

hi-fi news

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& Record Review

Exclusive

GROOVE MASTER

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Oppo PM-1

The best headphones yet?

PMC twenty.26

Floorstanders with attitude

VTL S-200 Signature

Heavyweight US tube amp

GROUP TEST

Instant computer
audio upgrades!

10 USB audio cables tested

Sonus faber's
'Ex3ma' speaker
HFN Investigates, p12



• **PLUS** 18 pages of music reviews & features • **VINYL RE-RELEASE** Jack White's *Blunderbuss* on 180g
• **OPINION** 11 pages of letters and comment • **VINTAGE REVIEW** Nytech's CA252 integrated amplifier
• **SHOW BLOG** We report from Stockholm High End • **READERS' CLASSIFIEDS** Hi-fi bargains galore

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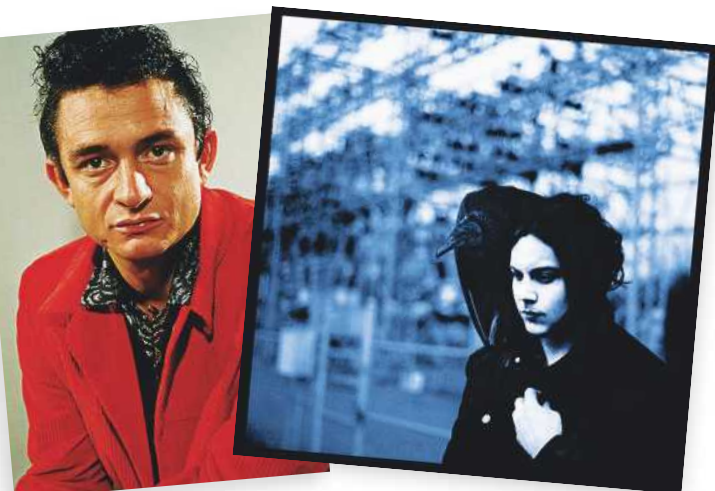
When music matters most

VERY HIGH QUALITY • MUSICAL FIDELITY DESIGNED
NEODYMIUM DRIVE UNITS

RIGHT: Oppo challenges the headphone market with its PM-1 – a bespoke 'isodynamic' design, see p58



ABOVE: Not just a USB DAC but an app-driven hi-res network streamer too. Find out how the new Primare NP30 fares on p32



VINYL: Johnny Cash's era-defining *At Folsom Prison* is this month's Vinyl Icon (p72) while Steve Sutherland recalls his fondness for Jack White as *Blunderbuss* is reissued as a 180g LP (p70)

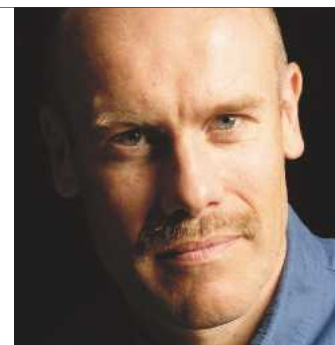
RIGHT: *Hi-Fi News & RR* is the exclusive UK representative of EISA's Audio and Home Theatre panels. Paul Miller is EISA's Audio and HT Panel Manager



Few components of a hi-fi system arouse more heated debate among enthusiasts than their choice of cabling. Everyone has their favourites, brands they cheer for as vociferously as fellow hi-fi fashionistas will decry. Cables, it seems, inspire loyalty and derision in equal measure but the truth is, with very few exceptions, they are an essential part of every music system.

All seasoned enthusiasts know that a sympathetic choice of interconnect and speaker cable can meld the components of a good system into one that sounds truly great, even if they'll never turn a dog's dinner into a gourmet sensation. And the plain fact is the rise of computer-driven high-res audio hasn't diminished the debate. Indeed, for those on the fringes of audio who declare that speaker or interconnect cables cannot, within reason, influence sound quality, the prospect of *digital* interconnects having any impact whatsoever is enough to inspire apoleptic indignation.

A year ago *HFN* fanned these flames when we published the first group test of USB audio cables, all auditioned under blind conditions and tested in our lab to illustrate differences in the propagation of data along their length. One year on, a sufficient



number of new USB audio cables has been launched – many from more specialised 'boutique' brands – for us to assemble another ten to audition and lab test in a similarly rigorous manner (p39).

So USB cables cannot sound different from one another? Don't you believe it!

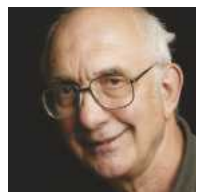
We've also been busy this month preparing some new

'So USB cables cannot sound different? Don't you believe it!'

HFN fixtures, including a series exploring the best recordings from noted composers, conductors and orchestras. Whether you are new to the classical world or a veteran of the genre, let our 'Classical Companion' be your guide through the maze of music on offer (p68). And if you are listening to hi-res classical downloads, you'll also discover the best USB cables to use...

PAUL MILLER EDITOR

HI-FI NEWS' EXPERT LINE UP: THE FINEST MINDS IN AUDIO JOURNALISM BRING THEIR EXPERIENCE TO BEAR ON ALL AREAS OF HI-FI & MUSIC



BARRY FOX
Investigative journalist supreme, Barry is the first with news of the latest developments in hi-fi and music technologies



JOHN BAMFORD
JB brings huge industry experience, a penchant for massive speakers and a love of hi-res audio in all its diverse guises



KEN KESSLER
is currently our Senior Contributing Editor and almost singularly responsible for the renaissance in valves and 'vintage hi-fi'



KEITH HOWARD
has written about hi-fi for 30 years, and edited *Hi-Fi Answers* for nine. KH performs our speaker and headphone lab tests



STEVE HARRIS
Former Editor of this very title from 1986 through to 2005. A lifetime in audio and a love of jazz makes Steve a goldmine



JOHN HOWES
Foremost collector and archivist of vintage hi-fi, famous for the UK's bi-annual Audio Jumble, John shares his experience with *HFN*



STEVE SUTHERLAND
Worked on *Melody Maker* and then edited *NME* from 1992-2000, the Britpop years. Steve brings a unique slant to our Vinyl Release pages

Xs 150: "Infinite smoothness in all registers. Unheard of power and authority. Control during the softest passages. I am speechless. I honestly never expected this dramatic an improvement.

Absolutely a masterpiece."



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ABOVE: For our Group Test of £10-£999 USB cables, turn to page p39

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Free! Seven audiophile CDs from Chesky See page 82

KEF's new Refs

THE ALL-NEW REFERENCE RANGE FEATURES THREE STEREO SPEAKERS WITH UNI-Q DRIVERS

For over 30 years KEF's flagship range has been distinguished by the name 'Reference' – an exercise in high quality engineering brought bang up-to-date for 2014 with the launch of five new Reference class loudspeakers. These include two elegant three-way floorstanders, the Reference 3 and 5, a substantial three-way bookshelf speaker, the Reference 1, plus a three-way centre channel and 1kW active subwoofer. Clearly, this one range aims to serve both traditional stereo and multichannel audio/home theatre markets.

The latest iteration of KEF's 'point source' Uni-Q MF/HF driver array features in the

stereo and centre speakers, this combining a 'state-of-the-art' 1in vented aluminium dome tweeter at the acoustic centre of a sophisticated 5in midrange driver. The Uni-Q driver behaves as a single-point source with controlled directivity, promising great stereo and a uniform response over a wide listening axis.

These four loudspeakers also share a newly-designed 6.5in bass driver, its gently contoured aluminium cone designed to complement the Uni-Q point source array.

The floorstanding Reference 5 model will be of particular interest to *HFN* readers (see picture, opposite), its 1.35m tall

cabinet available in Piano Black, Satin American Walnut, and Luxury Gloss Rosewood finishes. The four, reflex-loaded bass units combine to offer a claimed 25Hz (–6dB) in-room bass extension with an above-average sensitivity of 89.5dB and frequency response (±3dB) from 40Hz–35kHz. Minimum impedance is specified at 3.2ohm.

Two bespoke versions of the Reference 3 and 5 models will also be available. The stunning 'Kent Engineering and Foundry Editions' are finished in Blue Ice White and Copper Black Aluminium. **GP Acoustics (UK) Ltd,** 01622 672 261; www.kef.com



Muso, by Naim

WIRELESS STREAMING MUSIC SYSTEM

Designed and built at Naim's factory in Salisbury, the Muso is an integrated wireless music system featuring 6x75W Class D amplifiers driving six custom (Naim) speaker drivers. Numerous sources are accommodated, including AirPlay and Bluetooth streaming solutions, Internet radio, tablets, USB sticks, mobile phones and MP3 players while the Muso can function as a stand-alone system or as part of a Naim or AirPlay multiroom system.

Priced at £895 and housed in a single 'beautifully-crafted' unit, the Muso can be controlled via the supplied remote, its touch panel volume or via a Muso control app for iPad, iPhone, iPod and Android devices.

Naim Audio Ltd, 01722 426600;
www.naimaudio.com



HI-FI NEWS' NUGGETS

NAD ADDS SPOTIFY

NAD is introducing Spotify Connect to its compact D 7050 Direct Digital Network Amplifier. Spotify Connect gives owners the ability to playback millions of songs using any smart device connected to the D 7050. In an effort to create the 'ultimate plug 'n play solution for wireless music in the home' NAD is already combining its digital Class D amplifier technology with Apple's AirPlay, UPnP, and aptX Bluetooth wireless standards in a very compact chassis. <http://nadelectronics.com>

LINN AKUBARIK EXAKT

Extending its Exakt platform, Linn has launched the Akurate Exakt System comprising an Akurate Exakt DSM and Exakt Akubarik loudspeakers. The latter still houses a six-channel amp module but now features 'Exakt capability alongside Akurate quality DACs and Linn's Chakra 'silent power' amplification'. The speaker now accepts digital inputs and includes additional compensation to better integrate its drivers. www.linn.co.uk

Devialet upgrade

FIRMWARE UPDATE BRINGS MORE POWER

Devialet has announced the release of its v7.1 firmware, free to existing owners. There's an increase in power output across the amplifier range, reflected in an incremental name change: the 110 becomes the 120, 170 the 200, the 240 the 250, and 500 monoblocks the 800 (pictured below). Devialet has achieved this by updating its ADH algorithm and PSU control software and optimising thermal management.

Furthermore the Devialet 170/200 becomes bridgeable to a 400W monoblock, creating the Devialet 400. SAM (Speaker Active Matching – see News, Jun '14) is included across the range while a new iOS/Android app improves control via your smartphone. The interface has also been updated with a 'new look'!

Devialet, 0208 971 3909;
<http://en.devialet.com>,
www.absolutesounds.com



ELAC takes to the AIR

NEW HIGH-SPECIFICATION 2.4GHZ WIRELESS LOUDSPEAKERS

ELAC of Germany has added a 96kHz/24-bit 'audiophile wireless' solution to its range of active loudspeakers. The two-way 403 (pictured) and three-way 407 floorstander are both equipped with a three-channel amplifier pack (amounting to 225W in total) that's connected directly to the two or three drivers. Onboard DSP provides all the crossover compensation and also facilitates the AIR-X wireless input, if selected [see back panel shot, below]. The AIR-X base station is available separately for £329 and will service up to three sets of speakers, simultaneously transmitting from four different sources to up to three different sets of speakers. Prices for the AIR-X 403 and AIR-X 407 are £2499 and £4299.

ELAC Electroacoustic GmbH, 01285 643088;
www.elac.com, www.hifi-network.com



Bespoke passive preamp

UNDERSTATED PREAMP FROM NEW UK BRAND

The inaugural product of a new venture, The Bespoke Audio Company has announced a preamp offering six inputs and two outputs using combinations of balanced (XLR) and unbalanced (RCA) connections. A variety of finishes and technical options allow it to be configured to suit any system while the preamp's 46-step volume (over a 67.5dB range) is achieved passively via a transformer-coupled stepped attenuator. Price is a cool £9000.

Bespoke Audio Company, 01424 756471;
www.thebespokeaudiocompany.com



Canor's digital flagship

SLOVAKIAN HIGH-RES USB DAC WITH CD DRIVE



Designed to complement Canor's flagship amplifiers, the new CD 1.10 is a high-end, valve-based CD player with S/PDIF and USB DAC onboard. Internally, the CD 1.10's circuit boards feature Canor's own 'PCB Milling Technology' and are populated with two separate Burr-Brown PCM1792 24-bit/192kHz DACs, one for

each channel, in harmony with a triode-based analogue stage feeding both single-ended (RCA) and balanced (XLR) outputs. Switchable digital filtering allows further fine-tuning while the USB input also services DSD up to 5.6MHz. Price is £3295.
Canor Audio, 0118 981 4238;
www.canor-audio.com; www.soundfoundations.co.uk

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Upcoming Events

IMPORTANT DATES FOR YOUR HI-FI DIARY

- 30-01 JUN** T.H.E. Show, Hilton Hotel, Newport Beach, CA, USA
- 08-10 AUG** High End Audio Visual Show, Hong Kong
- 05-10 SEP** IFA Berlin, The International Funkausstellung, Germany
<http://b2c.ifa-berlin.de>
- 17-19 OCT** High End Swiss 2014, Hotel Moevenpick Zuerich Regensdorf, Switzerland; www.highendsociety.de/
- 01-02 NOV** The Hi-Fi Show Live 2014, Beaumont Estate, Windsor;
www.hifinews.co.uk/show

Stockholm High End 2014

Words & pictures: Jonas Bryngelsson, Per Sundell, Mats Meyer-Lie



Taking place over the first weekend in February this year, Stockholm's annual High End Show was once again held at the city's Sheraton and Lundqvist & Lindqvist hotels. Being able to make use of spacious rooms designed for conferences and presentations rather than having to squeeze systems into hotel bedrooms meant that exhibitors – of which there were nearly 200 – were able to ensure visitors could hear and see components at their best. And, according to the organisers, visitor numbers were up on last year.

Two Cantus parallel-tracking arms graced this Simply Black Magic turntable, which was used in the Gradient room [see opposite]. Both deck and arm are sold by Stockholm's Veteran HiFi store and were fitted with pick-ups from Japanese firm Miyajima. www.simplyblack.net, www.miyajima-lab.com



Elac showed the flagship in its four-strong 400 range of loudspeakers: the FS409. This three-and-a-half-way bass reflex design stands 120cm tall and features twin 180mm woofers below a 150mm midrange driver topped by JET 5 Air Motion Transformer tweeter. The FS409 is said to deliver down to 28Hz. www.elac.com



Vienna Acoustics drew the crowds with a somewhat less conventional-looking speaker – the Liszt – which will form part of the company's new Imperial series. All speakers in the planned line-up feature a new 15cm 'Flat-Spider-Cone' coincident driver system derived from the Klimt series. www.vienna-acoustics.com



The Dream, from Hesselvall Audio, is a single-ended triode integrated said to be 'a no feedback design' capable of delivering 40W per channel from its twin beefy GM70 triodes. Pure Class A in operation, it measures 295x470x585mm (hwd), offers three line-ins, an automatic bias system, plus a built-in test circuit. Used to drive Revolution speakers from Finnish company Gradient [see top, p9], the sound was intimate and warm, offering a level of musicality that could quickly prove addictive. Built to order, The Dream is available in the stove-black finish pictured or a striking red. www.hesselvallaudio.se

Four well known Nordic exhibitors on the same carpet: Veteran HiFi with the Simply Black Magic turntable, Hesselvall with The Dream tube amplifier, Kimber cable from Nordic distributor Audio Connection, and a pair of Revolution speakers from Gradient. The Revolution is a two-part system with its 12in woofers housed in the lower module and separated from the midrange and tweeter in the upper head module. www.gradient.fi



If not one of the world's best sounding speakers then this full-range design from German company Manger must surely be one of the best looking. Dubbed the MSMP1, each cabinet stands 117cm tall and houses a Manger driver, characterised by its distinctive star-shaped membrane made using multiple neodym magnets and said to be able to handle frequencies from 80Hz up to 40kHz. This sits above a conventional 8in woofer from Scanspeak with the two drivers crossing over at 330Hz. www.manger-audio.co.uk



This kit from Thorens is said to ensure that 'your records will last a lifetime' and includes a carbon brush, a domed velvet brush, a stylus cleaning brush with liquid and a pump spray containing 200ml of anti-static record cleaning fluid with a lint-free cleaning cloth in the lid. All items can be purchased separately but are presented here in a German-made beech box. www.thorens.com

The Mimer from Swedish company Bladelius is a network player and preamplifier in one neat box. What's more, a small, hidden compartment at the bottom of the unit houses a two-channel amplifier. It's not out on the market yet, but it was powerful enough to drive a pair of fairly big floorstanding Elac speakers. www.bladelius.com



oppo

PM-1

Planar Magnetic Headphones



Proprietary Planar
Magnetic Technology

Life-like, Natural Sound
Quality

Balanced Ohno
Continuous Casting cable

Cable for mobile devices

Wooden storage box

Selvedge denim carry
case

High Sensitivity &
Scalability

Plush Padding &
Reduced Weight for
Exceptional Comfort

oppo-bluray.co.uk



The Swedish importer of Canton loudspeakers wanted to show off the full capabilities of the Reference 9.2 and Chrono SL 520.2 bookshelf models, so chose electronics from Esoteric in the form of a pair of A-80 monoblocks, C-03 preamp and CD-K07 CD player. A less powerful Onkyo pre/power also gave good results. www.canton.de/en

Swedish Wharfedale importer Michael Carlsson looks really at home alongside one of the company's big, retro Airedale Heritage speakers. Inside that large, chambered hexagonal enclosure (and yes, we're talking about the Airedale here and not Mike) can be found the company's famous upward-firing 'ambience tweeter' while mounted on the speaker's angled front baffle are four drivers, the largest of which is a 15in woofer with alnico magnets. www.wharfedale.co.uk



Lars Type 2 mono tube power amps from Engström & Engström were heard driving Focal Scala Utopia speakers. Based around twin 300B-XLS tubes, the The Lars is said to deliver 36W per channel. Lars Engström told us a preamp is to be launched at High End Munich this year. www.engstromengstrom.com

Onda Liger's WAVE 168D is a three-way speaker standing 122cm tall. It was paired with AudioAero's La Source disc spinner and Magnum Dynalab's MD 809 Wi-Fi tuner. www.ondaligera.com



For the first time outside of Norway, Paradox Audio showcased its cables, ranging from entry level sets to the ones pictured which carried a price-tag of around £6,500. Unlike many other cable companies, Paradox doesn't adhere to just one technology or philosophy but builds its cables according to how they are to be used, or customer expectations.



If the Bristol Motor Company made hi-fi then it would probably resemble components from UK company Herron: slightly quirky but also traditional. On show at Stockholm was the VTSP-3A preamp. All tubes on the inside, of course, but a fascia with a digital readout. www.herronaudio.com

Next month

We report from the Munich High End Show

Ex3ma measures

Ken Kessler hears the world's most costly 'small' monitor – at Sonus faber

RIGHT: The Ex3ma on its dedicated pedestal, photographed in the Sonus faber listening room. The height of the speaker plus stand is 1095mm. Just 30 pairs of the Ex3ma are to be made

Please forgive any melodrama: I am – genuinely – as stunned as any by Sonus faber's Ex3ma, which represents a radical event in high-end audio because the implications of its business model go beyond the product itself. Simply put, the Italian speaker firm has ignored the rules by which the high-end operates, turning instead to the realm of select, high-performance objects like supercars.

For once, an automotive analogy is inescapable: at 2013's Munich High End Show, Sonus faber displayed Pagani's Huayra – one of the world's costliest vehicles – with a bespoke system. Sonus faber's owners – Fine Sounds – is also the steward of McIntosh, Wadia and Audio Research, which undoubtedly helped in creating the car's 1200W amplification and the complex, dedicated DSP elements.

BEYOND DRAMA

Sonus faber's gains from working with Pagani go beyond the mere drama of turning up at a hi-fi show with a car that draws crowds the way Hollywood stars do at premieres in Leicester Square. Their engineers have clearly benefited from Pagani's expertise in the use of titanium, as well as carbon fibre.

Technology developed for the Aida and 'The Sonus faber' was used in the baskets of the Huayra's speakers, with hybrid 'avional/



BELOW RIGHT: The original Extrema of 1991, the resemblance unmistakable. Note the rear view of the speaker on the right showing the plate covering the B139 passive radiator. The plate doesn't just protect the driver but spreads the sound to create bass 'ambience'



gunmetal' structures calculated to damp natural resonances of the two materials. Speaker diaphragms used a special ultra-light carbon fibre optimised for audio, with due care paid to rigidity and damping. Neodymium magnets were used throughout, chosen for best performance and the lightest weight possible. It all presaged the Ex3ma.

EX3MA ARRIVES

So important is the Ex3ma to Sonus faber that the company held a massive press conference in Italy for a few hundred guests. I missed the unveiling but visited a few weeks later. It afforded me a tour of the factory which I hadn't visited in a decade, with the privilege of a

lengthy, private demonstration in Sonus faber's listening room.

It is likely that, due to the speaker's rarity and the fact that the limited production run has been allocated already to dealers and distributors, the Ex3ma may never actually go out for review. There's no point. Thus, this 'Investigation' has the unusual element of containing an unofficial 'mini-review'. To the best of my knowledge, I am the only outsider who had a one-to-one 'audience' with the Ex3ma, rather than a quickie demo. I left the sessions a changed man.

Should the Ex3ma's name seem forced or odd, note that Sonus faber is Italian, and manufacturers have every right to employ wordplay in



their own languages. The figure '3' in Italian is 'tre', pronounced like 'tray' – so say it out loud and you have 'Ex-tre-ma'. The '3' in the middle also signifies three decades since Sonus faber was founded – not a third edition because this is only the second speaker to use the Extrema name.

As homages go, this ranks right up there with the modern Mini or Tudor's revived Black Bay wristwatch. Sonus faber created an all-new model with a brand-new look, yet it is unmistakably descended from the original Extrema, which was reviewed in the August 1991 issue of *HFN*.

In the company's brochure, the mission statement reads, 'Sonus faber decided to pay homage to its most "extreme" project, remaining perfectly adherent to the intentions that characterised its creation.' Another surprise: I didn't know that the Extrema, which never inspired any models in its wake, was held – internally – in such high regard.

Those who knew the original will recall key elements that made the Extrema so novel. Most vivid was a look derived from its sloped and grooved front baffle, with a centre section of solid MDF finished in semi-gloss black, between sides of solid walnut. Underneath were massive, brutally utilitarian pedestals, while technical considerations added their own novelty value.

Not least was the use of the famed KEF B139 lozenge-shaped passive radiator, a crossover that

swallowed 10W on its own and user-adjustable levels of damping the lower

frequencies. The B139 was mounted at the back, firing at a metal plate that cleared the woofer by a couple of centimetres. The plate served as both protection for the driver and a means of creating bass 'ambience' by spreading the sound.

UPDATING A LEGEND

Most radical among the updates, besides the sleek and swoopy new shape, is the Ex3ma's main section, made from a carbon fibre shell. Although not new to carbon fibre, Sonus faber certainly learned a few tricks from Pagani: the 'monocoque'

shell is as complex as any I've seen for a hi-fi application. 'Cooked' in an autoclave in a custom-made mould fashioned from

six elements, the Ex3ma chassis is made of numerous layers of carbon fibre with various damping materials in-between. The overlapping is undertaken by a skilled worker, the Ex3ma genuinely warranting use of

ABOVE: Pagani's awesome Huayra supercar with its bespoke Sonus faber sound system

ABOVE LEFT: Fine Sounds CEO Mauro Grange. The Italian-based company oversees McIntosh, Wadia, Audio Research, and Sonus faber, of course

BELOW RIGHT: The monocoque chassis of the Ex3ma. Made from numerous layers of carbon fibre, it's this chassis that is the speaker's supporting structure

BELOW: The new interpretation of the revered B139 passive radiator



the term 'hand-made': only two or three Sonus faber employees out of the 42-strong staff can work on this particular model.

Lightness, once any speaker has been positioned, serves no real purpose, but other virtues of carbon fibre are cited as rigidity, non-deformability and damping. The structure is sandwiched between side panels shaped by CNC machines that call upon the violin maker's art, a technique championed by founder Franco Serblin that reached its apotheosis in the 'Homage' models. For the Ex3ma, the wood is red spruce from Val di Fiemme, also used in the manufacture of the finest stringed instruments.

Whether it's hype or art or science, the company admits that the actual supporting structure of the Ex3ma is the carbon fibre monocoque, which thus renders the wood panels – to a mere observer such as I – purely cosmetic. Nevertheless, Sonus faber, ever in tune (pun intended) with the effects of wood, suggests that it serves as a 'pure resounding element, exactly as in the sound board of string instruments.'

ALUMINIUM ALLOYS

As evinced by most of Sonus faber's recent efforts, aluminium has become a key ingredient in the brand's high-end ventures.

Two aluminium alloys, Avional and Ergal, have been used in the structure of the Ex3ma; Avional's properties of lightness and hardness were proven of value in the development of 'the Sonus





Statement. The London Debut.

28 - 29 May 2014

Naim's flagship amplification system arrives in London for the first time, exclusively at KJ West One. This is your chance to hear the pinnacle of performance in hi-fi through the Statement NAC S1 preamplifier and NAP S1 mono power amplifiers driving Focal Grande Utopia loudspeakers. There will also be a range of accessible systems from both Naim and Focal on demonstration for you to enjoy. **Places are limited so make sure you book early by email or telephone to avoid disappointment.**



KJ West One | 26 New Cavendish Street | London | UK W1G 8TY
T: 020 7486 8262 | info@kjwestone.co.uk | www.kjwestone.co.uk



faber'. For the Ex3ma, the material forms the front and the back of the speaker. Sheets of Avional are CNC-machined from solid billets and finished by hand to 'create a high mass structure that can dampen the stress produced by the powerful drivers.' The aluminium components work with the monocoque to hold it all together, in concert with inserts made of sheets of copper and viscoelastic decoupling materials.

Ergal is used in addition to Avional because it is regarded by the designers as the 'best of all conventional aluminium alloys in terms of hardness and mechanical resistance, precious characteristics for creating drivers with exemplary performance.' The structures of the Ex3ma's transducers are made by milling solid pieces of Ergal.

A material also popular of late with camera and watch designers for their cases is gunmetal. Sonus faber's gunmetal is a special alloy of copper, zinc and tin, and is employed in the baskets of the mid and low frequency drivers, with parts machined from solid billets. The combination of gunmetal and Ergal cancels 'reciprocal resonances'.

OLD TECH/NEW TECH

Sonus faber turned to rare, costly materials for the 30mm tweeter diaphragm: beryllium and diamond, the former first used back in 1977 in Japan. Those beryllium cones were produced with 'Physical Vapour Deposition', familiar to watch enthusiasts as PVD – the technique used to coat stainless steel watch cases a stealthy black.

Sonus faber reverted to this process for the beryllium, while

ABOVE: The Ex3ma's components laid out; note the beautiful machined basket for the passive radiator

BELOW: Elsewhere in the factory are cabinets awaiting drivers (left); Sonus faber's skilled leather workers preparing sections to cover the speakers' baffles

tempering the 'metallic effect' of the material with a surface treatment applied with the even more robust 'Chemical Vapour Deposition': a layer of DLC ('Diamond Like Carbon'). This has supplanted PVD for high-end

watch manufacture, and, yes, DLC costs more than PVD as it is more difficult to apply but more resistant to wear.

A diamond/beryllium hybrid should offer the best of both worlds, providing hardness and rigidity for extremely fast behaviour. The tweeter operates above 2.35kHz and is configured with its own rear 'decompression chamber' with acoustic labyrinth,

'Eyes closed, I could have been listening to a Wilson XLF'

INVESTIGATION

reinforced by CNC-machined Ergal. Handling the frequencies below it is a 180mm 'ultra dynamic linearity' mid-woofer with a neodymium magnet, with 6N pure copper voice coils. The proprietary diaphragm is a sandwich of nano-carbon material and a damping foam said to ensure optimal resolution.

An inverted DLC/beryllium dome cap further increases the rigidity of the cone and improves transparency, as does the Ergal-and-gunmetal basket. This mid-woofer is separate from the front panel, designed with its own 'acoustic chamber'.

CLEVEREST MOVE

Even more surprising, enough to make this old fart choke with nostalgia, was Sonus faber's cleverest move of all: it has re-engineered the long-obsolete B139, KEF showing no interest in

re-introducing it.

The new version employs materials of which Raymond Cooke could only have dreamed.

But if you own old KEFs, TDLs, IMFs or other vintage

speakers in need of new B139s, don't get too excited: Sonus faber is making them only for their own usage, despite the fact that repro B139s could prove to be a nice little earner in the aftermarket/DIY sector. ➔



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is the decision to destroy the mould and to make only 30 pairs, when anyone with a shred of commercial vision would release a 'normal production' model of less lavish specification to satisfy those who would love to own this masterpiece, but now never will. And it's also painfully obvious that Sonus faber's refusal to manufacture and market B139s, having already tooled up for them, is simply baffling.

FUTURE TECH

A wander around the factory, built in 2002, reminded me that Sonus faber has its own leather-craft department, which wouldn't look out of place in a shoe factory, or upholstering fine chairs. 'Hand-made' isn't a conceit here, nor is 'Italian-ness': all of Sonus faber's suppliers are within a 15km radius of the factory. A quasi-anechoic chamber, a listening room worthy of an audiophile – it took me back to my last visit, when Franco Serblin unveiled the Stradivari Homage.

Last May, Fine Sounds opened its Design Lab directly across the street. I saw glimpses of models that may not appear for two or more years, as well as previews of Audio Research amplifiers, McIntosh headphones and the new Lilium loudspeaker, due to be launched in Munich. The place is a buzz with clever designs, including a high-end one-piece system that will make interior decorators swoon.

Thirty-one years after Sonus faber completely up-ended the notion of plain, sterile, prosaic and/or ugly boxes, the company has lost none of its creativity. As much as the inherent rarity of the Ex3ma disturbs me, I'm just as pleased to note that Franco Serblin's legacy remains as influential as ever. ☺

It is a thing of beauty. A passive radiator developed completely in-house but to B139 dimensions and functionality, it has been dubbed E.M.B.A.B.R (Electro Magnetic Brake Auxiliary Bass Radiator), with variable damping as in the original Extrema.

Its flat diaphragm is made of carbon fibre, positioned midway between the sandwich structures of the mid-woofer cone and the monocoque. The basket was developed to eliminate all resonance, made from machined Ergal and gunmetal. The quality of construction is simply staggering.

The Ex3ma's crossover, too, is a model of superior construction. The user-adjustable bass damping has four positions; all hardware is of the highest quality and it should be easier to drive than the original, with 88dB sensitivity and 4ohm impedance: I heard it with a low-powered valve amp and the sound was truly impressive.

'Sonus faber has destroyed the Ex3ma's carbon fibre mould'

was rich, deep and convincing. Alas, it may prove to be as much of a cul de sac as its ancestor, should Sonus faber choose not to use it as a launch pad for similar models.

Which brings us to the downside. Sonus faber is making only 30 pairs of the Ex3ma, demonstrating its pledge by destroying the carbon fibre mould, and making a meal of it on YouTube. Moreover, the price is so forbiddingly high that it is best described as 'POA', for 'Price On Application'. But let's not be coy, the Ex3ma costs as much as a loaded Maserati Ghibli, a Patek Philippe Nautilus watch and a few cases of

Masseto. With enough left over for you to feed ten friends at The Ivy. And leave an eye-watering tip.

Normally I won't apologise for prices. I am of

the sort who silences the Scrooges of the world with a simple: 'No-one is holding a gun to your head to force you to buy Product X.' But the blood dripping down my shirt is from biting my tongue.

I am flabbergasted at a price nudging six-figures. Troubling, too,

ABOVE: Crossover components, before and after potting. Sonus faber uses Mundorf 'Supreme' capacitors and each crossover is tuned by R&D manager Paolo Tezzon

BELOW: Also to be seen was mint-condition, vintage Audio Research hardware which has inspired the range to be launched at the Munich High End Show; white card shapes hint at the profile and dimensions

ATTACK, DETAIL, CLARITY

What nothing can prepare you for is the soundstage created by a speaker measuring only 434x282x560mm (hwd) on a gorgeous pedestal standing 660mm tall. Eyes closed, and I could have been listening to a speaker the size of a Wilson XLF, with the height and three-dimensionality of a Sound Labs ESL. Open and airy, the Ex3ma does a disappearing act to rival the best I have ever heard.

Attack, detail, clarity – this speaker is a peerless thoroughbred that embodies all the tenets of 'high performance', yet it takes up so little space that it makes a mockery of most behemoths. Even the bass



Brinkmann Balance 2

Germany's Brinkmann Audio introduces its new flagship turntable, the Balance 2, featuring a wealth of innovative technology to extract the very best from your vinyl
 Review: **Adam Smith** Lab: **Paul Miller**

British visitors to the annual Munich High End Hi-Fi Show (full report next month) can sometimes be disappointed to find that not all companies with products on display plan to export them to the UK, which makes buying the components complicated. One company that does *not* fall into this category is Brinkmann Audio, whose new flagship turntable, the Balance 2 – a masterpiece of stylish understatement – is available in the UK via importers Symmetry.

The Balance actually dates back to 1984 and has remained the company's flagship despite the arrival of the Oasis and Bardo models that utilise Brinkmann's in-house designed direct-drive motor. You might have thought it logical for the company to use this system again for a new top model, but Helmut Brinkmann decided it was better to use his Sinus motor and a belt-drive system as a way to update the Balance. The result is a brand new model aimed at customers who had requested a two tonearm option (a gap created by the discontinuation of the company's LaGrange model).

Although not physically larger than the Balance, the Balance 2 takes up rather more space when fully loaded. The plinth is CNC machined from aluminium and supports both arm bases plus the bearing. It sits on three spiked feet that are adjustable for levelling, and the screw closest to the bearing has a copper insert that helps dissipate unwanted resonances from the bearing into the plinth.

The bearing is made of hardened stainless steel and rotates in sintered brass bushings. It is fixed into its housing, is non-removable and is maintenance free, but it's unusual in that the bearing assembly is heated in order to ensure the bearing operates at a steady temperature independent

of the owner's room conditions. This is achieved by a power MOSFET device located in the chassis that dissipates a steady 15W when active.

VALVE PSU UPGRADE

The platter that rides atop this bearing is 90mm high and made from a solid block of machined aluminium. Brinkmann has chosen a polished crystal glass mat, rather than one fashioned from acrylic as is more common these days, and this is recessed into the top surface of the platter. A small plastic disc sits around the spindle and a screw-down record clamp is fitted which presses the LP across the glass mat. The key here is not to over-tighten the clamp. It's equally important to keep that mirror-flat glass surface scrupulously clean, if only to avoid forcing specks of dust into the underside of the record.

The Sinus motor stands in its own pod and has exquisite touch controls for Off, 33.3 and 45rpm selection, each with a small red LED in the centre to indicate the unit's status, while trim-pots at the rear permit fine adjustment of each speed.

The motor is Brinkmann's own design [see box out, opposite] and was a further development of the company's direct-drive unit, which brings the platter up to speed in a relatively short time, given its substantial 18kg mass.

I was also pleased to note that Brinkmann's manual offers some guidance as to the placement of the motor pod in relation to the platter. All too often with designs of this type it is left entirely to the user, which does not help performance if the belt is then too tight or too slack [see PM's Opinion, p98].



RIGHT: The freestanding motor pod sits to the left of the chassis and has a lid to cover the pulley; the belt exits through a thin slot in the side and sits in a groove around the platter



As standard, the Balance 2 comes with a neat transformer pack that provides power for both the motor and the heated bearing assembly. An upgrade for the motor is available in the form of the Rönt II power supply – one of the few such units I can think of that uses valves to achieve its ends.

In this case, the valve line-up is one 5AR4 rectifier feeding two PL36 power pentodes. (The PL36 was released originally in 1956 and was designed for driving the line timebase output of television sets, so

providing the necessary power for a motor is well within its capabilities.)

Each arm base for the Balance 2 is connected to the chassis using a sturdy single-point fixing and different effective lengths may be accommodated by simply loosening the screw and rotating the whole mount as required.

For review, the Balance 2 was loaded with two models from Brinkmann's own range, the £2495 10.0 and the £4195 12.1. (A 10.5in version is also available at

£3895.) The 12.1 is, as the name suggests, a 12in design based around a double gimballed bearing. The counterweight and bearing housing are made from steel, with all other essential items in aluminium.

The counterweight is uncalibrated and also unthreaded so a stylus balance is required for setting the correct tracking. The magnetic bias compensation fitted is similarly undefined and so bias adjustment must be done by ear – better still by using an oscilloscope together

with a suitable test LP, so as to monitor and minimise distortion in each channel.

'NEAR UNIPIVOT' OPTION

The second arm fitted to the deck, the Brinkmann 10.0, is a newer design that was originally developed for the Oasis and Bardo turntables and is slightly different from the 12.1 and 10.5 in its execution. This arm is what Brinkmann describes as 'effectively a unipivot' as it has a miniature bearing mounted on a stainless steel tip for

ABOVE: The optional isolation platform accommodates the turntable's component parts very effectively. The two arms are easily aligned with the adjustable mounting bases

horizontal movement, although a second ceramic bearing lower down the shaft provides stability for the assembly which means that the arm does not wobble like a conventional unipivot. Vertical movement is provided by a second array of conventional bearings.

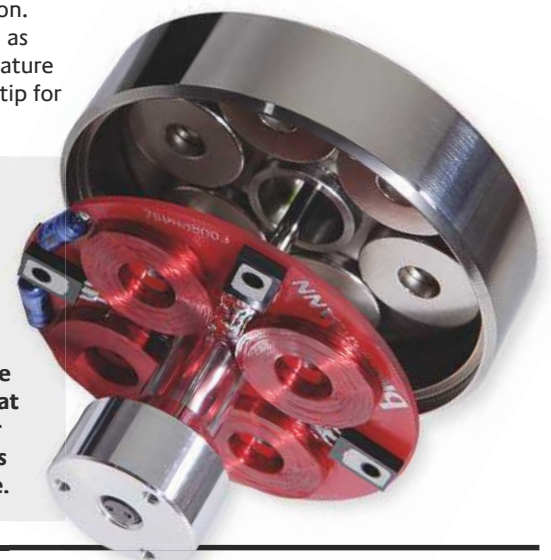
Both arms have screws beneath their headshells that can be loosened for cartridge azimuth adjustment and both also have a hex-headed screw running vertically through their mounting plates. Once the screw clamping the arm into its base is loosened, this hex item can be adjusted to increase and decrease VTA.

The 12.1 arm was supplied with Brinkmann's £2495 open-bodied EMT-Ti cartridge; essentially an updated version of the classic EMT low output moving-coil. ➔

'A PSU upgrade for the motor, the Rönt II, uses a trio of valves'

SINUS 'DIRECT DRIVE'

The Sinus motor came about as a result of Helmut Brinkmann's research in the development of the direct-drive motor for the Bardo and Oasis models. Previously the company had used Papst motors in conjunction with its own analogue speed controller, but the direct-drive unit gave greater insight into magnetic fields and how they can be controlled to reduce cogging. Helmut duly applied this to a new motor that could be used to turn a belt and the Sinus was the result. Here, the unit uses a four phase drive arrangement involving four coils 90° apart. Neodymium magnets ensure great efficiency and are arranged such that the drive circuit achieves 12 pulses per revolution. The rotor is then topped by a 500g flywheel that evens the pulses out and culminates in a motor that is smooth, silent and has plenty of torque.





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TURNTABLE

HELMUT BRINKMANN

We asked Helmut Brinkmann why he'd not used his direct-drive motor for the Balance?

'We don't think that direct drive is in principle better than belt. The Balance's new Sinus motor uses many of the technical aspects of our direct-drive motor, transferred to the needs of a belt drive.

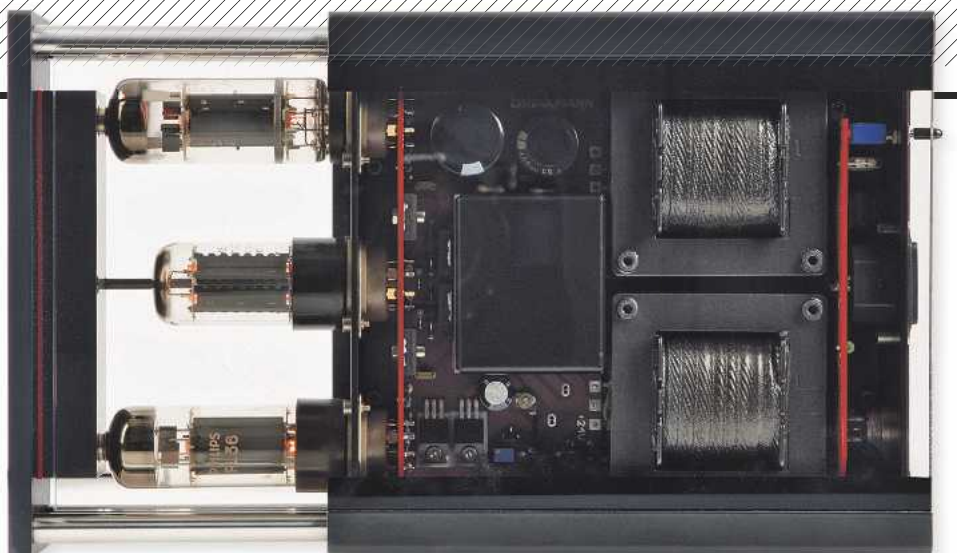
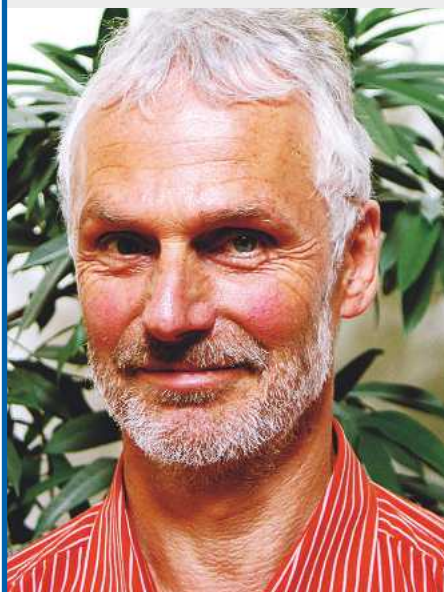
'That way we can add some aspects – good speed stability, low wow and flutter and cogging – to the belt drive that are usually a strong "plus" of the direct drive. On the other hand, we can keep a heavy platter without the need for a very powerful motor to drive it.'

What are the advantages of utilising valves in the RÖnt II PSU?

'The tubes in the RÖnt II act like a mains power conditioner, due to their vacuum. Additionally, they add all the sonic advantages of tubes like better texture and musical flow, just as in a good amp. Our circuit works similarly to a Class A single-ended amplifier, the motor in this case being the output load.'

What about the heated bearing?

'We have very low play in the bearing to provide stability for the heavy platter but the aluminium bearing housing can change this small gap as its temperature varies. The bearing heating helps to provide the tolerances for flawless working. This is only given when the oil gap and the viscosity meet exactly, and this is the case only in a small temperature window.'



