

hi-fi news

& Record Review

Exclusive

GROOVIN'...

TechDAS Air Force 2 takes off



TODDRUNDGREN
SOMETHING/ANYTHING?



INVESTIGATION

Radio, radio

BBC's 'missing' stations, p22

Budget Esoterica

Wharfedale's Diamond 230

GamuT D3i/M250i

Speaker-bursting amplifiers

Naim NAC-N 272

Network media player/preamp

Aurorasound Heada

Reference grade headphone amp

From the Vault

The perfect classical LP sleeve?



• **PLUS** 18 pages of music reviews & features • **VINYL RE-RELEASE** Robert Palmer *Sneakin' Sally...*
• **OPINION** 12 pages of letters and comment • **VINTAGE REVIEW** B&O Beogram CD50 disc player
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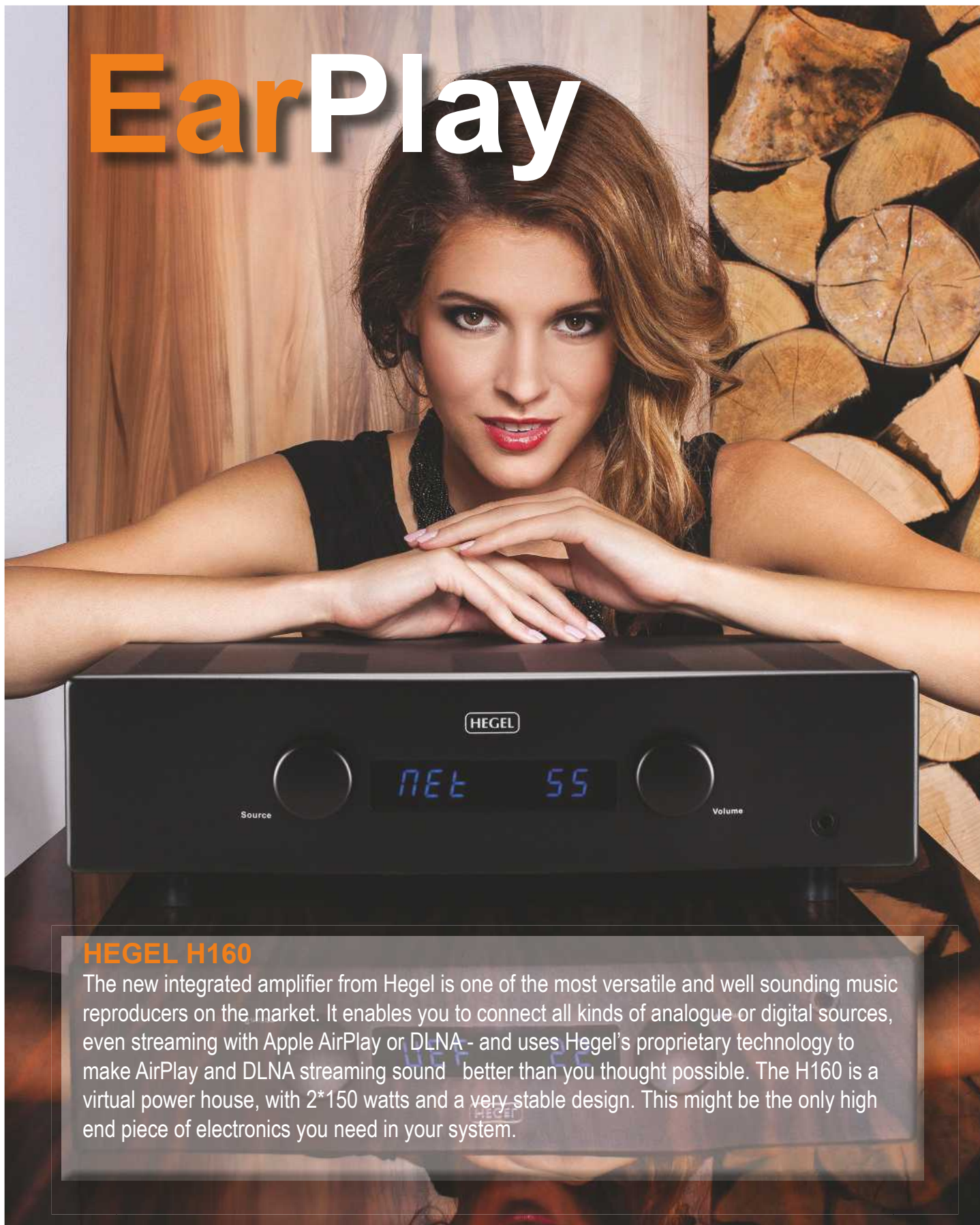
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RIGHT: From cables to headphones: Furutech unleashes its ADL H128 with triangular capsules. Full review, p60



ABOVE: Aurorasound's reference-class balanced headphone amp, p56



VINYL: Todd Rundgren's third solo album, *Something/Anything?* is this month's Vinyl Icon (p78), while Steve Sutherland talks tantrums as Robert Palmer's *Sneakin' Sally* is re-released on 180g vinyl (p76)



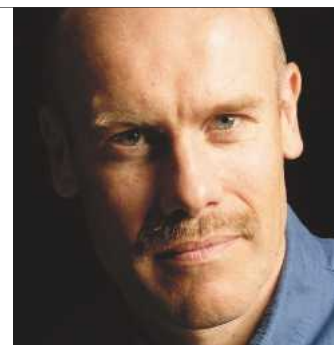
RIGHT: *Hi-Fi News & RR* is the exclusive UK representative of EISA's Hi-Fi Expert Group and editor Paul Miller is EISA's Hi-Fi Expert Group Manager

Every year the Office for National Statistics (ONS) revises the contents of its 'inflation basket', reflecting trends in consumer spending. As I type, the ONS has just announced that while cut flowers, white emulsion and sat navs are out (smartphone apps are taking over...) the cost of music streaming services and headphones are in.

This has to be the first time in decades that any music-related activity has been mentioned in such a survey since 'owning a good hi-fi' dropped off the list of top-ten consumer desirables (alongside owning your own home and having a foreign holiday once a year).

Inflation aside, I'm hugely encouraged that listening to music is cool again, for it only takes a fraction of these listeners to aspire to better fidelity – to discover the world of hi-fi that we already inhabit – and we'll have an influx of new and eager converts to our fold.

So we should thank Spotify for helping drive the trend for music streaming just as we should the fashion-led ear gear that's fuelled a market now ready to countenance genuinely high-end headphones. Without Spotify there would be no hi-res streaming from Tidal. Without Beats it's arguable the likes of Oppo, Audeze or oBravo, to name but three, would have



been so encouraged to develop their proprietary headphone technologies. This is 'trickle up', not 'trickle down'.

Entry into the fiscal shopping cart is proof positive that 'virtual media' is now mainstream. And not only music media – Netflix is in the basket while DVD recorders are out. The debate over streamed music files lacking the touchy, feely tangibility of LPs

'Sat navs are out but streaming and headphones are in'

and other physical media seems to have bypassed an entire generation of listeners.

Perhaps we audiophiles are never so content than when our glasses are half empty. So turn to p124 and you'll hear from two former contributors discussing the merits of various classical LP sleeve designs in Dec '75. Gatefolds, copious sleeve notes – they had it all. But even they were still complaining!

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 a long-serving contributor, luxury goods writer and champion 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



Kudos Titan

HIGH-END FLAGSHIP LOUDSPEAKER FROM AUDIOPHILE MARQUE

Sight and sound of a new flagship loudspeaker, particularly from an engineering-driven brand like Kudos Audio, is typically something very special. Kudos has always had its standard-bearer, but the Titan 88 floorstander designed 'without compromise to be the clearest, most coherent and musically engaging loudspeaker the company had ever created' has now been surpassed.

The new Kudos Titan 808 is a two and-a-half-way design featuring a split 'avant-garde' cabinet. The driver baffles are decoupled from the main cabinet frames, these being comprised of a variable 50/37/25mm-thickness HDF, via a polyethylene membrane. The cabinets themselves are mounted on a trilaminate steel/polymer/HDF plinth, which further contributes to the Titan 808's impressive 80kg weight!

The two isobaric bass drivers remain identical to those used in the original

Titan 88 but the 808's custom, SEAS-built midrange unit, tweeter and crossover have all been advanced and refined. The two identical 8in bass drivers are mounted in a magnet-to-magnet configuration, wired in series and out of phase to reduce odd-order harmonic distortions. The upper cabinet houses another 8in driver, but this midrange version has copper shorting rings in its magnet assembly while its paper cone is coated with Nextel on its front face and doped on its rear face.

This mid unit is married to a beryllium-domed version of SEAS's Crescendo tweeter via a second-order crossover at 3-4kHz. For this, Kudos specifies copper foil Mundorf inductors with silver/gold foil Supreme caps. Price for the Titan 808 on launch will be £21,250.

Kudos Audio Ltd,
01388 417177;
www.kudosaudio.com

ARC's new tubes

REFERENCE SERIES AMPS TO GET KT150 TUBES

Having incorporated the new, higher-power KT150 tube in its 'retro' Galileo-series GS150 amplifier [*HFN* Jan '15] it was almost inevitable that Audio Research's existing REF-series would also be upgraded. However, in addition to swapping out the KT120 for the KT150 power tube, ARC has also used the opportunity to upgrade a number of active and passive parts in what are now its Reference 75, 150 and 250 SE amplifiers. While the basic power specifications (75W, 150W and 250W, respectively) are unchanged, ARC is promising gains in 'resolution, bass weight, authority and control'.

Audio Research Corp, 0208 971 3909;
www.absolutesounds.com



HI-FI NEWS' NUGGETS

LINN MAKES SPACE

New Linn DS players will feature the company's SPACE (Speaker, Placement and Custom Environment) optimisation technology. This trickle-down tech from its Exakt separates fashions an acoustical model of the complete listening environment based on your choice of loudspeaker, the placement of the speakers and the characteristics of your listening room. The concept allows system owners to be more liberal in their choice and placement of partnering speakers without necessarily sacrificing sound quality.

www.linn.co.uk

RHODIUM'S NEW ARIA

Joining Black Rhodium's existing DCT (Deep Cryogenic Treatment) and CS (Crystal Sound Process) cables, the new Aria interconnect is available terminated in RCAs (£1000 for 1m) or as a 110ohm analogue stereo/digital version terminated in bright rhodium plated XLRs.

www.blackrhodium.co.uk

AR back with DAC

'HIGH POWER' USB DAC/HEADPHONE AMP

Once a household hi-fi brand, Acoustic Research has returned under new ownership with an 'audiophile-grade hi-res USB DAC/high-power headphone amplifier'. The £399 AR-UA1 is rated at 400mW/32ohm and supports a host of file formats up to 192kHz/24-bit LPCM (>192kHz and DSD 64/128 are converted via JRiver Media Centre). The core DAC chip is the PCM1794 from TI, along with the TPA6120A2 headphone amp that forms its 'M-Class audio engine'. Outputs include a ¼in headphone socket, stereo RCAs and optical digital, the former located alongside its diminutive volume control. A single LED changes through six colours depending on the incoming sample rate.

Acoustic Research (Audiovox Consumer Electronics HK Ltd);
www.acoustic-research.com





McIntosh C22/MC75

RETRO RE-LAUNCH FROM MCINTOSH... IN THE US ONLY

Staples of the McIntosh range in the late 1960s, the C22 tube preamp and mono MC75 KT88-based power amp have been refreshed and relaunched for a new audiophile generation. The C22 has ten inputs, including MM/MC phono and two balanced XLRs, while the MC75 is rated at 75W. Sadly, neither can be sold in the EU until standby power requirements are satisfied.

McIntosh Lab, 01202 911886; www.mcintoshlabs.com

Musaic adds Spotify

HI-RES MULTI-ROOM PLAYBACK SYSTEM SUPPORTS MORE APPS



Launched at CES 2014 and supported by Kickstarter funding, UK innovator Musaic has now added compatibility with Spotify Connect to its

award-winning wireless, 192kHz/24-bit compatible MP5 and MP10 Music Players.

**Musaic Ltd; 0207 558 8984
www.musaic.com**

Pro-Ject's Speed Strobe

PSU UPGRADE FOR LEGACY PRO-JECT DECKS

Pro-Ject is supporting all existing Debut Carbon turntable owners with its Speed Box DS Strobe PSU upgrade, a £199 controller with switching between 33.3 and 45rpm.

**Pro-Ject, 01235 511166;
www.henleydesigns.co.uk**



A very British brand

NEW LOUDSPEAKERS AND AMP FROM O'HEOCHA FACTORY

New UK-based hi-fi design and manufacturing company Sonic Concept Ltd has debuted floorstanding and standmount loudspeakers plus a partnering amplifier, all under the moniker of the 'Modern British Audio Company'. The speakers are inspired by previous O'hEocha models, the anodised (black, silver or gold) or powder-coated (white, orange, blue or silver) cabinets of the £3495 Pulse and £5295 Progression comprising a curved, aircraft-grade alloy. The £6295 Status integrated amp is rated at 2x170W/8ohm and includes a Bluetooth-ready DAC stage with USB input also supporting DSD files up to 5.6MHz.

Sonic Concept Ltd, 01843 821 821; www.mbaco.uk



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Upcoming Events

IMPORTANT DATES FOR YOUR HI-FI DIARY

- | | |
|------------------|---|
| 18-19 APR | Guildford Audio Show, Best Western/Moat House, Berks |
| 14-17 MAY | High End Show, M.O.C, Munich, Germany;
www.highendsociety.de |
| 29-31 MAY | T.H.E. Show, Hilton Hotel, Newport Beach, CA, USA |
| 04-09 SEP | IFA Berlin, The International Funkausstellung, Germany
http://b2c.ifa-berlin.de |
| 24-25 OCT | The Hi-Fi Show Live 2015, Beaumont Estate, Windsor;
www.hifinews.co.uk/show |

Bristol Sound & Vision 2015

Words & pictures: Paul Miller



As we've come to expect, the queues for what is now the UK's longest-running and most popular dealer-run hi-fi show started very early on the Friday morning. So keen were many of the West Country's enthusiasts to benefit from the various discounted products on offer that the organisers even offered multi-day tickets for those wishing to return over the weekend. As ever, the Bristol Hi-Fi Show remains

a vibrant meeting place for music-loving soulmates to audition some very tasty equipment, browse racks of LPs and share in an improved choice of baguettes.

Many of the demos were still driven by traditional physical (vinyl) media, but PC/Mac-based systems remained in the ascendant. As traditional brands rubbed shoulders with newbies, we celebrate the best Bristol had to offer.

Not-quite-released (but scheduled for review in *HFN*) Monitor Audio's new Gold 300 stereo floorstanders were sounding bold as brass driven by Simaudio separates. With its ribbon tweeter, 4in mid unit and twin 6.5in bass drivers, the Gold 300 is inspired by the current GX300. Price will be around £3000 with a 20% premium for the ebony finish. www.monitoraudio.co.uk



In a clear break from its current Performance line, Quad showed samples from its forthcoming Artera range of separates. Priced around £1500 each, the CD player/preamp and power amp were displayed alongside new S-series loudspeakers. A matching streamer/amp is also on the cards. www.quad-hifi.co.uk



No new standmounts or floorstanders from PMC this spring but a rather innovative subwoofer instead. Priced at a not inconsiderable £2950, the twenty-sub's robust enclosure houses twin 7in custom bass units driven via a 400W Class D amp and loaded via a 3m-long transmission line. Onboard DSP optimises the driver responses and provides low-pass filtering and parametric equalisation for in-room tuning. <https://pmc-speakers.com>



Rather than deface a hotel bedroom, Elac's UK distributor Hi-Fi Network Ltd brought its own facade to display the two-way WS1645 and two-and-a-half way WS1665 on-wall loudspeakers. Priced £610/£860 apiece, these crisp-sounding speakers were reinforced by Elac's app-driven SUB2070 sub. www.elac.com

Pictured alongside a pill-box red Pro-Ject Xtension 9 turntable 'Super Pack' (with Ortofon Quintet Black MC) is the long-anticipated Triode 25 tube amplifier from Unison Research. This push-pull Class A/B EL34-based amp includes triode and pentode mode operation and is rated at 2x22W and 2x45W, respectively. Price is £2500. Expect to see more from Unison Research and sister brand Opera Loudspeakers now the products are distributed in the UK via Henley Designs.

<http://unisonresearch.com/en>



Vinyl lovers were in for a treat courtesy of the Music First/Longdog Audio room. Pride of place went to the AMG turntable (inc. 12in arm and Benz Micro MC) and £9850 MM Reference Phono Amplifier from MFA. Music First also supplied the intermediate V2 step-up transformer (with 5/10/20:1 taps) but the vintage Quad 405 power amp was a pure indulgence! Sounded fab with Audio Note K-LX speakers. www.mfaudio.co.uk

Tucked away in a now-familiar rack of Technics' 'Premium Class' C700 components was this new addition – the SL-C700 CD player. Featuring Technics' own digital filter and '176.4 kHz/32-bit remastering', the player offers single-ended (RCA) analogue outs plus opt/coax digital outs. www.technics.com



Proudly displayed on substantial Hi-Fi Racks equipment supports, Creek Audio demonstrated its new Evolution 100A integrated amplifier complete with its Ruby plug-in DAC. The new amp is housed in a similar slim case with engraved front panel and solid metal control knobs to the 50A but it's rated at twice the power – 110W/8ohm. www.creekaudio.com



First seen at CES [HFN Mar '15], the much anticipated NightHawk headphones from AudioQuest are undergoing some 'cable tweaks' before formal launch. Demo'd to considerable acclaim courtesy of an Oppo universal player and HA-1 balanced preamp, this semi-open backed design features reinforced earcups fashioned from an inert 'liquid wood'. Sound is impressively natural. www.audioquest.com



SHOWBLOG Sights and sounds from around the globe



This stunning combination of 'new age' Devialet amp and 'vintage' Spondoraudio loudspeakers gave designer Phil Swift the chance to showcase his updated Classic series. This £8k SP100R2 model retains the original's 12in Bextrene woofer, 8in EP38 polymer mid and 22mm textile tweeter but with new magnet and crossover components. www.spondoraudio.com



Not one but three new RX series loudspeakers from Rega were demo'd at Bristol. The (£750-850) RX1 bookshelf model is joined by the (£1200-1500) RX3 floorstander with 5in side-firing woofer and (£1800-2k) RX5 with its 7in version. All use a new mid-bass unit with uPVA-doped cone and improved 18mm-thick MDF cabinets. www.rega.co.uk



Ruark Audio, one-time audiophile loudspeaker brand, utterly transformed its business when it moved into the serious end of lifestyle audio over a decade ago. It offers a range of tabletop solutions including the R1 and R2 (pictured) Bluetooth-ready DAB+ radios, equipped with its distinctive 'RotoDial' controller and slick OLED display. www.ruarkaudio.com



The long-awaited DAC option is now being fitted to various of Exposure's amps. On demo was the £1620 3010S2 CD player, the £3010S2D pre (with DAC) and two 3010S2 monoblock power amps (£1900 per pair). All Exposure's separates are available in titanium or black. www.exposurehifi.com

Vying with Ming Da [p21] for the most outrageous tube amp at the show, Icon Audio wowed visitors to its room with these MB81 monoblocks. Based around the astonishing GU81 transmitter valve it even uses EL34 pentodes as driver tubes for a rated 200W/8ohm. www.iconaudio.com



Brand new, certainly, but Harbeth's Super HL5plus is instantly recognisable as the latest (fourth) generation of its classic three-way monitor with 200mm bass/mid driver, 25mm tweeter and 20mm super tweeter (12kHz+). Price is £3279. www.harbeth.co.uk



A regular exhibitor, and a popular one at that, Eclipse (part of Fujitsu Ten Ltd) once again demonstrated the exquisite mid/treble imaging possible from its single 120mm driver TD712zMK2 loudspeaker design. Sensitivity is quite modest at 84dB but the price less so at £6500 inc. stand! www.eclipse-td.net



Seen atop the Hydra II amplifier is the new Libra Constellation series DAC from re-born Leema Acoustics. With support for DSD128 and DXD files over asynchronous USB, the analogue stage is based around its fully balanced 'Sabre dual-mono DAC modules'. www.leema-acoustics.com



Designed to complement its non-oversampling 1543 DAC, Computer Audio Design's CAT CD transport (with USB output) is also a complete PC-based one-box solution for music storage and playback. The CAT includes a CD ripper with storage added to order. www.computeraudiodesign.com



As reported in our News pages this month [p14], Kudos Audio took the opportunity to unveil its massive flagship Titan 808 floorstanders. The version shown was driven actively via three Linn Exakt stereo amplifiers and with its 3-way crossover modelled in a Linn Exaktbox DSP processor. www.kudosaudio.com

Played in pre-production form, this is the forthcoming Orbe SE R turntable from Michell Engineering. Priced at around £4000 it's based on the Orbe SE but fitted with a new acrylic laminate chassis that's grooved on its underside to 'break up resonances'. It sounded sublime with the £630 Techno Arm and £1100 low-output MC. www.michell-engineering.co.uk



Demonstrated to great effect, Chord's £2995 Hugo TT (Table Top) USB DAC/headphone amp proved every inch the bigger and beefier brother to the portable Hugo. It uses the same FPGA-based DAC but is equipped with full-sized B-type inputs for both SD and HD USB sources. The latter handles 384kHz/32-bit LPCM and DSD128. www.chordelectronics.co.uk





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Firmly in the category of 'if you have to ask...' GamuT's Superior RS7 floorstander's cabinet is a laminated/ form-pressed wood over birch plywood. Internal bracing, pressure control segments and externally machined grooves are all claimed to optimise the cabinet behaviour while a total of three 7in 'sliced cone' woofers, one sliced cone mid and 1.5in 'double ring radiator' tweeter comprise the three-way architecture. (Cost is £29k.) www.gamutaudio.com



Benchmark Media Systems has often demo'd its class-leading DACs [and now amps – see *HFN* Mar '15] via the 'SE Monitor' standmounts made by fellow US-brand Studio Electric. The updated version of this compact loudspeaker is now marketed under Benchmark's own wing as the £2499 SMS1 (£2699 in mahogany). Rock solid bass and super-clean mid are its hallmarks. www.benchmarkmedia.com



In a carbon-copy of its presentation at the *Hi-Fi News* Show last November, Ming Da partnered with Art Acoustics to demonstrate that fabulously large amps and loudspeakers can still deliver a remarkably compelling sound in an impossibly small room! Seen here are the Ming Da Dynasty Cantabile monoblocks that graced our March cover. www.mingda.co.uk

A distillation of KEF's 'world's first Single Apparent Source loudspeaker' – the Blade – the more room-friendly Blade 2 seems to sacrifice very little performance. Its Uni-Q driver comprises a 5in hybrid cone mid with a 1in vented aluminium dome tweeter, the bass handled by four 6.5in drivers with force cancelling. Sensitivity is rated at 90dB and price ~£16k. www.KEF.com



Driven by In-akustik's Premium Headphone No.1 USB DAC [see review, p64], these natty headphones are the £300 VK-1 'Classic Edition' from Aëdle. Assembled in France, these semi-closed back 'phones feature titanium drivers that vent through two slots in the base of the capsules. They come with detachable 1.2m and 2.4m cords and adapters. www.aedle.net; www.in-akustik.com



Bursting onto the scene with a range of loudspeakers and electronics, Modern British Audio cranked up the music with its blue-tinged £6295 Status integrated amplifier. Rated at 2x170W/8ohm it includes a Bluetooth-ready ESS Sabre Reference-based DAC stage with USB input that supports DSD64/128. www.mbaco.uk

Next month

We visit the national hi-fi shows in Paris and Serbia

Trouble downstream

Has your net radio lost the BBC? **Andrew Everard** finds out why

RIGHT: From the lowliest of Wi-Fi radios to high-end network music players, it was once simple to access the BBC's internet stations. Yet the corporation's decision to improve things has left listeners confused and hi-fi manufacturers struggling to restore service to their customers



For those who consider the whole network audio thing something of a bother, at least there's one simple source of music for that shiny new network player: while you're ripping your CD collection to a NAS, letting your streamer software index however many tracks you have stored or whatever, at least you have good old internet radio to fall back on. Plug in a network cable, scroll through tens of thousands of 'stations' from around the world, decide you really want to listen to the cricket after all, and off you go.

At least that's how simple it used to be to listen to the BBC's output

on whatever piece of internet radio hardware you happened to have, from the lowliest Wi-Fi radio right up to a high-end network music player. Yet since the nation's broadcaster decided to improve things, there's been significant confusion.

Some products have lost the BBC streams altogether. Others have lost the high-quality audio they used to have, let alone the better sound on all stations the BBC had been promising. And some have been forced to seek workarounds such as using server software playlists to provide access to what streams are left.

'BBC streams appear, change and disappear almost at random'

AUDIO FACTORY

Listeners have been confused. Radio stream aggregators such as vTuner and Tuneln – who provide access to the stations for hardware manufacturers – have seen streams appearing, changing and disappearing almost at random, while some manufacturers are facing considerable expense to sort out their products so they go back to offering the ease of access

to internet station streams they always had until the BBC decided to 'improve' things.

So what's gone wrong? Well, the BBC seems to like shaking things up a bit every now and then, whether to make its content more secure or just change the way it's delivered, and the latest wheeze is

something the corporation calls Audio Factory. As Jim Simmons, Senior Product Manager, Audio Services for BBC Future Media, puts it, Audio

Factory is designed 'to replace the ageing equipment and infrastructure that encodes and delivers the BBC's audio streams. This has grown in different ways across the BBC over the years and we need to standardise as we replace.'

'We want to make our delivery chains more resilient for every network, improve the audio quality for all stations, have UK and international versions for all stations, have all stations available on the same devices for live and listen again, make our programmes available to download to mobile

RIGHT: The BBC posts its plans to switch to HTTP Live Streaming and Advanced Audio Coding and no longer support Windows Media Audio Streams on its iPlayer help pages at <http://iplayerhelp.external.bbc.co.uk>



devices, make them available for 30 days and improve the accuracy of the start times of our listen again programmes.'

That in itself is laudable enough, especially the bit about improving the audio quality, but it hasn't quite worked out like that, simply because the first step the BBC took in this programme was to stop supporting Windows Media as of December the 31st last year, despite the fact that 'This will have an effect on some online listeners, as we know that some devices cannot support the new HTTP streaming methods or the AAC codec'.

TWO LISTENER GROUPS

The BBC says that listeners using Windows Media – or at least those using it up to the end of 2014 – are in two groups: those accessing the streams via aggregators such as Tuneln, and those using hardware devices such as internet radios.

The first group would be OK, it said, as they could use the new delivery methods; but the second? This second group has much less ability to switch to our new formats and many internet radios cannot easily be upgraded to accept the new formats.'

The BBC's solution? To provide an MP3 feed of the stations for which those listeners would be losing their existing streams, 'so that live radio will continue to work on internet radio devices for another year or two'. Trouble is, it's widely acknowledged among many listeners using high-quality equipment that MP3 doesn't offer the same quality as the old streams. And though the BBC is working on the higher-quality replacement for



the Windows Media-based services, until all hardware manufacturers have managed to catch up with its changes – and the BBC admits some equipment will never be able to receive the new services – then many of us are stuck with the downgraded MP3 service.

What's more, while the BBC says that those of us listening on high-quality internet radio devices account for just 2-5% of the listenership, it seems that this small minority is vocal enough to get the corporation's attention.

Most services' high-quality feeds are now reduced down to 128kbps MP3, unless you have equipment able to handle the new format, but miraculously BBC Radio 3 has reappeared as a 320kbps AAC stream available via ShoutCast, although we're told this is only temporary, and to allow manufacturers to get up to speed with the new 320kbps AAC via HLS/MPEG DASH service. This is the highest of four options to be offered by the Audio Factory streams. Or not, as the case may be.

ABOVE: The radio stream aggregators, vTuner and Tuneln, provide access to the stations for hardware manufacturers, and have been working hard to keep up with the BBC changes

with high-quality internet radio equipment listen – and would like to have Radio 2, or 6Music, or their favourite local station, available in the best possible quality. For them it's a case of upgrade, hope the manufacturer of your equipment can resolve the problem, or go back to listening to 128kbps MP3. And having heard what the new streams can do even for local radio stations (via some of the workarounds and temporary streams I've played with), that's something of a tragedy.

Oh, and if you're a sports fan, and want to keep up with major events via your expensive hi-fi network music player, you may be out of luck even with the MP3 fallback streams. These are running the international versions of Radio 5 Live and its offshoot stations, which are used when major matches, say, clash – and those international feeds don't carry many football matches and the like, for rights reasons. But even that's not the whole story...

TEST TRANSMISSIONS

For a while late in 2014 there had been a lot of 'behind closed doors' talk from some hardware companies about the greatly improved streams the BBC was planning to provide, and I'd been pointed toward test transmissions compatible with existing equipment and offering greatly enhanced sound. In fact, it's the kind of sound you can now hear if you happen to be lucky enough to have equipment fully compatible with the new service platform, or can manage to implement one of the workarounds so far put in place for incompatible equipment.

Until a fairly late stage, there was no indication that the BBC



LITTLE COMFORT

How temporary is temporary? Well, the BBC says the current high-quality Radio 3 AAC/ShoutCast stream is there to allow manufacturers, and thus listeners, to transition 'without interrupting access to the Proms', which would suggest it's going to be in place at least until the beginning of September: the Last Night is on September the 12th.

However, that will come as little comfort to those who aren't fans of BBC Radio 3 – though the corporation seems to suggest that's the only radio station to which those

LEFT: An update to the Audio Factory blog by BBC Senior Product Manager Jim Simmons on the 5th of February this year acknowledges that the move to new infrastructure will cause disruption for some listeners



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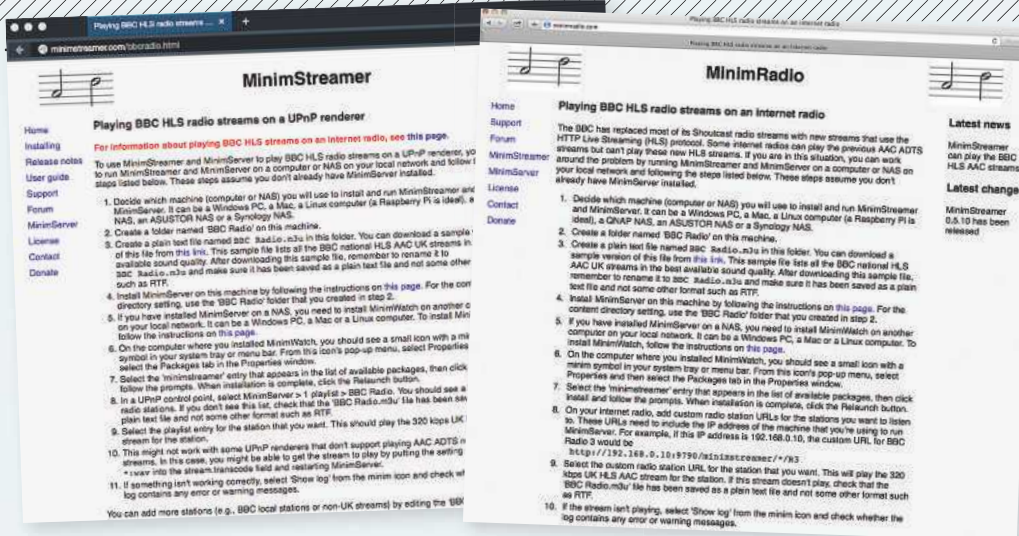
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was going to encapsulate its radio streams in HLS, or HTTP Live Streaming, as it now has done. It was certainly the case that the AAC test transmissions with which various audio companies had been working were not so encapsulated, and worked well on equipment running current software.

PLAYLIST HEADER

HLS is used widely by Apple in both its OSX and iOS operating systems, as well as in its Quicktime media player and Safari web browser, and works by sending audio as a series of small HTTP files, or chunks.

This technology has the advantage of working with firewalls and proxy servers provided they let through standard HTTP – ie, allow web access – and it is able deliver the same content in a range of qualities at the same time, thanks to its use of an extended M3U playlist header to describe the range of formats on offer.

That playlist header is what has allowed various workarounds for

ABOVE: The MinimStreamer website offered a workaround, using playlist headers to deliver a list of the BBC material in a way accessible to a network player's UPnP interface

ABOVE RIGHT: Naim's head of R&D, Trevor Wilson, was 'surprised' by the last-minute changes

BELOW: Apple's HTTP streaming (also known as HLS), which divides music files into small chunks, is the BBC's choice

equipment otherwise excluded by the BBC's move: by downloading a file and putting it on a store accessed by UPnP software such as MinimServer, a list of radio stations can be made to appear as a playlist on a network player or renderer, and the stations can thus be played.

DIGITAL RIGHTS

HLS also has the advantage of carrying encryption, enabling digital rights management control – something on which the BBC is keen given the huge amount of its content now available online for podcast, catch-up or live listening.

At the time of writing, the funding of the BBC is again under discussion, with suggestions that the long-standing 'TV licence' fee paid by UK viewers has no place in the BBC's future. Clearly if this goes, then other revenue streams and funding models will have to be

considered. Cost, too, has played a part in the move away from Windows Media for the BBC. The corporation says WMA on-demand streams are only used by some 2% of listeners to its most popular programmes, and by no more than 2-5% of all listeners, and that 'WMA is an old proprietary format that is no longer supported by our technology partners'.

The same goes for those high-resolution streams it was making available via ShoutCast

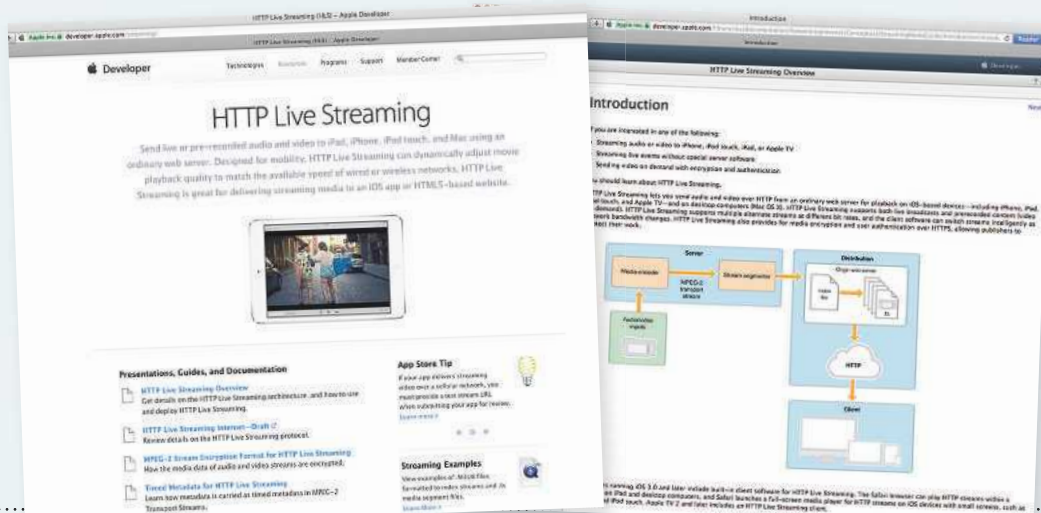
servers, of which the BBC says 'Our serving logs were cluttered with failed requests for the media, this meant that a large chunk of the traffic we

'The playlist header allows workarounds for excluded kit'

were delivering from our ShoutCast servers was in fact a 'forbidden' response, due to requests from devices that didn't understand how to communicate with our systems correctly... Clearly, spending money on delivering nothing is not a good use of licence payers' money.'

OUT OF THE BLUE

For those manufacturers who thought they'd been working closely with the BBC on the new services, the sudden emergence of the HLS-encapsulated services came out of the blue. Naim's R&D director, Trevor Wilson, says that 'we had been in contact with the BBC over the changes to their internet radio streaming and were extremely surprised to find the AAC streams changed at the last minute to being encapsulated in a HLS stream. The test transmissions were not. This



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change appears to be a shock to all of our industry friends as well.'

The BBC's move came at the same time that Naim was launching its new NAC-N 272 preamp/network music player [see p28], and fairly close behind the company's long-awaited implementation of Spotify on its network audio products.

WORK IN PROGRESS

With DSD capability also being rolled out to selected models in the range, not to mention the ever-growing number of streaming music services users are clamouring to have added to their products, you get the feeling this was a distraction the Salisbury company could well have done without.

Naim R&D, in common with the development departments of other companies, is currently working on a solution to restore the new BBC streams to their rightful place in their products' menu system – ie, accessed via the radio selection like the tens of thousands of other online broadcasts available worldwide, rather than through a slightly kludgy UPnP workaround.

However, Wilson says that 'The solution for accessing the AAC streams within the HLS streams with

Naim's network audio products is not trivial as the code constraints of embedded audio products are tougher than just a "relatively" easy fix on a PC – but Naim has already started on the process.'

In a masterful piece of understatement, he adds that, given recent conversations flying between Salisbury and the BBC, 'we've agreed more detailed operational interaction with the BBC going forward in order to support customers in the longer term.'

Or, as another manufacturer put it to me, while bemoaning the cost in time and effort required to develop and roll out a fix for the situation landed unexpectedly in its lap, 'When their favourite radio stations suddenly

vanish from their newly-bought network/internet player, or are only available in crappy MP3 again, no-one blames the BBC – instead, the product is faulty, and we're a bunch of incompetents...'

There will be some products destined only to receive lower-quality MP3-based BBC internet streams, and even then only while the current 'temporary'

ABOVE: Users of many players found their internet radio presets (left) no longer worked, and had to resort to the playlist workarounds (right). Others have been using smartphones or tablets running the BBC's iPlayer Radio app (centre), and connecting that device to their hi-fi system

BELOW: Naim's NAC-N 272 was all set for launch when the BBC decided to change its plans. Naim, like other brands, is now having to spend time and money to restore BBC streams to legacy products' menu systems, as seen in the Naim NDS Streamer below

arrangements remain in place, even if I can see them staying there for some time, given the current confusion! Others will only be saved by workarounds such as those already made available, or perhaps by the even messier route of using an iOS phone or tablet as a 'tuner' and then connecting it to a hi-fi network player, as some users are doing in order to access a number of streaming audio services.

To the outside observer, it does seem that the BBC has made what it calls the 'tough decision' to cast aside a minority of listeners from its future radio plans unless they're prepared to upgrade or replace some of their equipment. At the same time it's admitting that this same small minority numbers it uses to justify some of its decision also have sufficient influence to ensure the Radio 3 HD service has been restored to many who thought it lost – at least as a temporary measure.

DROPPED THE BALL

At least the BBC is prepared to admit it's dropped the ball when it came to communicating its changes to both the audio industry and its listeners – just how badly is illustrated in one of the points made on its blog.

It says 'In an attempt to reach users who were to be affected we also played out a recorded message on the affected WMA streams, but sadly many of the devices which were receiving those streams hadn't implemented the required part of WMA and stopped working altogether so we had to withdraw the message.'

In short, if you can't hear this message then you need to update your equipment... ☹



Naim NAC-N 272

The second network music preamp from Salisbury is a more sophisticated affair than the original NAC-N 172 XS and, as a result, it's a rather more compelling buy

Review: **Andrew Everard** Lab: **Paul Miller**

When it comes to network audio playback, Naim seems determined to fit that old TV ad line 'Yes, madam, we have all the colours in all the sizes'. You can have your streaming in combined ripping/storage devices, in all-in-one systems from the Uniti range, as separates players in the ND range, and even as network-capable preamplifiers. This last group started with the £1695 NAC-N172 XS, launched getting on for three years ago, and it now has its second member, the rather more ambitious NAC-N 272 at almost twice the price.

I don't think I ever quite 'got' the NAC-N172 XS. It's based on the NAC 152 XS preamp [HFN Feb '11], which sells for around the £1000 mark, to which it added network streaming and a range of digital inputs, but to me has always had a slight air of the 'horse designed by a committee' about it. I always felt anyone with an existing Naim system would probably do better to consider adding the ND5 XS network player [HFN Sep '14]. And those looking for a neat solution as a first streaming purchase might want to consider the NaimUniti2 (if they wanted CD playback as well) or the SuperUniti for enhanced performance.

Anyway, what do I know? The NAC-172 XS picked up some rave reviews, and now the NAC-N 272 takes the concept on to the next stage. Selling for £3300 as standard, or £3595 with optional DAB/DAB+/FM radio tuner module installed, the new model is part of the company's core 'Classic' range, rather than the entry-level 'XS' line-up, yet has some distinct differences from both past Naim preamps and its network music players to date.

For a start, this is the first Naim network product able to handle DSD files. Admittedly these have had little impact on the consciousness of general music buyer,

but they have gained a following among a sector of the high-end audio community.

A number of sites now offer DSD downloads for sale, including Norway's 2L, Channel Classics, Blue Coast Records and the e-Onkyo music store, and there are also enthusiasts who are using a slightly convoluted method involving Sony's PS3 games console (but only a hacked model, and only running certain versions of its firmware) to rip DSD from the SACD discs for which it was originally developed.

DSD FILES SUPPORTED

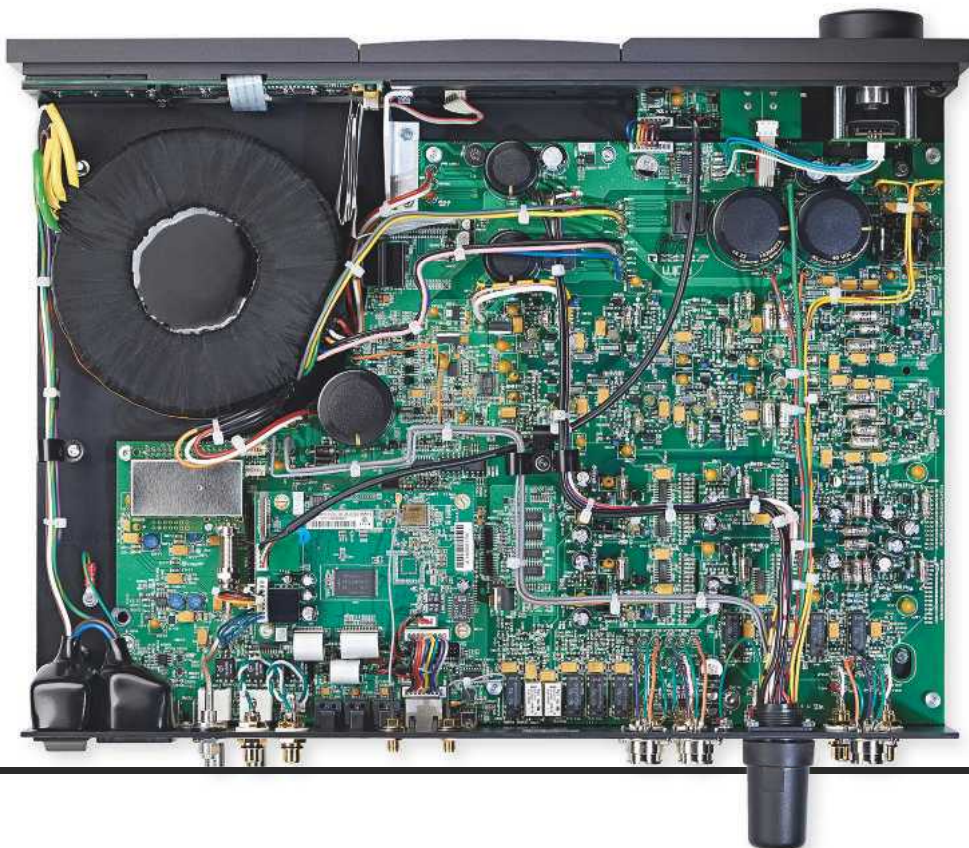
This method is a long way from simply slipping a CD into a computer drive and firing up ripping software (or indeed using a dedicated ripper/storage device such as Naim's own HDX or UnitiServe). But it's possible to store SACDs on a hard drive for streaming just as easily as one can with CD-derived or downloaded music files.

Perhaps better-known in the 'Macs and DACs' world – ie, to those listeners

connecting their computers directly to a digital-to-analogue converter and thus to their systems – DSD is now increasingly supported by streaming server packages such as MinimServer and TwonkyMedia. This means that it's possible to stream this content, as well as high-resolution PCM, from a computer or NAS over a home network, to devices such as the NAC-N 272. Or at least it is with enough network bandwidth: wired connections are more or less *de rigueur* for this kind of playback, in my experience, simply because Wi-Fi struggles. It's not a sound quality thing, but a stability/buffering one.

The NAC-N 272 will handle DSD64/2.8MHz files (both DFF and DSF, the latter having the advantage of being able to carry meta data), but not the DSD128/5.6MHz or even DSD256/11.2MHz offerings now available from some of the DSD enthusiast music vendors. (For more on how these files are handled, and the upsampling of other formats, see boxout.)

RIGHT: Four separate transformer secondaries feed regulated supplies for the analogue, DAC and two digital rails. The analogue and digital (signal) sections of the '272 are linked using fast opto-isolators to reduce mutual interference





Other new features here include the Spotify Connect compatibility recently rolled out to other Naim network products in the wake of the introduction of the company's mu-so all-in-one system, and aptX Bluetooth for wireless connection to computers, smartphones and tablets. Separate antennae are provided for Bluetooth and Wi-Fi, along with an Ethernet port for wired networking. And there's also a front-panel USB Type A socket which is both iOS compatible and usable to play music from USB storage devices.

INTERNET RADIO

The familiar internet radio functionality is provided by the vTuner platform, with Naim's usual customisation to provide Naim's choice line-up of stations the company feels will appeal to users. At the time of writing, the internet radio part of the package was in a less than ideal state. This was due to the ongoing shenanigans surrounding the BBC's reorganisation of its streamed audio functionality, under the Audio Factory banner. This has had the effect of disrupting the access of some internet radios to its services, and has been the subject of some head-scratching and

'Its sound mixes detail and rhythmic drive with subtlety'

re-working by affected companies, including Naim – see Investigation, p22.

The NAC-N 272 also provides three coaxial and three optical digital inputs, which are 192kHz/24-bit capable. However, there's no asynchronous USB connection for a computer, which would have been handy. There are also two sets of analogue inputs, on both RCA sockets and Naim's preferred DIN connectors, and

it's possible to adjust the input trim on each of these. Or you can select one or both as a fixed-level AV bypass input (for example when connecting the front left/right preouts from an AV processor or receiver).

The same choice of RCA or DIN sockets is offered for line- and preamp-level output, but there are no XLR analogue outs, which might have extended the appeal of the preamp to those wanting to use it with power amplifiers from other brands.

