

# hi-fi news

& Record Review

**Exclusive**

140  
pages

## MASTER POWER

D'Agostino's 'retro chic' Classic Stereo amplifier



### INVESTIGATION

#### Digital's debut

The birth of today's tech, p26

#### Inspire Elevation

Brit deck hits a high note



#### YG Acoustics Sonja

Flagship 'all-alloy' speaker

#### T+A MP/PA 2000 R

CD/DAC and amp combo

#### Aurender N10

Music library & server



• **PLUS** 18 pages of music reviews & features • **VINYL RE-RELEASE** Arcade Fire's *Funeral* on 180g  
• **OPINION** 12 pages of letters & comment • **VINTAGE REVIEW** Sansui's 5000A high power receiver  
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**BELOW:** Inspired by the flagship 3000 HV series, T+A has distilled its core technology into these new slimline 2000 R separates. See p44



**LEFT:** Kennerton is fast becoming known for its use of ancient bogwood in its headphone capsules. We test the closed-back Magister on p64

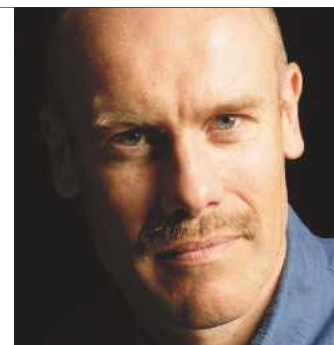


By the time many of you are reading this, the festive season will have faded into memory and the New Year's celebrations perhaps inspired a resolution or two. So while the diet food industry is winding its marketing engine up to full speed I thought *Hi-Fi News* might offer some life-affirming suggestions of our own.

I was fortunate enough to spend the period with the new iteration of Clearaudio's Statement turntable – all 400kg of it – and was motivated to dig out more than a few old LPs and compare them with rather more regularly-played 'hi-res' versions stored on the server.

In almost every instance while the difference in presentation between LP and download was 'technically' obvious, my musical engagement with each and every album was undimmed. Good music is good music, after all, but it got me thinking that a pluralist approach to our shared passion is no bad thing.

So if you are diehard computer audiophile why not make a resolution to hear a really good vinyl-playing system, if for no other reason than to recall a misspent musical youth? Similarly if your music is only palatable when served on a warm platter at 33.3rpm



then I'll urge you to break with tradition and sample a high-res download or two. If you already own a PC or Mac then this particular transition need not be financially burdensome.

An entry-level USB DAC from Cambridge Audio or AudioQuest is all you need to unlock a new and very accessible musical world. It'll only be a taster of

**'Forget the diet – *HFN* has a more attractive New Year's resolution'**

what's possible but thanks to free software [see [www.foobar2000.org/download](http://www.foobar2000.org/download)] you can 'push' WAV and FLAC files from your computer and out into your existing hi-fi system.

You may decide to return to a diet of pure vinyl just as the downloading/streaming fraternity may abandon physical media altogether. But give it a go anyway and whatever you choose, *Hi-Fi News* will always share the experience with you.

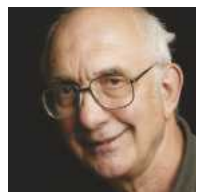
**PAUL MILLER EDITOR**

**VINYL:** Thin Lizzy's career-defining *Jailbreak* is this month's Vinyl Icon (p78), while Steve Sutherland explains David Bowie's love for Arcade Fire as *Funeral* is re-released on 180g vinyl (p76)

**RIGHT:** *Hi-Fi News & RR* is the UK's representative of EISA's Hi-Fi Expert Group. Editor Paul Miller is EISA's President-elect & Hi-Fi Group Manager



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**ANDREW EVERARD**  
has reviewed hi-fi for over 30 years and is still effortlessly enthusiastic about new technology, kit and discovering new music



**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



# MA's precious metal

MONITOR AUDIO'S FLAGSHIP PLATINUM LOUDSPEAKER RANGE IS REVAMPED AND RELAUNCHED

Described as the 'most accurate and beautiful loudspeakers Monitor Audio has ever made', the new Platinum II series benefits from refinements to their electrical, mechanical, magnetic and acoustic systems. In addition to the improved tolerance of the metallised polypropylene capacitors and air-cored inductors used in the speakers' crossovers, Monitor Audio has also ushered in a new series of drivers.

An improved composite is used for the 'RDTII' bass and midrange drivers which now employ a very lightweight but rigid sandwich of C-CAM (a ceramic-deposited alloy) and woven carbon fibre with a honeycomb Nomex filling. These new diaphragms offer a shallower but smoothly continuous profile without a centre hole or dust cap. Improved

excursion, reduced distortion and a wider passband are all claimed. These are joined by a new MPD (Micro Pleated Diaphragm) ribbon tweeter. The Platinum II range extends from the £3150 PL100II compact two-way to the £15,000 seven-driver PL500II flagship.

**Monitor Audio Ltd, 01268 740580**  
**www.monitoraudio.co.uk**



## More RPM

PRO-JECT LAUNCHES RPM 5 CARBON DECK



Hard on the heels of the new flagship RPM 10 Carbon turntable reviewed last month, Pro-Ject has announced a complete renovation of its RPM range including the award-winning RPM 5 model. Now in carbon guise, the £899 deck now features the decoupled (separate) motor design of its bigger brothers along with a black, red or white gloss-finished plinth that's topped-off with a layer of rigid carbon fibre. Its belt-driven acrylic platter spins on an inverted stainless steel bearing with a ceramic ball. The RPM 5 Carbon is supplied with Pro-Ject's 9CC Evolution tonearm and record clamp.

**Pro-Ject Audio Systems, Austria,**  
**01235 511166;**  
**www.project-audio.com**

## HI-FI NEWS' NUGGETS

### D'AGOSTINO UPDATE

In addition to introducing its 'entry-level' Master Power range [see p32], D'Agostino has announced a major upgrade to the company's flagship Momentum monaural amplifier. Dubbed the Momentum M400, this new version of the amplifier is rated at 400W instead of the original's 300W. The backbone of the power increase is a new ultra-quiet 1800VA transformer – 20% up on the original – and a new output stage design that includes a number of major enhancements. Existing owners will be offered an upgrade path.  
[www.dandagostino.com](http://www.dandagostino.com).

### SENNHEISER HD 800 S

This is the month for updated high-end headphones [see Beyerdynamic T1, adjacent] as Sennheiser joins the club with an enhanced 'S' version of its HD 800 flagship. With improvements to its 56mm ring radiator driver and a new 'absorber technology' claimed to mitigate against the masking effect of subtle HF detail, the HD 800 S boasts <0.02% THD. [www.sennheiser.com](http://www.sennheiser.com)

## Tesla Tech mk2

BEYERDYNAMIC TOP T1 'CANS UPDATED

Six years after the launch of its range-topping T1 headphone, Beyerdynamic has announced its second-generation replacement. Still touted as the only high-end 600ohm cans on the market, the T1 mk2 utilises exclusive Tesla drivers with powerful magnets and high impedance coils wound from wafer-thin copper wire. Moreover, the mk2s employ a 'more stable, high-tech' single-layer baffle material in an effort to further reduce mechanical resonances.

**Beyerdynamic GmbH & Co. KG, Germany,**  
**01444 258258;**  
**http://europe.beyerdynamic.com**



## Rega picks-up the pace

LONGSTANDING APHETA MC REPLACED BY A NEW FLAGSHIP



Designed to partner the RP10 and the Naiad turntable, Rega's third-generation moving-coil pick-up, the Aphelion, takes 'the technology developed for the Apheta 2 to the next level'. Key to its performance gains is the reduction in the pick-up's moving mass, Rega now utilising a rigid boron rod cantilever with a miniaturised iron cross and copper windings (18 micron diameter) in the

Aphelion's generator. Although the 'moving coil' is half the size of the Apheta's, Rega is also employing a higher powered neodymium magnet for a claimed 0.35mV output. The £2998 Aphelion is housed within a single piece, black anodised alloy body complete with a three-hole fixing regime to suit Rega's tonearms.

**Rega Research Ltd 01702 333071; [www.rega.co.uk](http://www.rega.co.uk)**

## Sonus faber belts-up

ITALIAN HEADPHONES THAT ARE THE HEIGHT OF FASHION

No strangers to delivering high-end sound from very stylish enclosures, speaker marque Sonus faber has launched a headphone brand dubbed Pryma. Handmade in Italy to 'match the finest bags, watches and shoes' the £380 Pryma 01 employs 40mm mylar drivers, neodymium magnets and

oversized voice coils to achieve a claimed 118dB sensitivity. Its detachable leather headband allows a choice of Coffee & Cream, Pure Black, Heavy Gold, Rose Gold & Grey, and Carbon Marsala colourways.

**Sonus faber, Italy, 0208 971 3909; [www.sonusfaber.com](http://www.sonusfaber.com)**



## Bryston's 3rd-gen DAC

CANADIAN AMP SPECIALIST ANNOUNCES THE BDA-3 USB DAC

The case design of Bryston's BDA-3 outboard USB DAC may have been inspired by its BDA-2 predecessor but the core digital processing is all-new. Offering great flexibility, the BDA-3 includes 10 inputs including four HDMI, asynchronous USB, AES/EBU, and S/PDIF coax and Toslink. LPCM files up to

384kHz/32-bit are supported along with DSD256 (quad-speed DSD) over both HDMI and USB – a first for Bryston. Priced £3200, the BDA-3 also features an entirely discrete analogue output stage.

**Bryston Ltd, Canada, 0870 4441044 [www.bryston.com](http://www.bryston.com)**



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## Upcoming Events

IMPORTANT DATES FOR YOUR HI-FI DIARY

- 21 FEB** Audio Jumble 2016, The Angel Leisure Centre, Tonbridge, Kent; [www.audiojumble.co.uk](http://www.audiojumble.co.uk)
- 26-28 FEB** Sound & Vision Show, Marriott City Centre Hotel, Bristol; [www.bristolshow.co.uk](http://www.bristolshow.co.uk)
- 05-08 MAY** High End Show, Munich, Germany; [www.highendsociety.de](http://www.highendsociety.de)
- 03-05 JUN** T.H.E. Show, The Hotel Irvine, Newport Beach, CA, USA
- 29-30 OCT** The Hi-Fi Show Live 2016, Beaumont Estate, Windsor; [www.hifinews.co.uk/show](http://www.hifinews.co.uk/show)



# Hi-Files Show, Serbia

Words & pictures: Ljubiša Miodragović



Held mid-November at the Holiday Inn in Belgrade, the annual *Hi-Files Show* sees exhibitors and audiophiles from Serbia and the surrounding region gather to share their passion for exceptional sound. Hosted by *Hi-Files* magazine, in true tradition the event was dominated by high-end hi-fi and home theatre systems, though this year saw an increase in the number of TV, video and imaging products, with notable presentations of some of the latest equipment from LG, Panasonic and Nikon.