ABOVE: The RÖnt II power supply uses PL36 valves to drive the motor. It is supplied with its own granite base in order that heat from the valves does not affect the supporting surface

For the review I fitted my own Ortofon Kontrapunkt B to the 10.0 tonearm.

A WEALTH OF DETAIL

The final item making up the review deck was Brinkmann's M3X isolation platform, developed by Harmonic Resolution Systems in the USA. This consists of a black granite plate located within a black anodised machined aluminium billet. Four sprung isolation feet then firmly support this structure – there is no alarming feeling of instability, which is reassuring given the weight and price of the turntable itself!

Starting with the 10.0 arm and Ortofon cartridge and the deck powered by the standard PSU it was interesting to revisit a truly high-end turntable design. Some might wonder if every record played is a jaw-hits-floor moment, with the feeling that every song sounds completely different from what you've heard before. Well, this can occur on occasion, but generally the truth is somewhat different and rather more complicated – but I was aware that the Brinkmann was bringing things to life that I had previously been unaware of, with a sense of solidity, focus and scale only hinted at by more affordable, albeit competent, designs.

With my regular first test-track of The Eagles' 'Long Road Out Of Eden' from the album of the same name [Universal 060251749243 1], all the artefacts of the piece were present, correct and highly detailed, but I was rather surprised by the way in which the bell that tolls quietly in the background during the intro to the song had real weight to its strikes. Usually this is evident but is very much something that lurks in the distance. The Balance 2

shone a spotlight on it and really dragged it into the main action in an uncanny way.

The reason for this was simply that the Brinkmann has some seriously weighty bass behind it. The kick-drum strikes punched out with real force and bass notes were solid but without making everything sound boomy and overblown. It never seemed to be trying to thump and bang its way into grabbing my attention: rather the whole performance had a big, enthusiastic gait to it and presented an overall feeling of commanding effortlessness.

To accompany this, Don Henley's vocals projected from my loudspeakers in a most gratifying manner, giving the whole song a commendable sense of depth and scale, with backing instruments around him easily placed within the soundstage. I did feel that this soundstage appeared not to have a great deal of lateral extension

beyond the limits of the loudspeakers themselves, but the Brinkmann certainly made the most of the central area, filling it with great precision.

'Brinkmann's 12.1 tonearm could rock with the best of them'

WITH THE HEAT ON

Equally impressive was the Balance 2's rendering of instruments, whether acoustic or electronic. Each was pushed out into my room as it took up the main action and then dropping back as attention re-focused elsewhere. The Brinkmann's midrange is definitely an appreciable quality.

At this point, I decided to see what some thermionic assistance might bring and so connected up the RÖnt II power supply which had been quietly warming up. My stopwatch told me that the start-up time was now a second or so quicker – which does not sound much but revealed

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ABOVE: The chassis-mounted power plug is for the bearing heater. Both arm leads are terminated in easily accessible phono sockets within the arm mounting bases

that there were indeed changes afoot. Not all supplies are equal, it would seem.

This proved to be true when listening, as the RōNt II made some interesting changes to the sound that initially seemed subtle until the original power pack was re-connected, whereupon their absence was notable.

I observed an even greater sense of bass weight and was a little concerned that this was becoming a little too much at times, particularly with fulsome tracks such as 'The Painter' from Sara K's *Water Falls* album [Stockfisch SFR 357.8025.1].

In this, Hans-Jörg Maucksch's fretless bass is the driving force behind the whole performance and the addition of the RōNt II seemed to blow it *slightly* out of proportion.

Playing the song a second time though revealed that, in fact, it was simply allowing the deck to dig deeper into the texture of the notes, fleshing them out better.

An interesting side-effect of this was that Sara K's vocals seemed more vivid and slightly crisper. All in all, the RōNt II power supply certainly brought worthwhile changes to the overall presentation.

SWAPPING ARMS

The final swap-around of the session saw me re-connecting the leads from my phono preamplifier to the 12.1 tonearm with its EMT-Ti cartridge, and this proved to be something of an ear-opener. The relative lack of soundstage width I had noted with the 10.0 arm was suddenly a faint memory since the Brinkmann now filled the width of my room with a superbly cavernous recreation of the studio.

The character of the music seemed to shift back a gear slightly, with the 12.1 having a more relaxed feeling to it, rather than the more up-front presentation offered by the

10.0 – which is not to say it was in any way soporific. Rather, it made songs such as Deacon Blue's 'When Will You (Make My Telephone Ring)' from their *Raintown* album [CBS 450549 1] clearer, whereas with the 10.0 in charge this track was a little splashy sounding.

A SONIC BALANCE

Some of this was of course down to the cartridge, as a subsequent swap across between the two arms revealed. The EMT-Ti definitely added smoothness and a slightly more cerebral hint of authority to proceedings, but it was never less than joyously musical and rhythmically proficient.

On the other hand, the 12.1 tonearm was responsible for the superb opening-up of the soundstage and could still rock with the best of them when fitted with my own Ortofon cartridge. In the past I have found some 12in arms to be a little over-smooth for my taste, particularly when heard alongside their 9in or 10in brethren, but the Brinkmann 12.1 strikes a very capable sonic balance and was thus my preferred choice of the two pick-up arms evaluated. ☺

HI-FI NEWS VERDICT

The Balance 2 is a fitting flagship for the Brinkmann range and a true high-end product, offering intelligent engineering and superb sound. Both tonearms tested offer their own slightly different takes on proceedings and can be used to fine-tune the end result desired by the user, as can the addition of the RōNt II power supply. Choose each by audition and this could be the last turntable you'll ever need.

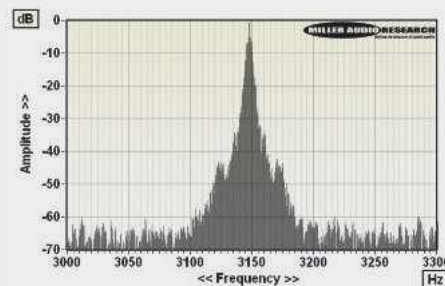
Sound Quality: 82%



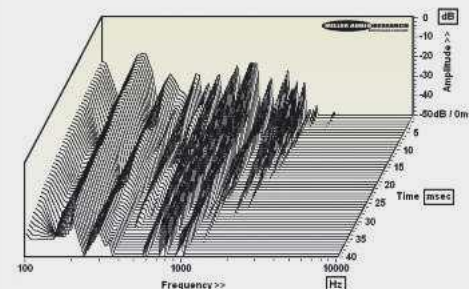
BRINKMANN BALANCE 2

The Balance 2 turntable's intriguing heated bearing assembly claims to maintain the tolerances of its stainless spindle and brass sleeve despite rotational friction and variations in environmental temperature. Left to run-in over a 24-hour period the Balance 2 achieved a fine DIN B-wtd rumble of -71.5dB via the bearing and -68.3dB via the LP groove, the latter more reflective of 'real world' use. Excellent speed accuracy is possible via the 33.3/45rpm trimpots, the deck offering exceedingly low wow (~0.01%, peak-wtd) and only slightly higher flutter [see Graph 1, below]. It's worth fine-tuning the deck's speed once the bearing has fully warmed-up, after which any residual drift is exceptionally low.

Brinkmann's 12.1 tonearm looks quite 'lively' – the cumulative decay waterfall [Graph 2] indicating the main beam resonance of its long (anodised aluminium) tube is either sub-100Hz or higher at 183Hz, followed by a series of breaks at 280Hz, 420Hz, 570Hz and 765Hz. The midrange/higher frequency 'chatter' is seemingly associated with the bearing yoke, arm lift device *etc* [see Graph 2, below]. Otherwise, the needle-point bearings are perfectly adjusted for minimum friction (<10mg in both planes) while suffering no perceptible play, although the high 14g effective mass necessarily confers compatibility with MC's offering a combination of low compliance and modest bodyweight (Brinkmann's partnering EMT-Ti is rated at 15cu and 11g, respectively). Readers may view full QC Suite reports for Brinkmann's Balance 2 turntable and 12.1 tonearm by navigating to www.hifinews.co.uk and clicking on the red 'download' button. PM



ABOVE: Wow and flutter re. 3150Hz tone at 5cm/sec (plotted ±150Hz, 5Hz per minor division). Some flutter but very low wow (excellent pitch stability)



ABOVE: Cumulative tonearm resonant decay for the 12.1, illustrating various bearing, pillar and 'tube' vibration modes spanning 100Hz-10kHz over 40msec

HI-FI NEWS SPECIFICATIONS

Turntable speed error at 33.33rpm	33.45rpm (+0.34%)
Time to audible stabilisation	7sec
Peak Wow/Flutter	0.01% / 0.03%
Rumble (silent groove, DIN B wtd)	-68.3dB
Rumble (through bearing, DIN B wtd)	-71.5dB
Hum & Noise (unwtd, rel. to 5cm/sec)	-62.6dB
Power Consumption	75W (65W idle)
Dimensions (WHD)	550x140x430mm

VTL S-200 Signature

Promising tubes without tears and plenty of power, this imposing heavyweight is the first stereo amplifier to join the monoblocks in VTL's high-tech Signature Series

Review: **Steve Harris** Lab: **Paul Miller**

When a company chooses to call its amplifiers Wotan and Siegfried, you expect something heroic, and indeed the VTL Wotan Reference MB-1250 was one of the world's most powerful production tube amplifiers when it was launched in 1995. But those Wagnerian names might also convey something about the musical interests of president Luke Manley and his company's commitment to serious music.

As he says, 'We've always felt that valves are really good for music, because they don't need very much error correction from negative feedback. But I've found users today are more music lovers than hands-on hobbyists, people who don't really want to fiddle with the amplifiers. If you think about our auto-bias and fault-sensing systems, this makes it an amplifier for people who just love music.'

GLOWING LIKE GOLDFISH

These user-friendly features are a major aspect of the current VTL Signature Series, including the latest S-200 Signature Stereo power amp reviewed here. Below the range, VTL has the Performance Series of simpler, manual-bias power amps, and at the top of this line is the 150W/channel stereo ST-150. But the Signature amplifiers also feature fully-balanced circuitry, bigger main power supplies and separate power supplies for the input and driver stages.

So the S-200 was developed to meet a demand for an amplifier priced between the most powerful Performance Series model and the upscale Signature Series monoblocks. Though based, like the ST-150, on four 6550 output tubes per channel, it has newly-designed output transformers, a larger power supply, and the Signature Series control electronics.

When running, the tubes can be seen through the smoked glass front window,

discreetly glowing like fish in a dimly-lit tank. Lurking to left and right are the big output tubes, four on each side. As standard, the S-200 comes with 6550s, but our sample was fitted with KT88s, an option that adds £200 to the retail price.

As the 'Balanced Drive' wording on the glass proclaims, there is a fully-balanced differential input stage, feeding a phase-splitter which drives the push-pull output stage. In this dual-mono layout, the two small tubes at the front are 12AT7 (or ECC81) double-triodes for the input stages, and behind them is a pair of 12BH7 double-triodes for the left and right driver or phase-splitter stages. Nestling between those driver tubes are the two small toggle

switches for VTL's variable damping factor control, an innovation that has already been applied to several Reference Series and Signature Series models.

The DF switches adjust the level of negative feedback around the output and driver stages, altering the amplifier's output impedance and consequently the damping factor (the ratio between the amplifier's output impedance and that of the speaker it is driving).

In VTL's Siegfried Series II Reference monoblocks, and also in the MB-450 Series III and MB-185 Series III, the Damping Factor control offers four possible settings. But other models, including the S-200, give a choice of three settings. In either



RIGHT: Substantial PSU and output transformers dominate the rear of the chassis while, within the cluster of tubes, VTL allows speaker damping factor to be selected



case, 'Low' gives the minimum amount of feedback and hence the lowest damping factor, for 'the least loudspeaker control, and the most natural sound'.

MATCHING AMP TO SPEAKERS

Giving more control for 'speakers that need it', but with some impact on sound quality, the 'Med' and 'Hi' positions increase the feedback by 2dB steps. So while the S-200 doesn't have the usual 4ohm and 8ohm speaker connection options, DF switches can be used instead to matching the amp to your speakers.

When powered up by the main rocker switch on the amp's rear panel, the internal logic system checks that everything is in order. Behind the glass front, the green LEDs on the deck behind each of the eight output tubes flash briefly in sequence, and the Mute LED will light green to indicate that the amp is in standby mode.

To go from standby to operating mode, you touch the centre Power button, when its LED will glow blue, while the Mute LED

will flash red for around 30s, during which time the power tube LEDs will blink once again, showing that the auto-bias system is calibrating the bias voltage for each tube. Leftmost of the three buttons is the Mode switch. On coming out of standby, the Mode LED will indicate whether the amplifier was last set for triode or tetrode operation, by glowing green or red respectively. A touch of the button will switch from one to the other, with the amplifier automatically muting for a few seconds during the changeover.

Once the Mute LED goes out, the amplifier is fully operational and you can play music. However, this LED also comes into play with VTL's fault sensing system. If it flashes rapidly, there is a power fault, eg, a blown fuse, or a tube fault. If one of the output tubes is drawing excessive current, its adjacent LED will blink green or show solid

'The DF switch set at "Low" produced one of those jaw-dropping moments'

ABOVE: With tubes seen glowing through smoked glass, the S-200 shares the control system of VTL's Signature Series monoblocks, and offers switchable triode/tetrode operation

green. In this case, the user can switch off and replace it.

With a non-critical fault, such as low current draw, both its own LED and the front-panel Mute LED will blink green slowly. In this case, the amplifier will continue to function, but the tube should be replaced as soon as possible. Happily, none of that happened

when I switched on. After a couple of gentle relay clicks from inside, the amplifier pronounced itself ready to play.

TRIODE MODE WINS

I first left the S-200 to warm up with a CD on repeat. It just happened that the disc in the player was *Remembering Big Bill Broonzy* [Beat Goes On Records BGOC91], a collection of mono tracks from 1951. Hardly modern standards, I know, but when I came into the room to start listening, it sounded so arrestingly good that I just let it play. As the amplifier was then running in the normal tetrode mode, I couldn't resist testing out the triode. And this was something else. Now there was an even freer and more natural quality to the music, a real feeling that you were hearing an actual performance.

Reverting to tetrode mode for Mitsuko Uchida and the first of Debussy's *Etudes* [Philips 422 412-2], which begins deceptively with the simplest of finger ➔

A FAMILY BUSINESS

It was in 1983 that the late David Manley arrived in the UK from South Africa and set up the original Vacuum Tube Logic company. As a recording engineer, he'd turned to tubes to get a better sound in the studios. His teenage son Luke came too and worked with him to build up the business in the UK. They then moved to the US, and started VTL USA in 1987. In 1989, David launched new pro amplifiers under the Manley brand, and at first these were manufactured in the existing VTL facility. But 1993 saw a parting of the ways, and a complete separation of the two businesses. While David now ran Manley Labs, still focused on pro audio, Luke took full control of VTL, developing more sophisticated amplifiers for the high-end market. Today, Luke runs the company with the help of his wife Bea Lam, an audiophile and trained classical pianist who also has a degree in electrical engineering and a master's in computer science. He was happily back in the UK last year to demonstrate VTL's latest products at the HFN Hi-Fi Show.

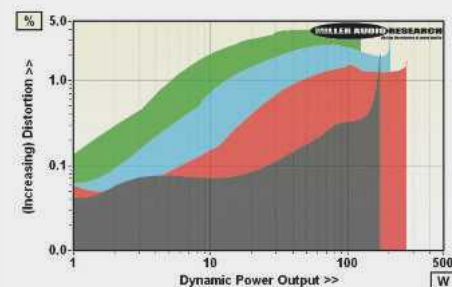


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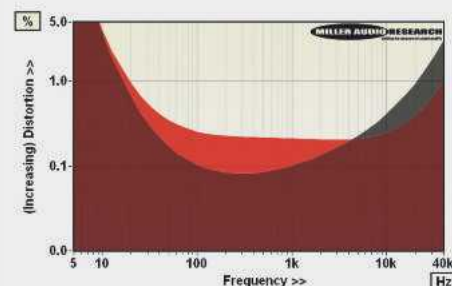
VTL S-200 SIGNATURE

Rated by VTL at '200W in Triode and 100W in Tetrode' modes, the power, distortion and frequency response of the S-200 Signature seems optimised for ~50hm loads (set for 'Medium' damping factor under test here), the amplifier yielding closer to 155W/95W respectively into 8ohm with a healthy 2x240W available into 4ohm. The 'Medium DF' output offers a moderate 2ohm source impedance that's very flat across the audio range and goes on to deliver 175W, 270W and 195W into 8, 4 and 2ohm loads under dynamic conditions [see Graph 1, below]. Maximum current is ~11.2A at <2% THD, further suggesting the S-200's compatibility with minimum 4ohm-load speakers. Distortion climbs gently with output through the midrange from 0.05% at 1W to 0.08%/10W and 0.25%/100W while the hefty transformers allow a good deal of power at very low frequencies (0.25% at 20Hz/10W). [See Graph 2, below.]

The 2ohm source impedance will modify the amp/speaker system response with variations in the latter's impedance trend, but into a 'flat' 8ohm load the response is very uniform and stretches up to 65kHz (-0.1dB) before rolling away to -1.35dB/100kHz. Unlike many tube amps, there's no obvious ultrasonic transformer resonance or notch in response, instead there's a broad lift in >20kHz output with decreasing load reaching +0.4dB, +1.2dB and +2.6dB/65kHz into 4, 2 and 1ohm. Below 1kHz there's a very gentle shelf amounting to -0.1dB/100Hz and -0.13dB/20Hz but this shouldn't influence its bass performance. The A-wtd S/N is acceptable but not exceptional at 82dB (re. 0dBW). Readers may view an in-depth QC Suite report for VTL's S-200 Signature amplifier by navigating to www.hifinews.co.uk and clicking on the red 'download' button. PM



ABOVE: Dynamic power versus distortion into 8ohm (black trace), 4ohm (red), 2ohm (cyan) and 1ohm (green) speaker loads. Optimised for ~50hm loads



ABOVE: Distortion vs. frequency from 5Hz-40kHz at 10W/8ohm (left = black; right = red)

HI-FI NEWS SPECIFICATIONS

Power output (<2% THD, 8/4ohm)	155W / 240W
Dynamic power (<2% THD, 8/4/2/1ohm)	175W / 270W / 195W / 125W
Output impedance (20Hz-20kHz)	2.08-1.98ohm
Frequency response (20Hz-100kHz)	-0.13dB to -1.35dB
Input sensitivity (for 0dBW/150W)	60mV / 760mV (Balanced in)
A-wtd S/N ratio (re. 0dBW/150W)	82.4dB / 104.2dB
Distortion (20Hz-20kHz re. 10W/8ohm)	0.075-0.93%
Power consumption (Idle/Rated o/p)	310W/680W (3W standby)
Dimensions (WHD) / Weight	470x230x457mm / 48kg



ABOVE: Rear connections include balanced inputs – a selector switch grounds the unused phase for unbalanced. A trigger input allows remote power-up from standby

exercises, there was immediately a gorgeous sense of Uchida's velvety touch and a fine sense of the acoustic space. Switching to triode mode gave an even sweeter sound to those soft single notes, and an even more enveloping quality to the Snape acoustic.

Zoe Rahman's 2007 album *Live* [Manushi MANUCD003] was recorded at the Dean Street Pizza Express, a venue that presents the opposite kind of challenge to the big reverberant space of Snape Maltings. Once again, I found myself preferring the triode sound, which seemed to give a truer impression than I'd ever heard of the piano and the acoustic setting on this disc.

GAINS IN PRESENTATION

The DF switches at the Mid position were deemed appropriate for the B&W speakers I was using, but of course I had to try the low-feedback alternative – adjusting the volume to compensate.

Setting the switch to Low produced one of those jaw-dropping moments, where a sound that I'd already thought was excellent became even better. With Patricia Barber's 'Snow' from *The Cole Porter Mix* [Blue Note 50999 5 01468 2], I was hearing more depth, a greater sense of three-dimensional presence from Barber herself when singing, while Neal Alger's beautiful guitar had a yet more luscious and mellow presence. I didn't think the bass end was compromised, and I really appreciated the gains in overall musical presentation.

After that, on practically every recording I tried, the VTL amplifier brought unexpected pleasures. It could bring out the best in a silky-smooth audiophile offering, like the Mozart Clarinet Concerto with Musical Fidelity

boss Antony Michaelson as soloist, engineered by Tony Faulkner in the acoustically favourable Henry Wood Hall [MF017]. Here the VTL was gorgeously light, airy, and spacious with a delightful string sound and a beautifully clean and open bass end.

On studio rock recordings too, the VTL evinced a very satisfying LF sound, deep in extension and coherent in the integration with the frequencies above. Low parts, whether taken by an acoustic string bass or a bass guitar, always seemed to take their proper place as the foundation of an arrangement, because the sound, from the fundamental to the higher harmonics, seemed to have the wholeness of a real instrument.

A great example was Ry Cooder's *Bop Till You Drop* [Warner 7599-27398-2], where a bass part that can often sound opaque and mechanical had unambiguous pitches and a real bounce. And this was really just an aspect of the fine open quality of the sound as whole, which allowed you to hear and appreciate the many strands in a complex mix without effort. ☺

HI-FI NEWS VERDICT

Amplify fulfilling VTL's mission to make tubes user-friendly, this well thought-out design brings all the benefits of glowing 'bottles' with hardly any of the headaches. As for the sound itself, it would be true to say that the VTL gave fresh insights to everything played, but that wouldn't convey what this amplifier does. Simply, the S-200 offers endlessly absorbing, effortless musical enjoyment. Warmly recommended.

Sound Quality: 84%



PMC twenty.26

This floorstander is the first three-way design in the twenty series and it's a commanding figurehead for the range

Review: **Adam Smith** Lab: **Keith Howard**

There's little doubt that a good three-way loudspeaker does many things effortlessly in a manner that even the best two- or two-and-a-half-way designs struggle to match. However, this is only true if the design is carefully thought through and judiciously implemented. Such a concept holds no fears for PMC, however, and its latest loudspeaker takes just such an approach to create a fine addition to the 'twenty' range.

It was during the development of the fact 12 – the top of the 'fact' range [see *HFN* Nov '13] – at the National Physical Laboratory that the idea of something along similar lines for the twenty series came about. The general intent was to trickle down some of the fact 12's abilities into the lower line-up, creating a bridge between fact and twenty.

Although the bass and midrange drive units on the twenty.26 may seem similar to those of the fact, they are completely new and only found on this loudspeaker so far.

The twenty.26's tweeter is the one unit carried over from the existing models and is the well proven Solonex 27mm soft-dome unit developed by SEAS in conjunction with PMC. In the smaller two-way designs this crosses over at a relatively low 1.8kHz but in the twenty.26 its output is rolled off below 3.8kHz to hand midrange duties over to the new dome mid driver.

This unit is something of a work of art and marks a big step forward in technology for PMC – a company which, let's not forget, has been using domed midrange drivers for longer than most. Designing a good dome midrange is much more difficult than a tweeter because of the greater size and the resulting compromises necessary in the material, stiffness and shape: all of these have an effect on frequency response, off-axis performance, breakup modes and power handling. Thanks to the help of the NPL, however, PMC has come up with a 50mm driver that utilises a very light yet rigid fabric dome, covered with a carefully configured

grille that aids dispersion. The pole piece of the driver behind the dome is damped in order to reduce internal reflections within the chamber and thus minimise distortion.

COMPLEX CROSSOVERS

Below 380Hz, the dome hands over to a 180mm bass driver based around a lightweight natural fibre cone, coated with a layer of doping. This driver features a vented pole piece that allows freer cone movement for lower distortion, but a side effect of this can be that the air pressure under the dust cap is reduced – which normally provides an effective brake to the cone as it approaches its excursion limits.

To this end, PMC has added a 'bulge' to the rear of the pole plate to give the coil more clearance, and has utilised a suspension design that progressively tightens at maximum travel to bring the coil to a gentle halt at the extremes of its movement. This then feeds into the 3.3m long transmission line (which is over a foot longer than that of the twenty.24).

All three drivers are allied using a relatively complex crossover that offers fourth order slopes between each unit. The circuit is laid out on a solid military-grade board with thick tracking and gold through-plating in order to allow maximum current flow. The board is directly connected to the rear of the tri-wire terminals. All crossover components were chosen following careful listening tests.

Standing just over 1m tall, the twenty.26's cabinet is certainly no shrinking violet but it is handsome and the sloped-back aspect of the front baffle is very stylish, which makes the PMC's appearance stand out from their competition. The review pair

RIGHT: Fitted neatly to the trademark sloping baffle are two new drive units for bass and midrange that work with the well proven twenty series tweeter. The extra bottom grille covers the larger transmission line vent chamber





BUILDING FOR THE PROS

Despite offering a wide range of domestic models, PMC is equally known for its professional designs and many enjoyable albums have been mastered using a pair of its loudspeakers. Several passive units are available but the largest selection is to be found in terms of active models. The three-strong 'twotwo' range is the most recent addition, all fully amplified and offering DSP sound control, plus configurations that have been optimised so that the speakers perform equally well oriented either vertically or horizontally. The crowning glory, however, is the mighty BB5/XBD-A combination, featuring over 2kW of matching Bryston amplification. These are used in many studios, including Metropolis and the BBC's Maida Vale location. They boast a weight of 136kg, four 15in bass drivers, low frequency extension down to 17Hz and a total height of just under seven feet!

were finished in walnut real wood veneer but oak, amarone and gloss diamond black are also available. Full-length grilles are provided with invisible magnetic fixings. At the very bottom, the stabilising plinths are 5mm thicker and 30% heavier than those of the twenty.24s to cope with the extra mass of these larger cabinets.

Double-ended spikes are supplied that are carpet-piercing at one end and rounded at the other so as to inflict minimal damage on wooden floors. As per the existing models, the plinths also feature cork and rubber isolation mounts that decouple the cabinet from the floor, with the promise of better stereo definition and tighter bass.

NEW GAINS IN INSIGHT

The twenty.26s were connected up and run in for a good week before listening began; and I was very keen to know not only how they would sound in their own right, but also how they would compare with the twenty.24s which I've been using as my reference loudspeakers for well over a year now.

As the first bars of Steely Dan's 'Jack Of Speed' from their *Two Against Nature* CD [Giant 9247 19-2] rang out, I had a feeling that I was going to like the twenty.26s – and this proved to be the case. The initial bass notes went deep, but the very subtly strummed electric guitar out at the extreme right-hand side of the soundstage was more vivid than I have heard it for a long time: sometimes this is so subtle, it wanders quietly off into the mix, to end up somewhat lost.

When the drums came in, I was greeted with hi-hats that were delightfully crisp and yet completely free of any harshness. At one point in the song, Donald Fagen emphasises the word 'routine' and the 't' in the middle often catches out unwary tweeters to

make them splutter momentarily. Through the twenty.26s, however, it was most certainly prominent, but now merely a clean, fleeting artefact.

I had initially lined-up the speakers pointing directly at me, but noting that central vocal imagery was a little diffuse, I widened their aim to follow PMC's recommendation in the manual that their axes should cross around 500mm behind the listening position. This proved to be a highly effective move, ensuring the stereo images set up by the PMCs had a tactile solidity. The main vocal action became prominent, stretching out towards me by just the right amount, with drums behind and guitars at the extremes on either side. Underpinning everything was this convincingly firm bass line, which was tuneful and flowed with ease.

The more I listened, the more I realised that the twenty.26 built further on the already impressive strengths of drive unit cohesion that marks out their smaller twenty.24 brothers. Mating three drive units instead of two is a greater challenge and in the past I have come across more than one loudspeaker where I have felt that I'm listening to three fine drive units that just happen to be playing the same song at the same time, rather than giving a truly integrated overall result. The entire frequency range emanating from the twenty.26s gels absolutely seamlessly, though, and the result is music on a grand scale, pure and simple.

A particular strength of the model has to be the midrange dome. It is nothing short of remarkable in terms of the way in which it can dig the finest of detail from the instruments on offer and serve them up in an easy manner. A couple of times I switched back to the twenty.24s on tracks I knew well, to make sure that something I seemed to be hearing for the first time through the 26s was actually always there! In each case it was, but it just was a bit ➤

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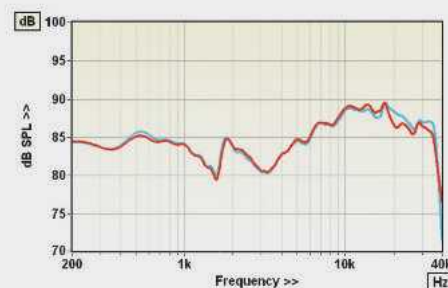
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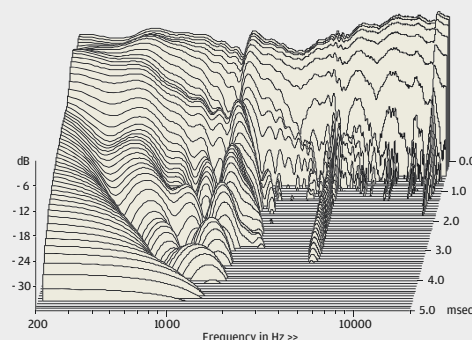
PMC TWENTY.26

PMC claims an 86dB sensitivity for the twenty.26 which squares fairly well with our pink noise figure of 85.3dB. But that includes the twenty.26's rising treble output, which provides for a more balanced treble when the speaker is listened to off-axis as intended. With this flatter response the twenty.26's sensitivity will fall to below 84dB – low for a floorstander of this size. I said of the Fact.12 [*HFN* Nov '13] that 'PMC has resisted any temptation to use low impedance to enhance sensitivity' but that is less the case here. A minimum measured modulus of 3.4ohm indicates that the nominal impedance should be 4ohm, not 8ohm as specified, and impedance phase angles are large enough to drop the minimum EPDR to 1.5ohm at 91Hz, making the twenty.26 a little more difficult to drive than typical floorstanders of this size.

Measured on the tweeter axis, the frequency response [Graph 1, below] is characterised by two dips in output prior to the rising treble, at about 1.6kHz and 3.2kHz. Lowering the mic position did nothing to eliminate these. Together with the treble rise they result in response errors of $\pm 5.0\text{dB}$ and $\pm 4.8\text{dB}$ respectively, 200Hz–20kHz, but while these figures are a little on the high side they will be reduced when listening off-axis. Pair matching was tight at $\pm 0.8\text{dB}$ up to 18kHz but worsened a little to $\pm 1.3\text{dB}$ by 20kHz. As is usually the case with transmission line designs, near-field bass output was somewhat uneven so the reference frequency for bass extension was lowered to 150Hz, –6dB then occurring at 41Hz. The cumulative spectral decay waterfall [Graph 2] reveals distinct resonances at about 1.6kHz, 5kHz and 18kHz. KH



ABOVE: Forward response trend shows two dips in the mid/presence but strong treble is tamed off-axis



ABOVE: Cumulative decay waterfall reveals the peak following the response dip at 1.6kHz as a resonance

HI-FI NEWS SPECIFICATIONS

Sensitivity (SPL/1m/2.83Vrms – Mean/IEC/Music)	87.3dB/85.3dB/84.4dB
Impedance modulus min/max (20Hz–20kHz)	3.4ohm @ 116Hz 18.5ohm @ 45Hz
Impedance phase min/max (20Hz–20kHz)	–64° @ 56Hz 31° @ 301Hz
Pair matching (200Hz–20kHz)	$\pm 1.3\text{dB}$
LF/HF extension (–6dB ref 150Hz/10kHz)	41Hz / 36.4kHz/37.0kHz
THD 100Hz/1kHz/10kHz (for 90dB SPL/1m)	1.2% / 0.2% / 0.3%
Dimensions (HWD)	1062x190x439mm

LEFT: The large cabinet necessitates a thick and sturdy plinth to ensure stability and provide an optimum location for the dual-purpose spikes. Three pairs of terminals permit tri-wiring or tri-amping

As he plays the song he taps his foot on the floor, and this underpins the performance with an unexpected bass beat. This can spotlight what I perceive as the 'timing ability' of a speaker, and I did notice that the beat seemed to lag behind by the merest fraction. Moving back to the twenty.24s corrected this yet robbed some of the impact. The '26s are in no way wallowy or slow but they can occasionally lack the very last vestige of 'timing' precision that their smaller brothers do so well.

RATTLING THE ORNAMENTS

Of course, transmission lines mean big bass and so I felt that something a little naughty had to go on the turntable. I chose 'Takes You Back (Unexpected Dub)' from Jazzanova's *In Between* [JCR 025-1]. This track has some wild synthesiser bass that can rearrange shelf ornaments at the right volume level, and the PMCs had no trouble in proving so.

They remained comfortable and composed at all times, even when I was less than judicious with the volume control, and there was never any hint of strain to Desney Bailey's vocals at these neighbour-baiting levels. And when I turned the volume right down, the bass line remained vivid and punchy, demonstrating that the twenty.26s' powers of low level resolution are indeed proficient. ☺

HI-FI NEWS VERDICT

The PMC twenty.26s are a fitting flagship to the range, bringing the delights of a well designed and beautifully engineered three-way loudspeaker to a price point that is not unduly high. The two new drive units, which were created specifically for the model, do a first-class job, with the midrange dome being a particular high point. However, all three drivers combine flawlessly to give a truly musically adept result.

Sound Quality: 83%



less obvious through the smaller models: the twenty.26s seemed to shine a more detailed spotlight on the minutiae of recordings.

A perfect example of this was 'Hey Hey' from Eric Clapton's *Unplugged* LP [Reprise Records 9632-45024-1] with Eric's vocals projected expertly, and the string plucks as good as I know them. But through this bigger model, the fretwork from his guitar was rendered with just that extra layering of detail.

Primare NP30

Swedish A/V specialist Primare has produced a network music player/DAC with inputs for other digital sources – including asynchronous USB for direct playback from a PC

Review: **John Bamford** Lab: **Paul Miller**

As discussed in our review of the Krell Connect network media player [*HFN* Mar '14], streaming digital music across a home network is now a mature technology capable of satisfying even demanding audiophiles who insist on seamless operability and playback of high resolution audio. Indeed, in a properly configured system and with a carefully maintained music library, browsing through one's album collection – by artist, album title, genre, etc – using a tablet or smartphone, and controlling playback from anywhere in the home, has become a prerequisite in many music lovers' homes. Wading through shelves of LPs and CDs seems so last century!

CHIC STYLING

Swedish specialist manufacturer Primare prides itself on creating audio components designed not only to satisfy critical listeners for whom fine sound quality is an overriding purchasing criteria, but also products that will look good in today's living spaces and are easy to operate. Yes, they're minimalist – but think 'Scandinavian chic' rather than hair-shirt minimalism.

Moreover, with the ubiquity of computer audio and portable music playback very much in mind, when setting out to develop its £2000 I32 integrated amplifier a few years ago (and sibling PRE32 preamp) Primare designed in an expansion slot for an optional media streaming and DAC board dubbed MM30, which can be inserted after removing a blanking plate on the amplifier's rear panel. The I32 integrated, with its partnering CD32 CD player, won a prestigious EISA award for best two-channel system 2011-12, and a Red Dot design award too.

That optional MM30 'media board' PCB costs £1250 and forms the heart of this

standalone £2000 NP30 network media player/DAC. It's based around a UPnP/DLNA network streaming module from German supplier Audivo [see boxout] which can be seen in our internal shot of the NP30 below. The NP30's feature set is the same as that found on the MM30 module. Playback of music files up to 192kHz/24-bit is supported via wired Ethernet LAN, with gapless playback of segued tracks, along with internet radio using the familiar vTuner platform.

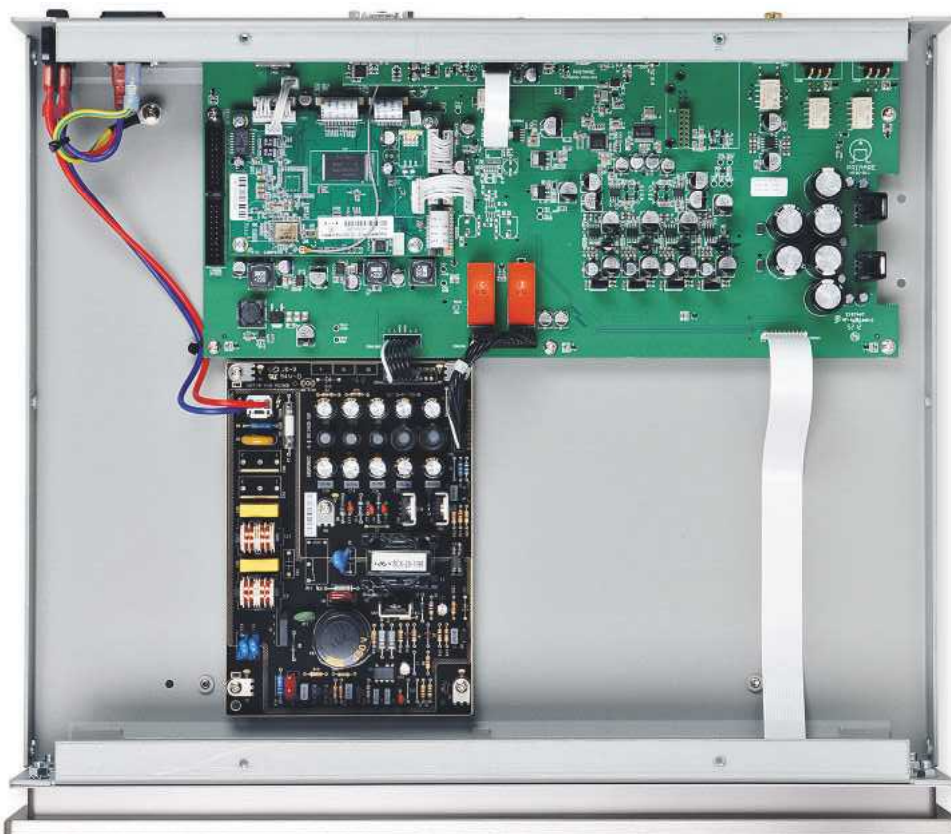
Wi-Fi connectivity is also included, but via WLAN you're restricted to CD/DAT-quality file playback at best, with a maximum resolution of 48kHz/16-bit. The NP30 also functions as a DAC for additional digital sources in a system. It sports four S/PDIF inputs (three Toslink; one RCA), an asynchronous USB-B input, and a further

USB-A socket at the rear for playback from a FAT32-formatted memory stick. This socket is also compatible with iDevices.

A FREE APP AVAILABLE

Housed in Primare's familiar heavyweight steel chassis supported on three isolation feet and with a brushed aluminium fascia, the NP30 looks almost identical to the firm's excellent DAC30 [*HFN* Feb '13]. Indeed, its nomenclature might suggest the NP30 is a DAC30 with additional streaming functionality, but since both products cost precisely £2k this is not so.

The DAC30 employs Crystal's CS4398 Delta-Sigma DAC, Burr-Brown SRC4392 digital interface receiver/sample-rate converter operating at 192kHz, and a linear power supply with an R-core transformer. The NP30 uses the same



RIGHT: Multiple switchmode supplies feed six regulated PSUs for the analogue stages and three for the digital sections. The (green) daughter board is the SeDMP3 embedded audio streaming module from Audivo



SRC4392, but with a Burr-Brown PCM1792 DAC and employs multiple switchmode supplies. And it lacks the DAC30's AES/EBU (XLR) digital input.

Of course, the NP30 is designed primarily to be a streamer – but you might want to push in data directly from a computer. So Primare uses the well-established XMOS microprocessor interface for the NP30's asynchronous USB input. USB Audio Class 1.0 functionality (data up to 96kHz/24-bit) is a straightforward matter of plug and play with all computers, while USB Audio Class 2.0 (higher data rates) is also natively supported for Mac OS-X. Drivers need to be downloaded from Primare's website and installed on PCs running Windows OS (XP SP2 and later). All of the NP30's inputs are compatible with data up to 192kHz/24-bit, while a coaxial (RCA) digital output at the rear works as a 'full HD' pass-through.

Pressing the button on the right of the fascia scrolls through the NP30's inputs, a single row of LEDs confirming the selected input, LAN connectivity and data lock. The USB-B input is labelled 'PC', the USB-A input 'Media'. Inputs and volume up/down can also be governed by the supplied

C24 IR handset (a new system remote for controlling pretty much any Primare component). This model is available separately for just £30.

Primare has developed a free app to control its 'connected' components using an iOS or Android device, the iOS version supporting Voice Over functionality for visually impaired users. Any standard UPnP application can, of course, be used to browse your media server and play files via the NP30, but you really need Primare's app to configure the NP30 and to access features such as input switching, volume control, etc. With it you can individually name digital inputs to match your sources and manage internet radio stations as lists of favourites.

Once I had the NP30 up and running, and the Primare App installed on my iPhone, the first thing I did was check for any firmware updates. In the app this is under Settings>Device Settings>Firmware. And, sure enough, I found one. Choosing to update via the internet (rather than a USB stick) and hitting the Start Update icon set the process in action. It took less than a couple of minutes, the NP30 automatically re-booting in the process. Everything

'Space Revolver showed it could dig deeply into the sounds'

ABOVE: Available in black as well as a titanium finish, the NP30's aluminium front panel simply has two buttons for standby on/off and source selection with accompanying input LED

worked seamlessly – and I found Primare's app wholly intuitive to use and entirely glitch-free in operation. It supports album art and also shows the bitrate, file format and sampling frequency of the file played.

HARD TO DIFFERENTIATE...

If you'd asked me a couple of years ago whether I prefer to push music files from a computer directly into a DAC or to use a network player – a 'streamer' – to pull files via my home network, I'd have said categorically that pushing into a DAC always sounded better.

All too often I've found that streaming tends to rob good quality recordings of their vitality and dynamic contrast. Transients' leading edges are softened and image specificity can become blurred. Not so with Primare's NP30, which sounded every bit as good when streaming as when used as a standalone DAC.

I spent many hours repeatedly A-B'ing tracks but could discern little or no difference in sound quality between the two playback methods. Whether this is due to the NP30's employment of Audivo's SeDMP3 module or, more pertinently, Primare's implementation of it, is anybody's guess – but music files rendered by the NP30's network client certainly sounded very fine indeed. It served up a commendably wide and deep soundstage when playing top quality recordings, while maintaining clear delineation of instruments and voices.

Malcolm Arnold's joyous *A Sussex Overture* with the composer conducting the London Philharmonic Orchestra [Arnold *Overtures* – Reference Recordings RR-48CD] sounded generously proportioned and convincingly three-dimensional. The NP30's sonic and musical delivery appeared effortless during the performance's climactic dynamic swings, with wall-to-wall soundstaging and precise focus. ➞

AUDIOVO PLATFORM

Under the bonnet of Primare's NP30 sits an SeDMP3 'EMAS' (Embedded Module for Audio Streaming) from German supplier Audivo. The company was founded by Erich Böhm, an electro-acoustics and cybernetics engineer who was responsible for the Pontis brand of MP3 players nearly two decades ago. Audivo specialises in network technologies, offering product manufacturers solutions from design to EMC testing and mass production, as well as bespoke hardware and software implementations. Its SeDMP3 UPnP/DLNA EMAS does not include a display, rather it's intended to be controlled via a control app. Says Primare's MD Lars Pedersen: 'We now have a long working relationship with Audivo. This gives us the possibility to engineer a special adaption of the module tailored specifically for our design implementation. In the NP30 we employ the same Burr-Brown DACs as featured on our MM30 plug-in module because it's a good DAC at its price point, but in the NP30 there's an additional buffer stage in the output. And since the NP30 is a standalone product with dedicated power supply and output stage, it inevitably sounds a little better than our MM30 plug-in module.'