Naim uses XLR connectors on some of its power amps (one to serve both channels on the NAP 250, one for each channel on the NAP 300 upwards), but it sticks to DIN outputs on its preamps. However, just as suitable cables

ABOVE: Front panel layout is familiar Naim stuff: volume control, USB-A in and headphone output to the left, display and control buttons to the right. It's best driven with the n-Stream app

to connect to its own amps are available from Naim, so there are also third-party manufacturers able to supply cables to connect Naim preamps to amplifiers using XLR inputs, if required.

POWER SUPPLY OPTIONS

The NAC-N 272 can also be upgraded with one of Naim's power supplies after removing a linking plug. Unlike other Naim preamplifiers (which are powered either from a suitable Naim power amp or come with their own power supplies, with HiCap, NAPSC or SuperCap supplies available as upgrades), the NAC-N 272 has its own internal power supply. But this can be upgraded with the XP5 XS, XPS or 555 PS – better known as supplies for the company's source components.

Connecting any of these three replaces the internal supply, and the mains connection to the NAC-N 272 must be switched off with an external supply in use.

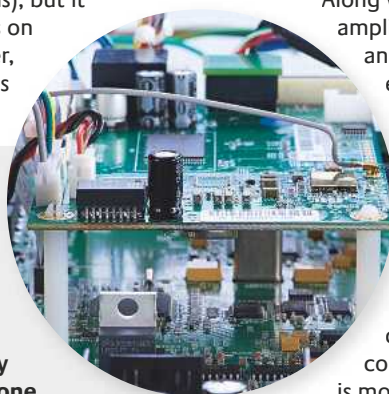
Along with a NAP 250 power amplifier, Naim supplied an XPS power supply for experimentation, and I was also able to press into service the 555PS normally used to provide juice to my NDS network player.

Like other mainstream Naim products, the NAC-N 272 is handbuilt at Naim's HQ, and within, familiar Naim design features are present and correct. The main circuitboard is mounted on shoulder-bolts to relieve any tension in the board, to which end the external analogue connections are also hand-wired to provide mechanical decoupling while a slight bend is employed in the mounting legs of the 1%-tolerance-matched resistors.

Optical isolation is used to exclude interference and at the heart of the

CUSTOM FILTER

Named after two of its long-serving engineers, the Sells/Nilsson filter employed in the Naim NAC-N 272 comprises a brickwall IIR filter running on a SHARC DSP (just visible on the lower PCB here) with a gentle 6th-order analogue filter feeding the output. This IIR filter is a phase-linear type with almost no pre-ringing and, therefore, very little acausal distortion – a suspect in the 'digital sound' that irritates many audiophiles. The filter increases all incoming sample rates to one of two elevated base rates – 768kHz (for 48k/96k/192kHz media) and 705.6kHz (for 44.1k/88.2k/176.4kHz media and DSD64 files). The Burr-Brown PCM1792A DAC, used here in current output mode and with discrete I-to-V conversion, may handle 768kHz/24-bit data natively but the NAC-N 272's response does not stretch out to 45kHz (with 96kHz media) or 90kHz (with 192kHz media). Instead, Naim's custom IIR filter coefficients cut in earlier, delivering a 60th-order roll-off at 25kHz [see Lab Report, p33]. PM



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NETWORK AUDIO PLAYER

JON GREEN

Jon Green, Naim's Principal Electronics Engineer, has been with the company for three years, following spells with Philips, Cyrus and IAG. Asked where the NAC-N 272 sits in the Naim preamp hierarchy, he explained that 'the model number should indicate where it's positioned, but with the addition of an external PSU it's seriously good.'

He says that once the decision had been taken to add DSD capability, 'the implementation wasn't too hard but its optimisation was. DSP code at this level is science with an element of art – and it's the art that makes it interesting.'

As for the arrival of DSD in other SHARC-based Naim products, 'Updates are currently in limited public beta, and when these are complete we will release. We try not to set targets as Naim owners beat us up if we slip!' So where does Naim go next? DSD128? MQA? Green says 'Never say never. We don't see much music we would like to listen to coming out exclusively on high rate DSD and so far MQA is not quite a commercial reality.'

And when it comes to adding extra streaming services, such as Tidal and Qobuz, 'The key for us is to implement services really well while being cautious of vendors that might hold us to ransom with constant service code changes. We take updates very seriously and don't wish to issue too many – it's resource-heavy for us and an inconvenience to our owners. So we are looking to have new streaming partners, ones that can implement a "connect" style of control.'



ABOVE: Naim's UPNP network connection is screened on its own daughter board and will accept 32-bit floating-point WAV files as well as standard-resolution 2.8MHz DSD files (also via USB-A input)

device sits a SHARC processor running DSP derived from the company's NDS network player, the processor also used in models including the NDX, ND5 XS and SuperUniti.

Naim's Statement amplifier informs the design of the volume control, which uses an analogue resistor ladder under digital control, while a Class A headphone amp is also included, designed to increase output current drive when headphones are plugged in, allowing even tricky headphone loads to be accommodated. In other words, the NAC-N 272 is an analogue preamplifier with a range of digital input options onboard, rather than taking the easier all-digital path.

A NAIM SOUND?

Using the NAC-N 272 is no harder than operating one of the Naim Uniti range. As usual, there's a compact handset supplied, but to get the best from the preamp, and its network capabilities, it's better to use the company's n-Serve app, available for iOS and Android devices. And for those outraged that one needs to spend the price of an iPad just to use the product, as I am writing this I am 'driving' the Naim using a very cheap Android tablet: the Asus MeMo Pad 7. It costs all of £80, and it works beautifully.

In five words, the sound quality can be summed up as 'Well, it sounds very Naim', which will come as some relief to those looking to upgrade an existing system

to streaming, and do nothing for those who just don't get on with the way Naim systems play things. I have to say that I'm not a great believer in there being so divisive a thing as 'a Naim sound'. Rather, the NAC-N272 – whether used as intended with a power amp or via its fixed outputs as a source (as I guess one might do during an upgrading phase) – has a sound combining plentiful detail and rhythmic drive with subtlety and refinement, plus a clean, tightly controlled but well-extended bass.

That makes it a reliably informative and attention-grabbing listen, and also means it's as well-suited to the intricacies of classical music as it is to the kind of singer/songwriter-through-to-rock content Naim tends to favour for its product demonstrations.

Even better is that the design of the digital signal handling effectively makes the NAC-N272 'input-agnostic' – it sounds the same whether you use the USB, S/PDIF or network streaming inputs. It also does a pretty good job when using Bluetooth.

I wasn't able to make all the direct comparisons I wanted to with the NDS flagship network player as, at the time of writing, mine was awaiting the firmware and DSP upgrades to allow it to handle DSD. But with files up to 192kHz/24-bit, the 272 gives a good account of itself, even if it doesn't quite have all of the much more expensive player's bass conviction ➔

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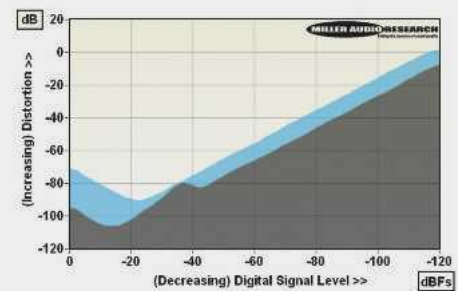
LAB REPORT

NAIM NAC-N 272

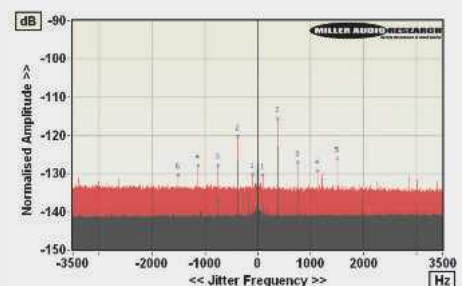
All digital inputs are processed via the same upsampling/jitter-suppressing 40-bit code and pass through the same PCM1792A DAC, a regime that's so effective there's no significant difference in performance whether data is delivered via S/PDIF, USB-A or (wired) network connections. It is worth using the pre-out rather than line-out DIN/RCA's, however, as the former offers a sub-1ohm impedance (increasing to 70ohm/25Hz), the latter a high 588ohm. Tested as an analogue preamp, the NAC-N 272 offers a mere 0.007-0.011% distortion (20Hz-20kHz), a maximum 9V output, a -0.6dB/20kHz and -16.2dB/100kHz response and a 97.4dB A-wtd S/N ratio (re. 0dBV). The DAC performance fits within this 'envelope' with distortion at 0.0006-0.002% (1kHz, 0dBfs to -30dBfs) and 0.001-0.03% (20kHz, 0dBfs to -30dBfs) [see Graph 1, below].

Naim's custom digital filter [see boxout, p29] acts earlier than is typical, providing reduced attenuation of stopband artefacts immediately adjacent to the top-end of 48kHz recordings (just -44dB at 26kHz re. 22kHz) and restricting the response of both 96kHz and 192kHz digital audio to a -3dB point of 25.2kHz. Lower 44.1kHz and 48kHz sample rates feature a -1.15dB roll-off at 20kHz. The NAC-N 272 has no balanced outputs but the A-wtd S/N ratio and low-level resolution are still excellent at 108dB (re. 0dBfs) and ± 0.1 dB (100dB range) respectively. And jitter? All inputs are suppressed to a mere 35psec (48kHz) and 40psec (96kHz) [see Graph 2].

Readers are invited to view a comprehensive QC Suite test reports for the preamp, S/PDIF and Network performance of Naim's NAC-N 272 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 via S/PDIF and network connections (1kHz, black; 20kHz, blue)



ABOVE: High resolution jitter spectrum via S/PDIF and network inputs (48kHz, black; 96kHz, red)

HI-FI NEWS SPECIFICATIONS

Maximum output level (preamp)	8.9Vrms at 0.9-70ohm
A-wtd S/N ratio (Pre / S/PDIF / Net.)	97.4dB / 107.7dB / 107.6dB
Distortion (1kHz, 0dBfs/-30dBfs)	0.002% / 0.003%
Dist. & Noise (20kHz, 0dBfs/-30dBfs)	0.03% / 0.0012%
Freq. resp. (20Hz-30kHz, preamp/DAC)	+0.0dB to -1.5dB/-12.5dB
Digital jitter (48kHz / 96kHz)	35psec / 40psec
Resolution @ -100dB	± 0.1 dB
Power consumption	20W (<1W standby)
Dimensions (WHD) / Weight	432x87x314mm / 12.5kg



ABOVE: Phono (RCA) connections and DIN sockets are included for analogue input and output, but Naim also offers six digital inputs (three coax/three optical), a wired Ethernet connection and three antenna inputs: Wi-Fi, Bluetooth and optional radio

or fine detail and presence.

However, it does impress, even with hoary old chestnuts such as Jeff Wayne's *War Of The Worlds* in DSD64 [Columbia DPCD960000], which comes up fresh, thanks to the added dynamics and impact the format can bring, and fair powers out of the speakers.

Similarly, the DSD release of Pink Floyd's *Wish You Were Here* [Analogue Productions CAPP 33453 SA] is full of details one might overlook on the CD version, and gains from the way the Naim allows the subtlest information to be heard. But it can also deliver all the slam of a track when required.

CLOSE TO THE FLAGSHIP

What's more, with delicate acoustic music, that torrent of information ensures a vibrant sound with bags of presence, with pianoforte having an entirely natural weight and sonority when required, and a close-up view of vocal techniques and phrasing.

So, the NAC-N 272 makes a solid case for DSD, but given the minority interest in single-bit audio, it's encouraging that it delivers with everything from CD rips right up to high-resolution downloads. Yes, it gives away those diminishing returns to the NDS when it comes to absolute three-dimensionality of soundstaging, and the focus of performers set within the stereo picture. But considering the price differential it's pretty close – and gets even closer when you start adding on Naim's power supplies.

Combined with the XPS I'd say it was about 75% there. Bolt on the same 555PS power supply the NDS uses, and you're into the mid to high 80s of the NDS's performance. The main gains? No, not a night and day boost in bass or whatever, but just a noticeable improvement in the solidity and presence of the sound: a filling-out of timbral character and even more ease in the way music is delivered. (Not that the 'naked' 272 ever seems to be working too hard to do what it does so well.) Mind you, the gap may open a little wider

again when we get to hear what an NDS can do playing DSD files.

But it's hard to argue with what the NAC-N272 does and the value for money it offers to the Naim owner wanting to upgrade their system to network capability without increasing their box-count, not to mention its ability to create a complete streaming/amplification system when used with, say, a NAP 200 or the NAP 250 I used for this test, giving an overall price of around £5500-£6700.

To these ears, the NAC-N272 is a much more convincing package than the NAC-N172 XS, with little sign of compromise even when used via its analogue inputs, and real star quality when working digitally, be it from a network server or a USB storage device shoved into the front port.

It's not perfect: to keep everyone happy, I guess an asynchronous USB input and balanced analogue outputs would have helped. But then, those features aren't found on any of Naim's existing network audio products, so it's no surprise they don't feature here. However, the NAC-N272 is both an excellent performer and – within the parameters of the Naim catalogue – offers excellent value for money.

If the NAC-N 172 XS has been something of a surprise success for the company, this new one deserves to do even better. ☺

HI-FI NEWS VERDICT

Yes, Naim already has one network preamp, but the NAC-N 272 is an altogether more advanced, and accomplished, offering than the NAC-N 172 XS. It has wide-ranging input flexibility, and sounds equally good across all its digital connections, from streaming to USB stick playback, and whether with CD-quality rips or downloads, or high-resolution content. Its DSD capability is pure icing on this richly-featured cake.

Sound Quality: 85%



TechDAS Air Force Two

Weep no more: TechDAS has delivered a baby brother to the all-conquering Air Force One turntable, at less than half the price! The Air Force Two has landed...

Review: **Ken Kessler** Lab: **Paul Miller**

T rue to its word and its long-term game plan, TechDAS has followed the ground-breaking Air Force One turntable [HFN Jun '13] with a scaled-down version... but 'scaled down' doesn't seem to apply in one area. For the Air Force Two actually has a slightly wider footprint than the One's and simply looks a lot bigger. This is but the first of the disconcerting differences, if one has presuppositions about what constitutes 'a less expensive version' of a flagship...

It was always TechDAS's plan to deliver as much trickle-down technology from model to model, despite the halving (or more) of the price with each new model – quite a mission when you consider that the One has a true air suspension, an air bearing and vacuum LP hold-down. But the team was undaunted in finding ways to preserve the operational features of the One, by any means possible.

DIFFERENT CHASSIS CONCEPT

Perhaps the most radical change for achieving this in the Two was a completely new alternative to the One's complex main chassis. It would deliver the cost savings, while also creating a new visual presence: the One is the curvier, the prettier of the pair, but the Two possesses its own ultra-functional charm.

And it cannot be emphasised enough that the newer model offers all of the operational niceties of the One, including the illuminated display, pitch control to a maximum of 10% pitch in $\pm 0.1\%$ steps, and pretty much adjustable everything else.

For the Air Force One, TechDAS used a CNC-machined solid block of aluminium with a polished surface.

RIGHT: The machined 10kg alloy platter is lifted 0.03mm above a hard glass surface by a cushion of air (the 'bearing'). The cast alloy chassis is supported on four air/polymer columns

The Air Force Two is more prosaic, its chassis being made of cast aluminium with a textured grey paint finish. While it's clear that they are siblings, the family resemblance is down to the details – like an isolated motor, suspension pillars and the illuminated control panel – rather than the actual styling.

The Air Force One sits on three feet, and it is entirely 'air suspended', while the Two sits on four pillars – hence the impression that it's larger. (The difference in the number of feet is due to the differences in weight distribution rather than costs or aesthetics.) They support the sub-chassis using not air suspension *per se*, but a hybrid suspension system with a sealed upper air chamber and a more economical lower section: a macromolecular polymer with a built-in spring, internally damped with oil in a sealed chamber.

If it's starting to suggest they're more dissimilar than alike, rest assured that the Two operates with an air bearing pump, suction pump, external motor power supply and condenser, just like its lofty predecessor. The cost savings in this

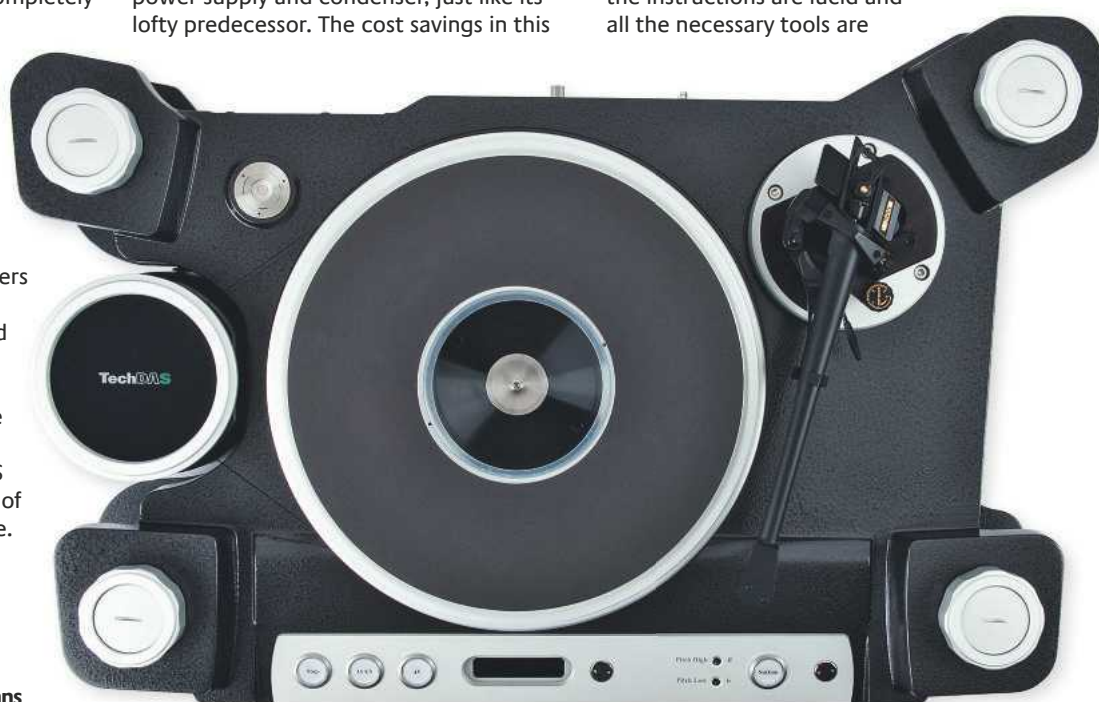
context are due to the Air Force One using two external boxes for these elements, while the newer model makes do with one.

A SIMPLIFIED PLATTER

Adding to the One's complexity is its 19kg platter with a choice of three upper platters ranging in weight from 1.5kg to 10kg and made of three different – and different-sounding – materials. The Two has only its standard platter, made of solid aluminium and weighing 10kg. (The Two is a much lighter machine, at 47kg overall, whereas the One is 32kg heavier.)

Our photos show an SME V arm fitted but the Two can accept two tonearms just like the One. The choices include 9in or 10in tonearms on the right, in the conventional position, while across the back the user can fit either 9in, 10in or 12in arms, and TechDAS says it will supply boards to suit any arm you care to fit. A natural partner is the Graham (or EAT).

Although the TechDAS turntables seem to present daunting set-up regimes, the instructions are lucid and all the necessary tools are





provided. Indeed, the Two is less of a hassle to configure than the One because it's a single-box design. You mount the chassis on a level surface, fit the platter onto the centre shaft, and screw and lock the spindle, fitting it to the air-bearing centre shaft. The deck is levelled by an adjustment knob fitted to each leg tower, set with a supplied gauge to the correct height. The free-standing motor housing is positioned in the 'cut-out' using another gauge, and levelled with its own adjustable feet.

You're then ready to fit the polyurethane fibre belt and fine-tune its tension [see box-out below], mount your arm and cartridge and it's ready to play. A trained dealer can do this in about 30 minutes. Once set up, it maintains a stable state of tune with near-mythic consistency.

Across its front are the buttons for all functions, all in a row, including Stop, 33.3 and 45rpm to the left of the speed display, with Pitch High, Pitch Low and Suction to the right. These are directly equivalent to the controls on the One, albeit

with the buttons in different locations. Ergonomically, the Two is more sensible in this regard, although one could hardly call the One awkward.

Operationally, the joyous feeling is similar to that of the One. There is something absurdly satisfying about a vacuum suck-down system that actually works without drama, and with almost indecent haste. As I grow older, I tire of fiddly nonsense. There is no need in this day and age to design anything badly, ergonomically suspect or which behaves in a recalcitrant manner (like my Pono player, for example). The Air Force Two – precisely like the Air Force One – does exactly what it is supposed to do, without melodrama.

For the tests, the Two was used as supplied, without the damping table and a stabiliser disc offered as options. If prices do have any influence in building a system where money doesn't seem to be in short supply, my own 'mid-level'

'It does just what it is supposed to do – without any melodrama'

SOPHISTICATED SET-UP

While most of the setup is straightforward, adjusting the inflexible belt requires man and machine to work in harmony. Tension is provisionally set by moving the motor backward or forward within its housing before locking it down with a finger/grub screw (*à la* the SME 20 or 30). After setting this approximately, you press 'Pitch High' and '45rpm' simultaneously. The speed adjustment menu appears on the display, and you tweak the belt tension as described above until the display shows 45rpm. After it settles for a few minutes, to ensure that 45rpm does not drift in either direction, you press 'Stop' to memorise the adjustment. The speed has thus been calibrated for both 33.3 and 45rpm.



ABOVE: The enamel finish and more utilitarian aesthetic distinguishes the Two from the One, but soft-touch speed control/adjustment and vacuum LP hold-down features are retained

assemblage (by today's standards, that is) seems to be a match with electronics and speakers in the same price band.

COMPARING LIKE WITH LIKE

For the listening sessions, I used the EAT E-Go tonearm [HFN Apr '13], Koetsu Blue Onyx MC cartridge, the Audio Research REF Phono II SE and REF 5SE preamplifier feeding a D'Agostino Momentum Stereo amplifier [HFN Aug '12] into Wilson Audio Alexias [HFN Mar '13]. (PM's lab tests were with the SME V tonearm fitted.) On a separate occasion, I was able to audition the Air Force One and the Air Force Two side by side, and the experience was as enlightening as a duel between my personal references: the SME 20/3 and 30/12 [HFN Mar '09 and '11].

As for listening material, I chose to use the same discs I played through the Air Force One, 18 months earlier. That way I was able to make use of the notes I'd taken for comparison's sake, and the experiment proved interesting. I can't stress enough the similarity in the relationship between Air Force One and Two, and the aforementioned brace of SMEs, their relative values in performance and price being so consistently paralleled as to beggar belief. But it sure made life easier because the Air Force Two's only valid point of reference is the Air Force One! Recalling my initial burst with the Air Force One in ideal conditions ➞

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Class AB Push-Pull amplifier

The Triode 25 is a Class AB Push-Pull integrated amplifier that utilises four EL34 tubes in the output stage for increased power output from a valve design. It can operate in two modes (Triode and Pentode) and has a switchable feedback level to suit the sound performance of any system. The additional manual bias adjustment ensures long-life and optimum performance from the supplied valves.

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The Triode 25 offers a perfect combination of tradition and modernity.

TURNTABLE

THE TECHDAS TEAM

When *HFN* met the TechDAS technical team in Japan, the design of the Air Force Two had been finalised, and production was just starting [*HFN* Apr '14]. They were rightly excited, as every indication showed their key goals had been met. Unequivocally, the primary concern was that the Two would sell for less than half the price of the One. History will repeat itself if the same price/performance formula succeeds for the forthcoming Air Force Three, because further lowering of the retail price is the constraint that forces innovative, lateral thinking.

Here's why: TechDAS insists on sacrificing none of its core design features. In addition to the Two lowering the price of the One by more than half, it did so without sacrificing the air bearing suspension and LP vacuum hold-down. TechDAS managed this by changing the construction and material of the main chassis, and producing fresh designs for the feet, the pump and other assemblies.

TechDAS will be tested even more by the Three, which may be ready in time for Munich 2015, but which one suspects will be saved for the Tokyo high-end Audio Fair in September. TechDAS says it will accommodate up to four tonearms at the same time – recalling Nishikawa-San's designs for Micro-Seiko three decades ago. It will employ the earlier TechDAS turntables' air-bearing and vacuum disc suction mechanism. And (deep breath)... the price would be half that of the Air Force Two.



ABOVE & BELOW: The main PSU, speed controller, vacuum and air-pump are all located inside this substantial outboard accessory. The pump, motor supply and control connections are on the rear

(as opposed to at a hi-fi show), it was the instant appeal of Rodriguez's *Cold Fact* [Blue Goose BMG002] that drew me in within a few bars. Because of the sort of performer he is, a singer-songwriter with edge rather than the kind who makes you feel all warm 'n' fuzzy, the emotional content has to be conveyed with sincerity.

From vocal textures to the resonances one associates with acoustic guitars, the entire album enjoyed the sense of 'presence' that was conveyed by the One. Plenty of low-level detail and air ensured that one heard as realistic an acoustic guitar as could be obtained from vinyl not far off from its first half-century. But it was a marginally 'smaller' image than can be extricated through the good graces of the Air Force One.

In terms of warmth and texture, Rodriguez's voice via the Two was almost indistinguishable from the One. As mature and commanding as was the One with this LP, the Two came embarrassingly close. So it was necessary to ramp up the intensity of the listening session. The Rodriguez album certainly taxed both turntables for transmitting that ethereal, almost indefinable quality that is found only in nuance. But turning to the detailed, immaculately-produced masterpiece, Willy DeVille's *Miracle* [Polydor 833 669-1], provided just the ammunition for assessing

the two turntables' way with attack, extension, dimensionality, *et al*.

This is, of course, where 'Assassin Of Love' first appeared, and it proved to be one of DeVille's most anguished performances. His voice was a mix of the gruff and the nasal, like a street version of Doctor John, and it was truly inimitable. Mark Knopfler knew just how to frame it, and the production values were precisely those that made Dire Straits the darlings of audiophiles in its era.

While it's arguable that it's hard to make this disc sound anything other than scintillating, the Air Force One yielded an experience indelibly etched in my (audio) memory because

it addressed a design goal expressed by Nishikawa-San, CEO of Stella Inc.

'Acoustic guitar was as realistic as could be conveyed by vinyl'

MATERIALISED BY MAGIC

And I quote this from my Air Force One review: 'From the most ghostly of background silences, a week before Nishikawa-san told me that's what he was trying to achieve, came a sound that materialised as if by magic.'

DeVille's voice would materialise from an inky black silence, the noise floor so low that one could mistake that aspect of the performance as near-digital. My impression is that the One bests the Two in this area, but not so you would think, 'Hmm, where can I find another £47k?'. It was hard to



“I don't know these
guys from Germany
but the sound was
fantastic ...”

*Michael Fremer Stereophile,
T.H.E. Show Newport 2013*



BERLINA-SERIES

EDITORS' CHOICE.

We are happy to receive a very special award at the end of this year: Besides the Editors'-choice-award in "The Absolute Sound" this year the major award was reaching the top of the all-time-ranking of our BERLINA RC 9 in Germany's "Audio" like the RC 11 did in "Stereoplay"!

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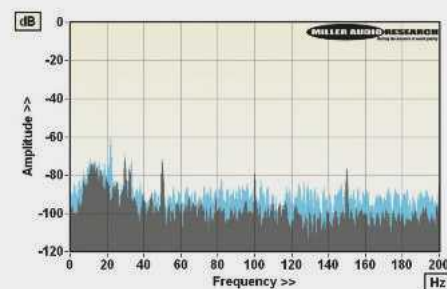
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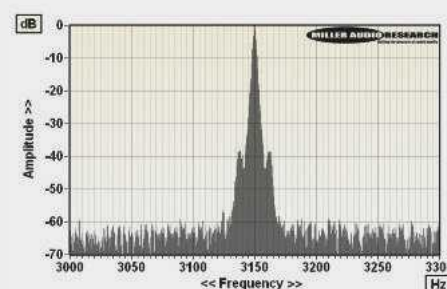
TECHDAS AIR FORCE TWO

Despite differences in the chassis and suspension design, the massive Air Force Two broadly matches the state-of-the-art performance secured by its big brother, the Air Force One [HFN Jun '13]. Once calibrated, the substantial 10kg platter comes up to speed a couple of seconds quicker than with the AF One at 18 seconds but it's still no direct-drive DJ-special! Once stabilised, our sample's platter was true to 33.33rpm within an uncommonly accurate 0.005% (the AF One achieved 0.02%). This *absolute* speed accuracy [note the precise central position of the peak in Graph 2, below] was reinforced by similarly low *cyclical* speed variations – the equivalent peak-weighted total of just 0.03% representing the current state-of-the-art set by the likes of SME's 20/3 and 30/12 [HFN Mar '09 and '11].

Although TechDAS's outboard PSU and pump accessory is whisper quiet, I'd still recommend it's isolated from the deck itself on a separate rack (the long pneumatic hoses certainly assist here). Tested in this fashion, the AF Two's through-(air) bearing rumble is only fractionally higher than that achieved by the AF One (-74.0dB versus -74.5dB) although its spectral composition is very different. In this case, the AF One's cyclical peak of electrical noise every 1.8secs is replaced by a broader span of high frequency white noise and structural modes at 30Hz and 32Hz [see black trace, Graph 1 below]. Incidentally, the peak at 22Hz from the in-groove rumble test is 'built into' the test LP and appears in all our (blue trace) rumble spectra. Electrical noise was significantly lower at -64.3dB (re. 1kHz/5cm/sec), possibly due to the superior wiring of the SME V tonearm. Readers are invited to view a full QC Suite report for the TechDAS Air Force Two turntable by navigating to www.hifinews.co.uk and clicking on the red 'download' button. PM



ABOVE: Unweighted bearing rumble from DC-200Hz (black infill) versus silent LP groove (with vacuum hold-down, blue) re. 1kHz at 5cm/sec



ABOVE: Wow and flutter re. 3150Hz tone at 5cm/sec (plotted ±150Hz, 5Hz per minor division)

HI-FI NEWS SPECIFICATIONS

Turntable speed error at 33.33rpm	33.33rpm (+0.005%)
Time to audible stabilisation	18sec
Peak Wow/Flutter	0.01% / 0.02%
Rumble (silent groove, DIN B wtd)	-73.0dB (with vacuum hold)
Rumble (through bearing, DIN B wtd)	-74.0dB
Hum & Noise (unwtd, rel. to 5cm/sec)	-64.3dB
Power Consumption (PSU + pump)	39W (4W standby)
Dimensions (WHD) / Weight	685x160(+arm)x460mm / 47kg



ABOVE: Pneumatic hoses from the outboard pump are connected to the air-bearing 'Flotation' and LP hold-down 'Vacuum' fittings while power and speed control are communicated via a multi-pin connector. Note the separate grounding post

define, more a *feeling* than an actual sonic reality. Suffice it to say the Two delivers the goods with such expansive dynamic contrasts.

For some reason, it made me picture that scene in Terry Gilliam's *Baron Munchausen* where Robin Williams' disembodied head hovers in the heavens. With *Miracle*, so silent is the background that the voice seems to float. And in order for this to happen the 'sound' of the hardware must disappear.

So coherent is the Air Force Two's playback that this talent will find favour with those who adore wide dynamic contrasts, the surprise element of 'attack', especially from punchy horns. While not quite as sharp as the leading edges heard through the Air Force One, the etching is of such a high calibre that it can fail to impress only those who have the dearer deck to hand.

NAKED PLAYBACK

But that's audiophile stuff: I unearthed Sam and Dave's *Soul Men* [Stax S725] on the ground that it was familiar, not that well-recorded but containing some of the most emotional soul music ever recorded. Again, it was as if Nishikawa was telling me what the turntable would do with each sound. The removal of unwanted noises, like even the most minute traces of vinyl 'whoosh', left me with the most naked-sounding playback of an LP I've heard too many times to consider.

This duo was comprised of two disparate voices that complemented each other with an uncanny balance perfect for the call-and-response techniques they favoured – rooted in Southern gospel. Behind them a rhythm section like no other.

Rumbling lower registers, slightly less weighty than through the One but still of undeniable substance, underscored the performances. While the title track wailed, it was

the torment of 'Broke Down Piece Of Man' that would be the final arbiter. This, though hardly one of Sam & Dave's best-known songs, embodies all that defined their particular brand of soul music. The Two nailed it with nearly all of the force borne of the Air Force One. For a deck costing less than half its price, that's a miracle, and any shortcomings must be put into context.

With turntables at this level – think Clearaudio, SME, Hanss, *et al* – the sonic differences are minuscule even if apparent though nakedly revealing systems. Because I had been fortunate enough to hear the Air Force Two alongside the much dearer One, I am prepared to say – under caution – that the former is the 'lite' version of the latter. It is less minutely detailed, slightly less convincing in the deepest reaches of the bass and a drop less 'polite' in ultimate refinement.

I'm even prepared to say that the SME 30/12 is its direct rival – and I'm sure which is the angel and which is the 'evil twin'. The SME 30/12 has grace, finesse and command. The Air Force Two? A wee bit of a head-banger. But I would not want to choose between them. ☺

HI-FI NEWS VERDICT

TechDAS's designers ensure that each model represents a position in the brand's hierarchy defined by price and technology: more money equals better performance. The Two is among the finest turntables you can buy, period. But the One remains the big brother in this family. Considering the huge price difference, though, it's a decision that will probably be made by your wallet rather than your ears.

Sound Quality: 89%



Triangle Signature Alpha

This imposing floorstander has its roots in traditional French speaker design, but still embodies new ideas

Review: **Steve Harris** Lab: **Keith Howard**

One are the days when we could be snobbishly insular about the sound of speakers from across the Channel. Like all Triangle's designs, the new £6000 Signature Alpha is unmistakably Gallic in conception, but it's a product that's evolved far beyond any national barriers.

Expanding strongly in the late 1990s, Triangle followed the inevitable trend and moved most of its production to the Far East. Although the lower-priced ranges are still outsourced, the Signature and Magellan models are all proudly labelled 'made in France'. Helping to keep these products competitive, Triangle supplies its dealers straight from the factory rather than through any national distributor.

HIGH-END ASPIRATIONS

While the Magellan series continues at the top of the line, the Signature models are more affordable, but still with high-end aspirations. The range began with the Signature Delta floorstander and also includes the compact bookshelf/standmount Theta, and the Gamma centre-channel. But the newly-launched Alpha reviewed here is the Signature flagship.

The sleek moulding that peeps up above the Alpha's gracefully-curved cabinet houses the latest version of Triangle's horn-loaded T22550 25mm dome tweeter, which handles frequencies above 2.6kHz. The horn itself is an aluminium injection moulding originally developed for the Magellan project, but the phase plug visible in front of the titanium dome has now been revised, while behind this the volume of the compression chamber has been increased – enhancements claimed to improve 'detail, finesse and transparency'.

Next is a 185mm midrange unit, a familiar Triangle type using a doped paper cone with a small-pleat short-travel suspension, but again with some improvements. At its centre, the old phase

plug has been replaced with a dustcap of identical shape and size, while the aluminium chassis (or basket) has been redesigned to provide better ventilation for the two-layer voice coil.

Though built on similar chassis, the bass units are naturally very different in design, using a fibreglass cone with an aluminium centre cover or dustcap, and an inverted half-roll rubber surround. At the back, the two-layer voice coil is embraced by a double-magnet motor system which has two large ferrite magnets as against the mid unit's one.

Whereas the slightly smaller Signature Delta uses a pair of bass units, the Alpha has three. With the Delta, Triangle introduced its unique Twin Vent system, prototyped using 3D printing, where the two bass units operate in isolation from each other, the upper and lower units reflex-loaded within their own separate sections of the cabinet.

At the centre of the front panel, a large flared moulded port component is split by a central horizontal divider, to provide the vent outlets for both. And the same principle is used for the Signature Alpha, except that the lower cabinet section contains two bass units instead of one.

FRONT GROUNDING PIN

Curvaceous cabinets are no longer a novelty, and in fact they have almost become the norm, but the floorstanding enclosures in Triangle's Signature series have some further unusual features. Their side panels are made by bending and laminating seven 3mm sheets of fibreboard in a press; the front baffle is reinforced further to a total thickness of 25mm. A closer look down below reveals the way

RIGHT: Drive units include a horn-loaded titanium-dome tweeter, paper-cone mid and no fewer than three bass units, reflex-loaded by the special 'Twin Vent' port in the middle





ETERNAL TRIANGLE

Located near Soissons, about 100km north of Paris, Triangle was founded in 1980 by Renaud de Vergnette. In the early days he bought in drive units from Audax, persuading them to supply the paper-cone units he preferred, even though these had been officially discontinued in favour of plastic-cone types. But in 1985 Triangle began making its own drivers, and does so to this day. In 1995, Olivier Decelle, who'd been one of the first retailers to stock Triangle and had remained a fan of the brand, bought into the company as a minority shareholder. There followed a period of reorganisation that saw Triangle becoming one of the top three French hi-fi manufacturers and in 2003 Triangle launched the original Magellan, the first of a series that aimed to earn a place in the international high-end market. When Renaud de Vergnette decided to leave in 2006, Olivier Decelle took control of the business, with Marc le Bihan as CEO. Today Triangle loudspeakers are available from over 240 outlets worldwide.

the bottom edges are bevelled off at the sides, so that the main plinth supports the cabinet on a relatively narrow spine section along the centre line of the speaker. This plinth doesn't extend to the front edge of the cabinet but is cut off short, leaving space for the prominent conical spiked front foot.

This is what Triangle calls its 'SPEC' system, in which a special fifth foot is placed directly under the front baffle, (which of course carries the drive units). This acts 'like the endpin of a cello', says Triangle, and it 'evacuates mechanical energy to the ground'.

The rear panel just has its terminal panel, with two sets of socket/binding posts, connected by bi-wiring links.

Internal wiring is by Kimber. Finishes are Black or White High Gloss Lacquer, or the MHG High Gloss, a rich mahogany.

PROPER SCALE

Once set up in the Editor's listening room [see www.hifinews.co.uk/news/article/meet-the-team;-paul-miller/9952], the speakers seemed quite at home when fed with high-quality material from hard-disk sources via (also French!) Devialet 800 monoblock amplifiers. They were not unduly fussy about placement, but it seemed the best results came with the two cabinets toed in so that their axes crossed over slightly ahead of the listening seat.

Here was a speaker that gave an immediately pleasing and enjoyable sense of scale. There was a really big stereo image that had a good feeling of height as well as width, which could help to make singers as well as instrumentalists appear before you at a lifelike size. It seemed initially a bit of a broadbrush sound, where instrumental sounds could seemingly

colour the air in an enticing way, without majoring on obvious detail. Yet the detail was there.

Starting with Diana Krall's *Wallflower* [Verve 4701861] and 'California Dreamin'' those wonderful strings arched right over the imaginary stage, above and behind the singer. Even if this speaker does not try to ram detail down your throat, on this recording there were plenty of little details at every turn to remind you what a superbly classy production this is.

On 'Desperado', Krall sounded even more Henley-like than usual here, almost masculine, until you caught the subtlety and artistry of her breath control. Listening to this track at least, you could conclude that the speaker does have a certain slight lower-mid chestiness.

For some purely instrumental jazz I turned to Bobby Hutcherson's *Enjoy The View* [Blue Note 060253 76544 8 2], and it was indeed enjoyable. On the punningly titled

'The subtle decay on Hutcherson's vibe notes was tellingly realistic'

blues, 'Don Is' it was impossible not to smile as Hutcherson quoted from 'Flying Home', while Joey DeFrancesco's organ bass was deep and breathing like real life, and provided a seemingly bottomless foundation for the music.

Hutcherson's vibes came over with ringing attack, and despite everything else going on the subtle decay on his notes was tellingly realistic. Sanborn's signature sax tone had body as well as its characteristic keening edge. And Billy Hart's drum kit, always happily and properly placed behind the other instruments, took on perceptible dimensions of width, depth and height too.

After this studio production, it was instructive to listen to the Signature Alpha on a natural recording where the acoustic of the venue has an important role. With ➔

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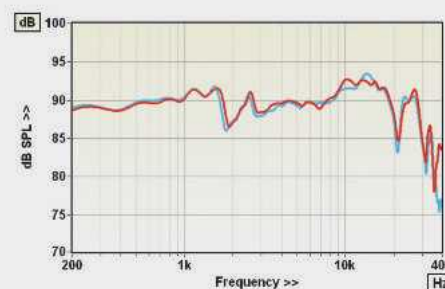
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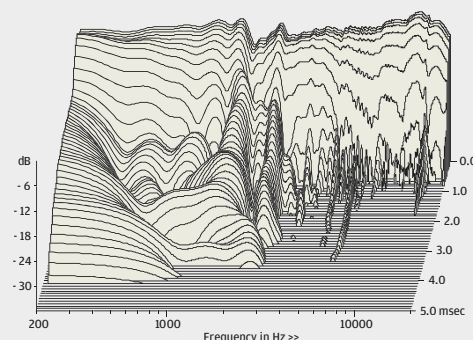
TRIANGLE SIGNATURE ALPHA

Triangle claims 92dB sensitivity for the Signature Alpha but our pink noise figure of 90.1dB suggests this is ambitious, although still sufficient to rank as above average. Nominal impedance is 8ohm but the specified minimum of 3.3ohm indicates a 4ohm rating is more appropriate, and our measured minimum modulus of 3.5ohm supports this. Impedance phase angles are sufficiently high to drop the EPDR (equivalent peak dissipation resistance) to a minimum of 1.7ohm at 90Hz – a typical result for a modern floorstander of this size and sensitivity.

As the horn-loaded tweeter is located above typical seated ear level, initial frequency response measurements were taken on the axis of the midrange unit and then at a height mid-way up the front baffle. The responses [Graph 1, below] are for the former position and show a rise in output above 8kHz but the response through bass and midrange is flatter than at the lower listening height. Mid-way up the baffle, the high treble excess is curbed but a narrow dip of about 4.5dB is introduced at 2.2kHz. Response errors on the midrange axis were ± 3.1 dB and ± 3.7 dB respectively (200Hz–20kHz), and these figures could perhaps be improved slightly off-axis. Pair matching was less satisfactory at ± 2.0 dB but the largest disparity, at 1.7kHz, was quite narrowband. Without this, the error would have been a better ± 1.3 dB. Diffraction-corrected near-field LF measurements showed the bass extension to be 49Hz (–6dB re. 200Hz), again typical for this class of loudspeaker. Origins of the response ripples between 1kHz and 3kHz are clear from the cumulative spectral decay waterfall [Graph 2] which shows two obvious resonances here. KH



ABOVE: The Triangle Alpha's forward response shows a generally flat bass/mid but with a slight treble lift



ABOVE: Cabinet resonances are modest but there are obvious driver modes at approx. 1kHz and 3kHz

HI-FI NEWS SPECIFICATIONS

Sensitivity (SPL/1m/2.83Vrms – Mean/IEC/Music)	90.9dB/90.1dB/89.9dB
Impedance modulus min/max (20Hz–20kHz)	3.5ohm @ 115Hz 20.7ohm @ 62Hz
Impedance phase min/max (20Hz–20kHz)	–56° @ 72Hz 33° @ 21Hz
Pair matching (300Hz–20kHz)	± 2.0 dB
LF/HF extension (–6dB ref 200Hz/10kHz)	49Hz / 30.6kHz/29.8kHz
THD 100Hz/1kHz/10kHz (for 90dB SPL/1m)	0.3% / 0.3% / 0.1%
Dimensions (HWD)	1270x233x372mm

LEFT: Double rear panel connections allow bi-wiring when the links are removed. Below, an integral plinth supports the speaker, but the additional front foot is intended to provide stable, mechanical grounding

swirling muddle that engulfs what actually is being said. But when it came to that slow explosion which ends the first section, the speaker was truly impressive, and the sound had a sort of majestic realism right to the final phase decay.

A PERFECT SOUND PICTURE

With the Voces8's take on Elgar's 'Nimrod', from their album *Lux*, [Decca 478 8053] I felt that the Triangle's attractively big sound really helped it win the day. Here the voices were really laid out beautifully in the recorded acoustic, producing a thrilling effect. There was no shortage of detail, the occasional breath sound and a rolled 'r' just adding to the perfect sound picture they created.

Listening to the next item on the programme, 'Teardrop', the highest notes produced some little frissons of intermodulation that seemed to arc across above the soundstage, but this came over as a natural effect and the treble quality as a whole was surely a tribute to the good behaviour of the speaker's tweeter.

But I kept coming back to Diana Krall's *Wallflower*, and especially her amazing duet with the everlasting Georgie Fame on 'Yeh! Yeh!', the song he'd had such a huge hit with when Krall was a babe in arms. Organ, brass, rhythm, and as Fame sings, 'Groovy hi-fi!'. ☺

HI-FI NEWS VERDICT

That almost daunting array of drive units is harnessed successfully here to give a vibrant, lively mid and treble with a deep, satisfyingly free-sounding bass and huge stereo stage. Though not entirely uncoloured, the Signature Alpha can impress with sonic pizzazz on almost any kind of music. If you're shopping in its price range, this is a fine, likeable speaker with real individuality that demands to be heard.

Sound Quality: 81%

0 - - - - - 100



pianist Paul Lewis and *Pictures at an Exhibition* [Harmonia Mundi HMC 902096] there was a real unity between the elements that made up the piano sound, from the initial attack through to the end of a note as the hall reverberation tailed away. There was a real sense that you were hearing a piano on a stage, and the lowest registers – as in 'Bydlo' – were truly impressive.

On 'Things Left Unsaid', the opening track of Pink Floyd's *The Endless River* [Parlophone 825646215423] the Triangle couldn't do much to illuminate the

GamuT D3i/M250i

A no-frills preamp meets power amplifiers offering massive clout from an unusually simple monoblock design. Please keep your arms inside the car during the thrill-ride
 Review: **Andrew Everard** Lab: **Paul Miller**

Provided that you have speakers able to handle it, the £5770 GamuT D3i preamp and £8658-a-piece M250i monoblocks are likely to rearrange not only your expectations of the sheer clout a hi-fi system can deliver, but also some of your furniture – should you decide in a moment of madness to wind the wick up.

After all, the M250i has a rated output power of 250W/8ohm, doubling into 4ohm and promising 900W into 2ohm and... well, you get the general idea. Suffice it to say that the manual explains that 'Somewhere, we have to draw a line between what is a loudspeaker load, and what is a short-circuit. We have set this line at 1.5ohm, which will draw about 47A peak' [see Lab Report, p47].

PHONO PREAMP NEEDED...

The D3i preamp, like all GamuT products, has an internal layout that uses a number of shielded compartments to avoid interference and thus noise: here it keeps the power supply section isolated from all the signal-handling circuitry.

