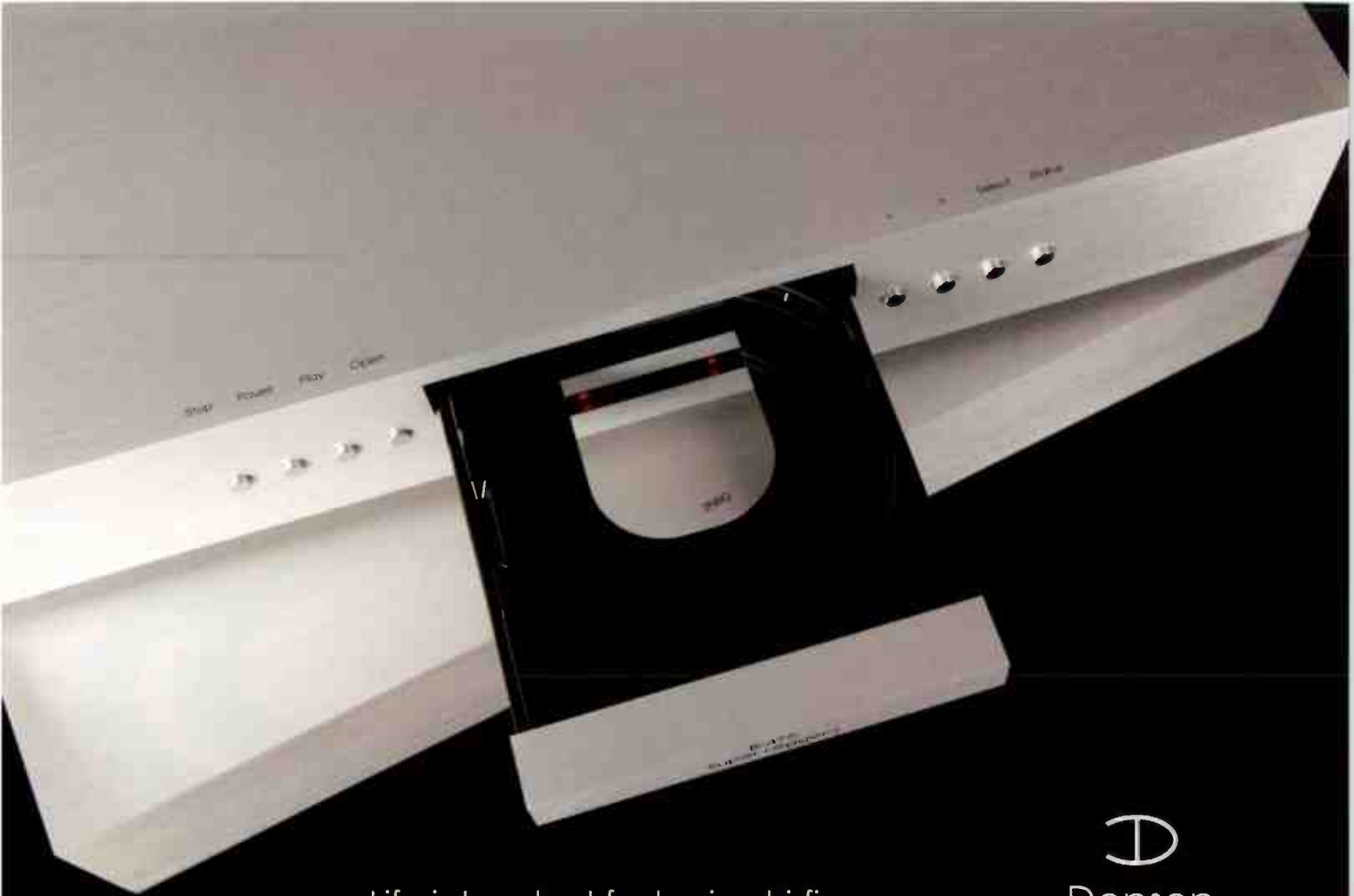
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FOR

- mature presentation
- focus
- low noise floor

AGAINST

- nothing



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Black & Blue

The stable of cable variants with the Tellurium Q catalogue continues to increase. Paul Rigby reviews the Blue Power Cable and the Black Phono Cable interconnects.



In typical Tellurium Q terms, despite my journalistic nose desperate to find something (anything!) about the nature of these cables and what technology they both might employ, the company steadfastly refused to reveal any of its secrets. The Blue Power Cable is a lower cost variant of its brother, the Black, while the set of interconnects, the Black Phono Cables are the first of their type to be released by the company.