The new HP-A4 stereo USB DAC from Fostex
Linear PCM up to 24bit/192kHz | DSD up to 5.6MHz



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NETWORK AUDIO PLAYER



ABOVE: Four S/PDIF inputs and one output, asynchronous USB-B plus an iDevice-compatible USB-A input, trigger, external IR and RS232 – with XLR/RCA outputs

Percussive crashes were handled well, if sounding rather softer, more 'polite', than they did true to life, while massed strings were delicately articulated with a pleasing sense of space around the performers and sections of the orchestra.

CALM UNDER PRESSURE

Similarly in 'Julsång' from the Proprius label's audiophile favourite *Cantate Domino* [88.2kHz/24-bit download, HDtracks] the swell of Oscar's Motet Choir in the chorus was glorious, the voices depicted as a mass of individual sounds rather than a congealed morass. The organ energising the acoustic space of the recording venue was palpable, everything appearing well controlled with seamless top-to-bottom balance and neutrality.

The NP30 did sound perceptibly softer and even slightly opaque when streaming via WLAN. I thought the image specificity less tangible and perceived a less finely-etched, rather 'sizzling' treble quality when using a wireless connection. Anyway, as the NP30's Wi-Fi functionality is limited to 48kHz/16-bit, most audiophiles of today's computer age will resolutely remain hard-wired.

Moving from a supremely natural sounding recording made in 1976 with a couple of excellent microphones and a Revox A77 to something altogether manufactured using a multi-track mixing desk almost a quarter of a century later, I challenged the NP30 to play 'Chicken Farmer Song' by Swedish prog-rockers The Flower Kings, from the band's 2000 album *Space Revolver* [Inside Out Music IOMCD 062]. It confirmed my impression of the NP30's apparent calmness under pressure and showed its ability to dig deeply into densely populated collages. The multiple layers of

guitars, swirling synthesizers and intricately woven vocal tracks were surprisingly well depicted given the 'thickening' compression during the song's more ambitious passages. The pumping rhythm section of Jonas Reingold and Hasse Bruniussön underpinned the whirlwind proceedings most admirably, helping to make sense of what can all too easily become a cacophonous wall of sound.

The NP30's bass isn't as powerful or quite as extended as I recall experiencing from Primare's DAC30, nevertheless its bottom octaves still provided a strong foundation for musical structures. Moreover you'll likely need speakers capable of shaking your house foundations to notice that the NP30 doesn't deliver the last ounce of bass detail and visceral slam.

Overall I found the NP30's sound to have been skilfully balanced, its gentle softening at frequency extremes imbuing the NP30 with a touch of 'golden glow' that made even low-bitrate internet radio tolerably listenable. When rendering lossless CD-quality (and better) recordings the NP30 proved that a well-implemented network player is more than capable of audiophile-quality music replay. ☺

HI-FI NEWS VERDICT

Given that it's a 192kHz/24-bit D-to-A converter as well as a hi-res-capable network media player, and is housed in Primare's classy steel and aluminium casework, the NP30 offers fine value. Primare's control app is also first rate. It's a different sounding animal to the company's DAC30 – slightly 'softer' and less ballsy in the bass – but notably easy-going and always comfortable and mellifluous. A great all-rounder.

Sound Quality: 80%

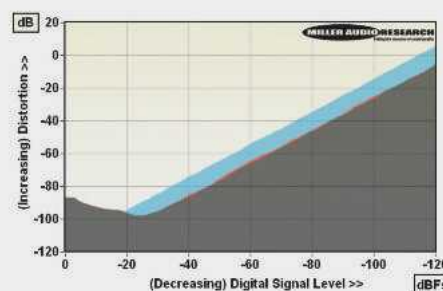
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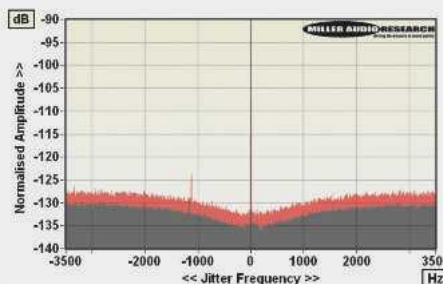
PRIMARE NP30

While appearances, and the product name, might suggest otherwise the technical performance of Primare's NP30 is not a foil for its superior DAC30 outboard converter [HFN Feb '13]. While the latter was itself inspired by the BD32 universal disc player with its Crystal CS4398-based, phase-inverting analogue output, the NP30 uses a Burr-Brown PCM1792 DAC to feed a phase-positive balanced output of just 2.07V (the DAC30 offers 4.3V). The NP30's overall S/N ratio is necessarily reduced, although perfectly acceptable, at 108dB although distortion climbs over the top 30dB of its dynamic range from 0.0005% to 0.005% at 1kHz and 0.0008% to 0.0028% at 20kHz [see Graph 1, below]. Because this is determined by the DAC/analogue stage, there is precious little difference in THD trends between any of the S/PDIF, USB or network audio inputs. The same is true of digital jitter, even via the wired ethernet connection thanks to the proven performance of the Audio SeDMP3 embedded network solution chosen by Primare [$<20\text{psec}$ at all sample rates, all inputs – see Graph 2, below].

The frequency responses are more obviously tailored by sample rate than was measured via the DAC30, to the tune of $-0.39\text{dB}/20\text{kHz}$ ($44.1/48\text{kHz}$), $-2.7\text{dB}/45\text{kHz}$ (96kHz) and $-13.7\text{dB}/90\text{kHz}$ (192kHz) while channel separation is encouragingly $>105\text{dB}$ ($20\text{Hz}-20\text{kHz}$). The 137ohm output impedance is also a little higher than the DAC30's 97ohm (balanced XLR outputs). Readers may view comprehensive QC Suite test reports for the S/PDIF, USB and network audio performance of Primare's NP30 by navigating to www.hifinews.co.uk and clicking on the red 'download' button. PM



ABOVE: Distortion versus 24-bit/48kHz digital signal level over a 120dB range at 1kHz (black, S/PDIF; red, USB/Network) and 20kHz (blue, USB/Network)



ABOVE: 24-bit/48kHz jitter spectra over S/PDIF (black) and Ethernet/USB (red) connections

HI-FI NEWS SPECIFICATIONS

Maximum output level (Balanced)	2.07Vrms at 137ohm
A-wtd S/N ratio (S/PDIF / USB)	108.2dB / 107.9dB
Distortion (1kHz, 0dBfs/-30dBfs)	0.005% / 0.00053%
Dist. & Noise (20kHz, 0dBfs/-30dBfs)	0.0028% / 0.0008%
Freq. resp. (20Hz-20kHz/45kHz/90kHz)	+0.0dB to -0.4dB/-2.7dB/-14dB
Digital jitter (S/PDIF / USB / network)	$<10\text{psec}$ / $<10\text{psec}$ / $<20\text{psec}$
Resolution @ -100dB	$\pm 0.3\text{dB}$
Power consumption	13W (1W standby)
Dimensions (WHD) / Weight	430x95x370mm / 8.5kg

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Hi-Fi News



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hi-fi news GROUP TEST

Hi-Fi News is no stranger to cable reviews and was the first to offer an authoritative account of 'USB cable sound' in 2013. Now, another ten brands are featured and all auditioned blind...

USB CABLES £10-£999

TESTED THIS MONTH

AUDIOQUEST FOREST	£35	LIGHT HARMONIC LIGHTSPEED	£999
CHORD SIG. TUNED ARAY	£400	NORDOST BLUE HEAVEN	£265
DIGITAL MUSIC BOX LINUS	£495	SIGNAL PROJECTS LYNX REFERENCE	£590
FURUTECH GT2 PRO	£210	STEREOLAB BLACK CAT SILVERSTAR!	£139
IN-AKUSTIK PREMIUM USB	£10	WIREWORLD SILVER STARLIGHT	£580



Cutting-edge gear, cherry-picked by the *Hi-Fi News* editor



The pinnacle of sound quality within its peer group



Great sound, great value and a cut above its rivals

• CD PLAYERS • TURNTABLES • CARTRIDGES • USB CABLES • AMPLIFIERS • DACS • TUNERS • SPEAKERS •

This time last year, *HFN* ran a ground-breaking group test revealing audible and measurable differences between USB cables. While every seasoned audiophile knows that different interconnect and loudspeaker cables will impact on the sound of a hi-fi system, this was the first time that USB – a synchronised, packet-based digital interconnect standard – was also shown to be cable-sensitive.

By way of anniversary, this month's group test pitches another ten USB cables into the mix, our measurements once again illustrating clear differences in the 'shape' of the data waveform arriving at the USB DAC [for more see my Opinion page in *HFN* Jul '13].

USB SPECIALISTS

Ten cable brands are represented here, but the presence of very new and specialist contenders reflects a certain maturity in this market. The lengths supplied varied from 1m to 2m according to the availability of stock, so please take note of this when comparing the prices. Some manufacturers offer lengths as short

as 0.5m while the USB standard specifies 5m as the maximum.

KEEP IT SIMPLE

For our subjective comparison we chose a system that would keep the signal path as short and as 'digital' as possible. A battery-powered Sony Vaio laptop running foobar2000 served as our front-end, its USB output driving the USB input of a Devialet 800 monoblock amp combination and pair of B&W 802D loudspeakers. Devialet's SAM bass optimisation regime was engaged throughout [see *HFN* Jun '14]. (You can see the room/set-up by visiting www.hifinews.co.uk/news/article/meet-the-team;-paul-miller/9952.)

As the only change to the system was its USB cable, our listening tests were necessarily performed at a fixed level. Any perceived change in 'loudness' was therefore a direct reflection of the 'sound' of the USB cable itself. Our listeners included *HFN* regular John Bamford, and all were unaware of the names or types of cables in the test or, indeed, of which cable was being auditioned at any one time. The results of each listening session were cross-

referenced to verify the consistency of our opinion.

QUALITY QUARTET

For auditioning we focused on four pieces of music. Two tracks were rips from CDs: the title track from *Just A Little Lovin'*, Shelby Lynne's 2008 collection of songs made famous by Dusty Springfield [UMG/Lost Highway 0602517448254] and 'No Sanctuary Here' taken from Chris Jones' *Roadhouses & Automobiles* released by Germany's Stockfisch Records in 2003 [SFR 357.6027.2]. We also played a 176.4kHz/24-bit file taken from one of Reference Recordings' 'HRx' DVD-ROMs: the opening *Non Allegro* from Rachmaninoff's *Symphonic Dances* performed by the Minnesota Orchestra under Eiji Oue [RR HR-96]. And because we found it so telling the last time we auditioned USB cables, we again played the 2009 44.1kHz/24-bit stereo remaster of 'Come Together' from The Beatles' *Abbey Road* album. But how obvious would the differences in USB interconnects really be? Read on...

REVIEWS & LAB TESTS BY PAUL MILLER

• CD PLAYERS • TURNTABLES • CARTRIDGES • USB CABLES • AMPLIFIERS • DACS • TUNERS • SPEAKERS •

GROUP TEST

Forest USB
Made by: Audioquest, California
Supplied by: Audioquest UK
Telephone: 01249 848 873
Web: www.audioquest.com
Price: £35/1.5m

**AUDIO
FILE**

Signature USB Tuned Array
Made by: The Chord Company, Wiltshire
Supplied by: The Chord Company
Telephone: 01980 625700
Web: www.chord.co.uk
Price: £400/1m (£500/2m)

Audioquest Forest USB

Since last year's inaugural *HFN* USB group test, Audioquest's ranks have swelled to six models, one of the more affordable being this attractively-finished green 'Forest' version.

The four A and B plug contacts are gold-plated and the conductors are all single 'long grain' copper strands, the pair carrying the differential data also silver-plated (though with a thinner layer than utilised in the costlier Carbon USB – see *HFN* July 13). A foamed polyethylene insulation keeps as much air – a superior dielectric – in the mix as possible. On the lab bench,

our 1.5m sample offered a fast 11.6nsec risetime with low deterministic jitter and evidently good noise rejection [see eye pattern, opposite].

GENUINE SOUND

While the energy and power of Rachmaninoff's *Symphonic Dances* was conveyed without the raggedness of some of the more vivid-sounding cables in this test, the percussion and string section possessed sufficient 'zing', body and bounce to really capture our attention.

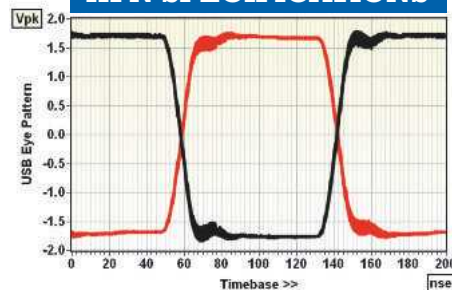
The crack of percussion from Shelby Lynne's track also illuminated the studio acoustic to great effect, her voice filling the room with

passion, articulately realised with no false emphasis or exaggerated sibilance. However, the track most prone to sounding too busy – The Beatles' remaster – actually sounded a little too flattened by the AQ Forest, the bass not quite as deep as possible, the treble not as expressive.

Otherwise, this cable typically dug deep, conveying the colour and contrasts of most recordings to good effect. It's a balanced sound, not perhaps as insightful in a 'hi-fi' context as others, but enjoyable nonetheless.



HFN SPECIFICATIONS



Sound Quality: 80%



Chord Company Signature Tuned Array

Taking its cues from Chord's 'tuned' Array Sarum USB cable, this Signature version also employs four separate but identical conductors for the differential data pair, +5V and ground. The coaxial conductors are heavily silver-plated, insulated with a superior PTFE dielectric and separately shielded with a high-density double braid.

All four conductors are gently twisted together and held in a woven black jacket and while this geometry may deviate slightly from the USB standard, the accurate waveshape and fast 11.9nsec risetime [see Graph] suggest its characteristic impedance is

not unduly influenced, at least at these data rates/frequency.

MATURE MUSIC

From the outset, it was patently clear we were auditioning a very 'mature' sounding cable, possessed of great control – delivering energy and passion when required as slickly as it revealed subtle details.

The limited bandwidth of The Beatles' remaster did nothing to dissuade us from the fun conveyed by this tightly integrated quartet, the vocals neatly counterpointing Ringo's rattling percussion.

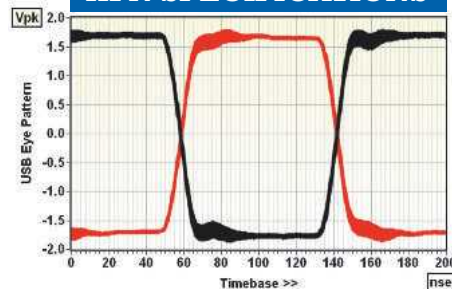
The percussive intro to Shelby Lynne's 'Just A Little Lovin'' also sparked a

cavernous acoustic, her voice slightly more forward with a 'headphone' intimacy that spoke to each and every listener. Her enunciation was very precise – tidy but convincing and free of the fuzzy quality that had infused the In-akustik and Furutech. Indeed, it was the only time in this test where her voice was genuinely 'breathy'.

Chris Jones enjoyed a similar vocal presence, the rich sound 'talking' so very expressively to our audience and earning the highest rating in this year's USB cable test.



HFN SPECIFICATIONS



Sound Quality: 85%



Linus USB
 Made by: The Digital Music Box, Dorset
 Supplied by: The Digital Music Box
 Telephone: 01202 240994
 Web: www.thedigitalmusicbox.com
 Price: £495/1m

**AUDIO
FILE**

GT2 Pro
 Made by: Furutech Co. Ltd, Japan
 Supplied by: Sound Foundations
 Telephone: 01276 501392
 Web: www.furutech.com; www.soundfoundations.co.uk
 Price: £210/1.8m

GROUP TEST

Digital Music Box Linus USB

Promoted as a 'best in class' USB cable, Linus is one of two new products from start-up company the Digital Music Box. The cost of the cable is partially mitigated by the use of 4N purity silver conductors for the differential data pair and silver-plated copper for the +5V leg. These are threaded into PTFE tubes, the data cores with silk insulation, and independently screened.

The conductors are silver-soldered in place but our samples lacked significant strain relief – pull these cables by their plugs only! On test, the 10.8nsec data edge risetime proved fast enough but not without obvious

overshoot and RF, suggesting a mismatched characteristic impedance [see Graph].



FULL CONTRAST

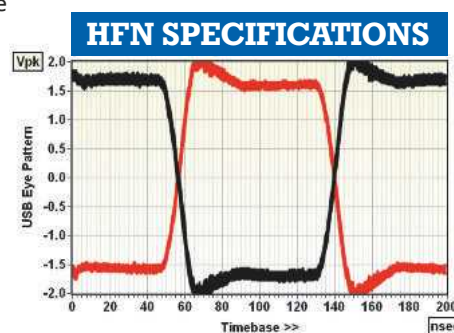
Listen to this cable in a quick A/B demonstration and its liveliness may suggest a very vivid sound full of bubbly detail, but our extended exposure was less positive.

The Rachmaninoff recording is full of subtlety that was lost to the 'full contrast' setting of the Linus, a cable that 'tries too hard to sound larger than life', suggested one listener. So while Shelby Lynne's bass had a lugubrious quality, and her voice did not sound as 'close' as we had heard via other

cables here, neither was it as focused or intimately detailed.

Chris Jones' energetic offering was also a little harder in delivery, his voice described as 'coarser' as the dirtiness heard earlier in the listening session was now shown as a harshness which made the track sound 'louder' than it really was.

A busier recording still – The Beatles' remaster – sounded louder and even more oppressive, the vocals insistent and shouty, Ringo's splashy cymbals notably tiring 'like a radio turned up full tilt'.



Sound Quality: 65%



Furutech GT2 Pro

In common with the ADL-branded Formula 2 USB cable, this new GT2 Pro variant from parent company Furutech also employs two pairs of multistranded Alpha-treated conductors. In this example, however, the data pair comprises 26-gauge silver/copper alloy cores (28-gauge is the typical standard) with HDPE insulation and an alloy mylar foil shield while +5V and ground are 24-gauge silver-plated copper with a PVC insulation. All four cores are shielded via a braid and inner foil wrap.

The build quality and termination of its 24k gold-plated USB connectors is

excellent but the on-test performance was restricted by a surprisingly high 20nsec risetime (very close to the USB specification) and obvious modification of the data waveshape [see Graph].



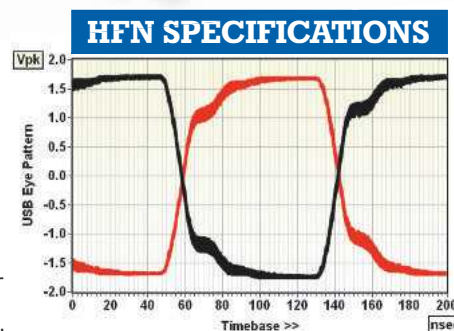
VIM AND VIGOUR

With more energy to strings and bass than cables like the In-akustik or Stereolab, Furutech's punch also came with a little raggedness, the metallic tinge of percussion not quite as pure as possible.

The cymbals accompanying Shelby Lynne certainly had a resonant 'crack' just as her vocals were more pointedly focused, but there was some debate among the panellists

as to whether her voice was as pure or intimately detailed as possible. Chris Jones was also conveyed with customary verve but our attention tended to wander, the performance not quite capturing our collective imagination.

With rock material the Furutech can sound earthily realistic, rougher and perhaps coarser, but arguably closer to the 'real thing'. So you'd never describe GT2 Pro as 'grey' but in the context of a high-res system other USB cables – including its own ADL series – can sound more compelling.



Sound Quality: 76%





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ACOUSTICA
Chester
01244 344227

LOUD AND CLEAR
Edinburgh
0131 555 3963

TOM TOM AUDIO
St Albans
01727 810047

Focal UK info@focal-uk.com 0845 660 2680

Premium USB
Made by: In-akustik GmbH & Co. KG, Germany
Supplied by: Hi-Fi Network Ltd, Gloucs.
Telephone: 01285 643088
Web: www.in-akustik.com; www.hifi-network.com
Price: £10/2m

**AUDIO
FILE**

Light Harmonic Lightspeed
Made by: Light Harmonic LLC, California, USA
Supplied by: Anthem AV Solutions, East Sussex
Telephone: 01825 750 858
Web: www.lightharmonic.com; www.anthemavs.co.uk
Price: £999/1.6m

GROUP TEST

In-akustik Premium USB

Premium USB' says In-akustik, 'transmits data quickly and reliably'. In practice, the data rate rather depends on the standard, which for USB 2.0 means up to 480Mbps, a pipe well in excess of what's required for 24-bit/192kHz audio for example. The cable itself is far from premium priced at £7.65/1m, £9.95/2m, £11.50/3m and £14.95/5m, all terminated in gold-plated A and B plugs with moulded anthracite-coloured shells and a matching PVC jacket.

As we discovered during our review of the LS-1603 speaker cable [HFN Jun '14], In-akustik takes precision

cable manufacturing to heart, so it's no surprise to see this by-the-book USB cable deliver a sharp data waveform, impressively free of deterministic jitter and offering a fast 10.8nsec risetime [see Graph].

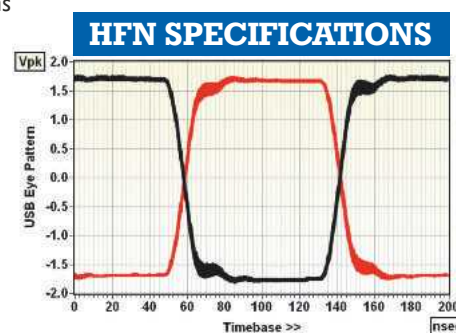
TIDY TIMBRES

Our listeners voted this a 'very tidy-sounding cable', for while Chris Jones' voice lacked that last vestige of energy and gusto, the ambience of the recording was still accurately recalled. Similarly, any suggestion of sibilance was kept firmly in check.

While the deepest bass was generally underwhelming there were instances when –

whamm – it would really kick, as in the driving line to The Beatles remaster. Here also, Lennon's voice was well focused but the bite of the guitar was a little muted as was the top-end energy of Ringo's percussion.

Shelby Lynne sounded composed, her voice detailed, the cymbals shimmering, but we still couldn't escape the feeling the performance was just a little recessed, a little too relaxed. If Premium isn't in the top drawer it's still preferable to some costlier cables here and at this price, well, what's not to recommend.



Sound Quality: 75%



Light Harmonic Lightspeed

From the architects of the astonishing Da Vinci DAC [see HFN Apr '13] comes this new USB cable, available in conventional A-B guise, as tested here, and also in a split form with two A-plugs designed to isolate the data and power supply connections between two separate USB hubs.

In a departure from the typical high/full-speed USB cable construction, the data leg in the A-B version is still physically separated from the +5V power and ground leg using acrylic spacers (see picture). Two 0.51mm silver-plated 5N copper data cores (26-gauge) are specified but

the edge risetime of 14.4nsec was not the fastest here.

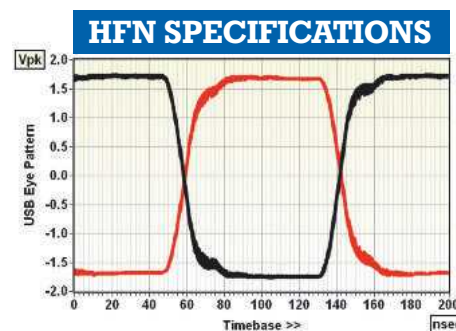
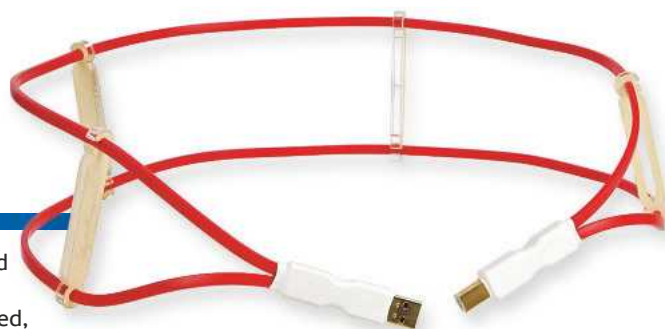
Finally, Light Harmonic says 'if you break it, we'll replace it. Warranty is lifetime and transferable, no matter how many times it's been traded, sold or given away'. This may be reflected in the price: £749/0.8m, £999/1.6m and £1499/3.2m...

PRECISE PLAYING

'It's all there' remarked one listener, 'but this precision might sound colourless in some systems' concluded another. So the textures and tones of the Minnesota Orchestra were not painted as vividly as possible, but while the woodwind and strings

seemed a little bleached, the instrumental separation and focus of the performers was still first-rate. As one panellist remarked, 'the physical form of the music is as clear as day, just with the colour control turned down.'

The precise, deft handling of Shelby Lynne's track was a delight, her voice as clear and articulate as we had heard, as was the bass line. It's 'very hi-fi' in the old-fashioned sense – all the detail, delivered with spectacular tidiness but lacking some passion.



Sound Quality: 80%





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Blue Heaven USB 2.0
Made by: Nordost, USA
Supplied by: Atacama Audio
Telephone: 01455 283251
Web: www.nordost.com; www.atacama-audio.co.uk
Price: £265/2m

**AUDIO
FILE**

Lynx Reference USB
Made by: Signal Projects Audio Ltd
Supplied by: BD-Audio Ltd, Malvern
Telephone: 01684 560853
Web: www.signalprojects.com; www.bd-audio.co.uk
Price: £590/1.2m

GROUP TEST

Nordost Blue Heaven USB 2.0

As a key player on the specialist cable scene, Nordost was bound to offer a USB option. Sensibly, the company looks to have adhered to a high/full-speed USB configuration while using top-quality materials.

Beneath the blue jacket (which clamps the cable geometry tight) is a dual-layer foil and braid screen that surrounds the +5V and ground conductors (20-gauge, 19-strand cable) and solid-core data pair (silver-plated 6N copper). An FEP insulation provides a decent dielectric. The data eye-pattern shows a 13.2nsec risetime [see Graph] while

deterministic jitter, on the edges, looks to be low.

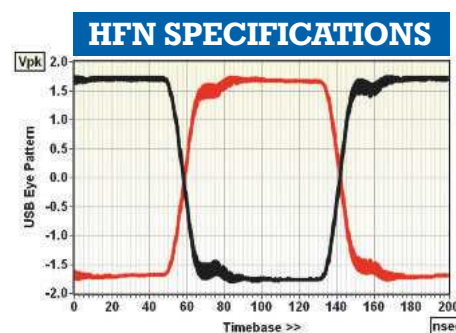
QUIET POISE

It would be glib to suggest Nordost's cable sounds especially 'heavenly', but it did sound subjectively quieter than most of the others here, a reflection of its freedom from grit and grain. Shelby Lynne's voice had real body – 'she can sound a little nasal' suggested one listener, 'but she is singing from her diaphragm here'.

The music enjoyed a natural ebb and flow, the instruments sounding relaxed but poised and delicately detailed, the soundstage eerily 'black'. The grain and

hardness in Chris Jones' voice heard with the Signal Projects and Music Box cables was completely absent, replaced by the mellow and yet insightful quality we had enjoyed with the Chord and Audioquest.

Our classical piece sat back in the soundstage, as it should, the orchestra uncluttered but arguably without that last vestige of subsonic weight. There was no hint of coarseness about The Beatles remaster either, as, with the best here, it sounded as clean and composed as if it were mixed yesterday.



Sound Quality: 83%



Signal Projects Lynx Reference USB

While Signal Projects is a UK company, its cables are made by hand in Greece and have already found favour in these pages [HFN May '13]. Its Lynx Reference is the most substantial cable on test here, employing 0.32mm² solid-core 6N copper conductors (plus some gold content) and a foil and copper braid screen in what Signal Projects refers to as a 'sophisticated internal geometry'. And are those ferrite clamps at both ends of the cable?

In practice, the geometry should not deviate from the high/full-speed data conductor arrangement and

shielding specified in the USB white paper (rev 2.0). The effect here is indicated by the data pattern [see Graph] which has a slowest risetime in this test of 25.5nsec and just outside the USB 2.0 spec.

FREE-FORM

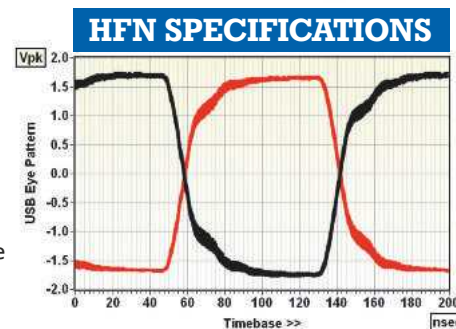
This is a slightly ragged sounding cable, Shelby Lynne seemingly a 'little shouty, up front and in your face', suggested one listener. Bass sounds big and full but not especially subtle, the rhythm free-form rather than strict.

As with the Digital Music Box Linus, this cable made Chris Jones' 'No Sanctuary' sound rather louder than it should, the forward

presentation no real substitute for rich detail. Similarly, the guitar was described as 'all leading edge transients, lacking body and substance'.

The busiest rock and pop tracks were simply too, well, 'busy' as the performers tripped over one another in an attempt to be noticed. The Beatles were no less affected – this dense recording somewhat more coarse and splashy than we'd come to enjoy.

Overall, Lynx is not the most frugal or oppressive sounding cable here but it falls short of commendation.



Sound Quality: 68%





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Black Cat Silverstar!
 Made by: Stereolab (The Signal Collection) LLC, USA
 Supplied by: Symmetry, Herts
 Telephone: 01727 865488
 Web: www.stereolab.us; www.symmetry-systems.co.uk
 Price: £139/1.23m

**AUDIO
FILE**

Silver Starlight USB
 Made by: Wireworld Inc, USA
 Supplied by: WireWorld UK, Middx
 Telephone: 0208 991 9200
 Web: www.wireworldcable.co.uk
 Price: £580/1.5m

GROUP TEST

Stereolab Black Cat Silverstar!



With a heritage in digital cable design stretching back to the early days of S/PDIF, the designer of the Black Cat Silverstar! is characteristically tight-lipped about the ingredients of this attractively-coloured USB cable. In fact it's not clear there's any silver in Silverstar! at all. It employs 'bare pure copper', presumably for the differential data pair, and tin-plated copper, presumably for the power and ground conductors (or the screen)?

The only unusual feature is a small bulge under the heatshrink tubing halfway along the cable (see picture) which, surely, cannot be a

joint. Either way, Silverstar!'s edge risetime was the second slowest on test at 19.2nsec, though still within the USB specification and gratifyingly free of deterministic jitter and RF interference [see Graph].

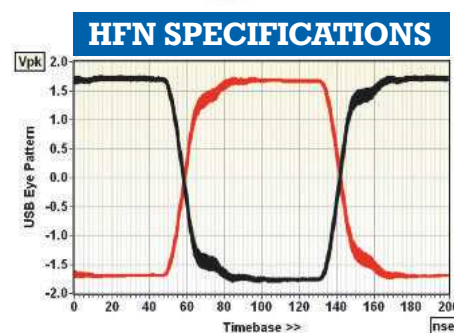


DARK HUMOUR

Auditioned after the Wireworld cable, Silverstar! returned the sense of focus to our musical selection but with this was a sense of the soundstage being 'tightly corralled'. Nevertheless there was no shortage of what was described as 'macro dynamics', the thunderous onslaught of the Minnesota Orchestra punctuating Rachmaninoff's *Symphonic*

Dances to impressive effect. The subtler dynamics, the inflections of woodwind and strings, for example, were arguably possessed of less clarity.

Shelby Lynne sounded 'dark', her voice somehow more sober and introspective than we had heard before. While other cables were more revealing of fine details (though not always interesting for it), Silverstar! was described as 'slightly homogenised'. However, this compaction of detail gives the music real punch, a tautness that can be genuinely effective.



Sound Quality: 78%



Wireworld Silver Starlight

Like Audioquest, Wireworld offers a broad spread of USB cables, with no fewer than five in its current range. Silver Starlight is one of two top cables to employ the company's 'DNA Helix' geometry, a subtle twist of six silver-plated copper strands within a cushioning dielectric. These data cores are physically separated from the coaxial power conductor within a relatively flat and soft insulating jacket.

The cable is beautifully built and finished but, interestingly, while Wireworld specifies a 90ohm impedance for the data cores, its substantial metal-barrel plugs

do not feature the standard USB trident icon. On test, Silver Starlight offered a 12.8nsec risetime [see Graph].



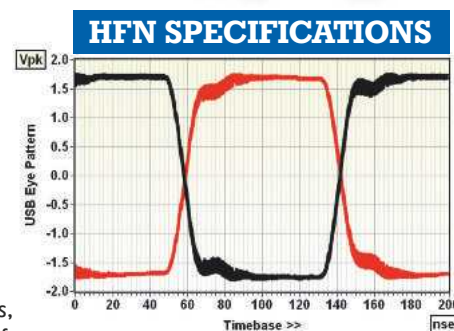
LARGER THAN LIFE

Our initial impressions had Wireworld's Silver Starlight pegged as a 'straight down the line' performer. Rachmaninoff's *Symphonic Dances* 'danced' from the speakers with a deal of spaciousness, packed with energy and spotlighted with detail – but was this effusiveness all that it seemed?

By contrast Shelby Lynne sounded rather more 'double mono' – very open but slightly phasey and lacking the focused enunciation of the

Chord Signature, for example. Here the cable expanded the image of the performers too wide. Percussion was a little more prominent too, very attractive in the delicate passages but perhaps too obvious when stronger.

Chris Jones' voice was also a little larger than life, not too forward or brash but certainly lacking the central focus we'd come to expect, the background organ sounding too ethereal 'as if floating in the air'. It was, in the words of a couple of panelists, 'not a bad all-rounder but slightly phasey in its realisation'.



Sound Quality: 75%



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GROUP TEST VERDICT

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With the experience of last year's USB cable group test already under our collective hat, we began 2014's digital voyage with a degree of expectation. And we were not disappointed, for the differences between this crop of proprietary USB cables were no less audible. The Linus USB from Digital Musical Box and the Signal Projects Lynx Reference were arguably the most 'different' sounding cables here, and certainly the least conformant on test, but our panellists' concluded they were both 'distinctive but ultimately relentless', the Lynx marginally less oppressive.

TRADE-OFFS

Furutech's GT2 Pro also proved up-beat but with an illuminating quality that highlighted percussive details and studio reverb. It can sound a little unrefined, perhaps, but that's the trade-off. By contrast, Inakustik's budget-priced Premium USB is a bit of a smoothie. What you gain in civility and composure you lose in the liveliness of both extreme bass and treble. The music is not quite as colourful as possible, but 'Premium' could be perfect for taming the over-exuberant budget system.

There's nothing 'budget' about Wireworld's Silver Starlight and it does offer an appropriately big if

slightly blowsy sound, lacking the focus and instrumental precision we enjoyed with other cables here. It did fare rather better with our classical selection, it must be said.

SHINE A LIGHT!

Extravagantly-priced, Light Harmonic's LightSpeed cable sounded very, very tidy, rendering the likes of Chris Jones with a dry clarity. Similarly, The Beatles remaster was delineated like no other in this test, Lennon and McCartney's voices revealed in seemingly explicit detail while Ringo's drum-work was pristine. This is very nearly a 'great cable' but where is the emotion?

Stereolab's Black Cat Silverstar! certainly 'emoted' more convincingly and revealed what was described as the 'big musical picture' really well indeed, even if it didn't let us right into the fine detail of the performance. Recommended, nonetheless, as is the more affordable Forest from Audioquest.

THE CREAM RISES

The latter has a vibrant energy that held our attention and kept our feet tapping. It's a lively-sounding cable but one that can withdraw slightly in the face of the busiest material, sounding slightly sat-on and compressed. It's a lot of cable for the money though.

We also appreciated the quiet poise offered by Nordost's Blue Heaven. Guitars had body and substance while percussion typically brought a refreshing sparkle and air to the

richest-sounding tracks. Lacking only that last drop of very deep bass, Nordost's Blue Heaven is otherwise a superior USB cable, delivering a very neutral, measured and inherently musical performance.

UNEXPECTED WINNER

Chord's flagship Signature Tuned Array cable sounds richly detailed and very expressive and while on first exposure it may seem to lack some 'bite', in practice there's no lack of colour or contrast to its richly hued performance. The timpani from Rachmaninoff's *Symphonic Dances* enjoyed a thunderous energy and strings thrilled just as the percussion sparkled in the depths of the soundstage. Vocals had a wonderfully breathy quality too, but was this necessarily the best 'in the round' USB cable we'd heard?

Returning to Chord's own USB SilverPlus (last year's winner) suggested not, for this latter cable – still a current item at just £55/1.5m – was arguably better integrated still, detailed, insightful and inherently musical. The USB standard has not changed and, quite frankly, neither has our choice of favourite USB cable. ☺

'Chord's Tuned Array offers a richly hued performance'



ABOVE: Nordost's Blue Heaven 2.0 – its music 'has a natural flow, free of grain'



ABOVE: Chord's top-of-the-line Signature Tuned Array – voted the best USB in 2014!

• CD PLAYERS • TURNTABLES • CARTRIDGES • **USB CABLES** • AMPLIFIERS • DACS • TUNERS • SPEAKERS •

Revel Performa F208

The flagship in Revel's recently launched Performa 3 range packs a punch with its twin 200mm woofers
Review: **John Bamford** Lab: **Keith Howard**

How much money does a music lover need to spend in order to own a pair of monitors that can rightly be deemed 'high-end'? I've been racking my brains these past few weeks attempting to determine precisely the qualities a loudspeaker must possess in order to qualify as such, while living with this handsome pair of Revel F208 floorstanders, which are the top model in the US company's recently-introduced Performa 3 range.

Since 2005, Performa series models have represented Revel's 'middle-market' speakers. At higher prices the company markets more luxurious designs called Ultima: the flagship Ultima Salon 2 is a four-way currently priced at £20,000 a pair. That's the sort of speaker an audiophile dreams of owning! (Revel also makes a more affordable range of less elaborately constructed models in the form of its Concerta series of on-wall 'lifestyle' speakers.)

The California-based R&D team has spent the past three years completely revamping its middle-range Performas. Now called Performa 3, they began shipping to the UK early this year. There are nine models in total if you include the two subwoofers which accompany the various bookshelf, centre and surround speakers for multichannel AV systems.

Two speakers in the Performa 3 range are floorstanders: the £3300 F206 slim tower [HFN April '14] and this F208. As you might expect to hear from any manufacturer's marketing department, we're told they've been designed not simply to offer a step up in performance from Revel's cheaper speakers but also to give more than a taste of the company's far more expensive models. Prices have been minimised by sub-contracting the manufacturing to Indonesia rather than building them locally.

Like the F206, the F208 is a three-way reflex design, its port venting on the front

baffle below the drivers. In its 71litre enclosure it employs the same 25mm aluminium dome tweeter and 130mm aluminium-coned midrange unit as the F206; however, its smaller sibling's two 165mm bass drivers are replaced by two larger 200mm woofers. Crossover points are at 270Hz and 2.2kHz.

FINE-TUNING OPTIONS

And where the F206 has just a single set of input terminals, the F208's crossover has been split to allow bi-wiring/amping. Furthermore, the terminal block at the rear sports controls for fine-tuning bass and treble levels. A five-position switch alters the tweeter's output by ± 0.5 and 1dB, with a 'flat' setting in its centre position.

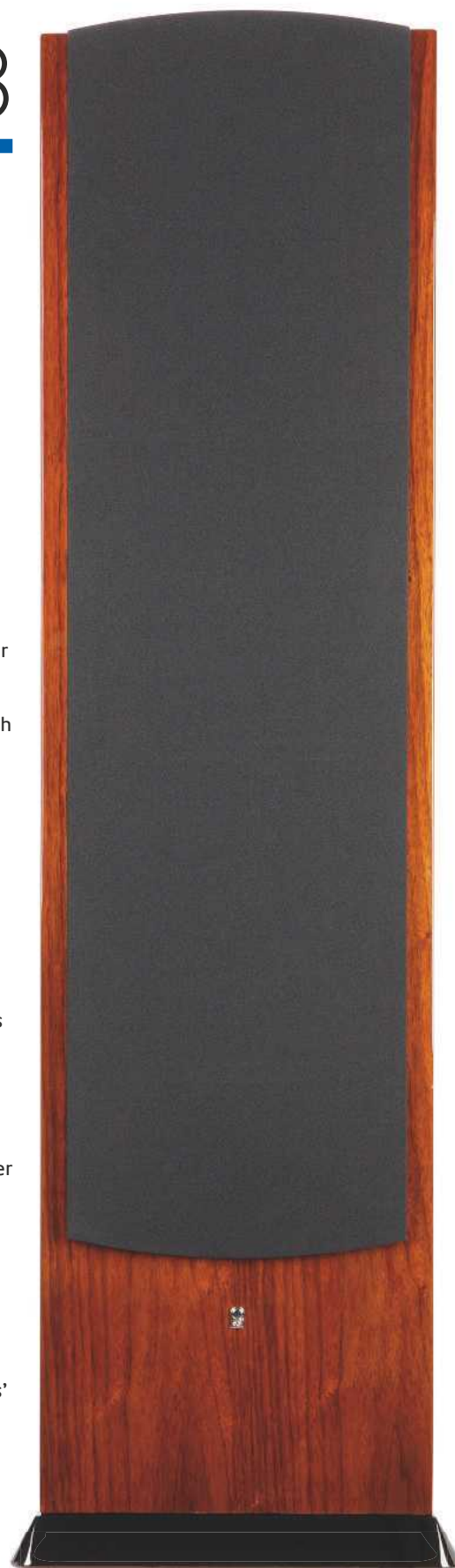
A low frequency compensation switch, which can be set to 'normal' or 'boundary', reduces bass output should the speaker be positioned in close proximity (less than half a metre or so) to

a boundary wall. LF contouring can be further tweaked with supplied foam bungs to plug the ports.

Revel's drivers for its Performa 3s are all-new designs. The woofer and midrange units are founded on cast aluminium chassis, their motor units employing large diameter voice coils and proprietary copper ring caps which the company claims lessens distortion at the lower frequency range of their operating windows by reducing inductance and flux modulation. Additionally the woofer features a steel ring to minimise LF distortion. The drivers' diaphragms are formed of aluminium and ribbed with tangential dents designed to shift cone breakup well beyond the drivers' operational bands.