The amplifier's anodised aluminium front panel, available in silver or black, is stripped of all superfluity, leaving just input and volume controls, three buttons and an indicator panel. Inputs are provided at line-level on four sets of single-ended RCA phonos and one set of balanced XLRs (labelled for CD), and while one set of inputs is called 'RIAA' on the front panel and 'MM/MC' at the rear, this is only a serving suggestion – if you want to connect a turntable you're going to need an external phono preamplifier.

Both the balanced CD inputs and one set of line-ins, marked 'HTH' (for home theatre), can be set to unity-gain bypass mode, avoiding the volume control, using two little rear-panel switches beside the relevant inputs. On the CD input this

'direct' mode must be confirmed by pressing the relevant button on the front panel, just to avoid unleashing full-power signal to your speakers.

Outputs are provided on both RCA phonos and two sets of balanced XLRs, with all socketry from Neutrik and gold-plated, while a remote control for the amplifier and a GamuT CD player completes the features list. The D3i is a dual-mono design, with separate power supplies for each channel, designed for low impedance and wide bandwidth. MOSFET input and output buffering is used, and the feet here are designed to provide compliant suspension for the entire chassis – again, probably wise when the power amps are capable of shaking the room!

Ah yes, those power amplifiers... whereas most designs of this kind use a bank of output devices to develop the wherewithal to drive and control a pair of speakers, GamuT uses just one complementary pair of very large MOSFETs to do the whole job, in the belief that though these industrial-spec devices are definitely expensive, it's the way to go. Why? Well, it says that 'transistors do not carry the same sound characteristics even if they are built together on the same day. So a powerful amplifier made with 32 transistors is more likely to sound like a choir than a single and clear voice.'

Using technology trickled down from the company's RS380M reference amplifier, the M250i uses a similarly massive



RIGHT: A truly massive linear power supply, with independent regulation for both phases, feeds a minimalist power amp stage based around a single pair of high current MOSFETs



power supply and GamuT's proprietary 'WormHole' cabling for its internal wiring.

PROTECTION CIRCUITS

Initial impressions of the GamuT are along the lines of 'Oh, that preamp's not so heavy for nearly £6k's-worth of equipment' closely followed by 'who glued these power amps to the floor?'. So while the D3i is a relatively dainty 12kg, the monoblocks weigh a rather more substantial 38kg apiece, making them a serious challenge to heft onto the equipment rack. (In the end I settled for parking them on a couple of spare paving slabs on the floor.)

'They're equally at home with delicate acoustic recordings'

GamuT suggests that extensive running-in isn't required, although a slight improvement may be noted over the first month of ownership as the capacitors adapt with use. After that, it suggests you

switch on 30 minutes before serious listening, to let everything get up to temperature.

After a day or two of running-in I followed this suggestion, and while I detected a little vagueness when switching on from cold, it's certainly something I could live with for half an hour while the amp played in the background.

The power amplifiers have a monitoring circuit to detect high-frequency distortion

ABOVE: Rotary controls on the D3i govern input selection and volume. The robust, no-nonsense styling carries through to the M250i (one of a stereo pair shown here)

content above 20kHz should you manage to play music loud enough to provoke clipping, and there's short-circuit/low-impedance detection, which will mute the amplifier to avoid it running out of steam. I didn't actually manage to provoke either of these protection systems during my time with the GamuTs, even though I was fairly ambitious with the volume levels at times. Oh, all right then – I was having a ball.

ENTIRELY UNBURSTABLE

You see, the GamuT amps are an absolute riot, not just finding information in tracks lesser amplification merely suggests might be there but, as already mentioned, proving entirely unburstable right up to the limits of what a pair of speakers can handle. They deliver a sound that's loud, proud and in the face when required, but are equally at home shimmering through some delicate acoustic recordings at tickover levels.

There's a choice of 'Direct' or 'Normal' speaker outputs, the latter's Zobel network offering some protection against capacitive speaker and cable loads, the former recommended for the best sound when the amp is used with relatively unreactive loads. If you are going to bi-wire with the M250i then you can experiment by ➤

A KVIST ON POWER

GamuT HQ, in Årre, Denmark, is located within the premises of its parent company Kvist Industries: Kvist's main business is high-end furniture and speaker cabinets, and the two 'met' in 2008 when Kvist started supplying GamuT with enclosures for its El Superiores speakers. The family-run Kvist company bought GamuT International in 2010. GamuT acknowledges that its way of designing amplifiers isn't exactly an exercise in penny-pinching (or should that be krone-cutting?). That's evident in its use of a single pair of massive, industrial-spec MOSFETs rather than paralleled pairs of transistors in the M250i power amplifiers. These hefty FETs come at a price but, as GamuT says (with some candour), 'We don't just look for great components, we look for the *very best*. And if we don't find the stuff we like, we go ahead and specify it ourselves. The end product might have an extra zero on its price tag but we think the performance benefits are undeniable.'

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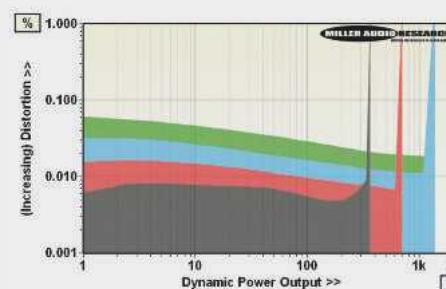
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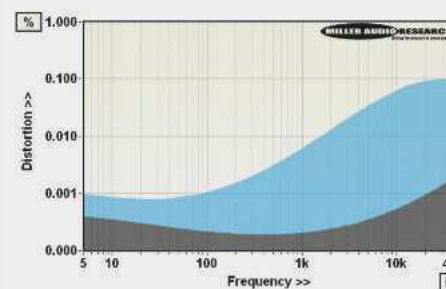
GAMUT D3i/M250i

These are costly, but *very* capable MOSFET-based amplifiers. The D3i preamp offers the lowest distortion of the pair at a mere 0.0001-0.00073% from 20Hz-20kHz, a performance it maintains up to 0.001% THD across its full 17V (balanced) output. The M250i offers a similarly insignificant 0.00085% distortion at low bass frequencies, increasing to a mere 0.0065%/1kHz but a more significant 0.11%/20kHz [see Graph 2, below]. Distortion actually decreases with increasing output, from 0.0065%/10W to 0.005%/100W and 0.0045% at the rated 250W (all 1kHz/8ohm). And the rated output is, naturally, very conservative indeed as the M250i achieves closer to 330W/8ohm and 630W/4ohm in practice with 363W, 704W and 1320W available under dynamic conditions into 8, 4 and 2ohm [see Graph 1, below]. Electronic protection 'limits' the output to 1120W (33.5A) into 1ohm loads.

The pre/power amps share the same (sensibly) tailored extreme HF frequency responses, the D3i reaching -0.5dB/20kHz to -7.2dB/100kHz while the M250i offers -0.2dB/20kHz to -3.3dB/100kHz, the latter measured via its Zobel-free 'Direct' output. The output impedance is uniform at ~0.02ohm from 20Hz-10kHz but increases thereafter to 0.028ohm/20kHz and 0.17ohm/100kHz. The D3i offers a 'flat' 145ohm via its balanced outs across the audioband alongside a fine 0.04dB channel balance and >80dB separation (20Hz-20kHz). It's impressively quiet too, with an A-wtd S/N ratio of 98.1dB (re. 0dBV) that bests the 85.4dB available from the M250i (re. 0dBW). Readers may view full QC Suite test reports for the GamuT D3i pre and M250i power amp by navigating to www.hifinews.co.uk and clicking on the red 'download' button. PM



ABOVE: Dynamic power output versus distortion into 8ohm (black trace), 4ohm (red), 2ohm (blue) and 1ohm (green). Maximum current is 33.5A



ABOVE: THD versus extended frequency; D3i (1V out, black trace) and M250i (10W/8ohm, blue trace)

HI-FI NEWS SPECIFICATIONS

Power output (<1% THD, 8/4ohm)	330W / 630W
Dynamic power (<1% THD, 8/4/2/1ohm)	363W / 704W / 1320W / 1120W
Output imp. (20Hz-20kHz, pre/power)	145ohm / 0.019-0.027ohm
Freq. resp. (20Hz-100kHz, pre/power)	+0.0 to -7.2dB / +0.0 to -3.3dB
Input sensitivity (for 0dBV/0dBW)	550mV (pre) / 102mV (power)
A-wtd S/N ratio (re. 0dBV/0dBW)	98.1dB (pre) / 85.4dB (power)
Distortion (20Hz-20kHz, 1V/10W)	0.0001-0.00073%/0.0009-0.11%
Power consumption (pre/power)	17W / 417W (43W, idle)
Dimensions (WHD, Pre/Power)	431x111x420/431x164x470mm



ABOVE: The D3i offers phono and four line inputs (one on balanced XLRs) plus outputs on RCA and dual XLRs. The partnering M250i has RCA and XLR inputs plus Direct and Normal (with a Zobel network) 4mm speaker outputs

switching the normal connection to the most reactive arm of the (two-way) crossover. Comparing the two in standard fashion, the Normal outputs do sound just a shade softer in the treble. If I were going to bi-wire, I'd do so using cables 'commoned' into the unfiltered Direct terminals.

But what about that bass? Well, it's not all about pounding drum'n'bass rhythm sections, though the GamuTs will do that with serious intent if that happens to be your thing. Where the quality as well as the quantity of the bass is best heard is when the track is less frenetic, and the instruments more real.

JAW-DROPPING GRIP

Play some close-recorded jazz, such as the title track from Kyle Eastwood's 2013 *The View From Here* [Jazz Village 570020], which opens with Eastwood's bass and Andrew McCormack's piano in unison laying down the riff of the track over Martin Kaine's drums, and the timbre and speed of the bass is superbly realised as a distinct instrument. When they break and go their separate ways, the understated bass line remains metronomic and tightly defined, providing the driving force of the piece.

Play some vintage Queen and for all the histrionics going on in the lead guitar and vocal department, the way John Deacon's bass and Roger Taylor's drums lock together to rocket the music along is inescapable – whether with an early track such as 'Seven Seas Of Rhye' from 1974's *Queen II* [Island 276 425 0] or 'Another One Bites The Dust' from Ludwig's 2011 remaster of 1980's *The Game* [Island 277

175 2]. And with 'High Hopes', the closing track of Pink Floyd's *The Division Bell* [Plg 289612], the GamuTs' ability to deliver fine detail in the church bells and ambient sounds of the opening, then turn on the power as the track builds, makes for a thrilling listen – and yes, you can start with it loud and let it just get louder if you want!

Bjork's latest album, *Vulnicura* [One Little Indian TPLP1231DL] is challenging at standard CD quality, but becomes even more so in 96kHz/24-bit, especially on tracks like 'Black Lake', with its electronic bass coming from somewhere down in the depths. Here, the GamuTs' ability to both grip and drive my usual PMC OB1 speakers was, to put it mildly, jaw-dropping.

Never, in the several years I've been using these speakers, have I heard them deliver bass with this much extension, slam and sheer sofa-shifting ability. The GamuTs are hugely impressive on a technical level – and totally addictive. ☺

HI-FI NEWS VERDICT

Prepare to reset your expectations of what a system can deliver: the GamuTs have all the agility and finesse required for fine sound, but underpinned with a massive sense of unfettered power and total control. By any standards this is an amplifier combination priced well into the high-end, but it's also one worth every penny, taking no prisoners while sacrificing nothing of the visceral thrill of 'real' music.

Sound Quality: 85%



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"I was struck by the claim, made by PS Audio's CEO Paul McGowan, that the processing done by the DirectStream results in superior playback of CDs. I heard more musical detail from CD than I had previously had. This detail was genuinely higher resolution manifested by greater differentiation among the sounds of instruments and rhythmic patterns. Quite Amazing".

Robert Deutsch – Stereophile Feb 2015



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Renaissance RP-02

That bright red/pink casework might just be calculated to grab vinyl lovers' attention, but there's more to this new Renaissance phono stage than a flashy paint finish

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

Like other specialist amplifier makers, Renaissance is keen to cater for the still growing number of vinyl enthusiasts. While its two-box RP-01 phono stage is an elaborate design using custom-made input and output transformers, the £750 RP-02 is much simpler, and aimed at a wider market.

Most phono stages offer more or less elaborate settings options for load impedance and/or sensitivity. But as with the RP-01, the RP-02 is intended as a fit-and-forget product largely bereft of user adjustments.

JUMPERS, NOT SWITCHES

For moving-coil there is a fixed input impedance of 50ohm, which Renaissance says 'works well with the vast majority of popular MC cartridges'.

Inside, an all-discrete first stage provides the extra 20dB gain for moving-coil. The second stage combines an LM4562 op-amp with RIAA filtering and gives 40dB of gain, so that for moving-coil the overall gain is 60dB. For moving-magnet, the first stage is simply bypassed.

Our pictures show the RP-02 in its striking pearlescent red/pink finish, but it also comes in sparkly grey/black. The casework could hardly be simpler, since the top and sides are formed of one piece of aluminium while another forms the

bottom, front and back. But it's well put together with an excellent paint job.

On the front panel there is only an on/off switch and a blue LED. While many phono stages use a separate power supply, often a plug-top device, the RP-02 is complete in a single box and accepts mains power through the usual IEC inlet at the back, with a replaceable 50mA fuse.

Signal connections are as simple as possible, too, with one pair each of inputs and outputs. Placed between the two input sockets, above a grounding terminal, is a set of four miniature jumpers, which have to be removed and replaced in their alternate positions when you want to switch between MM and MC.

This might seem a little surprising, and some users will find it fiddly. But although

ABOVE: Renaissance Amplification's simple, wrap-around bonnet and chassis is available in black or the metallic gloss red/pink seen here

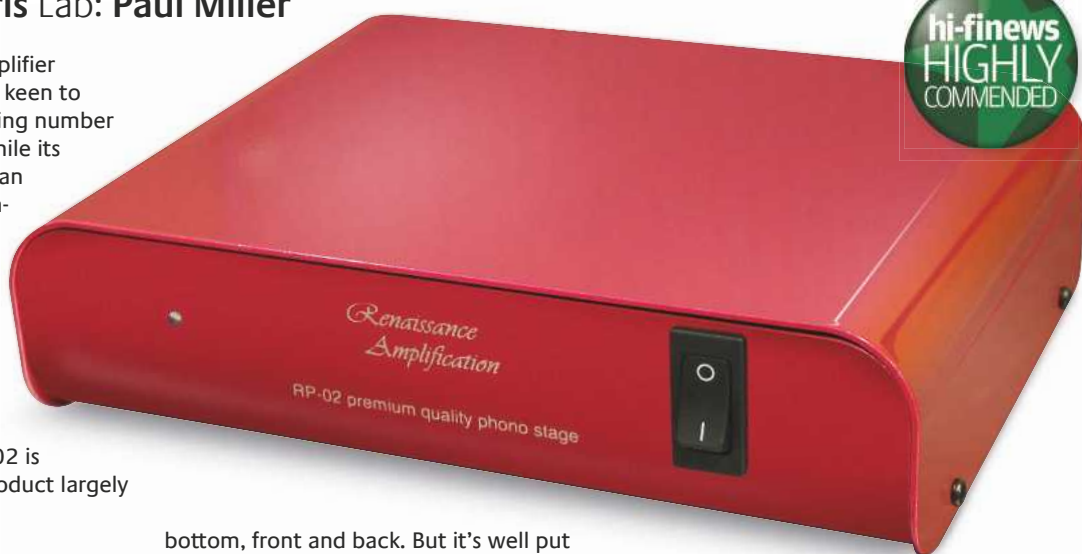
the changeover could be achieved by using a switch or a plug, Renaissance prefers to use the jumpers because 'we're interfering with the signal less'. In practice the jumpers will be set by the supplying dealer and most users won't need to change them that often.

If you're a mono aficionado, you might appreciate the way the Renaissance approach allows you to set one channel for MM and one for MC, so you can use both kinds of cartridge in mono without any switching. But for this review I happily stuck to stereo, starting with the Benz Micro Glider SL moving-coil [HFN Nov '10].

SUBTLE DETAILS RESOLVED

From the start it was clear that the RP-02 could resolve some of the subtlest inner detail. Its excellent soundstaging was immediately apparent too, with a fine and effortless sense of depth and real space around instruments.

All these virtues shone through when I listened to Barenboim playing and directing the ECO in 1967 in Mozart's Piano Concerto K467 [EMI ASD 2465]. At the bottom end, the double-basses were



SOLID-STATE RENAISSANCE?

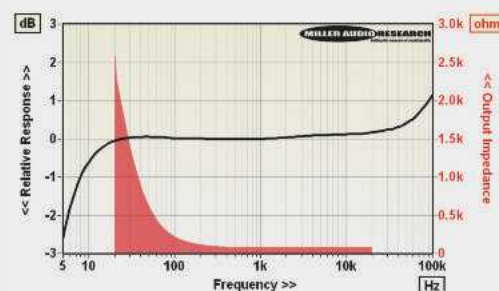
A name like Integrated Engineering Solutions doesn't exactly suggest an audiophile pedigree, and the company's website is mainly about data cable testing systems and other electronics for industry clients. You need to click on the 'High End Audio' link to discover Renaissance Amplification. Electronics engineer Chris Jennings and ex-IBM engineer Greg Speirs got together in the mid-'90s intending to build hi-fi tube amps, but got side-tracked by a request from Hewlett Packard for data cable measurement systems. This led to contracts from other clients, so it wasn't until 2001 that they finally launched the Renaissance RA-01 300B monoblock and matching RAP-01 valve preamp. But the next Renaissance product was the RP-01 phono stage, inspiring a complete solid-state line, including RA-02 and RA-03 monoblocks and Unity 100 stereo power amp.

LAB REPORT

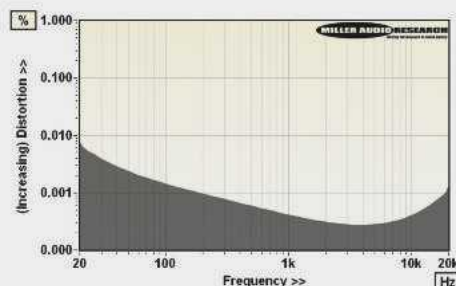
RENAISSANCE RP-02

Accurately specified, the RP-02 offers a fixed MC headamp gain of +19.8dB (a total gain of +59.7dB when combined with the MM/RIAA stage). With an input sensitivity of 1.03mV (re. 0dBV out) the RP-02 is best suited to 'midrange MCs' rather than very low output types where a gain of +70dB is typically more appropriate. Similarly, the 10.08mV MM sensitivity suggests that 'beefy' pick-ups are *de rigueur* while the +24.2dB input headroom (re. the IEC standard level of 5mV) indicates the RP-02 will not be clipped by a high output Ortofon, for example, tracking a peak +18dB groove modulation. The S/N ratio also broadly scales with sensitivity, the RP-02 offering an A-wtd 86.8dB with MM pick-ups but lower 68.5dB with MCs (re. 500µV), the latter only a couple of dB shy of typical vinyl groove background noise. Higher S/N figures are achievable but typically at greater cost [see *HFN* Mar '15, p54].

Distortion is very low via the RP-02, and remains so right up until its full 7.6V output, with a maximum of just 0.0075% at 20Hz steadily decreasing with increasing frequency to a minimum of 0.00027% at 3kHz [see Graph 2, below]. The RP-02 also offers a usefully low output impedance of 70-80ohm right down to around 400Hz, below which it climbs to a very high 2.6kohm/20Hz. Depending on amplifier matching this may impact on the RP-02's subjective bass performance, but driving a high input impedance the response is flat to -0.02dB/20Hz (-3dB/5Hz) and reaches out to +0.26dB/20kHz and +1.25dB/100kHz [see Graph 1, below]. Channel balance is good to ±0.1dB and separation >65dB (20Hz-20kHz). Readers may view a QC Suite test report for Renaissance Amplification's RP-02 MM/MC phono amp by navigating to www.hifinews.co.uk and clicking on the red 'Download' button. PM



ABOVE: RIAA-corrected freq. resp. from 5Hz-100kHz vs. output impedance from 20Hz-20kHz (red trace)



ABOVE: Distortion versus frequency from 20Hz-20kHz at 1V output. Typically <0.001% through mid/treble

HI-FI NEWS SPECIFICATIONS

Input loading (MM/MC)	47kohm / 50ohm
Input sensitivity (MM/MC, re. 0dBV)	10.08mV / 1.03mV
Input overload (MM/MC, re. 1% THD)	81mV / 8.5mV
Max. output (re. 1% THD) / Impedance	7.6V / 73ohm-2.53kohm
A-wtd S/N ratio (MM/MC, re. 0dBV)	86.8dB / 68.5dB
Frequency response (20Hz-20kHz)	-0.02dB to +0.26dB
Distortion (20Hz-20kHz, re. 0dBV)	0.00027-0.0074%
Power consumption	3W
Dimensions (WHD)	205x60x153mm



ABOVE: The single set of RCA inputs are switched for MM/MC operation via a series of four jumper connections

design, but has a Fritz Gyger FGII line-contact stylus.)

DEEP AND EVEN BASS

Unsurprisingly, the MM sound here couldn't match the moving-coil's transparency and its effortless 'breathing' quality. Yet the Corus Silver showed its worth in terms of detail, smoothness and general poise.

'Time In A Bottle,' which opens the Christine Collister album, still brought a fine sense of delicacy in the detail of Bennett's

imaginative guitar and banjo work while the backing vocals were both sweet and well differentiated. The bowed double-bass in 'Under My Skin' didn't have the power and presence that had been so striking with the Benz, but the bass was still deep and even.

Similarly, on Clapton's 'Walk Out In The Rain', Carl Radle's bass was still impressively firm, tuneful and authoritative. There was a good level of detail on this track, even if the components of the stereo image didn't have the stability and focus offered by the moving-coil. ☺

HI-FI NEWS VERDICT

Listening to the RP-02 proved to be thoroughly enjoyable, as it allows the music to come through in a very natural way. The lack of user adjustment might seem a limitation, but in practice the RP-02 will give good results with most moving-coils, while alternative loading or gain settings can be provided on request. But in any case it offers a sonic performance that would be quite hard to beat at the price.

Sound Quality: 82%



lifelike, possessing not just a boom but a well-textured 'whoomp' that was quick and agile too. And the sound was really sweet from top to bottom, with a fine and singing sense of detail in the strings.

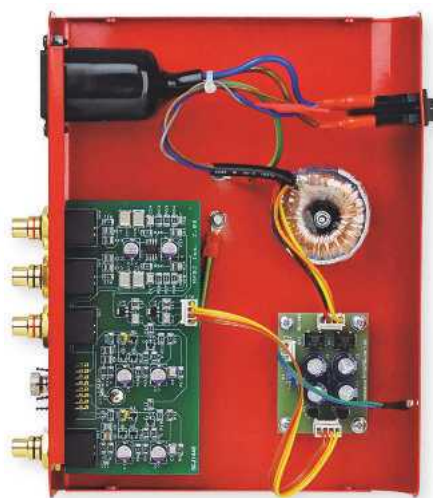
Other recordings benefited equally from a revealing purity in the mid and treble that seamlessly extended down to the bass. With Christine Collister's *Love* [Rega ENS 002], the singer's uniquely cloudy vocal textures were conveyed with real naturalness.

On 'Walk Out In The Rain', from Eric Clapton's 1978 album *Backless* [RSO Deluxe RSD 5001], the RP-02 easily revealed some of those far-back guitar sounds that can often go unnoticed in the mix.

'Too Much Stuff' from Eric Bibb's *Natural Light* [Earthbeat/Pure Pleasure PPAN 018] once again evidenced a deep and coherent bass quality, for example revealing the way rock-solid bassist Dave Bronze is right there below the horn figures.

After this I turned to the moving-magnet input, using an old-favourite cartridge, the Roksan Corus Silver. (This is based on a UK Goldring

'A purity in mid and treble extended down to the bass'



ABOVE: Small 3.5VA PSU feeds a fully discrete MC headamp and L4562 op-amp based MM/RIAA network/output stage

Primare PRE32/A34.2

Packed with trickle-down tech from its flagship siblings, this feature-rich pre/power pairing shows that Primare's latest 30-series amplifiers are a chip off the new block
 Review: **Andrew Simpson** Lab: **Paul Miller**

With the hotly anticipated release of its 60-series amps last year, it's perhaps easy to overlook just how much effort Primare has also been ploughing into keeping its mid-market 30-series amps up to date. The 30 line-up is Primare's most populated model range, and includes the standalone NP30 network player [HFN Jul '14], DAC30 outboard DAC [HFN Feb '13], R32 phono stage [HFN Jan '12] and a selection of amps boasting Primare's 'Ultra Fast Power Device' Class D power modules.

As well as arming this range with its latest technology, Primare has catered for both the diehard separates fan and audiophiles happy to combine boxes and save some shelf space, by offering a wealth of integrated or standalone solutions to suit varying system needs.

UPGRADABLE PREAMP

The PRE32 is the 30-range's dedicated preamp, which costs £1750 in standard, analogue-only guise. In this basic form, with its sleek OLED front panel and remote control, you get four line-level (RCA) and two balanced (XLR) inputs, alongside two sets of line-level and one set of balanced outputs, to feed a range of power amp options. There's also a fixed-level set of analogue outputs over RCA, for legacy tape recorders, etc. All analogue signal paths are kept short and fully balanced, employing Burr-Brown OPA2134 op-amps. Source selection, volume level and balance control are all performed in the analogue domain.

Like its R32 phono stage sibling, the PRE32 also uses an R-core power transformer and is DC coupled from input to output via DC servos – there are no capacitors in the signal path.

For our review, we also opted to include the company's MM30 media board, which slots into a dedicated rear port, adding a range of digital inputs (while upping the

PRE32's price to £3000). Since this module comes directly from the £2000 NP30 and gets the same Burr-Brown PCM1792 DAC and SRC4392 192kHz/24-bit upsampling converter for digital duties, this extra outlay seems like money well spent.

Digital inputs are well served by the MM30 and include an asynchronous USB-B port to connect a computer, a USB-A port for music stored on memory sticks and hard-drives, and S/PDIF inputs shared over three optical (Toslink) ports and a single coaxial (RCA) socket. Wi-Fi streaming is facilitated via a rear-panel stubby antenna, but as this is limited to 48kHz/16-bit, the Ethernet port is arguably the better route to the preamp's digital internals.

Completing our test model's extras is Primare's £180 aptX Bluetooth module,

taking our fully-loaded PRE32 up to a total price of £3180. Given that the BT module outputs its signal directly into the PRE32's DAC and sample rate converter, where it's upsampled to 192kHz, this also seems a worthy add-on if you're prone to streaming from a smartphone as the mood takes you.

THE A34.2 ROUTE

Partnering the PRE32 is Primare's A34.2 power amp, housed in matching silver or black casework with a simplified logo-embossed fascia. Its preamp stage comprises Burr-Brown OPA2134 and Analog Devices AD8512 op-amps while the output stage employs Primare's now very familiar and efficient Class D UFPD technology. In practice, the A34.2 uses half the number of these UFPD Class D



RIGHT: PRE32 preamp including additional MM30 DAC/streamer media board and Bluetooth receiver, installed via a slot on the amp's rear panel to sit above the main PCB



modules found in its big £6500 A60 [HFN Nov '14], although employing one module per channel has not halved its power output [see Lab Report, p55]. Furthermore, by including a dedicated jumper cable to connect between the right (-ve) and left (+ve) speaker outputs alongside a rear panel rocker switch, Primare also gives you the option to run the A34.2 as a bridged monoblock amplifier, increasing its output further to a claimed 550W/8ohm.

Befitting products from Primare, the look and feel of both amps is first-class. From its customisable input naming and tweakable screen colour to selecting source and tailoring settings, the PRE32 is highly intuitive to use. The onboard streamer also lets you access Primare's excellent app (for iOS and Android portable devices), which is one of the best in the business, making it a joy to use. Alongside useful features including random and repeat settings for stored music and with

access to bit-depth and sample-rate info, the Primare app also opens the door to internet radio via the vTuner platform.

CLARITY AND RHYTHM

Whether streaming music over Bluetooth or piping hi-res audio through a hard-wired USB or Ethernet connection, these amps sound as though they have clarity in abundance. Streaming The Handsome Family's 'Far From Any Road' from their *Singing Bones* album [Carrot Top Records SAKI 036] through Spotify at 320kbps via Bluetooth from my laptop, the amps didn't draw too much attention to the obvious shortcomings of this compressed format.

Vocals had surprising levels of depth and lifelike timbre, while the trumpet's edges

'They stay true to the purity of the music, yet without sounding clinical'

ABOVE: Both amplifiers are superbly finished and also come in matching titanium silver livery. PRE32 preamp's OLED display with stainless steel rotary dials and switchgear are pure class

didn't have that sense of being curtailed or sounding flat. Compared to other similarly priced streaming devices I've heard

recently, the Primares sounded less 'boxed in' over Bluetooth, with a more open soundstage. Channel separation and stereo imaging were so well rendered that you sometimes had to look twice to realise you

were not hearing a higher bitrate version.

But while Bluetooth makes for a worthwhile inclusion, you really need to serve these amps a richer diet to benefit from everything they have to offer. Exploring a 44.1kHz/16-bit FLAC rip of Future Islands' *Singles* album [4AD CAD 3402] streamed over USB from my laptop running JRiver, lets you know that these amps relish having a more substantial stream to play with.

Percussion on 'Like The Moon' is razor sharp, while being so foot-tapping and rhythmical it's addictive. Bass guitar notes take on a textured, robust quality, and the keyboard's atmospherics go deep and wide within the soundstage as their delayed echoes trail off into the distance. But it's not just the Primares' timing and musical scale that grab your attention, it's the way these amps seem to stay true to the purity of the music without being overly clinical. Despite this album's synthpop origins, the Primares are never to be found sounding

DESIGN FOR LIFE

Since the company's inception in 1986, Primare has sought to bring a contemporary lifestyle approach to the high-end audio market. Early landmark products include the company's rarefied 928 series of pre/power amplifiers released in 1986 and which remain the only hi-fi components in the Copenhagen Museum of Industrial Art. The stunning silver and gold-adorned 200 series followed in 1992, which included a top-loading CD player that looks as striking today as it did 23 years ago. An association with Xena Audio of Sweden, famous for its Copland and QLN brands, brought together the talents of Primare's Bent Nielsen and Xena's Lars Pedersen (now Primare MD) which led to the launch of the 20 and 30 series range of amplifiers and CD players in 1998. With the arrival of Björn Holmqvist in the late 1990s, Primare branched out into the high-end AV market, launching a range of DVD players and AV processors alongside its two-channel audio separates. Since 2007, Primare amps have featured its UFPD Class D technology, including the EISA-award winning I32 integrated amplifier.



JUNE 2015



New TAD CE1

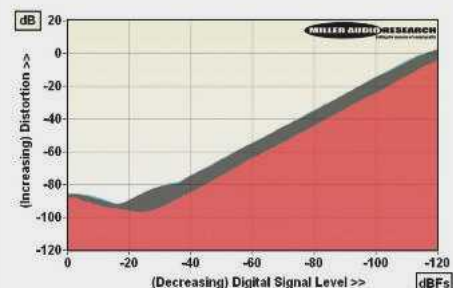
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UK Premiere at North West Audio Show www.audioshow.co.uk Cranage Hall, Cheshire						



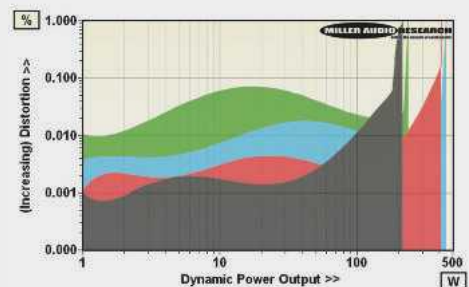
PRIMARE PRE32/A34.2

Judged as a plain vanilla 'analogue' preamp, the PRE32 acquires itself with flying colours – full gain is +16.7dB (bal. in/out) and full output 15V where distortion falls to a minimum of 0.000088-0.00067% (20kHz-20kHz) between 1-6V. The A-wtd S/N ratio is creditable at 95dB (re. 0dBV) and the response usefully extended from 1Hz (-0.0dB) to 20kHz/-0.12dB and 100kHz/-2.4dB. The MM30 Media Module brings its own 'colour' to the PRE32. Tested at Vol. '64' (an output of 2.05V), distortion increases to ~0.005%/0dBfs, ~0.004%/-10dBfs and ~0.0008%/-30dBfs [all 20Hz-20kHz, see Graph 1 below]. The S/N is improved at 103.6dB (re. 0dBfs), though still below 'average' for a modern DAC, while the responses of -0.55dB/20kHz (44.1/48kHz media), -3.4dB/45kHz (96kHz media) and -15.9dB/90kHz (192kHz files) bring an added HF roll-off to the PRE32's line response. On a purely digital front, jitter is vanishingly low at <10psec via S/PDIF and USB inputs at all sample rates (176.4kHz was not functional here via USB).

The A34.2 builds on the performance of earlier UFPD amps. Its 150W rating is exceeded to the tune of 210W/405W into 8/4ohm with a dynamic output of 215W, 410W, 447W into 8, 4 and 2ohm while distortion gently increases from 0.0007% at 1W to 0.0018%/10W, 0.0046%/100W and 0.017% at 150W [see Graph 2, below]. THD increases more markedly at HF (0.05%/20kHz/10W) while the A-wtd S/N remains slightly below average at 82dB (re. 0dBW). Readers may view comprehensive QC Suite test reports for Primare's PRE32 preamp/DAC and A34.2 power amp by navigating to www.hifinews.co.uk and clicking on the red 'download' button. PM



ABOVE: Distortion versus decreasing 48kHz/24-bit digital signal level via S/PDIF (1kHz, red and 20kHz, black) and USB (20kHz, blue)



ABOVE: Dynamic output versus distortion into 8ohm (black), 4ohm (red), 2ohm (blue) and 1ohm (green) loads. Maximum current is 15.4A

HI-FI NEWS SPECIFICATIONS

Power output (<1% THD, 8/4ohm)	210W / 405W
Dynamic power (<1% THD, 8/4/2/1ohm)	215W / 410W / 447W / 238W
Output imp. (20Hz-20kHz, pre/power)	92ohm / 0.021-0.091ohm
Freq. resp. (20Hz-100kHz, pre/power)	+0.02 to -2.4dB/+0.0 to -13.0dB
A-wtd S/N ratio (re. 0dBV/0dBW)	95.2dB (0dBV) / 82.0dB (0dBW)
Distortion (20Hz-20kHz, pre/power)	0.00009-0.0007% / 0.0006-0.052%
Digital jitter (USB/ S/PDIF)	<10psec / <10psec
Power consumption (pre/power)	31W/340W (22W idle)
Dimensions (WHD, CD/Amp)	430x105x385mm/430x105x385mm



ABOVE: PRE32 ticks lots of analogue and digital boxes with four S/PDIF, two USB, Ethernet, Wi-Fi and Bluetooth inputs plus balanced and unbalanced analogue in/outs. The A34.2 power amp offers XLR and RCA inputs (note bridged mode toggle switch)

artificial. Even at low levels the way the music comes across undiluted nicely portrays all the fervour of the band's performance, while cranking up the volume takes you ever closer to the rawness of Samuel T Herring's vocal performance.

But that's not to imply the amps are especially forward-sounding, because they're not. What they are is focused across the audio band, and broadly without coloration.

TAKING CONTROL

While the A34.2 power amp's casework barely gets warm to the touch, betraying its cool running internals, it certainly sounded fully 'warmed up' just 20-30 minutes after switch-on and more than capable of driving my Dynaudio Focus 260 floorstanders without pause. Typically these speakers welcome plenty of muscle to really open them up, and the A34.2 showed no hesitation in taking control of their air-moving hardware.

A 96kHz/24-bit FLAC download of track 2, the *Adagio* from the 'Arpggione' Sonata, from *Schubert & Schumann* [Naim CD104], can sometimes sound flat and lacking life with an unsympathetic amp, but the A34.2 showed its character, adding genuine weight to the piano combined with the right degree of delicacy when needed.

Within the midrange the pre/power combo ensured the cellist was projected with a sense of purpose and poise, highlighting just how much control these amps are orchestrating across the music. The soundstage is well proportioned, giving each instrument ample breathing space to express itself with clarity and natural timing.

Via USB or S/PDIF digital inputs the Primare package also walks

a very impressive line between fleshing out lots of detail without sounding clinical or cold.

Bass too is particularly well controlled with the PRE32/A34.2. Streaming a FLAC download of Madonna's 'La Isla Bonita' [192kHz download from HDtracks – Sire/Warner], they conveyed excellent levels of grip without bleeding any of this track's palpable upper bass detail into the midrange.

Testing the PRE32's analogue inputs with a VPI Scout 1.1 turntable [HFN Oct '14], Denon DL-103R MC and Primare R32 phono stage reassured me that the heart of the preamp is not surpassed by its digital add-ons. Playing 'Small Things' from Ben Howard's *I Forget Where We Were* LP [Island 4701043] conjured a very organic sonic landscape that was very easy to get lost in.

This track's bass reaches very deep but the Primares had no difficulty in plundering these lower registers without over-emphasis. It left you free to relish the most physical of bass without feeling overwhelmed by it. ☺

HI-FI NEWS VERDICT

As an analogue input-only package these amps have lots to offer, but paying for the extra digital internals is a no-brainer, as this gives you access to a sophisticated DAC, streamer and intuitive app, making this a superb system for the modern audiophile. And it's not just their spec. sheets that score highly, as they're blessed with a sonic finesse that's smooth and highly articulate across all inputs.

Sound Quality: 84%



Aurorasound Heada

This bulky, balanced output headphone amplifier from Japan is proof that the best things don't always come in small packages – or are the most tastefully wrapped

Review: **Keith Howard** Lab: **Paul Miller**

When I reviewed the Teac HA-501 headphone amplifier [HFN Apr '14] I described it as 'a Japanese product of the old school, with the type of no-nonsense looks that appeal more to male than female eyes', and I contrasted it with the compact, svelte Meridian Prime reviewed two months previously.

Well, the same description applies to the Aurorasound Heada which, with its wooden sleeve, little toggle switches and exposed fasteners securing the three XLR sockets on its fascia, looks even more obviously retro. With the Preda preamp [HFN Nov '14] Aurorasound appeared to have taken a stride towards more modern industrial design, whereas the Heada (like the Vida phono preamp too) has thus far escaped a makeover.

But just as 20th century looks did no harm to the Teac when assessed as a purveyor of aural rather than visual delights, so it is with the Heada. If you are a seeker after out-of-the-ordinary headphone sound quality you'd be unwise to scrub it from your shortlist on the basis of its utilitarian appearance.

FOR HEADPHONES ONLY

Like the Teac and the recently reviewed Auralic Taurus MkII [HFN Jan '15] the Heada is a pure headphone amplifier, not a DAC/headphone amp hybrid. It has analogue inputs and analogue outputs, and that's it. It doesn't even double as a simple preamp. Yes, there is a pair of phono sockets on the rear labelled 'Through Output' but that is a literal description: the signal on these is that downstream of the input selector switch, with no volume control or output buffering applied. So you can't connect the Heada directly to a power amplifier for speaker replay, it has to be to a preamp or an integrated amplifier – something with a gain control.

RIGHT: Internal layout is neat with the PSU board to the right (viewed from front) and four modular amp boards to the left. Volume control is a high-precision conductive plastic type

The Heada provides two inputs on the back panel, selectable by the top of two toggle switches towards the left of the fascia. Input 1 provides for balanced input via 3-pin XLR sockets or unbalanced input via phonos, while input 2 offers unbalanced input only. The Through Output sockets and an IEC mains input socket complete the rear panel connectivity.

Around the front, to the left of the fascia is the volume control with a scale comprising constant-diameter dots but no numbers, which makes precise resetting difficult. Immediately to its right is the input selector toggle switch above a second which selects between low and high gain. Next comes the ¼in jack socket that provides the conventional unbalanced headphone output (the owner's manual warns against plugging a *mono* jack into this), followed by three XLR female sockets which offer balanced connection for headphones that support this option. An

on/off toggle switch has a red LED above which lights when the unit is powered.

The wooden sleeved aluminium case has enough circuitry to fill much of its internal volume. Combining bipolar and J-FET devices, the four amplifier modules are unusual in eschewing low output impedance. Says the designer, Mr Karaki, 'For headphone drive, high damping factor cannot make good sound. I discovered this fact by testing a lot of headphones during [the] Heada circuit design.'

Specified output power, unbalanced, is 1W into 40ohm, equivalent to 6.3Vrms – more than enough to accommodate the transient peaks of high dynamic range music at sensible (or even excessive) replay volumes [see Lab Report, p59]. In balanced mode, as you'd expect, this doubles to 2W. Despite this ample output voltage capability, Aurorasound specifies compatibility with headphones of 16 to 600ohm impedance, suggesting that





current capability may be an issue with impedances below 16ohm, not that they are common. I experienced no issue here, though, as I will describe.

A MAGICAL COMBINATION

For the listening I drove the Heada exclusively via unbalanced signals from a Chordette QuteHD, fed S/PDIF from a Mac Mini via FireWire connection to a TC Electronic Impact Twin. For most of the listening I used the Sony MDR-MA900 [HFN Oct '12] because, rarely, it has the near-neutral tonal balance and explicit midrange essential for hearing what headphone amplifiers are up to.

The Sony is right at the lower end of Aurorasound's specified impedance range – in fact, with a minimum impedance of 13.9ohm it dips below 16ohm for much of the audible spectrum. But I heard no evidence of the Heada struggling, although it might have at extreme output levels beyond those at which I listened.

In fact the combination of the MDR-MA900 and the Heada was magical, despite the former being limited to using

the latter's unbalanced output. The Heada reminds me of the Teac HA-501 in that its sound has an all too rare combination of natural, uncontrived warmth alloyed with a searching clarity that never leaves you feeling short-changed in resolution or musical engagement.

So listening to it is pure, self-indulgent pleasure, my only concern being that with less honest, less revealing headphones, the balance could tip towards it sounding a little too lush. If that happens it's likely to be a comment on the headphone rather than the Heada, although it should be borne in mind that the Heada's relatively high output impedance may result in undesirable frequency response changes with 'phones that have highly variable impedance.

Once I'd established the general nature of the Heada's sound, I lined up a feast of hi-res tracks via which to enjoy it. I'll run through just three of them specifically: 'Take Five' from Sabina Sciubba and

'I really couldn't ask for "Take Five" to have sounded better'

ABOVE: Small toggle switches alongside the volume control select between the two inputs (top) and high or low internal gain. Balanced output is provided on both 4-pin and 3-pin XLRs

Antonio Forcione's *Meet Me In London* [Naim Label 192kHz/24-bit download]; the *Adagio* from Robin Ticciati's acclaimed interpretation of Schumann's *Symphony No 2* [Linn Records 192kHz/24-bit download]; and Dire Straits' 'Once Upon A Time In The West', converted to 88.2kHz/24-bit from a rip of the *Communiqué* SACD (Japanese import).

With words to the famous Dave Brubeck melody, 'Take Five' is a showcase for Forcione's guitar work but, above all, the seductive, elastic voice of Sciubba, who could charm birds from the trees. Her laughter before she sings sets the tone – she is enjoying herself here and soon puts a smile on *your* face too.

MUSICAL DELIGHTS

I really couldn't ask for this to sound better: the sense of studio acoustic was convincing, you could clearly hear Sciubba's quiet, staccato breaths emphasising the rhythm after her first 'just take five', and it was obvious that the centre-placed guitar was recorded more drily than that to the right. But above all it was a sheer musical delight.

Ticciati's chamber-like account of the Schumann relies for its un-showy, stealthy charm on precise delineation of the string harmonies in particular, and a clear exposition of this recording's fine sense of acoustic. The Heada delivered both, allowing this triumph of unhurried exposition to weave its calming magic. ➤

DAMPING FACTOR

This is the second headphone amp to come our way from Japan that includes deliberate manipulation of damping factor (DF) – the ratio of load resistance to output resistance. In driving loudspeakers it is normal for the amplifier output resistance to be low (DF high) in order to ensure effective electromagnetic damping, particularly of the loudspeaker's fundamental bass resonance. As this damping effect depends on current flow through the voice coil resistance in series with the amp's output resistance, though, it's arguable whether any practical benefit accrues when the latter is reduced below, say, 5% of the former (a damping factor of 20). Why a reduced DF should be of benefit to headphones, as Aurorasound's Mr Karaki suggests, is far from clear. But the audible effect, to judge from the variable DF control on the Teac HA-501, is obvious enough. As the damping factor is reduced, the sound becomes smoother, less 'etched', an effect unlikely to be explained simply by the changes in frequency response.



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Hifi World March 2015

VERDICT ●●●●●

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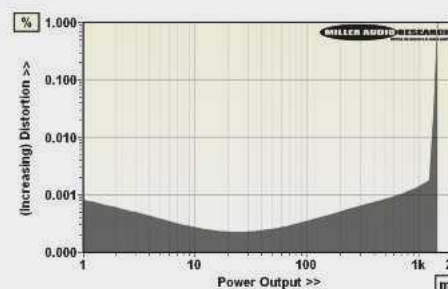


LAB REPORT

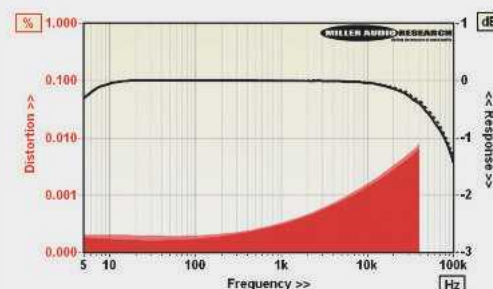
AURORASOUND HEADA

Despite being based around the same 'Aurora-AMP' discrete bipolar/J-FET op-amp modules we saw in the Preda preamp [HFN Nov '14], the configuration used in Aurorasound's Heada headphone amp exhibits slightly different response/distortion characteristics. In practice, I think the differences are due to the transformer-coupled volume control used in the Preda versus the conductive-plastic type employed here, the upshot being the Heada offers a far flatter LF response (0.0dB/20Hz down to -3dB/1Hz) with a more uniform LF distortion (0.0004%/1kHz down to 0.0002%/5Hz). Neither is there any appreciable change in response or THD under load [see Graph 2, below].