SOUND QUALITY

Reviewing the Power Cables first by spinning a series of rock-based vinyl discs, I found the Blue a different beast to the Black: not better or worse, just different. Where the Black is meaty, powerful, almost guttural in its bass power, the Blue, while maintaining a focused, punchy bass, offered a better balanced presentation for the vinyl front-end, injecting more air into the upper frequencies while draining some of the more claustrophobic bass. This gave the Blue a breezy presentation. Upper mids seemed to relax, taking their time to consider detail and tonal colour.

The Black, while packed with insight, didn't quite have the Blue's delicate foot padding and exploratory inquisitiveness.

Everything about the Black was power oriented which, I

quickly realised, is where the Black belongs, attached to amplifiers and associated equipment. The Black

releases as much bass through its core as possible, which is ideal for power-related peripherals. The Blue would sound rather weedy here but, attached to a source, the Blue stands tall and rules the roost.

Playing jazz, via CD, the effect was more accentuated. The Blue almost decluttered and cleansed the midrange to produce an outstanding clarity, adding a tremendous sense of balance.

Moving to the interconnects, and comparing them to my reference Avid SCTs, my rock-based vinyl possessed a tremendous soundstage via the Tellurium Qs (TQs), with an ordered air about it. The TQ stereo stage images were solid and stable while the rest of the soundstage benefitted from structurally secure instrumental separation.

Underpinning the rock performance was tremendous bass output – solid, secure, muscley and meaty. There was also a useful draining of distortive frequencies from the midrange and treble allowing them to beam with new found clarity as they sat in greater amounts of space.

for example. Her rather breathy delivery never masked the power that lay under the surface. The CD also didn't sound as loud as the reference Avid for the same gain because distortive drain removed many of those frequencies that acted harshly upon my ear.

CONCLUSION

I've talked a lot about Tellurium Q, of late. I've also sung its praises, constantly. To be honest, I wish I had something to grump about, it would make a change but, when a company gets a series of products 'this right' it's difficult to say anything negative.

Having tested the Blue power cable and now being able to place that in context with the Black, it is evident that Tellurium Q is going about cable design in a totally different way to other cable manufacturers. In fact, if I had to compare it to any other group, I would ally it more with quality power conditioning outfits like Isotek because Tellurium Q is looking at power load and application, designing for specific hardware in specific situations.

The interconnects, in the meantime, support the basic Tellurium ethos. They establish a sturdy, secure bass floor and build upon that groundwork with a distortion-free upper frequencies that offer a balanced contrast. These cables exhibit a dynamic and impressive performance that will have you pinned to your seat.



Turning to jazz on CD, the TQ interconnects brought a new degree of authority to various vocal jazz performers – Helene Merrill,

VERDICT ●●●●●

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Bass was punchy and upper frequencies provide tremendous insight. A perfect 'source' power cable.

FOR

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- balanced presentation
- clarity
- distortion free

AGAINST

- nothing

VERDICT ●●●●●

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FOR

- bass power
- midrange smoothness
- detail
- distortion free

AGAINST

- nothing

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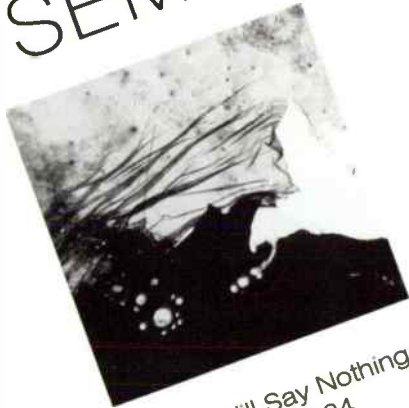


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VINYL ON DEMAND

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Anyone into drum & bass will know Robert Haigh from his nineties' project, Omni Trio, but Haigh had a busy musical existence before that successful time. In 1980, he formed Truth Club and Fote, both exploring the industrial and funk genres, along with the creation of his own label, Le Rey Records. It was two years later, in 1982, that, in addition to working with Nurse With Wound on several projects, Sema was born. Between then and 1984, Haigh released four albums as Sema: 'Notes from Underground', 'Theme from Hunger', 'Extract from Rosa Silber' and 'Three Seasons Only'. This box set includes all four of the albums plus those Nurse With Wound-related tracks.

So, why does this box represent a classic? It's not well known like the Roxy Music material covered in the last issue is it? It's hardly The Beatles' 'Sgt Pepper' either. That's the point, though. They might not be as accessible but there are classic sounds within a gamut of genres. Just because you may not have heard about them, doesn't mean that they don't deserve classic status. And this does.

I mention Roxy and, oddly enough, they were an influence in the early days. "In the mid-seventies I was the singer/songwriter in a band in South Yorkshire. We were called Labyrinth, playing Bowie, Roxy and proto-punk type stuff", said Haigh. "My first interest in experimental music came when my older sister gave me her unwanted copy of 'Faust

Tapes'. That album, along with the weirder aspects of Roxy Music and Peter Hammill, opened me up to a new way of listening to music. Later on I became a huge fan of the music of Steve Reich, Philip Glass, Michael Nyman, John Cage and Harold Budd."