RIGHT: The F208's subtly curved enclosure houses two 200mm aluminium-coned woofers alongside the 130mm midrange and 25mm aluminium dome tweeter in a waveguide also employed in Revel's smaller Performa F206

'Hefty chunks of bass from the F208 thumped me in the solar plexus'



BUILDING A BRAND

In our appraisal of the Performa F206 [HFN Apr '14] we highlighted that Revel is an unusual American high-end marque, in that where most makers of esoteric components are small privately owned companies, Revel is owned by one of the most powerful organisations in the industry: Harman International which also owns JBL, AKG, Lexicon and Mark Levinson. The Harman group employs some 13,000 people across 30-plus locations worldwide, with net sales for fiscal year 2013 quoted at \$4.3billion. Harman once owned Infinity as well, but founded Revel in 1996 to create a new premium speaker brand that could naturally partner Mark Levinson's luxurious electronics components. Kevin Voecks, former chief designer of Snell Acoustics' speakers, was brought in as Revel's manager of product development, with Mark Glazer (who'd been an Infinity engineer) appointed chief systems engineer.

Meanwhile the 25mm tweeter common across the entire Performa 3 range is an aluminium dome design with a high-compliance surround and a vented rear chamber, the unit boasting an uncommonly low mechanical resonance of around 800Hz. Revel has employed a new mathematical model in designing the tweeter's waveguide which aims to widen dispersion at high frequencies and is claimed to match the tweeter's dispersion to that of the midrange driver around the crossover point.

In its walnut finish (it also comes in high gloss piano black) – and due in no small part to those chunky 200mm woofers in an unfashionably wide baffle unlike today's myriad 'slim towers' – the F208 appears charmingly old-fashioned, I thought. But it is bound to dominate most average-sized listening rooms. The enclosure is footed with a slightly flared base plate to maintain good stability, below which are four threaded inserts for the supplied feet. These are double-ended, giving the choice of carpet-piercing spikes or rounded ends better suited to hard floors.

RICH AND VELVETY

The F208 really does sound like a big loudspeaker, with tremendous low frequency extension and bass weight. It has a rich and velvety tonality; the speaker's top end is lusciously smooth and 'relaxed' and notably free of undue sibilance on vocals. Shelby Lynne's close-miked voice in 'Anyone Who Had A Heart' and 'You Don't Have to Say You Love Me' from her 2008 album *Just A Little Lovin'* [Lost Highway 0602517448254], was finely-etched and sweet-toned. The speaker's fine clarity revealed delicious nuances in her vocal phrasing, while proving adequately transparent to reveal the recording's shortcomings as well. The drum kit and bass guitar were

wonderfully painted, the ringing of the cymbals fading beautifully to silence – although the compression in Lynne's vocal recording was all too obvious.

DYNAMIC EFFORTLESSNESS

As well as capable of serving up oodles of low-end grunt when the occasion demands, those twin woofers imbue a refreshing sense of dynamic effortlessness in the bass. Vigorously bowed basses and climactic wallops of timpani were handled easily by the F208 as I enjoyed tracks from Reference Recordings' *Exotic Dances From The Opera* at 96kHz/24-bit [RR71], with the Minnesota Orchestra under Eiji Oue captured in their Orchestra Hall. Rimsky-Korsakov's rollicking 'Dance of the Tumblers' from *The Snow Maiden* sounded absolutely epic, while Tchaikovsky's 'Hopak' from *Mazeppa* was equally thrilling as the F208 pressurised my listening room, hefty chunks of bass thumping me in the solar plexus.

These 'widescreen' recordings of an orchestra at full throttle were handled with aplomb, allowing the speaker to demonstrate its ability to draw out a broad and deep soundstage with good image specificity and tangible placement of instruments. I thought the perceived depth of image exceptional, the sound never appearing spatially squashed thanks to the speaker's admirable dynamic performance from *pianissimo* to *forte*. This was especially so with orchestral music, where the speaker's ability to resolve low-level information at the back of the stage made all the difference between very good and really tremendous sound reproduction.

I found the F208 to be a speaker I could listen to for hours without ever feeling short-changed. I felt the same way when I lived with Dali's Epicon 8 a couple of years back [HFN Sep '12] – however, this Revel Performa is less than half ↻



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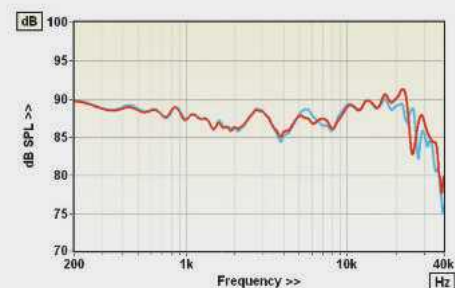


LAB REPORT

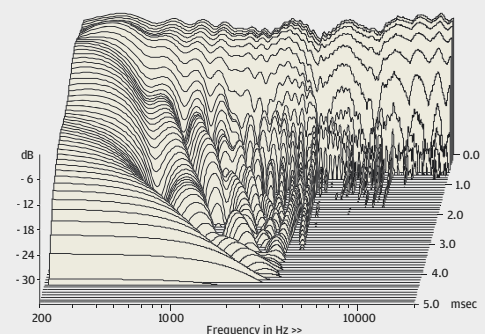
REVEL PERFORMA F208

Revel claims 88.5dB sensitivity for the Performa F208, which accords well with our pink noise figure of 88.2dB over the frequency range 200Hz-20kHz. We take issue with the nominal 8ohm impedance, though: a minimum modulus of 3.3ohm indicates that a 4ohm rating would be more appropriate. This low minimum modulus might have made the F208 quite a challenging load but the impedance phase angles are unusually well controlled, as a result of which the EPDR (equivalent peak dissipation resistance) drops to a minimum of 1.8ohm – typical of modern floorstanders, and probably less significant because it occurs at a high 2.5kHz. There is also a second dip to 2.0ohm at 63Hz, though.

The forward frequency responses [Graph 1, below] were measured on the axis of the midrange unit rather than the tweeter as this is nearer typical seated ear level. Although the frequency response errors are commendably small for a passive loudspeaker at ± 2.8 dB for the review pair, nonetheless the response has a clear concave trend with a suppressed presence band. This can be expected to soften the sound and also recess the stereo image. Pair matching error, also 200Hz-20kHz, was fine at ± 1.1 dB and bass extension – reflecting the size of cabinet – unusually good at 40Hz (-6dB re. 200Hz). The bass roll-off begins gently below 100Hz and doesn't become steeper until below 30Hz, which also bodes well for clean bass transient capability. The CSD waterfall [Graph 2, below] evinces fast initial energy decay across the spectrum and a treble largely clean of resonances. There are hints of modes at lower frequencies but these cannot be resolved reliably. KH



ABOVE: Pair matching is good but the forward response trend shows a recessed presence band



ABOVE: Cabinet resonances are very well controlled as are those associated with the mid and treble drivers

HI-FI NEWS SPECIFICATIONS

Sensitivity (SPL/1m/2.83Vrms – Mean/IEC/Music)	88.5dB/88.2dB/87.6dB
Impedance modulus min/max (20Hz–20kHz)	3.3ohm @ 2.9kHz 8.2ohm @ 20Hz
Impedance phase min/max (20Hz–20kHz)	-37° @ 53Hz 21° @ 216Hz
Pair matching (200Hz–20kHz)	± 1.1 dB
LF/HF extension (-6dB ref 200Hz/10kHz)	40Hz / 35.5kHz/33.3kHz
THD 100Hz/1kHz/10kHz (for 90dB SPL/1m)	0.3% / 0.1% / <0.1%
Dimensions (HWD)	1182x300x375mm

LEFT: Rear panel features LF compensation and tweeter level switches for fine-tuning the sound balance to taste. Bi-wire/amp terminals are provided with gold-plated links

Despite a lack of a degree of sharpness to leading edges, music still sounded vibrant and full of life. Aided by the realistic scale that such a large floorstander provides, there appeared an innate rightness that made it easy to listen for hours at a time, with the music flowing in an endearing manner whatever the genre. And the Performa F208s do still provide some semblance of analytical monitoring when challenged to impress.

FAST AND INTENSE

Demanding 'live take' recordings such as *James Newton Howard & Friends* [Sheffield Lab CD-23] can often appear brittle and too brightly-lit via many replay systems. The F208 delivered this with tremendous girth and vigour – and musical realism. The crashing cymbals of drummer Jeff Porcaro were handled with composure, while the snap of the snare and the thwacks of the over-damped kick-drum sounded dramatically fast and intense.

Returning to the burning issue of what a speaker has to be – or rather *sound* like – in order for it to rightly sport a 'high-end' badge: if you consider it should be engaging and reveal textures, timbres, tonal colours and dynamic swings, then Revel's F208 certainly passes muster. Rather than dissecting and deconstructing, it gets out of the way to let the music speak for itself. ⬇

HI-FI NEWS VERDICT

If you can accommodate a speaker as imposing as this and are looking for a floorstander that imbues music with keen energy while avoiding hyped aggression, the F208 should be right up your street. Revel's engineers have balanced it to sound creamy and easy-going, while maintaining fine transparency and plenty of detail at the top end – and its meaty bass delivery is mightily visceral when the music requires it.

Sound Quality: 86%

0 - - - - - 100



the price of that ribbon-tweeter'd Danish floorstander.

The F208's chocolate-y tonality is extremely inviting, and its silky treble minimises listener fatigue – although I considered its overall presentation of voices and instruments just a little *too* soft-hearted and beautiful to entirely suspend disbelief [see Lab Report]. If you like a top end with lots of sparkle and 'snap' you won't be entirely disappointed: the F208's treble is light-footed, detailed and extended, but a little more charming than real-life. An upside of the speaker's forgiving nature is that the sound never appears analytical or over-etched.

Musical Fidelity M8PRE/M8500s

MF's new stereo power amp bolsters the firm's line-up of M8 series components – and reduces the cost of owning a mightily capable pre/power combo with muscle to spare
 Review: **John Bamford** Lab: **Paul Miller**

One of several important new products previewed at the Sound & Vision show in Bristol earlier this year was Musical Fidelity's latest stereo power amplifier design, the £4499 M8500s.

It's quite a beast, weighing 29kg and rated at 2x500W/8ohm. Our intrepid editor secured an exclusive test for *Hi-Fi News*, arranged for just as soon as the Wembley-based company could supply a production sample for review.

When Musical Fidelity introduced its first M8 series amplifier components they comprised the M8PRE preamplifier and a pair of whopping monoblocks (£7999/pair) dubbed M8700m [*HFN* Jan '13]. Inflationary parts and transportation costs have seen the price of the preamplifier increase by £499 in the intervening 18 months, nevertheless the new M8500s stereo power amp significantly reduces the cost of owning an M8 series combo that the company has always described as being 'son of Titan'.

AFTER THE TITAN

MF's no-expense-spared Titan power amp [see *HFN* May '10] was a limited edition two-box behemoth and has long been sold out. It's now available only to well-heeled collectors of rare audio exotica.

While less powerful than the M8700m monoblocks, the M8500s is still a formidable powerhouse. It's essentially two mono amplifiers in a single chassis – the only common part is the AC connector and mains cable – as it employs entirely separate power supplies for each channel, each powered by a substantial 670VA toroidal transformer. It's a balanced design from input to output, the left

and right channels each employing six pairs of bipolar transistors (the M8700m monoblock used ten).

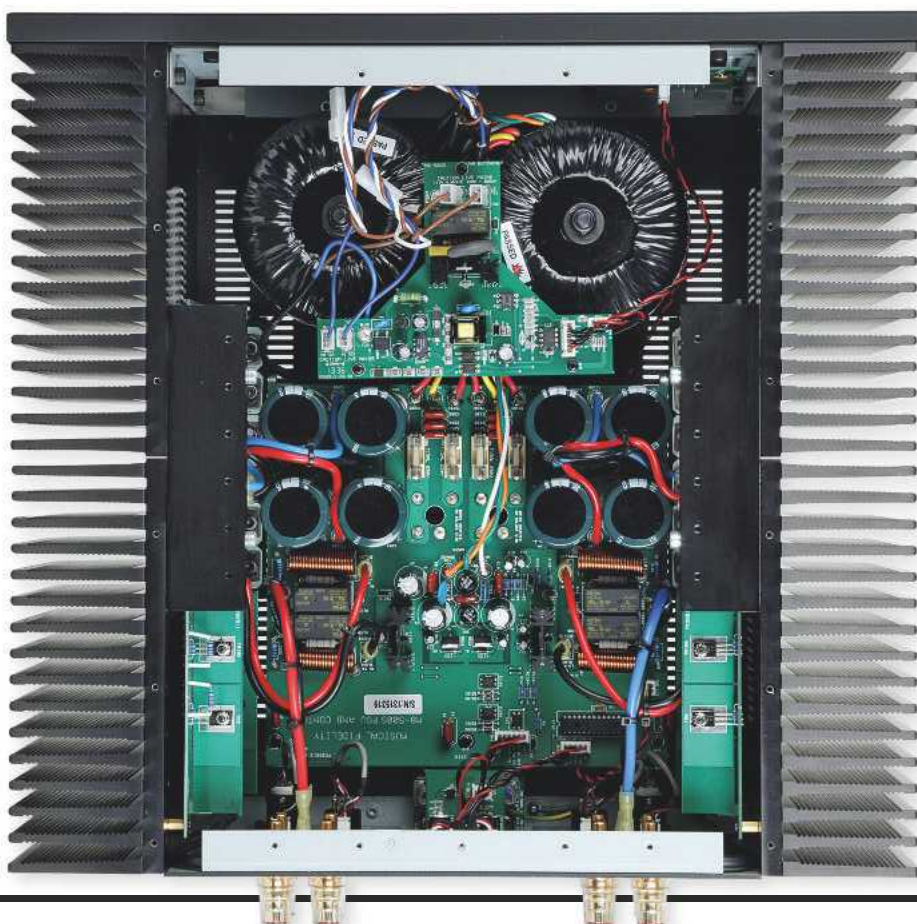
Two sets of chunky five-way speaker binding posts are provided for convenient bi-wiring and there are line level loop-through outputs as well (both XLR and RCA) should you ever fancy upgrading to a bi-amped system rig.

It's important to remember that the M8500s is a bridged circuit design, so its black (–) and red (+) output terminals are effectively 'hot' – ie, they both carry high current signals – so the amplifier should never be connected to a grounded speaker

such as an electrostatic or the speaker-level inputs of a powered subwoofer.

To recap on the M8 preamplifier, it's a fully balanced Class A design with seven line inputs: two balanced (XLR) and five single-ended (RCA). A pair of RCA output sockets is provided for use with single-ended power amplifiers, but using the preamp's balanced outputs is the recommended option, especially when combined with an M8 power amp.

In order that it can be easily married to a surround decoder in multichannel home cinema systems, one of its balanced inputs and/or one of the single-ended



RIGHT: Power amp is dual mono with independent L/R power supplies. Each channel employs six pairs of bipolar power transistors in a high voltage, balanced configuration



inputs can be set to be used as a unity gain pass-through. Each respective pair of input sockets on the rear panel has a small slider selector switch next to it. The M8PRE also features a proper tape monitor loop to provide 'confidence monitoring' when recording, something not commonly found on today's (pre-)amplifiers.

BUILT-IN PHONO STAGE

Less common still is the inclusion of a built-in phono stage. MF is no stranger to phono stage design. Company founder Antony Michaelson put Musical Fidelity on the hi-fi map in 1982, when CD was in its infancy and LP was the prime audiophile source, with The Preamp.

This debut product was highly acclaimed for its near-silent background

noise and, in particular, the excellence of its MM/MC phono stage which set new standards in cost/performance. In the M8PRE the phono section offers a claimed 81dB A-weighted S/N performance, with 29dB overload margin. Input impedance is set at 47kohm, while a slider switch adjacent to the L/R input sockets selects between 3.5mV (MM) and 440µV (MC) input sensitivity.

Much of the M8PRE's 17kg mass is due to its heavy casework and substantial twin regulated power supplies employing a 350VA toroidal transformer and regulation circuitry for each stage of each channel. Extensive use

'MF's M8 combo offered a squeaky-clean portrayal of the finest detail'

ABOVE: Preamp [top unit] has versatile connectivity and built-in MM/MC phono stage. Large casework of each component has a textured black finish with silver control buttons

is made of surface mount components to ensure very short signal paths, and the large volume knob controls a laser-trimmed electronic attenuator; each rotational 'click' increases gain in 0.5dB increments as indicated in the small display panel above

it. Meanwhile, a system remote handset is provided that includes a mute button (there's no mute switch on the fascia) and direct input switching; it also controls a Musical Fidelity CD player. There's no stereo/mono switch, no phase-reverse button and no left/right balance control.

BEGUILING COMBO

This new pre/power amp's strengths are its tremendous resolution, lifelike dynamics, neutral tonality, and truly excellent bass delivery. Forget any notion that huge powerful solid-state amplifiers can tend to sound rather cool and sterile – these M8 series amplifiers combine superb bass definition and impact with a sweet and delicate treble quality, such that the sonic ➞

A GOOD BIG 'UN

Does a good big 'un always beat a good little 'un? Musical Fidelity's founder and proprietor Antony Michaelson has always had a passion for high-powered behemoths. 'Having an amplifier with enormous power delivery capability isn't about bringing the ceiling down: it's to minimise overhang, avoid an artificially bloated sound and ensure there's no delay in the speed and attack of transients,' he told us last year when discussing his latest M8700m monoblocks. But if you've only a small listening room – and you choose speakers with reasonably high sensitivity – a mere handful of watts can still make beautiful music. A case in point was MF's ground-breaking A1 integrated amplifier, a low-powered, hot-running Class A model that almost coined the term 'budget esoterica' when it was introduced in 1984. It remains a cult classic to this day.

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ABOVE: M8500s has two sets of speaker binding posts for bi-wiring and XLR and RCA loop-through sockets for easy bi-amping. 12V trig in/outs are also provided

presentation remains beguiling with all but the hottest and most brittle of recordings.

Of course, there's no false opulence to the sound. However, along with the combo's solid, authoritative characteristic is a smooth and relaxed quality that never shows sign of strain. It seems unflappable even with busy music.

Playing David Chesky's *The Zephyrtine – A Ballet Story* [96kHz/24-bit download, HDtracks] amply demonstrated this M8 combo's signature sound quality: a sparkingly clear and open top end, deep and well-extended bass with immense control, and fabulous imaging. Delicate percussion details possessed lifelike 'zing' and the orchestral climaxes captured here appeared effortless thanks to the power amp's vice-like grip at the bottom end, everything seemingly unforced and graceful.

OPEN ANALOGUE SOUNDS

2L's high resolution DXD recordings sounded utterly magnificent thanks to the M8 combo's lightning-fast transient capability and squeaky-clean portrayal of fine detail. The title track from Jan Gunnar Hoff's solo piano album *Living* [2L-092] can sound a little vague in its two-channel presentation (it was a multichannel recording), the piano distantly placed in the reverberant acoustic of the Norwegian church venue. Nevertheless the M8PRE/M8500s duo delivered a robust and lifelike piano sound with tremendous solidity and tonal colour, the portrayal of depth perspective and reverberation finely depicted.

The same pianist's Hoff Ensemble project *Quiet Winter Night* [2L-082] was something of power and beauty, the M8 combo's transient snap and tight focus helping to keep in check the immense 'oomph' of the kick-drum and acoustic bass, while the amp's headroom allowed trumpet and slide guitar to really soar.

This isn't the first time I've listened to the M8PRE, and I can confirm that its built-in phono stage is supremely quiet while sounding 'wide open' and wonderfully revealing of recording quality.

'Couldn't Bear To Be Special' from Prefab Sprout's *Swoon* album [Kitchenware, KWLP1] sounded beautiful when I spun it for the first time in ages. The song's interesting production details (those ethereal harmony vocals and rumbling low frequency sound effects) were revealed in all their glory – as was the power and deliciously chocolaty acoustic bass contribution of Danny Thompson when I subsequently enjoyed the rousing 'Happiness Is Easy' from Talk Talk's *The Colour Of Spring* [EMI EMC 3506].

As is the hallmark of value, the sum is often greater than the parts. The M8PRE/M8500s offers a great deal of flexibility for the money and it will drive the heck out of even the most demanding loudspeaker loads. It sounded ultra-refined with pretty much everything I threw at it, and with hi-res recordings its delivery of lifelike timbre, texture and dynamics was thrilling.

Enthusiasts looking to build a truly high-end system on a sensible budget should look no further. ☺

HI-FI NEWS VERDICT

At £8500 this M8 combo is not inexpensive, but it is very keenly-priced given its technical performance and outstanding sound. It certainly challenges many amplifiers costing many times its price, due to a carefully managed cost-of-parts budget including less-than-elaborate casework, combined with Far-Eastern manufacturing. The result is a versatile package offering superb performance and value.

Sound Quality: 86%

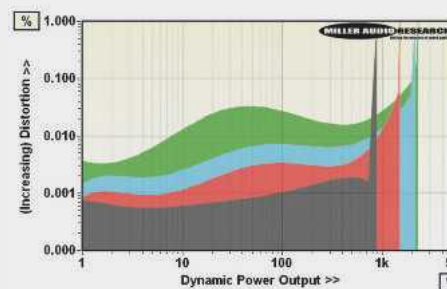


MUSICAL FIDELITY M8500s/(M8PRE)

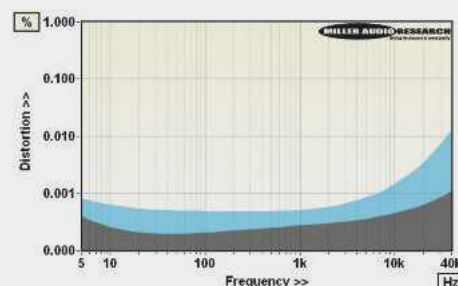
The M8500s reviewed here can trace its legacy back to Musical Fidelity's mighty Titan and kW amplifiers but its closest relative is the substantial mono M8500m [HFN Jan '13]. With the latter's output stage now split into two separate channels, power output has roughly halved from 925W/8ohm and 1.34kW/4ohm to 530W/8ohm and 690W/4ohm although the dynamic headroom is still sufficient to cover 890W, 1.5kW, 2.2kW and 2.3kW into 8, 4, 2 and 1ohm [see Graph 1, below]. The current limit is also reduced to 47.9A, though I use the term 'reduced' advisedly as the M8500s will clearly drive 99.9% of loudspeakers without pause.

With the proven M8 circuit, THD remains very low indeed at 0.0005% through bass and midrange at 10W/8ohm, increasing to just 0.004% at 20kHz [Graph 2, below] and 0.001%/100W and 0.0065% at its rated 500W. Noise also remains fabulously low, yielding an A-wtd S/N ratio of 95dB (re. 0dBV). The frequency response is flat to -0.1dB/20kHz and -1.9dB/100kHz into 8ohm but as the output impedance climbs at HF (0.032ohm/1kHz to 0.12ohm/20kHz), there's a slight treble roll-off into lower impedances (-0.3dB/20kHz/4ohm and -0.5dB/20kHz/2ohm). Finally, also in common with the M8700m, DC offset was rather high at -85mV.

The M8PRE offers a similarly wide 93dB A-wtd S/N ratio (re. 0dBV) and flat response but midband distortion is lower still at ~0.00009% [see black trace Graph 2]. Maximum (balanced) output is a heady 17V. Readers can view comprehensive QC Suite test reports for Musical Fidelity's M8PRE preamp and M8500s power amp by navigating to www.hifinews.co.uk and clicking on the red 'download' button. PM



ABOVE: Dynamic power output versus distortion up to 1% into 8ohm (black trace), 4ohm (red), 2ohm (blue) and 1ohm (green) speaker loads



ABOVE: Distortion vs. extended frequency, preamp (0dBV, black) and power amp (10W/8ohm, blue)

HI-FI NEWS SPECIFICATIONS

Power output (<1% THD, 8/4ohm)	530W / 690W
Dynamic power (<1% THD, 8/4/2/1ohm)	890W / 1495W / 2165W / 2295W
Output impedance (20Hz–20kHz)	0.032–0.12ohm (47–62ohm, pre)
Freq resp. (20Hz–100kHz, pre/power)	+0.0dB to -1.2dB/-0.1dB to -1.9dB
Input sensitivity (for 0dBV/500W)	88mV / 2000mV (balanced in)
A-wtd S/N ratio (pre/power)	92.8dB / 94.8dB (re. 0dBV/0dBW)
Distortion (20Hz–20kHz, pre/power)	0.00009–0.0006%/0.0005–0.0040%
Power consumption (Idle/Rated o/p)	150W/1.92kW (preamp, 17W)
Dimensions (WHD, pre/power)	440x162x400/440x160x460mm

Oppo PM-1

Out of the blue comes a headphone that's no 'me-too' tapping of the buoyant headphone market. In fact it may be the most significant isodynamic ever produced
 Review & Lab: **Keith Howard**

While we are well used by now to famous loudspeaker brands diversifying into headphone manufacture, it is a more unusual step to take for a large electronics brand like Oppo, which has made its audiophile name creating some of the best and most keenly priced universal disc players on the planet [see *HFN* Jan '13].

More unusual still, the new open-back, circumaural Oppo PM-1 is no cautious toe-dip into the headphone market but a vigorous plunge into the deep end. Because not only does it cost £1099, placing the PM-1 firmly within the headphone aristocracy, it is also a planar magnetic 'isodynamic' design that snatches the baton from Audeze and HiFiMan and dares to run even harder with it.

UNDERSTATED STYLING

Oppo could have done things the easy way and launched a middle-market 'me-too' moving-coil headphone; instead it has clearly invested a lot of R&D time and expense in an attempt to create a first product that does nothing less than recast audiophile headphone design.

Were Oppo tempted at any stage in the PM-1's development to make a headphone that shouted its bold ambition through look-at-me aesthetics, that temptation was sensibly resisted. The PM-1 looks conventional, even understated, albeit classy. There are no primary colours here, no eyeful of carbon fibre weave, no garish gold leaf logo. The colour scheme is cool black and silver, while Oppo's name is discreetly etched into the headband ends that carry the detented sliding supports for the capsule yokes, not plastered in large type over the capsules or headband.

If you know that the PM-1 is an isodynamic design, though, you will perhaps gawp at its weight.

Although at a specified 395g (I measured 400g for the headphone alone, 520g with its longer lead) it could never be called bantamweight, it is usefully lighter than the similarly priced and also isodynamic Audeze LCD-2 [*HFN* Mar '13] – 486g headphone alone, 600g with lead.

Doing away with the LCD-2's large capsules has obviously helped here, although arguably it has left the PM-1's earpads barely commodious enough for bigger ears. But Oppo has also gone to considerable pains to improve the efficiency of the planar magnetic drive unit with this design.

So the PM-1's seven-layer, thin, light diaphragm carries flat aluminium conductors not just on one side but both, and these are formed into a spiral pattern to provide the most evenly spread driving force. Apart from weight saving the principal result is a quantum leap in sensitivity. Whereas I measured the LCD-2's sensitivity at 106dB SPL for 1Vrms at 1kHz, and the costlier LCD-3's as 109.4dB [*HFN* May '14], Oppo claims 102dB SPL for 1mW, equivalent to 117dB for 1V into the stated nominal impedance of 32ohm. Our

measurements recorded a 1kHz sensitivity somewhat below this at 114.4dB but nonetheless a 5dB advantage is not to be sniffed at, particularly in light of the weight saving. This makes the PM-1 comfortably the most sensitive planar magnetic headphone we've tested.

As a consequence, this is a planar magnetic you can sensibly use on the hoof

with portable music sources. Oppo provides for this by supplying two headphone leads – a long, 3m one terminated in a ¼in jack plug for listening from a proper headphone amplifier, and a short,

1m one terminated in a mini-jack for use with iPods, smartphones, etc. Connection to each capsule is made securely via mini-jacks of adapted design. A zip-up denim carrying case is provided, the capsules folding flat (although the case is still larger than those for headphones whose capsules fold up into the curve of the headband). A large presentation case is provided for storage in the listening room.

HEADPHONE AMP OPTION

Oppo is also proud of its planar magnetic driver in terms of distortion performance, and certainly the PM-1 generated minuscule THD levels at 100Hz and 1kHz in our testing. From a Oppo PowerPoint presentation I was sent, it seems that Oppo favours multitone testing of intermodulation distortion which (as I've described in these pages many times before) is related to harmonic distortion but far the more significant in practice when listening to music.

Whether or not Oppo's efforts to refine the PM-1's nonlinear behaviour have a perceptible benefit, it's plainly good engineering to lower distortion if you can.

Given Oppo's electronics expertise you won't be surprised to hear that

'It's the most sensitive planar magnetic 'phone we've tested'



RIGHT: Oppo recommends putting the PM-1 on a headphone stand when not in use, or you can use its substantial storage box shown here



LEFT: Discreet styling rather than bling gives the PM-1 a classy look – but users with larger ears could find the earpads are a tight fit


extreme provocation, the PM-1 could be *made* for you. Whereas if you seek insight and excitement even at the cost of a brighter and occasionally perhaps coarser delivery, the PM-1 may not quite light your fire. However, whichever side of this fence you fall on – assuming you're not uncomfortably impaled on it! – we might all agree that, as we've come to expect of isodynamic designs, the PM-1 has great bass: clean, extended and powerful.

EVEN BASS RESPONSE

Unreconstructed bass freaks will perhaps wish that there wasn't a gentle decline in measured output below 100Hz [see boxout] but arguably that makes bass transients slightly cleaner. Whatever, on disco music like Daft Punk's immaculately recorded 'Lose Yourself To Dance' [88.2kHz/24-bit download from the Random Access Memories album] I can't imagine anyone being anything but delighted with the PM-1's low frequency performance. Headphones may lack the visceral bass clout of loudspeakers but they also lack those undesirable room interactions. Rarely will you hear bass as even from speakers as you do from the PM-1.

This same track, though, also provides an insight into the downside of the PM-1's polite tonal balance. Disco music should make you want to dance, right? Should encourage you to send that old white suit to the dry cleaners? It's in matters like this that the PM-1 will polarise opinion, between those content with its emphasis on smooth civility and others who demand more in the way of 'air', lips and teeth type clarity, and overall pizzazz.

Not, of course, that it is only on disco homages that this choice presents itself: it's omnipresent, if on some occasions more starkly than others. Steering a reciprocal course on the musical compass I left Daft Punk for the sparse but captivating opening few minutes of Harrison Birtwistle's *Nenia: The Death Of Orpheus* sung by the legendary Jane Manning [Lyrita SRCD.306]. If you don't know this piece with its part sung, part 'bro-ken-ly spo-ken' soprano part, suffice to say that it relies for its impact on uncompromised vocal clarity and an almost tangible sense of the recording space.

In the latter respect the PM-1's lack of presence band energy ratcheted back the sense of acoustic, and at the same time bled a little of the impact from Manning's 

it has in parallel developed its own headphone amplifier, with the no-nonsense designation HA-1, intended to extract the best not just from the PM-1 but high-end headphones of all flavours. It wasn't supplied for this review but we will catch up with it soon. For my listening I used the Teac HA-501 that I gushed about a couple of months ago [HFN Apr '14], and liked so much that I bought the review sample.

As noted in the lab report, the PM-1 has a very similar frequency response,

and hence tonal balance, to the aforementioned Audeze models. It's no great surprise, then, that they are of broadly similar character, so that the PM-1 presents a smooth, refined if rose-tinted view of whatever's played over it. If you're a potential buyer, this issue cannot be ducked as it will be crucial to your long-term satisfaction. If you crave a character of sound that steps back from utmost elucidation and will, as a benefit, only sound coarse or bright with

SHELVED-UP LF?

The fact that the PM-1 has such fine bass, begs the question as to how it squares with the new headphone target responses being suggested over The Pond. I'm not aware of Canada's National Research Council having published the results of its work in this area, but we know from recent PSB and NAD models that shelved-up bass is a key feature. We haven't had much more from Sean Olive's research programme at Harman, in that the best I've seen thus far is a hand-drawn target response which again features shelved-up LF. In both cases the justification is that this results in a tonal balance more like that heard from a good pair of loudspeakers in an acoustically well-behaved room. Does this tie in with what the PM-1 delivers? It does not, in that the PM-1's uncorrected response on our artificial ear (the same as used by Harman) begins a gentle decline from above 100Hz. Would the PM-1 sound better with a significant bass lift? Absolutely not.

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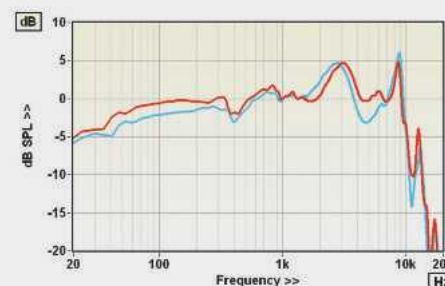
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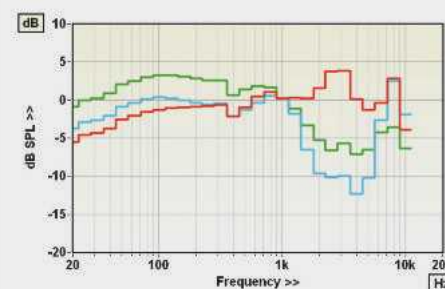
OPPO PM-1

Oppo claims 102dB for 1mW sensitivity for the PM-1, equivalent to 117dB for 1V at the specified impedance of 32ohm. We measured the lower value of 114.4dB at 1kHz, averaged for the two capsules, but this is still exceptional for a planar magnetic design, being 8.4dB better than we obtained with the Audeze LCD-2 [HFN Mar '13] and 5.0dB better than from the LCD-3 [HFN May '14]. So even more so than with the Audezes, this is a planar magnetic headphone that defies the type's reputation for being insensitive. In fact the PM-1 is as sensitive as many moving-coil designs. It's a characteristic of isodynamic drivers that they have almost resistive impedance, and so it is with the PM-1 – although some mild peaking 200-500Hz makes for a larger variation than we measured from the two Audeze models, with minimum and maximum modulus values of 29.2ohm and 32.3ohm, 20Hz-20kHz. But this narrow range still ensures that frequency response is little affected by source impedance, to the extent of just 0.2dB for a 10ohm source or 0.4dB for a 30ohm source.

Inevitable comparisons with the Audeze models extend to the frequency response [shown uncorrected in Graph 1, below], which likewise shows less peaking around 3kHz than moving coil models typically exhibit. Diffuse-field correction of the frequency response [Graph 2, green trace] suggests that the perceived tonal balance will be much like that of the Audeze models with a lack of presence band energy. Gentle low frequency roll-off is apparent below 100Hz but bass output is nonetheless well maintained to below 20Hz, while total harmonic distortion is vanishingly small at 90dB SPL at both 100Hz and 1kHz. Capsule matching error of ± 3.5 dB, 40Hz to 10kHz, is excellent for a headphone and mostly reflects different interactions with the left and right pinnae of the artificial ear. KH



ABOVE: In common with other planar magnetic designs, the PM-1 shows a *reduced* peakiness around 3kHz leading to a slight loss in presence [see below]



ABOVE: 3rd-octave freq. resp. (red = uncorrected; cyan = FF corrected; green = DF corrected)

HI-FI NEWS SPECIFICATIONS

Sensitivity (SPL at 1kHz for 1Vrms input)	114.4dB
Impedance modulus min/max (20Hz-20kHz)	29.2ohm @ 3.4kHz 32.3ohm @ 368Hz
Capsule matching (40Hz-10kHz)	± 3.5 dB
LF extension (-6dB ref. 200Hz)	15Hz
Distortion 100Hz/1kHz (for 90dB SPL)	<0.1% / <0.1%
Weight (inc cable and 0.25in connector)	520g



extraordinarily precise vocalisations. The result was certainly easy on the ear but less arresting in consequence.

Where the refined character of the PM-1 worked at its best, I found, was on the luscious orchestration of 'By The River' from Delius's early *Florida Suite*. The main soaring theme was simply sumptuous.

As I've often commented before, extracting the best from turgid old rock recordings isn't the forte of hi-fi products, of any category, that are less than unfailingly transparent and explicit in their makeup.

Argent's 'Hold Your Head Up' is a real blast from the past for me (brought back to mind by a recent visit to John Bamford's) because I bought the album at school. But even by the standards of early-'70s rock recordings it's no audiophile treasure, and predictably the PM-1 didn't burnish it as best it might. If music of this genre and era forms a large part of your musical diet, products with a softly-balanced sound are not the best companions – although the PM-1's bass heft is a distinct asset.

EXCITING ENTRANT

Something more contemporary, Bugge Wesseltuft and Henrik Schwarz's 'Dreaming' from their CD *Duo* (which John introduced me to) is an intoxicating mix of piano and electronic sounds that's in a different league sonically from the Argent track. This played more to the PM-1's strengths, particularly its muscular bass.

The picture I've attempted to paint here is of an exciting entrant to the high-end headphone market that has the vision and engineering resource to make an impact. But this is a particularly febrile time

ABOVE: Despite being lightweight for a planar magnetic design the PM-1 delivers notably high sensitivity

for headphone design. While headphone sales are booming and seemingly everyone wants a part of the bonanza, there is scant evidence of convergent evolution, of designers and consumers agreeing on what good headphone sound comprises. We even have powerful forces in North America suggesting

new headphone target responses that I personally consider misguided.

In the circumstances perhaps we just have to accept,

even embrace, the principle of different strokes for different folks – even more so in headphones than elsewhere in hi-fi.

So on this basis I recommend the Oppo PM-1s as a fine piece of engineering at a competitive price. But you do need to assure yourself that you understand and enjoy what increasingly appears to be the generic sonic character of planar magnetic headphones before you buy a pair. ☺

HI-FI NEWS VERDICT

The PM-1 is a remarkable first product from a company with no track record in high-end headphones. It gives every indication of having been painstakingly engineered, and in its high sensitivity alone breaks significant new ground for an isodynamic design. But like others of its type it has a distinct tonal balance – one that biases its sound towards understatement rather than flamboyance.

Sound Quality: 85%



'Delius' *Florida Suite*'s main soaring theme was simply sumptuous'

Inspire Hi-Fi Black Magic Si

With its curvy lines, expanses of acrylic and luxurious deep-red paint, this turntable's certainly got the looks, but are its sonics enough to get our pulses racing too?

Review: **Andrew Simpson** Lab: **Paul Miller**

If you're looking for a belt-drive turntable at moderate cost, chances are you'll be picking from established models that follow a well trodden design aesthetic – something, say, in a rectangular plinth with motor, platter and arm assembly sitting under a square-edged Perspex lid. Finding something a little more stylish usually requires digging a little deeper into your pocket, which makes Inspire's Black Magic Si a welcome alternative at its price, with its curvy lines and glossy finish.

Inspire Hi-Fi is a turntable manufacturer that's equally at home with belt, direct or idler-drive decks, its philosophy being to wring the optimum performance from whichever method it chooses. Witness its range of upgrades to some of the most iconic decks of the last few decades from the likes of Linn, Technics and Lenco.

What's equally refreshing is that no two Inspire decks look the same; and so, whether wood, bold colours or funky acrylic is your thing, it's probable that the Derbyshire-based company has a model in its catalogue to suit.

PLENTY OF CHOICES

At £560, the Black Magic Si is the entry-level model in the firm's home-grown belt-drive range, and it includes an Inspire-branded Rega RB202 tonearm. Rubbing shoulders with the Si model is the Quest Clear deck (£750) and the Apollo (£875) – which both offer unique takes on the acrylic platter and plinth approach. Further up the chain comes the Eclipse SEV2 (£2000 with neither arm nor cartridge). This represents the pinnacle of Inspire's belt-drive models, using a high mass acrylic/stainless steel platter and bearing spindle machined from a billet of stainless steel.

Those of the direct-drive persuasion can look towards the company's Monarch models (£2500-£4500) which are stylish

wooden affairs built around Technics 1210 motors [*HFN* Oct '12]. Finally, for the idler-drive enthusiast there's the classy looking Enigma [*HFN* Dec '12], a re-imagined Goldring Lenco GL75 brought up to modern standards and boasting a choice of resplendent gloss finishes.

POWER SUPPLY UPGRADE

The Black Magic's platter is a precision cut 20mm frosted acrylic disc which has a recessed area in its underside to accept the deck's sub-platter, motor pulley and round section belt. The sub-platter is Inspire's own design, precision machined from a block of acetyl resin. This, in turn, is bonded to an aluminium shaft that runs inside a bronze bearing sleeve.

The deck's curvy plinth is made from a single slab of acoustically rigid 25mm MDF,

with the main circular shape measuring around 340mm in diameter, and with a 13.5mm diameter circular armboard stemming from the main board at the two o'clock position. To achieve the chassis's deep gloss finish, Inspire applies no fewer than seven coats of paint.

The Black Magic's plinth rests on three cone-shaped, chunky acrylic feet, attached via a fixed layer of Sorbothane to its base, with two feet spaced under the plinth's front and a third positioned at the deck's rear. While mirroring the design aesthetic of the deck's platter, these feet also bring plenty of stability, although they're pin

sharp, so owners of hi-fi racks prone to scratches should be prepared to invest in a few protective pads to site the deck on.

In keeping with its upgrade philosophy, Inspire offers plenty of options to take the

*'The flute notes
soared like a
metaphorical
sonic bird'*



RIGHT: AC motor mounted at the 12 o'clock position drives the deck's sub-platter. Manual speed change means lifting the platter to move the belt on the two-stepped motor pulley



unit to the next level, including a £150 supporting platform from its Quest range and its £65 polished Puka record weight.

You can also upgrade the Black Magic by plugging the deck into Inspire's £320 off-board PSU, a steel-cased quartz-locked speed generator, which works with the deck's onboard PSU and offers electronic speed change between 33.3 and 45rpm. This external PSU boasts two mains-filtering transformers and a high-current amplification circuit to ensure a smooth and constant supply to the motor.

The second model up in Rega's range and sporting a die-cast tube and steel counterweight, the supplied RB202 tonearm warrants no criticism from us at the price. The arm employs Rega's standard three-point mounting system, so you could upgrade this at a later date to a higher-spec model from Rega's stable or Inspire's own Rega derived X100 Mk2 tonearm (£850), which boasts a carbon fibre arm wand, high-specification cabling and an under-slung counterweight. Because the arm comes ready mounted, setting up the

Black Magic is a doddle. Once unboxed, simply fit the drive belt around the motor pulley and sub-platter, gently place the platter on top and level the deck (which may require using spacers under the feet as they are non-adjustable).

All that's left to do is install a cartridge of your choice, which is made easy because of the way the arm overhangs in free space. Inspire can also supply the Black Magic with a range of pick-ups fitted at extra cost. As the deck comes without a lid, it's worth investing in a soft cover to keep dust at bay when the deck's not in use.



INSIGHTS INTO THE MUSIC

Our review sample came supplied with an Ortofon 2M Blue cartridge, which at £170 is typical of the type of moving-magnet pick-up that's likely to partner a deck at this price level. With this installed, I listened via a Primare R32 phono stage, Musical Fidelity M6PRE/PRX amps and Dynaudio Focus 260 loudspeakers.

From Kwaakhu Baah's opening conga slaps and taps in 'Three Hours', on Nick

ABOVE: No mat required as LPs are placed directly on the acrylic platter. Nightfire red plinth also comes in black or metallic blue while the Rega arm is a classic choice

Drake's *Made To Love Magic* album [Island Records ILPS 8141/986 631-9], my attention was grabbed by the Black Magic's way with the music as it opened up the track. Each instrument sounded nice and clear with acoustic guitar and congas working within their own spaces, allowing me to hear how they complement and feed off each other during the song.