Distortion is actually 10x lower than Aurorasound's spec. up to a 1W power output although the maximum 1.45W/25ohm is slightly lower than might be anticipated from Aurorasound's rated 1W/40ohm [single-ended – see Graph 1, below]. While this is also lower than the 5-10W/40ohm we've measured from some of its high-end competition [HFN Sep '14 and Jan '15], this and the maximum 13V (high gain mode) voltage output will be sufficient to drive all headphones in the Heada's specified 16-600ohm range. Keith talks about Aurorasound's DF control circuit in our review [see boxout, p57], realised in the Heada by its high (by headphone amp standards) 9.3-9.9ohm source impedance. The value is about 0.8ohm lower in high gain mode but both will represent a ~2.7dB loss into a 25ohm load and invite system response variations with low/variable impedance 'phones. Readers may view a comprehensive QC Suite test report for Aurorasound's Heada headphone preamp by navigating to www.hifinews.co.uk and clicking on the red 'download' button. PM



ABOVE: Continuous, single-ended power output versus distortion into 25ohm 'headphone' load



ABOVE: Freq. resp. from 5Hz-100kHz (black) and into 25ohm (dashed) with distortion versus frequency (red, 1V; shaded, 40mW) from 5Hz-40kHz

HI-FI NEWS SPECIFICATIONS

Maximum output (re. 1% THD into 47kohm)	13.0V
Max. power output (re. 1% THD into 25ohm)	1470mW
Output impedance (20Hz-20kHz)	9.31-9.90ohm
Maximum gain (low/high, balanced input)	+5.64dB / +13.8dB
A-wtd S/N ratio (re. 0dBV)	96.7dB
Frequency response (20Hz-20kHz/25ohm)	+0.0dB to -0.12dB
Distortion (20Hz-20kHz, re. 40mW)	0.00019-0.0031%
Power consumption	12W
Dimensions (WHD) / Weight	260x100x250mm / 3.5kg



ABOVE: Input 1 offers balanced or unbalanced connections while Input 2 is unbalanced only. 'Through Output' bypasses the volume control, so the Heada cannot serve as a preamp with a separate power amp

From my days of owning the LP, I'd always thought that *Communiqué* was the best sounding of the early Dire Straits albums, certainly much better than *Making Movies*, but never felt that I'd really extracted the best from it. With the recent arrival of the DSD-layer-only SACD from Japan I feel I've finally got there: as close to the master tape as I'm ever likely to get.

It's by no means an audiophile recording, of course – there's no deep bass and the cymbal sound is the usual indistinct buzz of the period – but, via the Heada, the lead and rhythm guitars and the voice at last realised the clarity I'd always suspected was buried there.

THE BALANCED OPTION

But what of unbalanced output versus balanced output? The Heada arrived while I was in the process of converting a second pair of the Sonys so that they can be used either way – quite a major job as it involves rewiring the capsules internally and installing connectors. But as I couldn't finish the task in time for this review I took up the offer from importer Pure Sound to borrow its Sennheiser HD600s, complete with balanced cables.

The ageing Sennheiser, if less than ideally spritely in its SQ, has the advantage of high impedance (nominally 300ohm), which should prevent any significant alteration in frequency response occurring as a result of the Heada's output impedance changing according to whether one or two of its 'damping factor control' stages are in circuit.

Concerned not to do too much plugging and unplugging of the two leads, bearing in mind Sennheiser's warning of old that the two-pin connectors on the HD600 and HD650 were never intended for this type of use, I restricted myself to making the unbalanced/balanced

comparison on just one track – the Sciubba/Forcione 'Take Five'. Indeed, that was all I needed to hear that the balanced connection was better: the guitar sound was crisper, Sciubba's creamy vocals clearer, the whole performance more energetic and engaging.

Still, I hesitate to conclude that the balanced output option is better *per se*, assuming that you have headphones to exploit it. Two reasons: first, my concern about the frequency responses being different in unbalanced and balanced operation, because of changes in source impedance, may well be realised when the Heada is used with lower-impedance 'phones.

Secondly, the cabling in Pure Sound's unbalanced and balanced cables is different, and having owned an HD650 myself for many years, during which I bought one of Russ Andrews' aftermarket cables for it, I know that this in itself can make quite a change in sound quality.

So I reserve judgment as to whether balanced connection is generally an improvement – but there is no question, in the circumstances described, that it made my tail wag. ☺

HI-FI NEWS VERDICT

Equipment reviewing would be unalloyed pleasure if only every item of equipment gave as much listening pleasure during its tenure. Partnered with a neutrally balanced, transparent headphone the Heada is capable of some of the best, if not the best, sounds I have heard from between capsules. Its alluring warmth is matched to great resolution, making for a musical experience as welcoming as it is informative.

Sound Quality: 88%



Furutech ADL H128

Building on the distinctive H118 model, with its triangular-shaped capsules and earpads, ADL's H128 is intended to add some extra oomph to its predecessor's civility
 Review & Lab: **Keith Howard**

If the Alpha Design Labs (ADL) brand is new to you, as it was to me before the arrival of the H128 for review, let me paint in a little background. Sister to Furutech, it functions as an entry-level adjunct to its more up-market sibling, with a range which encompasses earphones, headphone amplifier/DACs (portable and static) and cables as well as headphones.

Priced at just below £300, the H128 is a development of the previous H118 model, which remains available. According to ADL the design goal was to retain the H118's smoothness but ally it to improved dynamics 'and recreate the same "punch" that you hear during live performances'.

In most respects the H128 is a pretty conventional closed-back headphone but it does depart from the norm in the shaping of its capsules and earpads. ADL calls them, rather grandly, 'Alpha Triform Contour Earcups' – its way of saying that the cavity for your ears is triangular rather than rectangular or circular. Two justifications are offered for this: first, it improves the earpads' seal to the head, thereby assuring more consistent bass response. Second, the lack of parallel surfaces reduces standing waves within the volumes of air enclosed by each capsule.

A QUESTION OF COMFORT

Certainly the area immediately below and behind the ear, crossing the jaw line, presents a challenge to earpad sealing, albeit one which some headphone users have more of a problem with than others. ADL is not alone in seeking to address this but our standard ten response measurements per capsule on the artificial ear recorded nothing like the outstanding bass consistency demonstrated by the D-shaped Sound Sealing earpads of the AKG K812 [HFN Dec '14], for instance, particularly for the right capsule [see Lab Report]. Moreover, the H128's capsules

could never be called capacious and its head clamping force is on the high side, so I found it to be less than ideally comfortable to wear: the earpads bent my pinnae and their grip was rather too vice-like. The contrast with, say, the (sadly) discontinued Sony MDR-MA900 [HFN Oct '12] – which, in addition to having large, circular capsules, is also significantly lighter – was palpably obvious.

While we are talking physical design, I should also mention that the H128's headband suffers a low-frequency

resonance that can clearly be heard as a carry-over of bass sound from one capsule to the other on single-channel pink noise and which is suppressed if you reach up

and grasp the headband to damp it. Exactly what effect this will have in terms of imaging and perceived coloration is difficult to say but obviously it would be better were the resonance eliminated.

Although it's supplied with a short (1.3m) as well as a long (3.0m) connecting cable and a zip-up hard-shell carrying case, the H128 isn't best adapted to listening on the move because, while the capsules do turn flat, they don't fold up into the substantial leatherette-covered headband. As a result the carrying case (about 235x235x70mm) is much too large to sit in a normal coat or jacket pocket and will take up what may be an unwelcome amount of space even in a briefcase.

'In its mildly understated way the H128 is an informative listen'

SHARED GROUND CONNECTION

To accommodate the two different-length cables ADL has used mini-XLR connectors to join them to the left capsule but arguably has missed a trick in making them three-pin, with a shared ground connection for both channels. This precludes the H128 ever being used with the balanced outputs appearing on an increasing number of headphone amplifiers.

The shared earth line impedance – a common feature of headphones having conventional, unbalanced connections – also introduces some interchannel crosstalk, albeit at a low level.

Within each capsule is a 40mm driver featuring a diaphragm formed from PEEK (polyether ether ketone: a robust semicrystalline thermoplastic), a neodymium magnet system and copper-coated aluminium wire in the voice coil to reduce moving mass. Ohno continuous casting wiring is used and Furutech's Alpha-Process – 'a low-temperature two-stage cryogenic and anti-magnetic process' – is



RIGHT: Most notable feature of the H128 is its triangular-shaped capsules (blue version here), intended to improve the seal of the earpads to the head and suppress internal resonances

applied to the driver metal parts as well as to the wiring and mini-XLR connector [see boxout]. Three external colour options are available: silver/black and, less understatedly, silver/brown or dark blue.

A BOOSTED BASS

Headphone amplifiers used for the listening were the Aurorasound Heada [see p56] and the Teac HA-501 [HFN Apr '14]. Both were fed analogue signals from a Chord Electronics QuteHD DAC, itself fed S/PDIF from a TC Electronic Impact Twin FireWire audio interface. A second-generation Mac mini running Windows XP and JRiver Media Center v19 played as music server.

As regular readers of our headphone reviews will know, headphone tonal balance has become a controversial issue. For many years it was widely accepted that the response at the eardrum should be the same as for a flat-spectrum diffuse sound field (where sound intensity is the same whatever the direction of arrival). However, recently two teams of researchers – at NRC in Canada and Harman in the US – have concluded that, while the diffuse field goal is fine at higher frequencies, below about 200Hz the output should start to be shelved up in order to provide the same tonal balance as a good pair of (floorstanding) loudspeakers in a well-behaved room.

Either you buy into the new target response with its boosted bass or – despite the flurry of Audio Engineering Society

papers on the subject from Harman – your listening experience tells you that the idea is misguided. As someone who abhors bass excess whatever the circumstance, I'm in the latter camp.

Although on test the H128 delivered rather different low frequency response from its left and right capsules, it is

LEFT: Three colour options are available: silver/brown as pictured here, dark blue (see p60) and, more conventionally, silver/black



clear from the diffuse-field corrected average response (and confirmed by listening) that ADL has chosen the boosted bass route.

Compared to some exponents the boost is moderate but it nevertheless gives a distinct cast to the H128's sound. Even with music that lacks strong bass content the tonal balance is warmer than I consider neutral and textures are thickened as a result. On programme with generous bass content the lowest three octaves or so are plainly dominant. If you're to live happily with the H128 then this is a part of its character that you must relish, or at the very least accept.

A LOT TO ENJOY

If it sounds from this as if I'm lining up the H128 for a lukewarm review then that isn't so. Because, if you accept its tonal weighting towards LF, the H128 has a lot to like about it. It's not quite as hear-though as I like, principally because of its tonal hue, but in its mildly understated way the H128 is an informative and enjoyable listen.

Take two quite different examples: the 88.2kHz/24-bit download of Daft Punk's ballad 'Within' and the 44.1kHz/16-bit version of the third movement of Mozart's Divertimento in E flat, K375, from the SCO Wind Soloists [Linn Records CKD 479 – also a recently monthly sampler download track from Hyperion].

Yes, the left hand of the piano intro to 'Within' was a little dominant, as was the bass proper later in the track, but the textures of the vocodered vocal and the detail in the cymbals were well preserved, retaining the freshness and distinctness of this departure from *Random Access Memories'* up-tempo content [Sony 88883716862].

On the Mozart, delicacy and fidelity of instrumental timbre are the key requisites for doing this genuinely diverting, playful music full justice. While the H128 fattened the textures somewhat and didn't quite have the 'air' to render the full expanse of the recording acoustic, the skill and

THE ALPHA PROCESS

Furutech's Alpha-Process – applied to the metal parts of the H128's 40mm drive unit and to the OCC internal wiring and connecting cable's mini-XLR socket – is a two-stage cryogenic and anti-magnetic process said to improve significantly 'every facet of audio performance'. While the details of Furutech's process are proprietary, deep cryogenic treatment – which involves cooling components to very low temperatures, typically around -196°C (the boiling point of liquid nitrogen), and then slowly warming them back to room temperature – has a long and controversial history in high-quality audio. A process more widely associated with improving the life of tool steels and enhancing the mechanical properties of metals used in Formula One and aerospace applications, it was first used in an audio context by Ed Meitner – then of Museatex – as long ago as the early '90s on components as varied as cables, CDs, circuit boards and speaker voice coils.

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enjoyment that the SCO soloists bring to this programme remained abundantly obvious. If the sheer pleasure of eavesdropping in on their fun was mildly blunted, it was only *mildly*.

EXTRAORDINARY STRINGS

If you are a DSD aficionado you will probably know about Native DSD (www.nativedsd.com) and already have expended a large chunk of your monthly download allowance acquiring the tracks from the *Just Listen 1* compilation available from the website free. Some of the tracks are offered in DSD64, DSD128, DSD256 and DXD format, allowing for some interesting comparisons, and multichannel versions are available as well as stereo.

If you'd rather cherry-pick than download the lot – a time-consuming and data-eating exercise – then I recommend the 'Heiliger Dankesang' movement from Beethoven's String Quartet Op.132, played by a Boston string orchestra [*Dreams & Prayers*, Crier Records CR 1401], which is available in both DSD64 and DSD128 formats. There's also a binaural version yet I've found the standard stereo version to sound significantly more spacious replayed over headphones!

This recording is extraordinary and (even if you convert the DSF files to 88.2kHz/24-bit PCM as I did) the difference between the DSD64 and DSD128 versions is plainly audible: in favour of the latter, as you'd suppose. What makes this recording so special is the gargantuan size and sheer presence of the stereo image – characteristics which test the mettle of any headphone.

It's a challenge to which the H128 stood up well. Its generous bass subdued the sense of presence and 'air' somewhat but the big-boned beauty of both the music and

ABOVE: Two lead lengths are provided: 1.3m for use with personal players and 3.0m for static systems

the recording still shone through. Once the track had started playing it would have been a wrench to stop it prematurely.

In going from this to a 44.1kHz/16-bit rip of Cameo's 'Word Up!' [Club JABHC17] I risk being accused of trading the sublime for the ridiculous but, let's face it, Larry Blackmon's most famous tune does get inside your head – all the more so if you watch the original music video on YouTube. As you'd anticipate of a mid-'80s pop recording it doesn't win any audiophile prizes but is the sort of bread and butter rock/pop material that any hi-fi system ought to handle with aplomb if it's going to win lots of friends and not restrict its owner to a circumscribed musical diet.

Yes, I'm going to continue griping about the H128 spreading its bass too thickly but on this material I guess not many people would complain. Especially as 'Word Up!' remained quirky and fun – and that's the point, right? ☺

HI-FI NEWS VERDICT

While I can't commend this headphone for its comfort, so far as sound quality goes it merits adding to the shortlist of anyone looking for a standout £300 model. Its bass is shelved up, like many of its competitors, but not so much so as to obscure its inherent resolution and musicality, qualities which make the H128 an enjoyable headphone to listen to across a gratifyingly wide range of genres.

Sound Quality: 81%

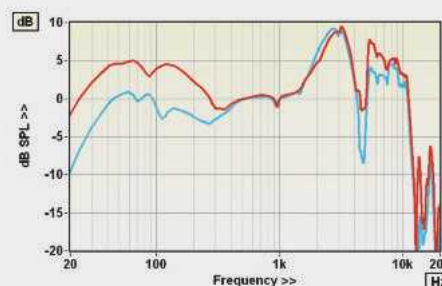


LAB REPORT

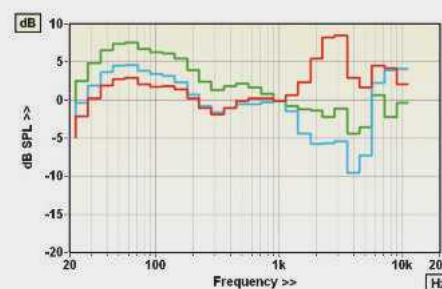
FURUTECH ADL H128

ADL claims a sensitivity for the H128 of just 98dB SPL for 1mW input, equivalent to 109.7dB SPL for 1Vrms at the nominal impedance of 68ohm. According to our measurements this is a significant underestimate as we recorded 115.0dB for 1V input at 1kHz, averaged for the two capsules – a typical figure for a modern headphone. The nominal impedance is also understated somewhat, for here we measured a minimum of 71.6ohm and a maximum of 83.7ohm within the audible range (20Hz-20kHz) a variation which introduces frequency response errors of just 0.2dB and 0.4dB for source resistances of 10ohm and 30ohm, respectively. The headphone was worn during the impedance measurement, not only to ensure appropriate acoustical loading but to check whether there is any audible carry-over from the active to the inactive capsule. Indeed, low-frequency carry-over could be heard and eliminated by reaching up to grasp and thereby damp the headband assembly, indicating that the H128 has an appreciable headband resonance [see Investigation, *HFN* Jun '14].

Uncorrected frequency responses for the two capsules shows a notable shelf up in bass output at <300Hz via the left capsule [red trace, Graph 1], reaching a maximum of about 5dB, whereas the right capsule [blue trace] lacks this feature, perhaps because it sealed less well to the artificial ear. Even so the averaged response of the two capsules when diffuse-field correction is applied [green trace, Graph 2] still shows an uplift below 1kHz, consistent with the subjective assessment of the H128's tonal balance. Above 1kHz there is also some shortfall in presence band output which will increase the sense of rich, darkened timbres. Capsule matching of ± 4.5 dB is better than many headphones achieve and largely represents different interactions with the left/right artificial pinnae which, like most real ears, are somewhat differently shaped. KH



ABOVE: Our left capsule (red trace) showed a stronger sub-300Hz bass lift than the right, but the overall balance is still 'rich' [see also green trace, 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)	115.0dB
Impedance modulus min/max (20Hz-20kHz)	71.6ohm @ 20Hz 83.7ohm @ 76Hz
Capsule matching (40Hz-10kHz)	± 4.5 dB
LF extension (-6dB ref. 200Hz)	19Hz
Distortion 100Hz/1kHz (for 90dB SPL)	1.3% / <0.1%
Weight (inc cable)	336g

In-akustik Premium Headphone Amp No.1



Compact and rather covetable, this dinky pocket DAC/amp from the German cables and accessory specialist offers an informative and involving sound
Review: **Andrew Everard** Lab: **Paul Miller**

The first question I asked when I was handed the prosaically-named In-akustik Headphone Amp No. 1 was: 'Are you sure it's in the box?' You see, this USB/line-input battery-powered amp from the German cables-to-loudspeakers-to-music company is not only tiny, easily fitting in the palm of the hand, but also almost vanishingly light, at just 90g – quite a bit of which is presumably accounted for by its internal 950mAh lithium-ion battery.

Of course there's no shortage of compact headphone amps for portable use on the market, from the likes of the USB-stick AudioQuest DragonFly [*HFN* Mar '14] to the somewhat chunkier Denon DA-10, the latter dwarfing the In-akustik in every dimension. And it's not hard to see their appeal: they can be used on the desktop either at home or on the road, and also connected to the likes of smartphones and tablets by way of sonic upgrade.

BATTERY POWER

The No. 1 is certainly portable, and comes with digital and analogue cables, a drawstring carrying case and a glorified rubber band to allow it to be strapped to your iPhone, or similar device. Its claimed

RIGHT: High quality casework gives a feeling of solidity. Analogue ins and outs are on the front panel, mini-USB to the rear

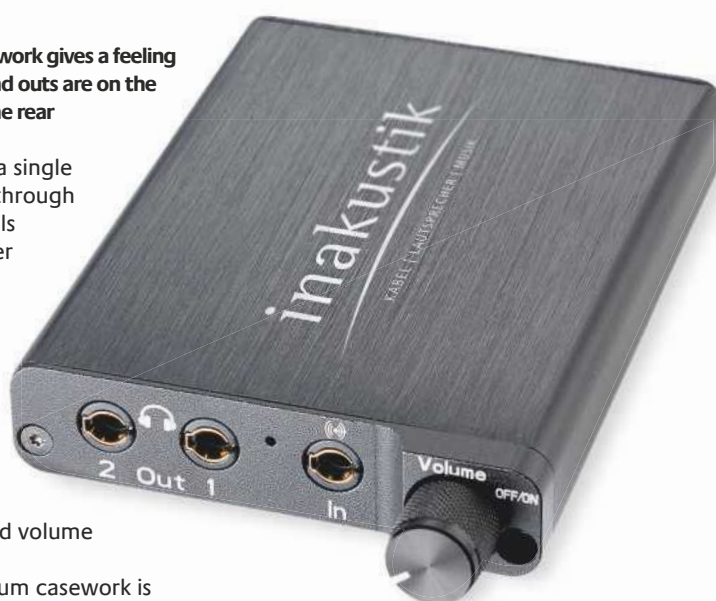
60-hour battery life on a single charge should see you through even the longest of hauls without proving a power drain on your iDevice. Controls are simple: a slider switch to the rear selects between the digital input and the front-mounted 3.5mm line-in, there are two headphone outputs also on 3.5mm sockets, and a combined volume and on-off switch.

The brushed aluminium casework is of high quality, and the whole enterprise offers a certain degree of covetability.



UP TO THE TASK

The Lab Report [p65] reveals the limitations of the No.1, in that inputs are downsampled to 48kHz/24-bit max and it has a relatively low output, at least from the onboard DAC. And yet its low output impedance means it's more than up to the



task of driving even the kind of headphones you probably wouldn't wear out and about, as loud as anyone could want. And it does so crisply, cleanly and without any serious sign of compression. Only when you really crank things up with some complex music is there any suggestion of thickening to the balance – but by that point you're up to the kind of levels where you really ought to be wearing some form of ear-defenders ... although of course you can't because you have a pair of headphones on.

Connected to my MacBook Air using the USB input, or to an Android tablet in analogue, it did a more than a reasonable job of driving my reference Oppo PM-1 headphones [*HFN* Jul '14] with the hard-driving Otis Redding/Carla Thomas cover of 'Knock On Wood', from *King & Queen* [Stax S 716], with a realistic blare to the brass (though the bass sounded just a shade laboured when levels were pushed hard).

Best of all, it conveyed the vocals remarkably well, and this ability was also reflected when playing Lake Street Dive's stripped-down, smoky version of 'I Want

INSIDE IN-AKUSTIK

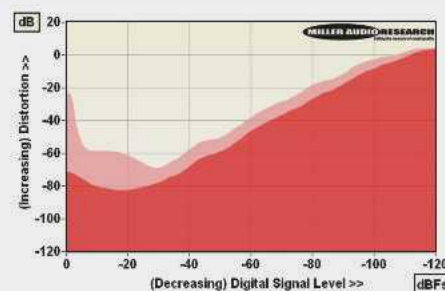
Based on the edge of the Black Forest and just coming up to its 40th anniversary, In-akustik is a brand perhaps better known in its native Germany than in the UK. It is part of the huge Braun group, best known for its high-end model railways and AmbienTech system of custom-installation cabling systems, lighting and flat-panel speakers. In-akustik itself has a wide-ranging portfolio, as the 'Kabel/Lautsprecher/Music' legend on the top of the No.1's casework suggests. The company says that 'Head, stomach, eyes and ears all get their money's worth with an excellent price-performance ratio', and while it's not quite clear where the stomach bit fits in – perhaps a diversification into listening snacks is on the cards? – the wide range of cables for both audio and video is at the core of the business. Unlike some cable companies, which buy in their 'on-the-reel' stock, In-akustik has its own cable plant in Germany, where its products are made from scratch, right down to conductor-drawing and insulation.

LAB REPORT

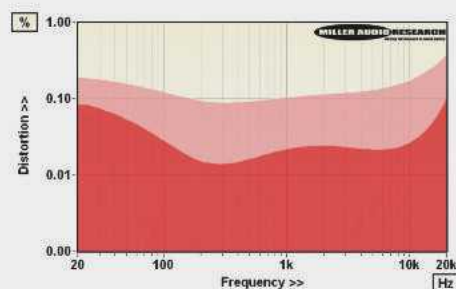
IN-AKUSTIK HEADPHONE AMP NO.1

In-akustik offers some basic measurements on the packaging for its Headphone Amp No.1, including a power specification of 320mW and THD of <0.008% at 10mW output which, when tested via its internal USB DAC, does not accord especially well with the results recorded in my lab. In practice, the No.1 delivered a full 1.6V, unloaded, at ~10% THD for 0dBFS input or 950mV at 1% THD with the rotary volume backed off accordingly. This is equivalent to 1.5mW into 600ohm, increasing to a maximum of 18mW/25ohm at 1% THD which, while some 12dB off specification, is still more than sufficient to raise damagingly high SPLs from most average sensitivity, low impedance headphones.

The performance is assisted by In-akustik having engineered a respectably low output impedance of 1.5-1.8ohm (20Hz-20kHz). Into a uniform impedance the response is flat out to 20kHz (-0.2dB) but rolls gently away at low frequencies below 100Hz to reach -1.9dB/20Hz (high impedance 'phones) to -4.3dB/20Hz (low impedance 'phones). Sample rates above 48kHz are not directly supported and so the analogue response will not exceed ~20kHz even with 96kHz or 192kHz files. The A-wtd S/N ratio is not up with the best USB headphone amps at 88.5dB, but it's far from the noisiest, while jitter is up with the budget best at 440psec. Distortion also increases with loading and output, from a best-case 0.008% (-10dBFS to -30dBFS, unloaded) to 0.03-0.1% over the same range into 25ohm [see Graph 1, below]. Readers may view a comprehensive QC Suite test report for In-akustik's Premium Headphone Amp No.1 USB DAC/headphone amplifier by navigating to www.hifinews.co.uk and clicking on the red 'download' button. PM



ABOVE: Distortion versus digital signal level at 1kHz (red = unloaded; shaded red = loaded where 0dBFS = 18mW, -10dBFS = 1.8mW and -12.6dBFS = 1mW)



ABOVE: Distortion versus frequency from 20Hz-20kHz (solid red, 1V unloaded; shaded red, 10mW into 25ohm load)

HI-FI NEWS SPECIFICATIONS

Maximum output (re. 0dBFS into 47kohm)	950mW @ 1% THD
Max. power output (re. 0dBFS into 25ohm)	18mW @ 1% THD
Output Impedance (20Hz-20kHz)	1.5-1.8ohm
A-wtd S/N ratio (re. 0dBFS)	88.5dB
Distortion (20Hz-20kHz, re. 10mW)	0.086-0.40%
Frequency response (20Hz-20kHz)	-4.25 to -0.17dB
Stereo separation (20Hz-20kHz)	46dB to 83dB
Digital jitter (unloaded/loaded at 25ohm)	440psec / 480psec
Dimensions (WHD)	57x13x90mm



ABOVE: All you need for music on the move: digital/charging and analogue cables come in the box, along with a carrying case and a band to strap the No.1 to your smartphone or player

You Back', from their *Fun Machine* EP [Signature Sounds SIG 2048]. Yes, perhaps the percussion was a little splashier than would be ideal, but the combination of Bridget Kearney's resonant upright bass and Rachael Price's to-die-for vocals, set against the simple but effective work of the band, was highly attractive.

The Count Basie Orchestra's 'April In Paris' [*Basie is Back - Live In Japan, Eighty-Eights* VRCL 18833], was presented in full-blooded fashion, complete with the polite applause of the audience for the soloists, and the In-akustik did well to deliver the scale of the orchestral forces while offering a good degree of 'listen-in' detail.

It's not quite as convincing in this respect as the considerably larger and more expensive Denon DA-10 I had to hand for comparison, which presents the music in more expressive fashion. Nor can it quite match the smoothness and simplicity of an original-model Dragonfly I also tried, but the No.1 certainly makes a persuasive case for itself across a wide range of styles.

And it shone with a high-quality recording such as the aria 'Erbarme dich, mein Gott' from the Dunedin Consort's *Bach St Matthew Passion* [Linn CKD 313], with both the soloist and the violin obbligato retaining the ability to tingle the spine.

This slightly dry, close-focused view of the music also well served James Taylor's 'Fire And Rain', from the *Sweet Baby James* album [Warner Bros 1843-2], with good character to the voice, a nice bite

to the backing strings and sensible punch when the drums kicked in.

CONSISTENT PERFORMER

What's more, tried with a range of headphones, including the B&O H6, Focal Spirit Pro and the hilariously enjoyable Phil Jones Bass PJB-850 (designed for bass players but with

so much more appeal), the little In-akustik amp retained the same kind of quality, showing how well it's able to drive a variety of loads and designs

despite its ultra-compact design.

It has a consistent performance whether with analogue or digital inputs, and even worked well with much my much-travelled Phonak PFE 012 in-ears, and easily matched the FiiO E12 battery amp I normally use, while having the advantages of smaller size, less weight and the built-in DAC the FiiO lacks. ☺

HI-FI NEWS VERDICT

In-akustik's Premium Headphone Amplifier No.1 may be a mouthful, but it's not a pocketful, thanks to its compact dimensions and ultra-low weight. It comes with all you need to use it on the move, appears to have very decent battery life and, while it doesn't set new standards in what is a highly competitive market, this dinky amp is a highly competent, solidly-built and really rather appealing travelling companion.

Sound Quality: 80%



'The In-akustik offered a good degree of "listen-in" detail'

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Wharfedale Diamond 230

Fine engineering allied to careful voicing ensures this floorstander sets the state of the budget speaker art...

Review: **Nick Tate** Lab: **Keith Howard**

Diamonds may be forever, but those of the Wharfedale variety have so far lasted 31 years, as it was in 1984 that the original tiny bookshelf model first appeared in UK shops. Since then the loudspeaker has gone through numerous incarnations, with each successive line putting the accent on getting a big sound from a small box.

However, everything in the modern world seems to be getting bigger – and that includes the Diamond in the shape of the £500 ‘intermediate’ floorstander reviewed here. So while Wharfedale still makes small standmount Diamonds (its 210s are the direct descendant of the original design), the franchise has now grown to include everything from centre speakers to really quite large floorstanders.

We have witnessed the rise of a new generation of small floorstanders from the likes of Q Acoustics [*HFN* Feb ’14] that offer the appeal of deep, earthy bass at a price previously associated with bookshelf designs. It’s an attractive formula, but notoriously difficult to get right because of the compromises that a larger, less rigid, cabinet introduces.

Peter Comeau was the man entrusted to do this – his job was to preserve the purity of this iconic line while broadening its appeal. Now Director of Design for IAG, this talented engineer was the creator of the fondly remembered Heybrook speakers of the 1980s, then subsequently he designed many of Mission’s more modern models.

The third model up the new Diamond 200 range, the 230 is the smallest floorstander and sports a new reflex-loaded cabinet sandwich construction. The baffle design is new too, along with an improved ‘Slot-Loaded Distributed Port’ that is said to reduce air turbulence.

Of course, the cabinet on a budget floorstander such as this is critical – standmount Diamonds have smaller boxes and offer every possibility of being stiffer and less resonant. So that large expanse of woodwork on a floorstander has to be resilient, otherwise the loudspeaker is going to boom and smear the desired forward output from the drivers.

SOPHISTICATED STYLE DETAILS

To this end, Wharfedale has elected to use an 18mm-thick sandwich of particleboard and MDF called ‘Crystalam’. Its 35litre cabinet is certainly quieter than some rivals when you rap it with your knuckles [see Lab Report, p71].

The front baffle is a one-piece affair painted to the same colour as the rest of the speaker, and fitted with two 165mm

woven Kevlar bass/midband drivers with semi-elliptical ‘break-up’ areas, visible as raised ‘V shapes’.

These, along with the 25mm textile dome tweeter are fitted with attractive silver-coloured, diamond-cut drive unit trim rings that add to the feeling of sophistication.

The tweeter also employs an advanced ferrite magnet system and a special waveguide around the fabric dome for improved dispersion.

Peter Comeau says he chose a 2.5-way design because this configuration parallels the twin mid/bass units to maximum effect at low bass frequencies. Had he gone for a conventional 3-way, the extra ‘punch’ of one driver would be lost further up the frequency range. Instead, both share the

RIGHT: The gloss white ‘Crystalam’ cabinet is a hybrid of variable density particle boards. It houses a 25mm soft dome tweeter and twin 165mm woven Kevlar mid/bass drivers





DIAMONDS ARE FOREVER

The first Diamond was launched in 1984, derived from research done for Wharfedale's high-end TSR102 project. In a tiny (240x185x205mm) 5.2litre vinyl-wrapped 12mm-thick chipboard box were fitted a 19mm Audax plastic dome tweeter and the company's own 120mm polypropylene-coned mid/bass driver. The result was a wonderfully musical sound with surprising bass extension for its size. In true '80s audiophile tradition, the crossover was just two elements plus a resistor to bring the tweeter level down. The next generations of Diamond were ever more polished variations on this theme. The original's 50W power handling was improved slightly and the 86dB sensitivity crept with the more balanced sounding Diamond IIs, then the Super Diamonds arrived with stronger wood veneered cabinets for nearly twice the price. The Active Diamond was an interesting idea, though arguably before its time.

load with the tweeter kicking in above 2.3kHz. As already mentioned, the bass port is a slot at the bottom of the cabinet and works in a subtle enough way to enable the 230 to be placed a little closer to boundary walls than many rivals can.

Our review samples sat 30cm into the room on their plinths and spikes, gently toed in. The smooth piano lacquered finish is excellent and comes in a choice of black, white, walnut and rosewood finishes, all of which makes the original '80s vinyl-wrapped Diamond seem quite crude.



TAUT, TIGHT AND TUNEFUL

Listening to a floorstander at this price normally requires a serious 'readjustment' of expectations. So it was a pleasant surprise to find that the humble Diamond 230 is actually a most capable performer at the price, with a clean and dry yet powerful and punchy sound. Smooth and refined beyond its price point, it is true Budget Esoterica.

Any affordable design such as this should be easy to use. The 230 was certainly simple to set up in my listening room, the main challenge being to get it properly run in. After a week of regular use its true nature came to the fore – whereas before it had sounded rather constrained, it began to deliver music in a highly engaging and involving way.

Part of the reason for this was its extended bandwidth: this speaker offered deeper bass than expected, and a more articulate one. Many small standmounts make token attempts to go down low, but end up sounding stilted. The Wharfedale's bass, however, proved really rather enjoyable.

For example, Scritti Politti's 'The Word Girl' [*Cupid And Psyche*, Virgin

CDV 2350] is a crisp 1980s recording with a powerful synthesised bass running through it. This can often overwhelm smaller floorstanders but singularly failed to knock the Diamond off course – instead it sounded taut, tight and tuneful. In turn, this meant the midband was less at the mercy of a wayward bass, resulting in a nicely open and clear presentation.

Of course, expectations of electrostatic levels of detail and insight are unrealistic, but you might still be surprised by how well it managed to capture the recorded acoustic of the song. Singer Green Gartside's beautifully silky vocals were carried with consummate smoothness, showing no real rough edges, yet the chiming digital synthesisers still came over with great visceral impact and bite. This track is a veritable assault-course for budget loudspeakers, and happily the 230 emerged unscathed.

Moving to acoustic rock music, and REM's 'Driver 8' [*Fables Of The Reconstruction*, IRS Records IRLD 19016] was on next. This is no easy ride either, being a densely layered 'wall' of Rickenbacker guitars set in front of rather leaden-sounding drums and bass guitar, overlaid with vocal harmonies.

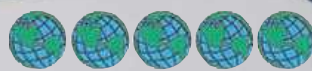
Again, the Diamond dutifully delivered the song with its mixture of refinement and power. Its drive units and cabinet proved of sufficient quality to 'get out of the way' enough to hear through the murky mix.

Indeed, the 230 has an impressively even tonality with no 'hot spots' anywhere in its frequency range that I could discern: the smoothness and competence with which this track was delivered is a testament to this. The song steamed along at a fair rate of knots, with fine resolution of the

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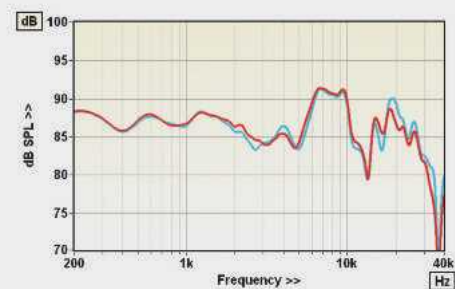
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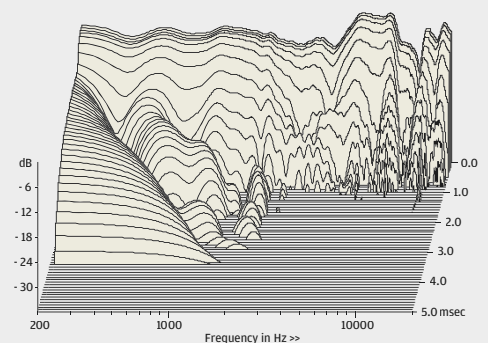
WHARFEDALE DIAMOND 230

Wharfedale claims 88dB sensitivity for the Diamond 230 but our pink noise and 'music' figures of 87.3dB and 87.1dB suggest this is slightly optimistic. Specified nominal impedance is '8ohms compatible' but with a claimed minimum of 3.7ohm – we measured a dip to 3.3ohm at 151Hz – this is clearly a 4ohm design by the normal criteria. Impedance phase angles are very well controlled so the minimum EPDR (equivalent peak dissipation resistance) of 2.2ohm at 310Hz suggests the Diamond 230 is easier to drive than many modern floorstanders even if a second EPDR dip to 2.2ohm at 107Hz adds to the amplifier's challenge.

The forward frequency response – measured on the tweeter axis with all driver covers in place – shows a flat trend to about 2kHz, followed by an octave-wide presence band dip and then an octave-wide shelf up to 10kHz [see Graph 1, below]. Thereafter a narrow notch occurs around 13kHz and there is further unevenness beyond – all down to the horn-loaded tweeter. As a result, the response errors are high at ± 6.0 dB and ± 5.9 dB respectively, and pair matching poor at ± 2.6 dB (all 200Hz–20kHz), again due to the tweeter. Below 3.5kHz the matching tightens to ± 1.0 dB. Diffraction-corrected nearfield measurement indicates a bass extension of 59Hz (–6dB re. 200Hz) which is typical for a small floorstander. Although the HF extension is quoted as 28.9kHz and 30.5kHz in our table, the first dip below –6dB actually occurs in-band at a little over 12kHz due to the aforementioned response notch. Despite these treble woes the cumulative spectral decay waterfall evinces fast energy decay and little resonance [see Graph 2]. KH



ABOVE: Forward response is even through bass and midrange but tweeter causes unevenness above 5kHz



ABOVE: Cabinet looks well controlled and, despite response errors, driver modes are also held in check

HI-FI NEWS SPECIFICATIONS

Sensitivity (SPL/1m/2.83Vrms – Mean/IEC/Music)	87.6dB/87.3dB/87.1dB
Impedance modulus min/max (20Hz–20kHz)	3.3ohm @ 151Hz 13.0ohm @ 2.6kHz
Impedance phase min/max (20Hz–20kHz)	–29° @ 4.7kHz 30° @ 601Hz
Pair matching (200Hz–20kHz)	± 2.6 dB
LF/HF extension (–6dB ref 200Hz/10kHz)	59Hz / 28.9kHz/30.5kHz
THD 100Hz/1kHz/10kHz (for 90dB SPL/1m)	0.5% / 0.6% / 0.1%
Dimensions (HWD)	938x196x306mm

LEFT: Slotted distribution bass port integrates with the 230's baseplate which holds its adjustable spikes. The gold-plated terminals are bi-wire ready

Indeed, this speaker can throw images out into the room with real accuracy and hang them back surprisingly well too. Ultimately, I would have liked a better sense of space to the midband, and a little more air in the treble – but for the money the Diamond is excellent.

POWER FOR THE PRICE

Again, it really locked onto the sinuous rhythms of the song, and pushed things along in a positive, pacy way. This naturally musical gait, allied to a relatively deep and largely effortless bass, gave this speaker a physicality and power that I haven't previously heard at the price.

Only when you feed it really high quality recordings do you begin to see what compromises have been made. For example, the Avison Ensemble's recording of Corelli's *Concerti Grossi* Op.6 [Linn CKD 411] showed a slightly 'cuppy' quality to the midband, the tendency to compress dynamic transients and a loss of very low level detail.

I'd also have been tempted to suggest the Diamond 230's relatively large cabinet was joining in the fun and adding some of its own coloration (the Lab Report indicates otherwise) but some midband strings still sounded a little 'rubbery'. No loudspeaker is without issues of course, so it's all the more surprising that the Wharfedale does so well at its bargain-basement price. ☺

HI-FI NEWS VERDICT

To date, £500 floorstanders have often been more about showroom appeal than serious sound. Yet this new Diamond turns in a musical performance surprisingly devoid of problems. Smooth, open and detailed yet powerful and confident, it transcends its apparent limitations to deliver excellent results. Factor in attractive styling and fine build, and what's not to like about this little gem?

Sound Quality: 80%



leading edges of notes and good tracking of dynamics; the result was a highly enjoyable listen.

'Alfie's Theme' from Sonny Rollins [*Alfie OST*, Impulse IMP 12242] underlined quite how polished a 2015 Wharfedale Diamond can be. The cymbal sound was very good for a budget speaker – crisp and fairly delicate, it integrated well with the wide, spacious midband.

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Paul Miller, Hi-Fi News, March 2015



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BEHIND THE MUSIC WITH HI-FI NEWS & RECORD REVIEW

Wilhelm Furtwängler *A controversial figure*

The German conductor's decision to stay in Berlin during World War 2 has been much debated over the years. **Christopher Breunig** has been listening to his records

You may think Glenn Gould's 1962 performance of Brahms's D minor Piano Concerto [Sony 82876787532] beyond the pale – his accompanying conductor, Bernstein, disassociated himself from what they were about to do – but it's nothing compared with a 1943 radio recording of No 2 in B-flat with pianist Adrian Aeschbacher, who careers into both opening movements as if playing a Liszt virtuoso study. He was aided and abetted by Wilhelm Furtwängler, no less extreme in wild tempi: very different from those in the properly spacious performance given a year earlier with the Swiss pianist Edwin Fischer (25m 36s versus 21m 49s for those two movements together).

But, on a far more serious level, Furtwängler's decision to stay in wartime Germany where he became a political tool of the Nazis, aiding

→ **HMV's sleeve for the 1951 Bayreuth Festival Beethoven Ninth Symphony**

← **The German conductor Wilhelm Furtwängler was with the Berlin Philharmonic Orchestra from 1922-45 and then from 1952-4**



and abetting their propaganda efforts, has long been discussed.

(His consequent investigation by the Americans was the subject of a stage play by Ronald Harwood, later filmed: *Taking Sides*. Appointed chief conductor to the Berlin Philharmonic in 1922 Furtwängler was only reinstated there for the last two years of his life in 1952.)

Firm in his belief that National Socialism was transient and that his principal duty was to try to uphold true cultural values had meant that with each gesture of resistance he became more enmeshed with the regime, until the threat of Gestapo arrest drove him to Switzerland.

As part of his immediate postwar compassionate work in Germany, Yehudi Menuhin agreed to appear with Furtwängler in Vienna and Lucerne, in 1947, then giving two concerts at the Titania Palast, Berlin that September (full details at http://www.academia.edu/3102687/Music_and_Politics_after_the_Holocaust).

He found 'a man who embodied all that is great and noble in the German tradition. It was a privilege to discover with him, amidst the

ruins of Berlin, the beginnings of a new Germany.'

Their 1947/49 Lucerne Festival recordings of the Beethoven and Brahms concertos are widely admired and in 1953 they remade the Beethoven for EMI, also recording the Bartók Second Violin Concerto with the Philharmonia.

THE CONCERT REPERTOIRE

Furtwängler is mostly heard on numerous current live and studio recordings in Beethoven, Brahms, Bruckner and Richard Strauss, but his repertoire embraced Sibelius (never popular in Germany), Hindemith, the more conservative Pfitzner and Reger. He gave the world premiere

of Schoenberg's *Orchestral Variations*, a single account of *The Rite Of Spring* (thereafter simpler pieces like *The Fairy's Kiss* and *Orchestral Suites*).

'He felt his duty was to uphold true German cultural values'

Works by Ravel, Debussy, Honegger and Bartók were only occasionally programmed with the Berliners.

Furtwängler also introduced his own Symphony No 2, premiered in Feb 1947. It's a sprawling work in a Regerish idiom, with passages of nightmarish tension. Although he made a DG studio recording, the one to hear is from 1953, live with the Vienna Philharmonic [Orfeo d'Or C3759418]. The symphony has also been recorded by Eugen Jochum and Daniel Barenboim.

Barenboim was considerably influenced by the German conductor, whom he first met when a conducting student of Igor Markevitch, in 1954. He sat in on rehearsals at Salzburg (mostly of transition passages, where he could be revelatory) then absorbed what he could from the recordings

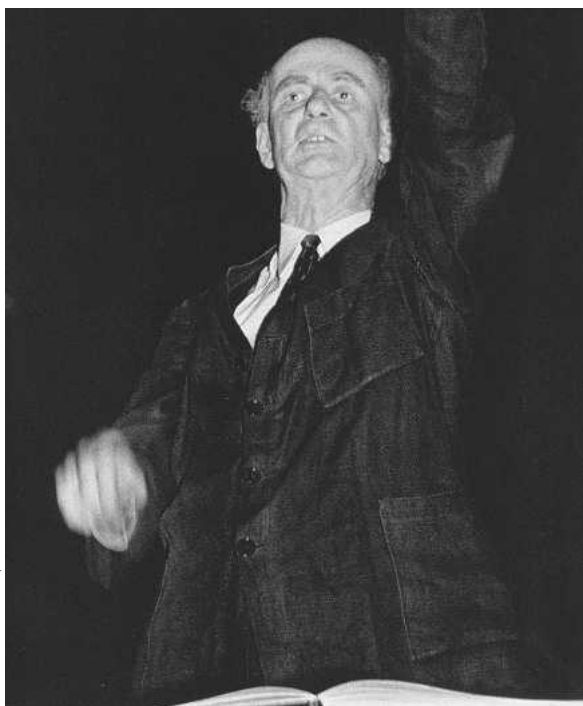


PHOTO: ROGER HALLERT/RENÉ KSTER

and the marked scores left by Furtwängler – on his own website there's an essay on 'why Wilhelm Furtwängler still moves us today'.

Ten years into the stereo era and EMI began thinning its catalogue of the (all mono) Furtwängler LPs. But in 1968 a young former policeman, John Goldsmith, who had set up Unicorn Records, producing new works with Jascha Horenstein, Bernard Herrmann, *et al*, also issued Furtwängler material, some EMI licensed, but mainly from Melodiya sources. When the Soviets overran Berlin they had taken 1940s radio tapes back to Moscow, some of which were transferred to commercial LPs (to the later delight of Barenboim and Ashkenazy). Only in 1987 were they returned to SF Berlin when DG promptly issued them as CDs [427 773-2, 11 discs].

Although the fine Brahms Piano Concerto No 2 with Edwin Fischer



PHOTO: ROGER HAUERT / RENÉ KISTER

was on Unicorn, then later on an EMI Références LP, and has survived [Testament SBT1170 with a 78rpm filler of part of the conductor's *Symphonic Concerto*], the exciting Sibelius Violin Concerto with Georg Kulenkampf has now seemingly disappeared from any catalogues.