Companies with a global presence, such as Naim, Yamaha and MBL, were out in force but local manufacturers of fine audio enjoyed a fair share of the audience too. Most of the exhibitors opted for streaming and network sources for their demos, the noteworthy exceptions being Gallus Audio and Act Audio who used either a customised digital source or one it had built itself.



Belgrade-based distributor Player showed Naim's NAC-N 272 streamer/DAC/preamp with Focal Trio 6 Be active monitors, said to be capable of 115dB. Also on display were the Naim ND5 XS network player and DAC-V1/NAP 100 DAC/power combo driving KEF LS50 loudspeakers, inspired by the legendary LS3/5a. [www.player.rs](http://www.player.rs)



One Hi-Fi combined Harbeth's classic Super H5L speakers with a pair of Devialet's Le 400 integrated amps to form a glorious-sounding system with music streamed from an iPod. Ljuba Miodragovic, editor of *Hi-Files* magazine and EISA Vice-President, admires the sound pressure created by Devialet's little Phantom speakers (inset). [www.one-hifi.com](http://www.one-hifi.com)

Player also showcased speakers from the EISA Award-winning Klipsch Reference Premiere line-up, driven by a 9.2-channel Onkyo TX-NR1030 AV receiver with Dolby Atmos. A truly dynamic-sounding system; source was an Arcam UDP-411 Blu-ray player. [www.player.rs](http://www.player.rs)



Serbian manufacturer Act Audio showcased its all-valve range of components: RCD-1 CD player with Philips CD Pro2 transport and Wolfson WM8741 DAC, RL-1 preamp with valve rectification, and a pair of 6C33 Class A monoblocks. These powered Vienna Acoustics' Beethoven Baby Grand loudspeakers, with poise and musicality. [www.actaudio.com](http://www.actaudio.com)



Persej Audio drew the crowds with high-end speakers from Manger Audio and Raidho. The former's C1 active monitor and P1 floorstander with transversal wave tweeters proved highly revealing powered by a Lindemann MusicBook 25 streamer/preamp and Class D MusicBook 55 power amp. Meanwhile, the small Raidho D1 bookshelf speaker with its diamond driver and quasi-ribbon tweeter, impressed with the power of its delivery hooked up to the same electronics. [www.manger-audio.co.uk](http://www.manger-audio.co.uk); [www.raidho.dk](http://www.raidho.dk)



Airy and detailed sound was the order of the day from German company MBL. On display was its 'budget' Corona line, hooked up with cables from Wireworld and Anzuz. With C31 CD player/DAC (and a MacBook) as sources, the C51 integrated amplifier and C11/C21 pre/power combo alternately powered the company's smallest – though hardly diminutive – 116F floorstander. [www.mbl-audio.ae](http://www.mbl-audio.ae)



Slovenian manufacturer Gallus Audio made waves with its first bookshelf speaker, the Aquarius, which uses Scanspeak and Eaton drivers. Croatia's Colibri Lab was also in attendance with its top-of-the-line, gold and silver Guru Extreme power cables. The system comprised the Accuphase DP-510 CD player, Pass Labs X1 preamp and Sanders Magtech 1600 monoblocks. [www.gallus-audio.com](http://www.gallus-audio.com); [www.audiocolibri.com](http://www.audiocolibri.com)



4Audio also featured a range of portable speakers and desktop audio novelties from Yamaha and Bose. They may not offer the highest fidelity, but boy can they make some noise! Tiny marvels, like Yamaha's Restio or TSX-B235, are great-sounding bedroom or office solutions while the wireless Bose SoundLink Mini Speaker II boasts enough battery life for use on a patio or in a garden. [www.4audio.rs](http://www.4audio.rs)



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# AV Trend & Hi-Fi, Hungary

Words & pictures: **Rezső Soltész**



Central Europe's largest consumer electronics exhibition was held in Budapest in mid-November where, besides premium local and globally-produced high-end hi-fi, the products that took gongs in the 2015-2016 EISA Awards were also on show.

This was the 16th year of what is an annual event and saw 30 exhibitors introduce the very latest audio and home theatre equipment to more than 2500 visitors over two days.

Dali is rightfully regarded as a premium brand by Hungarian audiophiles, so local importer Horn Distribution played a trump card by showing loudspeakers from Dali's Opticon series. Four models from the range lined up next to each other certainly made for an imposing sight and also drew applause for their stunningly detailed yet rich-sounding presentation. [www.dali-speakers.com](http://www.dali-speakers.com); [www.horn.eu](http://www.horn.eu)



The show also saw the world premiere of products from Hungarian manufacturer Audio Hungary Ltd. A series of amplifiers using Univox and Qualiton-branded tubes drew many positive remarks from visitors. Pictured is the company's new Qualiton a20i push-pull stereo integrated amplifier sporting 12AX7, E88C and 5881 valves. A marque to look out for... [www.univox.hu](http://www.univox.hu)



Products from German company Heco have proved hugely popular in Hungary. This year the brand's local importer Hi-Fi Station was excited to have Heco's latest speaker on show – the Direkt. Seen here in a white finish these two-way bass reflex floorstanders feature an 11in woofer/midrange driver and 1.2in dome tweeter. [www.heco-audio.de](http://www.heco-audio.de)

Sony UK's Eric Kingdon and Eric Put from the Netherlands flew in to present the company's Hi-Res Audio components. They also provided visitors with an in-depth explanation of PCM and DSD file technologies, and outlined both the economic and practical advantages of the tech in a world of compressed formats. [www.sony.com](http://www.sony.com)



Clearaudio's Master Innovation turntable was a real hit at the show. Thanks to the use of high-quality materials, the breathtakingly beautiful deck drew more eyes than the incredible view from the window of the exhibition room! Loudspeakers were from Opera, with electronics from Danish company Gryphon. [www.lauditeur.hu](http://www.lauditeur.hu)



# Paris Salon Hi-Fi Show

Words & pictures: Ken Kessler



If one judges a show by the calibre of its launches, then the Festival Son & Image 2015 held at the Novotel Tour Eiffel in October was world-class. Sonus faber unveiled the Cremonese and its new Pryma headphones in Paris, Audio Research stunned everyone with the new REF 6 preamplifier before both were unveiled in New York in November, Elipson joined the ranks of the turntable manufacturers – all this before the usual launch pad called CES.

As in previous years, Paris' show caters evenly to high-end, mid-fi, the headphone cult and home cinema. Local lads Micromega and Focal/JM Labs dominated the entrance to the event with a co-operative stand that exploited something very French: a display featuring a Micromega M1 and a pair of Focal speakers in the famous orange hue of Hermès. Now if that ain't courting the luxury client, I don't know what is.

Merging+Nadac showed 'the first 384kHz, DSD256, multichannel and open standard network-attached DAC'. It offers balanced and single-ended outputs, ¼in and mini-jack headphone sockets and Ethernet, AES/EBU XLR, S/PDIF optical and coaxial digital inputs. [www.nadac.merging.com](http://www.nadac.merging.com)



More bargains from Advance Acoustic: this pre/power combination consisting of the digital X-Preamp with USB input astride the X-A1200 monoblock power amplifier. The latter contains a 1000VA transformer and is said to deliver 450W into 8ohm or 700W into 4ohm with 'the first 80W in Class A'. Inputs are single-ended and balanced. [www.advance-acoustic.com](http://www.advance-acoustic.com)

The Philharmonia from Amadeus, designed by architect Jean Nouvel, owes much to Sonus faber's Guarneri. Nouvel and Amadeus's co-founder Michael Deluc designed the 1613x320x465mm (hwd) two-way active speakers with a wooden top half constructed from 547 pieces of birch veneer. [www.amadeus-audio.com](http://www.amadeus-audio.com)



Aimed at the home cinema market, Héliade Audio's stand, floor and wall-mount surround and centre speakers feature enclosures that straddle a 1in compression tweeter with a brace of woofers, the range topped by the Gamme Héra with 12in drivers. The one in red is the Gamme Nessay, with two 10in woofers. Price is €1850 apiece. [www.heliade-audio.fr](http://www.heliade-audio.fr)





The new Audio Research REF 6 preamplifier replaces the REF 5SE, with styling that reflects the look of the G-Series. It boasts a higher tube count and superior volume control. Hot news: it will be joined by the REF 3 phono stage at CES. [www.audioresearch.com](http://www.audioresearch.com)



Micromega's all-in-one M.one 'Devialet fighter', due early this year, will be offered in a vast range of colours. This cheeky set-up, the M.one flanked by Focal Sopras, showed how a system would look if made in conjunction with luxury brand Hermès. [www.micromega-hifi.com](http://www.micromega-hifi.com)



Sonus faber's luscious II Cremonese is further evidence that the Italian brand has rediscovered its roots. It further refines the lute cross-section into a rhomboid, this model embracing the technology of the company's much dearer Aida and Lilium. The speaker is billed as a 3.5-way system. Sensitivity is stated as a high 92dB/1W while impedance is given as 4ohm. [www.sonusfaber.com](http://www.sonusfaber.com)



Elipson showed two 'Made In France' turntables, the sleek Alpha 100 and Omega 100. Both have a 450x380mm footprint but differ in materials, the Alpha 100 having an MDF chassis and matt black finish, the Omega 100 chassis made of 'PMMA', with lacquer finish in a choice of colours. Both are supplied with arm and Ortofon OM10 cartridge. [www.elipson.com](http://www.elipson.com)



Seemingly old-school, but with such niceties as a digital read-out for volume, Fostex's HP-V8 is probably the ultimate headphone amp for true anachrophiles: it uses E88CCs and 300Bs driving KT88s to power balanced and single-ended headphone sockets. Also provided are selectors for high-and-low gain and impedance. [www.fostexinternational.com](http://www.fostexinternational.com)

The Pryma 01 is the first-ever headphone from Sonus faber. It's a clever design that allows users to change headbands with ease. The range includes cups in four colours, with a growing choice of colours for the bands. Construction is fabulous, while technology is a full-range driver. [sonusfaber.com](http://sonusfaber.com)





# The New Architecture for Preamps



The CP-800 stereo preamp/processor



Conventional high-end preamplifiers are the direct descendants of preamps that were conceived decades ago in a pre-digital world. The CP-800 stereo preamp/processor is something new. It combines the key circuit blocks of a high-end audio system in a unique way to improve and shorten the signal path. Analogue purity is preserved while digital sources acquire new processing features and higher performance than ever. For the first time, a CD ripped to a computer can sound better than it would if played in the world's best CD player.