Notwithstanding the Black Magic's strong analytical abilities, it's no cold or soulless performer. Instead its delivery is distinctly 'analogue', which brings lots of realism to the music. Sticking with the *Made To Love Magic* cut of 'Three Hours', the way the Black Magic lets you hear the air passing through the flute and sets its notes free to fly from within the soundstage – soaring around my listening room like a metaphorical sonic bird – was just captivating.

The Black Magic's modest physical footprint belies its ability to throw out a generous and balanced soundstage. Turning to Tracy Chapman's self-titled 1988 album [Elektra/Asylum Records EKT 44 960 774-1] showed that the Black Magic can indeed conjure a sizeable sonic picture. With the Spanish guitar on 'She's Got Her Ticket' voiced well out in the left channel and the track's bass guitar resonating from behind my speaker plane, I was pulled deep into the recording from all round, with Chapman's voice of course taking centre stage.

The bass is also surprisingly well controlled for a deck at this price point. While my Dynaudios are blessed with ➤

GETTING INSPIRED

Formed in 2006 by Robert Isherwood, Inspire Hi-Fi launched its first turntable, the Eclipse, in 2009, which has since gone through a few iterations to morph into its current Mk2 SEV2 guise. Then came the company's flagship Monarch direct-drive deck, which was quickly followed by the company's idler driven Enigma [HFN Oct and Dec '12]. Inspire's South Yorkshire facilities are home to a metal engineering and prototype designing area, alongside its own modern demo facility which boasts over 20 decks on permanent demonstration. For the parts not produced in-house, Inspire calls upon carefully selected local companies for specialist electronics and acrylic machining work. Unlike most hi-fi manufacturers, Inspire prides itself on selling direct to the customer. Robert says this helps to keep costs down while allowing it to offer a more bespoke service. So what's next? Says Robert: 'A new product for 2014 that will certainly give fans of classic '70s and '80s high-end sprung designs something to smile about!'



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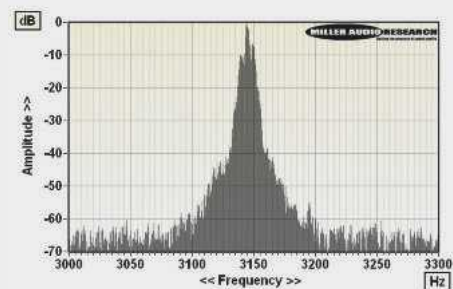
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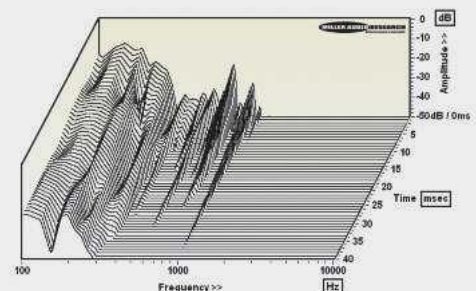
INSPIRE HI-FI BLACK MAGIC SI

With an eye to simplicity, Inspire Hi-Fi has engineered a cracking little deck in the Black Magic Si. This belt-driven design employs a 'low vibration' Premotec AC motor driving a sub-platter machined from a block of acetyl resin, its aluminium/bronze bearing assembly achieving an impressively low rumble figure of -71.9dB (DIN-B wtd re. 1kHz/5cm/sec). The in-groove rumble is necessarily slightly worse, but at -68.0dB is still creditable and, with the optional record weight squeezing the vinyl LP to the acrylic platter, improves further to -68.8dB. Absolute speed was slightly slow on our sample but at -0.19% will not be audible. Similarly, while wow and flutter is not in the same class as its exceptional rumble figures a peak-weighted 0.04% for both low and high-rate speed variations (0.08% total) is perfectly typical for a deck at this price. The $\pm 5\text{Hz}$ wow component is clear enough [see Graph 1, below] but the general 'sharpness' of the main peak illustrates the Black Magic's lack of drift – a boon to pitch-stable bass.

The partnering Rega RB202 tonearm is similar to both the RB101 and RB303 [HFN Oct '11] in performance terms with an 11g effective mass and rigid tube that offers a well-defined main resonance at 150Hz followed by other modes at 200-300Hz at lower amplitude. The higher-Q resonances at 750Hz and 1kHz decay quickly and, as we saw them in the RB101 and 303, are probably linked to the bias and cueing mechanisms. Play is minimal and friction <10mg in both planes. Readers may view full QC Suite reports for Inspire Hi-Fi's Black Magic Si turntable and Rega RB202 arm by navigating to www.hifinews.co.uk and clicking on the red 'download' button. PM



ABOVE: Wow and flutter re. 3150Hz tone at 5cm/sec (plotted $\pm 150\text{Hz}$, 5Hz per minor division). Absolute speed accuracy is imperceptibly slow



ABOVE: Cumulative tonearm resonant decay spectrum, illustrating various bearing, pillar and 'tube' vibration modes spanning 100Hz-10kHz over 40msec

HI-FI NEWS SPECIFICATIONS

Turntable speed error at 33.33rpm	33.27rpm (-0.19%)
Time to audible stabilisation	4sec
Peak Wow/Flutter	0.04% / 0.04%
Rumble (silent groove, DIN B wtd)	-68.8dB (with record weight)
Rumble (through bearing, DIN B wtd)	-71.9dB
Hum & Noise (unwtd, rel. to 5cm/sec)	-55.3dB
Power Consumption	3W
Dimensions (WHD inc arm)	450x120x335mm



ABOVE: On/off switch sits at the chassis's rear next to its captive mains lead. Rear pointed foot and onboard PSU can be seen attached to the plinth's underside

ample low end grunt, they're also quick to highlight any flaws in this department. Thankfully, the Black Magic is designed to err on the side of a controlled response, rather than attempting earth-pounding levels of low-down wallop.

However, this deck is no bass lightweight (especially when compared to its nearest price rivals), but its strengths lie in ensuring the bass it produces is articulate and well rounded, yet without sacrificing detail in the process.

As the Black Magic got to grips with the lower frequencies of Tracy Chapman's 'She's Got Her Ticket', I could clearly hear the tone and texture of the track's bass guitar notes, as its addictive melody bopped along. What was perhaps more admirable was how the Inspire didn't let the bass overwhelm the track, or compete with other instruments in the lower midrange, when I began cranking up the volume. Instead, it was kept in check within the mix, underpinning the track with exactly the right amount of punch.

Timing is another key string to the Black Magic's bow. Put to the test via Goldfrapp's *Tales Of Us* [Mute Records STUMM356], the Black Magic caught my ear early on with the opening, looping piano riff on 'Drew', before moving on to the rapid start/stop style of the opening strings, which the deck nailed with effortless precision.



ABOVE: The optional 500g polished stainless steel Puka record weight

Despite the track's changing tempo, the Inspire never sounded as if it was playing 'catch up' and remained poised as the song gathered pace to build to its musical zenith. Demonstrated during the quieter and slower passages of this track was the deck's ability to be cool under pressure when handling music's dynamic swings, an area where many a mid-priced deck can get a little flustered.

A LIFT IN PERFORMANCE

The Black Magic package with Ortofon MM cartridge clearly makes for an impressive pairing and so it was interesting to test the deck's talents further via my reference Benz Micro ACE SH high output MC pick-up. This lifted the performance considerably. Revisiting 'Three Hours' showed that this deck can support a more revealing cartridge before its limits are reached; and now the track really began to open up. While bringing more detail to proceedings, this combination sounded far smoother in the midrange across the a range of test material.

What this ultimately serves to highlight is the Black Magic Si's transparent nature – it truly does provide a platform that adds little of its own sonic colour. ☺

HI-FI NEWS VERDICT

By keeping things simple and investing in the areas that matter, Inspire has created a vinyl spinner that sounds superb for the money, with a neutral tone that delivers bags of musical detail. And because it looks a million dollars, you'll have no problems getting this past the front door. Add a decent MM cartridge of the Ortofon or Nagaoka ilk and you'll be blessed with a package that punches well above its weight.

Sound Quality: 80%



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Classical Companion

BEHIND THE MUSIC WITH HI-FI NEWS & RECORD REVIEW

Richard Wagner *The Siegfried Idyll*

NEW SERIES

It's not much heard in concert programmes these days, but in the days of LP it made a comfortable fit for a 12in side. **Christopher Breunig** reveals the very best recordings

Composers as contrasted as Elgar and Bartók, Schumann and Shostakovich, Mahler and Beethoven have concealed, or made explicit references in their music to women they adored. Richard Wagner's 'song of thanksgiving, with a profound regard for the bonds of human affection' [Richard Osborne], was first heard on Christmas morning in 1870, played by a small group clustered in the stairway of his house near Lake Lucerne.

SOME HISTORY

Now known as the *Siegfried Idyll*, it then had the wordy title 'Tribtschen Idyll, with Fidi's Bird-Song and Orange Sunrise as a Symphonic Birthday Greeting' – Fidi being his son Siegfried, Orange Sunrise referring to their bedroom wall

→ First LP release of the Nov 1965 Decca recording by Solti, with members of the Vienna Philharmonic

← Richard Wagner: a 1864-5 painting by Friedrich Pecht, which is now in the NY Metropolitan Museum of Art



paper. The serenade (with five string players, flute, oboe, two clarinets and two horns, bassoon and trumpet) was never meant for publication, but later financial constraints meant that Wagner sold it to Schott's with the scoring extended for 35 or so players, as we mostly hear it performed today.

The piece was of course written for Cosima, Franz Liszt's daughter, who had married the musician Hans von Bulow but was

instantly attracted to the much older Wagner when they were introduced in 1857, during a honeymoon visit (the composer and von Bulow had a close working relationship which continued on despite the marital outcome). In a Berlin meeting six years later they declared 'a confession to belong to each other alone' and Cosima had three children with Wagner – Siegfried the third – before her husband finally sanctioned a divorce.

Cosima Wagner lived for 47 years after Wagner's death, devoting herself to maintaining fidelity to his aims in opera productions at Bayreuth until illness prompted a succession by her son Siegfried

(Adolf Hitler became a regular visitor to the Wagners' house, Wahnfried, from 1923).

THE MONO ERA

The 1951 *Record Guide* (the collector's bible pre-Penguin Guides) described the music as 'uniquely tender and beautiful', but found the 1949 HMV 78rpm set by Wilhelm Furtwängler with the VPO, recorded in the Musikverein [now on Naxos 8.110999], missing in woodwind detail through the use of a large strings complement.

That decade brought several mono LP versions, only one of which would become a longterm recommendation: an Oct '51 Abbey Road HMV recording with the Philharmonia. In fact this resulted from a rescheduling to reduce tensions with the difficult young

Italian conductor

Guido Cantelli.

Stephen J Pettitt's book about the orchestra [*Philharmonia Orchestra: A Record Of*

'Dennis Brain left the Cantelli sessions saying "Never again!"'

Achievement 1945-1985; Faber & Faber] describes how he expected the players to stand when he entered a hall (!), and Alan Sanders' splendid reissue note [Testament SBT1012] tells us more. A Toscanini protégé, Cantelli was a perfectionist – Dennis Brain (legendary principal horn) apparently left the sessions, with its numerous retakes, saying 'Never again...'. You feel the interpretation as correspondingly disciplined; not all sections flow seamlessly – edited short takes? – but it's musically compelling (and the CD has a magnificent Brahms First Symphony from 1953).

Karajan was 69 before he was tempted to record the *Siegfried*



Idyll with the Berlin Philharmonic [DG 449 7252]. As with 2LP sets by Haitink and Klemperer, it came as side 4 with a Bruckner Seventh.

TWO ORIGINAL VERSIONS

It's the Vienna Philharmonic again with the Nov 1965 Decca LP recording with Solti [SXL6421], engineered by Gordon Parry. But here's the difference: allegedly recorded late at night in the Sofiensaal, this is the original chamber version, led by Walter Weller; and the focus on intimacy makes for a very different and engaging listening experience.

The Decca Legends coupling with Solti's very fine VPO Schubert 'Great C major' Symphony [460 311-2] now comes as an MP3 download only (ignore the cover artwork flash saying '96kHz/24-bit') but you may



still find CD copies around, and it's preferable, I'd say, to the all-Wagner replacement [475 8502]. It's also a part of the *Ring Cycle* Blu-ray audio Limited Edition package [see *HFN* Nov '12, p105].

Although Otto Klemperer's 1928 Berlin State Opera Orchestra *Siegfried Idyll* recording was with full orchestra [Naxos 8.111274], his 1961 Philharmonia/Kingsway Hall version was also with a chamber group. I like its dogged integrity although tonally it is inferior to the Solti. We've had various CD recouplings (it's currently on EMI 6782992 with other Wagner orchestral 'highlights') and you can hear the whole thing on YouTube.

My top recommendation comes from an unexpected source. The German company Audite has, in its archive series, CDs derived from the Lucerne Festival. And with the news of the sad death of Claudio

→ Abbado's live recording with the Chamber Orchestra of Europe is from the 1988 Lucerne Festival

← Now on a Testament CD, Guido Cantelli's Abbey Road recording with the Philharmonia was made in Oct 1951



Abbado it promptly brought forward a planned release of live performances he'd given in the Lucerne Konzerthaus: Schubert's 'Unfinished' Symphony, with the VPO from 1978, and Beethoven's Second with the *Siegfried Idyll* from 1988 [Audite 95.627, two discs].

These later two were with the Chamber Orchestra of Europe, which he'd helped to found in 1981 and had recorded extensively with in the 1980s – sets include the Schubert symphonies and Haydn's 'London' series. A discography can be seen at the COE website.

The COE programme was a Toscanini memorial concert – the Wagner piece was a Toscanini favourite and he'd conducted it at Lucerne in 1937. Abbado's performance seems to progress as if of its own accord: the music

flows naturally with wind voices clearly heard – the first *Siegfried* horn reference is quite 'perky' for once – and there's a wonderfully clean balance (the soundstage is well represented in this SRF Radio taping); Abbado's principle of his players listening to each other is clearly evident. His innocence of self-regard sits well with this work – it's odd that DG never made a subsequent studio recording.

A FINAL CURIOSITY

Perhaps worth mentioning is the eccentric Canadian pianist Glenn Gould playing his own Wagner transcription of the *Idyll* in 1973 and also directing a Toronto chamber group – with painfully slow tempi in both cases [Sony 52650]. YouTube has this uploaded in four sections, for those with extreme patience... ↻

ESSENTIAL RECORDINGS

Scottish Chamber Orchestra/ Robin Ticciati

Linn CKD540 (CD and download)

A suitably small-scaled account principally worth recommending as it's the only one available – on its own if preferred: it's part of a Linn anniversary compilation – as a 192kHz/24-bit download (to be reviewed).

Vienna Philharmonic Orchestra/ Herbert von Karajan

DG 423 513-2 (CD)

A Salzburg performance from near the end of his career (1987). Preferable to his Berlin studio version and the movingly conducted Tristan Prelude and 'Liebestod', sung by Jessye Norman, makes the disc especially worth having.

Columbia Symphony Orchestra/ Bruno Walter

Sony 644562 (2CDs)

In 1976 CBS issued an LP set with rehearsals of the work together with a final performance. It is reissued with other Wagner Orchestral excerpts, all from this conductor's 'Indian Summer' in the Los Angeles recording studios.

Berlin Philharmonic Orchestra/ Rafael Kubelík

DG 478 5188 (CD)

This likeable account from 1963 is reissued with other Wagner pieces conducted by Karl Böhm and Eugen Jochum. But there's an alternative later Kubelík version on Sony with his Bavarian RSO [88697884112].

Vinyl Release

BEHIND THE MUSIC WITH HI-FI NEWS & RECORD REVIEW

Jack White *Blunderbuss* (180g)

Lost limbs, nosebleeds, fingers in doors and drinking perfume... **Steve Sutherland** takes stock of the first solo album from Jack White, in all its 180g vinyl glory...

I've never interviewed Jack White but I met him once, briefly. He was standing at the side of the *NME*/Radio 1 Stage at the Reading leg of the Reading & Leeds Festival, talking to my daughter, Molly. This was in 2006 and Molly was six years old at the time. Jack's side project, The Raconteurs, were headlining the stage, but Jack had rocked up early to catch The Fall who were, at this precise moment, doing that thing that only The Fall can really do – making a racket while Mark E Smith sort of ranted unintelligibly over the top.

GENUINE GENIUS

It was great, of course, and Jack was obviously into it. So was Moll. Jack asked her if she liked The Fall and she replied in the affirmative and went on to say that when she grew up, she was gonna play guitar in a band. Jack thought that was great and said so.

All these many years on, Moll doesn't remember the meeting and is mortified because she loves Jack White and so do I. I liked him then for taking the time to talk to Moll and nothing he's done since has

persuaded me to any other opinion than the man is as close as we've got these days to some kind of genuine genius.

Blunderbuss is the album we're here to talk about and, when it came out on Jack's own Third Man label in August 2012, it was trumpeted as Jack's first solo offering which was a bit daft really considering how he'd been the absolute controlling and dominant talent in everything he'd ever done to that point.

He might have taken a step back into the shadows with The Raconteurs and even relegated himself to the drum stool in Dead Weather, but it was still Jack you looked to when those bands got brilliant. And as for The White Stripes, that was surely Jack's show, top to bottom. From the red and white schematic to the sister/brother, husband/wife shtick he had going with Meg, from the faux-negro way he addressed the crowd at gigs to the way each and every track was its own volcanic

'Each song is an intensely playful celebration of what rock can do'

drama, Jack was creating his own world and inviting us to drop on by.

Perhaps The Stripes became so defined by the vaudeville act that Jack developed that the main man felt trapped. Perhaps Meg just got freaked out by the fame, but it came as no great surprise when Jack called time on the deal. I don't wish to understate Meg's contribution here – when

I was first introduced to the band's music in the *NME* office, it was as a mini Led Zeppelin burning down bars around the States and Meg was the Bonham. Ray LaMontagne even wrote a great, if

decidedly creepy, song about her (check it out, it's sincerely weird).

But what I'm saying is that, when *Blunderbuss* arrived, it was no surprise when it turned out to be Jack's usual business as opposed to anything radically different. Each song is an intensely playful celebration of what rock can do and where it can go, just delivered with – and I don't think I'm imagining this – a new-found sense of confidence and freedom. Certainly many of The Stripes' hallmarks are upfront, present and correct.

PSYCHOTIC EDGE

The first track released from the album was 'Love Interruption', a starkly violent acoustic number steeped in the luscious melodramatic Southern Gothic you'd come to expect from Jack at his most flamboyant. With all the stuff about slamming fingers in doors and killing your mother delivered with a woozy, psychotic edge, 'Love Interruption' promised that *Blunderbuss* was likely to be some sort of songwriting masterclass and when it finally arrived, Jack delivered on that promise.

Right from the off, 'Missing Pieces' is a horror movie in a hospital, full of nosebleeds in showers and waking up to find limbs lost to amputation. The way Jack brings it all around to be about the

STEVE SUTHERLAND

Steve edited *NME* from 1992-2000, the Britpop years, launching *NME.com* and reviving the *NME Awards*. Previously he was Assistant Editor on *Melody Maker*. Among his many adventures he has been physically threatened by Axl Rose, hung out awhile with Jerry Garcia and had a drink or two with Keith Richards...



MAT HAYWARD/SHUTTERSTOCK.COM



Jack White on stage at the WaMu Theater in Seattle, WA, on August the 14th, 2012. He formed The White Stripes along with Meg White in 1997. They disbanded in 2011



➔ Priced £16.99, Jack White's *Blunderbuss* on 180g vinyl is on the Third Man label and can be ordered from www.rockbox.co.uk

emotional tally of relationships is perfectly stunning. 'Sixteen Saltines' comes next, a hyper-tense maelstrom straight out of the Stripes' canon, Jack creeping around drinking his paramour's perfume when she's out and slamming down a cool metal riff to rival anything in his back catalogue.

'Freedom At 21' is more falsetto violence relaxing atop Mt Zeppelin while the title track invites a gentlemanly country steel guitar to waltz in the parlour as the cotton ripens outside in the fields. 'Hypocritical Kiss' has the whiff of The Raconteurs about it, all West Coast harmonies, brushed drums and picture palace piano. 'Weep Themselves To Sleep' is another piano-driven fanfare to how tough love can be, while Jack's wobbly joyful version of the old Little Willie John strutter 'I'm Shakin'" is pure rockin' pneumonia complete with high-strung chick backing vox and a cheeky lyrical nod to the great Bo Diddley.

That brings us to 'Trash Tongue Talker', Jack soap-boxing about some boogie



THOM JOHNSTON

➔ Jack and Meg White in 2007 during a concert for fans on a bus in Winnipeg



woogie wanton silliness, and the lovely juke-jump 'Hip (Eponymous) Poor Boy' which sidles neatly into 'I Guess I Should Go To Sleep', one of those cute 'Goodnight Irene' trad-type ballads that Jack has always enjoyed dropping on his albums.

'On And On And On' has got the chill jazz about it, remarkably reminiscent of The Grateful Dead's Jerry Garcia though I doubt Jack would thank us for saying that. Which takes us to the closer, 'Take Me With You When You Go', which has a lot of fun riffing on Dave Brubeck's 'Take Five', indulging in some top fuzz riffery and ending on a sweet Beatley 'ooohh'.

NEW FAVOURITES

You'll have doubtless noticed by now that we've taken a stroll through the entire piece, track by track. That's no accident. It's the mark of a great album, I think, when not only do you find yourself playing it end to end, over and over, as whole but when you find yourself constantly falling for new favourites.

White Stripes albums tended to have real stand-outs and then other mostly great stuff – I'm thinking of how 'Seven Nation Army', 'Icky Thump', 'Hotel Yorba' and 'Fell In Love With A Girl' tended to dominate their respective LPs. But *Blunderbuss* boasts a rare wall-to-wall quality where really it would be churlish to pick a runt from the litter. 'I'm Shakin' is easier to get into than

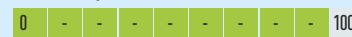
some of the others and 'Sixteen Saltines' is downright class but, overall, this is an exceptional work united by the feeling that Jack White could – and does – turn his hand to just about anything musically he wants to and totally own it.

At the time of writing, Jack has released 'High Ball Stepper' online, an astonishing psychedelic instrumental and, we suspect, a taster for his second solo LP, *Lazaretto*, scheduled for release in Summer 2014. There's nothing about it to suggest we won't be celebrating that little beauty on these very pages in a year or two's time. ☺

RE-RELEASE VERDICT

The White Stripes favoured all-analogue recording (their 2003 LP, *Elephant*, was recorded at a small analogue-only studio in Hackney) so it's perhaps no surprise the vinyl master for *Blunderbuss* was prepared by no less a luminary than Grammy Award-winner Bob Ludwig using 100% analogue sources and that the vinyl was cut by George Ingram at Nashville Record Productions. In short, no expense was spared where it counts – the sound – and while not the most accessible of LPs musically, production is immaculate. HFN

Sound Quality: 89%



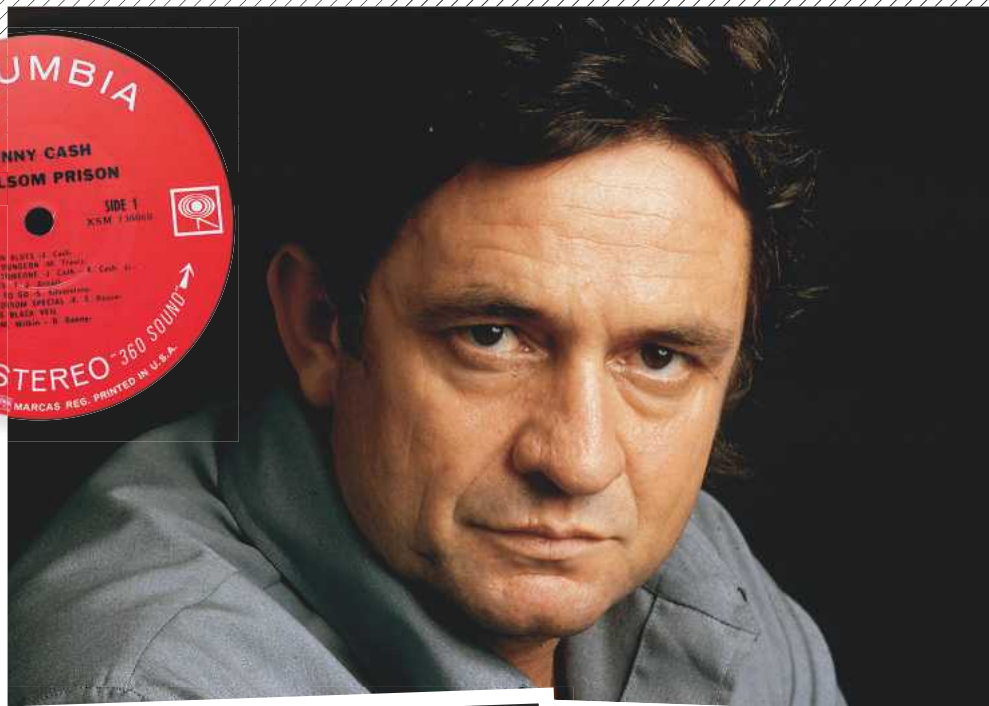


Johnny Cash *At Folsom Prison*

In 1968, Johnny Cash defied his record label and hatched a plan to record a live LP at Folsom Prison in California. On release the album hit No 1 on the Billboard Country chart, eventually exceeded triple platinum sales and relaunched the singer's ailing career...

Words: **Johnny Black**

When a big, unmarked truck rumbled through the gates of Folsom Prison in Northern California on January the 13th, 1968, nobody knew that music history was about to be made. Inside the truck, Johnny Cash and sundry Nashville outlaw compatriots were undertaking a veritable Mission Impossible. Their plan? To secretly record a Columbia Records live album without the knowledge of Columbia Records.



AL CLAYTON/SONY MUSIC ARCHIVES

TOAD STRANGLER

In a sense, the truck had been heading for Folsom since Cash released his hit single 'Folsom Prison Blues' way back in 1955. That hard-nosed, unsentimental murder ballad, with its starkly grim line, 'I shot a man in Reno, just to watch him die', quickly became a hot favourite in the convict community.

When Cash sang it in the midst of what he called a 'real toad strangler' of a thunderstorm at the 1957 State Prison Rodeo in Huntsville, Texas, he could feel the power it delivered to the inmates who shrugged off the violence of the weather to enjoy the thrill of the music. From that moment on, Cash started thinking about making an album in a prison and, at the top of his most-wanted list, of course, was Folsom Prison.



➔ Johnny Cash in 1971 by photographer Al Clayton. Inset shows label of original Columbia LP

➔ Promo shot from 1959

➔ The singer on stage at Folsom prison. The stage was setup in the prison's mess hall

➔ Colour shot of Cash in reflective mood taken in 1965



DON HUNSTEN/SONY MUSIC ARCHIVES

'I thought people would take notice of men that have been forgotten in everybody's mind,' he explained years later. 'It would be good for them to hear the men's reaction. Columbia hadn't wanted to bother. They thought it would be too much red tape.'

Even so, Cash doggedly persisted until, a decade later, with the help of his friend, Reverend Floyd Gressett, who preached regularly at Folsom, he won the approval of the prison authorities to make an album.

COLUMBIA RESISTS

Cash's chief co-conspirator in this clandestine operation was Columbia Records producer Bob Johnston, whose previous credits included classic albums by Bob Dylan, Leonard Cohen and Simon And Garfunkel.

In 1968, however, country music was not high among Columbia's priorities. The company was riding a successful wave of psychedelic rock

and pop. Cash was not a huge seller, and a high-profile drug bust on the Mexican border had made the company wary of him.

Even Johnston, who wielded considerable clout with Columbia, could not convince his bosses to finance *Johnny Cash At Folsom*

'Columbia said if he did the LP he'd never record for the label again'

Prison. 'They said if I did it I'd be fired,' he told me. 'They also called Johnny and said that if he did this record it would ruin his career and he'd

never record for Columbia again.'

When I asked Johnston how he handled those threats, he revealed, 'I said, "F**k you". I picked up the phone and called Folsom and I said "I wanna talk to the warden." He took the call and I said, "Guess what? Johnny Cash is gonna come and do a concert at your prison."'

Between them, Cash and Johnston evolved a plan whereby they would secretly fill a truck with gear, spend a couple of days rehearsing in the Banqueting Hall ➔

PRODUCTION NOTES

As one of America's most experienced producers, Bob Johnston reckons he has recorded in every toilet in the world and most of the major studios, but Folsom Prison offered a challenge like no other.

Because of the secrecy surrounding the recording, 'We had a truck full of whatever we could take from Columbia Studios in Nashville. Charlie Bragg, who was on staff at Columbia, was the engineer. The show was done in the mess hall but I was recording it in the cafeteria, 200 feet in the air. It was huge and echoing, with catwalks and hard surfaces everywhere. So, we put up as many mics as we could on the stage, sometimes a couple or three for each player, close in. There wasn't any EQ'ing, either – we went straight out to the recorders from there.'

'We recorded it to 8-track,' he remembers, 'but it was the show that made itself, really.'

Because of the fly-by-night nature of the session, no significant written records remain but scrutinising rock photographer Jim Marshall's excellent photos, it can be seen that Shure SM56 microphones were employed, with a Shure SH55 and a University vocal horn patched together for the PA.

Unsurprisingly, the album is treasured for the power of its performances because there was never any hope of achieving anything resembling pristine sound. 'I worked for about three weeks trying to get a sound out of that,' says Johnston but, being a realist, he makes no boast about his sonic achievement other than, 'I got the album done.'



DON HUNSTEN/SONY MUSIC ARCHIVES

JT PHILLIPS/SONY MUSIC ARCHIVES



of The El Rancho Motel in nearby Sacramento, then play the gig at Folsom Prison on January the 13th.

The team that assembled at the El Rancho included Cash and June Carter plus the Tennessee Three, Carl Perkins, The Statler Brothers, Johnny's father Ray Cash, producer Johnston, photographer Jim Marshall, and a couple of reporters – Los Angeles-based freelancer Robert Hilburn and Gene Beley of the Ventura Star Free Press.

GREYSTONE CHAPEL

Beley recalls how, on the first evening in El Rancho, the Rev Gressett asked a favour of Cash. Glen Sherley, a Folsom inmate doing five-to-life for armed robbery, had written a song, 'Greystone Chapel', about the spiritual uplift provided to the men by the prison chapel. The Rev Gressett wondered if Johnny might be able to mention the song during the show.

Cash asked to hear the song on tape. He then announced that he'd decided to do more than just mention it on stage.

'I want to record it tomorrow on the album during the show,' he declared, and began scribbling the words down in a notebook.

Rehearsals continued into January the 12th, with the band focused on learning 'Greystone Chapel', when an unexpected guest showed up. California governor Ronald Reagan, who was at the hotel for an after-dinner speech, visited the band and offered his encouragement.

Next morning, the entourage drove to Folsom where, it being a maximum security jail, their truck and equipment were searched,

but obviously not too thoroughly, because Cash had brought along a plentiful supply of amphetamines to help power his performance.

'The granite walls in Folsom are about eight feet thick,' remembered Jim Marshall, 'and we had just gotten off the bus and gone through one giant gate into a holding area. Then we went through a second gate, and, when it clanked shut, John said, "Jim, there's a feeling of permanence in that sound." After that, I started wondering when we were going to get out of there.'

Bob Johnston recalls that, 'The concert was down on a makeshift stage (in the prison's mess hall)

and we were recording up in the cafeteria. There were guards walking around up on the balcony with those dark glasses on so

you couldn't see anything, and the guns were loaded.'

The atmosphere was impossibly tense because, as Hilburn has explained, 'Two weeks before, some prisoners had taken a guard hostage. Officials told the inmates that if anyone left their chair during the concert they would stop the show, and there were guards with rifles on walkways above the stage.'

'I'M JOHNNY CASH...'

There were two performances to 2000 inmates, one at 9:40am and one at 12:40pm, in case the first performance proved unsatisfactory.

Carl Perkins took the stage first and performed his hit 'Blue Suede Shoes'. Following this, The Statler Brothers sang 'Flowers On The Wall' and 'This Old House'. Finally, The Man In Black strode out and delivered his unforgettable opening

← The singer performs in 1969 on his ABC television show with June Carter Cash, his second wife. A five-time Grammy Award winner and one-time member of The Carter Family, June backed Cash on stage at Folsom for the songs 'Jackson' and 'Give My Love To Rose'. He married her later that year

← Cash is caught on camera making notes in the studio for this Columbia Records promo shot from 1960. During a career that lasted nearly 50 years until his death in 2003 the singer released close to 100 albums for several record labels

'There were guards walking around with dark glasses and loaded guns'

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RON KEITH / SONY MUSIC ARCHIVES

Picture of the singer in 1985 from the Sony/BMG archives

line. 'When he said, "Hello, I'm Johnny Cash," and started "Folsom Prison Blues", everyone knew he had nailed it,' reckoned Hilburn.

'He didn't come in with a "greatest hits" show: he came in with a set designed for the prisoners, to make them laugh and give them hope. Before that day I saw country music primarily as entertainment, but Cash wanted his music to lift people up. There was a purpose to it.'

'Folsom Prison Blues' was delivered with noticeably more zip than the 1955 original, an emotionally-charged version that set the inmates alight. 'It did get pretty hairy there for a while,' remembers Johnston. 'When he did the thing about "I shot a man in Reno" and those guys were up on the chairs, cheering, I thought, "Man, I should have brought Tammy Wynette and George Jones here – anyone but Johnny Cash."'

GRIM HUMOUR

Cash stoked the emotional flames ever higher with prison-oriented songs including 'Green, Green Grass Of Home', the grimly humorous '25 Minutes To Go', and other songs of despair such as Merle Travis's 'Dark As The Dungeon', before ending both concerts with Sherley's 'Greystone Chapel'.

But such was the empathy between the singer and his audience that the authorities' fears of rioting and violence came to nothing. 'He felt kinship with the prisoners,' believed Jim Marshall. 'That's why he did "Greystone Chapel". The prisoners respected him, too. If John would have said, "Follow me, we're gonna bust out," they would have done it. The atmosphere was electric: it was one of the greatest concerts I have ever been to.' ☺



ORIGINAL VINYL (1968)

Having overcome its reluctance to issue it at all, Columbia Records went to market on March the 1st, 1968, with a standard album package [CS 9639] fronted by a gritty Jim Marshall colour shot, with a 'handwritten' note from Johnny Cash on the reverse.

Columbia's standard "'360 Sound' Stereo" logo appeared on the centre label but not, perhaps significantly, on the front or rear covers. Could it be that the company was reluctant to prominently display that proud logo on a recording it considered to be decidedly inferior?

One problem, the high level of reverb caused by the hall's acoustics can be perceived as documentary realism perfectly suited to the project – a true and honest reflection of what happened. Then again, there's no doubt that if Bob Johnston and engineer Charlie Bragg could have had their way, it would have sounded much 'better' in terms of definition, separation and frequency range.

Similarly, the constant barrage of hooting, yelling and delighted squawking from the prisoners, not to mention prison warders' harsh Tannoy announcements, is present at a level that some listeners will find simply distracting, while others will cherish its realism.

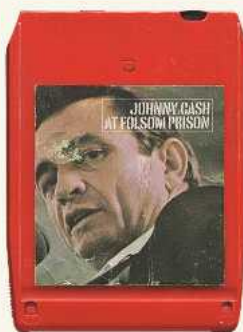
Interestingly, according to Cash's meticulous biographer Michael Streissguth, the cheering from the audience following the line, 'I shot a man in Reno, just to watch him die' was added in post-production, because the prisoners, fearing reprisals from guards, were reluctant to cheer at anything

that might arouse their wrath. Those who can listen past all this, will thrill to the sound of a rhythm section whose legendary 'boom-chicka-boom' groove is tighter than the shrink wrap on supermarket roquefort. They'll also melt to the gorgeous vocal harmonies supplied by June Carter Cash on 'Jackson' and 'Give My Love To Rose'.

On a musical level, Johnston captured a superb performance, but to enjoy it fully the listener must also be prepared to relish the lo-fi audio. Alternatively, seek out *Johnny Cash At San Quentin*, the 1969 sequel, which is a better recording of a less engaging performance.

CASSETTE, 8-TRACK AND REEL TO REEL (1968)

As near as I can discover, once Columbia realised its Folsom vinyl was actually selling, it jumped in with every other format available. There was a cassette version [16 10 0404], an 8-track [18 10 0404] and even a reel-to-reel edition [CQ 1005]. I have to confess, I've heard none of them, so can't comment.



FIRST CD (1999)

Three decades rolled by before Columbia Legacy made *At Folsom Prison* available as a re-mastered CD [CK 65955] with a bunch of extra tracks.

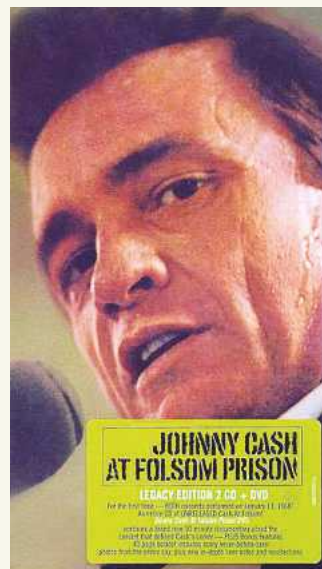
Regrettably, the flawed nature of the original meant that this stands as little more than a more convenient way to listen to this historic concert.

SACD (1999)

Although this SACD [CS 65955] is noticeably a shade better than the same year's CD, it was still nothing to write home about. Once again, the shortcomings of the original masters meant we were still listening to something of a grainy lo-fi recording.

40TH ANNIVERSARY LEGACY DELUXE EDITION (2008)

For any Cash devotee, this reissue [88697 36329 2] is the one. Presumably having accepted that it would never make a sonic silk



purse out of 1968s sow's ear of a recording, Columbia Legacy pulled out all the stops to make this irresistible in every other aspect.

It's a 2CD and one DVD set, where CD1 features the original album plus seven extra tracks respectfully cleaned up. CD2 presents the 75-minute second Folsom show with 24 previously unissued tracks.

Meanwhile, the DVD offers a splendid documentary featuring rare Folsom footage, insightful interviews, and unpublished Jim Marshall photographs. Throw in Cash biographer Michael Streissguth's 24-page booklet and what's not to like?

180G VINYL RE-ISSUES (2010)

There are, to my knowledge, two 180gm vinyl re-issues, a single LP 16-song edition from Sundazed [LP 5361] and a 24-song gatefold sleeve Music On Vinyl [MOVL274] double album version.

If you'd like to replace your well-used old original vinyl copy with a shiny new one, these are your best options. Just don't expect sonic miracles.



O₂ Academy, *Brixton, London*

Born after street battles in a riot-torn Brixton, the venue soon became a pit-stop for acts on world tours and even escaped bankruptcy by turning misfortune into money. **Steve Sutherland** takes you to the heart of the live experience at the O₂ Academy

If only Bollo from The Mighty Boosh had been there. He would certainly have warned me: 'I've got a bad feeling about this.' But January the 27th 1998 was a good eight years before he would bang the drums on stage at Brixton Academy and right now I'm in the midst of a classic Mexican stand-off.

Up there, dwarfed by a badly misconceived backdrop of giant urinals, is Eddie Izzard, host of our *NME* Awards. And down there, sitting at a table on the dancefloor, are The Verve who, with Oasis on the slide and Blur in chaos, are the readers' vote for Single and Best Video for 'Bittersweet Symphony', and, most prestigious of all, Band Of The Year.

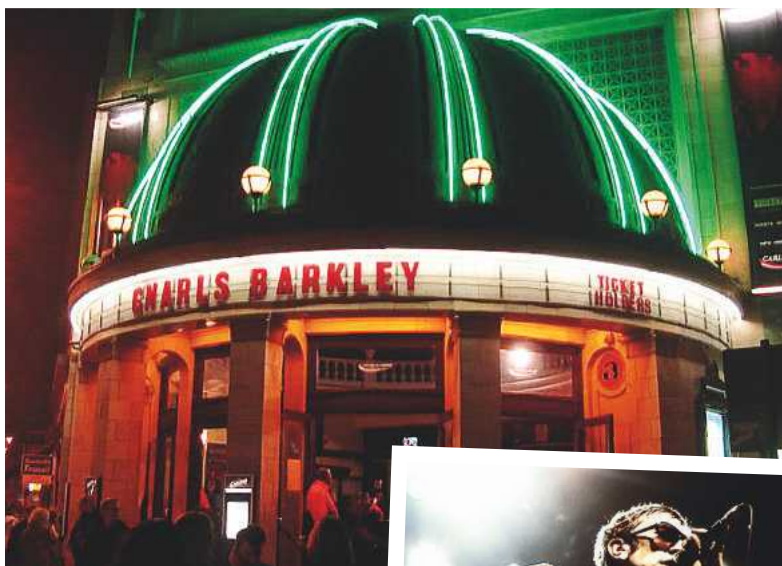
MAD RICHARD

This is the climax of the show, the big one. As *NME* Editor I'd negotiated hard to get the band to attend. They'd refuse to show for the Brits in a fortnight, preferring to play a rescheduled benefit gig at this very venue for charities associated with children's homes. Zoe Ball would receive their Brit on their behalf and they'd beam in 'Lucky Man' live from the gig to the ceremony at the

➔ View of the venue's main entrance as it looks today, on 211 Stockwell Road, Brixton

➔ Richard Ashcroft of The Verve – 'too cool' to take to the stage at the 1998 *NME* Awards, leaving the organisers with a problem

➔ The Clash's Joe Strummer and Paul Simonon at the venue in 1982 and (below) original ticket for the band's December 1984 miners' benefit



CONNOR TURNER

London Arena. So just getting them here is quite a coup.

The trouble is, Richard Ashcroft – Mad Richard as many of us know him – is happy enough to turn up and thank the readers for their votes but has made it absolutely clear that he is above doing anything so extremely uncool as walking up on stage to receive the awards. And Eddie Izzard, not a man to be messed with, has made it apparent that he most certainly isn't about to toddle down the steps on his high heels to take the awards to the band's table.

What to do? What to do? The show *must* go on. So muggins here stumbles on stage, grabs the bronzed fists with the raised middle fingers from the frowning Izzard's sweaty grasp and delivers them to The Verve's table where Ashcroft gives me a hug and is happy to dance around with the awards raised above his head.



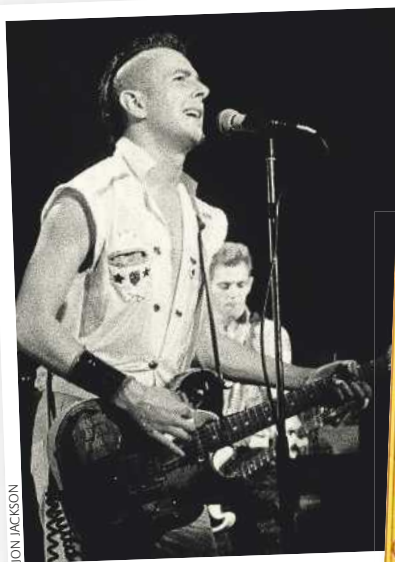
Later in the evening Matt Priest, the drummer with Britpop one-hit wonders Dodgy, will delight in describing my actions as 'toadying' to the world's assembled press. But right now I'm in the Academy bar and couldn't give a fig.