LOUDER EQUALS FASTER

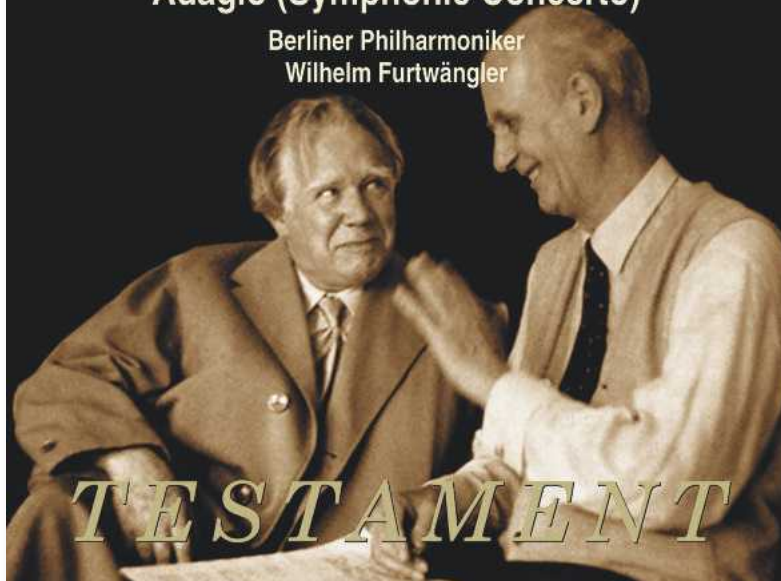
Five years his junior, Hermann Scherchen made some critical notes during Furtwängler rehearsals in Zurich in 1941. Surprisingly, he found 'something erotic... a way of playing derived from sex' in the conducting style. He also noted 'a sort of sublime diletantism... he accelerates with crescendos and calms with decrescendos. It transforms [the music's] essence.' It was a habit which infuriated

→ The 1942 radio recording of Brahms's Piano Concerto No 2 with Edwin Fischer is now on Testament

← Furtwängler with Yehudi Menuhin, who played in Berlin in 1947 as an act of reconciliation

Edwin Fischer Brahms: Piano Concerto No.2 Furtwängler Adagio (Symphonic Concerto)

Berliner Philharmoniker
Wilhelm Furtwängler



English record critics: the EMG *Monthly Letter* frequently called him 'a vandal' and really only approved of his Wagner. I remember being told they never stocked his (acclaimed) Beethoven Ninth 'on artistic grounds'. This was the Bayreuth Festival recording from 1951, unusual at a time when *live* recordings were very rarely issued. Years later a genuine radio tape was issued on CD [see boxout] and it was mooted that the EMI set (sleeve pictured opposite) was actually a live/rehearsal composite.

A DEFEATED ARMY?

We have had a confusingly wide range of posthumously issued Furtwängler performances, multiple

Beethoven Symphonies Nos 3, 5, 6 and 9 in particular. All the RIAS Radio tapes are on Audite, both as CD or vinyl sets (44.1kHz/16-bit at www.theclassicalshop.net), Tahra has made various commemorative CD sets – notably the out-of-print FURT1090-93, with its copious portrait photos – while Music & Arts has single CDs.

Preparing this article I listened to a 1954 Berlin performance of Beethoven's Symphony No 5, where each of the '---' motto entries was treated differently and where the *Andante* sounded like a ghost army in retreat, intermittently recalling past glories. In principle it was a distortion; in reality it opened doors to the music. ☺

ESSENTIAL RECORDINGS

Beethoven, Symphony No 9 (Bayreuth)

Orfeo d'Or C754081B

The actual live recording from 1951 [see text].

Beethoven Violin Concerto (Menuhin); Mozart Symphony No 40; VPO

Naxos 8.110996

Furtwängler was one of the few to observe the 'allegro molto' first-movt of the G-minor Symphony. The Menuhin is from EMI's 1947 Lucerne Festival Orchestra 78rpm version.

Haydn Symphony 88 in G; Schubert Symphony 9 'Great C major'; BPO

DG E4474392

Fine Haydn and an unforgettable Schubert recording much praised by Claudio Arrau.

Tchaikovsky, Symphony No 6 (BPO)

Naxos 8.110865

This tremendous 1938 'Pathétique' appeared on Novello: an obscure CD label. Happily it's restored on Naxos, with the Tristan Prelude & Liebestod, also BPO/1938. Transfer engineer: Mark Obert-Thorn.

Wagner, Tristan und Isolde; Flagstad, Suthaus, et al, Philharmonia Orchestra

EMI 5858732

Other Furtwängler Wagner operas (eg, from the Ring cycle) are in poor sound but this studio classic is pretty exemplary mono. A young Fischer-Dieskau sings Kurwenal; a high note splice from Schwarzkopf was famously cut into one of Flagstad's passages.

Vinyl Release

BEHIND THE MUSIC WITH HI-FI NEWS & RECORD REVIEW

Robert Palmer *Sneakin' Sally...*

Could the one-time UK pub circuit singer hold his own amid a who's who of R&B giants? **Steve Sutherland** hears Robert Palmer's debut solo LP, now on 180g vinyl

I've interviewed a fair number of musicians and pop stars in my time and I've been enthralled, enlightened, threatened, walked-out-on and bored quite a lot in the process. But the full-blown hissy-fit – well, that's a true rarity.

In fact, I can only recall three real screaming ab-dabs. One top stropper was Stevie Nicks during her drug-befuddled '80s solo years. She caterwauled considerably because a telephone was ringing in the next room, disturbing her karma. Another was Nick Cave who totally wiggled out when I wouldn't surrender my interview tape. This was back in The Birthday Party days and apparently I asked too many questions about violence and suchlike. Nick, by the way, still had blood on his boots from kicking front row punks in the face.

And the third pertains to Robert Palmer. This encounter occurred back in 1985, some 11 years after the album we're here to celebrate. Bob, as we shall call him, was in an Islington studio getting ready for a photo session with John Taylor of Duran Duran for an article I was writing about them for *Melody Maker*. The occasion was the release of the debut LP by The Power Station, the 'supergroup' comprising Bob, JT, JT's bandmate John Taylor and Tony Thompson of Chic. The unit was named after the New York recording studio where they liked

to work and the lads were having considerable success wooing the airwaves with their faux-funky singles 'Some Like It Hot' and 'Get It On (Bang A Gong)', a muscular cover of the T Rex classic.

'Edgy, efficient and polite, he was more like a businessman than a crooner'

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...



I knew JT from many Duran encounters – he was suavely hungover as usual – but I had never met Bob who, I noted at the time, was 'edgy, efficient and polite' in his bearing. I recall he carried himself more like a businessman than a crooner, had a flawless tan from hanging out at his pad in Nassau and spent most of the afternoon 'elegantly apart' from the usual goings-on that precede a photo shoot.

Once the session is underway, however, he transfigures into Adonis incarnate. Between every single shot, he's

calling over the hairdresser in attendance to squirt stuff on his hair and fluff it up to his satisfaction. And watch out, 'cos here comes the ranting and raving! In all the squirting and the fluffing, the hapless hairdresser inadvertently drips something onto Bob's tie and Bob, not to put too fine a point on it, goes absolutely ape.

ALL IN KNOTS...

Screaming fit to bust the blood vessels standing out on his temples, he calls the cowering hairdresser just about every cretin under the sun and insists the session be halted immediately, and the tie taken off, and out of his sight to be thoroughly cleaned before the shoot can resume. No clean tie, he makes it very clear, no more photos! Then Bob stomps off in a huff into an ante-room only to reappear some minutes later somewhat more composed.

The tie was 'liver-coloured', he offers, by way of explanation. 'Liver-coloured', he repeats, his voice now a mixture of awe and sorrow. 'I've been looking for a liver-coloured tie like that for five years and I've only had it two days!'

Commiserations naturally pour forth, Bob is somewhat calmed, the hairdresser un-spooked, the tie cleaned and pressed and the shoot resumed. That Bob, eh? What a stylish geezer, and what a stickler



EMI RECORDS UK / FABIO NOSOTTI

➔ The singer/songwriter Robert Palmer pictured in 1994. After a highly successful career he died in a Paris hotel room from a heart attack in September 2003, aged just 54



➔ Priced £24.99, the 180g vinyl reissue of *Sneakin' Sally Through The Alley* on the MOV label is available at www.amazon.co.uk

for detail! And these, dear reader, are precisely the character traits which made *Sneakin' Sally Through The Alley*, Bob's debut solo album, such a gas.

Bob had started out as a singer on the UK pub and club circuit with a couple of bands – Dada, a 12-piece jazz-rock outfit, and the blues-ier Vinegar Joe, who got great reviews but didn't sell any records.

In both bands, Bob shared his upfront duties with a vocal belter called Elkie Brooks so deciding to step out on his own showed quite some courage and self-belief. As did his next manoeuvre.

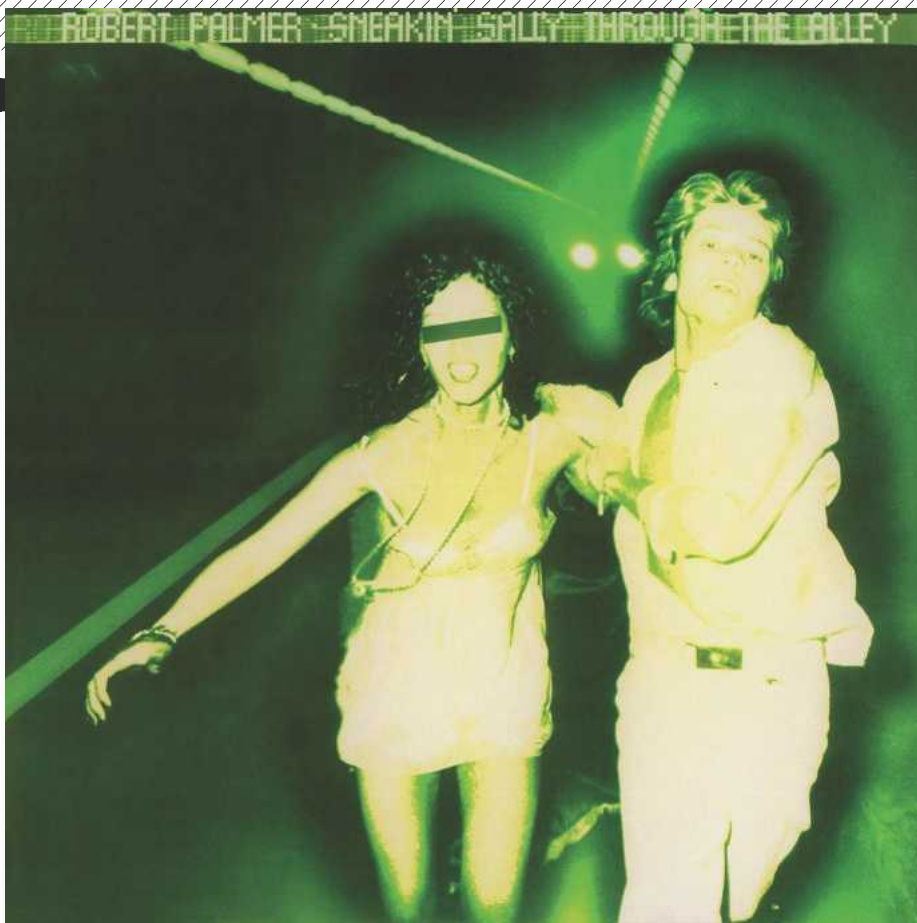
GROOVY NUMBERS

More a stylist than an innovator, Bob audaciously shifted his base from London to New Orleans, sifted out three recent extremely groovy numbers deserving of wider attention and recruited two of the hottest contemporary talents in the world to back him up on them.

One of these talents was Lowell George who, at this juncture, was in a similar pickle to Bob. He'd left his steady employment, as a guitarist and singer in the employ of Frank Zappa's Mothers Of Invention, to start his own band, the superb Little Feat. But his new outfit's first two albums – *Little Feat* and *Sailin' Shoes* – while adored by a few in the know, were roundly ignored by the rent-paying public.

Discouraged, Lowell had split up the band and was a gun for hire, lending the considerable kudos of his signature slide guitar work to such tasteful LPs as John Cale's *Paris 1919*, Harry Nilsson's *Son Of Schmilsson* and John Sebastian's *Tarzana Kid*. And that's when Bob came a-calling.

The result was that *Sneaking Sally...* kicks off with a highly satisfying, slightly funk-up facsimile of *Sailin' Shoes*' title track, liberally spiced up with Lowell's slide, which also adds shivering cool to four of the album's other tracks including the Bob/Lowell co-written 'Blackmail'.



The other talents Bob called up were ace songwriter and producer Allen Toussaint's cracking house band The Meters – Art Neville on keyboards, Leo Nocentelli on guitar, George Porter Jr on bass and Joseph Modeliste on drums. This was the crew who cooked up the gumbo behind such irresistible hits as Lee Dorsey's 'Workin' In A Coalmine'. And indeed, the track 'Sneakin' Sally Through The Alley' itself had been originally recorded by Dorsey under Toussaint's tutelage with The Meters backing back in 1970.

Bob also tackled Toussaint's 'From A Whisper To A Scream', which had appeared on the producer's eponymous second solo LP in 1971, so this was all kid-in-a-sweet-shop stuff as far as Bob was concerned.

FRISKY START

Hero worship's one thing, though. Holding your own in the presence of giants is something else entirely and it's to Bob's great credit that he more than cut the mustard. The opening salvo of 'Sailin' Shoes' morphing into Bob's own sprightly 'Hey Julia' and then into the title track itself is as frisky a start to an album as was ever recorded, while the closing 12-plus minutes of 'Through It All There's You' is as smooth and assured a stroll through style over content as you're ever likely to hear.

The album didn't exactly set the world on fire but as a springboard for future

career developments it served just fine. Bob chose Lowell to produce his next LP, *Pressure Drop*, and Little Feat toured it with him. Lowell went on to work with The Meters on their splendid *Rejuvenation* album, providing lovely guitar for their killer single 'Just Kissed My Baby'.

When Bob got briefly really big in 1986 with his 'Addicted To Love' single, his tasty groove was firmly established, the models in the little black dresses in the famous video were classically manicured, the singer's hair was wonderfully pouffed and his tie, of course, was spotless. ☺

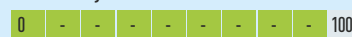
RE-RELEASE VERDICT

Reissued on the Music On Vinyl label, this 180g pressing comes in a 3mm-thick sleeve sporting a high quality reproduction of the artwork found on the original LP cover.

Produced by Steve Smith, the sound here is clear and detailed yet still full, Palmer's close-miked and double-tracked vocals as rich in tone as you're likely to hear them on any copy of *Sneakin' Sally Through The Alley* released so far.

The fact that our copy was silent, flat and exhibited no manufacturing flaws only adds to the appeal. HFN

Sound Quality: 89%





Todd Rundgren *Something /...*

A double album in a gatefold sleeve housing inserts printed on folded glossy paper and twin platters piled so high with catchy tunes they're virtually tumbling off the sides... Todd Rundgren made more concise LPs, but his third solo album remains his masterpiece
Words: **Mike Barnes**

Like many of his American teenage contemporaries, Todd Rundgren, born in 1948, was a fan of the so-called British Invasion of the mid-'60s in which bands like The Beatles, The Who, The Kinks and The Rolling Stones took the rock 'n' roll music that had sprung up in the US a decade previously and delivered it back with a youthful, modern sharpness.

Rundgren had played in a school blues band, Woody's Truck Stop, but his first group of significance was The Nazz, formed in his home town of Philadelphia in 1967. Also influenced by The Move and the heavier, more flamboyant sounds of Cream, they were a cut above the average Anglophile bands of the day, allying a garage rock urgency to strong pop melodies.

OVER MANAGED

Rundgren wrote almost all of their material, but was developing too quickly to be happy within the group's stylistic confines and they split up in 1970 having made two albums. Looking back on the era in 2012, Rundgren claimed that the group were 'over-managed' and that they fought all the time. He had intended their second album, *Nazz Nazz*, to be a double album, but some of his piano-based songs, redolent of Carole King and Laura Nyro in particular, were rejected.

Rundgren carried on this compositional tack on his solo albums *Runt* (1970) and *Runt: The Ballad Of Todd Rundgren* (1971), which were favourably received. This prompting a cynical cash-in move

**"Go ahead.
Ignore me."**



Take no chances.
Something/Anything?,
a twin-pack of
Todd Rundgren albums
on Bearsville Records.

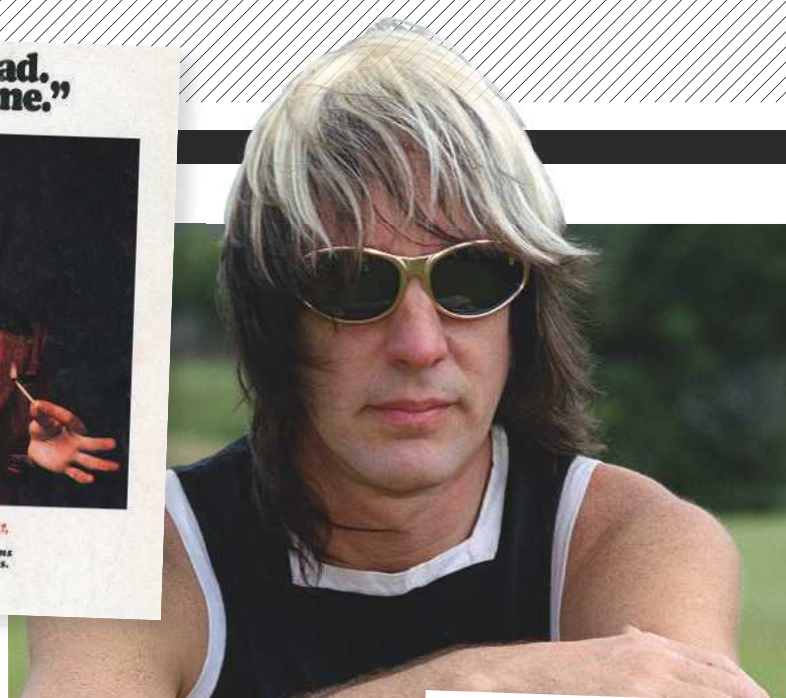
↑ Original poster from 1972 promoting the album

↗ Promo shot of Rundgren used by Esoteric Recordings in 2013

↗ In concert during the early '70s

↗ On stage in March 2009 at Fort Lauderdale

↙ Rear of gatefold LP sleeve with photo of Rundgren by Les Underhill, and LP label



in which the rejected Nazz material was released as *Nazz III* after the band had split, with many of Rundgren's original vocals replaced by those of Robert Antoni.

This only reinforced Rundgren's view that the record industry was 'sleazy'. He didn't want to be in a band and intended specialising in studio production and "finding a niche" where he could operate and release his records. He then became an in-house producer at the Bearsville

Stage Fright album, his abrasive attitude prompted drummer Levon Helm to chase him and threaten him with physical violence. Taking over George Harrison's production

on Badfinger's *Straight Up* in London in autumn 1971, he immediately alienated the group. But overall Grossman was pleased

**'His attitude saw
Levon Helm
threaten him with
physical violence'**

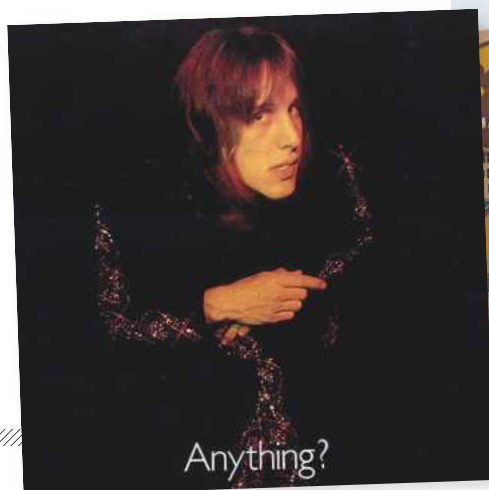
Studios near Woodstock in New York State, owned by Bob Dylan's former manager, Albert Grossman.

LACKING SKILLS

As a record producer, Rundgren was talented, but young and brash, and was decidedly lacking in the skills of people management. In the sessions for The Band's

with what the young studio whiz was achieving. He was generating a lot of musical ideas of his own and, as a proven artist, Grossman gave him a fairly modest budget towards the end of 1971 to go and record an album for his newly formed Bearsville Record label.

Grossman was amazed when months later he was presented with *Something/Anything?*, a double album of staggeringly high quality. ➤



VINYL ICONS

PRODUCTION NOTES

When Rundgren started recording at ID Studios in Los Angeles, he also borrowed a Scully 8-track machine, which he set up at his rented apartment. He would get to ID at about 1am, work and then come home, adding guitar and vocal overdubs until 4am: 'It was all I did – I loved it,' he said in 2012.

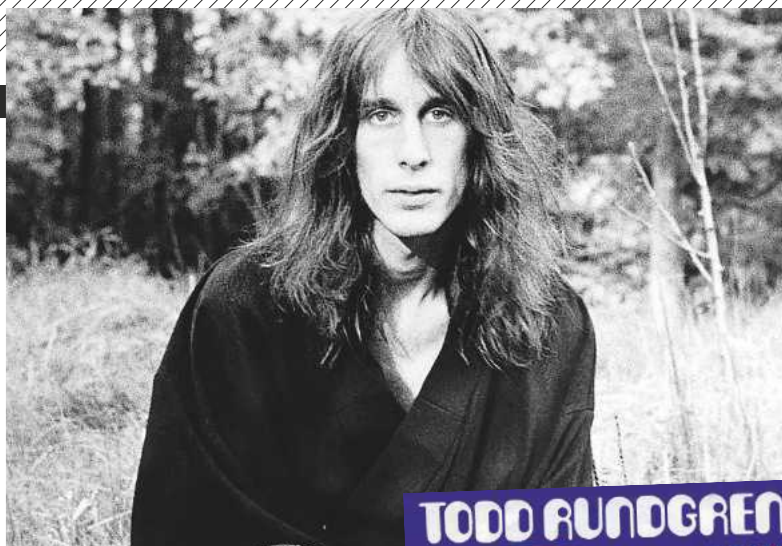
The engineer at ID was James Lowe, former vocalist of psychedelic garage band The Electric Prunes. Lowe took the rather unusual step at the time of mixing up each drum individually to isolate them for further processing. When Rundgren started laying down his drum tracks, Lowe found his methods baffling.

'I was never sure exactly where the song was going until we'd put down about four or five tracks,' said Lowe in 2006. 'He'd leave these blank spaces all over the place – there would be eight or 12 bars of nothing – and then he'd just go back afterward and pop in a piano or guitar in that spot. As a result, I was mostly working in the dark.'

Rundgren wanted a big punchy sound. On 'Couldn't I Just Tell You' his acoustic guitar was put through a Techtronics limiter (compressor) on maximum gain, as were a lot of other instruments in order to get something with, in Lowe's words, 'a little more bite than usual'.

The side-four full-band sessions were recorded at ID, then Rundgren and Lowe moved to The Record Plant in New York and Bearsville Studios where the final vocals were added.

Lowe took the photo seen on the inside cover of *Something/Anything?* when Rundgren was recording in his apartment. The sight of a Neumann microphone taped to a broomstick was an amusing, but powerful, statement of independence.



Rundgren temporarily decamped to Los Angeles where he recorded at the independent ID Studios. Just to make sure that what was recorded was exactly as he wanted, Rundgren decided to play all the instruments himself. While this was remarkable, it certainly wasn't unprecedented. Paul McCartney had played all the instruments on his debut solo album, *McCartney*, and had done so on a number of tracks while still a member of The Beatles.

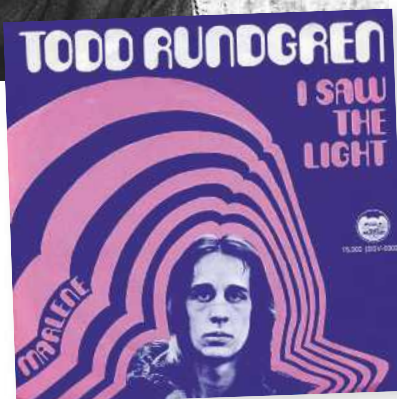
Meanwhile, Pete Townsend was laying down tracks in his home studio for a solo album, *Who Came First*, and Stevie Wonder was already playing most of the instruments on *Music For My Mind*. Both the Townsend and Wonder albums were released later in 1972.

PRIMARY COLOURS

Something/Anything? was a remarkable step forward in that it encompassed elements of The Nazz's 'power pop', the crafted Laura Nyro-esque pop balladry that Rundgren loved so much and, on a song like 'It Wouldn't Have Made Any Difference', the smooth stylings of Philadelphia Soul.

Add to these the influences of Motown, hard rock, Brian Wilson's knack of vocal harmonies and studio experimentation and you have a vivid, primary coloured puzzle made of many pieces. The instrumental 'Breathless', a piece of dayglo psychedelia, sounded like it had come from somewhere else again.

One of the strangest aspects of the whole album was the



consistently high standard of songwriting. Listening now, one might well assume that most tracks had arrived in the studio as pop

gems awaiting their final polishing, but many were worked up in the studio from fragments or single ideas. Rundgren has

said that the sublime 'I Saw The Light' took him about 20 minutes to write. Habitually teetotal, he had found a novel way of both opening his mind and focusing his creativity through a combination of cannabis and Ritalin. Rundgren surprised himself by the speed at which he worked, although this did give rise to some rather perfunctory rhyming in the lyrics.

As Rundgren didn't like playing with a drum machine, the one-man band started with the drum track. 'If I screwed up I had to rewrite the song,' he said in 2012. 'It can make it more coherent than'

Press shot issued by the Bearsville label in the late '70s. The image was used on the cover of Rundgren's eighth solo album, *Hermit Of Mink Hollow*, released in 1978

'I Saw The Light' 7in reached the UK Top 40 and No 16 in the US Billboard chart

Part of the album insert comprised a collage of images taken during the recording session

On stage in 1978, a year Rundgren toured with a quadraphonic PA, though he abandoned it due to technical difficulties





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The Absolute Sound, Issue 246, Oct - '14



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Alternate Format Discography



➔ Rundgren captured on camera by a fan in 2009

when it's played by better players and you know what they are all doing because they are all you.'

On 'Couldn't I Just Tell You', he accents the words of the lines 'I'm not afraid to feel the way that I do' by playing the bass and snare slightly behind the beat, but consistently each time he does it, so adding to the song's dynamic.

Similarly, on the soul rock stomper 'Wolfman Jack' he hangs back on the backbeat before pushing the tempo slightly when playing eighth beats on the hi-hat – but then this is what groups tended to do before the rhythmic strictures of the click track.

LIVE SIDE

Realising that he had enough material for a double album Rundgren decided to finish the album in completely the opposite way – with a live side with few overdubs – simply because he was becoming tired of doing everything himself. The best musicians that his friend Mark Moogy Klingman could muster up appeared on the sessions including guitarist Rick Derringer and saxophonist Michael Brecker and trumpet-playing brother, Randy.

Rundgren realised that his 'concepts were going to be album oriented', but 'Hello It's Me', a cover of the Nazz song released in late 1973 gave him a hit single in the US, peaking at No 5 in the Billboard charts. The album itself peaked at No 29 and went gold three years after release. It's still viewed as one of the most consistent statements of a career that would be hallmarked by a kind of brilliant inconsistency. *Something/Anything?* showed what Rundgren could do and gave him a wide choice of avenues to go down. Over the coming decades he would assiduously explore them all. ☺



ORIGINAL LP

Something/Anything? was released in February 1972 as a double LP in a gatefold sleeve on Bearsville Records in the US and Australia [2 BX 2066]. A particularly rare US version has side one mislabelled as side three.

Some of the earliest 1972 US versions came with a lyrics and credits insert on glossy paper that was folded and opened out concertina-style, with a running order error on side four.

A striking promo was made available for the album [2 BX 2066] – a gatefold sleeve, insert, and one dark red and one dark blue LP disc [see opposite, centre]. The UK version was also released on Bearsville [K65501].

The Canadian version had the same serial number as the US release, but was the only one of the initial pressings that comprised two LPs in a single sleeve.

Whereas Bearsville was part of Warner Bros and distributed by WEA Records, the New Zealand version was released on Warner Bros [2-WBS 2066], while the version for the Netherlands was released on Ariola Benelux BV [300 654] with a lyrics and credits insert. The German version, on Bearsville, had a different catalogue number [BEA 65 501].

CASSETTE RELEASE

The album came out on cassette in the US only [L5 2066]. Released in February 1972, it appeared as a double-play cassette, advertised as being 'Equal to two albums'.

LATER VINYL RELEASES

A Spanish version of the gatefold LP, part of the Serie Pioneros series, was released on Warner Brothers in 1977 [500-205/6 S]. Some – although oddly, not all –

titles are translated into Spanish on the sleeve and the label, with some spelling and translation errors.

A later Spanish version – from 1979 – was released on the Bearsville label [2 BX 2066], this time without the translations. It



was released again in the UK on the Essential label in 1989 [ESDLP007] in a gatefold sleeve.

CD RELEASES

The first CD release was in the Netherlands in 1988 on Bearsville [BRCD 2066]. It was released on CD a year later in the UK on Essential [ESD CD 007] and came with a single page liner note insert.

The first US CD appeared in 1990 on Rhino Records [R2 71107, R2DD 71107] and in 1993 Rhino licensed this version to the audiophile label Mobile Fidelity Sound Lab for a release on two gold discs [UDCD 2-591].

Something/Anything? saw a further CD release in the UK in 1999, again on the Essential label,

ORIGINAL MASTER RECORDING™



but this time bearing the catalogue number ECD CD 672.

A special remastered Japanese CD came out on Bearsville in 2008 in a replica gatefold sleeve as part of the Victor Music 80! Series [VICP-64203-4]. In 2011 Rhino reissued the 1990 version in the US, but this time in a slim double jewel case with a single fold-out booklet

EXTRA TRACKS

The first reissue to come with bonus tracks was released in Europe on Edsel. It came with an alternative version of 'It Wouldn't Have Made Any Difference' from the Bearsville Studio sessions and 'Something/Anything? Promos # 1-6', which was a series of very short radio

promos. These were originally released on *Somewhere/Anywhere*, a Japan-only Bearsville compilation of rarities [VICP-60492].

In 2012 a Japanese version of the album appeared on Bearsville [VICP-75036~7] and came in a card replica gatefold sleeve. It included a number of additional extra tracks. These were 'I Saw The Light' (Mono Version); 'Hello It's Me' (Edit Version); 'Wolfman Jack' (Alternate Version and Mono Version); and 'It Wouldn't Have Made Any Difference' (Live/Edit Version).



VINYL REISSUE

The first vinyl reissue of the album came in a gatefold sleeve on Rhino/Bearsville [RNDA 71107] in 1993. This version was also licensed to Mobile Fidelity Sound Lab, which released a limited edition version that same year [MFSL 2-225].

The first vinyl reissue to appear on 180g vinyl was on Bearsville/Rhino in 2011 [RH1 71107]. Remastered by Chris Bellman, it was pressed by Record Technology Incorporated in California.

Colston Hall, *Bristol*

From sugar house to school to live concert venue, music by major names – rock, jazz and classical – has been enjoyed at this concert hall since 1867. **Steve Sutherland** takes you to the heart of the live music experience with the story of the Colston Hall in Bristol

You may recall that one of last year's biggest news stories involved Donald T Sterling, the long-time owner of the Los Angeles Clippers, who was banned for life by the National Basketball Association after a recording was released of him making disparaging remarks to a female companion about her 'associating with black people'.

You may also recall that this nasty episode rekindled a controversy that has been simmering for decades regarding Washington's representatives in the National Football League. They're called the Redskins, their logo is a cartoon 'Indian' and many protest groups are unhappy that the franchise celebrates the denigration of Native American citizens, not least because the term 'redskin' is derogatory and, some say, refers back to the time when soldiers were rewarded for delivering the scalps of their indigenous foe.

SUGAR HOUSE

What you may not have heard, though, is that there is a similar troubling scenario involving the venue we're here to celebrate. It was built on a site that first accommodated a Carmelite Friary that was founded in 1267 and demolished when Henry VIII did in the monasteries. Then a great house



↗ **Colston Hall as it appears today. It seats just over 2000 and is now a Grade II listed building**

↖ **The newly formed Led Zeppelin took to the Colston Hall stage on the 21st of June 1969**



was built by Sir John Young, which Elizabeth 1 used as a stopover on a jaunt to Wales in 1574. By 1693 the building had been converted by John Knight Jr into a sugar house, refining the raw imports from Caribbean plantations on the islands of Montserrat, Nevis and Barbados.

Many of these plantations were owned and managed by Bristol businessmen and one of these was Edward Colston, a merchant and MP, who bought the sugar house in 1708 and converted it into a boarding school for boys, known as Colston's Hospital, later renamed as Colston's School.

The purpose of the school was wholly generous: 'to educate in the principles of the Church of England, and to maintain and clothe 100 poor boys, and to place them out to apprentice.' This, and other such charitable acts, meant that, when the school needed to expand and moved in 1861, the building, which became a concert hall, retained Colston's name, along with other Bristol landmarks such as Colston Avenue, Colston Street, Colston

Tower and several schools which, to this day, honour his memory every 13th of November, when a Colston Bun is given out for the kids to scoff.

Colston died in 1861, a statue was erected in Bristol in his honour, and over the many ensuing years the concert hall has retained his name. However, there are those who are angered by this. Their argument is that, although Colston may have been responsible for many philanthropic acts, the wealth that

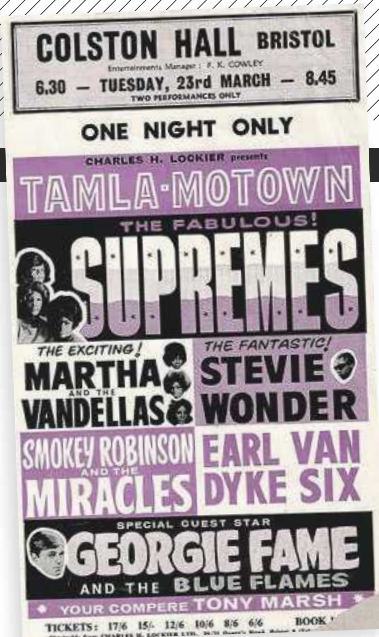
allowed these acts to happen were built on the fact that Colston was a big player in the slave trade.

Colston's plantations were worked by slaves

'Student types flour-bombed The Beatles from the lighting rig'

and his business was based on this most gross of inhumanities, a fact that was highlighted in 1998 when the words 'Slave Trader' were daubed across the base of his statue. Bristol is a city renowned for its vibrant multiculturalism and local bands like Massive Attack declared they would never play their prestigious home town venue while it continued to market itself under Colston's name.





The stand-off continues, so far as I know, but thankfully there is still much to enjoy in the venue's rich history. A devastating fire nearly put an end to it in 1898 but it reopened two years later with a fancy organ donated by the Wills family of tobacco fame. It burned down again in 1945 and this time it took six years to get it rebuilt, the grand re-opening starring a performance by Sir Thomas Beecham conducting The Royal Philharmonic Orchestra, a splendid gathering by all accounts, attended by the Duke of Gloucester.

Since then it's hosted some brilliant stuff. Jazz reigned at first – Lionel Hampton and his orchestra ('56), Count Basie ('57), Duke Ellington with Ella Fitzgerald, Dizzy Gillespie and Oscar Peterson ('58), Louis Armstrong ('59), Miles Davis ('60) are just a selection of the greats that graced the Colston stage in its first decade back in business.

IMMORTAL BIGGIES

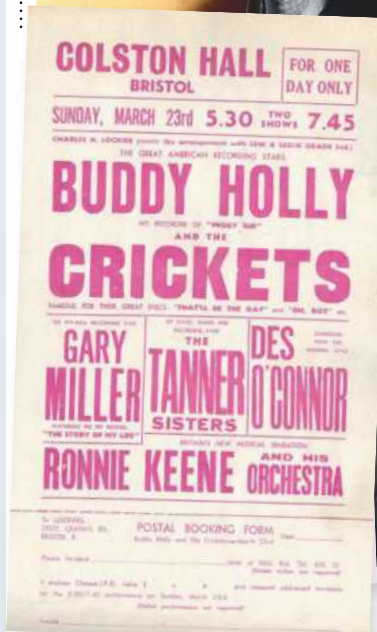
And tucked in amongst them, on the 23rd of March 1958, the venue played host to rock 'n' roll pioneer Buddy Holly and his Crickets, the 23rd stop-off of their one and only UK tour. The band played two evening shows – one at 6.30 and one at 8.30 – and were onstage for about 25 minutes, bashing through their immortal biggies 'That'll Be The Day', 'Peggy Sue', 'Oh Boy' and 'Maybe Baby'. The rest of the bill featured Des O'Connor (advertised on the posters as 'Comedian with the modern style'), UK popettes

Original poster for the Tamla Motown Show, which took place in March 1965. Sales were lacklustre and 1000 tickets were given away

Just one of the jazz greats who played at the venue – Louis Armstrong

Bob Dylan stares out of his limo during a rainy day in Bristol in May 1966

Poster for the 1958 appearance by Buddy Holly and The Crickets (pictured below)



The Tanner Sisters and Gary Miller (who had a hit with the theme to the Robin Hood TV series and sang 'Aqua Marina' at the end of TV sci-fi puppet show *Stingray*).

Buddy, sadly, died in a plane crash less than a year later.

The '60s naturally saw rock and pop taking over and the Hall played host to a fabulous array of touring talent. Ray Charles was there in 1964, as were Cliff Richard and The Rolling Stones. Nineteen-Sixty-Five brought The Moody Blues on a double package with Chuck Berry and, on the 23rd of March, the Tamla Motown Show rolled into town, starring The Supremes, Earl Van Dyke, The Miracles, Martha & The Vandellas and the 14-year-old prodigy Little Stevie Wonder.

Billed as a 'Pop Invasion From The USA!', amazingly the show didn't sell very well, promoter



Charles Lockier giving away 1000 tickets to what was referred to as 'ethnic minorities' in Bristol.

Among other '60s highlights, Bob Dylan showed up on the 10th of March 1966, The Beach Boys shared a bill with The Who in 1968, the newly formed Led Zeppelin rocked the stage on the 21st of June 1969 and on the 2nd of December of the same year, Delaney & Bonnie & Friends showed up with their ace band to play two shows following their tour opener at London's Royal Albert Hall the night before.

A NEW FRIEND

Eric Clapton was guitarist in their band having just folded Blind Faith and his great mate, George Harrison, was persuaded to join the Friends after witnessing the Albert Hall gig. When he strolled out on stage at the Colston Hall with DB&F, it was his first live appearance since The Beatles had given up on playing live on the 29th of August 1966.

Talking of which, before they quit, the Fabs played the Bristol venue on three occasions. Their



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CLASSIC VENUES



first appearance was on the 15th of March 1963 when they played two shows on a bill with American recording artists Chris Montez (who had a No 2 hit 'Let's Dance') and Tommy Roe (who went on to have a No 1 with 'Dizzy').

John Lennon had missed three dates after having caught flu but was back for this,

the tour's 12th destination, and the band blazed through a six-song set comprising 'Love Me Do', 'Misery', 'A Taste Of Honey', 'Do You Want

To Know A Secret', 'Please Please Me' and 'I Saw Her Standing There'.

The band returned exactly eight months later, now in the midst of Beatlemania, with the police escorts, screaming, fainting girls, the works. Supported by local band The Kestrels, the Fabs did ten numbers. No-one could hear much of them over the screaming and one girl evaded security and jumped on John Lennon's back before the band were smuggled out of the building and on to a hotel in Bath where they were, once again, besieged.

The third and last Beatles appearance at Colston Hall took place on the 10th of November 1964. The band were paid £850 for two performances (one at 6.20, one at 8.45). Support acts were local wannabes The Rustiks, instrumental virtuosos Sounds Incorporated, some

geezer called Michael Haslam, fellow Merseybeaters The Remo Four, a singer in Brian Epstein's stable called Tommy Quickly and Motown soul queen Mary Wells.

The band's setlist read: 'Twist And Shout', '(Money) Can't Buy Me Love', 'Things We Said Today', 'I'm Happy Just To Dance With You',

'I Should Have Known Better', 'If I Fell', 'I Wanna Be Your Man', 'A Hard Day's Night' and 'Long Tall Sally'. The last show didn't go off without incident.

For a prank, during 'If I Fell', some student types scrambled undetected up the lighting rig and flour-bombed the band who, it's said, took their punishment in good spirits.

PACKAGE TOUR

Other amazing shows that are now part of Colston Hall's history include the package tour which arrived on the 24th of November 1967 featuring Irish rockers The Eire Apparent, Welsh hitmakers Amen Corner, Keith Emerson's prog-pioneers The Nice, Syd-era brain-exploders Pink Floyd, Brummie anarcho popstars The Move and the utterly astonishing Jimi Hendrix Experience!

Hendrix, 'untamed and unchained' according to contemporary reviews, had 40 minutes to burn through 'Foxy

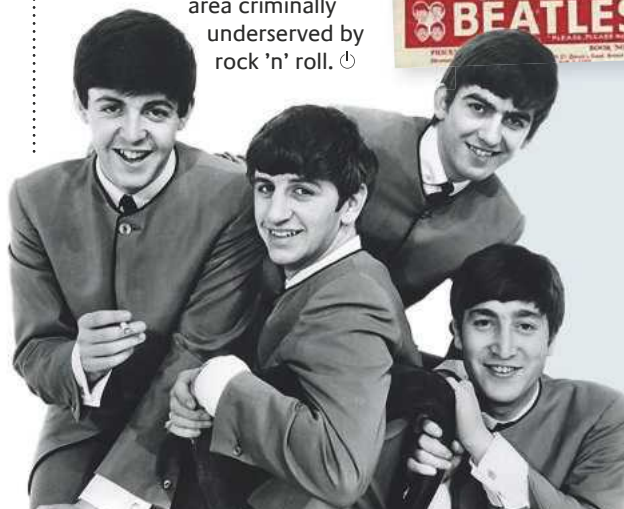


Lady', 'The Wind Cries Mary', 'Hey Joe', 'The Burning Of The Midnight Lamp', 'Spanish Castle Magic' and 'Purple Haze'. Pink Floyd had all of 17 minutes to get their psychedelic schtick across. Syd Barrett, by the way, was a bit of a druggy mess by then, which led Hendrix to refer to him as 'Laughing Syd Barrett'.

The show was sandwiched between performances by The Stan Getz Quartet (21st of November) and the Vienne Boys Choir (27th), which gives you some idea of the crazy range of acts Bristol was being treated to at the time.

Add to the roster The Byrds, Elton John and Yes, who all played the Colston Hall in 1971, David Bowie, Status Quo and Slade in '72, Mott The Hoople sharing a bill with Queen in '73, Bob Marley and AC/DC appearing in '76, The Damned and T Rex doing a show together in '77, Led Zep's Robert Plant doing his first solo tour in '83 (with a guest appearance from Zep's John Paul Jones), Guns N' Roses in '87, The Strokes, Nick Cave and the Manic Street Preachers in 2006... well, you get the picture.