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## SHOWBLOG Sights and sounds from around the globe



Meridian convincingly demonstrated MQA via its DSP-8000 speakers. The technology was fully explained in *HFN* Apr '15 and we await news of readily available material one can stream, but the big news is that the hardware won't be an issue: Meridian has ensured that anyone can be MQA-ready with the affordable Explorer2 USB DAC. [www.meridian-audio.com](http://www.meridian-audio.com)

Advance Acoustic also showed floorstanding loudspeakers, called the Advance Paris range, including the X-L500 seen here, which is derived from the flagship X-L1000. Its drivers include a 12in woofer, 8in mid and a TWR 100-8 ribbon tweeter, each in its own MDF enclosure, with crossover points at 250Hz and 2.5kHz. Sensitivity is specified as an easy 95dB/1W into 8ohm, and overall frequency response as 27Hz-40kHz. The company recommends amplifiers between 20W and 500W. [www.advance-acoustic.com](http://www.advance-acoustic.com)

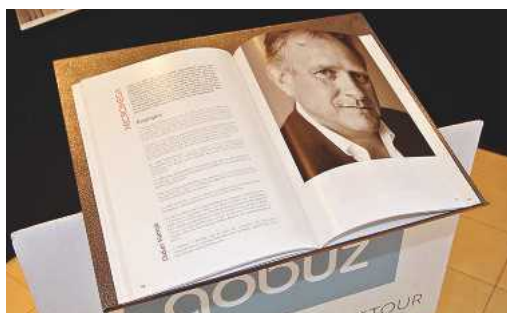


Germans do love their chrome. On the top of this stack is the latest version of the Sinfonietta 40W/ch stereo valve integrated amplifier from LUA, now reworked to Mk II status. Below it is the 45W/ch 4545L. Both use EL34 valves, WIMA caps and ALPS pots. Bias adjustment is via LEDs. [www.lua.de](http://www.lua.de)

Gotta love a speaker called the 'Clint Freya'. This Scandinavian offering is a Bluetooth system standing 210mm tall with a 100mm diameter. Fitted with 'AUX-In for old boys', it contains a 7W amp. [www.clintdigital.com](http://www.clintdigital.com)



Named the 'fjord mini' (with lower case letters...), this new stereo wireless speaker from Tangent contains two 2.5in drivers and a passive radiator, in an enclosure standing 210x90x90mm (hwd) and which should run for eight hours on a full charge. The handle on the back suggests portability as a prime design consideration. [www.tangent-audio.com](http://www.tangent-audio.com)



A new paperback enjoyed its launch at the Paris fair, *Hommage!* featuring biographies of key players on the French hi-fi scene, primarily manufacturers but with one or two entrepreneurs and journalists as well. Also launched was a new French audio print magazine, *Vumetre*.

# Next month

We report from the International CES 2016

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# Champing at the bits...

Steve Harris traces the move to digital recording, from the '70s to the CD era

**RIGHT:** Denon's Takeaki Anazawa with the 8-track DN-023R digital recorder, used to make many Denon LPs in the 1970s featuring classical, jazz and traditional Japanese music

As with so many other developments, the concept of digital audio had been around for a long time before the means existed to make it a practical reality.

During World War II, PCM coding was used by the Americans for a secure speech transmission system called SIGSALY. But it was the post-war development of semiconductor electronics and computing, as well as videotape systems capable of recording very high frequencies, which made digital audio begin to look feasible in the late 1960s.

And the acceleration of the 1970s, in what could be called the run-up to the compact disc, makes a fascinating story. It's been told quite definitively by recording specialist Tom Fine, the son of Robert C Fine and Wilma Cozart Fine of Mercury Records and Fine Recordings fame, in a lengthy and deeply-researched article called 'The Dawn Of Commercial Digital Recording' [published in *ARSC Journal*, Spring 2008, and now easily found online. Fine's work must be acknowledged here as a major source of information.

Now seen as a defining moment, the first public demonstration of the digital recording and reproduction of stereo music was given at the Technical Research Laboratories of the Japanese broadcaster, NHK, in 1967. Looking back more than 20 years later [in the book *Compact Disc Technology*, 1992, IOS Press] Heitaro Nakajima, who in 1967 was



heading NHK's Acoustic Research division, wrote 'Using a two-head helical-scan VTR (tape width 1 inch) and a method in which the digital signal is recorded in the VTR's picture band with a sampling frequency of 40kHz, a 12-bit 5 piecewise linear quantisation and detection of code errors only, the system could not have been completely satisfactory from our current point of view.'

## MONO TO STEREO

NHK's research had begun in 1965, and by the following year its engineers had built 'a makeshift monophonic recording set'. The next step was stereo – 'a sound of noble birth' – and despite misgivings on the part of Nakajima about the results that were being achieved, a demonstration was given in May 1967.

'Each had his own version of the results of the demonstration,' said Nakajima. 'I think those who saw the musical quality as important gave it harsh marks; those who picked up the nobility of the sound gave it good marks.'

Incidentally, while Nakajima gives the sampling frequency of that demonstration as 40kHz,

every other source states that it was in fact 30kHz.

After this, NHK's research programme was brought to an end, but its work was picked up by engineers at Nippon Columbia (Denon) in 1969. The recordings they made on an NHK recorder include the first ever commercial digital recording, *Something* by Steve Marcus [NCB-7003].

Denon went on to build its own recorder, the 8-channel DN-023R, based on a 4-head helical-scan video transport, using 2in tape and offering 13-bit resolution with a sampling frequency of 47.25kHz. With this, and the later, more compact DN-034R for location work, Denon made many more digital recordings for LP issue.

These included the first commercial digital recording to be made in Western Europe, Bach's *Musical Offering*, by the Paillard Chamber Orchestra, in 1974, and the first digital recording intended for commercial issue to be made in the USA. This was Archie Shepp's *On Green Dolphin Street*, recorded in late 1977 and released by the Nippon Columbia label in May 1978.

In America, though, the late Tom Stockham is regarded as 'the father

**BELOW:** The first ever commercial digital recording from 1971, *Something* by Steve Marcus, and the first ever Denon classical digital recording on LP, produced in Tokyo in 1972 using the Denon DN-023R – Mozart's String Quartets K458 and K421 by the Smetana Quartet





of digital recording' and not without justification. After taking a science doctorate at MIT in 1959, Stockham was appointed Assistant Professor of Electrical Engineering there. His interest in digital recording is said to have been sparked by seeing students recording their voices into the Lincoln Laboratory's TX-0 mainframe computer. He began his own digital recording experiments on this same computer in 1962.

Stockham left MIT for the University of Utah in 1968. In 1974 he was involved in analysing the infamous Nixon White House tapes, showing that the erasure of the missing 18 minutes could not have been accidental.

With Malcolm Low, who was the 'L' of KLH, Stockham founded Soundstream, Inc, in 1975. By the summer of 1976 he had built a prototype 16-bit two-channel recording system with a sampling rate of 37.5kHz, using a modified Honeywell 5600E instrumentation recorder as the tape transport. With this he recorded the Santa Fe Opera's production of Virgil Thomson and Gertrude Stein's *The Mother Of Us All*. At the end of October that year, he demonstrated this recording at the AES Convention in New York.

One pundit who was impressed by Soundstream's demonstrations was *Audio* magazine writer Bert Whyte, who'd co-founded Everest Records, producing or engineering many early stereo records.

In August 1977, acting as producer for Crystal Clear Records, Whyte invited Soundstream to record as backup on the label's direct-cut sessions with organist Virgil Fox at the Garden Grove



Community Church in Orange County. According to former Soundstream engineer Jules Bloomenthal, as quoted by Tom Fine, several listeners at the AES convention mentioned a lack of 'air' in the sound, so for the four-track recorder that came next, Stockham increased the sample rate to 42.5kHz. This machine was ready just in time for the Fox sessions.

#### TRUE LANDMARK

Crystal Clear issued the direct-cut sides as *The Fox Touch, Vol I* and *Vol II*, but in 1981 the Soundstream digital recordings appeared on an Ultragroove double LP as *The Digital Fox*, the artwork ambiguously proclaiming 'The First Digital Recordings Made In The United States'. In the CD era, Bainbridge would offer the digital recordings, while a Laserlight CD apparently came from the direct-cuts.

April 1978 saw a true landmark, when Jack Renner and Robert Woods, founders of the small Telarc label in Cleveland Ohio, recorded America's first for-release orchestral

'The run up to the compact disc makes a fascinating story'



**ABOVE LEFT:** Tom Stockham and (below right) his Soundstream recorder

**ABOVE:** Telarc 1812 - 'Audio's toughest challenge' and *The Fox Touch* incorrectly labelled as the first digital recording made in the US

**BELOW:** Front and rear sleeve of Frederick Fennell conducting *The Cleveland Symphonic Winds* in music by Bach, Handel and Holst. The rear sleeve shows Jack Renner, Stan Ricker and Robert Woods behind the mixing desk



digital recording. Frederick Fennell conducted The Cleveland Symphonic Winds in music by Bach, Handel and Holst. This 'Special Edition Audiophile Recording' brought wide acclaim for Soundstream and Telarc.

The four-track Soundstream recorder was by now sampling at 50kHz, easily allowing a full 20Hz-20kHz frequency range. Soundstream offered computer-based editing, carried out on-screen after dumping the audio data on to a hard-drive, which was a first and extremely advanced for its time.

But with the room-filling hardware of the day, this meant that editing had to be carried out at Soundstream's headquarters in Utah.

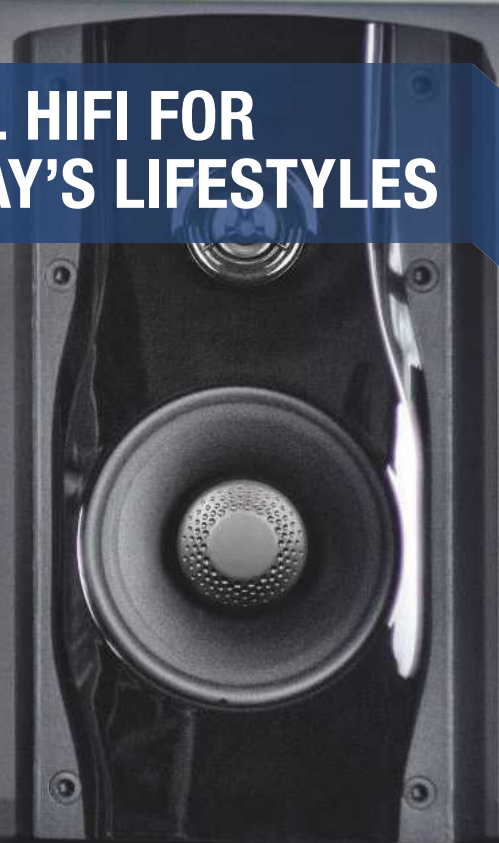
Soundstream couldn't offer a digital replacement for the multi-track systems used in studios for rock recordings. But the digital recording system developed by the giant 3M Company set out to do just that. With a combination of 16-bit resolution and 50kHz sampling, the 32-track 3M recorder allowed for both editing and overdubbing, storing the data on a special type of 1in tape running at 45in/sec.

The company demonstrated its system at the November 1977 New York AES Convention, and subsequently installed a prototype machine, still only two-channel, in a local Minneapolis facility, Studio80. In June 1978, the studio recorded



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the St Paul Chamber Orchestra conducted by Dennis Russell Davies, performing Copland's *Appalachian Spring* and *Three Places In New England* by Charles Ives.