Rock 'n' roll, eh!

GRIM REPUTATION

Brixton Academy started out as an Astoria Cinema in 1929, built with the exquisite art deco interior in vogue for the great picture palaces at the time. Opening with an Al Jolson feature, it ran until 1972 when it briefly became The Sundown, a music venue that only lasted a few months.

It then lay pretty much abandoned for a decade, used for storage and suchlike until it was resurrected as the Fair Deal for nigh-on a year, The Clash being one of the acts that played there on



ION JACKSON





their Casbah Club Tour until financial problems forced the venue to shut down once more.

Quite apart from anything else, Brixton in South London had a pretty grim reputation as the scene of the April 1981 riots when battles ran for days between local youth and police – not the most attractive location for a night out with your mates.

Enter one Simon Parkes, a music fan with a lot of guts and no music business experience whatsoever. Simon was tipped off that, although the area was dodgy, the building, with its four and a half thousand punter capacity, was ripe for rockin'.

So, equipped with way more chutzpah than common sense, he persuaded the owners, brewers Watney Coomb and Reed, to sell him the lease for a quid on the understanding that he would flog their beer exclusively in the venue for the next decade.

HARD TO HANDLE

It was a struggle at first. Bands were too scared to play the newly named Academy in the early days of 1983 so Parkes hosted the acts that would come, mostly reggae giants like Gregory Isaacs and Dennis Brown who were heroes to the locals but who other seasoned promoters had deemed hard to handle.

Parkes' early experiences setting up the venue, dealing with the local gangsters and other ne'er-do-wells-on-the-make are thrillingly captured in a pretty good book just published by Serpents Tail. Called *Live At The Brixton Academy, A Riotous Life In The Music Business* [ISBN 9781846689550], it's definitely worth checking out.

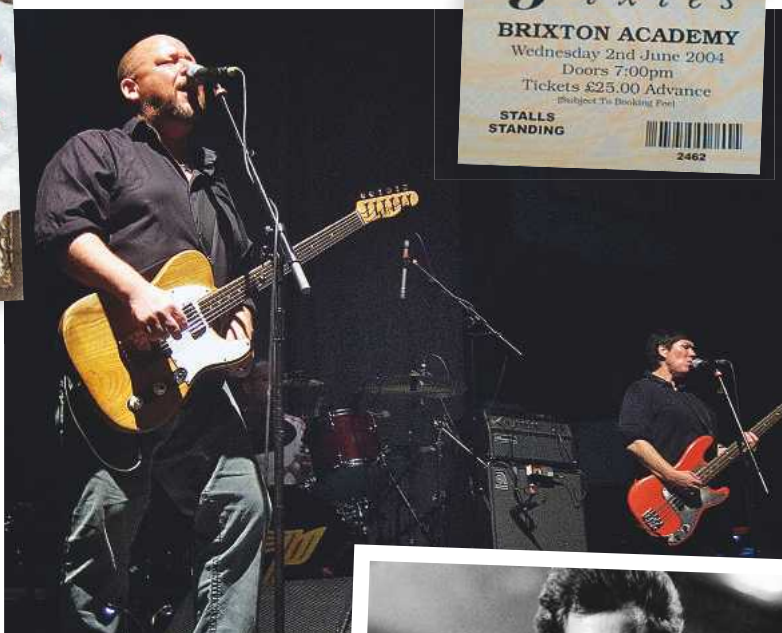


← Ticket for Madonna's 2000 show, which saw her *Music* album streamed live on the web

→ The Pixies, who played four nights in 2004

→ Keith Richards on the band's 2005 Voodoo Lounge tour

↓ Gregory Isaacs in 2010, just four months before he passed away



Anyway, the Academy eventually came to boss the London gig circuit – grungier and more fun than the Hammersmith Odeon for example – and band after band began to brave the trip South of the river. The fledgling U2 played there in November

1984 as part of their Unforgettable Fire Tour and groups keen on keeping in touch with their street cred while raking it in on mega-stadium tours started to look upon Brixton as a groovy extra show.

Ever mindful of the importance of looking cool while growing longer in the tooth, The Rolling Stones wrapped up their Voodoo Lounge world tour with a 'club' gig at the Academy in July 1995, while David Bowie brought his not entirely successful Tin Machine there in November 1991. Bob Dylan rocked up in

March 1995, duetting with Elvis Costello on a rousing finale of 'I Shall Be Released'. Not to be left out, Madonna did a one-off promo show for her new *Music* album there in 2000, the gig being webcast live.

And while we're on the subject of webby things and the opportunities offered by new technology, when The Pixies played four shows at the Academy in 2004, the audience

'The strangest show is actually one that didn't happen at all'

could buy a CD of each show on the way out of the venue, a trick repeated by Moby in 2005.

HIP-HOP SCENE

Another notable show in the Academy's illustrious history took place on the 24 May 1987 when the venue introduced the capitol to the emergent hip-hop scene in the shape of a stunning double bill

featuring Run DMC and The Beastie Boys.

On a more traditional tip, homeboys The Clash returned to Brixton in December 1984

to play a benefit for the striking miners who were making a stand against Margaret Thatcher's plans for the coal industry, the band playing a 26-song set including 'White Riot', 'Bankrobber', 'Rock The Casbah' and a finale of 'London Calling' to a rapturous audience.

A few weeks later, Aztec Camera, Everything But The Girl and Orange Juice played another miners' ☺

CLASSIC VENUES

BEHIND THE MUSIC WITH HI-FI NEWS & RECORD REVIEW



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benefit, Edwyn Collins stunning everyone, including his band Orange Juice, by announcing from the stage that this would be their last ever show. And another beat group who played their last ever gig together at a benefit hosted by the Academy were The Smiths, whose *Anti Apartheid* show on the 12th of December 1986 was their swansong, Johnny Marr packing it in weeks later.

The gig is famous as the only time the band ever played 'Some Girls Are Bigger Than Other Girls' and 'Shoplifters Of The World' live plus the 15-song set included such gems as 'Hand In Glove', 'There Is A Light That Never Goes Out' and 'The Boy With The Thorn In His Side'.

UNWELCOME NEWS

But surely the strangest show in the venue's history is actually one that didn't happen at all. Parkes had Nirvana booked to play in April 1994 and all the tickets were sold out by the time news reached these shores that Kurt Cobain had been found dead in Seattle.

Once it became clear that Cobain's death was suicide, Parkes realised that insurance wouldn't cover it and he was staring down the barrel of £250,000's worth of refunds. Bankruptcy seemed the only conclusion until suddenly everyone wanted a ticket as a memento.

Every £13.50 refund Parkes dished out gave him a paper ticket that he was then able to re-sell to collectors for £100 a pop!

The Academy also staked a reputation as one of London's hottest dance venues, with all-nighter clubs like West World

responding to the '90s acid house boom and beyond.

The venue was also used during the day to stage rehearsals and shoot videos,

with Wham!, Culture Club and Billy Ocean all using the venue's facilities to film top-tenners.

There have been tons of live CDs recorded at the venue and some notable live DVDs too, including



← Ticket for the Nirvana Academy gig that never took place and (l-r) Grohl, Kobain and Novoselic

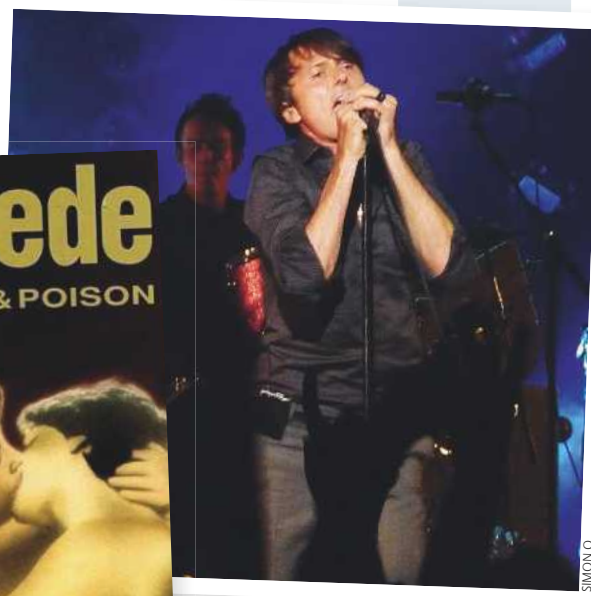
← The Smiths (l-r): Rourke, Morrissey, Marr, Joyce

← The DVD release of The Mighty Boosh's 2006 show

↓ Suede's Brett Anderson at the Academy in 2011 and their 1993 video, recorded at the venue

Suede's 1993 offering *Love & Poison* and the aforementioned Mighty Boosh who filmed their Academy live shows there in 2006 and then returned two years later with their wondrous *Future Sailors* tour.

Parkes sold his tenure of the venue to the Break For The Border organisation in 1995 after a dozen eventful years in charge. It is now run by the Academy Music Group and known as the O₂ Academy, the centrepiece of the nationwide chain that keeps the UK's gig circuit among the healthiest, and wealthiest, in the world. ☺



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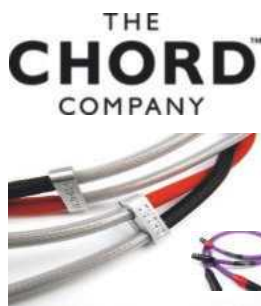
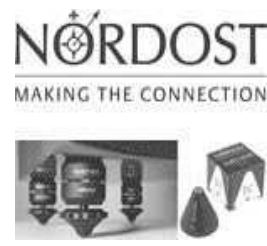
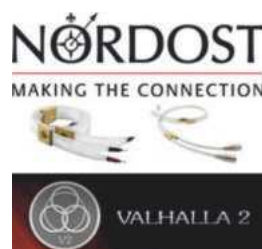
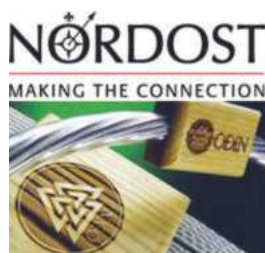
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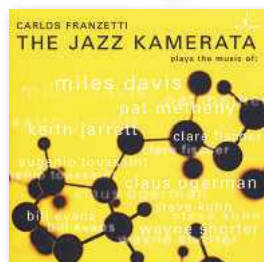
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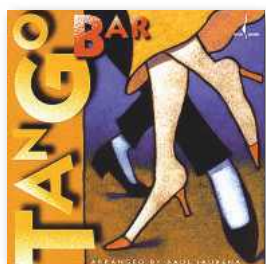
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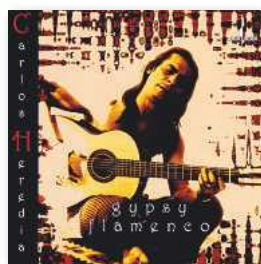
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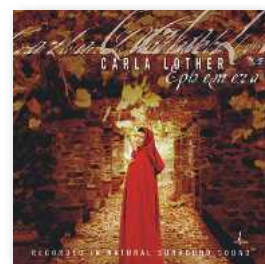
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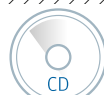
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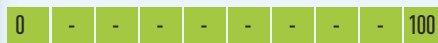
RICKIE LEE JONES

Rickie Lee Jones

Mobile Fidelity MFSL 2-45010 (two 45rpm discs; 180g vinyl)

In anyone's list of all-time audiophile faves, whether standard pressings or specialty releases, this eponymous debut from 1979 is enjoying a spectacular reissue for its 35th Anniversary. As with the recently released box for Dylan's *Blonde On Blonde*, this plays at 45rpm and exhibits the sort of care once lavished only on snooty classical box sets. My own loathing for it is based on 15 repeated playings in one afternoon of 'Easy Money' when I foolishly agreed to participate in a *Hi-Fi Choice* listening session. That aside, it is sexy, jazzy, cool and – with the sensational opener of 'Chuck E's In Love', plus guests and session stars like Steve Gadd, Randy Newman and Dr John – worthy of its demo reputation. **KK**

Sound Quality: 92%



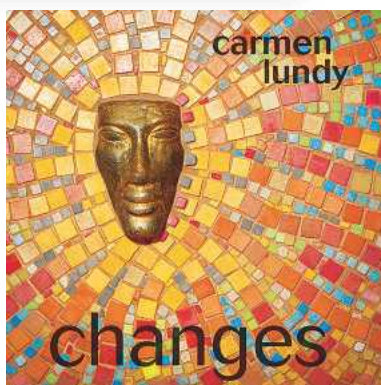
ELVIS COSTELLO AND THE ATTRactions

Punch The Clock

Mobile Fidelity MFSL 1-389 (180g vinyl)

By 1983, Elvis Costello had overstayed his welcome for some – the 'angry young man' shtick was too tedious even for the post-punk era – but he had matured into an adventurous genre-hopper. This LP followed *Imperial Bedroom*, which didn't achieve the success he'd hoped for, so he opted for a more commercial feel – and earned a US hit with the soulful 'Everyday I Write The Book'. Equally important in his canon is the elegiac 'Shipbuilding', which was co-written with Clive Langer. An odd choice of LP for audiophile treatment, but as MoFi is doing the bulk of his catalogue, it's a fascinating one nonetheless. **KK**

Sound Quality: 87%



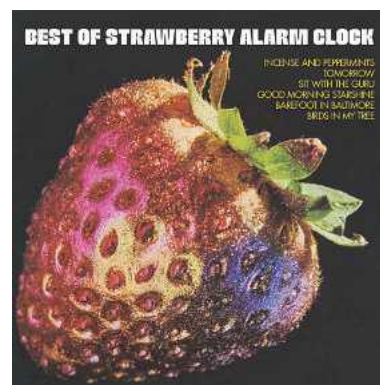
CARMEN LUNDY

Changes

Pure Pleasure PPAN AFP 13712

Lundy has all the qualities needed to add a freshness to a 100-year-old genre (based on 'pop' starting with Jerome Kern's 'They Didn't Believe Me'...): seductive voice, deft phrasing, impeccable taste and terrific song-writing skills. Lundy adds spice to the set by occasionally inserting a Latin beat – subtle rather than dominating – and it enhances this, her twelfth or so album in 30 years, with added novelty. Her backing band is as tasteful as her delivery demands, the sound is warm and rich, and her writing style is so true to the form that the one cover, 'A Nightingale Sang In Berkeley Square', doesn't stick out even though it's someone else's work. Utterly gorgeous. **KK**

Sound Quality: 89%



STRAWBERRY ALARM CLOCK

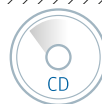
Best Of

Sundazed LP5441 (180g vinyl)

While Sundazed has kindly reissued this legendary psych-pop band's first three LPs, for some the 'hits' may be sufficient to fill the gap in their collections. It does, after all, start with their finest moment, 'Incense And Peppermints', which reached No 1 in 1967 and stayed in the US charts for 16 weeks. After that, it was straight to the obscurity of cult-lust, but the music remains fascinating, if of its time: fuzz guitar, cheesy organ, ponderous lyrics. This compilation dates from 1970 and includes material from their LPs and singles, taken from the stereo UNI reels. Listen out for a cover of 'Good Morning Starshine', and hints of nascent 'heavy rock'. **KK**

Sound Quality: 84%





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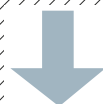
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ARETHA FRANKLIN

The Queen Of Soul

Rhino/Atlantic 8122796069 (four discs; part mono)

Uniform with the Otis Redding box reviewed in June, this is another bargain indicative of the times in which we live. In real terms, individual CDs sell for a sixth of their cost in 1983 (a then-painful £14), here's four of them for around £15 in 2014 money, from a huge star, with no dross. Indeed, as with Otis's box, some hard-to-find stuff has been included, such as mono material, non-LP singles and other delights. Of course, the 87 tracks include all of the major hits from the Atlantic era – post-CBS lounge stuff and pre-disco – so this is the Queen with full-on gospel intensity. It opens with 'I Never Loved A Man (The Way I Love You)', for goodness' sake! *KK*

Sound Quality: 89%



LYNYRD SKYNYRD

Second Helping

Analogue Productions CAPP-4135A

In April, I listened to the vinyl version, and it reminded me what a truly exceptional band this was. Yes, their legacy is written in a tragic plane crash, overshadowed by the phenomenal success of 'Sweet Home Alabama', but now that 36 years have passed, reassessment is appropriate. Any TV special about 'Southern Rock' justly places them on a par with the bluesier Allman Brothers, while this, their second release, shows them embracing more than just a swampy style. Even if the sublime 'Sweet Home Alabama' didn't open this, it would still warrant any hard-rock fan's respect. The SACD is cleaner, but less 'real'-sounding than the LP, so the choice is yours. *KK*

Sound Quality: 85%



FRANK SINATRA

Songs For Swingin' Lovers

Mobile Fidelity UD5ACD 2106 (mono)

As one who's never had a problem with monaural material – though I'd never go as far as Spector and say it beats stereo – I do wonder about how it goes down with those who want only a wall of sound. With this album, mono-philes have another argument in its favour: within seconds, you forget about stage width. OK, so the opener of this 1956 killer is 'You Make Me Feel So Young' and the entire 15-track set is a faultless display of Sinatra's way with the Great American Songbook. It's one of the greatest albums ever, MoFi restored the pre-1957 cover art, Nelson Riddle was at his peak – we are talking true masterpiece here, and it swings all the way. *KK*

Sound Quality: 90%



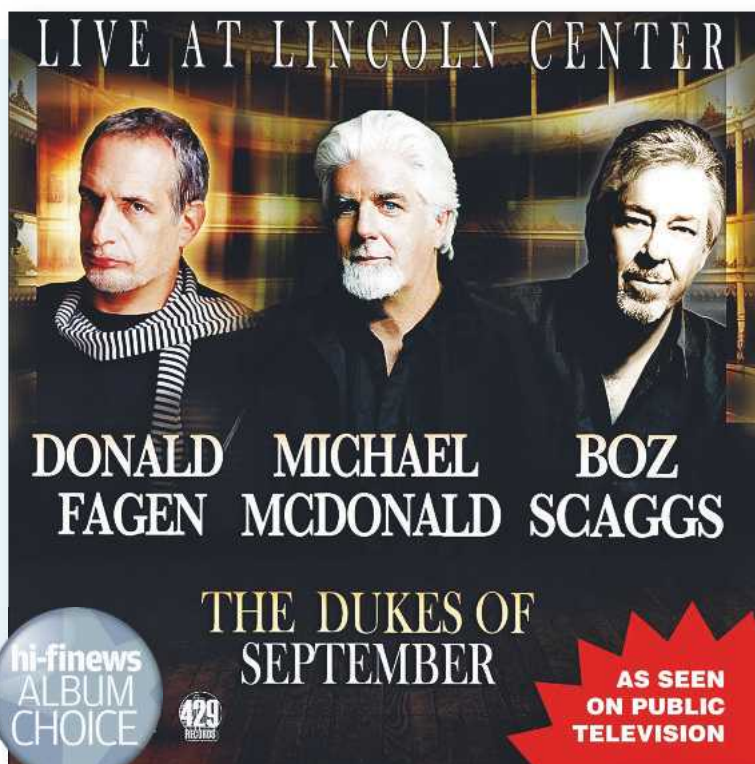
THE DUKES OF SEPTEMBER

Live At Lincoln Center

429 Records FTN17947

In any audiophile's list of 'approved' artists, these three – Donald Fagen (Steely Dan), Michael McDonald (Doobie Brothers) and Boz Scaggs – are bound to appear. All have had their works issued as audiophile discs, and their music – in addition to being sublime in an artistic sense – has always been recorded with the kind of care hi-fi enthusiasts revere. They've joined forces as the Dukes Of September, formed in 2010 as a touring entity, and the term 'supergroup' is not misused. A gig that was shown on US public TV, the set gives equal time to all three, the performances are warm and involving, the backing band is note-perfect, and you have a choice of Dolby stereo or Dolby or DTS 5.1 surround. A no-brainer, then. *KK*

Sound Quality: 90%



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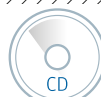
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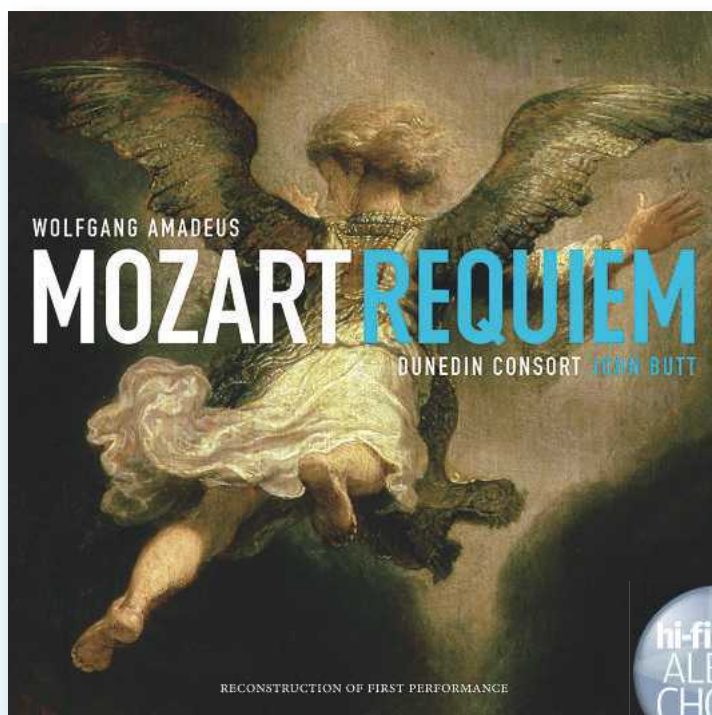
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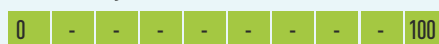
Requiem in D minor, K626, etc; Soloists, Dunedin Consort/John Butt (192kHz/24-bit; FLAC/ALAC)

www.linnrecords.com; Linn Records CKD 449

Linn already has a fine Mozart Requiem under Sir Charles Mackerras [BKD 211]. But that was using a version by Robert Levin, whereas this new production from Greyfriars Kirk Edinburgh is a reconstruction of the first performance, based on a new edition of Süssmayer's completion of Mozart's score. In addition, there's the *Misericordias Domini*, K222, and two movements from the *Requiem* thought to have been heard at a Mass held a few days after Mozart's

death in 1791, and given with just a handful of voices. (Repeating *Requiem aeternam* and *Kyrie*, this simulation has different musical tensions from the main performance.) The 16-strong chorus shows tireless energy, with four of its members taking the solo parts. Butt's direction is akin to cleaning an old painting, the colours emerging with a new vividness. An important realisation of a well-loved work. **CB**

Sound Quality: 95%



SHELBY LYNNE

Just A Little Lovin' (96kHz/24-bit; FLAC)*

www.hi-resaudio.com; Universal Music Group

Story has it that for her album of Dusty Springfield covers, American singer/songwriter Shelby Lynne insisted on having the legendary Phil Ramone produce *Just A Little Lovin'*, with recording engineer Al Schmitt at the controls in Capitol's Studio A in Hollywood. This is an analogue recording made on 2in tape that LPs fans might want to own on Analogue Productions' 200g vinyl [AAPP 041], while this recently-available 96kHz/24-bit download is perceptibly more dynamic and refined-sounding than the (already very good) Doug Sax-mastered CD issue that's been an audiophile favourite since its 2008 release. In her interpretations of classics made famous by Dusty, Shelby Lynne makes the songs her own, with intimate vocals and refreshingly sparse arrangements. The title track you'll find particularly revealing of system performance. **JB**

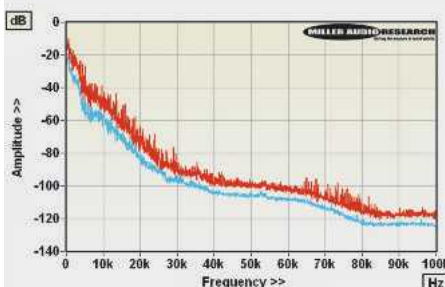
Sound Quality: 85%



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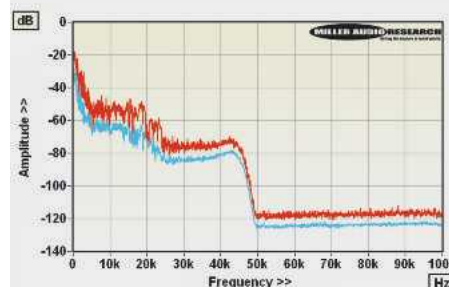
Following our Investigation feature [HFN, Jun '11] where we examined the claimed quality of high-resolution downloads, *Hi-Fi News & Record Review* is now measuring the true sample rate and bit-depth of the HD music downloads reviewed on these pages. These unique reviews will be a regular source of information for those seeking new and re-mastered recordings offered at high sample rates and with the promise of delivering the very best sound quality. (Note: asterisk in headings denotes technical reservation explained below.) **PM**

LAB REPORT

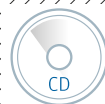


Linn offers this Requiem in a variety of resolutions, with this 'Studio Master' file the highest available at 192kHz/24-bit. Presumably the native record rate with 'information' out to 80kHz, but peaks >60kHz are likely to be spurious. **PM**

LAB REPORT



Though an analogue recording, the peak of ultrasonic noise suggests this 96kHz rendering is taken instead from the SACD release (or DSD copy). Dynamic range is limited by the original tape rather than any subsequent processing. **PM**



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TORQUE TRIO

Osmosis (96kHz/24-bit; FLAC)

www.hiresaudio.com; Neuklang NCD4079

Described by several commentators as the most inventive jazz trio to have emerged from Europe in many years, the German/Dutch Torque Trio describes the jazz scenes of Amsterdam and Cologne as its 'home turf'. *Osmosis* is a striking follow-up to the trio's 2011's debut *Forward*. Both are on Neuklang, a label owned by Bauer Studios, one of Germany's largest studio complexes. This is a fine recording, with a good sense of space around the players who clearly enjoy keeping listeners on their toes with constantly shifting melodies and rhythms. In 'Desillusie', before breaking into a frantic jazz workout, the first part could almost be described as lounge jazz – albeit with a lyrical melody redolent of many a prog-rock anthem. And 'Presikhaaf', with a haunting solo bass intro, takes several twists and turns while affectionately re-stating melodic themes during its journey. *JB*

Sound Quality: 80%



SIBELIUS

Violin Concerto; Karelia Suite; The Swan of Tuonela; Valse lyrique; Valse triste; Andante festivo; Finlandia
Jennifer Pike, Bergen PO/Sir Andrew Davis
(96kHz/24-bit; FLAC)

www.theclassicalshop.net; Chandos CHSA 5134

Jennifer Pike's playing in the concerto is satisfying for the consistent purity of her intonation, although you need patience – it really needs more bravura, some of Heifetz's nonchalance. The rest of the programme is mostly unashamedly popular Sibelius, but there's no trace of routine. As we heard with their Berlioz overtures [*HFN* May '13], the Bergen orchestra seems to get on really well with Sir Andrew Davis – 'The Swan of Tuonela' and 'Valse triste' almost equal Sir Colin Davis's two great versions with the Boston SO. The *Karelia Suite* includes what sounds like wooden percussion in (ii), not in some scores. The way you can listen 'into' the orchestral sound, engineered by Brian Couzens, is superior to much of what we've heard on BIS, in its Litton series. *CB*

Sound Quality: 85%



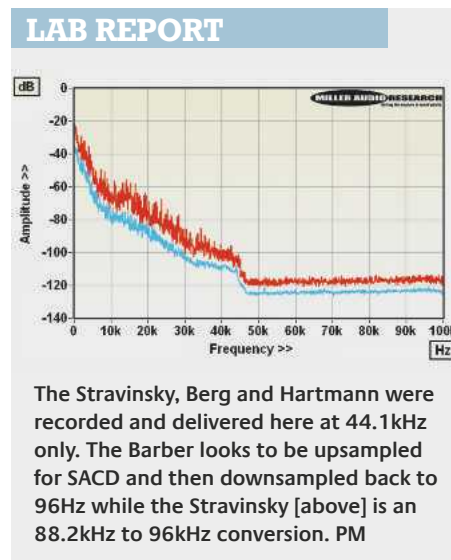
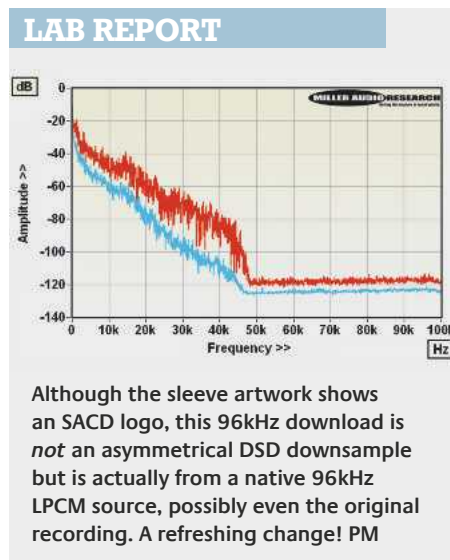
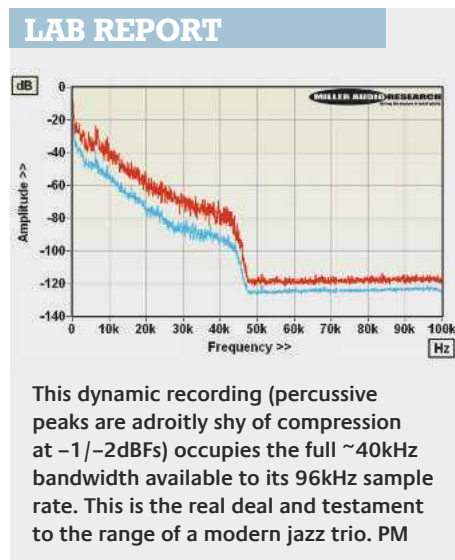
1930s VIOLIN CONCERTOS

by Barber, Berg, Britten, Hartmann, Stravinsky
Gil Shaham, various orchestras/conductors
(96kHz/24-bit; FLAC)*

www.hiresaudio.com; Canary Classics CC12

After recording for DG in the 1990s – with memorable versions of the Bartók Second Concerto with Boulez, the Brahms with Abbado and the Barber with Previn – Gil Shaham founded Canary Classics in 2004. This present compilation is from live recordings, apart from the Hartmann *Concerto funèbre* (where the strings are also directed by Shaham), made between 2008 and 2013 in Boston, Dresden, London and New York. Shaham seems able to identify with each of these markedly different scores – his Barbican Stravinsky is especially enjoyable – but it's not an 'audiophile' package: the Britten has the best sound and brilliant accompaniment (Boston SO); the Berg is pretty good (Dresden); but the Hartmann is quite claustrophobically close-balanced. *CB*

Sound Quality: 70%





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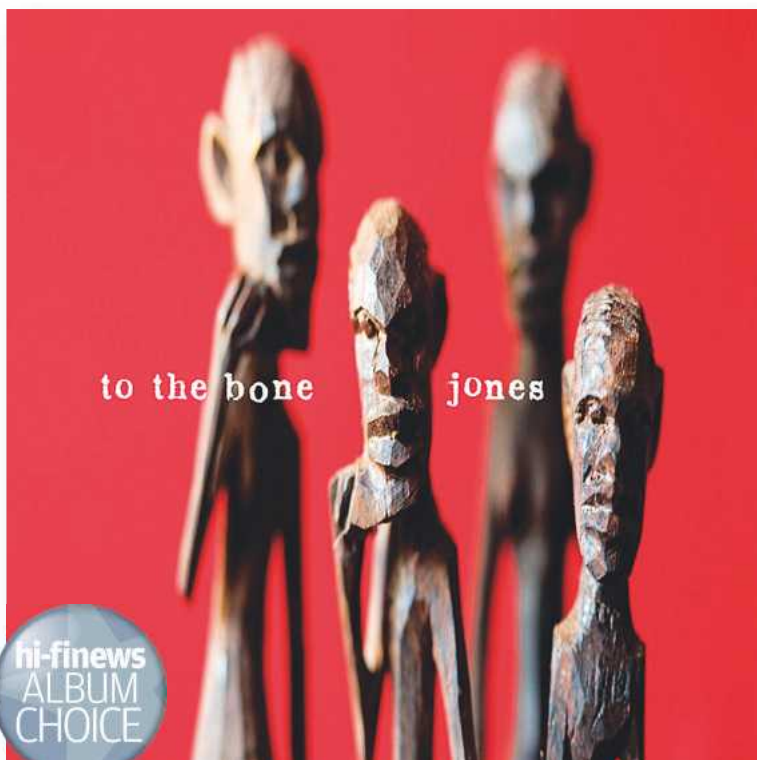
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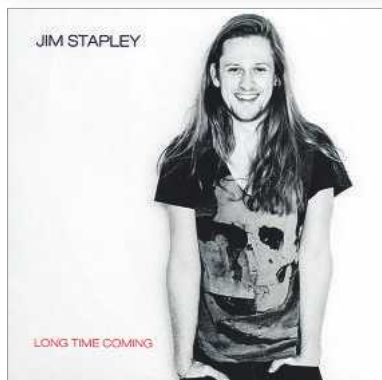
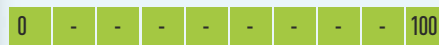
JONES

To The Bone

MeMe Records CDM18

Many of you, although not yet enough, already know Trevor Jones in his incarnation as Miracle Mile, easily Britain's most singer-songwriterly duo. Occasionally he releases a 'solo' album, but how these differ from Miracle Mile albums is hard to define. Analytically, it's probably that a Jones album is more minimal, less complex, than a Miracle Mile album, and that the balance between the contributions of Jones and his multi-instrumentalist partner Marcus Cliffe is skewed more towards Jones. This is another corker with gorgeous ambient touches: the distant police sirens in 'Books To Bed', the steel guitar that morphs into an angel choir on the short, sweet, 'Man Behind The Moon'. Possibly his best yet, 'til the next one. *JBk*

Sound Quality: 92%



JIM STAPLEY

Long Time Coming

Mita Records MITACD002

Here's all you need to know. Our Jim will be promoting this album with gigs at Harley Davidson bike festivals across Europe. Yes indeed, Stapley purveys muscular blues-rock for men with hair in places where most folks don't even have places. Produced, immaculately of course, by the legendary Tony Visconti, the album starts with 'No Good Reason', a sturdy Free-meets-Stevie Ray Vaughan hurricane of testosterone, drops down into the acoustic boogie intro of 'Laid To Waste', introduces the lush orchestration and falsetto wails during 'Heartstrings', pulls out the urban lovelorn anguish in 'New Religion'. If you like this sort of thing, you'll love this one. *JBk*

Sound Quality: 92%



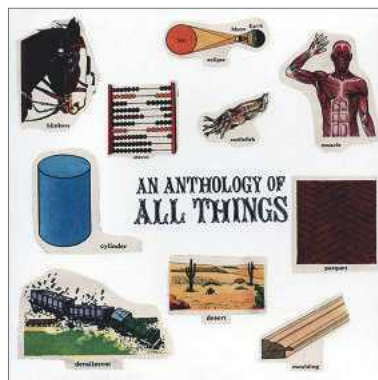
TAFFY

Plus +++

ClubAC30 Records AC3011012

Go straight to track 2, 'Jolly Orange', for the most magnificently fun-filled full-on retro-punk blast of overwhelmingly loud, distorted guitars and almost buried female vocals that you'll hear between now and January 2015. A quartet from the suburbs of Tokyo, Taffy sound like they got trapped in a haunted lift for a month with the ghost of Johnny Ramone and have never quite recovered. Vocalist Iris sounds like Debbie Harry crossed with Louise Wener of Sleeper. This is actually a compilation, but as Taffy's material has never made any impact in the UK, it should all sound new to you, like discovering a fantastic '80s shoegaze indie band you never knew existed. *JBk*

Sound Quality: 85%



JOHNNY PARRY

An Anthology Of All Things

Bedford Creative/Lost Toys LOSTTOYS013

Yes, we've been waiting for Bedford to get its act together since, er, well, forever. Finally Bedford Creative Arts dept has stepped up to enable The Johnny Parry Chamber Orchestra to record this truly extraordinary album. Essentially, in a career spanning a decade, Bedford-based Parry has been composing music for his 20-odd piece chamber band. Accompanied on this outing by the Bedford Arts Choir, they deliver a magnificently opulent sound while interpreting the eight movements of Parry's song-suite. It's not for everyone but start with 'Song For Someone' and if you're not immediately hooked, pass the album to someone who actually loves music. *JBk*

Sound Quality: 90%



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IsoTek EV03 Premier, Hi-Fi Choice, March 2013



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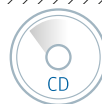
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COMPACT DISC



SUPRAUDIO



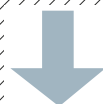
DVD



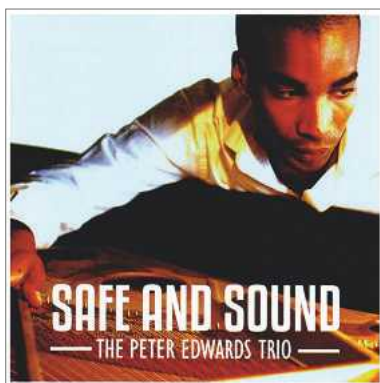
BLU-RAY



VINYL



DOWNLOAD



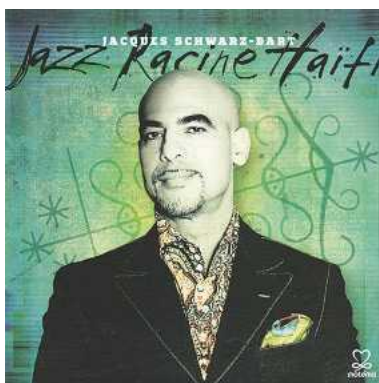
PETER EDWARDS TRIO

Safe And Sound

Edwards Music Productions MPC0001

Cutting his teeth with the Tomorrow's Warriors youth music programme, the composer and pianist eventually became musical director of the Nu Civilization Orchestra that grew from it, having graduated from Trinity College of Music and toured with the late Abram Wilson. Forming his own trio, Edwards recorded a four-track EP in 2010, but *Safe And Sound*, with bassist Max Luthert and drummer Moses Boyd, is his first complete trio album. Aside from a joyful 'I Mean You', all the pieces are Edwards originals, their firm structures and varied harmonic colours reflecting an intent to 'paint pictures with music'. And these are enticing pictures, full of life. *SH*

Sound Quality: 85%



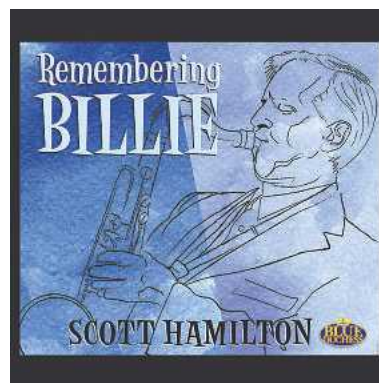
JACQUES SCHWARZ-BART

Jazz Racine Haiti

Motema 233811

With *Soné Ka-La* in 2007, the saxophonist explored the music of his mother's homeland, Guadeloupe, where he'd played the *gwo ka* drum as a child. But with this project Schwarz-Bart undertook a deeper exploration of his French-Caribbean heritage, as two priests of voodoo joined his jazz group in pieces based around traditional chants. The music was performed at Banlieues Bleues and other festivals in 2011, so for the studio recording little rehearsal was needed. Fabulous playing complements the haunting vocals of Erol Josué, also an activist for the preservation of voodoo culture in Haiti, to make this an arresting, exciting album. *SH*

Sound Quality: 90%



SCOTT HAMILTON

Remembering Billie

Blue Duchess BDLP001 (180g vinyl)

Focusing mainly on tunes recorded by Billie Holiday in the 1930s, this came out on CD last year but is now the first vinyl release on guitarist Duke Robillard's label. Hamilton, with a crisp piano trio behind him, is in great form and the sound is excellent, and though Robillard is best-known for blues in the style of T-Bone Walker, he comps gracefully on acoustic guitar on a couple of tracks. There has to be an honourable mention here for *Dean Street Nights*, recorded live at the Pizza Express in London [Woodville WVCD141], and many fans will want both records. But if it's Hamilton on vinyl that you crave, you can buy direct by emailing shiningduchess@gmail.com. *SH*

Sound Quality: 85%



JOHN McLAUGHLIN & THE 4TH DIMENSION

The Boston Record

Abstract Logix ABLX042

Along with McLaughlin's still-astounding guitar wizardry, this live album is a showcase for the virtuosity of silk-gloved bass player Etienne M'Bappe and the amazing drumming of Ranjit Barot. And there are real pyrotechnics when he's joined on another set of drums by keyboardist Gary Husband, a mainstay of McLaughlin's groups since 2005. There's a kind of celebratory feel to the whole thing, whether it's the funky 'Abbaji' from the 2008 *Floating Point* album or the more contemplative 'Senor CS' from *Industrial Zen*. Delving further back, the set ends with a crowd-pleasing, anthemic version of the Mahavishnu Orchestra's 'You Know You Know'. McLaughlin certainly knows how to keep that fusion flag flying. *SH*

Sound Quality: 90%



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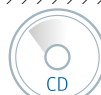
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COMPACT DISC



SUPERAUDIO



DVD



BLU-RAY



VINYL



DOWNLOAD



MOZART

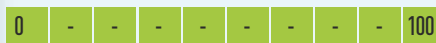
Piano Concertos K466 and K503

Martha Argerich, Orchestra Mozart/Claudio Abbado

DG 479 1033

Pianist and conductor first recorded concertos for DG in 1967 – sadly, these live recordings from the 2013 Lucerne Festival will be their last collaboration. The D-minor Concerto (K466) is especially fine and the Beethoven cadenzas make you wonder ‘isn’t this how *he* might have sounded?’. In K503 we hear a cadenza by Martha Argerich’s one-time mentor Friedrich Gulda. Argerich gives very much her own view of Mozart, and in the festive C major (K503) I admit to straining not to miss any strands of what Claudio Abbado and his Bologna orchestra were doing. (You can of course compare Maria João Pires and Abbado in K466 with the Orchestra Mozart: DG 479 0075.) **CB**

Sound Quality: 95%



BEETHOVEN

Piano Trios Vol.3

Robert Plane, Gould Piano Trio

Somm Recordings SOMMCD 0135

Recorded live at St George’s Bristol, this CD has the ‘Kakadu’ Variations, Beethoven’s early trio for clarinet, cello and piano, Op. 11 and the rarely encountered arrangement of the Septet, Op. 20, for these three instruments. Robert Plane fits in very well with the piano trio headed by Benjamin Frith – whose early recordings included Field concertos and (ASV, 1991) the *Diabelli Variations*. Frith, Lucy Gould and Alice Neary have been playing together for 22 years now. Frith’s phrasing is witty and colourful and he’s perfectly matched by Plane. Not an earth-shattering release but one that gives real musical satisfaction. **CB**

Sound Quality: 85%



BRUCKNER

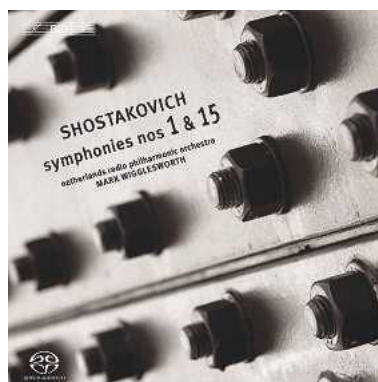
Symphony 2 (arr. Payne)

RAM Soloists Ens/Trevor Pinnock

Linn Records CKD 442 (SACD hybrid); downloads up to 192kHz/24-bit

This follows the Erwin Stein reduction of Mahler’s Symphony 4 with the Academy Soloists [HFN Jan ’14]; this time composer Anthony Payne was commissioned to scale down one of Bruckner’s less often heard symphonies. There’s a bonus of Berg’s 1921 transcription of ‘Wine, Women and Song’: quaint, with strings, piano and harmonium, and charmingly done by Pinnock. The textures in the symphony are endlessly fascinating (although the better you know the work the more you’ll get from Payne’s rescoring). More importantly, the performance has both depth and beauty: Pinnock should now record the original! **CB**

Sound Quality: 85%



SHOSTAKOVICH

Symphonies 1 and 15

Netherlands Radio PO/Mark Wigglesworth

BIS-1643 (SACD hybrid); downloads up to 44.1kHz/24-bit

This rather undervalued cycle ends with the last symphony: a work that at first puzzled listeners with its Rossini, Wagner and self quotations. I’ve heard most of the recordings since Ormandy’s premiere 1972 RCA LP and, perhaps more subjective in approach, Wigglesworth’s ranks with the two top-rated Haitink versions. This is a personal work, not depicting great events in Soviet history, so it was logical to couple a reissue of the voluble First Symphony: performed with comparable attention to detail and elan by the Netherlands orchestra. The Hilversum studio recordings both date back to Oct 2006. **CB**

Sound Quality: 85%





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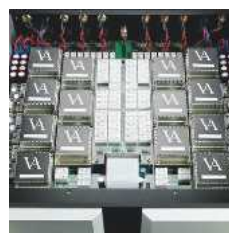
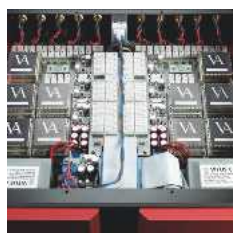
Neil Gader, The Absolute Sound

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Paul Miller Editor

Technician and writer on all things audio for some 30 years, Paul Miller took over the editor's chair in 2006. He invented the QC Suite, used across the audio industry

Redesign or evolution?