It may be haunted by its history but Bristol's Colston Hall remains a kingpin on the UK's touring circuit, serving vastly appreciative audiences in an area criminally underserved by rock 'n' roll. ☺



Poster for the 1967 package tour featuring Jimi Hendrix, The Move and Pink Floyd, among others, which stopped off at the Colston Hall as part of a 16-date British tour

Pink Floyd in 1967 with Syd Barrett far right

The Beatles in the early '60s and a poster for their first show at the venue, in March 1963



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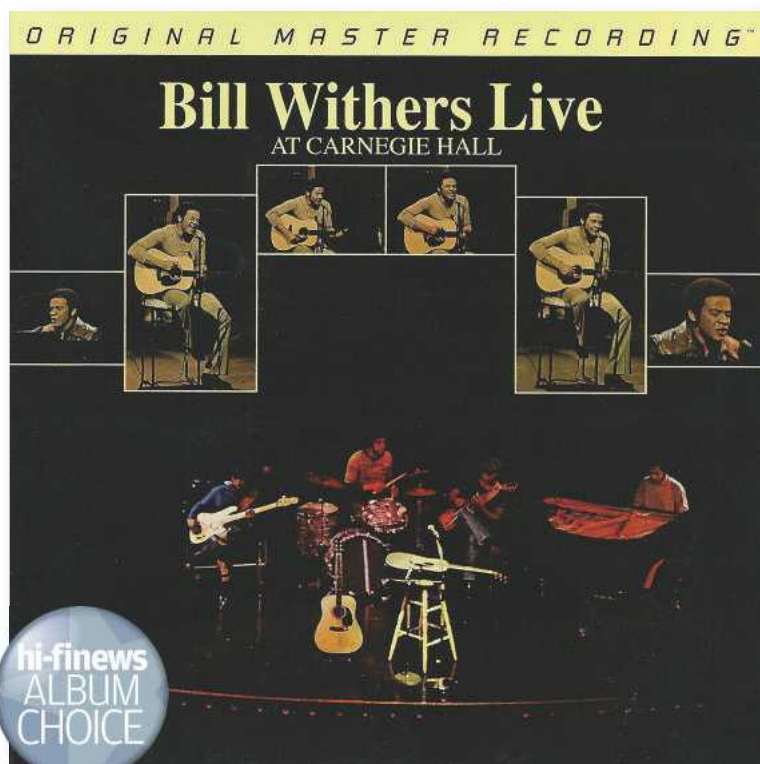
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ALBUM REVIEWS: VINYL



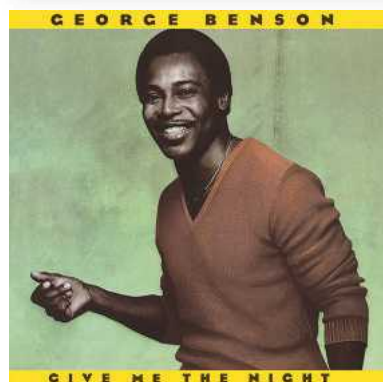
BILL WITHERS

Live At Carnegie Hall

Mobile Fidelity MFSL 2-446 2x180g LPs

Live funk at Carnegie Hall, circa '73? How can you resist? The super-sexy soul singer who gave us 'Lean On Me', 'Ain't No Sunshine', 'Grandma's Hands' (nicely covered by Livingston Taylor for the Cheskys) and other memorable classics presents these with wonderful intros, followed by performances with intimacy that belie the venue's immensity. Fourteen tracks over two LPs, they sound so vivid that this ought to rank with the sets by the Weavers and Harry Belafonte at the same site: open, airy, authentic. 'Lean On Me' will make the hairs stand up on the back of your neck – not least because the audience is so appreciative. If the audiophile in you can't resist, note that the clapping is so real it's scary. KK

Sound Quality: 92%



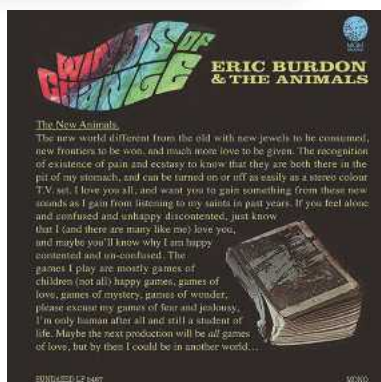
GEORGE BENSON

Give Me The Night

Pure Pleasure/Warner HS3453 (180g vinyl)

Is it really 35 years since this stunning, Quincy Jones-produced release first appeared? Virtuoso jazz guitarist Benson forged a mainstream soul/pop solo career with polished efforts like this, the post-rock era equivalent of the lounge balladry that, 25 years earlier, would have been Sinatra's turf. The big difference, and the only aspect that dates it, is the use of a disco beat – *de rigueur* at the time. To remind those of you above a certain age and inform those of you below it, this reached No 1 in the soul and jazz albums charts, and made No 3 in *Billboard*'s Pop Albums charts, while the title track was a No 1 soul single. Slick? Believe it. KK

Sound Quality: 89%



ERIC BURDON & THE ANIMALS

Winds Of Change

Sundazed LP 5487 (180g vinyl; mono)

Among the most sorely-neglected acts of the 'British Invasion' of 1964, The Animals deserve a lot more respect. The Animals represented the hard, blues-y side of the incursion into the US charts, but by the time this appeared in '67, only Eric Burdon remained from the original line-up, The title signified a second break from the past: this showcased Burdon's songwriting, instead of dependence on cover versions. Amusingly, the only non-original cut is The Rolling Stones' 'Paint It Black' – their main rivals. Burdon embraced hippiedom, as evinced by a break-out hit, the twee-in-retrospect 'San Franciscan Nights'. The payoff? A slot at the Monterey Pop Festival. KK

Sound Quality: 87%



LED ZEPPELIN

(Led Zeppelin IV)

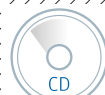
Atlantic R2-536185 (two 180g vinyl LPs + two CDs)

Maintaining the standards of the first three 'super deluxe' sets, *Led Zeppelin IV* – aka 'Four Symbols' or 'ZoSo' – includes 'Stairway To Heaven', so it's automatically a contender as the fanboys' fave. Add to it 'Black Dog', 'Rock And Roll' and five others of similar weight, calibre and intensity, and the case is made even stronger. This is a masterpiece that represents the band at its very pinnacle, a permanent presence in any all-time greats list. Completed by an 80-page hardback, a 96kHz/24-bit download voucher and an art print, this is as lavish as it gets, up there with the *Layla* box. And despite controversies about the sonic merit, this remains sublime. KK

Sound Quality: 88%



AUDIOPHILE: DIGITAL



COMPACT DISC



SUPRAAUDIO



DVD



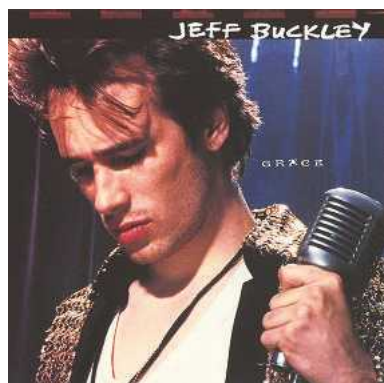
BLU-RAY



VINYL



DOWNLOAD



JEFF BUCKLEY

Grace

Original Recordings Group ORG 194-3 (SACD)

Hard to believe this masterpiece is 21 years old... but it still sounds as intense and fresh as ever. His only fully-realised studio album in a too-short career – all other releases are entirely posthumous and either live or ‘compiled’ – *Grace* in retrospect sounds in parts so much like his late father Tim that it borders on the eerie. Only now that Buckley has been gone for 18 years is it OK to say this. It would have been in bad taste during his lifetime, and for good reason: this achingly passionate material may betray his genes, but it surpassed his father’s work in many ways – not least the stronger vocals. An important, impossible-to-overrate work that grows in stature every year. *KK*

Sound Quality: 90%



ELTON JOHN

Goodbye Yellow Brick Road

Mercury 602537585977 (Blu-ray audio-only)

Another of those albums so huge that it’s beyond criticism, you do not need to be told about a set that includes ‘Bennie & The Jets’, ‘Candle In The Wind’, ‘Saturday Night’s Alright For Fighting’ and the immortal title track, from the era when ol’ Elton had the world at his feet. Forty-two years on, it’s still truly impressive, a sweeping display of a genius at work and at his peak. But the big deal here is Blu-ray Pure Audio, in stereo or 5.1 surround, as PCM or DTS-HD respectively. No need to guess which hardcore audiophiles and purists will prefer, but for those of you with a sense of adventure and a surround sound system, the effects are simply delightful. *KK*

Sound Quality: 90%



LYNYRD SKYNYRD

(pronounced ‘Lēh-‘nérd ‘Skin-‘nérd)

Mobile Fidelity UD5ACD 2104 (stereo SACD)

Surely there can’t be that many more Lynyrd Skynyrd releases left for MoFi (or Acoustic Sounds) to reissue? From 1973, this was the band’s astonishing debut album, a gutsy slab of southern rock with enough heavy metal at its core to cross genres. Here on stereo SACD, (*pronounced ‘lēh-‘nérd ‘skin-‘nérd*) is home to the band’s other epic – said to be even more requested than ‘Sweet Home Alabama’ – the soaring ‘Freebird’. Despite a dredged-from-the-swamp image, the band produced complex material with a broad sweep, sounding so good here that you won’t feel cheated if you don’t buy the LP version. A must if you love multiple guitar leads! *KK*

Sound Quality: 89%



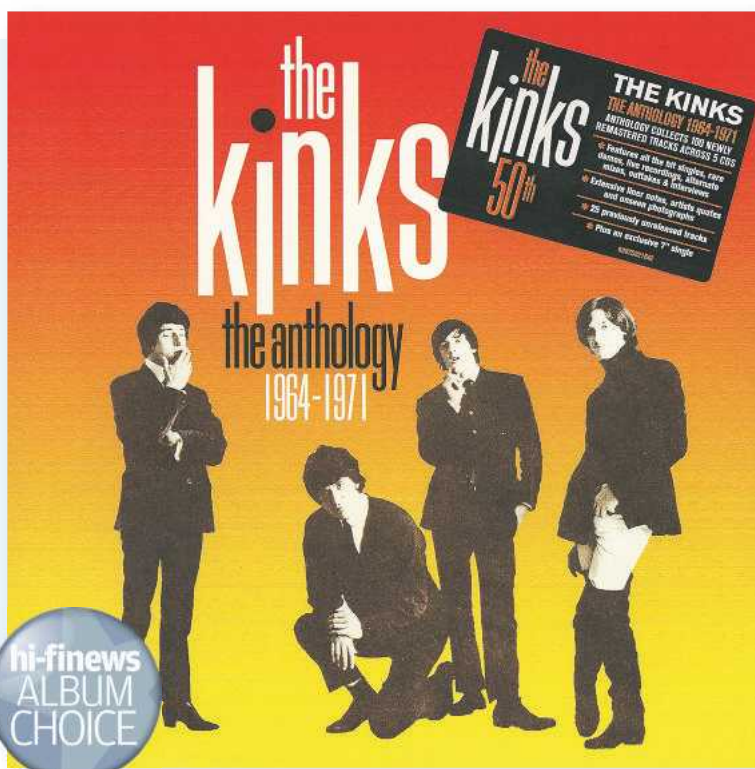
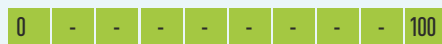
THE KINKS

The Anthology 1964-1971

Sanctuary/Legacy/BMG 88875021542 (five CDs + one 7in single)

No Kinks fan will deny that the band has been ‘box-setted’ and anthologised far too often, their back catalogue exploited beyond reason. Yet here we are marking their 50th Anniversary with another... but it’s phenomenal. Despite most of their albums being reissued with wonderful extras, the compilers found more in the vaults. This set contains all the hits, the key non-hits, live tracks and interviews; of these a stonking 25 tracks are previously unreleased, with two live cuts included on a 7in single. The sound is stupendous, the new-found material of a superior, non-filler nature and the accompanying booklet a visual delight. A pity the box and slotted CD holder are in cheap, cheesy, falling-apart cardboard. *KK*

Sound Quality: 91%



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ANOUAR BRAHEM

Souvenance (96kHz/24-bit; FLAC)

www.hiresaudio.com; ECM 2423/24; 379 7776

Recorded by the Swiss Italian-language broadcaster RSI, this album by oudist Anouar Brahem apparently draws its inspiration from the recent political and social traumas of his native Tunisia. It sees Brahem's lute-like instrument front and centre in the mix. He's helped by close miking, and partnered by Francois Couturier (piano), Klaus Gesing (bass clarinet) and Bjorn Meyer (bass) – oh, and the small matter of the Orchestra della Svizzera Italiana. Here the orchestra performs the function of the backing

drone so often heard in Middle Eastern and North African music, underpinning Brahem's lyrical, reflective playing and the rich interjections of Gesing's clarinet. It's an unusual effect: what is basically a background sound takes on a whole new texture when it's being produced with the weight and scale of an orchestra, and the set as whole is soulful and just a little hypnotic, making it one well worth exploring. **AE**

Sound Quality: 95%



VIJAY IYER TRIO

Break Stuff (96kHz/24-bit; FLAC)

www.hiresaudio.com; ECM 2420 470 8937

Jazz pianist Vijay Iyer's been busy of late: having changed label from ACT to ECM last year, he's managed to put out three albums, of which this is the latest, as well as being appointed a Professor of the Arts at Harvard. Here he rejoins with long-term travelling companions Stephan Crump on double-bass and Marcus Gilmore wielding the sticks – the three have been playing together for over a decade – for a set combining Iyer's takes on some jazz classics as well as self-compositions. Iyer and company pay tribute to Monk, Coltrane and Strayhorn with impressive takes on 'Work', 'Countdown' and 'Blood Count' respectively, but it's in the original pieces that there's the strongest sense of musicians who know each other well both locking together and playing off each other. It's all recorded with typical ECM clarity by label founder Manfred Eicher. **AE**

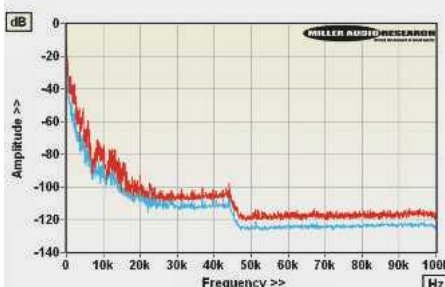
Sound Quality: 90%



OUR PROMISE

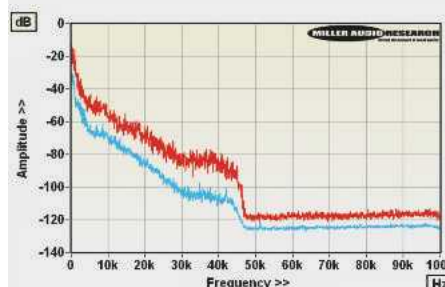
Following our Investigation feature [*HFN*, Jun '11] where we examined the claimed quality of high-resolution downloads, *Hi-Fi News & Record Review* is now measuring the true sample rate and bit-depth of the HD music downloads reviewed on these pages. These unique reviews will be a regular source of 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

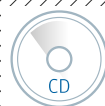


While tracks 7-11 show some spurious tones (mainly ultrasonic and at <-100dB) this recording is a genuine 96kHz offering, mercifully free of compression. Intriguingly, the close-miked oud puts out most of the energy ~10kHz. **PM**

LAB REPORT



While the piano occupies very little of this 96kHz recording's available bandwidth, the 'slap' of percussion does prompt bursts of ultrasonic energy [as in the title track, see Graph]. Distortion / compression from the cymbal mic? **PM**



COMPACT DISC



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DVD



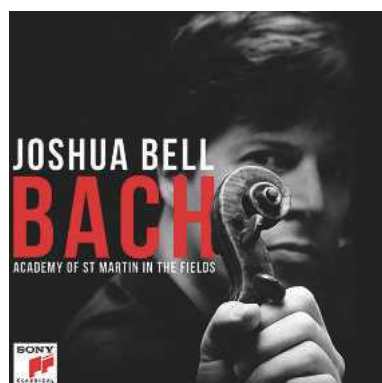
BLU-RAY



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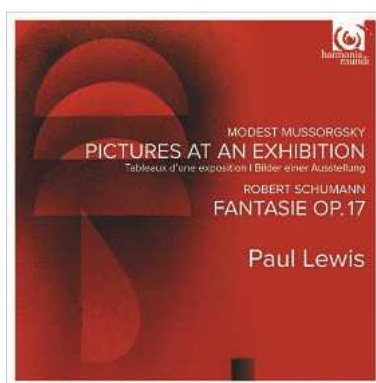
JS BACH

Violin Concertos BWV1041 and 1042; Chaconne (arr. Mendelssohn); Partita No 3 – Gavotte en Rondeau (arr. Schumann); Suite No 3 – 'Air' Joshua Bell/ASMIF (44.1kHz/24-bit; FLAC)

www.hifiresaudio.com; Sony Classical 88843087792

Joshua Bell became artistic director of the St Martin's Academy in 2011. New to his discography, Bach's concertos in E and A minor are followed by contemporary adaptations, with strings, by Julian Milone (composer/academic, he also plays in the Philharmonia), from older violin/piano transcriptions of two solo pieces, plus the 'Air' – taken at a rather old-school slow tempo, and with Bell prominent in the mix as leader/director. He introduces tasteful modest decorations. These are very cleanly played concerto performances, seriousness in slow movements contrasted with joyous finales, tempos steadily maintained. The crisp recordings were made at Air Studios, London, in Apr '14. (There's no booklet PDF with the downloads.) *CB*

Sound Quality: 85%



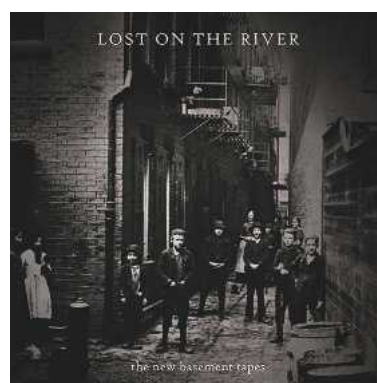
MUSSORGSKY/SCHUMANN

Pictures at an Exhibition/Fantasia Op.17; Paul Lewis (96kHz/24-bit; FLAC)

www.hifiresaudio.com; Harmonia Mundi HMC 902096

You can't help noticing that Paul Lewis's recorded repertoire closely follows that of his mentor Alfred Brendel, whose early Vox LPs included *Pictures at an Exhibition*, a work he redid 30 years later for Philips. Issued with a bold Kandinsky cover, this Teldex Studio coupling is from Nov '10/Feb '14 and there's a real disparity in sound quality. *Pictures* receives an outstanding performance and the piano sound is one of the best I have heard: with the instrument seemingly some 16ft away, my Quad ESLs simply 'vanished from view'. But for the Schumann it's restricted, jangly, trebly, not unlike 'pseudo-stereo' from mono. SQ rating then: 60%/95%. But don't miss Paul Lewis's sharply differentiated 'Promenades', his quirky 'Gnomus', breath-taking 'Catacombs' and sonorous 'Gate of Kiev'. The Schumann? Interesting but unusually introspective. *CB*

Sound Quality: 75%



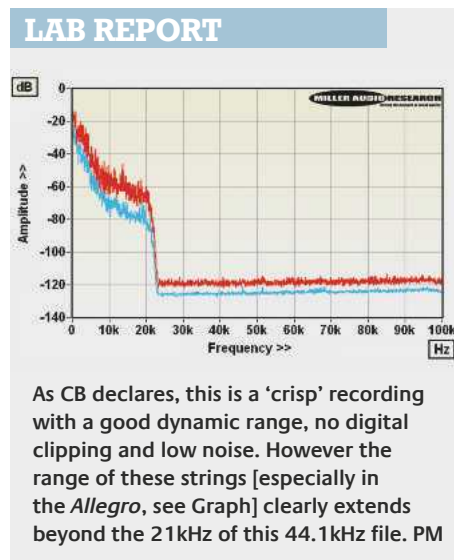
THE NEW BASEMENT TAPES

Lost On The River (96kHz/24-bit; FLAC)

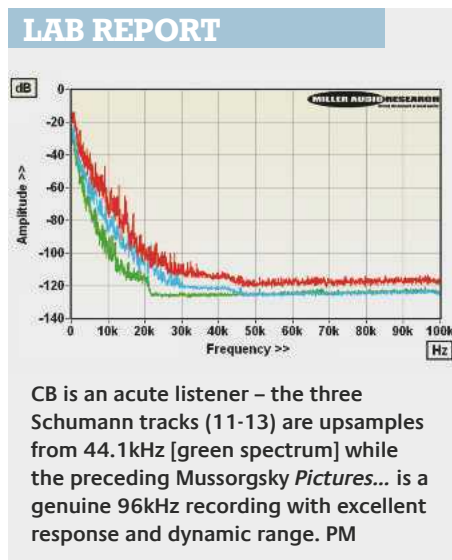
www.hifiresaudio.com; Universal Music 3795014

Almost 50 years on, this is the companion to Dylan's original *The Basement Tapes* album. In 2013 Dylan's publisher sent musician and producer T Bone Burnett a collection of lyrics unused at the time of the original sessions. Burnett then assembled a group of musicians including Elvis Costello, Jim James and Marcus Mumford to compose music for these lyrics. Of 40 recorded, the 20 tracks here make up *Lost On The River: The New Basement Tapes Vol 1*. The immediacy of the music bears comparison with Dylan's original, and the analogue recordings are smooth and warm. James' 'Down On The Bottom', with its echoing vocal and twangy guitar, sets the tone for the album, while the first Costello track, 'Married To My Hack', finds the singer evoking Dylan while being very Elvis Costello. But is this album one for the Dylan completists or just a vanity project? *AE*

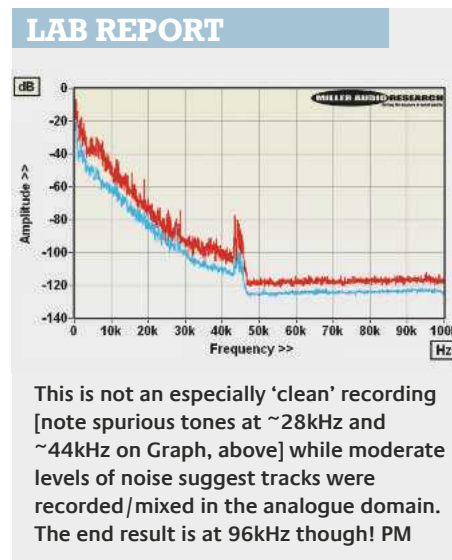
Sound Quality: 70%



As CB declares, this is a 'crisp' recording with a good dynamic range, no digital clipping and low noise. However the range of these strings [especially in the *Allegro*, see Graph] clearly extends beyond the 21kHz of this 44.1kHz file. PM



CB is an acute listener – the three Schumann tracks (11-13) are upsamples from 44.1kHz [green spectrum] while the preceding Mussorgsky *Pictures...* is a genuine 96kHz recording with excellent response and dynamic range. PM



This is not an especially 'clean' recording [note spurious tones at ~28kHz and ~44kHz on Graph, above] while moderate levels of noise suggest tracks were recorded/mixed in the analogue domain. The end result is at 96kHz though! PM



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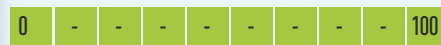
THE VERONICAS

The Veronicas

Sony Music 88875012962

After a relatively quiet few years, identical twin sisters The Veronicas recently returned to No 1 in Australia's singles chart with 'You Ruin Me' and followed up with a Top 5 placing for 'If You Love Someone'. They've never yet made a big impact in the UK, but this third album (which includes both of those tracks) could be the one to break them big here. As songwriters, they're mistresses of killer pop-rock hooks and tasty arrangements; but better yet, they deliver their smart modern woman lyrics with a passionate intensity that burns them into your head at first listen. Almost any track here could be a single, and although they're not great innovators, the instant appeal of what they do should overcome any opposition. *JBk*

Sound Quality: 92%



THE ELWINS

Play For Keeps

Affairs Of The Heart HUG026

I can't speak for you, but this is precisely what I think of when I use the term 'pop music'. The Elwins hail from Keswick, Ontario, and offer the same *joie de vivre*, curiosity and quirkily imaginative freewheeling tunes that you'll find in Vampire Weekend or The Shins, rather than in the mechanical meanderings of Rita Ora or Nicki Minaj. Mailman Matthew Sweeney writes songs about all the usual stuff – trouble with girls, good times, bad times and dancing – but he makes it all sound ridiculously uplifting, so you find yourself singing along at the top of your voice to the soundtrack of his wild mood swings. They're ridiculously optimistic but why not? *JBk*

Sound Quality: 88%



PURITY RING

Another Eternity

4AD CAD3501CD

Thanks to the internet, young musicians the world over have finally secured the same access to the public that once was only available to performers contracted to major record labels. Purity Ring, the Canadian synthpop duo of vocalist Megan James and producer Corin Roddick, are a great example. After self-releasing their debut single in 2011 they were soon snapped up by the indie 4AD Records and have built a huge international fan-base largely by a combination of word of mouth and live gigs. This second wonderful album, should delight anyone who enjoys Ellie Goulding's more imaginative moments or even the less well-known electro-pop princess, Lights. *JBk*

Sound Quality: 86%



KATZENJAMMER

Rockland

Propellor Recordings PRR123

Kick off your shoes, find the nearest straw-covered barn floor and prepare to dance like a hayseed raised on corn likker and hominy grits because, despite their origins among God's frozen people in Norway, Katzenjammer sound like sun-drenched afternoons in the wide-open spaces of America's mid-west. Using an array of unlikely instruments, including a giant balalaika, they romp and stomp through 11 songs which are by turns saucy, sarcastic, euphoric and reckless but always foot-tappingly infectious. Somehow, though, they also sound utterly contemporary, maybe even a tad avant-garde in their own wacky way. *JBk*

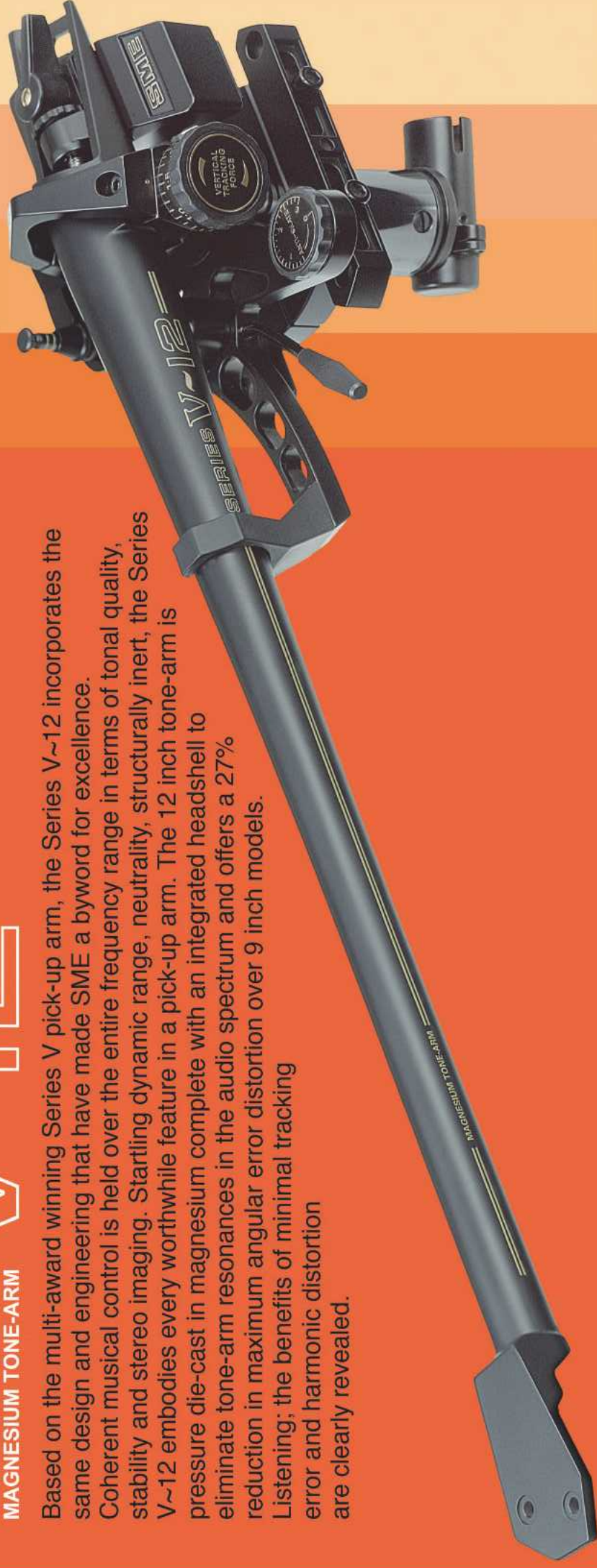
Sound Quality: 90%



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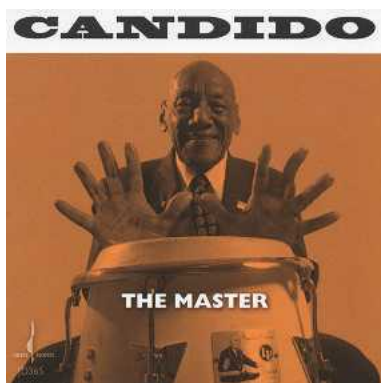


COURTNEY PINE Song (The Ballad Book)

Destin-E Records 777102468X

Though he made his name on tenor saxophone, the 2000s have seen Courtney Pine concentrating on bass clarinet while sometimes, as on 2013's *House Of Legends*, exploiting the more declamatory quality of the soprano sax. But here, as with 2011's *Europa*, it's bass clarinet all the way. And as with that album, but this time in a duo format, the pianist is the wonderful Zoe Rahman. With sensitivity and deep harmonic understanding, she's the perfect partner, as Pine, sometimes taking off in Dophy-like flight but more often tenderly lyrical, explores some favourite ballads. Their lovely take on 'Someday We'll All Be Free' makes a perfect ending too. *SH*

Sound Quality: 90%



CANDIDO The Master

Chesky Records JD365 (downloads up to 192kHz/24-bit)

A great celebration of an extraordinary career, and a warm-hearted gathering of New York's Latin-jazz royalty. Havana-born *conguero* Candido Camaro arrived in New York from Havana in 1952 and was soon helping pianist Billy Taylor's 'mambo' trio to fame. After that he never looked back, and remains active in his 90s. Here the music and arrangements are by Ray Santos, best known as arranger of *The Mambo Kings* soundtrack and Linda Ronstadt's *Frenesi*. One of the standouts is 'Lagrimas Negras', a fine vocal feature for Xiomara Laugart but also a fabulous performance from the band. Chesky's Binaural+ makes the sonics natural, spacious and relaxed. *SH*

Sound Quality: 95%



ENZO ZIRILLI/LUCA BOSCAGIN/ ROSS STANLEY/JIM MULLEN Radio Londra

Trio Records TR592

On the London jazz scene, Italian drummer Enzo Zirilli had often worked with pianist/organist Ross Stanley, who in turn often worked in Jim Mullen's organ trio. When these three teamed up, we could have had just another great organ trio, but Zirilli added his young fellow-countryman Luca Boscagin to create an unusual two-guitar quartet. Most of the tunes are standards, but a gentrified 'Satisfaction' has Boscagin in his rockier element, and is followed by his gently melodic 'Us 4', the only original. Finally, 'After The Love Has Gone' has both guitarists in a really comfortable groove. Enjoyable to the end. *SH*

Sound Quality: 85%



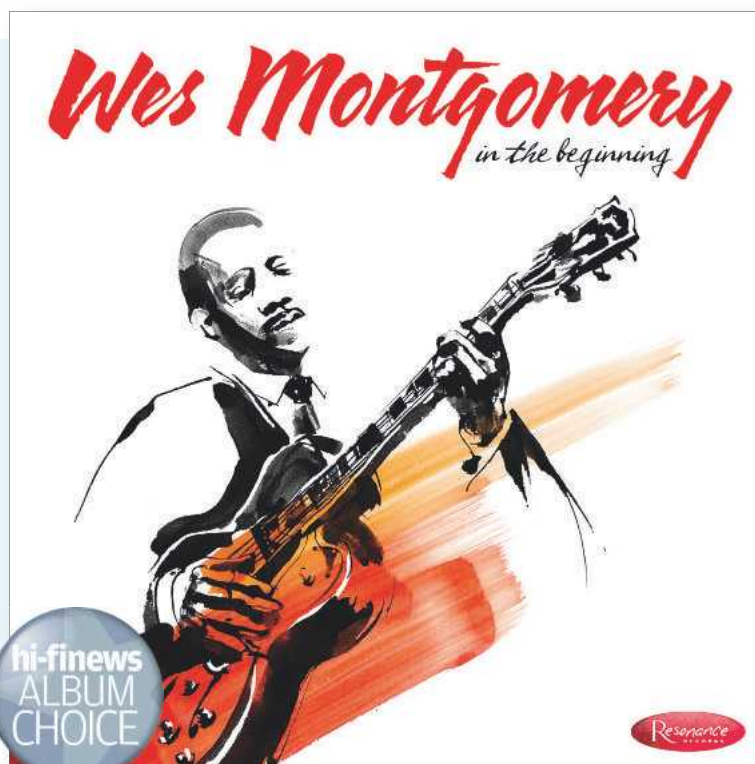
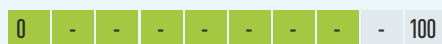
WES MONTGOMERY

In The Beginning

Resonance Records HCD-2014 (two CDs, three LPs; mono)

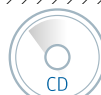
In 2012 Resonance put out *Echoes Of Indiana Avenue*, containing newly-discovered live recordings of the Montgomery brothers Wes, Buddy and Monk from 1957 and 1958. After that, Buddy's widow came up with another trove of live tapes from 1956, and these fill most of one CD here. On the second disc are the five forgotten studio numbers that Quincy Jones produced at Columbia for the Epic label in 1955. Unless you count Resonance's two USA-only 10in LPs, which sampled these tracks for Record Store Day, 2014, almost all this material is previously unreleased. To close, there are Wes's earliest studio recordings, as a sideman with saxophonist Gene Morris in 1949, dubbed from rare 78s. Essential. *SH*

Sound Quality: 80%



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COMPACT DISC



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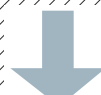
DVD



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VINYL



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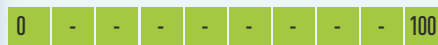
Romeo and Juliet – excerpts

Chicago Symphony Orchestra/Riccardo Muti

CSO Resound CSOR9011402 (downloads up to 96kHz/24-bit resolution)

Muti has made some excellent Prokofiev recordings with the Philharmonia and Philadelphia Orchestras [EMI and Philips] including a selection of 12 movements from the Suites from the ballet. The ten here are live/Oct 2013. Although shamelessly close-mic'd, the sound is gorgeous – every detail of Prokofiev's orchestration is captured. But then, the Chicago Orchestra is refined well beyond anything you would have found in the Solti era. The players' commitment under Muti's sophisticated command is palpable and especially lovely in the quiet music. The coda to 'Romeo At Juliet's Tomb' is especially sensitive. Highresaudio charges £2 less than other online providers! CB

Sound Quality: 95%



JS BACH

The Well Tempered Klavier (Books 1 and 2)

John Butt

Linn Records CKD 463 (four discs; downloads up to 192kHz/24-bit)

When we have had so many recordings with concert grand, it makes the harpsichord – as here – seem the anachronistic choice! Working from scholarly editions, John Butt plays on a copy of a 1702 German instrument. The balance – from St Martin's, East Woodhay – is quite close, giving a solid instrumental image (decay can be judged by the released pedals). As it costs no more, it's best to download the 192kHz/24-bit option, which puts more light and air into the phrasing. But Kenneth Gilbert's Archiv CDs still sound wonderful and I much prefer him. I also think Linn should have priced the two Books singly. CB

Sound Quality: 75%



BEETHOVEN

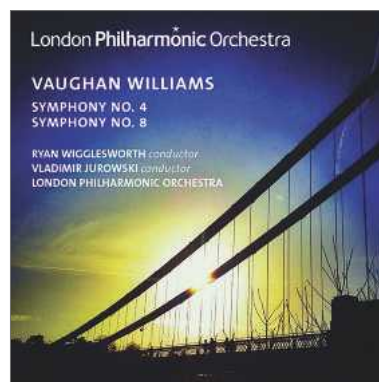
Symphony 9 'Choral'

Soloists, Lucerne Festival Ch, Philharmonia Orchestra/ Wilhelm Furtwängler

Audite 92.461 (downloads up to 48kHz/24-bit resolution)

Formerly available as part of a Tahra 4CD set, Furtwängler's very last performance of this symphony from Aug '54 – with soloists Elisabeth Schwarzkopf, Elsa Cavelti, Ernst Haefliger and Otto Edelmann – is now remastered from Swiss Radio tapes with pitch correction and is available at a higher resolution. (Not part of the download, see cover and booklet at audite.de.) It's not as extreme an interpretation as the earlier alternatives, but the singers are good. The sound, though, has a 'digital edge' and I preferred the files downsampled to 44.1kHz/16-bit, reducing this effect. CB

Sound Quality: 60%



VAUGHAN WILLIAMS

Symphonies 4 and 8

LPO/Ryan Wigglesworth/Vladimir Jurowski

LPO LPO-0082 (downloads up to 96kHz/24-bit resolution)

Premiered then recorded in 1956 by Barbirolli (both are on CD), the Eighth Symphony appeared as slighter than its neighbours – analogous to Beethoven's in the canon of nine. Jurowski's spacious account rightly implies greater depths and the percussive finale has a jubilation that crowns this live performance as one of the best available. This cannot be said of the coupling: the playing is fine, the conducting disappoints. Ryan Wigglesworth's account of the Fourth Symphony sensationalises this inherently disturbing music and lacks the organic development you find with Boult, Handley or Haitink. CB

Sound Quality: 75%



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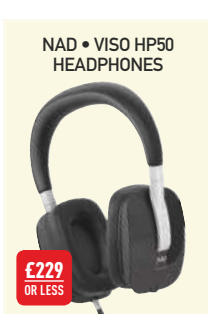
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Paul Miller Editor

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

Disharmony with DSD

Compatibility with DSD music files is fast becoming the 'must have' feature for all new outboard USB DACs. But in the headlong rush, says **Paul Miller**, perhaps we should pause and ask why

Unlike denizens of the AV industry where the logos of affiliated technologies stretch endlessly around the front and back of its AV receivers, pure hi-fi brands have worried less about the 'tick list' of essential and unessential features.

I remember a time when manufacturers of surround amps struggled to make headway unless their new multichannel behemoth boasted a THX logo – even if precious few cinema fans even had full-blown THX systems. But with DSD, and DSD-compatible USB DACs in particular, I'm beginning to wonder if we're becoming a little too obsessed with a new numbers game.

WHAT'S THE DEAL?

Is it really a deal breaker if a new DAC doesn't handle DSD over USB, or perhaps only supports DSD64 and not double- or quad-rate DSD128/DSD256 files – as is the case with Naim's new NAC-N 272, see p28? With no legitimate method of ripping from SACD (I don't count the PS3 workaround as above board) how many audiophiles are specifically downloading DSD files rather than LPCM or high-rate DXD equivalents? And, finally, how do we really know whether many of these DSD files were not converted at some intermediate point into LPCM during mixing or mastering?

HIDING DSD IN PCM

Having been able to stream CD and higher rate 192kHz/24-bit digital data for years, first over S/PDIF and latterly via USB, it was frustration with SACD's closed system that provided the inertia for a fightback. A few engineers including Andreas Koch of Playback Designs, Andy McHarg of dCS and Rob Robinson

'Frustration with SACD's closed system prompted a fightback'

of Channel D, collaborated to develop a protocol that would enable SACD's DSD data to be carried over USB.

As PC and Mac drivers do not support DSD *per se*, the open standard shows how 16 DSD audio bits and eight DSD marker bits may be packaged into a single 24-bit frame and transmitted as 'LPCM'. Hence

the term DoP or DSD over PCM (perhaps 'DSD disguised as PCM' is more appropriate).

The marker bits ensure the receiving DAC understands this is DSD data that must be unpacked from its LPCM envelope. Put

in context, a standard 1-bit/ 2.8224MHz DSD (SACD) stream represents a data rate of 2.8224Mbps, equivalent to that of 16-bit/176.4kHz LPCM. Double-rate DSD at 5.6448MHz can be accommodated by 352.8kHz USB replay systems, and so on.

ONE-BIT SOUND QUALITY

The commercial incentive for this open standard is pretty straightforward, as a section of the hi-res audiophile community maintains that music digitised and represented, according to playback, as a

pure 1-bit bitstream sounds, well, so much more *musical*. We've been here before in my Opinion page because I'm just not convinced we can make these generalisations. Why? Because none of the DAC hardware we're using handles DSD data in precisely the same way.

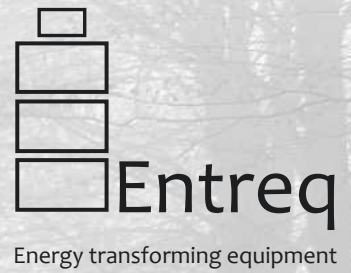
Sure enough, examine the datasheets for the favoured audio DACs – TI's PCM1792, Cirrus Logic's CS4398, the ESS Sabre 9018 – and while they all have DSD interfaces, their subsequent DSD processing is proprietary. Solutions range from passing DSD through the same switched capacitor DAC and filter as the LPCM input (following Delta-Sigma modulation) or simply using an analogue FIR low-pass filter.

Pick your processing, and your sound, according to taste. Is it any wonder that some enthusiasts, including our own Keith Howard, prefer their DSD files downsampled to 88.2kHz/24-bit LPCM before conversion? And what of the provenance of your DSD files? While the better specialised websites obtain their DSD Edit Master files directly from the labels, until we have a CD-like SPARS Code (AAD, ADD, DDD, etc) we'll never really know whether that 1-bit stream has spent time as 24-bit LPCM... ☺



ABOVE: Compatibility with the open DoP standard allows DSD files to be communicated over USB. Most contemporary outboard DACs now offer conversion for both LPCM and DSD media

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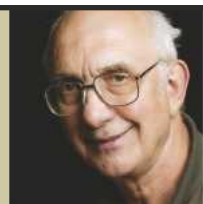


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Barry Fox Technology journalist

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

True Blue?

One Japanese manufacturer is now trumpeting a new in-house technology that it says offers 96kHz/24-bit quality wireless audio over Bluetooth. How can this be, wonders **Barry Fox**

Remember how the run-up to Christmas saw what looked like an amazing claim from LG that its wireless speaker system could network hi-res audio round the home via Bluetooth? Adverts for its Music Flow technology were claiming that 'everything works seamlessly over Wi-Fi or Bluetooth, in true HD sound'.

LG's spokeswoman stalled on my query, so I contacted LG direct. Facing a likely investigation by the Advertising Standards Authority, LG's Front of House woke up. The advert, it said, 'was created by Currys PC World, as opposed to LG. LG did not write the copy or have any creative input into this advert. The advert would have been sent to LG prior to publication but unfortunately it appears the claim was missed on this occasion. LG will notify Currys PC World to ensure future adverts are amended.'

MORE CONFUSION

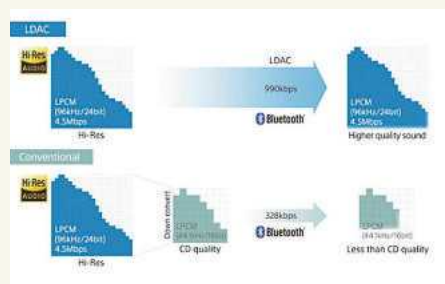
The irony is that we will soon see products that *do* stream hi-res audio over a Bluetooth

link. The are coming from Sony and could cause even more confusion than the LG/Currys cock-up.

Sony's new MDR

1A headphones, due mid-2015 at around £300 per pair, claim on the packaging to deliver 'High Resolution with wired operation'. But Sony's marketers are saying the Bluetooth link can carry 96kHz/24-bit or 192kHz FLAC.

How can this be possible? The basic Bluetooth radio standard specifies transmission at 2.4-2.485GHz, in the ISM (Industrial, Scientific and Medical) band, with a maximum theoretical data rate of around 1Mbps. In practice, only around a third of this is used for audio, to ensure a stable and robust connection.



ABOVE: LDAC and conventional Bluetooth compared – see www.sony.co.uk for more

The Bluetooth standard for audio specifies a basic stereo system called Advanced Audio Distribution Profile (A2DP) which uses SBC (Sub Band Coding), that all Bluetooth audio players, speakers and headphones, must support.

But the standard also lists several optional systems, such as various flavours of MPEG audio, aptX and Sony's old ATRAC. Most of the optionals have now been sidelined because aptX works well and leading Bluetooth chip-maker CSR

has bought the technology. If two pieces of kit support aptX they use it; if they don't both support aptX, they fall back to A2DP.

The user doesn't have to know that SBC uses ancient

MPEG-1 Audio Layer II compression at 345kbps for stereo and that aptX uses more modern compression to carry 16-bit, 44.1kHz CD-quality stereo at a data rate of 352kbps. All that matters is that when aptX kicks in, the music sounds better.

Unlike LG's 'blame it on Currys' climbdown, Sony is sticking to the claim of hi-res (up to 100kHz) by Bluetooth. But Sony is being very cagey about how this is done – much as Sony is still not explaining how DSEE-HX magically 'restores the HF lost in low resolution systems such as MP3'.

The only hard facts to emerge from Sony on Bluetooth hi-res are that the new headphones use the new Bluetooth 3.0 standard, with proprietary Sony noise-shaping compression called LDAC (which stands for who knows what) and a transmitted data rate around 1Mbps.

So I did some digging.

Bluetooth Ver.3 pushes the theoretical data rate from 1Mbps to 3Mbps, but the real novelty is in the LDAC compression. This is claimed to squeeze a 4.5Mbps LPCM audio signal into a 1Mbps Bluetooth link, and recover it with no audible loss.

CRYSTAL CLEAR

How it works in practice must, like the question of how DSEE-HX works in practice, wait until Sony offers some controlled, before and after, A/B comparisons. But technically there is no reason why LDAC cannot use a Bluetooth link. But it will only work if both the source device and headphones (or speakers) are LDAC-enabled.

Says Jonny McClintock, Director of aptX Sales & Marketing at CSR: 'We believe LDAC is a technically viable audio codec and like aptX it delivers high quality audio over Bluetooth. However, unlike aptX it lacks the installed base. Users will need an LDAC-enabled Sony device at both ends of the Bluetooth link whereas aptX offers a much wider choice of interoperable devices.'

This is something that Sony's marketing will need to make crystal clear. Listeners will only hear hi-res over Bluetooth if they spend however much it costs to buy an LDAC player and an LDAC speaker or headset. If they buy just one half of the LDAC pair they will be hearing CD quality by aptX or sub-CD from A2DP.

It's just what happened in the early days of HDTV. Viewers were connecting an HD video source to an HDTV, by Scart cable, and often not even knowing they were watching in SD. ☹

'All that matters to the user is that when aptX kicks in, the music sounds better'

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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

Letters from America

Explore your real-world music library or the far bigger ones to be found online and you'll soon find a song with letter-writing as its theme. Enjoy them while they still have relevance, says **Barry Willis**

Depending on how heedless of speed limits you may be, the drive from Las Vegas to San Francisco varies from eight to ten hours, with necessary stops. My friend Ken and I took off in our rented van about five in the afternoon on the last day of CES, heading west and north through the cool arid night.

We'd had enough of Sin City for another year, and were glad to get out on the mostly empty road. We had satellite radio to keep us entertained. We surfed randomly through the pop music of the last seven decades, and somewhere between the 1990s and the present – or was it somewhere between Barstow and Coalinga? – I realised a whole genre of songwriting has disappeared.

THE WRITE STUFF

In the 20th century there were a great many songs written and performed on the theme of letters: writing a letter, sending one, regretting having sent one, agonising about having one returned unopened. There were many about the tension of waiting for weeks for a reply, about the joy and sadness of receiving letters and poring over old ones.

From the pathos of being dumped long distance ('Dear John') to anguished teenage hope ('Please Mr

Postman') to deep abiding faith ('Love Letters'), the theme is woven through the music of several successive eras.

Beyond songs particularly about letters are many more in which the mention of writing, sending, receiving, and reading them is integral to musical storylines: '...give me a ticket for an aeroplane/ain't got time to take a fast train/my baby just wrote me a letter.'

'No-one will ever open a classic blues lament with 'I got an email this morning...'

The age of instant communications has washed away this entire genre, rendered it quaint at best, irrelevant at worst, and impossible to transpose to the present. Imagine a timeless tearjerker on the theme of 'Baby, I waited two whole minutes and you didn't respond to my text', or 'I tweeted my love for you but you de-friended me on Facebook.' No-one will ever

open a classic blues lament with the line 'I got an email this morning...'

The disappearing genre of letter-themed pop songs is a pathetic reflection of our inability to approach personal communications with purposeful, contemplative gravitas. Plus, skilled writing has ever-diminishing value.

The final nail in the coffin is an increasingly widespread educational policy in the US not to teach longhand to children. Why waste valuable educational resources imparting an antiquated form of communications, the thinking goes. By the time these kids are adults they'll be

technologically telepathic; thumbprints or retina scans will serve as signatures. The fact that they won't be able to read a letter or write one of their own doesn't appear to be a regrettable loss to educational policymakers.

SEEKING SOLACE

So while we bemoan the present and shudder with dread about the future, I suggest we seek solace in all those great old songs that evoke emotional missives with the power to transcend the vastness of time and distance. Leon Redbone's version of 'Love Letters In The Sand' is a good place to start.

But perhaps the greatest example of the vanished genre is 'Love Letters'. Ketty Lester's definitive 1962 performance of this gem may be the best. I'm not sure. It was done with aplomb by artists as varied as Julie London and Elvis Presley, but one of the most moving performances ever captured was by Tom Jones in the 2003 documentary *Red White And Blues*, excerpted on YouTube at www.youtube.com/watch?v=B5_pidiEEWs.