When it came to Sema, Haigh wanted to explore other musical urges, "...that catered for my love of minimal and ambient music. I started SEMA. But I didn't want it just to be pretty background ambient music, I wanted it to also have a darker and discordant side to it.

As I progressed I became more and more interested in composing for piano. I've always been a fan of Erik Satie, I was impressed with how he juxtaposed melody and discord – the tonal and atonal – in works such as the 'Six Gnossiennes' and the 'Five Nocturnes'. I've always enjoyed subverting what appears to be melodic material with atonal elements. This is still what I do to differing degrees".

For those used to Omni Trio, Sema isn't vastly different. The main difference was the introduction into a whole new world of technology for Sema. Haigh was like a kid alone in a toy shop; he had a whole new set of play-things. "All along, through that period, I continued to compose for piano. Some of it found its way into Omni Trio material. The original sketch for Renegade Snare was like a Philip Glass progression."

In terms of sources for this box

set, Haigh supplied Vinyl On Demand with unplayed vinyl copies of the four SEMA albums from his personal archive ("...a crate in the garage!"), but the original pressings were far from pristine. They were meant to be classical pressings but they were full of pops and glitches. "VOD's sound engineer, Markus Aschenbrenner, did a wonderful job. I can honestly say that these new pressings are superior to the originals. The material is clean and clear and the EQ is spot on, the treble is not harsh and the bottom end is well represented".

Fans of Haigh will be intrigued to hear that he still has a few treasures lurking in his music chest. "Well, there is an album of piano material that I did for United Diaries ('Valentine Out Of Season') that is unavailable and has never been on CD. Then there are two EPs that I did for L.A.Y.L.A.H that together would make for an interesting release. Also there is an album that I did for my label, Le Rey Records, 'A Waltz In Plain C'. I'd be happy for all these to come out at some point".

Haigh's works often use a growing tension, building blocks of piano wrapped around a fattening tone, helping to grow like the sun drawing up a rose from the soil. Haigh's music sucks you into an often meditative state but he does so while keeping you alert. Unlike other productions of the same ilk, he never sends you to sleep. You want to see what's over the next hill. **PR**

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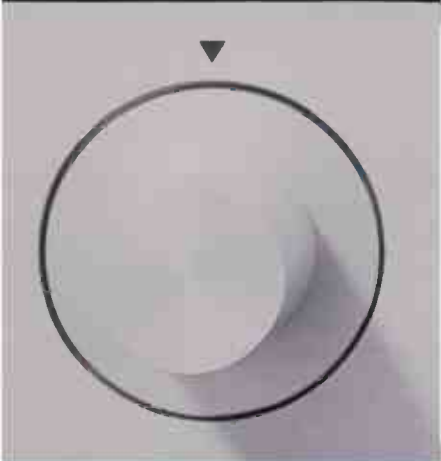
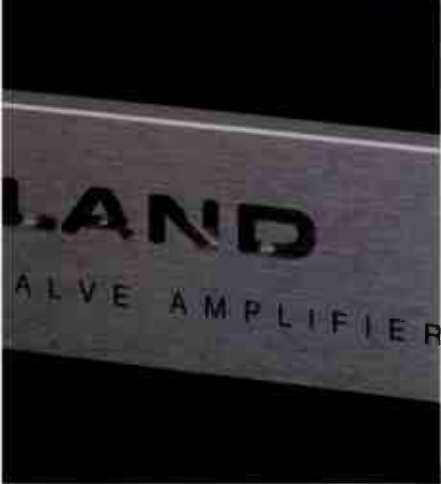
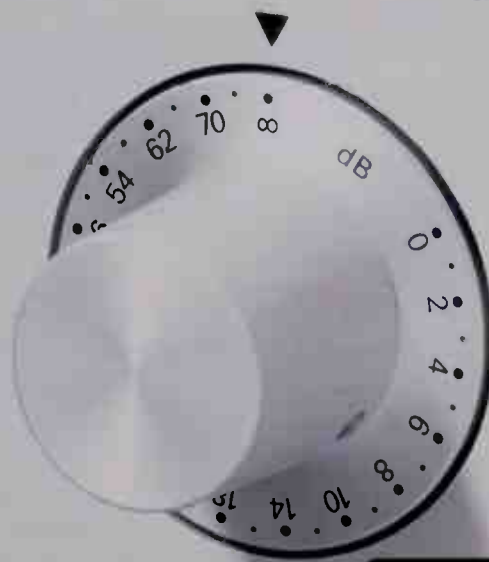


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