Is the quest to develop bigger, better and smarter hi-fi always a process of evolution or are lessons lost along the way? **Paul Miller** wonders if looking back might sometimes help us move forward

While breaking open the six (yes, six!) boxes housing the various building blocks of the Brinkmann Balance turntable reviewed this month [see p18], I was reminded of a topic addressed in these pages before – 'is the latest thing necessarily the best thing?' Or perhaps I should re-phrase the question: 'is the latest thing always as well thought out as the previous thing?' The 'thing' needn't be a turntable, of course, but might just as well be an amplifier, an outboard DAC or a CD player.

DIGITAL EVOLUTION

There's a good reason why the best CD players from the late '80s to the early '90s still command good prices among audio's cognoscenti, and that goes double for the first generation of SACD players. Right up until the advent of DVD, the development of CD-specific transports, DACs and oversampling filters had reached its peak. This was as good as '44.1kHz-centric' silicon was ever going to get.

Once DVD arrived, digital R&D switched almost exclusively to 48kHz-centric processing. Pure audio has always been a poor cousin to video, for the latter is truly mass market. But from that day on, purist hi-fi manufacturing has been doing the very best it can with chips designed, not for CD, but audio from DVD and Blu-ray.

Only in the last couple of years has this become less of an issue, as enthusiasts start to migrate to high-resolution music downloads, much of it offered at 48kHz, 96kHz and 192kHz. These sample rates are right up the latest silicon's alley! I also mentioned SACD – only the first generation of these players used genuine 1-bit DACs to decode

RIGHT: Time was when the relationship between motor and platter was not left to chance, as in this SE version of the classic GyroDec turntable, originally launched by Michell Engineering over 30 years ago



'Do fads of the day play a role in contemporary turntable design?'

(filter) the format's Bit Stream. Later players, including universal disc models, were/are perfectly compatible with SACD but the data is typically downsampled to a 4-to-6-bit PWM bitstream (just as 48-192kHz LPCM data is upsampled and truncated into the same bitstream) before conversion to analogue audio via a hybrid DAC. It's a flexible technology but not one that's specific to CD, SACD or hi-res LPCM.

VINYL REVOLUTION

Ok, so what brought on this hankering for the delights of digital past? Quite simply it was the prospect of shelling out many thousands of hi-fi vouchers for a beautifully engineered turntable that offered, to my mind, a relaxed notion of where to place its motor. I couldn't help but wonder what reaction this concept would have drawn from the LP12, PT and GyroDec-buying vinyl enthusiast some 30 years ago?

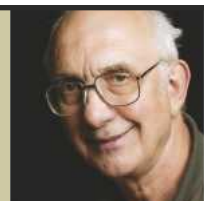
Was the concept of a well-executed suspension and of a meticulously positioned motor (relative to platter, bearing and stylus arc) simply a fad of the time? Somehow I think not. In fairness, I know that the UK importer of said massive

turntable will be asking its designers for the simple expedient of a template, a cut-out card placed against the chassis to indicate the ideal motor position.

I'm also bound to point out that there are other turntables where the motor placement is left almost entirely to the whim and imagination of the user. Indeed it's something of a theme among various and typically non-suspended, heavyweight, belt-driven turntables designed and manufactured to otherwise fastidiously precise standards by the prolific German high-end hi-fi industry.

Sure enough, the flywheel effect of these massive platters does help mitigate matters, but achieving the ideal belt tension through motor position is still vital when fine-tuning the performance of any such deck. *HFN* has the benefit of a spectrum analyser to ensure all our review turntables are optimised for ideal start-up time, best absolute speed with the minimum wow and flutter, drift and transmitted rumble. But a fat lot of use this is to even the most well-heeled of enthusiasts as it's impossible to achieve this level of accuracy with a mere strobe.

In the event I was left wondering that while some areas of hi-res, high-end audio are making great strides in performance, we forget the hard-fought ground rules of audio's pioneers at our peril. ☺



Barry Fox Technology journalist

Barry Fox trained in electronics with the RAF and worked as a patent agent, but he gave that up to enter journalism. He is one of the world's top technology writers

A real blast...

If you wonder whether your system is reproducing music faithfully then why not take time to hear a band playing live? And it can be done for free, says **Barry Fox**, if you know where to look

How would you like a full orchestra with soloists and singers, or a big band, jazz combo or string quartet, live in your living room, with no amplification, as a reminder of what music really sounds like? An experience that's very close is quite easily available, free or at low cost, if you know where to look.

The Free Church in Hampstead Garden Suburb opened in 1911 has a superb acoustic, live but not echoey. The London International Orchestra uses it for rehearsals and now performs concerts there, usually for charity, with entry for around £10. I recently went to an LIO concert given in aid of the charity Musequality. This gives under-privileged street kids in Africa and India a chance to turn their lives round by learning a musical instrument.

TOP MUSICIANS

The huge LIO boasts some of London's top orchestral musicians such as percussionist Tristan Fry who can always be relied on to give a quiet and unobtrusive master class in technique and tasteful dynamics. The orchestra for Musequality was conducted by Paul Wynne Griffiths, of the Royal Opera House, and featured 14-year-old child prodigy violinist Louisa-Rose Staples playing Mendelssohn's *Violin Concerto in E minor* and Pablo de Sarasate's *Fantasy on Bizet's Carmen*, with astonishing technique and memory. Black African soprano Pumeza Matshikiza sang an aria from *La Bohème*.

The best thing about the LIO/Free Church events (apart from quality of performance for next to no money) is the informal approach. Conductors talk to the audience, and play encores. The



ABOVE: The LIO at the Free Church in Hampstead with conductor Paul Wynne Griffiths, standing

flat-plan seating is quite casually arranged so that some members of the audience are at the foot of soloists. And there's not an instrument mic to be seen or heard.

Look out too for free or low cost concerts at musical colleges such as the Royal Academy of Music in Marylebone Road and Guildhall School of Music close to the Barbican. I recently went to RAM to

hear the Academy Symphonic Brass recreating the Grammy Award jazz album *Big Fat Brass* recorded by Billy May in 1958.

Like Nelson Riddle, Billy May used a tuba and bass trombone to flesh out the low

end sound. No words can describe the watery crackle of a bass trombone, fired straight into your ears from a few metres away or the vibrancy of a brass section in full flight, literally too close for comfort.

The Duke's Hall at RAM was built a hundred years ago and has a fine acoustic. The Fat Brass band, led by college tutor and famed session trumpet player Mike Lovatt, produced a jaw-dropping sound. Only two instruments were amplified, the harp and string bass – necessary to re-create the subtlety of the original studio recording.

Opened towards the end of 2013, the Guildhall's Milton Court Concert hall was designed by Arup and reminds of London's other new concert halls, at Kings Place, with mainly wood stage and walls, slatted to disperse reflections but give the acoustic a lovely live edge.

NEXT TO NO MONEY

The Guildhall School now regularly puts on free or low cost concerts at Milton Court, with both student and professional talent. I saw The Nightingale String Quartet, from the Royal Danish Academy of Music in Copenhagen, whose award-winning CDs are handled in the UK by Select.

If you want to hear live music as she really sounds, for next to no money, check out the RAM and Guildhall websites for event schedules [www.ram.ac.uk and www.gsmd.ac.uk respectively].

In my dreams I see one of these halls being used for a modern version of the live-versus-recorded comparison concerts which Gilbert Briggs of Wharfedale and Peter Walker of Quad staged at the Royal Festival Hall in London and Carnegie Hall in New York in the 1950s.

Surely there must be a high-end audio company with the courage to try something similar today? ☺

'No words can describe the watery crackle of a bass trombone'



Barry Willis

Journalist for top American audio-video publications

While his main interest is high-end audio, Barry Willis also writes about the culinary industry, visual art and theatre for a huge variety of US newspapers and magazines

Interconnected future

Future advancements in sound won't all be about higher resolution, but about systems able to learn your musical tastes and meet your needs automatically. And it's happening now, says **Barry Willis**

In what's clearly more than a trend, new cars and trucks are being equipped with communication capabilities for improved safety and convenience of drivers and passengers. Programmable destinations and automated accident avoidance are becoming possible. Instead of machines to be driven, future automobiles will be information-intensive conveyances.

In the States, many long-distance trucks are already fitted with devices to limit the number of hours they can be driven. The dangers of texting at the wheel may be eliminated by technology closely related to everything in your smartphone, the scourge of life in the early 21st century – until the inevitable software glitch or hardware failure.

DATA MINING

The acronym 'IOT' isn't new, but it's one that should be part of your working technical vocabulary. Car, house, and almost everything you use and touch will eventually report back to the universal data management

centre. Many apparently dumb devices have wireless capability, such as my neighbour's bathroom scale that each morning dutifully logs its

results in an applet on his computer at the other end of the house.

In a bit of satirical brilliance, in his new HBO series *Silicon Valley*, writer/actor/director Mike Judge includes an entrepreneurial doctor who's developed a Bluetooth suppository that continually transmits patients' vital signs.

Its design flaw, of course, is the need for frequent reinsertion.

I already have a car that thwarts my best efforts to defeat its safety features – it won't start unless my foot is on the

RIGHT: The Pandora website explains The Music Genome Project and how Pandora uses this database to recognise individuals' tastes in music in a bid to provide a personalised radio experience



brake, the passenger doors won't open unless the transmission is in 'park', and I can't adjust sound system presets while the car is moving. All that's missing is the sternly reassuring voice of a schoolmistress telling me to keep my eyes on the road and hands on the wheel.

The paranoid among us may think of all this as intrusive Big Brotherism, but bear in mind that ongoing data-mining

projects like Twitter and Facebook are completely voluntary. Every day millions of people eagerly report their whereabouts and activities – and thoughts that might best be kept

private – without the slightest urging from an ominous global government. Will innocent enthusiasm for seemingly benign technology prove to be mass enslavement or liberation?

You may be wondering what this has to do with the enjoyment of recorded music. Every vision of the future, from Jules Verne forward, has been based on extrapolating from the present and projecting beyond the horizon. In the 1950s and '60s, science fiction predictions were largely about mechanical marvels – the household

robot, the personal helicopter – because computer technology was in its infancy. At the dawn of this era, even visionaries Bill Gates and Steve Jobs couldn't imagine the ubiquity of PCs as they exist now.

Writers who've mused about audio in the future have mostly discussed technical improvements – data rates, bandwidth, resolution. Few have probed the human/cybernetic interface. Resolution isn't the issue – there will be all that anyone could wish for, scalable and appropriate for each device and each listener in each and every situation.

SEDUCTIVE SOUND

The real key is in associative databases of the type developed by online music source Pandora: 'if you liked that, you might like this...' The more information you feed it, the more accurate and useful it becomes, and the more dependent you become on it.

The audio system of the future will be deeply intuitive, like a superbly trained Singapore Airlines hostess who knows before you do that you want a sip of champagne or a glass of orange juice. It will sense your emotional needs and cue up a Chopin Nocturne just before you consciously realise you'd like to hear one. You will be assimilated not through coercion but through seduction. ☺

'The audio system of the future will be deeply intuitive. It will sense your needs'



Jim Lesurf Science Journalist

Jim Lesurf has spent a lifetime in audio, both as an engineer at UK hi-fi company Armstrong and reader in Physics and Electronics at St Andrew's University

Off the record

Few modern amps cater for tape recorders because most people making recordings use their PCs. Now there are USB ADCs appearing, which could give high quality sound. **Jim Lesurf** takes a look

During hi-fi's early days, amps tended to offer a number of features that are now rarely seen. Among questionable extras like 'loudness' controls, some of these were once felt to be essential. Yet how many amps have a 'mono' button these days? And of all the lost facilities, surely the one that would surprise audiophiles of past decades the most is the widespread disappearance of any provision for a tape recorder.

Back around 1970, when I was buying my first hi-fi kit, I took it for granted that a capable system would include a reel-to-reel tape recorder. This meant that the amp needed outputs for recording purposes and a 'tape monitor' switch to compare the recording with the source. By 1980, when I was designing a new preamp, it made sense to provide for two tape decks to allow for dubbing transfers between them.

PC RULES

Now we're in a different world. For many, the tape recorder is regarded as a bit of a dinosaur. However, it wasn't destroyed by a meteor from space or vast volcanic eruptions. Rather, it faded from view, partly due to the arrival of the ubiquitous home computer with its soundcards. When people actually want to record audio today their first thought is usually to try using the sound input socket on their PC.

Alas, the quality of the internal audio electronics found in most home computers tends to be mediocre at best. This is compounded by inputs that provide no analogue gain controls before the signal is converted, making it hard to get the level optimised. And things can be made even worse by 'nanny knows

'I've noticed a steady increase in people wanting to make high-res copies of LPs'



ABOVE: The Focusrite Scarlett 2i2 with a jack-phon adapter used by the author during testing

best' operating systems and software that take over and whose inner workings are downright baffling.

If you never need to record anything requiring high audio quality this won't matter. But I've noticed a steady increase in people wanting to make high resolution digital file copies of either their old LP collection or of new 180gm LPs they've bought. In almost every case their first reaction is to try their computer soundcard, only to be disappointed by the results.

Fortunately, in the same way that USB DACs now enable us to enjoy high sound quality from our PCs, a variety of USB ADCs (Analogue to Digital Converters) have started to appear that can help us make high quality recorded sound on our home computers. Most are aimed at musicians or studios, so the connectors tend to differ from those found on domestic audio equipment. And just like standard 'came with the computer' soundcards, some may be low quality. But those designed for serious studio

use may offer almost state-of-the-art performance, though at a price!

Personally, I've been happily using a stand-alone digital recorder (the Tascam HD-P2) for years. But having been asked by various people about making audio recordings using their computer I decided to check out some of the units currently on offer. You can see the full results at www.audiomisc.co.uk/HFN/ADC/USBRecording.html. But the bottom line is that I found one device that worked fairly well.

SCARLETT FANTASTIC

The unit is the Focusrite Scarlett 2i2. This enables the user make 96kHz/24-bit stereo recordings. It can also be used as a DAC and has a headphone output. As with the other models I tried, it works with Linux and RISC OS as well as Windows and Macs because it complies with the agreed standards for USB Audio.

If you are able to suggest a better USB stereo ADC that also operates at 96kHz/24-bit and conforms to the agreed USB Audio Class 1 or 2 standards, then please let me know. Once I've tried it and found that it works nicely, I can tell other readers about it. ☺

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Steve Harris Contributing Editor

Steve Harris edited *Hi-Fi News* between 1986 and 2005. He loves jazz, blues music, vinyl and vintage hi-fi and anything that makes good music come to life

DAC's the way we like it

Over the past 25 years we've gone from amplifiers with DACs in them to active speakers housing DACs to having amps with DACs in them once more. **Steve Harris** looks back with amusement...

Earlier this year, Meridian came up with Special Edition versions of its big, curvy-looking DSP speaker systems, to mark the 25th anniversary of its first 'Digital Active' speaker, the D600.

Back in the 1980s, Meridian wasn't the only British manufacturer to recognise the benefits of active speakers, with multiple amplifiers and electronic crossovers. But it was the only one to take the next step, by building in a DAC.

DIGITAL AMPLIFIER

While Meridian was coming up with this, Japanese companies focused instead on the 'digital amplifier', actually a conventional analogue amplifier with a DAC built in, so that it could accept digital signal inputs. Technics' SU-A60 Digital Control Amplifier, for example, was a preamp with both co-axial and Toslink optical digital inputs and a digital record-out connection too.

"I'm designing myself out of a job," joked Meridian's Allen Boothroyd

Products like this looked forward to a future in which audiophiles would not only have chucked out their vinyl record player in favour of a CD transport, but would have replaced their cassette deck or reel-to-reel with a Digital Audio Tape (DAT) recorder.

There were hopes, of course, that DAT would replace the compact disc itself. But in any case the Japanese makers seemed to think that consumers would go on buying stacks of techy-looking hi-fi separates just the way they'd been doing since the boom years of the 1970s.

Meridian saw the future rather differently. With the D600, you only needed to add a CD transport to create a complete CD playing system. If this transport was a Meridian 200, you could control the CD playing functions as well as volume, using Meridian's 209 remote control. Such a system got rid of

all those speaker cables and analogue interconnects, with signals remaining in digital form while they were sent around the room. Or around the house. Even with the D600, Meridian was ready to cater for multi-room sound.

After the D600 came the impressive D6000, as seen on the rather surreal cover designed by Flick Ekins and photographed by Tony Petch for *Hi-Fi News*, January 1991. It probably did represent a 'digital dawn' for Meridian, even if the rest of the world would take a while to see the light.

Later in the 1990s Meridian's co-founder and technical director Bob Stuart was a prime mover in the battle to establish DVD-Audio. Although DVD-Audio didn't last, these efforts paved the way for high-resolution audio as we know it now.

You could argue that the Technics SU-A60 amp was an ancestor of today's USB-input amps, but once it had become clear that DAT wouldn't succeed as a



ABOVE: 'A Digital Dawn' – Meridian's D6000 as featured on the cover of *Hi-Fi News*, Jan '91

consumer product, 'digital amplifiers' like this were soon forgotten. It's amusing, now, to look back and see how different Meridian's approach was, and how much more far-sighted.

RATHER GOBSMACKED

Allen Boothroyd's brilliant and striking industrial design had been a feature of all the products he'd worked on with Stuart ever since they founded Meridian in 1977, and before that with Lecson and Orpheus. But I remember, in the late 1980s, being rather gobsmacked when he told me about the concept of the D600. In the future, Allen told me, you could have a system where all you saw in the room was the speaker. 'I'm designing myself out of a job,' he joked.

He wasn't, of course. You could argue that every amplifier today needs a digital input. But, as any high-end retailer will tell you, it's also true that every product still needs good industrial design. ☺



ABOVE: Allen Boothroyd (left) and Bob Stuart pictured with Meridian's D8000 loudspeaker

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OLD SCHOOL SOUNDS SURPRISE AS TRIO AND YAMAHA PAIRING EXCELS

I love music and am fortunate to have grown up in the golden age of hi-fi, when one of life's most important events was the purchase of a first hi-fi system. Since then, my system has evolved, though strangely I seem to have gone full circle and now find myself with a set-up that is distinctly quirky and decidedly vintage!

The amplifier is a Trio KA7300, which was on the market from 1975 to 1977. This gorgeous piece of engineering weighs in at 14kg and was built at a time when kit was made to last. It sports a slab of aluminium as its fascia, beautifully machined switches and weighty rotary knobs that are precise and a tactile delight to use.

The turntable is a Garrard, but not one many people will have heard of. It's a GT35P, which is a two-speed belt-drive unit from the mid '70s and one of the company's later efforts when Garrard was owned by Plessey.

The speakers are yet another old school item and are the latest

addition to my system. The Yamaha NS-1000Ms were produced from the mid '70s to mid '90s and originally classified by some comedian as a bookshelf model. Weighing 31kg and measuring 67.5cm tall, that would be some shelf needed to support them!

Unusually, the speakers have potentiometers fitted for the tweeter and the mid allowing the sound of the individual drive units to be adjusted. This I do, with the tweeter setting at the 11 o'clock position and the mids at 10 o'clock, giving around 1dB and 2dB down from the normal settings.

I had initially put the Yamahas with the Trio amp just to ensure that they worked correctly and had expected the harshness of transistors to rear their head. What a pleasant surprise it was to find that the two worked so well together. I get a crisp, clean sound – not too harsh – and a good level of clarity with an excellent rendition of musical detail.

This may surprise those who say the Yamahas can sound hard or tizzy, but this is not the case, provided you set the pots up as I have described and ensure there are lots of soft furnishings nearby.

John Fearon, via email

Tim Jarman replies: This comes as no surprise – a correctly designed transistor amplifier should not sound harsh and the Japanese were at the top of their game during this period.

Your Trio is a good match for the NS-1000s, another is the original version of the Pioneer SA-9500 which can sound a bit 'soft' with conventional speakers. If anything, your excellent amp and speakers perhaps leave the turntable a little outclassed. Something like a Sony PS-6750 or a Technics SL-1700 may well bring improvements.



ABOVE: Reader John's NS-1000M with both the treble and mid 'pots' adjusted

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It was a one-box Nytech to die for

READER FORGETS DECK, BUT REMEMBERS THE CTA252

It was good to see the Nytech CTA252 mentioned in the February issue. I am still using the CA252 amplifier every day. My CT206 tuner is sat next to it, but it's not in use at the moment. A French friend of mine used to have a music centre consisting of the CTA252 sitting on the right-hand side of a turntable from a manufacturer I now cannot remember. That was probably a one-box piece of kit to die for, as we now say.

John Flood-Paddock, via email

Tim Jarman replies: Good news! The CA252 is covered in this month's issue [see p114], so you can see how it measures up. You are lucky to have the tuner (arguably the best bit of the CTA252 package). These are difficult to find. The music centre variants mark an earlier period in Nytech's development and tend to use a lower spec version of the CTA252 unit. Console mounting the CTA252 also detracts from its looks.



ABOVE: The Nytech CTA206 tuner with its six presets

Hi-fi redefined

DUTCH READER SHARES SOME PITHY AUDIO OBSERVATIONS

I buy *Hi-Fi News* here in Holland and have been reading the letters and features about hearing aids and listening to hi-fi. My personal problem is tinnitus along with a loss of high tones, which especially affects my left ear. Fortunately, I found that AKG's 701 headphones give a treble lift that suits my now far-from-perfect hearing.

By the way, do you know the real meaning of high-fidelity? When you're young you can hear everything but have no money to spend on kit. When you're old you have the money, but can't hear the full sound the kit makes.

Nico Verbeek, Holland

Patrick Fraser replies: We're glad to hear that your AKG headphones at least offer you some solace for what can be a highly frustrating hearing condition – and that you haven't lost your sense of humour! How would other *HFN* readers define hi-fi? We'd love to know...

Vinyl to valves and PC audio

NEW FORMATS AND LIVING ARRANGEMENTS MEAN SYSTEM CHANGES, BUT VALVES REMAIN

From time to time my system has evolved in the light of changing media. The last time this happened was in 1996, when I moved from vinyl to CD. Yet afterwards I felt something was missing from the sound.

By 2002 I had modified an Audio Note DAC, and then I heard about some valve amplifier kits. So I thought I would return to my adolescence and build a valve amplifier. My first kit, running EL34s, with its accompanying valve preamp, produced a magical sound. From that moment onwards I was hooked on valves again.

A steady upgrade route followed. I built a 300B push-pull amp to replace the EL34 amp, and then heard about a Tim Paravicini design, which was often described as 'the ultimate push-pull 300B amp circuit' and decided to build a version of that. The amp uses interstage transformers, a choke-regulated, valve-rectified power supply and produces 28W of Class A power with no negative feedback.

At the same time, I modified an Arcam Alpha 5+ for use as a CD transport and sync'd this to the Audio Note DAC, into which I inserted a masterclock. This set-up sounded seriously good. I then changed my speakers from Epos ES30s to Elac FS207s with ribbon tweeters, not solely for sonic reasons but because a house move meant smaller speakers were needed.

Yet another house move meant even less space and so it was time for most of my CDs to go. It was this that prompted my first forays into computer audio. A Mac mini was purchased, along with external hard drives, and a variety of DACs

came and went. My current system comprises the 300B amplifier creation, a home-made cathode-follower preamp with remote control and switched relay inputs, and the Elac FS207s. The preamp is fed by a JKDAC from the Mac mini for music, films and streaming; a modified re-clocked Pioneer universal DVD player for DVDs, CDs or SACDs; and the Arcam DAC, which is used for streaming music from a laptop or converting the optical out from a Virgin media box. The preamp also drives a Roksan Kandy amp for everyday use with a pair of JBL monitors, and a sub which can be switched in for movies (or parties).

The DAC, disc drives, power supplies, and conditioners are all housed within a pine dresser on which the other equipment sits.

So how does all this sound? In a word: stunning. Cymbals sting, the sound is fast, furious and superbly detailed and the feedbackless amp means kettle-drums or rimshots explode from the speakers.

David Coe, via email

Paul Miller replies: You describe a uniquely personal and fascinating hi-fi journey, David, though such a hands-on approach is not one many enthusiasts would feel so comfortable with. Hi-fi nearly always sounds better when you have such a personal investment but we would certainly urge caution before any of our readers contemplate building or modifying a tube amp, for example. I remember testing the Arcam Alpha 5+ in 1995 – a safer exercise! Arcam developed its own Sync Lock in the '90s but this was never fitted to the 5+, so kudos to you.



ABOVE: David's home made valve amp atop the pine dresser with the Mac mini far right

8

Lanes On Your Entertainment Superhighway



RJ/E Forest



RJ/E Cinnamon



RJ/E Vodka



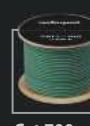
RJ/E Diamond



Cat 600 Pearl



Cat 700 Pearl



Cat 700 Forest



Cat 700 Carbon

Since its origins in the early 1980's, Ethernet, and the Local Area Network (LAN) systems it enables, has become the copper plumbing of the digital age. Originally deployed only over coaxial cable, the Ethernet protocols (IEEE 802.3) now also apply to fibre-optic and "Category" (Cat 5, 5e, 6, 6e, 7) cables. These 8-conductor (4 twisted pairs) Cat cables are the 8 lanes which stream or transport your digital entertainment to equipment a foot away or several rooms away.

AudioQuest refers to its pre-terminated leading-edge Cat 7 cables as the RJ/E Series ... RJ for the RJ45 connector standard to the application, and E for Ethernet. For AudioQuest, the highest Cat 7 standard (with all 4 pairs using correctly differentiated twist rates and individually shielded) is only the solid foundation to which AQ then adds better materials and unique-to-AQ additional technologies.

The particulars of the RJ45 connectors have also received extreme attention. The plugs used on the Vodka and Diamond models (and available for use with bulk Cat 700 models), feature a unique patented transition-compensating system which reduces reflections caused by the impedance mismatch where 4 twisted pairs meet a straight line of 8 plug contacts.

What does this all mean? Simple ... better sound!

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Server-based PC music

WHY A NETWORK PLAYER WITH AN ETHERNET INPUT AND S/PDIF OUTPUT IS THE SOLUTION

I'd like to comment on Bob Stares' letter and your response in the May issue. While I've also explored the 'Mac and DAC' approach in some depth in a bedroom system (a dedicated Mac mini with a Metrum Octave DAC using Audirvana+ for playback) I did not want to move the Mac and its associated library storage into my main 'listening' room. It was not just a question of space or aesthetics; I wanted to avoid introducing any electrical or mechanical noise.

I've therefore been trying to put together a server-based system that sounds as good as my PS Audio PWT disc transport (or the Mac mini system). My aim was to add just one box to my existing system in the form of an Ethernet-to-S/PDIF renderer. I auditioned a Krell Connect (without a DAC). The sound quality was very good, certainly better than that from a Cyrus Stream X2 and marginally better than that from a Naim ND5 XS. But I balked at the £2500 price tag. Instead, I bought a Sonore Rendu at less than half the cost which, now that it is 'run-in', has a sound in the same class as that of the Krell and Naim.

With all of these I found that listening is a far more relaxing experience than via disc (CD or hires). This is not because the music is softened or has added warmth but because it all sounds so natural. The crushed high notes from singers or orchestral climaxes (which I thought was a limitation arising from CD resolution) are gone. There is more space, more ambience, more solid bass notes, more detail and better soundstaging. The music sounds louder, so I found myself setting volume at lower levels than when listening to discs, and there is still greater detail and ambience!

This improvement over disc strikes me as a very good result as my network includes a wireless bridge as opposed to the direct connection of the PWT (via a transparent reference AES/EBU digital cable). I'd say that 75% of my music stored on a NAS now sounds better than the remainder I have on CD, so I'm going to start ripping the latter!



ABOVE: For more on the Sonore Rendu network audio player see www.sonore.us

The Rendu required no setting up: it just appeared on my network and picked up the music library on my NAS. The only active 'processor' in the system now is the one in the NAS, which is made by Synology. I use a Mac computer only when necessary to curate the music library on the NAS. I had some minor problems trying to play 24-bit/192kHz ALAC files, as I did with the Krell Connect. A simple fix (which users of Krell Connect could adopt) was to enable transcoding in the MinimServer software running on the NAS. This converts the ALAC to WAV, which plays without any problem.

For control, I use the Audionet app running on an iPad mini tablet. This gives gapless playback up to 24-bit/192kHz resolution.

Finally, could I ask for more coverage of music servers and streaming in *HFN*? Surely you could spare a few pages from the 19 currently devoted to vinyl and vintage in all its forms? Nevertheless, *Hi-Fi News* is still a very good read!

David Lovell, via email

Paul Miller replies: Thank you for sharing your experiences with us, David. Readers inspired by your story might also care to consider the Simaudio Moon 180MiND Ethernet-to-S/PDIF converter as another sub-£1000 solution, and a mighty fine sounding one at that [see *HFN* Aug '13]. We are very keen to review every new high-end streaming product that meets the aspirations of *HFN* readers, and we endeavour to discover at least one new model for every issue – this month we have the NP30 from Primare [see p32].

WIRELESS FRONTIER?



Not only are wires still very much the lowest-distortion highest-performance way to send both analog and digital audio information, but when it comes to sending power, "wireless" is just a nifty science project, not part of a home entertainment rig.

The challenge of not adding distortion as AC power goes from the wall to the electronics, and the challenge of not adding distortion as audio power is sent to a loudspeaker, are almost the same. The amount of energy transferred through these cables, and the size of the associated magnetic fields, puts them in a different class from all other audio and video cables.

Speaker cables need to maintain perfect integrity across the audio band and then some, while AC cables only have to try to be perfect in a narrower band. AC cable design is therefore a subset of speaker cable design because AC cables are subject to almost all the same distortion mechanisms, and benefit from almost all the same damage minimizing techniques.

For the most sophisticated power-transfer cables, for the best sound and video, please visit audioquest.com for more details.

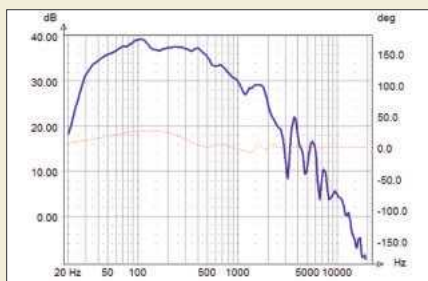
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Sonus faber bass measurements – a mistake?

READER'S CONFUSION OVER WHY MORE EXPENSIVE LOUDSPEAKER APPEARS TO POSSESS LESS BASS EXTENSION THAN MORE AFFORDABLE MODEL. WE EXPLAIN...

I want to buy a pair of Sonus faber Venere 3.0 or Venere 2.5 speakers and read your reviews and measurements of the two models in the January and March issues of *Hi-Fi News*, respectively. One thing puzzles me: according to your measurements (both –6dB ref 200Hz), the less expensive Venere 2.5 goes down in bass to 30Hz whereas the more expensive model, the Venere 3.0, only goes down to 58Hz.

Is this really possible or has there been a mistake in your measurements? Or was there a typo? I am very confused because I assume that the more expensive model (a three-way system) should deliver deeper bass than the less expensive (a two-and-a-half-way system). This is also what the Sonus



ABOVE: Near-field bass measurements of Sonus faber Venere 2.5 (top) and 3.0 (below)

faber factory's official data indicate (the company claims the 2.5 goes down to 40Hz while the 3.0 goes down to 38Hz) Do you actually mean that Sonus faber's own specs are false? It appears that you are saying this because, among other things, you gave the Venere 3.0 fewer points in your Sound Quality rating (82) than you awarded the 2.5 (85).

I would like to buy the Sonus faber model which offers the deeper bass, but your measurements have confused me. Thanks in advance for your clarification.

Martin Humpal, Czech Republic

Keith Howard replies: I agree that this seems puzzling, but there was no error or typo – those are the results we obtained from our near-field bass measurements [see above]. These are the diffraction-corrected results from the KHF tool in LspCAD.

As you'll see from the two graphs, there are two principal reasons for the difference in bass extension between the Venere 2.5 and 3.0. First, the two speakers evince quite different roll-off characteristics: in the 2.5 it's initially gentle from 110Hz and then steep below 35Hz, whereas the 3.0 has a steep roll-off beginning at 75Hz.

Second, the 2.5's response is peaked up at about 110Hz which has the effect of lifting the low-bass response relative to that at the reference frequency of 200Hz.

It is not unusual for our loudspeaker measurements to differ from those of manufacturers and there are many possible reasons for this. In the particular case of bass extension there may be differences in measurement method (often not described in any detail in manufacturers' specifications) or simulation results may be quoted rather than measurements. The value of independent testing such as we perform is not just that it provides verification, or otherwise, of manufacturers' claims but that the measurement method remains consistent from one loudspeaker to the next, to facilitate meaningful comparisons.

It is also worth reiterating that the bass responses of both Veneres will be very different in-room, even ignoring the effects of room modes, because of interaction between the speaker and the room boundaries.



ABOVE: The two-and-a-half-way Sonus faber Venere 2.5 [see Group Test, *HFN* Mar '14]



ABOVE: The three-way Venere 3.0 with its twin 180mm bass units [see *HFN*, Jan '14]

Master Sound: CD or SACD?

INFORMATION IN CD BOOKLET IMPLIES SONY DISC IS MORE THAN PLAIN VANILLA CD

I was fascinated by the Vinyl Icon feature on Herbie Hancock's *Head Hunters* LP [see *HFN* Sept '13]. I bought the LP the day it came out and it was on my turntable being played through my Cambridge P50 amp and Cambridge R50 transmission-line loudspeakers faster than you could say 'funk'! This album has always been a favourite, and I have now purchased the CD.

Or is it a CD? The disc is manufactured by Sony as part of its Master Sound series [SRCS 9339] and if you read the information in English on the booklet inside the jewel case it implies it is an SACD. So was it recorded in this format by Wally Heider Studios? I have enclosed disc and booklet in the hope you'll be able to throw some light on the matter.

I have been reading *Hi-Fi News* since 1970, so you must be getting something right!

Hartley Pascoe, via email

Paul Miller replies: It can be confusing when corporations litter their products with illustrations of proprietary technology



ABOVE: The Sony Records Master Sound release of Herbie Hancock's *Head Hunters*

(such as DSD in this instance). In this case I think we can safely assume that a recording made in 1973 will have been to analogue tape, plain and simple. For this 'Master Sound' release, Sony has digitised the tape to 20-bit resolution and used its Super Bit Mapping (SBM) process – a type of noise-shaping – to truncate the data down to the 16-bit resolution required by 44.1kHz CD. So this is still a CD, not an SACD.

Case of the missing icons

EAGLE-EYED READER BEMOANS ABSENCE OF SACD LEGEND ON MUSIC REVIEWS PAGES

I have noticed in some of your album reviews that you fail to denote that the title is available on SACD, despite the fact that the SACD logo can be clearly seen on the album cover. A good example is the review of the Martin

Frost Mozart Clarinet Concerto [*HFN* May '14], which is shown as being available on CD and download only.

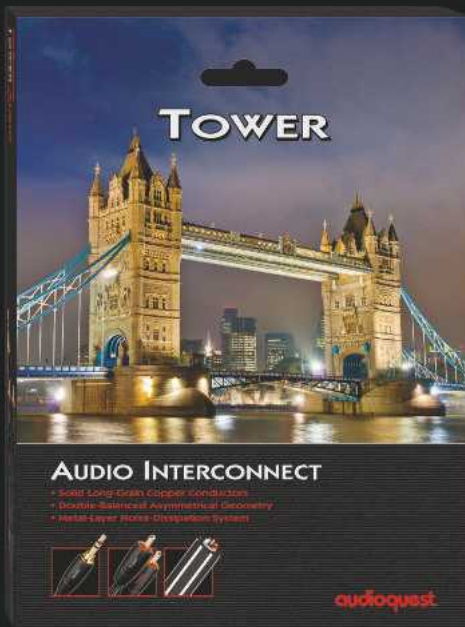
It is useful for those of us who have invested in SACD players to know which titles are available in 'better than CD quality'.

Paul Mumford, via email



ABOVE: The Martin Frost Mozart Clarinet Concerto, available as an SACD hybrid disc

HFN replies: If you look at the heading to the Martin Frost review you will see that it clearly says 'SACD hybrid' although in this instance, as you rightly point out, a CD icon has been placed next to the cover picture rather than the correct SACD one. In fact with this release – as the concluding line suggests – Christopher Breunig was reviewing the high-resolution download supplied by eclassical.com. With Ken Kessler's digital page we state the disc type as part of the heading although if it's simply an SACD the icon might suffice.



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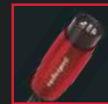
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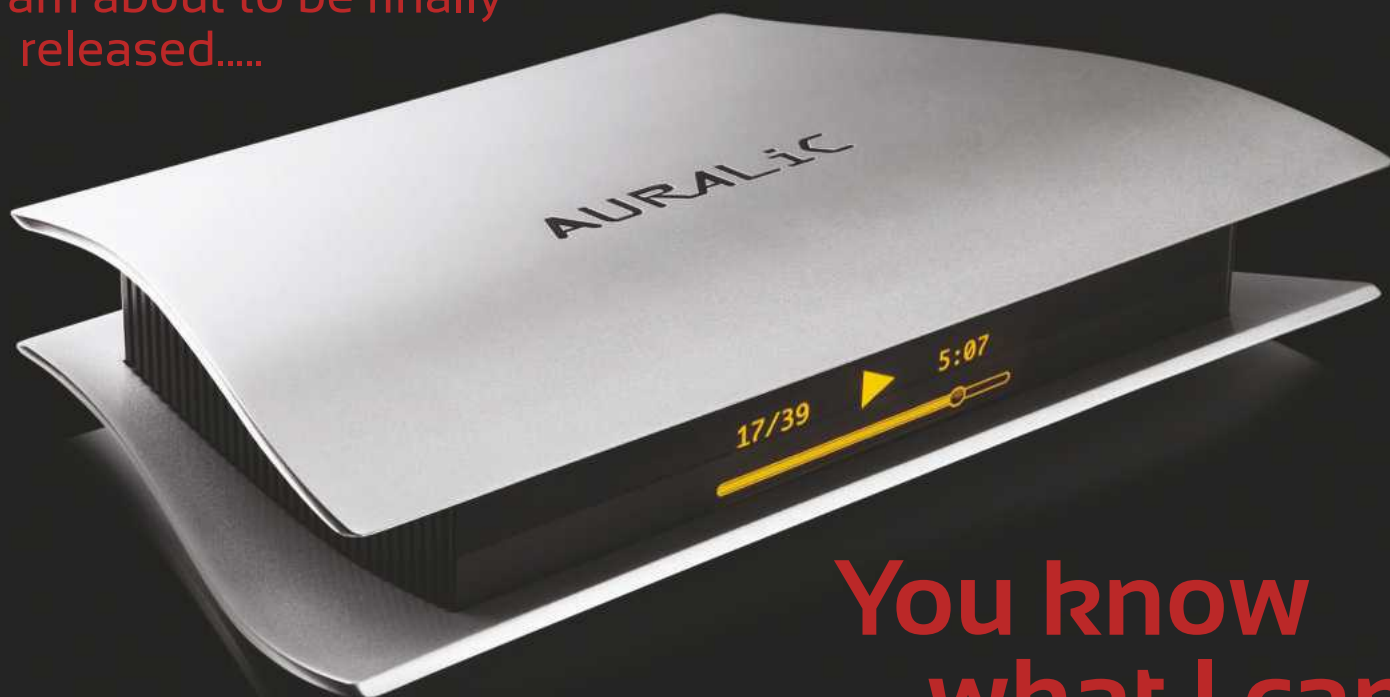
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Tony Bolton, Hi Fi World 2014

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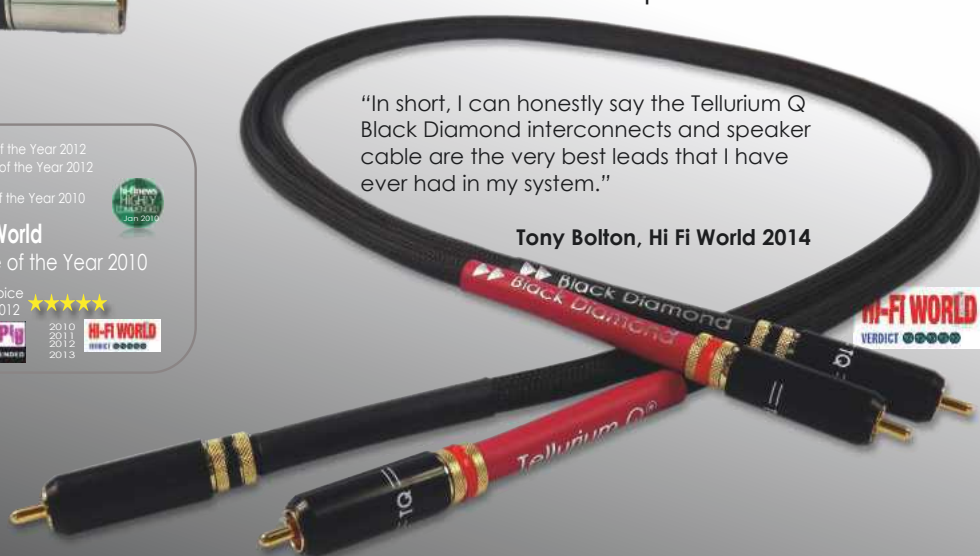
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Nytech Audio CA252

While it may have lost to its predecessor, the CTA252, on sheer style points, this compact amp was highly popular in its time. But how does it measure up today?
Review: **Tim Jarman** Lab: **Paul Miller**

Nytech is best known among audiophiles for its imaginatively styled 'calculator tuner amplifier' of the late 1970s and early 1980s – the CTA252. Developed over the years, the amp became a firm favourite among those looking for a lower-powered design and was often seen partnered with some quite superior turntables and loudspeakers. Its FM tuner section was also noted for its excellent quality.