Enjoy it while it still has relevance for you. Or, should I say, read it and weep. ☹



ABOVE: Julie London's 1962 *Love Letters* album and Ketty Lester's hit single from the same year



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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

Another brick in the wall

Would you buy music from a traditional record and CD shop or an online site with knowledgeable staff on hand if it improved your shopping experience, or is **Jim Lesurf** whistling in the wind?

Towards the end of last year, while out Christmas shopping, I noticed that my local secondhand LP shop was displaying a big 'Closing Down!' sign in its doorway. True, similar signs had been appearing month after month, but this was a result of the shop's owners just being able to afford a series of short-term leases. But this notice was different. This time a specific date for closure was given – the 31st of December 2014 – and the number of boxes of LPs on display, as well as their prices, were reduced. Then, after Hogmanay, I received an unexpected email.

WORST FEARS

For years I've bought my CDs from Bath Compact Discs. Unlike many online dealers the staff would cheerfully chat via email and discuss the choices available. Most recently I'd wanted to buy a box set of Mozart's Piano Concertos. There are a number of versions by various outstanding pianists and all have received good reviews. The question was: which set to choose?

The advantage of being able to talk to a knowledgeable dealer is that they can help you decide which would be the version you'd prefer. Ideally, this would be a face-to-face discussion in a shop, maybe even with the chance to hear snippets from the different discs you are considering buying.

In these modern times, alas, there is little chance of that happening, unless you live somewhere like central London. In the end I chose the set performed by Mitsuko Uchida [Philips 475 7306] and am very pleased with my decision.

However, receiving an unexpected email from the person I had come to

RIGHT: Bath Compact Discs announces its decision to cease trading on its Twitter feed (see <https://twitter.com/bathcds>). The shop first opened its doors in 1982



know over the years at Bath Compact Discs made me fear the worst. And the fear was realised – the shop was to close down.

At one time the store had hoped to continue without a bricks-and-mortar shop, but over the holiday season its owners had decided simply to cease trading entirely. This is a great shame. The same rise in property prices that looks good for the UK's National GDP also raises the cost of small business premises.

This hits both specialist shops and manufacturers, like those in the UK music and hi-fi arenas.

In the last year or two, we keep hearing how the sales of LPs are

growing, and that the economy is recovering. But to me, sadly, the reality seems to have a split personality. While *some* types of LPs enjoy growing sales, the classical music business in particular continues to struggle. Particularly when it comes to the knowledgeable retailers who matter so much. It's hard to ignore a feeling that some of the recovery in the UK economy is like a billboard hoarding put up

to cover the starker landscape that lies beyond and behind it.

So I'm now on the look-out for a new classical music retailer. One with staff I can talk to on the phone without always having to visit a clinical website. As yet I've not had a chance to walk down the street where our local secondhand LP shop was located. If I'm honest it's partially because I'm reluctant to find out that it has finally closed for good. I just hope it was able to buy a new lease.

ONLY OPTION

Maybe my feelings are the same as those felt by pop and rock LP enthusiasts when LPs began disappearing from the shelves a few decades ago. At least my broadband connection was recently upgraded. So if downloading music becomes my only option then I guess the process will now be faster.

But it's just not the same, is it, as having a real person to interact with? With luck, maybe, a few retailers will realise not everyone wants cheap-to-maintain human-free website interfaces. And enough of us would vote with our wallets for something more helpful. Or am I the only one who feels this way? ☹

'While sales of some types of LPs grow, the classical music business struggles'

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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

Turntables have turned

Convenience has taken a step further, it seems, as manufacturers continue to release components marrying valves, vinyl and horns with Bluetooth. Is someone missing the point, asks **Steve Harris**

When CD reigned supreme, the more progressive elements in the trade tended to sneer at audiophiles who still clung to analogue, calling them old fogies who just enjoyed fiddling with their record players.

Back in their day, learning to install and adjust a cartridge had been the very essence of the hi-fi hobby. Once you became obsessive about getting the best sound from your deck, you could spend your life in endless tweaking.

When the compact disc put an end to all that – because there was nothing to fiddle with – new tweaks had to be invented. You could put special mats on your CDs, paint the edges of them with green pens and so on, and above all you could start comparing cables.

THE LOST ART

As record deck sales dwindled, turntable setup seemed to be in danger of becoming a lost art. Henley Designs, the importer of Ortofon cartridges, was concerned enough to launch a special turntable training programme for younger retail staff who'd come into the business knowing only CD.

Since then, you could say, the turntables have turned. For those who do want to know how to get the best out of a record deck, there's

plenty of information out there. Michael Fremer's hugely successful instructional DVD is one example (see www.analogplanet.com).

On a basic level, you can find a bunch of turntable setup videos on Youtube, although these are often aimed at DJs: 'Don't use reverse if you haven't got a scratching-type stylus, 'cos if you're using a regular hi-fi stylus you'll break it off.'

RIGHT: The Gramovox Bluetooth Gramophone stands nearly 20in tall and features a steel horn on a solid walnut base. Bluetooth range is said to be 33ft. For more see www.gramovox.com



But if, like many newcomers to vinyl, you are playing your records on a £39 Steepletone record player with built-in speakers or have just bought a sub-£100 USB-equipped turntable simply to digitise your records, you'll probably carry on without ever investigating the finer points of the vinyl medium.

Now, though, convenience and convergence have gone a step further with Ion's Air LP Bluetooth turntable. As with previous Ion products, you can create digital files from LPs but you can also play back from the record wirelessly. This means anyone can enjoy vinyl without even having the bother of connecting the deck to an amplifier.

Of course, Ion's player is just one of a rapidly increasing number of Bluetooth audio products. You want the warm glow of valves? You can have the little Fatman Mi-Tube 2 hybrid amplifier from John Lewis for £249. Or, if you prefer something that looks like a traditional amp, rather than some kind of miniature cooking appliance, choose the Mistral Audio DT-307B. Both combine a tube line stage with solid-state output.

If you hanker after horns, you could go for the Gramovox Bluetooth Gramophone, a battery-powered active speaker, styled after a swan-necked 1920s Magnavox, and ready to play wirelessly from your computer or any other Bluetooth-equipped device. It stands nearly 20in tall, but it's designed to be ornamental.

CLEAN, EASY, COMPACT...

So, in the digital world it seems that you can still have vinyl, valves and horn speakers, all clean, easy and compact, and without all those annoying wires. Look at the blurb for products like this and you'll soon start coming across the phrase 'best of both worlds'.

In an online news video about the Ion Air LP, the *Digital Trends* reporter noted: 'Of course, you can connect it to a standard stereo system via RCA if you want to, but if you've got Bluetooth, why would you bother?'

With the Bluetooth connection, you might be listening to vinyl, but you are no longer listening to analogue. So there actually is a reason to bother with the wired connection. Or to go further, and move up to a genuinely hi-fi turntable. Because you can't really have your analogue cake and eat it digitally. ☹

'You can enjoy vinyl without the bother of connecting the turntable to an amp'

YOUR VIEWS

Sound Off!

Correspondents express their own opinions, not those of *Hi-Fi News*. We reserve the right to edit letters for publication. Correspondents using e-mail are asked to give their full postal address (which won't be published). Letters seeking advice will be answered in print on our Sound Off pages, but due to time constraints we regret we're unable to answer questions on buying items of hi-fi or any other hi-fi queries by telephone, post or via e-mail.

THE FORGOTTEN TEST IS IT TIME TO MEASURE PHASE DISTORTION?

The amplifier lab reports published in *Hi-Fi News* have changed significantly over the years. Vanishingly small amounts of distortion can now be measured as can dynamic power and output impedance at different frequencies. These lab reports hopefully support the subjective review of the product being tested and help us better understand how an amp or preamp might sound.

Apart from a few esoteric valve amplifiers, distortion levels are often so low and the frequency response sufficiently wide that they are unlikely to give rise to much audible difference between most of the items reviewed. Even the output impedance of solid-state amps and many valve amplifiers is low enough to have little effect when they are used to drive typical 4-8ohm loudspeakers.

But phase distortion seems to be a forgotten measurement and it's one that may give a real clue as to why some amplifiers seem to reproduce music more realistically than others. Most musical instruments create a range of harmonics, which contribute to their 'sound'. If these harmonics pass through an amp and emerge changed with respect to phase or time-relationship then this will surely produce a different 'sound' to that of the original instrument.

I am unsure how much research has been done in this area, but producing phase distortion versus frequency graphs in the magazine might be very helpful to readers. Might it also be a good subject for a future technical article?

Martin Phillips, via email

Keith Howard replies: Audio amplifiers are minimum-phase devices. In mathematical terms

this means that their magnitude response ('frequency response') and phase response are intimately related and calculable one from the other using a procedure called the Hilbert Transform. In more practical terms it means that if the frequency response is flat then the phase response is linear, ie there is no phase distortion.

Only at the LF and HF extremes, where the frequency response rolls off, is phase distortion introduced. So there can be no lurking phase response 'nasties' responsible for subjective differences, although that's not to say that the phase effects at LF and HF are necessarily blameless. This is a controversial area but it's no accident, for instance, that amplifier manufacturers often push the LF corner frequency down to, say, 2Hz or below having discovered a low roll-off point sounds better, presumably because of phase distortion effects.

Elsewhere in the audio chain minimum-phase behaviour does not always pertain. CD player/DACs with linear-phase reconstruction filters, for instance, do not introduce phase distortion despite a typically steep low-pass roll-off. Unfortunately this doesn't guarantee that they are ideal as linear-phase behaviour means a time-symmetrical impulse response with substantial pre-ringing and perhaps pre-echo – believed to impact on sound quality.

Loudspeakers are different again. Loudspeaker drive units are minimum-phase but complete loudspeakers usually are not as a result of the crossover network(s). As phase distortion is the subject of much misunderstanding and confusion, an Investigation article on the subject is a good idea. We will publish one shortly.

Send in your views to:
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Enterprise House, Enterprise Way, Edenbridge, Kent TN8 6HF
or email your views to: letters@hifinews.com –
please use 'Sound Off' in your subject field

A few classical alternatives

READER SHARES HIS STRAUSS AND TCHAIKOVSKY FAVOURITES

I was disappointed to see that Christopher Breunig did not include Felicity Lott with the Scottish National Orchestra under Neeme Järvi in his piece on Richard Strauss's *Four Last Songs* in the March issue. These are very moving performances, wonderfully recorded by Chandos's Brian and Ralph Couzens in 1986 in Caird Hall, Dundee and originally released with *Ein Heldenleben* [ABRD 1228] and then again in the first of the two volumes of Orchestral Songs [CHAN 9054 and 9159]. Not to be missed!

Also, in the February issue Christopher didn't mention other *Nutcracker* alternatives – though space probably didn't permit. Of the two ballets, I thoroughly recommend the LSO/Previn EMI box set (Christophers Bishop and Parker in Kingsway Hall and Abbey Rd) and also the Nat PO/Bonyngue on Decca (Locke, Wilkinson, etc/Kingsway Hall).

I rate Chandos recordings very highly, but some recent SACDs have not sounded as good



ABOVE: Strauss [Mar '15] and the Feb *Nutcracker* review

as usual. But I might try the three Tchaikovsky ballets if they are boxed/discontinued.

Humphrey Britton-Johnston, via email

Christopher Breunig replies: As I wrote in my piece, an uncredited website lists no fewer than 500 different recordings of the *Four Last Songs* (!) – see <http://vierletztelieder.com> – but I must confess to finding my original Chandos LP [ABRD 1228] on the shelf after sending in the article, and it does merit a recommendation. Radio 3's 'Building a Library' first choice in 2002, it is also currently listed with recoupled vocal material on CHAN10075 at budget price.

As you suggest, in the February *Nutcracker* review I didn't have space for further suggestions, although the sets you mention are well regarded, the Bonyngue/Decca on 460 4112 (six discs), Previn – much cheaper – on EMI 6483772 (also six discs).

Lanes On Your Entertainment Superhighway

Mystery of Beatles in mono

HOW CAN A MONO LP PLAYED ON A STEREO SYSTEM RESULT IN A SOUNDSTAGE HAVING DEPTH?

Having purchased a few of the 'new' Beatles releases as stereo CDs, I decided to buy the new mono version of *Magical Mystery Tour* on vinyl to see what all the fuss was about.

I'm sure that I will need to listen to the album a few times before coming to any final conclusions, but one thing has confused me right from the start, and in a good way.

I always thought that you could only achieve a soundstage in stereo, in that different parts of the recording were sent to each speaker so as to create the illusion that the music (and voices in particular) didn't come out of the actual speakers but hung in mid air in front of you. My understanding has always been that this effect is heightened by positioning the speakers carefully then sitting in the 'sweet-spot' between them.

I always thought that mono was designed for one speaker and that when replayed on a two-channel system the signal was simply split between the two speakers making it impossible to achieve a soundstage.

To my amazement there is a clear and discernible soundstage when I play the *Magical Mystery Tour LP*. Can you explain what is going on?

Just so you know, I am using a Linn LP12 turntable with Ittok IV II tonearm and Dynavector Karat 17D2 cartridge. This feeds a Sugden Masterclass integrated amplifier driving ProAc Response 1SC speakers.

Mark Benjamin, via email



ABOVE: The remastered 2014 reissue of *Magical Mystery Tour*, available in mono

Steve Harris replies: Mono recordings can always give an impression of front-to-back depth, but how wide should a mono sound image be? It's an interesting question. Before stereo, designers and enthusiast builders tried all sorts of devices to spread the sound out and make the sound of a single speaker bigger and more lifelike.

Ironically, stereo solved the problem, because now when you played a mono record the sound hung like a cloud in space between the speakers. But the apparent size and nature of the mono image from LP will depend on the equipment, from the accuracy of the record player to the dispersion characteristics of the speakers, and on the room. To get a handle on what's going on, try listening on one speaker only and see what you think of that!



ABOVE: Linn Sondek LP12 (minus platter) and Linn Ittok IV II arm, as used by reader Mark



RJ/E Forest



RJ/E Cinnamon



RJ/E Vodka



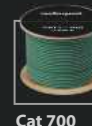
RJ/E Diamond



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.

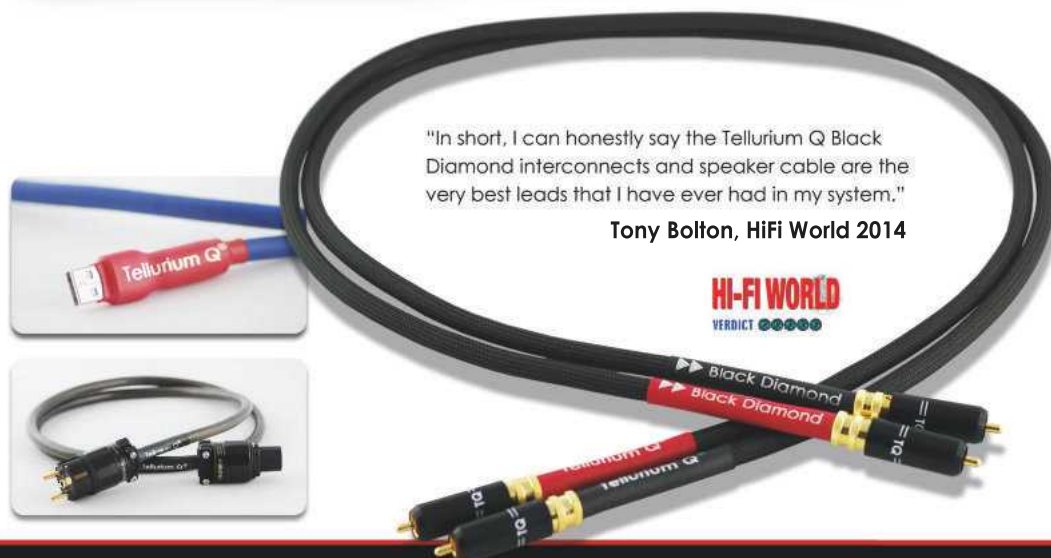
AudioQuest refers to its pre-terminated leading-edge Cat 7 cables as the RJ/E Series ... RJ for the RJ45 connector standard to the application, and E for Ethernet. For AudioQuest, the highest Cat 7 standard (with all 4 pairs using correctly differentiated twist rates and individually shielded) is only 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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Question of balance

READER ARGUES THAT ADVANTAGES OF BALANCED CONNECTIONS ARE A MYTH

There are many myths that creep into the 'high end', but the one that currently irritates me is that balanced transmission must be better than unbalanced. Balanced transmission was developed by the then GPO as a means of sending audio over tens or hundreds of miles. It relies on a matched transmission system in which the send impedance, balanced pair line impedance, and load impedance are all the same – usually 600ohm. The send and receive is invariably via 600ohm transformers and this has the huge advantage of providing electrical isolation, which means that differing signal earth levels are eliminated and can no longer be a problem.

The BBC adopted and almost certainly still widely uses balanced feeds, but it has to send signals here there and everywhere and often over considerable distances and it implements the system consistently.

When it comes to high-end hi-fi, the use of high grade transformers will have the virtue of losing the earth link. But these transformers are expensive, will introduce a small amount of distortion and will limit bass response. Many designs do not use transformers and create

their balanced feed with electronic circuitry. Such circuits cannot lose the earth link, meaning one of the major advantages is immediately lost, while considerable complexity will have been introduced.

If the balanced feed sounds better than the unbalanced then it will be because the designers have taken more care with the balanced circuits and not enough with the unbalanced. Or it will mean that system earthing problems or hum loops exist, which should be properly sorted out.

Nick Willans, via email

Keith Howard replies: The matter of balanced connections – analogue or digital – in the context of domestic audio single-room systems is, indeed, a contentious one and has been for a long time. I remember, for example, Martin Colloms writing on the subject many years ago, when balanced outputs and inputs first began to appear alongside traditional unbalanced ones on high-end audio equipment, urging that balanced connection not be assumed superior.

There are places within the complete audio chain – from recording to replay – where balanced connection's resistance to external interference (which does not rely on it being impedance matched, a technique usually reserved for connections of greater length) is unquestionably valuable, such as between microphone and preamplifier and within recording studios generally, where potential sources of interference are often legion. But within a domestic listening space – where connections are usually short and interference levels low – the benefit is questionable and certainly, given the extra circuit complexity and cost, should never be taken for granted.

There are potential advantages, though, to the balanced (*ie*, bridged-output) operation of power amplifiers – advantages which have nothing to do with interference suppression. Having two amplifiers operating in antiphase can bring benefits to power supply performance, for instance, while in Naim's flagship Statement amplifier the use of balanced speaker drive allows high output power to be achieved without resorting to paralleled output devices – something Naim regards as anathema.



ABOVE: Naim's Statement amp – balanced design avoids paralleled power transistors

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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Which isolation devices are best?

READER THROWS DOWN THE GAUNTLET TO THE HFN TEST TEAM TO SEE IF EFFECTS OF ISOLATION PRODUCTS CAN BE QUANTIFIED

Last year I upgraded the electronics in my systems, which are now all Primare products: BD32 universal player, PRE32 preamp, A32 power amp and R32 phono stage. I'm delighted with these purchases and they have proved to be a major upgrade from my old system, which comprised a Cambridge 840A integrated amp, 840C CD player and Lehmann Black Cube SE phono stage.

I'm now considering accessories to tweak the performance of my system, specifically those that are said to improve sound by isolating components.

There are many devices available for placing between components and hi-fi rack shelves, and these appear to be of two major types: those designed to isolate components from environmental vibration, such as Solid Tech (IsoClear, Discs of Silence, Feet of Silence) along with many varieties of cone feet; and those which claim to eliminate internal vibrations generated within components, like Stillpoints' Ultra range, the Cera range from Finite Elemente and Nordost's series of Sort Kones.

Solid Tech publishes test measurements claiming to show the benefits of its products, while Nordost claims that isolating components from external vibration is the wrong approach, as most vibrations affecting performance are generated internally.

I would think the component in my system most likely to benefit from devices designed to drain internal vibration would be the BD32 player, as you'd expect the disc spinner to generate the most vibration.

These devices are designed to be in contact with the body of the component, not under existing feet, which probably rules out their use under the A32 amp

which weighs 40kg. Placing so much weight on supports placed directly on the underside of this component seems likely to cause damage.

All of the brands I've mentioned are available in Australia, but not in my state, which means I would need to purchase them without hearing what they really do. Most of them are far from cheap and it would be helpful to have something to go on when selecting.

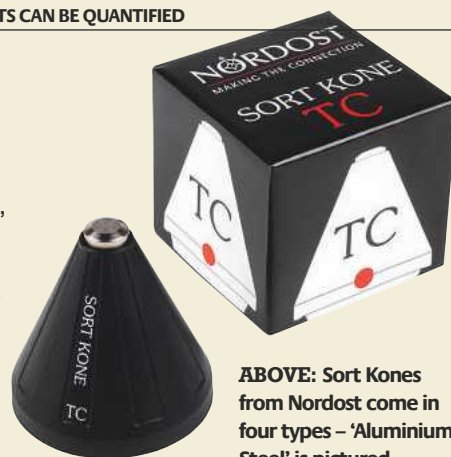
Are you able to make any recommendations as to which basic type of device is likely to provide the greater benefit? It would be truly informative if *Hi-Fi News* were able to do a comparative test of these products to assess their relative benefits, particularly if Paul Miller can devise testing methods to actually quantify their effect.

Frank Copley, South Australia

Keith Howard replies: My feeling is that nobody has ever really got to the bottom of what's going on with equipment 'isolation' (much of which isn't), despite the fact that it can make an obvious difference to sound quality. There's a case for saying that if an item of equipment were designed properly its means of support would make no difference at all to its performance – but being smart-arse doesn't address the practical reality.

Perhaps the only thing that is clear in all of this is that if you seek isolation from vibration (in either direction) then this is most effectively achieved by placing compliance, *ie*, a spring of some sort, between the item of equipment and whatever it rests on, choosing the spring rate in relation to the mass to achieve as low a natural frequency as practicable, which is typically around 3Hz.

If Mr Copley can lay hands on back numbers of *HFN* he may find of interest the articles I wrote in July and August 2002 ('Bad vibes' and 'More bad vibes', about measuring ground-borne background



ABOVE: Sort Kones from Nordost come in four types – 'Aluminium Steel' is pictured

vibration) and about the physics of compliant isolation and its efficacy compared to cones.

Users of valve equipment are also referred to 'Singing Along', *HFN*'s two-part investigation of valve microphony which appeared in May/June 2006.

Paul Miller replies: Back 'in the day' I regularly produced spectra illustrating the effects of structural-borne pink noise on the suspension system and other components of turntables [*HFN* Nov '87] while also providing measurements demonstrating low-level microphony in cables as well as higher-level effects in early CD players and contemporary tube amplifiers.

Naim Audio still suspends the DAC PCB in its various D/A converter and media players, for example, and while modern IC substrates are extremely resilient to vibration, this was not always the case. I well remember measuring an analogue output from a Philips-based CD player in 1986 simply by tapping its 16-bit DAC with the end of a pencil. Some modern valve amps are still extremely sensitive to structural-borne noise, regardless of whether equipped with tube dampers or left 'naked'. On occasion, simply drumming your fingers on the case is sufficient to 'bounce' the amp's (white) noise floor by 10dB or so.



ABOVE: Solid Tech's Feet Of Silence and IsoClear footers with Stillpoints' Ultra range (far right)

Joys of vinyl

NO SURFACE NOISE AND A PLEASING 'TICK'...

Having a couple of young grandsons aged 18 and 13 who, in turn, have taken an interest in LPs, I have decided to revive my record playing equipment. This comprises a Technics SL-Q33 direct-drive player of early 1980 vintage. Apart from needing a new belt to drive the arm mechanism, all was well. A suitable rubber band effected this repair!

However, I decided that a new stylus was needed. On some kind of instinct I went for an Ortofon OM 5 E. I know that this is probably frowned upon by the 'nothing less than £500 fraternity' but I am very pleased with the result, as is my friend of long standing. We are in our 80s and started our interest in hi-fi in the 1950s when if you wanted it, you built it.

This was the era of the Mullard 510 amplifier. I still have the construction book for it! We first met in 1950 when we began our radio and TV designer apprenticeships. Our group of hi-fi enthusiasts regarded the Gilson grain orientated transformers a necessity.

My valve days ended up with a push-pull 6V6. My last home-made unit was cobbled together with Maplin amp modules and a home-designed preamp section.

Over 30 years on I set up a Quad 34/405II driving B&W DM14s. How's that for vintage? In 1982 I added the Technics turntable after reading a review of it in *Hi-Fi News* then, in 1987, bought a CD player and followed the digital route.

Recently my friend came over with some of his record collection including a disc which stunned us both. Do any other readers have the Decca SXL 6450 of 1967? It is Britten's *Young Person's Guide To The Orchestra* coupled with his *Variations On A Theme of Frank Bridge*. Performed by the English Chamber Orchestra, it is conducted by Britten. It was specially recorded by Decca and mastered and pressed by Nimbus. The production was outstanding from the depth of the timpani right through to the very sweet string section. No surface noise and the rather pleasing 'tick' as the stylus enters the groove.

John Collins MIET, via email



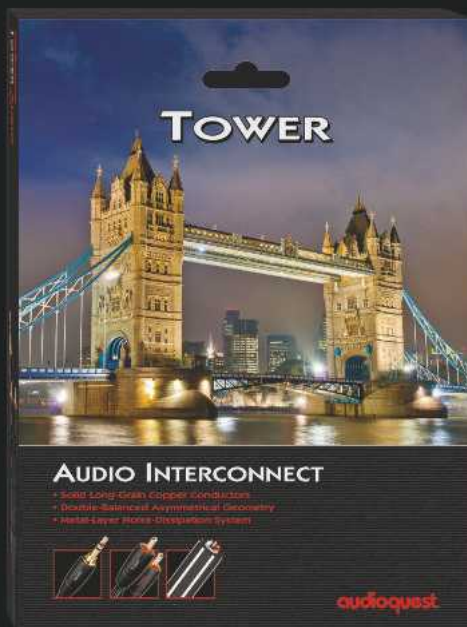
ABOVE: Ortofon 2M Black [HFN Mar '11]

Tim Jarman replies: Your Technics/Quad/B&W system was a typical choice during the early '80s period and is one combination that is difficult to usefully improve upon using similarly priced modern equipment. My usual recommendation for a cartridge for decks of the calibre of the SL-Q33 is something from the Ortofon 2M line, preferably the bronze or black, or an equivalent MM model from the Audio-Technica range.

My only concern with your set-up as it stands would be the use of the rubber band. Due to the difference in the stiffness of the material, these need to be much tighter than the original belt to work effectively. This can overload the motor and the driving electronics, leading to problems that will be much more difficult to solve at a later date. Fear not though, as packs of small belts for portable cassette recorders are widely available and you will certainly find one that is suitable.

Christopher Breunig replies: Well, here's another reader/contributor with a copy of the Nimbus-pressed Britten *YPG* and *Frank Bridge Variations*. This was one of a clutch of Supercut remasterings prepared by the long-gone audio magazine *Practical Hi-Fi* – along with the Boulton/EMI Elgar Symphony 2, and the Warner LP *Rickie Lee Jones*. They sounded significantly better than the standard commercial equivalents.

In our June Classical Companion I will be looking at a new Decca set of mono classical reissues (not quite 80 years old but 65-ish!). And, of course, you can find other vinyl labels increasingly now sold by reliable dealers like MDT, Derby. The 180g pressings from Speakers Corner (DG, Mercury, CBS/Sony, *et al*) and Hi-Q (EMI titles) are pretty dependable re. surface imperfections and claimed to be all-analogue from the parent company master tapes.



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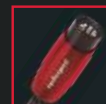
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B&O Beogram CD50

Based on an Aiwa machine, the CD50 was the first CD player designed to be used with a B&O stackable system – the Beosystem 5000. How does it sound today?

Review: **Tim Jarman** Lab: **Paul Miller**

So many people own CD players today that it's easy to forget the sheer complexity of the engineering found inside one. In the mid 1980s, once it became clear the format was set to be a winner, hi-fi manufacturers at all levels were keen to have a player in their range. For those who lacked the necessary resources (which meant everyone bar Philips and the biggest Japanese names) the easiest thing to do was to buy in machines from the big boys then re-brand them as required.

For its first generation models, B&O of Denmark hedged its bets. The 1985 catalogue showed the proposed Beogram CD50 but the text made it clear that the machines weren't actually available to buy yet. Just before it was ready, B&O released another player: the Beogram CDX.

ODD COMBINATION

Unlike the CD50, the CDX was aimed at owners of legacy equipment who wanted to add a CD player in the B&O style. For the CDX, B&O went to Philips, using the odd combination of a CD100 chassis and CD104 electronics (*HFN* Oct '11/Apr '14). For the CD50 it went to Aiwa, selecting the DX-1500 model as the basis. At this stage, Philips and the Japanese had quite different ideas on the subject of CD playback, so it is remarkable that both schools of thought were available under the B&O brand.

What made the Beogram CD50 different from other early CD players was the way it was integrated with the host system. Previously, it had been sufficient to offer



ABOVE: Not the debut system but a good match nevertheless – here's the Beogram CD50 player as part of Beosystem 5500. The units on the left are the receiver and cassette deck

a machine with similar styling cues to the equipment it was intended to work with and a button on the amplifier marked 'CD'. This wasn't enough for B&O.

The Beosystem 5000, which at launch in late 1983 had comprised a 55W AM/FM receiver, cassette deck and belt-drive automatic turntable all of almost identical appearance, was built for CD from the start and used a centralised form of interactive remote control. This saw all instructions first processed by the receiver before being distributed to the other units via extra connections in the signal cables. From

the outset the software was engineered for the complete operation of the CD player. Functions included the usual skip and search as well as direct track access, multiple programming modes, automatic sequencing and a timer.

The player could also be controlled and programmed from any location in the house connected to B&O's multi-room Link system. Since the remote control unit featured interactive displays, its status could be monitored too. Systems like this are only just becoming widespread now; back in 1986 it seemed like something from another world.

MATCHING CHASSIS

To properly match the other Beosystem 5000 components, the new CD player also had to fit into the same 42x7.5x32.5cm chassis – a complex task as most early CD players were narrow and tall rather than flat and wide. Nevertheless, the Aiwa fitted



LEFT: The user instruction manual, showing the range of connection options which the Beogram CD50 CD player offered. Equipment of all ages could be accommodated



the bill, although it was necessary for B&O to machine away part of the inside of each top cover to fit the mechanism in.

Other Beosystem 5000 hallmarks were also present, for example the red four-digit LED display and the control functions at each end of the silver aluminium strip on the front. Even the name had been chosen so that the text could be laid out to match that of the other units, 'CD50' having four characters like the '5000' on the matching components. In using the Beogram moniker B&O indicated that it considered CD to be an alternative to the LP; the Beogram CDX even had 'Laser Optical Turntable' discreetly printed under its lid. All of B&O's subsequent CD players were also prefixed Beogram.

Unlike the Beogram CDX, which was built in a Philips factory in Belgium, the Beogram CD50 was assembled by B&O in Denmark. There, bare Aiwa units from Japan were fitted into a B&O chassis and

cabinet and equipped with a B&O front panel, microprocessor control system and connections. This gave the completed player the correct B&O finish and feel.

Apart from having its PCB-mounted RCA connectors removed and replaced with a DIN socket and RCAs on a remote panel, the Aiwa's signal circuits were untouched; the Beogram CD50 and the DX-1500

thus give identical performance.

Technically, the DX-1500 was a typical second-generation Japanese machine. This meant that 2x oversampling and a digital filter were now

included, courtesy of Yamaha's YM2201 chip. The 16-bit Burr-Brown PCM53 DAC was still time-shared between the two channels though, so the machine was still somewhat behind contemporary European (eg, Philips) practice. A three-beam laser pick-up was used and, unusually, this was mounted over the disc, shining downwards. This layout, of course, required that the

ABOVE: The Beogram CD50 makes almost every other CD player look fussy and cluttered, regardless of era. Black glass and machined aluminium are used for the fascia

disc be loaded label side down, a quirk that led to many service calls once the machines entered user's homes.

Much of the DX-1500's servo system was still implemented using analogue circuits and production spreads meant that modifications often had to be made during manufacture to get things to work. This was evidenced by a rat's nest of components mounted on the back of the servo PCB; sometimes it seems that no two machines were exactly alike!

LEASE OF LIFE

The Beogram CD50 remained in production for the life of the Beosystem 5000, but in 1987 this was replaced by the Beosystem 5500 – an update of the existing theme. It was intended that this new system would include a CD player of B&O's own design, based around the Philips 16x4 chipset. However, as was the case ➔

'The player's sound was bright and bursting with sheer energy'



LEFT: Classic 1980s elegance: the complete Beosystem 5000 as shown in the 1986 B&O catalogue. Strictly speaking the CD player should be placed above the cassette deck and not below it, as shown here, since the entire tape deck mechanism slides out on a motor powered drawer

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MB30 Absolute Simplicity 16 watts Triode or 30 watts Ultra Linear Pure “Class A”

For many Hi Fi fans the idea of a Single Ended Triode output valve (SET) is very appealing for its seamless musical truth without the stark mechanical properties that some amplifiers have. Until now about 8 watts was about the norm for most designs, severely limiting speaker choice, apart from expensive, “exotic” amplifiers.

The new Tung Sol KT150 in Pure “Class A” gives double the power of the 300B in pure triode mode, and nearly four times the power in Ultra Linear.

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RIGHT: A meeting of worlds: The green PCB, the transport and the transformer come from Aiwa, the rest is made by B&O. The optional remote receiver is at the bottom centre

with the CD50, this was delayed, so for the first year the new system was sold with the old player. When the new machine, the Beogram CD5500, eventually appeared, it proved to have been well worth the wait, but that's a whole other story...

The Beogram CD50 can be used with other equipment as well as the Beosystem 5000. The 1985 catalogue pictures show a machine with a flip-down front panel with keys behind, but sadly this feature did not make it to the production version, the only controls being 'play'/'skip'/'off' on the right of the fascia and 'drawer open' on the left.

The drawer can be closed either by pushing it or by using the play key, so the controls are sufficient to get you going and to choose a track, but precious little else.

A remote control kit was offered, which brings full functionality, but this is an unusual item. Most CD50s were bought as part of B&O systems and so in the beginning this extra wasn't needed.

TIM LISTENS

Even without the remote control the player is still usable, which perhaps goes to show how few of the functions found on a traditional player are actually (if ever) used.

The seven-pin DIN connector for B&O equipment is augmented by a pair of standard RCA's, so the only problem you may encounter when connecting a CD50 to an existing system is that some types of bulky modern plugs won't fit inside the recess at the

'The violin was cleanly rendered with virtually no wiriness at all'

back. This was not an issue for my Chord Calypso interconnects, so the CD50 was quickly connected to my reference Cyrus 6A amplifier and Monitor Audio PL100

loudspeakers. In practice none of B&O's design refinements affects the CD50's performance – what you are listening to is pure 'Aiwa'.

From the first track I recognised a considerable

improvement over the performance of the first-generation Japanese machines, typified by Sony's CDP-101 [HFN Jan '12]. The clanking, mechanical quality of the

upper midband and chaotic soundstaging that is so often a feature of the original 16-bit non-oversampling machines was not present to anything like its earlier extent.

Tonally the Aiwa circuits provide an even-handed account of what's on the disc and nothing jumps out as obviously deficient once the music starts to play. In fact, there isn't a great deal to give away that this is an early player at all, apart from the lazy nature of the track searching system, which works in small, slow jumps. (TOC reading is also a bit of a performance and is accompanied by an odd series of ticks, whirrs and slurps. It always seems to get there in the end though.)

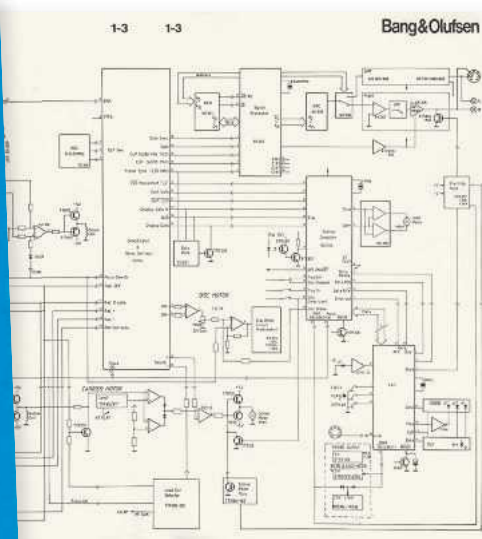
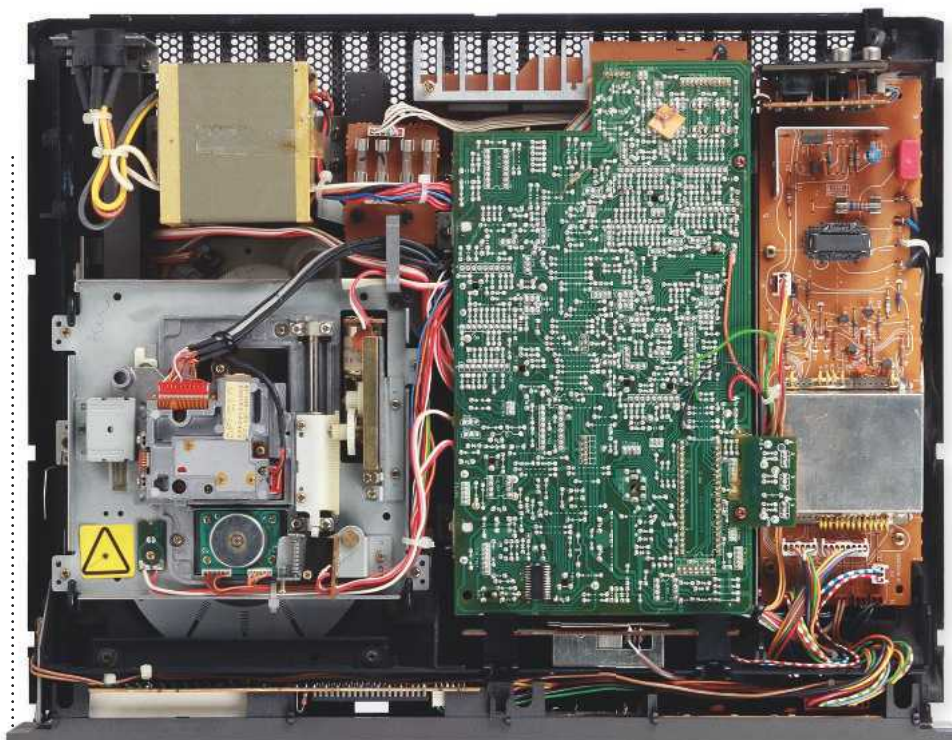
A TRIFLE BUSY

The player's weaknesses are to be found in its slightly splashy high treble and in the indistinct nature of any centre stage imaging – artefacts from the sharp filters in the analogue stages perhaps?

Both these effects were clear when listening to the track 'Gypsy' by Fleetwood Mac [WB 812279316]. The percussion was just a trifle busy and unusually edgy whereas Stevie Nicks' vocals never seemed to quite gel in a central position.

Vocals aside, it has to be said that the various instruments were better placed and, as is often the case with early CD

LEFT: B&O service manual for the CD50 with diagrams and adjustment procedures re-drawn from the Aiwa originals. The blue cover indicates a source component (CD, tape deck etc)



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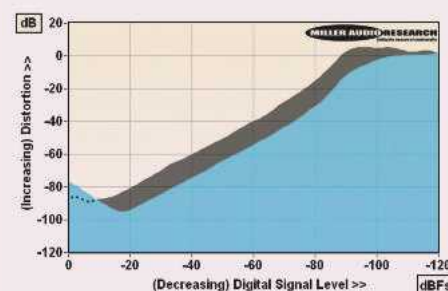


LAB REPORT

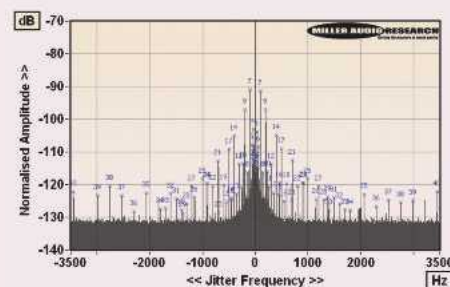
B&O BEOGRAM CD50 (Vintage)

Second generation it may be, but this Aiwa-based CD player also plays second-fiddle to the technical performance offered by Philips' first-generation CD100 [HFN Oct '11], the CD303 [HFN Nov '13] and CD104 [HFN Apr '14]. Their 14-bit/4x technology offered lower distortion, a wider S/N and – especially – a superior low-level resolution (+1.5dB over a 90-100dB dynamic range) than the 16-bit DACs employed in much of the Far Eastern competition. Our CD50's 16-bit PCM53 DAC suffered a 16.5dB error at -90dBfs and was already 3.5dB adrift at -80dBfs. Fortunately, the errors are *negative*, so low-level and necessarily very distorted signals were reproduced at a lower level than encoded. With the 98.7dB A-wtd S/N ratio, the practical resolution of the player is around 15-bits.

Two-times oversampling also reduces the interchannel phase-shift caused by the use of a single time-shared DAC but the output of the CD50 is also phase-inverting. Response ripple is much reduced over first-gen players, however, with a gentle bass lift of +0.2dB/20Hz allied here to a peak of +0.4dB/17kHz before the HF filter kicks-in. The 2V output is bang on the original 'standard' albeit from a moderate 445ohm source impedance, but, because of the steep analogue filter, distortion is higher through midrange frequencies (0.0017-0.026% at 1kHz over a 30dB range) than at 20kHz (0.0093-0.0012%) – see Graph 1, below. Jitter is high too at 1300-2000psec, caused here by switching noise from the PSU rectifier [see Graph 2] and known to exert a 'warming' influence on the sound. Readers may view a full QC Suite test report for B&O's Beogram CD50 vintage CD player by navigating to www.hifinews.co.uk and clicking on the red 'Download' button. PM



ABOVE: Distortion versus 16-bit digital signal level over a 120dB range (1kHz = black; 20kHz = blue)



ABOVE: High resolution jitter spectrum showing sidebands and digital noise (44.1kHz/16-bit data)

HI-FI NEWS SPECIFICATIONS

Maximum output level / Impedance	1.99Vrms at 445ohm
A-wtd S/N ratio	98.7dB
Distortion (1kHz, 0dBfs/-30dBfs)	0.0017% / 0.026%
Distortion & Noise (20kHz, 0dBfs/-30dBfs)	0.0093% / 0.0012%
Frequency response (20Hz-20kHz)	-0.19dB to +0.45dB
Digital jitter	1920psec
Resolution @ -90dB	-16.5dB
Power consumption	15W
Dimensions (WHD)	420x75x325mm



ABOVE: Clean rear panel with recessed connectors gave a neat and tidy appearance from all angles. Matching receiver and cassette deck shared many cabinet parts

players, the presentation was bright and bursting with sheer energy.

Orchestral pieces flatter the CD50 more, I thought, as I enjoyed a delicious performance of Johan Svendsen's *Romance* in G major [Deutsche Grammophon 459 377-2]. Here, the solo violin stood centre stage against a deep background about which the other performers were spread.

The violin was cleanly rendered with virtually none of the feared wiriness that a lesser player could introduce. As a backdrop to this, the other sounds were rich yet neither excessively thick nor tubby – a fine balancing act, which it is easy to get wrong. Full marks to Aiwa for wringing a sonic quart out of a single DAC pint pot!

Another plus point of the CD50 that is clear with this type of music is that it is mechanically quiet once the track has been selected. This is unlike some machines of this era that hiss, clatter and whine from inside the cabinet the whole time.

POPULAR MACHINE

Unlike the Aiwa DX-1500, the Beogram CD50 was a popular machine and so examples are not too difficult to find. However, the would-be buyer will be in competition with Beosystem 5000 and 5500 owners trying to keep their set-ups going when the original players fail beyond repair.

Not that the CD50 is troublesome, the laser pick-up, for example, is very durable and seldom the cause of breakdowns. The spindle motor causes more problems, but this can be reconditioned with a little care. It is of the brushless type and so there is nothing to wear out.



ABOVE: B&O's remote offered the full gamut of CD transport facilities

Old lubricant that has gummed up is the main cause of failure. The drive belt for the tray also becomes baggy with age, the trouble here being that it is necessary to remove the optical deck and all the drive gears to replace it. This isn't an easy task since the gears have to be carefully re-timed on assembly otherwise nothing will work.

Missing the first ten or so seconds from the first track is a common (and annoying) CD50 trait. This is caused by stiffness in the movement of the laser sled and can be cured by careful lubrication of the runners and by removing the spring from the friction clutch in the gear train. Like one's appendix, it serves no useful purpose, it seems.

The electronics give little in the way of trouble apart from the odd crusty capacitor and dry joint, although in some cases the glue that is used to secure the wiring can become conductive with age, resulting in odd servo problems. Chip it away and all is well though.

The CD50's remote control system will work with any B&O receiver having a seven-pin CD or Aux socket, but you need the correct seven-pin DIN cable for the remote functions to work. Much of the above applies to the Aiwa DX-1500 too, though these have not survived in such large numbers. ☹

HI-FI NEWS VERDICT

This novel Aiwa-based machine shows how much progress the Japanese made with their second generation models. A durable machine and a competent performer, the Beogram CD50 is probably employed to best effect in a complete B&O system where its high-tech user interface can also be enjoyed. Remember that the DX-1500 would be a better choice for general use, were it not so unusual.

Sound Quality: 77%



Sleeves under scrutiny

Viewing the subject from slightly different angles, keen record collectors **Trevor Swinson** and **Tully Potter** look at what makes a perfect LP sleeve

*Hi-Fi
News
Dec 1979*

Each month *HFN* will bring you an article from our vast archive of features and reviews from yesteryear

In the early days of LPs, writes **Trevor Swinson**, it soon became evident that attractive pictures were an important selling feature, so that expensive four-colour illustrations became the order of the day. Today, for pop albums it is not unusual for several thousands of pounds to be spent on the artwork alone!

To the more serious purchaser of classical records, what is on the other side of the record sleeve is by far the more important – the sleeve notes. And don't they vary in content! From those Philips reissues that gave a history lesson but no musical help, to the really informative. Even so, it is worthwhile setting down some of the essentials.

First of all, for a single record of symphonies, suites, etc, the movements should be indicated in display type and not hidden in the text. While most people are used to the usual Italian terms like *andante* and so on, instructions in German (by Mahler, for example) will not



ABOVE: Typical of box sets of the period, this Philips collection of symphonies by Boccherini sported an eye-catching cover while inside were four pages of notes

be understood by everyone and might well be translated. Record companies should remember that a considerable number of buyers will be newcomers to the scene who need all the help they can get.