Even Tom Fine is constrained to state that 'Exactly what happened at that recording session is the topic of some dispute.' But it seems that, once again, a digital recorder was run as a backup during what was intended to be a direct-cut session. In this case, though, the 3M masters were used for the issued LP, which claimed to combine the direct-cut philosophy of recording in 'real time' with 'the exciting new digital technology'. It became the first digital recording to win a Grammy.

Similarly, what was to have been a direct-cut of Flim & The BBs became the second Sound80 digital LP release. The engineer for both was Tom Jung, who would launch the DMP label.

## A ROCK FIRST

By early 1979, 3M's 32-track recorder was ready and it was soon being installed in some major studios, including Warner's in North Hollywood. It was used for the first commercial digital rock recording, Ry Cooder's *Bop Till You Drop*.

As far as the UK is concerned, the story of digital audio recording starts not with a record label or hardware manufacturer but with the BBC. The corporation had introduced FM radio broadcasting in 1955 and FM stereo in 1958. But even by 1970, stereo coverage was limited

**RIGHT:** Photo from inside the 1978 Copland LP sleeve (below) shows the session being recorded in Studio80



**ABOVE:** The Copland album, made on the prototype 3M Digital Mastering System at Studio80, was the first digital recording to win a Grammy



to the South East and the Midlands, and only Radio 3 programmes were actually broadcast in stereo.

Broadcast signals had to be distributed to the regional transmitters by a network of links that included the landlines operated by the state-owned General Post Office. The limitations of these connections made it difficult if not impossible to provide high-quality FM stereo signals nationwide.

So from the mid-1960s BBC had been researching the potential of digital techniques for both audio and video signals. From 1971, sound for TV signals was digitally encoded and added to the picture signal for distribution to the transmitters.

Then came the introduction of PCM for FM. Once again, signals were converted to PCM digital for distribution via the remote links to the transmitters, then converted back to analogue for transmission.

In September 1972, the link from Broadcasting House to the Wrotham transmitter in Kent was switched to PCM. Further BBC development would eventually bring NICAM stereo TV sound. The BBC also contributed some of its technology to 3M, and developed its own recorder, which played a part in Decca's move to two-channel digital recording.

In November 1976, Decca's engineers carried out a serious test recording session with a full

orchestra, for which they borrowed the BBC's experimental recorder. This was a 13-bit two-channel machine which used the BBC's own companding system and sampled at 32kHz to give a frequency response of up to 15kHz, all that was necessary for FM broadcasting.

'We would have liked 20kHz,' Bill Bayliff – general manager of the recording studios – told an interviewer in July 1979, 'but the machine worked well and gave us a very good idea of the performance capabilities of digital recording.'

Digital recordings were made in parallel with Decca's usual analogue master tape recorder, and also with a direct feed to the cutting lathe. The direct-cut provided a benchmark for

comparison, on the assumption that it must be about the best that could be achieved on LP.

## SUBJECTIVE TESTS

Having cut masters from the analogue and digital tapes, they produced pressings and embarked on subjective comparison sessions, then collated the results of hundreds of observations from listeners.

'And,' said Bayliff, 'this quite clearly showed us that records produced from digital masters were indistinguishable from those that were direct cut. Statistically there was no difference between the direct and digital, but there was a significant difference between digital and analogue.' ➔

**'Digital audio recording in the UK started with the BBC'**



**LEFT:** Advert for the 3M Digital Mastering System, introduced in 1979 after the success of the company's prototype installed at Studio80. It was used for the recording of Ry Cooder's *Bop Till You Drop*



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So the decision was made to pursue digital recording, and the question was whether to buy in equipment or to pursue in-house development. A crucial requirement was that the digital system would have to offer editing flexibility comparable with that of analogue tape, and which analogue editors could learn to operate fairly quickly.

## BOARD APPROVAL

After visiting the New York AES exhibition in 1977 and taking a good look what might be available to buy, they decided that none of the immediately-available systems would fulfill their needs. They then got board approval to complete their own system for actual recording sessions.

As Tony Griffiths, head of R&D at the studios, recalled in 1979, by the following March they had one machine working, by May they had two. They were based on the American IVC 800 series professional videotape recorders, using 1in tape, with Decca's electronics providing a sampling frequency of 48kHz and 16-bit resolution, which would later be increased to 18-bit and finally 20-bit. In June 1978 the engineers took these first two machines to the Kingsway Hall, alongside the usual analogue system, to record Ashkenazy and the LSO playing Mozart piano concertos.

During the summer, Decca engineers developed the digital editing system, similar to video tape editing, using two recorders and an editing control box. As well as the digital signal, recorded in the picture band, the VTR tape would contain a low-grade analogue signal track. The operator could listen to this and, as with analogue audio tape, find the edit point on the take being worked



on by manually moving the tape to and fro. With everything up and running, the Decca team went to Vienna in December to record Mendelssohn's 'Italian' symphony. Leaving the equipment there, they carried on after Christmas with the 1979 New Year's Day concert, which, as a double LP, became the first commercial digitally-recorded release in Europe.

Meanwhile, in Japan, while Denon went on steadily issuing digital albums, the technology was developing fast, with Sony launching its first stationary-head professional digital audio recorder in 1974. And in March 1978, the company launched the PCM-1600 two-channel recorder, which, along

with the later PCM-1610 and PCM-1630 updates, would become the essential mastering machine for compact disc.

By 1982, Sony had succeeded in establishing its DASH [Digital Audio Stationary Head] standard for studio recorders, which was also supported by the main European manufacturer, Studer. The DASH standard allowed for two-channel audio on 1/4in tape, and for 24 or 48 tracks on 1/2in tape. Tape speed was 30in/sec, for 48kHz sampling.

Linear recording with a stationary head avoided the handling complexities of helical scanning, and edits could even be made using the traditional razor blade.



**ABOVE:** One of the first consumer digital recorders was Technics' SV-P100 (far left); recording engineer Tony Faulkner at work with the Sony PCM-1600 (centre); the later Sony PCM-1610, which became the industry standard for mastering CD; the portable Sony PCM-F1 encoder (above)

**BELOW:** IVC 800 videotape recorder from 1969 – a modified version was used by Decca's Bayliff and Griffiths



But as well as catering for the pro user, the Japanese manufacturers also contemplated a consumer market, or at least a semi-pro market,

for digital recorders based on the consumer videocassette formats, VHS and Betamax.

Standards for consumer machines were laid down by the EIAJ [Electronic Industries Association of Japan] in 1979. This specified 14-bit encoding, but at the urging of Sony it also allowed the option for 16-bit, with simpler error correction.

## WORKHORSE SYSTEM

Several makers launched consumer digital recorders, early examples being the Technics SV-P100 and Hitachi V300. But then came the Sony PCM-F1, a unique portable PCM adaptor designed to be used with the Sony SL-F1 Betamax portable video recorder (known as the SL-2000 in the USA). While the other home-use machines were 14-bit only, the F1 could be switched from 14-bit to 16-bit. For a time the Sony PCM-F1/SL-F1 combination became a workhorse recording system for both location use and smaller studios.

Writing at the end of the 1980s, Heitaro Nakajima was able to

look ahead to 'the tremendous range of possibilities created by optical disc technology.' It must have seemed to him then that all the work put into the development of digital audio had come to fruition with the final arrival of CD. Now, of course, we know better. We know that CD's optical disc technology just marked the start of a much bigger digital revolution. ☺

'Meanwhile, in Japan, the technology was developing fast'

# D'Agostino Master Power Classic Stereo

For those who cannot aspire to a Momentum amplifier, but who crave some of that D'Agostino magic, the new 300W Classic Stereo is a gift from one of the (audio) gods  
 Review: **Ken Kessler** Lab: **Paul Miller**

**R**arely do the words 'affordable' and 'Dan D'Agostino Master Audio Systems' occur in the same sentence. If, however, we add 'relatively', then the 300W Classic Stereo at £13,498 is 'affordable' in the sense that it costs less than half the price of a 200W D'Agostino Momentum Stereo in black [HFN Aug '12]. One might ask where the other £18k goes: not least is the change from the Momentum's 'functional sculpture' to a not-quite-prosaic cubist box. But cheap it ain't.

## A REAL HEAVYWEIGHT

Before going anywhere near the details, one statistic tells you more about the Classic Stereo than any other, especially if you possess a touch of the tyre-kicker – which all audiophiles do, if truth be told. Bluntly put, this amplifier weighs 50kg, or 110lbs in old money. It is so damn heavy that I had to enlist help in unpacking it, which I didn't require for the not-that-much-lighter Momentum (though PM unpacked it, tested and packed it solo). The difference is that the Classic Stereo is also massive at 483x292x508mm, whereas the Momentum is dense but compact, as if you sliced the Classic horizontally in two.

Unlike the aesthetically innovative Momentum amplifiers, which I cannot believe have not yet been ripped off stylistically by lesser makers, the Classic Stereo comes in a traditional rack-mount case. It features massive front handles that proved essential when unpacking the thing. I only wish that they had fitted handles to the rear as well, because this is one of the most physically challenging amplifiers I have ever had to install, and gripping it without handles is worrying.

**RIGHT:** Classic Stereo comprises two mono amp 'cards', each built onto a pair of heatsinks. A huge toroidal PSU transformer is bolted to the rear of the fascia behind a white cover

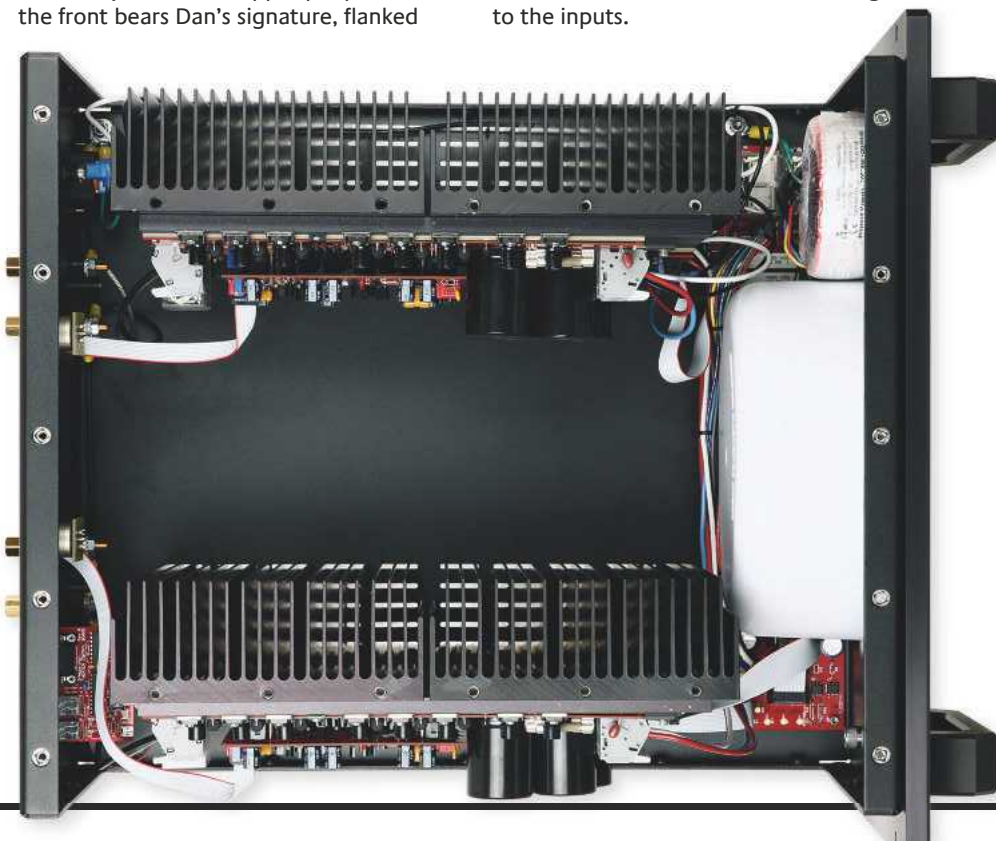
I didn't want to count all the bolts that hold this together, so I stopped at 44. One can quickly surmise, however, that rather than use sheer mass, as in the Momentum with its machined, solid-copper heatsinks, the Classic acquires much of its rigidity with a belt-and-braces approach. The innards contain an enormous toroidal transformer and a pair of amplifier sections consisting of the circuitry and a finned heatsink to which each board is attached, providing both dual-mono topology and a structural support that ensures the lid and side panels do not flex.