Less well remembered are the gaggle of other products Nytech produced, many of which were derived from the CTA252. Of these, the CA252 integrated amplifier tested here was one of the most popular.

AT A STROKE...

While a receiver can be an ideal way to package hi-fi equipment, it has its drawbacks. Costs are much higher since a quality tuner section worthy of hi-fi use is not cheap to design or make. Separate tuners and amplifiers, although bulky and sometimes difficult for the uninitiated to use, do at least allow the system to be purchased in more manageable stages.

By separating the amplifier section of the CTA252 to form the basis of the CA252, at a stroke Nytech expanded its range into a highly active area of the audio market. For those wishing to complete the set-up, the CT206 FM tuner offered the other half of the CTA252 package in a cabinet that matched that of the CA252.

Inside, the design was simple and straightforward although the use of multiple small circuit boards



ABOVE: Richard Hay (left) who co-founded Nytech in 1973 – the company was originally called Nytronics Ltd – talks to a youthful Russ Andrews (right) in the company's 'lab' room in Chew Magna

interconnected by a mass of coloured wiring did not always give that impression!

An unusual feature for the time was that the loudspeakers were AC coupled to the amplifier's output through large capacitors, meaning that at very low frequencies the output impedance rose and the damping factor reduced considerably. This was a necessary evil in the early days of transistor amplifiers since matched pairs of complementary NPN/PNP power transistors were not available.

Oddly, the CA252 does have complementary output transistors, but since they are fed from a single +60V supply rail the coupling capacitors are still necessary.

One consolation for the slight drop in measured performance

that results from this arrangement is improved reliability. AC coupled transistor amplifiers tend to produce a strong 'thump' through the loudspeakers as the capacitors charge when the unit is first switched on. Though rarely harmful, the sound can be off-putting. In later CA252s, this effect is suppressed by the addition of circuitry that causes the power levels in the output stage to build up more slowly.

MORE IMPROVEMENTS

Another later improvement saw the position of the volume control in the circuit moved from the output of the preamp section to the input. While the former arrangement gives good noise performance it leaves the amp more susceptible to overload from high-level sources such as CD players. Both these improvements could be found in the CA252S, which also had a more developed power supply for the power amp.

As well as tuning up the CA252 over the years, Nytech also produced a simplified



LEFT: The buttons and slide controls are a sign that this little amplifier is closely related to the famous CTA252 receiver. However, the casing here is not plastic but painted metal



budget version, the CA202. This looked similar, but came without a buffer stage for the recording output and the option of different RIAA amplifiers for the turntable input. For the CA252 there was a choice of three RIAA stages to suit either MM cartridges or two different sensitivities of MC, but the CA202 was suitable for MM types only. There was also a higher powered CA302 version, but this is seldom seen today.

The mostly metal housing of the CA252 makes it feel pleasingly weighty and affords a better feeling of quality than does the moulded plastic casing of the CTA252, despite the latter's wooden appliqué surround. The styling, though, is less of a success. While

the CTA252 is a recognised design classic, the CA252 is nondescript. Only the use of the same knobs for the push buttons and sliders suggests a link between the two.

Ergonomically the CA252 is also something of a retrograde step. The CTA252, for example, had two headphone sockets, mounted on the main operating panel. The CA252 has one and this is located on the rear panel, obscured by some oversized loudspeaker

cable binding posts on our test sample.

The angle of the front panel also gives the sliding controls a stiff, awkward feel and the design of the source selection buttons makes it difficult to see which source is selected. Operationally there

'In a word, the sound of the Nytech CA252 is notably "British"'

ABOVE: Simple controls in the minimalist style. The power and source selection buttons are a clever idea, but it can be difficult to tell at a glance which input has been selected

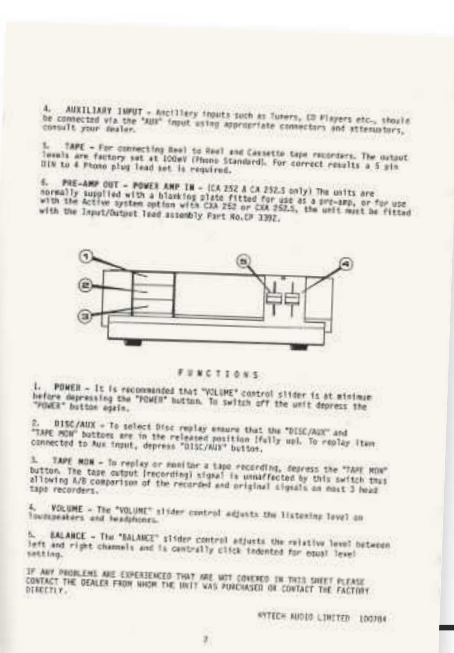
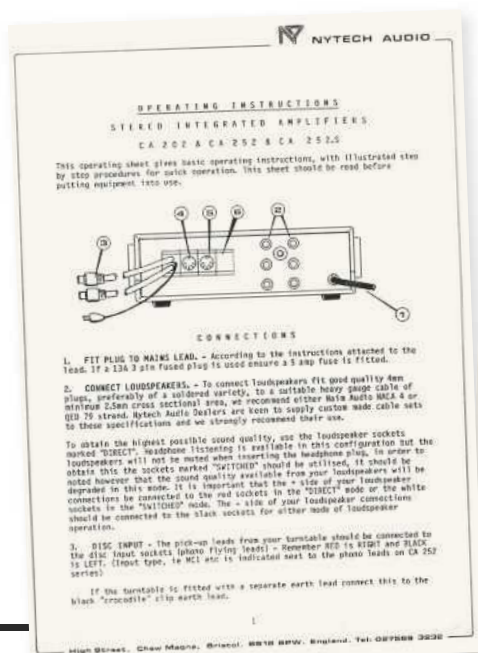
are drawbacks, too. Chief among these is that there are only three inputs: one for a turntable, one auxiliary and one tape loop. While this is excusable for a receiver like the CTA252 (where the tuner does not occupy one of the sockets), even at the time this would have been regarded as a bit limited. Trying to build a versatile system around this amplifier would have been difficult without the use of external switch boxes of the QED type.

FUSS-FREE SETUP

Setting up the CA252 is reasonably straightforward; early Nytech products used DIN-type loudspeaker connectors but this one has standard binding posts into which my Chord Odyssey 2 cables fitted nicely. The line-level connections are DIN types as well, but the recording output is closer to line level than DIN standard. Bear this in mind if you intend to connect a tape recorder since the output of the CA252 would overwhelm a standard DIN level recording input.

Connections for a turntable are by two RCA sockets on short flying leads. This is a good technical solution although it does look a tad 'home made'. Curiously, there is no earth stud to ground the turntable's chassis to either. The final connection on the rear panel is a pre/power amp link. Nytech offered an external 60W power

LEFT: Original operating instructions for the amp were brief, but were all that were needed for what was a straightforward product – unlike the CTA252 which was made to look 'high tech'



VINTAGE HI-FI

RIGHT: Interior view of the CA252 amplifier shows the various small modules used, the toroidal mains transformer and the mass of colourful interconnecting wiring

amplifier – the CPA602 – along with various active crossover systems and this is where these would have been connected.

Normally a DIN shorting plug is fitted here and without this there will be no sound. It was the absence of this key part that many years ago saw me take ownership of my first 'decent' amplifier, a not particularly old CTA252XD in supposedly non-working condition for under a fiver. One cheap DIN plug later and partnered with an ITT model 87 cassette deck, not only did it look stunning but went on to give me many years of pleasure, after which it was sold on for a tidy profit.

Perhaps unsurprisingly I have a great affection for Nytech products of this era, and so it was with relish that I took the chance to re-make the acquaintance.

TIM LISTENS

The amp's 100mV input sensitivity (a common standard for British equipment of this period) is a bit too high for 2Vrms sources like CD players. I didn't hear any distortion, but the volume slider ended up stuck at the bottom, making accurate adjustment tricky. In-line attenuators are therefore recommended if you are going to use sources like the Cyrus CD8 SE2 I used for my listening. The excess sensitivity gives the impression that the Nytech is a very powerful amplifier and in practice, like most transistor designs of any quality, it will go more than loud enough for the great

'This makes the CA252 a bargain if you already have a tuner'

majority of domestic listening purposes. At normal levels the sound is neat and well ordered but it can become ragged – especially at the bottom end, if the outer limits are too vigorously explored. Subjectively it feels slightly less powerful than an early NAD 3020, despite the latter's lower published rating.

If asked to sum up the sound of the CA252 in one word I'd say that it is notably 'British' – no doubt Nytech's original

aim and one it has hit bang on target. To me, the British sound is characterised by outstanding midrange clarity and dryness; a tight, not especially extended bottom-end; and a slightly clipped

treble. This, of course, brings vocals and the more interestingly textured instruments in the orchestra to the fore.

REM's 'Daysleeper' from the album *Up*, [WB 47112-2] gave a clear insight into what the CA252 could do. True, the track's warmth and glow was curtailed to

a degree but the vocals and the rhythm guitar stood proud of the mix as if awaiting forensic examination.

This presentation proved to be ideal for R&B singer India Arie's 'Video' from *Acoustic Soul* [Universal 014 695-2], where the mix comes over as a little thick sometimes. The Nytech cut cleanly through this, lifting the tuneful vocals clear of the track's booming underpinnings. The percussion sounds remained smooth and well proportioned throughout the proceedings and it would be difficult not to be impressed with the CA252 on this showing. Only the fake 'vinyl' pops and clicks throughout the song continued to irritate, but I know of no amplifier able to get rid of those!

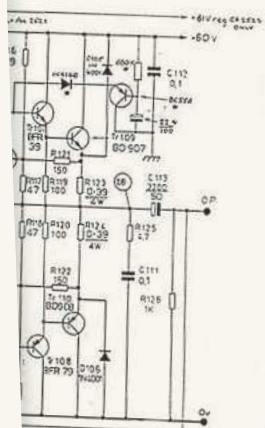
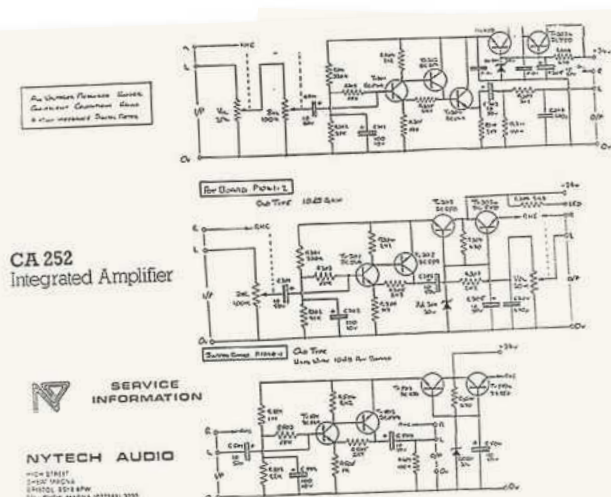
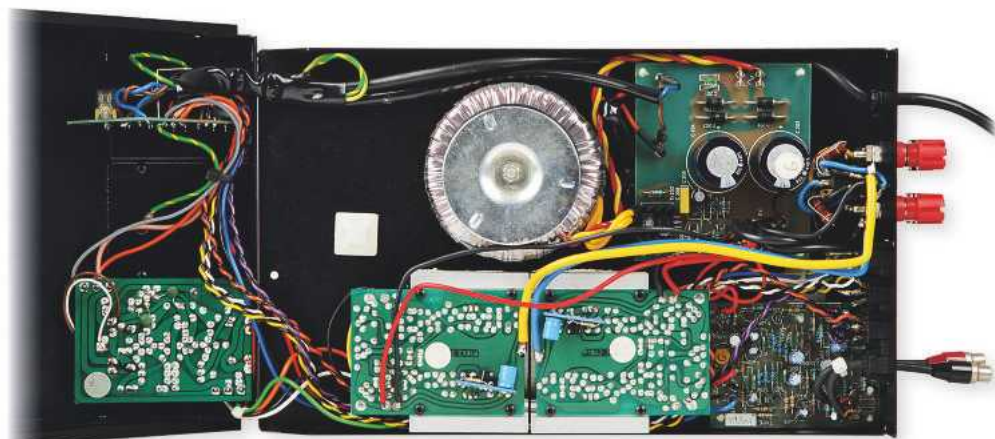
CRYSTAL CLEAR

There is more to life (and the work of a hi-fi system) than music of course. Although few audiophiles would care to admit it, recorded music is on the whole a highly processed and packaged product and so solely drawing conclusions from listening to it at home can give a misleading impression as to what is accurate.

I was lucky during my time with the CA252 to have a Sony ST-A6B tuner on loan, a top quality FM design whose ability to recover information from broadcasts ranks it among the best available.

A live spoken word programme like BBC Radio 4's *Today*, received by the Sony and amplified by the Nytech, showed that the latter's tonality was ideally suited to this type of task. Stripped of boom and sibilance, the presenters could have been sitting at the far side of my listening room. There was no fuss, it just sounded 'right' and it was crystal clear as to where each

LEFT: Unlike some of its rivals, Nytech issued circuit diagrams for its kit. The development of the preamp and the moving of the volume control in the circuit is shown here



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VINTAGE HI-FI

LAB REPORT

NYTECH AUDIO CA252 (Vintage)



ABOVE: Rear view shows the flying leads for the turntable input and the almost inaccessible headphone socket. Other inputs are DIN, but work at close to line level

voice was located in the soundstage. Systems geared to make music sound 'exciting' often fail at this seemingly simple task, but not so the Nytech. Yet here's the rub: an amplifier that does radio this well needs a tuner and Nytech of course made a receiver, which in XD form has a very similar amplifier to the CA252. This, for me anyway, makes the CTA252 the better choice of the two, and that's before we even get on to how good looking it is...

BUYING SECONDHAND

For those thinking of buying a CA252 secondhand, the good news is that Nytech has re-emerged as a force in audio and is able to undertake repair work on a range of past models. Though an instant death sentence for most DC-coupled amplifiers, the previously mentioned AC-coupled loudspeaker outputs

mean that accidentally shorted loudspeaker cables won't instantly blow the power amps to bits if you are lucky. With this potential tragedy out of the way, the chances of finding a working CA252 improve quite considerably.

The flimsy plastic knobs and buttons do go missing quite easily however, so make sure that the amp is complete before you hand over the cash. Despite their difference in cost when new, receivers tend to cost no more than amplifiers on their own on the vintage market, usually making them a better buy.

This is not always the case with the Nytechs however. The CTA252 has 'designer' appeal and can sometimes be a costly proposition when in very good order. This makes the less well known CA252 series a bargain if you already have a tuner or don't need one. The later 'S' variant has some worthwhile improvements and is the best choice if you can track one down. ☺

HI-FI NEWS VERDICT

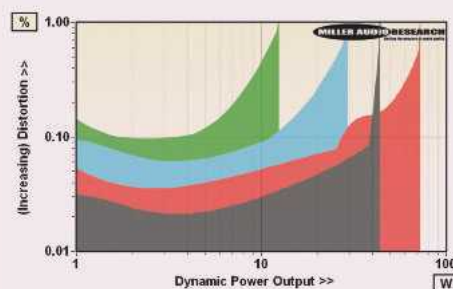
Although it lacks the radical styling and the excellent FM tuner of the CTA252, the CA252 integrated amp makes an interesting alternative to the more obvious Cyrus Two or an original Naim NAIT. What's more, its somewhat nondescript look means it can be had for a bargain price and working examples are not that hard to find. The availability of factory service backup is another bonus.

Sound Quality: 75%

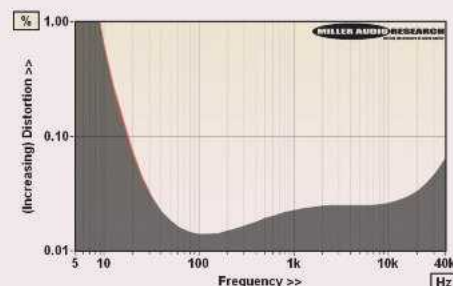


This pristine sample of the CA252 was supplied by the modern-day incarnation of Nytech, re-capped and retro-fitted with an 'anti thump' circuit which was an original factory modification made to later builds of the amplifier. There's some debate over the original factory specification but whether the CA252 was rated at 20W or 25W/8ohm in practice it exceeded both by delivering 2x32W/8ohm and 2x46W/4ohm. This is more than sufficient to drive a modern, high sensitivity loudspeaker (89dB+) while the extra output under dynamic conditions brings worthwhile headroom. This amounts to 44W/8ohm and 72W/4ohm with a maximum current of just 4.2A [see Graph 1, below], the latter suggesting that sub-4ohm impedance speakers are not ideal partners for the CA252.

Nytech's AC-coupled output stage necessarily tailors the CA252's low-end performance. Output impedance, for example, lifts from a creditably low 0.075ohm through midrange and treble to a substantial 1.2ohm/20kHz. Aside from the impact on bass damping it will also influence the amp/speaker LF system response, especially with ported designs. Into a non-reactive 8ohm load, bass already rolls off to -1.5dB/20Hz (-6dB/8Hz) but is essentially flat to within ± 0.1 dB from 100Hz-10kHz (-0.4dB/20kHz). The drop-off in feedback at LF means distortion also increases in the bass from 0.01-0.08% (100Hz-20kHz) to a full 0.12%/20Hz at 10W/8ohm [see Graph 2, below]. Finally while the 75dB A-wtd S/N ratio (re. 0dBW) is below-average, the noise floor is otherwise 'white' and clean. Readers may view a full QC Suite test report for Nytech's CA252 integrated amplifier by navigating to www.hifinews.co.uk and clicking on the red 'Download' button. PM



ABOVE: Dynamic power output vs. distortion (8ohm tap) into 8ohm up to 1% (black trace), 4ohm (red), 2ohm (blue) and 1ohm (green) speaker loads



ABOVE: Distortion vs. extended frequency from 5Hz-40kHz at 10W/8ohm (black, left; red, right channel)

HI-FI NEWS SPECIFICATIONS

Power output (<1% THD, 8/4ohm)	32W / 46W
Dynamic power (<1% THD, 8/4/2/1ohm)	44W / 72W / 30W / 12W
Output impedance (20Hz-20kHz)	0.074-1.21ohm
Frequency resp. (20Hz-100kHz, 0dBW)	-1.5dB to -6.4dB
Input sensitivity (for 0dBW/20W)	16mV / 77mV
A-wtd S/N ratio (re. 0dBW/20W)	75.0dB / 88.0dB
Distortion (20Hz-20kHz, 1W/8ohm)	0.010-0.12%
Power consumption (Idle/rated output)	7W/97W
Dimensions (WHD)	210x80x360mm



ABOVE: Original ad – at the time £184 was a fair sum for the facilities offered

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Fons CQ30/ Linn Sondek LP12

NEW SERIES

Frank Jones compares the LP12 to a Fons, but will it be a win for the Linn?



Hi-Fi
News
October
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Both the Linn Sondek LP12 and the Fons CQ30 are made in Scotland, and with the Ariston RD11 represent the output of the new and apparently thriving Scottish turntable industry. Even a cursory comparison of the Ariston and the Linn reveals considerable similarities in design, and this turns out to be due to their one-time association with Hamish Robertson. The Fons, however, is totally different in conception and execution, so it is something of a surprise to learn that this, too, is Mr Robertson's work; clearly he is not a man who lets the grass grow under his feet.

The LP12 and the CQ30 are both belt driven, the Linn employing a 24-pole brushless motor (which is locked to the mains supply frequency) and the Fons adopting a perhaps more elegant arrangement, using a servo-controlled brush motor. The servo is electronic,

MANUFACTURER'S SPECIFICATION

Linn Sondek LP12: Single-speed belt-drive transcription unit in low resonance plinth. Also available in chassis form. **Motor:** 24-pole synchronous. **Bearing:** Single point, running in oil bath. **Belt:** Flat, ground to 0.0004in, manufactured from chloroprene. **Platter:** 12in diameter zinc alloy diecasting, weight 10½lb. **Power requirements:** 220-250V 50Hz, or 110-125V 60Hz, 3.3VA. **Dimensions:** 453x343x152mm. **Price (ex. VAT):** chassis £86.00; with plinth and cover £110.50. As tested with Grace G-707: £160.50.

Fons CQ30: Three-speed electronically controlled transcription unit. **Speeds:** 33⅓, 45 and 78 nominal. Each speed adjustable over the range 29-100rpm. Platter: 12in. diameter. **Start-time:** 2 seconds (typical). **Bearing:** Hyper-concentric (concentricity ±0.00003in, approx). **Rumble:** Better than -64dB weighted (BS 4852). **Wow and flutter:** 0.06% (DIN 45 507). **Speed stability:** Better than 0.02% over 12 hours for 15% supply voltage variation and 20% supply frequency variation. **Dimensions:** 444x349x156mm, 8.6kg. **Power requirements:** 110-240V, 50-60Hz, 9W. Guarantee: 2 years. **Price (ex. VAT):** £93.50. With SME arm as tested: £143.90.

Manufacturers: Linn-Sondek, Linn Products Ltd., Drakemire Drive, Glasgow, G45 9SZ (Tel: 041 634 3860). Fons International Hi-Fi Ltd, Maybole KA19 7BH, Scotland (Tel: 0655 82424).

and therefore subject to problems of reliability and service which the Linn avoids. However, the electronics are very simple and the disadvantage is therefore marginal. It is this difference in approach which enables Fons to offer a much more versatile product than its compatriots (single-speed LP12; three, infinitely-variable speed CQ30). Both units are above reproach when reproducing LPs, and are probably as good as anything to be had at any price in this respect.

ENTHUSIAST'S DECK

The substantial main frame of the Linn Sondek is trimmed in stainless steel, which is most attractive, set against the matt black pick-up arm board, and solid teak plinth.

The smoked Perspex cover is on lift-off hinges, with a rather ugly prop attached to it to hold it open, and this is probably the least attractive part of the design – except for the ugly marks which soon accrue on the trim, from careless fingers.

The massive turntable (see specification) is beautifully made and runs very true; the ribbed rubber mat is also much better than these things usually are. These superficial indications of engineering quality persist when the unit is opened up, too; everything is very substantial, and one need have no worries about the heavy platter being too much for the other parts.

A very rigid sub-chassis, which carries the platter and arm, is suspended from the main frame on coil springs. These springs decouple the 'active' parts of the unit from its surroundings, thereby reducing the likelihood of acoustic feedback; they also isolate the motor, which is bolted directly onto the main frame. This suspension serves both these purposes very well, but it is not entirely satisfactory in practice because it makes the turntable difficult to operate properly – of which more anon.

A turntable as expensive as this, which offers just one speed, is clearly aimed at the enthusiast,



LEFT: The original Linn Sondek LP12 ran at 33.3rpm only and had a square illuminated on/off switch. The deck was launched in 1972



LEFT: The Fons CQ30 offered three speeds, including 78rpm, each adjustable for accuracy using the strobe pattern on the platter

an impression reinforced by the condition in which it arrives, and the major part of the instruction leaflet (they call it a manual) deals with 'Installation'. 'Assembly' might be a more appropriate heading, since a lot of work is required of the purchaser, even if the LP12 is ordered with an arm. This is normally done by Linn dealers, I understand, and clearly represents a considerable nuisance.

After assembly is complete an important operational adjustment is needed – adjusting the attitude of the motor in relation to the platter, using the screws provided. If this adjustment is not correct the belt doesn't remain on the crown of the drive pulley, but wanders until it touches its guide, causing a rubbing noise.

Because of the characteristics of the suspension, rubbing is still encountered when the motor starts, or if the pick-up platform is displaced when the arm is operated.

Indeed, any deflecting force causes the sub-assembly to rotate about the axis of the main bearing, because of the heavy platter, and this very non-linear motion can easily unstick the arm, as well as causing wow. The relationship between

these components can also affect the LF performance of the system (and thus alter the rumble level) and the dynamic stability.

SILENT BACKGROUND

Comparisons were made with the Fons, and with my own (much cheaper) turntable using the same cartridge in all three. Using an Ortofon M15 cartridge, there were no discernible audible differences on most records, although this very compliant design was very difficult to handle when fitted to the LP12-

Grace G707 combination. However, using the better damped, stiffer, Supex 50901-E in the Grace arm, comparisons made with

my own turntable were most interesting, producing subtle but clearly audible changes other than those which would be expected due to small variations in frequency response. The major improvement, due to the LP12's very low hum-field, and the excellent screening of the moving-coil cartridge and transformer, was the firm silent background

compared with the slight residual hum of my own system. The hum is not obtrusive normally: however, the comparison showed it up straight away; other small differences such as this may well account for the impressions of sound quality Linn are attributing to their turntable.

Apart from the criticism of the suspension – which does not affect reproduced sound quality – the Linn can be thoroughly recommended, and will realise the potential of the finest ancillary equipment.

Running noise is negligible – a very slight swish from the belt is only apparent to an ear placed within a foot or so of the unit, and that in a quiet room. Rumble is extremely low – better than the measuring method can resolve, probably.

Seismic tests were impressive too, and it proved impossible to detect any change in the noise level whether or not the turntable was operating – apart from the slight hum field produced by the motor. Flutter is totally ironed out by the massive platter, and wow never gave any problems even though the belt had a slight flaw causing it to 'hop' slightly as it passed the drive pulley.

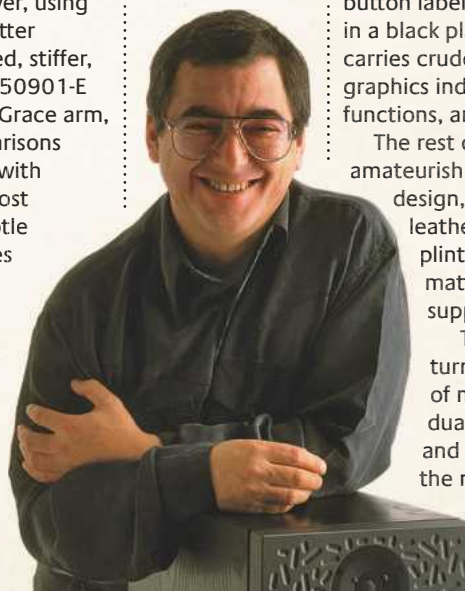
THREE-SPEED FONTS

Unlike the Linn, the Fons offers three speeds with the facility for varying each of them independently over the range 30-100rpm. Selection is effected by three square push buttons, and multi-turn potentiometers provide fine adjustment. These controls – together with a fourth press button labelled 'off' – are mounted in a black plastic fascia, which also carries crudely drawn and screened graphics indicating the various functions, and the model number.

The rest of the deck shares this amateurish attention to visual design, with a black mottled leatherette surface to the plinth, matt black platter and matt black rubber segments supporting the disc.

The centre of the turntable carries three sets of marks for a three-speed dual-frequency stroboscope and this is eccentric, like the mat, which is also untidily attached to the turntable. The plinth, too, is tatty, ➡

BELOW: Ivor Tiefenbrun MBE, Executive Chairman of Linn Products Ltd and perhaps best known for being the designer of the LP12. Born in Glasgow in 1946, Tiefenbrun established Linn Products in 1972



FROM THE VAULT

PERFORMANCE TABLE

Time to reach 33 $\frac{1}{3}$ rpm (approx.):	Linn Sondek LP12	Fons CQ30
Time to stop from 33 $\frac{1}{3}$ rpm:	4 secs	2 secs
Speed (as supplied if variable) at 33 $\frac{1}{3}$ rpm:	10 secs	16 secs
Speed (with PU at 1gm and Dust Bug):	exact	+2%
Wow and flutter (DIN) at 33 $\frac{1}{3}$ rpm:	-0.4%	-1.3%
Speed variation over 1 hour at 33 $\frac{1}{3}$ rpm:	0.07%	0.05%
Speed variation for mains input 200-250V 33 $\frac{1}{3}$ rpm:	nil	+0.4%
Rumble at 33 $\frac{1}{3}$ rpm (ref: 5cm/sec, 1kHz, unweighted):	nil	$\pm 0.4\%$
Rumble (DIN weighted, ref: 10cm/sec at 1kHz):	-46dB	-48dB
Hum level at 33 $\frac{1}{3}$ rpm (ref: Linn Sondek):	-68dB	-70dB
Acoustic feedback (ref: Linn Sondek):	0dB	+6dB max
	0dB	-7dB max

1. The mains supply was 240V, 50Hz nominal, unless otherwise specified.
2. Rumble and acoustic feedback were measured with the same pick-up mounted in the equipment as supplied. A sharp-cut filter was used to reduce the response of the system below 25Hz in both cases.
3. Measurements referred to the Linn Sondek are relative measurements, and the results have no absolute significance. Variations in different practical situations are to be expected. The figures for acoustic feedback represent the difference in loop gain necessary just to maintain continuous oscillation.
4. Hum measurements were made with a search coil, mounted on the pick-up arm. The figures refer to the worst point in each case.

with large gaps at the corners of the chipboard plinth (finished in walnut veneer) and supplied with a poorly moulded lid and skew-mounted friction hinges.

It is perhaps unfortunate, then, that this first reaction is exacerbated by a crude Union-Jack sticker as in every important respect the performance is absolutely first class.

MOTOR AND SUPPLY

From material produced by the manufacturers we learn that the motor is a brush design using a 3-segment commutator, and that at 33 $\frac{1}{2}$ rpm the operating voltage is rather less than a fifth of the design value. Under these conditions wear should be a minor problem.

A 9V (nominal) unstabilised supply is incorporated on a well made printed board, which also carries the other components used to control motor speed. The circuit is very simple indeed, and should prove extremely reliable for there are no adjustments required.

Pulses, at a rate proportional to the speed of the motor, are obtained from a tacho-generator attached to the motor shaft. These are amplified, and applied to a diode bridge, the output of which is integrated and then compared with a reference voltage set by the speed control potentiometer.

Any error produces a change in the current passed through the motor – and the whole arrangement is extremely elegant, particularly because clamping the pulses

and the reference to the rail has eliminated speed variation if the supply voltage is varied.

Several advantages are obtained from this approach. The first is the elimination of the need for a stepped pulley to effect speed change, which alters the belt tension and may damage its edge. A second is that the coupling between motor drive pulley and belt can be tight because the motor can run up to speed slowly instead of having to slip against the belt whilst it accelerates the platter. A third advantage of the servo system is that the current in the motor is automatically reduced to the amount required just to keep the platter turning at the selected speed. This reduces radiated fields, and vibration.

As with the Linn, absolutely no slack was discernible at the

periphery of the platter (very unusual) yet the bearings on both turntables are very free and quiet. Because the Fons platter is lighter than that on the Sondek, the bearing assembly is smaller; however, it should prove no less adequate over a period of use. The platter is not removable from the main spindle by the user, and this makes belt replacement a service job, a minor annoyance which could easily have been avoided.

SLIGHT BUZZ

The Fons ran very quietly indeed, an extremely slight buzz from the mains transformer being the only observed acoustical consequence of applying power. The hum field from the transformer also determines the ultimate signal-to-noise ratio, in practice, and in this respect the CQ30 was not as good as the Linn Sondek. Perhaps the mains transformer could be resited, or screened – if it were the unit would then almost certainly be better than the Linn in this respect. (In

'When it comes to deciding between the two the choice is much simpler'

this context it is perhaps worth observing that although hum may measure well below rumble, it tends not to be masked

effectively, once the ear latches on to it, and is in practice one of the most important forms of distortion in good turntables.)

The motor used for the Fons is bolted directly onto the sub-frame, so that the suspension does not provide any decoupling of the pick-up arm mountings in the manner of the Linn Sondek. Evidently the makers consider the motor vibration insufficient to warrant this, preferring instead to avoid the problem of wow being introduced by suspension movements.

Constant speed is essential, of course, for high quality sound reproduction, and the Fons is excellent in this respect. Although the platter is about half the weight of the Linn Sondek's, the ratio of its mass to the torque pulses of the motor is probably greater, so flutter is negligible. In this design low wow, and long term speed stability are more likely to be ➔

BELOW: Ad from the May 1973 issue of Hi-Fi News informing readers that Linn Products has been formed and that the company is now producing the LP12 from new premises in order to keep up with consumer demand

Advertisers Announcement



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FROM THE VAULT

limited by the servo than by motor, belt and bearings (assuming good engineering of these parts) and here, too, Fons has got it right.

Before attempting to extend a preference for one of the two turntables under examination, a few general comments. Both units are warranted for two years – but the motor and the switch on the Linn are exempted from this quite generous provision after 12 months.

No fuse is fitted to the Fons, which also has a moulded flat pin plug on its mains lead, shortly to be outlawed here, as it already is in some countries. Neither unit is earthed except by connection to an earthed component, so compliance with the requirements for double insulation is presumed, and this is as it should be if hum loops are to be avoided; the Linn instructions deal briefly with this point but the Fons do not, which may cause concern amongst people who are unfamiliar with electrical products.

EXCELLENT QUALITIES

Both these turntables are really excellent performers, inasmuch as they provide those qualities necessary for high quality record reproduction, viz: high signal-to-noise ratio, constant speed and freedom from worries about reliability. Neither is cheap enough to be considered good value, however, despite the undoubted excellence of the engineering they incorporate. This judgement is prompted by a glance at some of the alternatives available which



include the Connoisseur BD3, the Technics SL20, and the Philips GA212 at little more than half the price of the Linn and the Fons.

The Philips is certainly less well engineered than any of the others, but performs very well nevertheless, and the BD3 offers 78rpm (variable at that). All offer DC servo control, whilst the Philips also has touch controls and an opto-electronic end-of-record detect and shut-off system.

There's a lot of good competition at about the same price, too, including a number of direct-drive turntables (though there is no reason to suppose they offer a better performance than any of the models listed). Although it isn't servo-controlled the Dual 601 has variable speed (not 78) and provides automatic single play operation, with a very good arm, whilst the Telefunken 5500 is servo controlled, offers touch controls, end-of-record-detect and an edge-cut strobe, for the same sort of price as the Linn and the Fons, with a cartridge thrown in.

FINAL VERDICT

When it comes to deciding between the review models, however, the choice is much simpler. They are so different in every respect, except for the excellence of their performance, that no one should be torn by the decision. Personally, I can see no reason for opting for the Linn unless the styling and very conservative engineering approach appeal to you. The Fons does what the Linn does, does it as well, and does a great deal more besides. I wish they'd give it a (further) face-lift, though. ☺

ABOVE: Frank Jones' review – with manufacturer's specs and performance table – as it appeared in the October 1976 issue of *Hi-Fi News*



Also in *HFN* this month in 1976

MISLEADING MEASUREMENTS

Raymond Cooke, MD of KEF, examines current developments in loudspeaker measurements.

DBX

Frank Ogden of Studio Sound looks at the new noise reduction system, describing how it works.

WHICH HI-FI? SUPPLEMENT

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John Dwyer examines the new safety regulations that become law on October the 1st.

QUALITY MONITOR

Hi-Fi News staff assess the last quarter's top recordings from the technical angle.

AUDIO AWARD

Janet Baker is revealed as the recipient of the year's *HFN/RR* Audio Award.

MUSIC ON RECORD

An extended look at the work of Stokowski by John Davis.

STRATHEARN STM4 TURNTABLE/ARM

Roderick Snell on this advanced servo-controlled direct-drive turntable from Northern Ireland.

MICRO-ACOUSTICS QDC 1E

B J Webb hears a new type of pick-up cartridge – an electret design with a naked elliptical diamond stylus.

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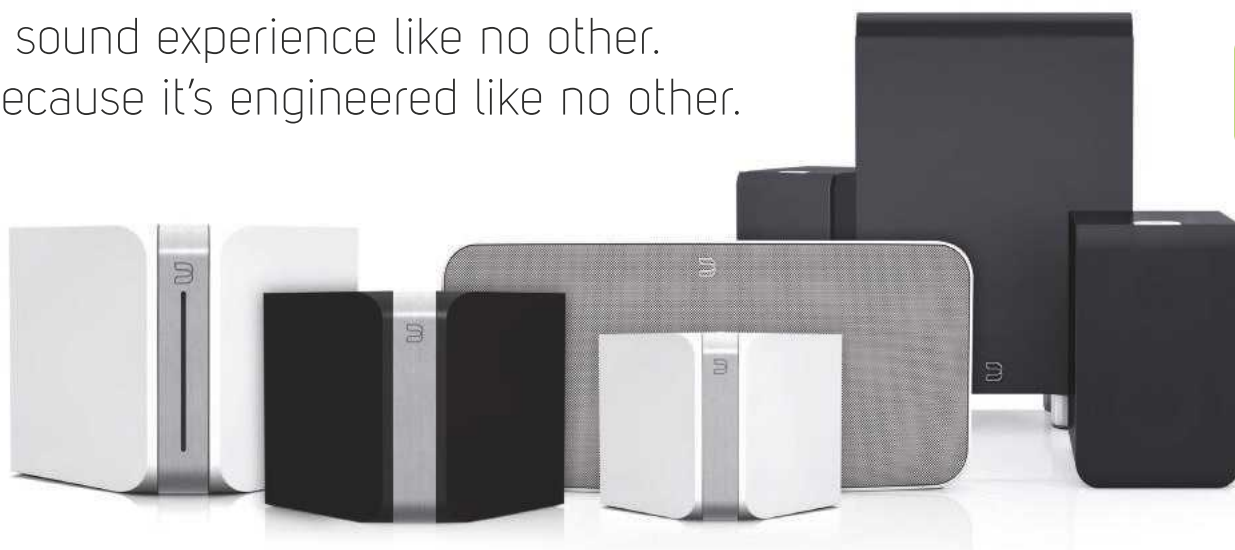
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LEFT: 'At £75 plus VAT it's too good to miss...' Fons trumpets the accuracy and flexibility of its CQ30 turntable in this mid-'70s ad

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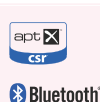


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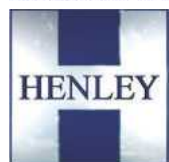
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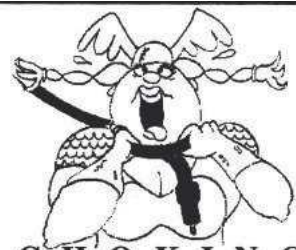
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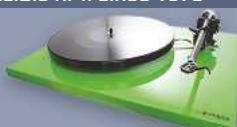
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LAST WORD

OFF THE LEASH!

KEN KESSLER TELLS IT LIKE IT IS...

When it comes to costly cables **Ken Kessler** is a sceptic, but for once he's thrilled to the core...

Long-term readers know that I have barely-disguised contempt for audiophile cables. While I admit to be lacking any of the skills needed to be an engineer or a metallurgist, I have visited factories as wildly differing in their crafts as Bugatti (supercars), Greubel Forsey (watches), Leica (cameras), Montegrappa (pens) and more high-end amp, turntable and speaker factories than I care to count.

In every case, I can 'see' where the money goes. Those named above are among the most expensive brands in their respective categories. They probably all work to the same pricing formula, give or take a few per cent, but even that may not cover their costs. For example, it is rumoured that despite prices of €1m-plus, Volkswagen loses a bundle on every Bugatti it sells. Why do they do it? Prestige, I suppose.

Be that as it may, in normal practice, price – not counting local taxes – is established by taking the materials and labour costs and multiplying them by five or six. The final retail price includes the retailer's margin, which is usually the biggest, as the retailer has to sell the stock and is stuck with it if it doesn't shift. Next is the distributor's margin, which may also be the manufacturer's, if the company is large enough to have its own distribution in each territory. Lastly, the manufacturer takes what is left.

'Recent experience has shown me that the better cables are "for real"'



To put this into context, something costing £1000 (without tax) would probably be broken down into £400 for the retailer, £250 for the distributor and £350 for the manufacturer. And those are gross figures, so they also have to cover marketing, servicing, research and development, and a host of other expenses that consumers never think about when they're whining about prices. If what you make doesn't sell in huge numbers, the only way to recoup the investment is with the appropriate retail prices.

JUST A PIECE OF WIRE

Back to cables. Unless we're talking about solid gold or platinum, nothing will allow me to comprehend how a piece of wire, which is a device with no moving nor 'active' parts, can cost ten times as much as a German-made camera with a few hundred parts or a car. Sure, they can say, 'We spent £1m on a reference

hi-fi system and another £1m on test equipment and we put in tens of thousands of man-hours listening to every tweak.' To which I reply: it's still just a piece of wire.

Now, ignore everything in the preceding paragraphs, and turn to another way of pricing an item for sale. For all of those who do actually consider every penny and price accordingly, there are – I am certain – others who pluck numbers out of thin air, believing

that people will pay what they think something is worth. In my experience, the *only* place where that is true is at auction, nowadays best exemplified by eBay, where people bid until they go past the point where they think something is not worth it.

As much as I hold up cables as synecdoche for all that is wrong with the high-end, and how insane cable prices have driven people away from this hobby of ours, I have to confess that recent experience – while not altering my opinion about pricing one iota – has at least demonstrated to me that the better cables are 'for real' and do deliver sonic gains. The question is not whether the cables work, but whether or not the gains are worth the money. And only the buyer can decide that.

CABLE TUNING

Recent changes in my system have caused the experimentation, my needs differing from those who can 'leave their systems alone' because reviewers have to change cables each time they change a component. And as these needs demand, I keep a selection of cables which I go through until I find the ones that best allow a component to give of its best. My arsenal has long included Atlas, Kimber and Yter, with Transparent Reference as my, er, reference.

Transparent actually 'tunes' each cable to the components, so I had to send a list of my hardware to the company so they could match everything. I was sceptical, but a change of amplifier led to a retuning of the interconnects and speaker cables, and while I await the former, the arrival of the latter caused no end of head-scratching. Damn, are they good.

Not believing my ears, I loaned the speaker wires to a friend who had a different amp but similar speakers. He was gob-smacked. That the cables cost as much as a loaded Skoda Yeti now seemed simply a fact of life rather than a cause for scorn.

I'm also trying a full set of Crystal Cables, in my quest for a neutral, easy-to-use range for general reviewing. (Transparent's speaker cables are good practice for those who might want to wrestle alligators.) Again, prices are high. But at least these really do deliver audibly superior sound. ☺

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