Sleeve notes almost always give some historical background to the works in question and the date of composition is essential. It is also very useful to know the composition of the orchestra; the larger the forces used, the more likely it is to be given. But 'classical' (eg, Mozart) record sleeves seem to be shy of disclosing this information.

SITING OF INSTRUMENTS

Even more interesting would be the disposition of the forces – in concert halls, the siting of woodwind, brass and percussion varies quite a lot. It is interesting, for example, to be told whether the violins are 'divided' left and right. The knowledgeable will be able to tell for themselves, of course, but such information is of interest to the uninitiated.

Now it is a strange thing, due to manufacturers' internal arrangements, that music experts

commissioned to write sleeve notes usually have to work months ahead of the record's production. So they may well know little or nothing about the performance. Consequently, vital information can be omitted. This might be remedied by better liaison between departments, where time allows. (What has been said about orchestras applies equally to choirs.) With organ records it is usual, but not invariable, to give the organ's date and specification.

The hi-fi enthusiast might well want to know how the members of choirs and orchestras are positioned – and the disposition of microphones! It is perhaps too much to expect this extra work from the companies, but most folk must be tired of photographs of polo-necked conductors and shirt-sleeved orchestral players jumbled up in a mass of trailing wires and microphones. At best, it destroys the concert-hall illusion!

On some reissues or bargain labels, it seems to be that less informative sleeve notes are good enough. Surely the best and





FAR LEFT: The 1970 Mozart box set had a 12-page booklet with notes, artist pictures and biographies, drawings and portraits from Mozart's lifetime – but no producer/venue details!

LEFT: Living composers Britten, Copland and Stravinsky were generously represented on Decca and CBS LPs

cheapest way is to reprint the original notes, if still relevant?

Now for those three-language horrors of sleeve notes. These almost always entail abbreviated texts to accommodate the unwanted languages. Reviewers in gramophone journals frequently criticise this cheap practice, and many record buyers don't like it either. A glaring instance of the problems of using three languages can be seen on the Decca 'Jubilee' records of the Beethoven symphonies, where very small type has had to be used just to accommodate all the text.

USE OF TYPOGRAPHY

Mention of type leads on to the typography of record sleeves. In display faces, some of the crudest Victorian typefaces have been resurrected for the sake of fashion. In text type, things are improving, perhaps. A year or two ago the type looked as though it had been 'set' on an old electric typewriter, and was either too heavy or too light. Strangely, some of the smaller companies provide excellent typography and do not indulge in three language notes.

In the early LP days, the fold-over flaps were on the top and bottom of the record sleeves, then glued down, outside. Occasionally, there was an insufficiency of glue, to give a dogeared look after some use. So someone decided it was neater to glue the flaps inside. So it is, but on occasion, it is much harder to insert record and inner into the sleeve.

Two-record sets come either in boxes or double folders. The former have been criticised for taking up too much room; the latter are much more economical to produce and, being in the form of a folder, provide three sides for extended program notes, etc. Three-record sets and above must be boxed, with

a showy four-colour picture on the outside as a selling aid, and hopefully factory-sealed. One would expect the wily manufacturer to

cheapen the brochure inside. Not so, in many cases.

Almost invariably, the booklet is about the same size as the 30cm discs. This is a most inconvenient size to handle, especially if used frequently, as opera booklets may well be. Paper sizes now being metric, it would be convenient – and economical – to use A4, which is not unlike the old foolscap size. True, it would leave less room for the trilingual advocates, but would surely be well received by the average listener.

Colour is often lavishly provided in these booklets.

An extreme example was the Decca-Telefunken *Magic Flute* (Solti) libretto, which had 26 full-colour pictures of 'roughs' of proposed costumes for the opera – surely of minimal interest to the fireside opera listener. On the

other hand, the recent Philips box of Boccherini symphonies had a heavy maroon cover enclosing four pages of notes, the English text occupying two-and-a half columns. The contents of these booklets are almost always fully comprehensive and include potted biographies of conductor and principals involved, though sometimes overdone.

Even so, I still have a plain single-colour, pocket-size, libretto of the first Decca (mono) recording of *Seraglio*, price 9d, well-printed and perfectly adequate. And so easy to handle; as some of these opera brochures must cost a pound or two to produce, one wonders whether a more economical format would not be equally acceptable, with a proportionally lower price – and VAT – for the whole package.

A WORD ON LABELS

Typographically, most of these booklets are of high quality and artistically beautiful. For sheer consistent quality over many years, Deutsche Grammophon would take some beating, and EMI is not far behind. Strangely enough, though almost invariably printed in photolitho, illustration quality does not always match up to the text. One example is Decca's Haydn symphony series booklets, which were marred by some muddy pictures reproduced from inferior originals.

The subject matter seems invariably to describe the music,

etc., effectively, but presentation varies. (It would be welcome if the labels were always the same way up on both sides!) Background colours should always be such that the type matter can be easily read in fair artificial light. CBS, for example, prints its labels in black on a blue, brown or red background that makes it none too easy to decipher. DG, again, scores with clear type on a yellow background.

In sets, the numbering of discs →

BELOW: Logos for the principal LP labels in the UK during the '70s – DG, EMI, Decca and Philips





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is variable. In a three-record set, for instance, one would expect the sides to be numbered 1-8. Philips and DG sometimes favour 1-2 for each disc and in small type '1st side of first record' and so on, the main numerals being bold and clear. Thankfully, it appears that automatic coupling numbering has almost died out in the UK.

On the small matter of serial numbering, simplicity is surely not only more convenient for the customer but for the retail trade. Two or three letters and a four-figure serial number is fine, eg, EMI's ASD and Decca's SXL numbers are splendid (and even give the knowledgeable some idea of the date of issue!). Seven-figure serial numbers, on the other hand, can be the source of much confusion.

TULLEY POTTER WRITES...

When you play a record at home, it is natural to sit reading the notes on the sleeve. Like me, you may even have received a large amount of your musical education from this activity. Yet the sleeve, such a vital factor, is often the least well produced part of the package. It sometimes seems to have been

RIGHT: The Florilegium Series from Oiseau-Lyre was the UK counterpart to the Archiv (Deutsche Grammophon) early music label. An insert sheet had notes with details of the historic instruments used, etc

BELOW: Philips' Universo reissues had sleeve notes relating to the period of the music on the LP – Lenin, a 1933 Zeppelin and Yuri Gagarin for this Shostakovich Symphony



designed expressly to frustrate and annoy the poor record collector. Oh, it's probably been lavishly printed, at great expense, thereby adding considerably to the cost of the record. But is it actually of any use? Or is it just a liability?

Take those double sleeves (for single discs) which are all the rage with some able to give a single disc almost the room for two. My house is jam-packed with 23 years' accumulation of records as it is.

Luckily the double sleeves are often badly glued together; so I can slit open the useless extra flap and insert another disc – one made by the same artist, or an imported

languages – at least two of which must be superfluous to the buyer of the record – could just as easily be printed on a sheet inserted into a single sleeve. Anyone who has a reasonable record collection and limited space will know what I mean, when I say a double sleeve makes me think twice before buying the LP.

And how many times do we buy a set of two or three records that come housed in a box big enough for six or eight discs?

DETAILS, DETAILS...

Apart from the artwork – which is a matter of taste – two other aspects of sleeves demand attention:

The details of the recording sessions and the background information on the music and the performers.

Here is what

I would like to

be told about the sessions: dates and venues of the recordings on the disc; equipment used and the method of setting it up; the recording personnel involved; the musicians involved, including names of important obligato players; the instruments used as in type of piano, maker of violin and date of manufacture, etc; full details of the source of the music – the edition being used, the cuts made and the repeats omitted, etc. I'd also like to know who designed the sleeve – and where the pretty picture on the front came from.

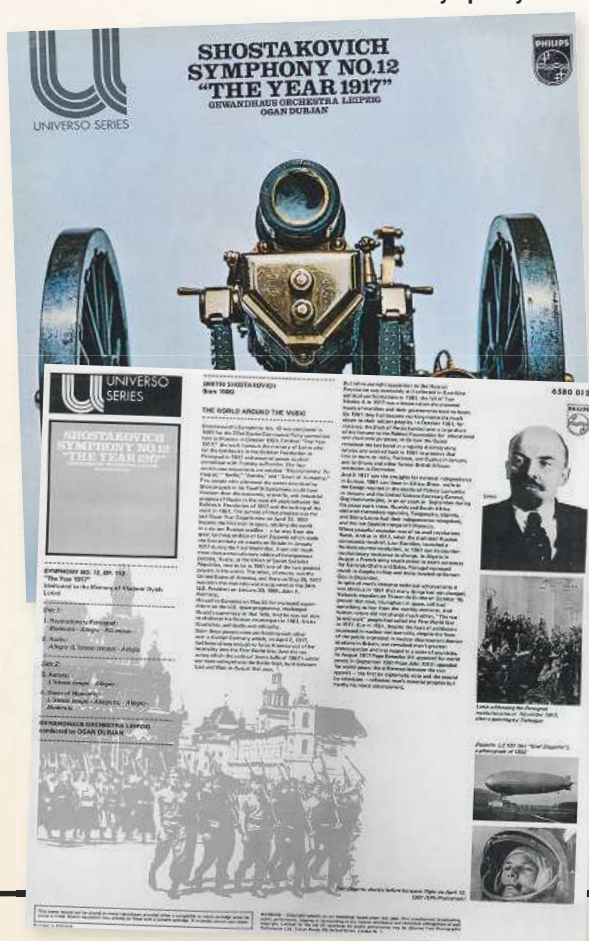
This may seem a long list, but all this information could be given in small type, within a very small space on the sleeve. Many companies already provide much of this especially the smaller firms, ☺

'I am convinced I've had more warped discs in double sleeves'

disc of the same composer which came with sleeve notes in Serbo-Croat, Russian or Czech. So now I have a fair number of discs which have been bereft of their own sleeves and are living like promiscuous hermit crabs, in the spare accommodation provided by other discs. But I also have a load of spare, empty sleeves... so what should I do with them? Burn them?

Then what happens when I want to get rid of those particular records – or the records whose sleeves they are sharing? That's just the first of the nightmares. I am convinced that I have had a far greater number of warped discs in double sleeves than in single ones. It seems obvious that a disc cannot be stored straight and upright, under the correct pressure, in a double sleeve.

Worse, these monstrosities often contain no more notes and information than single covers do. What they do contain, in three



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who often put their international brethren to shame.

As for the background notes... I feel that the average collector wants a simple, sensible note on the music, without too much structural analysis. He wants some indication of where it stands in the composer's output – and, perhaps, how it relates to works by contemporary or other relevant composers.

It is also pleasant to know something about the circumstances in which the work was written and first performed. It is only courteous to the artists, and interesting to the buyer, to give a biography, however brief, of the principal performers.

AROUND THE MUSIC

Philips had a good idea when it introduced its now defunct Universo label – it set the music and its composer in the context of what was happening in the other arts and the world in general at the same time ('The World Around the Music'). However, it erred in not giving enough information about the actual music, although there was often plenty of space left on the sleeve to include this. After much criticism the company withdrew this type of note altogether, but with the right handling it could be very successful.

To summarise: DG's 'Archiv' label meets most of my requirements, with impressive documentation and good notes, but loses points for substituting double sleeves for the old fold-over type. Decca's 'Fiorileglum' series is beautifully presented but is very short on

**'HMV falls down
appallingly on
musical sources
and session info'**

session information and doesn't always specify source material for the music. Several small labels like Unicorn, Symphonica and Meridian have found just the right blend, though even they could improve.

CRD also does well but spoils its efforts with unnecessary double sleeves. HMV generally has superb artwork and model notes, but falls down appallingly on session information and musical sources.

About DG (other than 'Archiv'), Decca, RCA and Philips sleeves, I can find very little good to say except that they usually eschew the double variety. CBS hasn't even that saving

grace and its 'Masterworks' series gets my booby prize.

Model sleeve note writers who have caught my eye are Michael Kennedy, Gerald

Abraham, Hugh Ottaway, Robert Layton, Martin Cooper, Charles Rosen, Jeremy Noble and H C Robbins Landon. (My personal Pseuds' Corner is reserved for Richard Osborne.)

I shall continue the search for the 'Perfect Sleeve' though even that won't save a disc which is badly recorded, poorly pressed, or warped, or which enshrines a dull performance. But that, as they say, is another story... ☺



ABOVE: The pages from the December 1979 issue of *Hi-Fi News* in which Trevor Swinson and Tully Potter examined the information printed on record sleeves and boxes of the day. The magazine cover pictured the Argentine pianist and conductor, Daniel Barenboim



Also in *HFN* this month in 1979

THE FEARBY FRONT-END
L F Fearby describes a DIY head-amp for MC pick-ups.

THE CALREC SOUNDFIELD MICROPHONE

Angus McKenzie completes his survey of mikes by discussing this remarkable device.

INTERFERENCE

A conducted tour through radio breakthrough and 'fridge plops' by Harry Leeming.

THE LSO

Peter Gammond considers the history, achievements and recordings of a great orchestra, midway through its 75th season.

FOUR SMALL LOUDSPEAKERS

Trevor Attewell hears the Chartwell PM110, Infinity Infinitesimal, Videotone GB3 and the KEF R101.

FIVE MID-PRICED CASSETTE RECORDERS

The Aiwa ADL40, Harman Kardon HK2500, JVC KD-A5, Sony TCK-75 and Teac 510 tested by Denys Killick.

DANIEL BARENBOIM

Andrew Keener talks to a very lively-minded musician.

RECORD REVIEWS

Classical issues and collections, plus rock, jazz, folk reviews and records of the month.

LEFT: The Archiv label was for early music played on period instruments; sleeves were often plain gatefolds with insert cards listing the instrumentation, etc. Early boxed sets came with real linen cloth covers (later simulated)



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Cartridge Man Conductor Air Bearing Tonearm new
Clearaudio Innovation Compact, good condition dem
Clearaudio Unify Tonearm excellent boxed dem
Clearaudio Basic Symmetry Phono Stage boxed used
Conrad Johnson TEA 1b Phono stage used
Conrad Johnson Premier Six phono preamplifier used
Conrad Johnson TEA 40 phono stage dem
Garrard 401, Jelco 750 12" arm, new plinth and lid dem
Graham Phantom Supreme 12", SME cut dem
Haddock 242 Export, dem
Hanns T30, mega T1, sealed box new
Lehmann Black Cube phono stage dem
Inspire Full on! Technics 1210/Plinth/PSU/SME M2 arm used
Linn Sondek, Ittok, nice condition used
Linn Sondek, Lingo, Naim Aro, superb used
Linn Sondek, Basic plus, Vahlha, VGC+ used
Linn Sondek, Grace 707, basic psu, VGC+ used
Linn Sondek, Naim Aro, Staff build Armageddon used
Linn Lingo, excellent used
Linn Basic Plus, vgc+ dem
Lyra Erosion Step up used
Michell Hydraulic Reference, Fluid arm, excellent used
Michell Tecnoarm A in black as new mint boxed used
Michell Synco/RB250/Eroica, great condition used
Michell Orbe Se, excellent boxed used
Moth phono stage dem
Musical Fidelity XLP5V3 phono stage dem
Musical Fidelity XLP5V8 phono stage dem
Naim Aro, excellent boxed used
Naim Stargeline N excellent boxed used
Pioneer PL530 Direct Drive, good condition used
Pioneer PhonoBox SE phono stage, excellent value dem
Project RPM 9 turntable with arm and platform dem
Project Xpression mk2, arm and cart dem
Project RPM 5 Turntable/Arm boxed with Speedbox used
Project RPM 4 Turntable/Arm with cover, great! used
Project Perspective, Speedbox SE, Shure V15mx Rega Planar 2, RB250, excellent boxed used
Rega RP3 Elys2 cartridge, excellent boxed used
Revolver Rosewood, G1022, excellent used
Roksan Xerxes RB300, PSU, boxed used
Roksan TMS 2 with Reference PSU, boxed as new used
Roksan Xerxes, XPS, SME Fit dem
Graham Slee Fanfare Amp3 dem
Graham Slee Reflex C with PSU 1 used
SME 3009/3, excellent boxed used
SME V, excellent, due in dem
SME V12, nr mint boxed used
STD305, vgc, no arm used
Systemdek, Syntex P02, excellent used
Systemdek IIX900/RB250/AT440 used
Technics 1210, near mint boxed used
Thorens TD150, SME3009 good condition new
Thorens TD160 HD turntable used
Thorens TD160, Audio Technica arm, boxed used
Thorens TD209 turntable package dem
Thorens TD2030 Blue turntable new
Thorens TD125 c/w SME3009, excellent used
Tom Evans Groove, 0.85mV/100 ohm, excellent used
Townshend Elite Rock c/w Excalibur, boxed excellent used
Transfiguration Orpheus L, good condition dem
Trichord D20 2 c/w NC PSU & HP Cable dem
VH1 Colibri M/C cartridge new
VDH Condor M/C cartridge new
VPI Scout, JMW arm excellent used
VTL TP2.5 phono stage (new) new
Wilson Benesch Act 1 Tonearm, nr mint superb used

Radio/Recorders

Akai GX95mk2 boxed with remote used
Arcam T61, vgc+ used
Denon TU-S10 used
Musical Fidelity A5DAB, sealed box used
Naim NAT03, excellent used
Naim NAT01 and NAPST phone, serviced, vgc+ used
Naim NAT101 & SNAPS, excellent £500 Naim service used
Nakamichi Dragon, excellent! used
Nakamichi CR4e, vgc used
Nakamichi DR10, excellent used
Nakamichi DR1, vgc used
Nakamichi BX2, excellent used
Nakamichi S80, near mint boxed used
Nakamichi RX505 used
Pioneer CT91a reference used
Pioneer CT5810S used
Pure 701ES DAB Tuner used
Quad FMA, late grey version, excellent used
REVOX B215s, vgc+ used
Tandberg TCD440a, superb! used
TEAC V8000S, superb used
TEAC V80003S, excellent used
Rotel RT1080, excellent used
Yamaha KX1200 excellent used
Yamaha CT7000, vgc used

Amplifiers

AMR 777 Integrated dem
Anthem Integrated 2 Valve Integrated used
Arcam Alpha 7, vgc+ boxed used
Arcam C31 preamplifier, remote excellent used
Art Audio Jota 520b, excellent used
Audio Flight Pre and Flight 50 Class A power used
Audio Analogue Bellini VB and Donizetti Cento, superb used
Audio Analogue Maestro Ref SE integrated dem
Audio Analogue Pucini Ref SE amp. Black dem
Audio Project ap60 integrated dem
Audio Research Ref 610 Monoblocks, vgc boxed used
Audio Research LS25 mk2, excellent boxed used
Audiolab 8000Q/Ms, silver, excellent boxed dem
Audiolab 8000C excellent boxed dem
Audiolab 8000P vgc boxed dem
Audiolab 8000A vgc boxed dem
Audion Sterling Plus KT88 Integrated boxed dem
AVI Lab Series Pre/Power, excellent remote used
BAT VK50se preamplifier, vgc+ used
Bryston 4Bsst2, excellent boxed, due in used
Chapter Audio Couplet Power Amplifier used
Conrad Johnson Premier 18, boxed with remote used
Consonance Cyber 10 Integrated used
Consonance Ref 8.8 integrated valve amp dem
Consonance Cyber 211 monos c/w Pavane valves used
Creek A50i Integrated with MC board boxed used
Cyrus XPower, excellent boxed used
Cyrus aCA7 Pre and aPA7 Monos, excellent used
DartZeel NHB108B, excellent E20+k new used
Denon PMA1500AE, excellent used
EAR 834T Integrated, boxed excellent used
Esoteric A03 Power, boxed near mint dem
Graef GM50B Mk11 Integrated dem
Graef GM100 valve power amp dem
Icon Audio, MC34 boxed used
Jolida 211 Monoblocks, £7k new, superb used
Leema Hydra 2, vgc+ boxed used
Leema Elements Amplifier, excellent dem
Leema Tucana 2, excellent dem
LFD Integrated amp LE MK111 dem
LFD LS1 Inestage, reasonable shape used
Linn Majik Kontrol & 4100 Power, excellent used
Linn Kolektor Preamplifier used
McIntosh C22 & MC275 Commemoratives, boxed used
McIntosh MA5100, excellent! used
Meridian 501V preamp, excellent used
Meridian 501 Pre used
Micromega IA100, great integrated, boxed used
Moon W7RS, excellent used
Musical Fidelity M3i, excellent boxed, REDUCED used
Musical Fidelity A1000 Two box monster Integrated! used
Musical Fidelity A1008 Two box monster Integrated!!! used
Musical Fidelity A1 FPB Preamp and PSU, sealed box new
Musical Fidelity 550K Superchargers, sealed boxes! used
Musical Fidelity X-T100 Integrated dem
Musical Fidelity Pre 8 and 2 x MA65 chrome fronted used
Naim NAP100, vgc+ used
Naim NAC82, excellent boxed used
Naim NAP250, olive excellent boxed used
Naim NAP250, very late olive excellent used
Naim NAC42.5/NAP110, vgc used
Naim NAC42/NAP110, excellent boxed used
Naim NAP250, excellent late boxed olive used
Naim NAP150, excellent boxed used
Naim NAC202 with NAPSC, boxed used
Naim NAC202, vgc+ boxed just Naim serviced used
Naim NAP180, excellent boxed used
Naim NAIT 5, excellent remote boxed used
Naim NAC152/NAP155XS, excellent boxed used
Naim NAC90/NAP92, vgc used
Neutonia Salls Integrated, classy Restek built used
Onix OA32 Integrated, excellent used
Onix OA25 Integrated, excellent used
Orade Delphi, Zeta, due in used
Pathos Logos Integrated dem
Placetate Audio Passive Linestage dem
Prima Luna Prologue 3 Preamplifier vgc+ used
Prima Luna Prologue 2 Integrated, good shape used
Prima Luna Prologue 3 Preamplifier, REDUCED used
Puresound L300 valve preamp used
Quad 66 Preamp, excellent remote used
Quad 99 Pre/Power, excellent, remote, Quadlink used
Quad 405, from used
Quad 33/303, vgc, serviced used
Resolution Audio Opus 21 S80 Integrated dem
Renaissance RA02 Monos, vgc and excellent value used
Roksan Kandy K2 Power, nr mint boxed dem
Sonic Euphoria PLC Passive pre used
Sugden Masterclass Monoblocks, in titanium used
Sugden A21a line Integrated used
Sugden Masterclass Pre/Monos in Graphite used
Sugden Masterclass Pre/Monos in Titanium used
Sugden Masterclass Integrated in Titanium used
Tag/McLaren 60iRV, excellent boxed used
Talk Electronics Hurricane/Tornado Pre/Power used
TEAC Distinction A1000 Integrated, ex demo used
Trio L07C and L07Ci, both good condition from used
Union Research Simply Italy Integrated dem
Union Research S2k Integrated, excellent used
Yamaha ASS00, excellent boxed used
Yamaha A-S3000, nr mint boxed dem

Digital

Arcam Alpha 8, excellent used
Arcam Alpha 8se, excellent boxed used
Arcam CD17, excellent used
Arcam CD37, vgc+, remote used
Arcam CD37, remote excellent used
Arcam Alpha Plus, excellent dem
Atoll 100SE DAC used
Audio Alchemy digital transmission interface/psu dem
Audio Analogue Maestro SE CD dem
Audio Analogue Paganini (later model) dem
Audio Synthesis Transcend CDT (Modded SONY) dem
Ayre Evolution DVD used
Cary Audio CD306 Pro, near mint boxed used
Chapter Audio Sonnet CD & Nevo remote dem
Chord 'One' CD player used
Chord Qute EX DAC, excellent boxed dem
Consonance CD120 Linear dem
Consonance CD2.2, new sealed dem
Consonance Droplet, vgc+ dem
Creek Destiny Integrated CD player, boxed used
Cyrus Discmaster/Dacmaster, vgc+ used
Cyrus DAC XP, excellent boxed dem
Cyrus CDXT2, mint boxed just back from Cyrus dem
Cyrus CD8, boxed remote dem
Cyrus CD7Q chip, vgc+ dem
Cyrus CD8se, boxed remote used
Cyrus DAD3, excellent used
Denon DN720AE, near mint boxed used
EAR Acute 3, mint boxed dem
Exposure 210CD, remote dem
Goldenote Koala, near mint boxed used
Ica Design Katana cd player (no remote) used
Kelvin Labs DAC, rare dem
Leema Elements CD player sealed box dem
Linn Karik 3, excellent boxed remote dem
Marantz CD6003, excellent boxed used
Marantz CD10, excellent boxed new belt kit used
Marantz CD63K1, remote, boxed excellent used
Marantz CD6004, nr mint boxed dem
Marantz NA7004, nr mint boxed dem
Meridian 506/20 with MSR used
Meridian 563 DAC reasonable condition used
Meridian 500 Transport, excellent boxed used
Meridian 602/606 combo with remote used
Micromega Leader, remote used
Moon Equinox CD used
Musical Fidelity 3.5 CD dem
Musical Fidelity A1Pro CD new
Musical Fidelity KW SACD, new laser, upgraded ps used
Musical Fidelity M1 DAC, excellent boxed used
Musical Fidelity M1 CDTB dem
Musical Fidelity M6 black boxed dem
Musical Fidelity M3 black boxed dem
Musical Fidelity M1 C1ic new
Mryad Z20DAC, excellent boxed used
NAD C545Bee, excellent boxed used
Naim CDSi, excellent boxed used
Naim DAC, nr mint boxed dem
Naim CDSi, near mint boxed dem
Naim CDS3, excellent boxed, remote used
Naim CDI, excellent boxed dem
Naim CD3.5, vgc used
Naim CDX2, excellent boxed dem
Peachtree DACi, excellent used
Prima Luna Prologue 8, ex demo boxed dem
Quad 99CDP, excellent REDUCED used
Rega Planet 2000, excellent used
Rega Apollo R, excellent used
Rega Apollo 35th Anniversary, excellent used
Rina D10, excellent used
Rega Saturn, excellent boxed used
Roksan Kandy K2, excellent boxed used
Roksan Kandy K1 Mk3, excellent boxed used
Rotel RCD965BX, excellent boxed used
Sugden Masterclass CD original version used
TAG McLaren DAC 20, excellent dem
Tube Technology Fulcrum CD transport dem
Tube Technology Fulcrum DAC (inc DAC64 chip) dem
Yamaha CD-S3000 near mint dem
YBA GC-10, ex boxed, £1600 new, BARGAIN used

AV/Accessories/Cables

Audeze LCD2 excellent dem
Audeze LCDXC excellent dem
Bryston BHA-1 Headphone amplifier, superb dem
Chord Anthem (original), from 0.5m up used
Custom Design Milan, ex display dem
Cyrus PSXR, excellent from dem
Elemental Audio Equipment Rack dem
Elemental Audio speaker stands dem
Ergo AMT phones with Amp 2 (£2.5k new) dem
G-W T2.6F Valve headphone amplifier, excellent used
Grado GS1000 and RA1 amplifier used
Isotek Nova power conditioner dem
Lehmann Rhineland dem
Musical Fidelity M1 HPAB used
Musical Fidelity TriplexX power supply new
Naim XPS DR, ex demo dem
Naim Supercap, various excellent boxed from dem
ProAudio Bono Reference Platform used
Stax SR404/SR0006ii, stand, cover etc boxed dem

Loudspeakers

Acoustic Energy AE1 Classic new
Acoustic Energy AE1 Reference standmount new
Acoustic Energy AE 1 Mk11 in Gloss black dem
Alacritty Audio Caterham Classic, flightcased, £2k new used
Apogee Duetta Signature (Reality rebuilt) Superb used
Art Audio Stiletto in Maple dem
Aspara Acoustics HL6 in Oak dem
Audio Physic Tempo in Cherry, fair dem
Audiovector Si3, near mintboxed dem
Audiovector Si3 Super, near mint boxed dem
Aurum Cantus Music Goddess in Gloss black dem
Avalon Ascendant Mk2, mint crated, £10k new used
B&W CDM1 in black, vgc+ used
B&W CDM1se in cherry, excellent used
B&W DM601s3, vgc+ used
B&W DM602s3, vgc+ used
B&W DM602s3, vgc+ used
B&W XT4, excellent new
Castle Harlech, excellent boxed dem
Castle Chester vgc later versions dem
Eminent Technology LFT8, some marks used
Epos M22 in Cherry dem
Ferguson Hill FH007/8 'desktop' audio set boxed used
Final 400 Electrostatics with ES400 Sub dem
Focal Electra 1008, mint boxed dem
Focal Electra 1028, mint boxed dem
Focal Electra 1038, mint boxed dem
Gallo Nucleus Reference 2, rare, superb & boxed used
Heco Celan 500 in Silver dem
Heco Celan 300 in Mahogany dem
Heco Statement in gloss black, £3k new dem
Kef Q100, brand new, sealed box new
Kudos C10, boxed vgc and cheap used
Leema Kandia Mk1 in black new
Leema Xero in Mahogany dem
Linn Index with KuStone stands, vgc+ used
Living Voice IBX R2 in stunning Zebrano, excellent used
Magnephaner MG1.6, superb, boxed dem
Mark & Daniel Maximus with treble extenders £2500sh dem
Mark & Daniel Mini in Grey inc. Marble cabinets. dem
Martin Logan Mosaic, excellent boxed dem
Martin Logan Quests, superb sound, reduced used
Martin Logan Prodigy, excellent used
Martin Logan Summit X, ex demo used
Mission 782se nr mint boxed used
Mission Freedom 5, vgc in Rosewood used
Mission 752, 2 pairs, from used
Monitor Audio BX2 excellent boxed dem
Monitor Audio RS8 excellent dem
Monitor Audio GX300, near mint boxed dem
Monitor Audio GX 5.1 Home Cinema set BARGAIN new
Monopulse Model S new
Monopulse Model A speakers new
Monopulse Model C new
Musical Fidelity M06 Floorstanders, boxed vgc+ used
Naim Ovato S400, excellent dem
Naim Ovato, excellent used
Naim SBL, vgc+ dem
Nola KO speakers in black dem
Nola Micro Grand Reference inc stands, £15k new dem
PMC Twenty 21, excellent boxed, ex dealer demo used
PMC Twenty 22, excellent boxed, ex dealer demo used
Proac D38 in Yew, boxed used
Proac D28, good condition in cherry boxed used
Proac D18, good condition in cherry boxed used
Proac Studio 140 mk2, nr mint boxed dem
Proac Studio 110, excellent boxed dem
Proac Studio 115, excellent boxed dem
Q Acoustics 1020, vgc+ dem
Quad 21L Floorstander used
Quad ESL63, Rosewood, great condition used
Quad ESL57, good condition used
Quad 11L2, excellent boxed used
Red Rose Rosebud £2.5k new with (used) stands dem
REL Sterling, black ash vgc used
Revel M22, excellent boxed new
Revolver RW45 floorstander in Cherry dem
Revolver Cygnis Gold in Black, £14k new dem
Sonus Faber Elipsa, superb boxed used
Sonus Faber Cremona Auditor, boxed used
Spendor A6, in Walnut excellent boxed used
Sunfire True Sub Subwoofer dem
Tannoy Prestige Autograph Mini, ex boxed used
Thiel CS7.2, vgc, just refurbished... used
Totem Mani Signature, boxed near mint used
Totem Mite in black dem
Totem Rokk in mahogany, excellent used
Totem Star, near mint boxed new
Usher N6311, transit damaged to clear dem
Usher Be10DM, excellent dem
Velodyne DD18 sub in black dem
Veritas H3 (Lowther drivers) in gloss black, 100db dem

Special system deals

Audio Analogue Crescendo Amp and CD used
Consonance Ping CD/AMP dem
Linn Classic Movie 05, excellent boxed dem
Naim Unifilite, ex demo dem
Orelle EVO CD and Amp was £2700 used
Sony CDPX3000es and TAF3000es, reasonable condition used

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Pilnius CD-Lab (pre-processor by-pass)	£390	VPI Classic 2/JMW 10.5l & SDS psu	£2,490	Focal Jm Lab Maestro Topology III	£16,990	Krellt KPS25sc	£2,995
Naim Audio CDx2	£1,490	Sonus Faber P300 Power Plant	£460	Wadia S71	£7,990	McIntosh C2200	£3,750
Meridian Sort Line AC (x3)	£1,990	Primare Cd 10	£750	Meridian Audio DSP 5200	£7,500	CTL TP5 Phono	£7,500
Kubala Sosna Anticipation	£190	Vertex AQ Soraima jaya plus	£250	Meridian Audio DSP 7200	£16,500	Esooteric Power Cable Tw 7100	£1,450
Artisan Silver Cables Digital (Pure Silver 1m)	£180	Pilnius CD-101	£1,800	Bryston BP-26 and MPS-2	£2,200	FURUTECH Power Reference III	£750
Nordost Red Dawn 3m RCA	£275	Audio Research DS450 (New-sealed box)	£5,750	Sonus Faber Amati Anniversario GR	£11,990	Iselecan Power Supreme Focus R6	£1,250
Wellborn cables DRD45 monies Rectifying psu	£390	Wire 99.99% Cu	£390	Audio Research SAC3 Valve buffer stage	£500	Sensimoteur HiFi Stereo headphones	£390
Avantgrade Acoustics Duo 2.2 & 225 subs	£6,490	Nottingham Analogue Wave Mechanic	£250	Dan D'Agostino Momentum Integrated	£26,990	Cyrus/Monitor Audio System Pw	£3,400

CD Players and DACs		Aurousral AI 1 MK		E445	B.A.T. VK-255 SE	E3,700	Mark Levinson No 326s Reference	
Accuphase DP500	E2,490	Avalon Arcus	E3,450	Bel Canto Ref 1000 M (Mk2) Mono blocks NEW	E4,300	Dual Mono Pre	E8,170	
Arcam rDAC + Squeeze	E250	Avalon Time	E57,600	Bel Canto Ref 1000 monos	E1,990	Mark Levinson No 380	E1,790	
Audio Aero Capstone Signature	E3,300	Avantgrade Acoustics Duo 2.2 & 22s subs	E6,490	Beyond Frontiers Audio Tulp w/ DAC	E8,500	McIntosh C2200	E3,750	
Audio Aero La Source	E29,500	B&W htm 2D	E2,800	BMC Audio CS2 Integrated/ Power Amplifier	E4,595	Musical Fidelity Kw Phono	E1,450	
Audio Aero La Fontaine	E17,500	B&W DM 70 Continentals	E1,800	BMC Audio M2 Monoblocks	E9,190	Nakamichi 410	E198	
Audiolab 8200CD	E600	B&W Matrix 800	E5,990	Boulder 2060	E14,990	Plinius CD-Lad (pre-processor by-pass)	E390	
Audiological Pierre Lume Mephisto CD Transport	E790	Beason B2+ Revelation	E1,800	Chord Electronics 1200c	E1,690	Sony TAE 900	E2,990	
AVI Series 21 MC4 Reference	E690	Dali 300 MK2 in Rosewood	E1,650	Conrad Johnson Prem 8A monoblocks	E4,950	Tom Evans The Vibe pre & Pulse power supply	E2,750	
Bel Canto Dac3	E2,199	Eclipse TD512, AS02 + Stands	E2,000	Crimson Electronics 640 E3 Monoblocks	E3,399	VTL LT 6.5 Signature Line Pre	E990	
Bel Canto USB Link 24/96	E349	Eggleson Works SAVOY	E15,000	Edge NL Reference Monoblocks	E34,990	Turntables/Amcs/Cartridges & Phonostages		
Bluenote Stibbert valve improved	E1,800	Focal JM Lab Alto Utopia	E4,750	Edge NL12.1	E8,900	Aesthetix IO Eclipse	E15,990	
BMC Audio BDCD1.1 Belt Drive CD Player	E3,195	Focal JM Lab Diablo Utopia III + Stands	E8,100	Gryphon Antileon	E5,990	Astin Trew AT8000 phono	E450	
BMC Audio PureDAC	E1,290	Focal JM Lab Maestro Utopia III	E16,990	Halcro DMJ8 Monoblocks	E24,950	Audio Research PH8 black	E3,890	
Cambridge Audio dacmagic plus	E1,615	Focal JM Lab Electra 1028Bc	E2,595	Halco DM38 with 220/110 V transformer	E8,500	BMC Audio MCCII Phono MC	E2,300	
CEC TL0X	E9,990	Focal JM Lab Grande Utopia III EM	E121,999	Jadis ja-250	E15,000	Boulder MM/MC Phono stage & psu	E1,795	
Classe Audio CDP102	E1,290	Focal JM Lab Scala Utopia 3	E18,999	Jeff Rowland model 3	E2,450	Cello Cartridge	E4,000	
Copland CDA822	E650	Focal JM Lab Stella Utopia III EM	E47,990	Jeff Rowland Model 3 Monoblocks	E2,500	Clear Audio Insider Gold	E1,000	
Cyrus cd6 se2	E400	Ganuit S5	E9,490	Karan Acoustics KA M2000	E22,990	Clear Audio da Vinci V2	E2,890	
Cyus CD6x	E400	Genesis Technologies Genesis G200.	E2,990	Krell EVO 302	E5,500	Dr. Feickert Analogue NG High-Precision		
Esoteric PDS D05	E5,500	4 box system	E12,990	Krell FPB 200	E1,750	Cartridge Alignment Tool	E149	
Krell EVO 505 (110v)	E3,395	Genesis Technologies 5.3	E7,500	Lamm Lamm M1.1	E6,990	ELP LT-1LRC	E3,500	
Krell Evolution 525	E5,990	Hansen Audio Emperor	E32,500	Leema Acoustics Corvus	E999	EMT 950 Turntable	E6,500	
Krell KPS20II	E1,490	Hansen Audio Prince V2	E18,000	Linn klimax Solos	E8,995	Gale GT2101 Turntable	E7,990	
Krell KPS25sc	E2,995	Hansen Audio The Knight	E9,900	Luxman M800A stereo power	E8,990	Jan Allaerts MC18 mk1	E1,495	
Marantz UD 9004	E2,690	Heco celan 500	E2,590	Mark Levinson No 33H	E9,900	Klyne Audio Arts 6PE mm/mc	E1,950	
Mark Levinson No 31.5 Reference CD Transport	E3,590	JBL 250 TI	E8,800	Mark Levinson No 53Z	E17,362	Kuzma STBl (wood) & Ref psu	E1,990	
Mark Levinson No 512 CD/SACD	E2,590	KFJ Music	E85,000	Mark Levinson No 53ZH Reference	E85,000	LFD MCT SE Phono mc	E3,500	
Mark Levinson No 512 CD/SACD	E7,995	Krell resolution 3	E2,700	High current Dual Mono Power Amp	E7,500	Manticore Mantra	E8300	
Mark Levinson No 31 & 30.5 Transport/Dac	E7,450	Living Voice Auditorium	E1,350	Mark Levinson No 53ZH stereo power amp	E4,995	Marantz tt15s1	E3205	
Mark Levinson No 31.5 Reference CD Transport	E3,500	Loewe Reference stand speaker	E1,400	McIntosh MC275 (2 Available)	E4,250	Nottingham Analogue Wave Mechanic	E250	
McIntosh MCD1100	E7,490	Martin Logan Summit	E5,500	Musical Fidelity 308 K Mono-blocks	E650	Origin Line Digital Stylus Force Gauge	E65	
Meridian Audio 508	E600	Martin Logan Summit	E4,490	Naim Audio Nap 180	E500	Pink Triangle Export/ Zeta	E1,495	
Meridian Audio 508	E1,490	Martin Logan Logos Centre	E4,490	New Audio Frontiers NAF Performance 2A3	E4,000	Roksan Xerxes/Artemiz	E1,400	
MICROMEGA Microdac	E295	Martin Logan Request	E1,550	Plinius SA 250mkIV	E3,495	SME 312s	E2,050	
Moon 300D	E850	Meridian Audio DSP 5200	E7,500	Rotel RB-1510	E295	SME Model 10A turntable	E4,250	
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NAD M51	E1,100	Merlin VSM MXR	E6,495	Soulution Audio 711 upgraded from 710	E29,990	SME Model 30/2A	E8,790	
Naim Audio CDI	E650	Mission 765	E400	Tenor HP 300	E15,500	SME Series V Gold plated arm	E2,395	
Naim Audio CDX2	E1,490	Mission 765	E2250	Tenor Evans Linear A	E3,850	SME Series V-12	E3,249	
Opera Cansone Droplet CDP 5.0	E1,299	P.M.C Twenty 22	E1,350	Tube Technology Genesis Monoblocks	E1,390	SME Model 20/12A	E11,567	
Pierreux DP32	E1,475	Quad ESL 2905	E3,750	VTL Mk450-II Signature Monoblocks	E14,500	SME Model 20/3A	E7,990	
Plinius CD-101	E1,800	Revel Ultima Studio 2 NEW	E8,490	Welborne Labs DRD45	E1,690	SME Series V (gold print)	E2,490	
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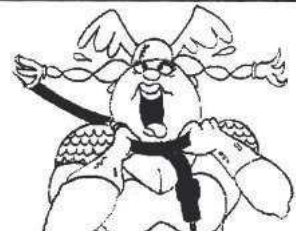
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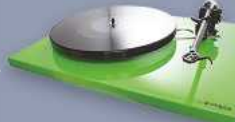
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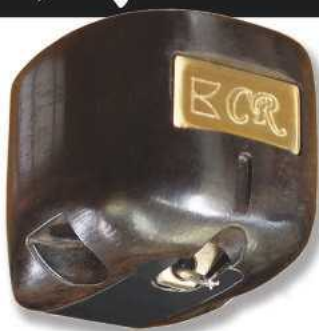
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Tel: 0844 412 2262
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LAST WORD

OFF THE LEASH!

KEN KESSLER TELLS IT LIKE IT IS...

We still argue the merits of some rival formats while others represent a choice, says **Ken Kessler**



Audio has always been stratified – budget/mid/high-end – but the lines have been shifting for some time. The public-at-large is unaware of our controversies; we squabble away from the mainstream, leaving them to play happily with their Bluetooth ca-ca.

The most obvious, overall arch of concern to us audiophiles is analogue-vs-digital, which has now lasted a generation: if CD was the first commercial realisation of digital in public access and consumption, then it's now 32-years-old in the West.

PARTISAN FRACAS

And how about valves-vs-transistors? If you discount early critics of solid-state back in the 1960s, because most of them eventually accepted trannies, the 'tube revival' of the 1970s is now past 40, having commenced in Japan, then the USA, followed by Europe. And valves are no longer a minority interest in hi-fi: they remain as valid as they ever did, and no longer raise an eye-brow. Today they simply represent a matter of choice between two technologies, which is what it should always have been instead of a partisan fracas.

What is illuminating is to step back a moment and look at the bigger picture, a landscape that embraces the above debates, along with the voices of smaller cults such

as those who swear by live FM radio as the finest-ever source, or reel-to-reel tape die-hards who *know* you can't beat 15ips half-track tapes in a domestic system. (Yes, there are those using 1in 30ips in the home, but let's be reasonable.)

If headphones-vs-speakers is the newest manifestation of partisanship, with the championing of cassettes a smaller cult with a younger/hipper profile, then servers-vs-streaming is likely to be another. Although it's early days, I have no doubt that the latter will fuel many a debate.

Specific causes aside, what seems to be the most apparent change is in how these *contretemps* are expressed. When it comes to opposing views, the behaviour of assorted adherents (online miscreants notwithstanding) demonstrate a civility that was lacking in the most heated of audio eras: the 1970s. I'm referring, of course, to the Flat Earthers-vs-everyone else.

For those who didn't live through that period, it boiled

'We are harmless rather than confrontational, but I am still offensive'

down to a handful of British brands who placed nationalism above sound quality and everything else that really mattered. Interestingly, nearly all of the brands who were part of the axis have embraced servers and streaming and, indeed, CD, which goes to show that pragmatism even affects (metaphorically-speaking) irrational,

fire-breathing, pitchfork-wielding zealots. *None* of these UK manufacturers still has an unassailable presence, especially among the high-end brands they pooh-pooh'd as overpriced swill from across the pond.

Correct me if I'm wrong, but the very companies the Flat-Earthers denigrated – Krell, Wilson Audio, Audio Research and others of that ilk – *still* dominate the high-end. Not one of this Yankee trio, as examples of continuity and robustness, makes in-car gear, all-in-one systems (what were once called 'music centres') nor headphones.

As for the journalists who championed the components so loved by the Flat-Earth brigade, nearly all of those Kool-Aid drinking half-wits are gone, or irrelevant at best. Luckily for them, the internet came along and made vanity publishing a nearly-cost-free exercise. They may still ply their trade, pretending it's 1978 or 1986, but only via self-published magazines or online.

TRAGIC NEWS

Why am I in full-on gloating mode? At the recent Audiojumble organised by *HFN's* John Howes, I was reminded of the frightening passage of time and the unimportance of what once were preoccupations.

A bout of reminiscing with Steve Harris, still of this organ, coupled to learning the tragic news of the passing of fellow audio scribe and one-time *HFN* contributor Tony Bolton, who died in December, demanded full-on access to the memory bank.

I will always remember Tony as the first person to say, 'The iPod sucks!' and who proudly wore a T-shirt to prove it. He was championing vinyl up to the very end. Steve still adores 78s. I'm still lazy enough to use whatever is to hand, whether CD or LP or FM tuner, but I carry a torch for Deccas and LS3/5As. We remain harmless rather than confrontational, though I am still offensive.

As for the defining moment for me at the Audiojumble, it was seeing a Fons record deck. This was one of the casualties of the Flat Earthers' campaigning, a fine turntable that answered the needs of those who wanted to play 78s, when an LP12 wouldn't even play 45s [*HFN* Oct '76 & Jul '14].

Hmm – maybe audio's petty rivalries aren't so victimless after all. ☺

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- José Victor Henriques, Hi-Fi News & Record Review

GENIUS



Modern retro – that's the thinking behind the new Audio Research G Series. It pays tribute to the original designs of company founder William Z. Johnson, while at the same time encapsulating the very latest thinking on tube amplifier design. Welcome siblings to this famous family, sitting comfortably alongside its already legendary Reference range.

It makes use of an all new output tube, the Tung Sol KT150: from the company responsible for the famous 6550, launched 60 years ago, this new design is destined to find a place throughout the Audio Research range.

Three new models lead off the G Series. The GSPre preamplifier, with its internal tube-powered phono stage and integrated headphone amplifier. The powerhouse GS150 stereo power amplifier, capable of 155W per channel and the GS175 integrated amplifier, combining many of the attributes of the preamp and power amp in a single chassis, and delivering 75W per channel.

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