Pretty it ain't. If you want the Ava Gardner of amplifiers, then look to the sleek and sexy Momentum. This is more the Roseanne Barr – big, beefy, and, indeed, a bit scary. The bold copper plaque on the front bears Dan's signature, flanked

by the handles. Below, to the right, is the on/off button, a simple plastic affair that turns green when lit. That's it, one of the least cluttered, most purely functional and instinctive fascias you can devise. The only thing that could make it even more austere would be to move the on/off switch sadiistically to the back.

## ONLY BALANCED INPUTS

And the back isn't all that cluttered, either. AC enters via one of those 15A IEC plugs, while an RS232 connector and 12V power trigger inputs will allow users to integrate the Classic Stereo into systems with remote power-on from the preamp or system controller. Speaker terminals are massive multi-way metal posts, and there's a user-accessible fuse at the back. Then we get to the inputs.







As stated in the interview with Dan D'Agostino [see p35], this is balanced because he feels it is imperative for the best performance. This isn't the first instance of amplifiers that are balanced-only, and I wholeheartedly agree with the sentiment, but neither does one want to preclude sales to individuals with single-ended-only preamplifiers.

Although not found in the box with the review sample, the owner's manual says that XLR-to-RCA adapters are supplied. I have it in Dan's own words that, 'We are OK with using high quality RCA-XLR adapters'. So, please, don't let the XLR-only ingress deter you. Whatever it may sound like using RCA-to-XLR, I stuck with balanced operation,

feeding the Classic Stereo from my Audio Research REF 5SE with Transparent cables.

In addition to the Wilson Alexia loudspeakers [HFN Mar '13], I also drove the Sonus faber Venere S [HFN Mar '16], and used the Marantz DV8300 SACD/

DVD player, SME 30/12 turntable/arm, EAT E-Glo phono stage and Clearaudio Goldfinger MC [HFN Jan '15] as sources. Aside from struggling with the sheer bulk of the Classic Stereo, set-up

was swift. The only caveat is the warm-up time. Stated quite specifically as 30 minutes in the manual, the warm-up is no worse than that for valve amplifiers. While I would need two – one 'cold' and one that had been running for that half-hour – to

**'This sonovagun sounded like a KSA-50 for the 21st century'**

## BLAST FROM THE PAST?

Reminded of Dan's earlier classics, the original Krell KSA-100 and KSA-50, Editor Miller mused, 'While the Classic Stereo's internal design is quite different, do you think Dan is reliving his past?' Dan was happy to explain both the links to the past and the breaks from it, such as its heavyweight build. 'We wanted to develop an amp that would help more people experience our product line. The Classic Stereo incorporates my core beliefs in amplifier circuitry and required a certain size and scale for the best sound.' He also felt that 'a more streamlined aesthetic was appropriate for this application.' Clearly recalling his work for 40 years is balanced circuitry, 'Imperative for great sound. By only including an XLR option, we are reinforcing the importance. Low impedance drive is also a fundamental element of my amplifiers. The Classic is no different and will double its power output down to 2ohm and can easily handle a 1ohm load.'

**ABOVE:** Just a power-on button that glows green – that's all you see at the front of the Classic Stereo. Build and parts quality defined by one spec: this monster weighs over 100lb

determine quite what the sonic difference is between them, I can with relative certainty say that the sound opened up considerably and the treble sweetened.

Once cooked – and I hate to keep referring back to Dan D'Agostino's past achievements – this sonovagun certainly sounded like a KSA-50 for the 21st century. And that is a very good thing, indeed, because we are talking about an all-time great. And one that has been revisited, as it were, with the efficacy, added experience and authority of, say, Cecil B DeMille doing a remake of *The Ten Commandments* 33 years after the first version. A coincidence? I think not...

## SHEER CONFIDENCE

Not that this sounds vintage: the refinement possessed by the Classic Stereo owes more to its dearer siblings in the Momentum range than anything born in the 1980s. It possesses the sheer confidence, command and composure that we associate with the likes of the Momentum Stereo, Soulution's hardware, the Continuum amplifiers, that over-the-top darTZeel monster and other no-compromise units. What is so stupefying is the Classic's price point. While it is still eye-wateringly high, £13.5k is 'entry level' compared with these powerhouses. ➔



# MOON

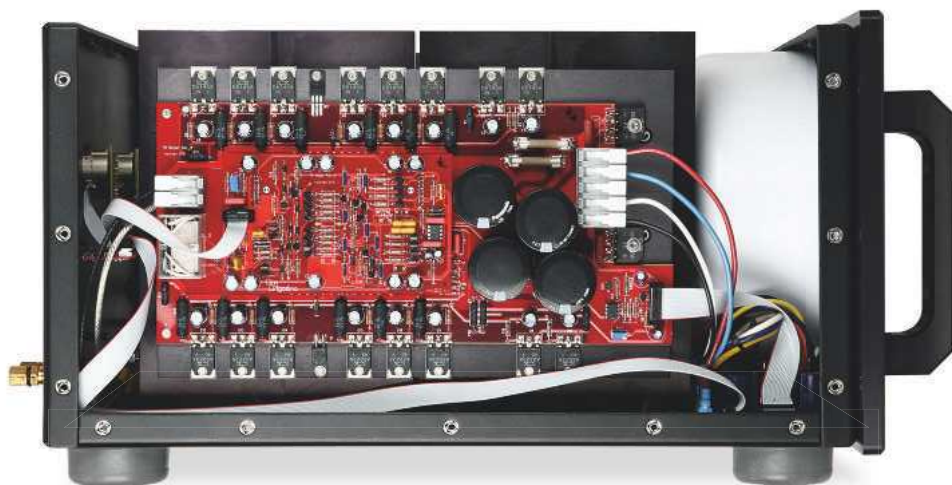
by SIMAUDIO

The Neo 230HAD is a headphone amplifier, a DAC and a line-stage preamplifier all housed in one very stylish package. The possibilities are endless as it can be used with virtually any digital source, offering the same fidelity as your main music system. The 230HAD fills an immense void in the current headphone marketplace, with an exceptional price to performance ratio.





## POWER AMPLIFIER



**ABOVE:** Four 6800µF reservoir caps and local regulation feature on each amplifier 'card' – no fewer than eight pairs of high current Sanken output transistors are employed in the power amp stage

Regrettably for some of you I am still fetishising about proto-disco. The Detroit Emeralds' 'Feel The Need' [*Greatest Hits*, Westbound CDSEWD 119 (CD); and *Feel The Need*, Atlantic K50372 (LP)] and 'Rock The Boat' by the Hues Corporation [*The Very Best of The Hues Corporation*, Camden 74321 603422 (CD); and *Freedom For The Stallion* RCA APL 1-0323 (LP)] have been played so many times that I fear I'm acquiring a desire for a metallic onesie jumpsuit with flares, opened to the navel.

Then again, rich bass and punchy brass are precisely the fodder to feed a behemoth like this, while whucka-whucka guitar is ideal for testing transient attack and decay, punch and other speed- or control-related abilities. Lo and behold, the Classic presented both tracks in exactly the manner that defines its own presence, its own form. The Classic's character is embodied in the sound of the music it produces with an uncanny likeness, also evocative of the designer's personality.

In a word, everything about the presentation was 'massive'. There is no other term I can find, and I use it strictly to describe scale and, well, *mass*, as one would apply it to a bull elephant, a dump truck or 48oz soft drink.

Whether using the Sonus fabers or the Wilsons the soundstage was gloriously cavernous, the bass extended, fast and weighty. As ludicrous (and tyre-kickery) as it seems to attribute the traits of an amplifier to its performance, there is no escaping the sensation. These are not the fevered imaginings of an audiophile plagued with wish fulfilment.

'Everything about the presentation was "massive"'

When I turned to the percussive juggernaut that is Kodo drumming, on *Heartbeat: Drummers Of Japan* [Sheffield Lab CD-KODO], the net effect was the movement of air in quantities I had never before extracted from the Alexias, let alone the smaller Venere Signatures. With Levon Helm's kick-drum opening to The Band's 'Up On Cripple Creek' [*The Band*, Mobile Fidelity UDSACD 2129], the Classic managed to infuse the dry, crisp thwacks with a visceral quality so convincing that I had one of those reality-check moments. Yup, that good.

Neither man nor woman lives by percussion alone, and I certainly prefer to hear vocals above everything else, so it was on with the ever-dependable call-and-response of Dianne Reeves and Lou Rawls on the latter's *At Last* [Blue Note CDP 7 91937 2]. If you don't have this disc – and I realise it's hard to find – one of the myriad versions of Ella Fitzgerald's duets with Louis Armstrong will provide a nearly-identical set of contrasts.

### MICROSCOPIC DETAIL

And what a torture test it is, the gravelly Lou (or Louis) countering the crystalline vocals of Dianne (or Ella). If you want to hear what 'textures' are, this juxtaposition will – if you think about it – illustrate just how hard a sound system has to work to convey the natural, yet disparate characteristics of human voices. The Classic eschews sibilance unless the recording is poor and the sibilance is inescapable, which is as it should be, yet you hear the breathing, the lips, the microscopic details that suggest reality rather than a ➔

## DAN D'AGOSTINO

With the Classic Stereo being a departure from the Momentum models, released in the same year as the Momentum Phono Stage, the still-young brand is expanding its catalogue vertically as well as laterally. Dan told *HFN* that, 'We recently announced the Momentum M400 Monaural amplifier, which is a major update to the original Momentum amplifier. Power output has been increased to 400W, up from the original 300W. The backbone of the increase is a new ultra-quiet 1800VA transformer that's 20% bigger than the original.

'Coupled to this larger power source is a new complementary driver and an updated output stage. The new driver stage nearly doubles the current drive necessary to maximize the enhanced output stage that follows. This takes this increased drive and boosts the open loop gain by a factor of two. The result is a sound that is richer, more authoritative and expansive.'

For Momentum owners, further good news is the pending Momentum streamer and headphone amplifier. 'I am still working on Helios,' said Dan. 'At CES, we will unveil the first product in the Progression Series [see *HFN* Mar '16]. It will be a very powerful monaural amplifier that has many aesthetic cues and circuit elements from the Momentum series. It is priced between the Master Power series and our Momentum line-up. Our immediate plans include a Progression series mono, preamplifier, stereo and lifestyle amplifiers.'





*"The N1Z is the audiophile's replacement to the computer or the network, because it sounds better than both...The N1Z gets the strongest recommendation."*

*Hifi+ Issue 124*



# MELCO

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**VERDICT** ●●●●●

*Hifi World March 2015*

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*Hifi Critic March 2015*

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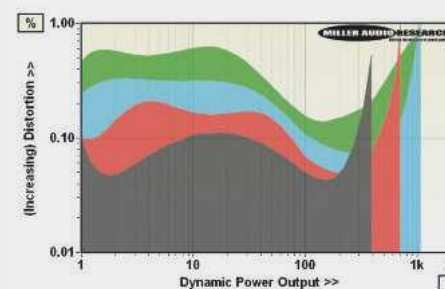
## LAB REPORT

### D'AGOSTINO CLASSIC STEREO

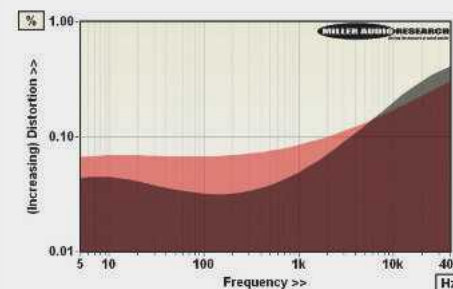
At the time of writing (Dec '15) D'Agostino's website has the power output of the Classic Stereo as 300W/600W/1.2kW into 8/4/2ohm while the downloadable owner's manual specifies 300W/500W/1kW. The latter is the more accurate as the Classic Stereo achieved 2x354W/8ohm and 2x530W/4ohm with a substantial 390W, 705W, 1.05kW and 1.0kW available under dynamic conditions to 1% THD into 8, 4, 2 and 1ohm loads [see Graph 1, below]. So few speakers will faze this 50kg black brick even if its very consistent but moderately high 0.5ohm source impedance will introduce some system response variations in line with big swings in speaker impedance. Into a straight 8ohm load the response is flat from 1Hz-20kHz (-0.1dB) and out to 100kHz (-1.95dB) but gets 'flatter' into lower impedance loads until -0.5dB/100kHz at 1ohm.

Noise is not vanishingly low – that big toroid reaches out to local PSU regulation on each power amp 'card' – but 87-88dB (re. 0dBW) is a respectable enough A-wtd S/N ratio. Distortion is also well managed vs. output power, the Classic Stereo achieving ~0.06-0.1% over a full 1-250W/8ohm range. D'Agostino amps typically operate with only moderate levels of compensation and the Classic Stereo is no exception as distortion increases with frequency from ~0.06% through bass and midrange to ~0.19%/10kHz and ~0.25%/20kHz [all at 10W/8ohm, see Graph 2]. Finally, the 'dual mono' modularity of its design ensures a superb >80dB separation (20Hz-20kHz).

Readers are invited to view a comprehensive QC Suite test report for D'Agostino's Master Power Classic Stereo amplifier by navigating to [www.hifinews.com](http://www.hifinews.com) 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) loads. Maximum current is 32A



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

### HI-FI NEWS SPECIFICATIONS

Power output (<1% THD, 8/4ohm)	345W / 530W
Dynamic power (<1% THD, 8/4/2/1ohm)	390W / 705W / 1.05kW / 1.0kW
Output impedance (20Hz-20kHz)	0.51-0.52ohm
Frequency response (20Hz-100kHz)	+0.0dB to -1.95dB
Input sensitivity (for 0dBW/300W)	135mV / 2325mV (balanced)
A-wtd S/N ratio (re. 0dBW/300W)	87.5dB / 110.8dB
Distortion (20Hz-20kHz, 10W/8ohm)	0.055-0.25%
Power consumption (Idle/Rated o/p)	111W / 1.03kW
Dimensions (WHD) / Weight	483x292x508mm / 50kg



ABOVE: Balanced XLR inputs are joined by solid (not 4mm) screw-down speaker connections best suited for bare wire or spade adapters. Note 12V trigger comms

recording. With this lush-sounding set, there is such a palpable lack of artifice that the potential for voices to exhibit utter authenticity is nothing short of breathtaking. As capable of brutality as the Classic is, with, for example, the most overpowering of sections on the Kodo disc, it is also capable of delicacy reminiscent (to these ears) of no less than the Radford MA-15. But then that shouldn't surprise any seasoned listener: all great amplifiers can deliver both a gentle touch and a fist when required.

### YOUR VANISHING ROOM

Having recently acquired the SHM-CD of The Beatles *Let It Be* [Apple Japan UICY76979] – not my favourite by a long shot – I was stunned by the clarity and detail. This is not the place to debate the quality of the various formats in the Fab Four's catalogue, but the SHM-CDs have a naturalness that sends chills down my spine. Although this is really a naff album – sorry, but it's the sound of a band breaking up – the off-mike chat in studio takes, especially Lennon's farewell remarks, exist in a convincing space that transcends two channels.

Here the Classic Stereo matched the Momentum to the millimetre, with openness that allowed the speakers to disappear as they should. It was enveloping, without any suggestion of boundaries related to the walls of the room. And isn't that the ultimate trick for a decent system – to eliminate the room?

As a last tester, I chose the Blu-spec version of The Byrds' exquisite, complex, hypnotic *Notorious Byrd Brothers* [Sony Music Japan

SICP20042]. It suits listening sessions because the opening brass onslaught in 'Artificial Energy' has a delicious *shine*, for want of a better word, that can splutter if not handled properly. I have no idea what effects were applied in the studio, but the Classic positioned the brass to create a wave over the listener, coming from the left.

Stage right is crisp percussion, in between, the vocals. To my delight, it was revealed with that absolutely perfect balance between a wall of sound – coherent, consistent – and a series of separate events. The brass swelled and faded to a degree that recalled the flanging of 'Itchycoo Park', without the actually trickery. If any audio patois or jargon suits this sensation, it has to be 'liquidity'.

By this time, I knew I was in the presence of a masterpiece. It might even threaten the Momentum. And now that this review has been written, it's time to hook up the Scintillas [see p124]... ☺

### HI-FI NEWS VERDICT

Even without waiting for it to warm up, the Classic dazzled from the opening bars of 'Feel The Need.' It swings, it rocks, it grabs the speakers by the waist and dances with them, filling the room with musical energy that creates one of those moments in one's hi-fi life that marks a milestone. I still recall the first time I heard a KSA-50 and I'll never forget the first time I heard its great-granddaughter.

Sound Quality: 90%



# YG Acoustics Sonja 1.3

A statement speaker for which great claims are made, this symphony in aluminium is yours for a cool £100,000  
Review: **Nick Tate** Lab: **Keith Howard**

**T**he best loudspeaker in the world' is a much-touted phrase [see p56], bandied around by manufacturers and reviewers alike in far too louche a way to be meaningful. Yet still – although almost all audiophiles can't afford such a thing – a great many of us still aspire to hearing it. There's something uniquely evocative about an absolutely uncompromising statement speaker that intrigues us all.

Bitter experience teaches us that, actually, there is no such thing as 'the best', but still you won't find any shortage of grand looking, eye-wateringly priced designs aspiring to be such. Selling for £100,000, the YG Acoustics Sonja 1.3 is precisely this...

The trouble is, something costing this sort of money invites criticism before you've even heard it. I suggested to company founder and designer, Yoav Geva, that it might have been easier to aim his sights a little lower – where people are a tad more forgiving of any failings a speaker may have?

'Perhaps from a business perspective it would have been easier to start with a price point at which some compromises would have been the norm,' he tells me, 'but from an engineering perspective the greatest challenge is redefining the edge-of-the-art. This challenge drives and inspires me... my passion is to recreate lifelike sound.'

The Sonja range offers a clever modular concept which makes it possible to buy the speaker in stages [see boxout, p39], and it stands out from the crowd in several other respects too. First is Geva's insistence on infinite baffle cabinets as opposed to reflex ported ones, which many others employ. This was imperative,

'because the air doesn't have to travel from the back of the driver, through the vent to the outside world – so there's no time delay'.

## MACHINED TO PERFECTION

Geva notes that it also eliminates port resonances that can colour the midband, and that it gives easier in-room positioning because it doesn't add 'a second sound source in a different location in the room' to the equation. His own calculations suggest that infinite baffles work better in a wider variety of room sizes too, because ported speakers 'feel not just their enclosure-volume, but also the larger volume of the room.'

Another critical part of the Sonja's design is its use of aluminium, both in the cabinets and the drive units. The former are multi-layered structures optimised for each module's specific frequency range, and made from precision-machined aircraft-grade aluminium alloy. They are beautiful things to behold, with exquisitely smooth surfacing and rounded edges, so they appear less severe than they should, given their size and sheer blackness.

The drive units also use aluminium because of its excellent stiffness-to-weight ratio. YG Acoustics' so-called 'BilletCore' cones are CNC machined from solid on machinery that costs 'upwards of half a million dollars' [see picture, p41], and have a very high resonant frequency well outside their passband, so they're easy to attenuate using the crossover.

**RIGHT:** Aluminium alloy features throughout the Sonja's build, from the cabinet through to the bespoke bass and midrange drivers. Every part is machined from solid – YG Acoustics even has its own 5-axis CNC milling/turning machine

“The greatest challenge for me is to redefine the edge-of-the-art”







## MODULAR THINKING

Unusually, YG Acoustics' flagship loudspeaker can be split into three different modules. It comes in a choice of 1.1 (compact two-way), 1.2 (a three-way) and 1.3 variants (tested here, a three-way with twin bass drivers). It's possible to start with either of the smaller modules and add the huge triangular subwoofer to make the £100k Sonja 1.3 when funds or room size permit – the ensemble weighs 230kg and stands 179cm tall, after all. All three Sonja models are characterised by extensive use of aluminium both in their cabinets and driver cone material. This invests them with a distinctive sound, but designer Yoav Geva [see p41] says that his 'DualCoherent' crossover – featuring CNC-wound toroidal 'ToroAir' inductors claimed to eliminate inter-driver crosstalk – is the speaker's 'single most complex technology'. He says 'its exclusivity clearly distinguishes it from all other rival designs', adding 'virtually all loudspeakers are developed using a single off-the-shelf software tool, which optimises response or phase, but not both.' YG Acoustics' in-house software is 'unique in delivering both a ruler-flat frequency response and near-zero relative phase.'



After the cones and other parts are machined, they are sent to Scanspeak in Denmark for final assembly and additional quality control.

In its 1.3 guise, the Sonja runs a lone 25mm 'ForgeCore' silk dome tweeter, made from a single sheet of material that forms both the dome and the surround. And its magnet system uses a bespoke motor that's 'optimised to reduce distortion', says the designer. This crosses over to twin aluminium-coned 152mm midrange units at 1.75kHz, and then down to the twin 260mm woofers at 65Hz via the 'DualCoherent' crossover.

Weighing 230kg each, setting up the Sonja 1.3 isn't exactly something you might do while waiting for the kettle to boil. The modular system makes it easier than it might otherwise be, with each successive tier of speaker locked on top of the larger module beneath. Castors are used for positioning, before final spiking to the floor takes place. This done, you'll need to hook the pair up to a powerful amplifier, on account of the speaker's sensitivity [see Lab Report, p43].

Still, anyone who can afford a pair of Sonja 1.3s should be able to run to a suitably muscular power amp. The infinite baffle design does indeed make this speaker less fussy about placement, and it can work half-a-metre or so from boundary walls without booming – excellent for such a big box. Which isn't to say that it doesn't deserve a largish room, because its talents are wasted anywhere smaller. You might

also care to consider whether your listening room floor can actually take the combined 460kg weight of a pair of Sonja 1.3s!

## AN ICY BEAUTY

Is this 'the best loudspeaker in the world' then? Well if such a thing actually exists in the first place, then the YG Acoustics Sonja 1.3 certainly warrants consideration. It is one of a select group of ultra capable high-end designs which perform quite unlike normal hi-fi boxes.

In the editor's listening room [see [www.hifinews.co.uk/news/article/meet-the-team;paul-miller/9952](http://www.hifinews.co.uk/news/article/meet-the-team;paul-miller/9952)] and powered by a Melco server/Devialet Le 800 amp combo, it sounded superb, but so it jolly well should considering the price tag. Like every such member of 'the ultimate speaker club', it has its own distinctive character that will thrill some and alienate others. Therein lies the problem for high-end designs, because they all have their own idea of what constitutes sonic perfection...

This speaker's character reminds one of fresh snow set against a bright blue sky. It has a strikingly beautiful yet icy sound that presents music in a way that's quite unlike almost any other loudspeaker around. Some listeners ➤





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**ABOVE:** Every BilletCore woofer is machined in four stages that sees a 7kg cylindrical aluminium billet turned into a 35g cone. Here reinforcing ribs are retained on the rear of the BilletCore driver

may think it a tad too stark, whereas others will love its unsullied clarity that cuts right into the heart of the music.

It shines a brilliant white light on the recording, making you aware of exactly what's going on – for better *and* for worse. It avoids garnishing the recording to make it sound warm and romantic: those looking for big boxes with a sweet, sumptuous sound should turn the pages now!

Take the classic 1970s rock standard, 'School' by Supertramp [*Crime Of The Century*, A&M DIDZ-10077]. It's a very high quality, albeit

slightly dry, recording with clever production to match its obvious musical sophistication. The Sonja 1.3 proved a perfect tool to listen with, because it opened the recording up like a book. Its rare translucency showed all the elements of the mix in their proper place, and made the production trickery clear to hear. Tonally, it was never shrill or hard, yet didn't overplay the low frequencies either.

Indeed, you could say this speaker resembles a good electrostatic in this respect, but turn up the volume and you realise that the Sonja can keep on driving. Even at high levels it powers the room cleanly and without a hint of strain, and proves able to track powerful dynamics that most other loudspeakers simply cannot. Its tonal balance is commendably smooth too, with nothing too exaggerated and everything kept subtly balanced.

Blessed with great scale, speed, clarity and power, the Sonja 1.3 might seem unassailable, yet – just like every other

loudspeaker – it does show certain traits, as I've suggested. Its distinctive character is not unattractive, but it's still not quite as 'invisible' as it should be at the price. There was a tendency to lose a fraction of the natural warmth of some recordings, and instead render everything in a spry, crisp and dry way.

#### DOUBLE-EDGED SWORD

Frankie Goes To Hollywood's 'The Power Of Love' [*Welcome To The Pleasuredome*, ZTT SALVOMDCD03], for example, didn't

sound as opulent as nature intended. The Sonja 1.3 can clearly signpost the difference in production values between recordings, but it doesn't quite catch the richness of some warmer ones. Its bass – in our listening room at least

– never managed to be truly tuneful, while at the other frequency extreme, although the treble was highly delicate, clean and nuanced it wasn't quite as spacious as it might have been.

Feeding the Sonja 1.3 a less impressive recording than the Supertramp, T-Rex's 'Cosmic Dancer' [*Electric Warrior*, A&M Records 493 113-2], it rather underwhelmed. This compressed, rather grungy track was obviously mixed for radio, and suddenly that glass-clear midband became a double-edged sword, as it showed up this song's rudimentary production values.

Again, it served up an awful lot of detail and a nice wide soundstage, but somehow the song didn't quite seduce in the way that it should. Although brilliantly adept ➔

'Supertramp's  
'School' was  
opened up  
like a book'

#### YOAV GEVA

Fourteen years ago, Yoav Geva set up YG Acoustics in Arvada (near Denver), Colorado, 'because it offers a business-friendly environment, and a highly skilled workforce, thanks to the multitude of audio manufacturers nearby. I found it also to be a wonderful environment for raising a family...' Indeed, he is obviously a keen family man, naming his speakers after his wife Sonja, daughter Hailey and son Carmel. As you would expect, music is one of the man's great passions, and if he were banished to desert island, he confides that he would stash away baroque and classical music – Bach a particular favourite, apparently.

Given the vast purchase price of the Sonja 1.3, you might expect it to be active – but not so. Geva says that YG Acoustics used to make active loudspeakers but, 'we achieve superior performance from passive designs today'. This chimes with his avowedly minimalist design philosophy – striving to implement the smallest number of components in the signal path.

Indeed, being a former IT guy, he seeks to reduce the number of variables in any given system and that's why he's such an ardent fan of infinite baffle cabinets. Not having a reflex port means that the speakers produce sound from their drivers only, 'which makes it easier to build a time-coherent speaker', he says.

The company is growing steadily, and has interesting plans for the future – with an additional design being debuted at the Las Vegas Consumer Electronics Show 2016 [see Show Blog, *HFN* Mar '16].





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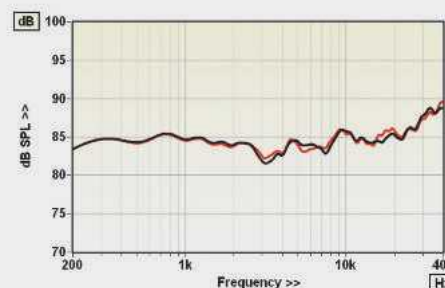


## LAB REPORT

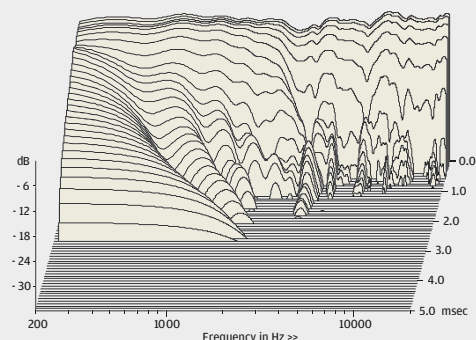
### YG ACOUSTICS SONJA 1.3

YG Acoustics claims 88dB sensitivity for the Sonja 1.3 but it is obvious from the volume control settings required for measurement and listening that this is a substantial overestimate. In fact our measured pink noise figure was 84.4dB – over 3.5dB below specification. Such is the ramification of choosing closed box rather than reflex bass loading and despite the Sonja 1.3 having quite low impedance. The specification states a nominal figure of 4ohm and a minimum of 3.0ohm; we measured a dip to 2.5ohm at 264Hz. Impedance phase angles are modest but even so, together with the low modulus, they result in the EPDR (equivalent peak dissipation resistance) dipping twice to 1.5ohm, at 146Hz and 628Hz. This and the low sensitivity indicate that the Sonja 1.3 is quite a challenging load to drive.

The forward frequency response [Graph 1, below], measured on the tweeter axis, has the 'smile' shape of a presence band dip, and the ultrasonic response rises quite steeply above 20kHz. But the response errors are commendably low at just  $\pm 2.2$ dB and  $\pm 2.0$ dB respectively, and the pair matching is also good at  $\pm 1.0$ dB (all 200Hz–20kHz). Nearfield measurement of closed-box speakers is generally easier than with ported designs but combining the weighted outputs of the Sonja 1.3's twin subwoofers and twin midwoofers resulted in an uneven response below 70Hz so the diffraction-corrected bass extension figure of 31Hz (–6dB re. 200Hz) is subject to some uncertainty. THD at 90dB SPL at 1kHz was exceptionally low at 0.02%. While the CSD waterfall [Graph 2] shows fast initial decay, some low-level treble resonances are apparent. KH



ABOVE: Bass extension and pair matching are very good but the response has a mild presence band dip



ABOVE: Cabinet resonances are well controlled but very mild mid driver resonances are visible >4kHz

### HI-FI NEWS SPECIFICATIONS

<b>Sensitivity</b> (SPL/1m/2.83Vrms – Mean/IEC/Music)	84.6dB/84.4dB/84.1dB
<b>Impedance modulus min/max</b> (20Hz–20kHz)	2.5ohm @ 264Hz 12.5ohm @ 1.9kHz
<b>Impedance phase min/max</b> (20Hz–20kHz)	–34° @ 108Hz 44° @ 1.2kHz
<b>Pair matching/Resp. Error</b> (200Hz–20kHz)	$\pm 1.0$ dB / $\pm 2.2$ dB/ $\pm 2.0$ dB
<b>LF/HF extension</b> (–6dB ref 200Hz/10kHz)	31Hz / >40kHz/>40kHz
<b>THD 100Hz/1kHz/10kHz</b> (for 90dB SPL/1m)	0.3% / <0.1% / 0.1%
<b>Dimensions</b> (HWD)	1790x430x720mm

**LEFT:** Each of the three cabinets houses its own crossover – perfect for tri-amping that ultimate system. The lower bass section carries three adjustable spikes, machined in-house of course!

recording again gave the YG Acoustics speaker a chance to show its mettle. The bright xenon light it shone on the proceedings let the listener peer right inside the mix, and we were rewarded with a wealth of filigree detail.

#### A RARE MOMENT...

With this track it proved able to deliver one of those rare 'I never heard that before' moments. Within our larger-than-average British listening room it ran images far left and right, and performed the clever trick of delivering a truly three-dimensional soundstage wherein both speakers completely dissolved. Image location in particular was superlative, making individual strands of the mix sound so solid that they might as well have been bolted down as part of the furniture in the room.

And a slice of beautiful '90s electro-pop from Depeche Mode, in the shape of 'Enjoy The Silence' [Violator, Mute CD Stumm 64] showcased the Sonja's fine transient speed. Its ability to let the listener into the spaces between the notes was rare, giving an etched and nuanced sound that let you hear behind the lead synthesiser part right down into the depths of the mix. It carried the distinctive 'envelope' of each electronic instrument, resolutely refusing to blur things together. ☺

### HI-FI NEWS VERDICT

It is nigh on impossible to justify spending £100,000 on a pair of loudspeakers, yet few will deny that the YG Acoustics Sonja 1.3 has real star quality. Thanks to its crystalline clarity and serious physical presence, it always makes music memorable. It's also an arresting piece of design, and superbly built. Although not quite perfect (nothing ever is), it's sufficiently special to warrant a place at the top table.

Sound Quality: 90%

0 - - - - - 100

at zooming right in on the subtler aspects of the guitarist's fingering and the drummer's stick work, for example, it didn't quite weave them together in a rhythmically convincing way. Instead, on this rather iffy recording, it seemed better at deconstruction than reconstruction.

Steely Dan's 'Night By Night' [Aja, MCA 088 112 056-2] turned the tables, however. This excellent

# T+A MP 2000 R/PA 2000 R

The engineering team at Germany's T+A has shoehorned much of the latest design thinking from its cost-no-object separates into a new range of R-Series components  
Review: **John Bamford** Lab: **Paul Miller**

It was at last summer's High-End exhibition in Munich that Germany's T+A Elektroakustik announced it was developing a new line of 'real world' components featuring technologies trickled down from its high-end HV-Series products. So while the company's svelte R-Series has been the 'middle-range' in its product portfolio since 1992, they have now been given a thorough makeover.

The source media player is the £4200 MP 2000 R. It's a high-spec DAC with built-in CD drive, FM and DAB+ tuner, network streaming client with internet radio functionality (vTuner), and a plethora of hi-res-capable digital inputs. Bluetooth connectivity is also included for direct streaming from phablets.

## CUSTOMISABLE OPTIONS

We have it partnered here with the matching PA 2000 R integrated amplifier, rated at 100W/8ohm, which has six line inputs (three balanced XLRs and three single-ended RCAs) and also costs £4200. The new R-Series line also includes a more powerful integrated amp, the 140W/8ohm PA 2500 R (£5577) which has beefier twin power supplies and larger heatsinking, and there's a pre/power combo currently in development. Vinyl enthusiasts are catered for too, with a partnering G 2000 R belt-drive turntable. This is priced at £3430 fitted with a Rega-sourced arm and Ortofon 2M Bronze MM cartridge, or at £4720 with Clearaudio Carbon-2 tonearm and MC-2 moving-coil cartridge.

On paper the two components reviewed here might seem a *little* expensive. It's only when actually seeing them that one can appreciate the fine engineering and meticulous attention to detail. Of course the metalwork isn't anything like as over-the-top as T+A's high-end 'HV' series components (a two-man lift), nevertheless the quality of fit and finish is exemplary.

These components don't just look classy in their brushed aluminium casework but their control buttons and knobs also feel sumptuous in operation.

The PA 2000 R amplifier comes with a neat universal system remote handset (model FM2000) which sports a logical layout and offers all manner of menu-driven settings to configure the amplifier for individual preferences and requirements. The display can be customised; inputs can be named to match sources; bass and treble can be adjusted (either individually for the left and right channels or in unison); and there are three loudness settings to best suit the size of your room and sensitivity of your loudspeakers. All tone settings can be bypassed via the handset or the 'Flat' button on the front panel.

A headphone socket is included on the left of the fascia, preamp outputs are included (RCA only), and LAN sockets provide interfacing for computer-

controlled home automation systems from the likes of AMX and Crestron. An optional MM or MC phono module is a simple retrofit (priced £506), while one of the inputs can also be configured for pass-through, selected by a trigger signal.

The rotary volume knob governs banks of precision resistors which are switched using gold contact relays (these are heard clicking as you alter the gain in 1dB steps). Channel balance is adjusted by pressing and holding down the volume control for a couple of seconds.

Meanwhile the almost-all-encompassing MP 2000 R might be considered a substantially scaled-down version of T+A's £8300 MP 3000 HV media player [HFN Jun '13] amalgamated with the DSD-capable USB technology debuted in the company's £11,670 PDP 3000 HV disc player/DAC [HFN Mar '15]. At this MP's heart lies T+A's sophisticated re-clocking regime with four pairs of Burr-Brown 384kHz/32-bit



**RIGHT:** Exquisitely designed and laid out – with level-dependent forced air cooling – the PA 2000 R combines an efficient switchmode PSU with a derivation of T+A's 'High Voltage' amplification





capable DACs in a 'double symmetrical' configuration, with oversampling carried out by a 56-bit DSP and with four digital filter options for playback of PCM files [see PM's boxout below].

### PURIST APPROACH TO DSD

The CD mechanism is cocooned in an isolated enclosure and offers rapid track access, with support for CD Text. Only 'standard-res' (up to CD quality) playback is recommended via WLAN. However, via a wired network connection the media player's streaming client can handle audio up to 192kHz/32-bit. Playback is also possible directly from local (FAT32-formatted) storage media connected to either of the player's front or rear panel USB-A sockets.

Note that DSD cannot be played by the MP's streaming client, only by pushing into the unit's USB-B input from a computer running appropriate music player software. However, T+A does take a commendably purist approach to DSD playback. DSD data is handled entirely separately from PCM data, the MP 2000 R employing what the company calls its 'true 1-bit DSD converter' to reconstruct an analogue

waveform from DSD's single-bit stream. Standard (64Fs/2.8MHz) and double-rate (128Fs/5.6MHz) DSD are accommodated alongside PCM up to 384kHz/32-bit by the DAC's USB-B input, while the supplied driver software enables playback of quad-rate DSD (256Fs/11.2MHz) – albeit currently only from PCs running Windows.

The unit's analogue filtering automatically limits bandwidth to 44kHz, 60kHz or 80kHz for DSD64, DSD128 and DSD256 respectively. As for the remaining numbers, the unit's Toslink optical inputs handle data up to 96kHz/24-bit and its RCA electrical inputs are capable of 192kHz/24-bit. The player's separate (double-mono) output stages are galvanically isolated from the digital section by means of transformers.

As with the PA 2000 R amplifier, there are myriad settings available for tailoring the brightness/sleep/context behaviour of the MP 2000 R's vacuum fluorescent display to taste. And if the media player and amplifier are daisy-chained via their 'R2Link' communication

**ABOVE:** Both media player (top) and amp feature clear VFDs for navigating their comprehensive menu settings. Classy alloy casework is available in a silver or black finish

sockets using a supplied RJ45 cable, system operation is elegantly unified. Free control apps are available both for iOS and Android smartphones and tablets.

### MESMERISING MUSIC

The combination of media player and amplifier not only looks elegant and proved satisfying to use, it was easy to be seduced

by the composure and finesse of its sound quality. Spinning up the CD of the evergreen Proprius recording *Jazz At The Pawnshop* [1996 remaster, First Impression Music FIM XRCD 012/013]

showed precisely just how capable these components really are. The intimate atmosphere of Stockholm's Jazzpuben Stampen (the 'Pawnshop' club) captured by Swedish sound engineer Gert Palmcrantz nearly 40 years ago on a couple of Nagras running at 38cm/s sounded enchanting, the recording's mesmerising soundstage and the musicians' infectious enthusiasm for the straight-ahead swing jazz standards clearly depicted.

Another 'audiophile test CD' that I hadn't played for what seems like years – it was used so often for system analysis and played to death at hi-fi shows that I frankly got sick of it – is the Oscar Peterson Trio's *We Get Requests* [Verve 521 442-2]. Driving my Townshend Sir Galahad speakers this T+A combo recreated a captivating picture of the musicians' performance in the stellar recording of the opening track 'You Look Good To Me', the body and resonance of Ray Brown's bowed string bass and the lifelike sound of Ed Thigpen's drum kit accompanying Peterson's piano ➤

"The music simply  
"bloomed" with  
deeply saturated  
colours on display"

### WHICH FILTER?

Something of a T+A tradition, the MP 2000 R offers four custom filters. 'FIR Long' and 'FIR Short' are traditional linear-phase types while 'Bezier/IIR' and 'Bezier' are minimum-phase filters based on Bezier polynomials. FIR Long is the default filter, offering equal pre/post ringing and a brickwall roll-off (−0.2dB/20kHz, +0.2dB/45kHz and −6.1dB/90kHz with 48kHz, 96kHz and 192kHz media respectively). Phase distortion is low and rejection of aliasing images superb, but the ringing is not ideal. FIR Short trades less pre/post-ringing for poorer rejection of out-of-band images (just −8dB versus −102dB for FIR Long). The two Bezier filters offer the same (negligible) stopband suppression as FIR Short but with almost no pre-ringing in the time domain. While these filters modify the audioband with CD/48kHz media, they are ideal for 96kHz sample rates. Here, 'Bezier/IIR' offers a slightly brightened upper treble (+0.3dB from 10kHz-20kHz) with a roll-off thereafter (−28dB/45kHz) while 'Bezier' offers a gentler all-round response (−0.2dB/20kHz and −4.7dB/45kHz). There is no difference in the frequency response between any of the filters with 192kHz media. PM

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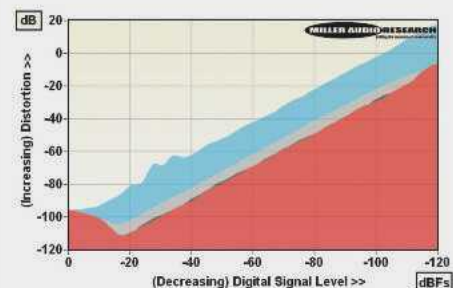


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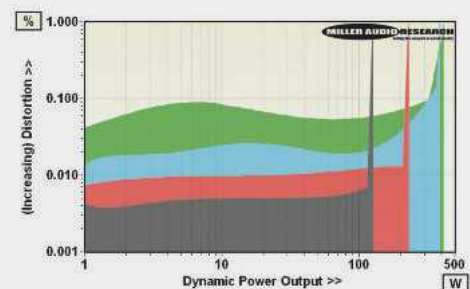
### T+A MP 2000 R/PA 2000 R

Yet more textbook performance from T+A: the PA 2000 R besting its 100/200W 8/4ohm specification with 2x125W/8ohm and 2x230W/4ohm – illustrating the remarkable ‘stiffness’ of its PSU – alongside the 127W, 230W, 390W and 410W available into 8, 4, 2 and 1ohm loads under dynamic conditions [see Graph 2, below]. (The ‘Clipping Protection’ menu option has no impact on these figures.) The amplifier is also exceptionally quiet, offering a 99.3dB A-wtd S/N ratio, and has a carefully managed response that’s flat to within  $\pm 0.1$ dB from 20Hz–20kHz and reaching  $-1$ dB/51kHz out to  $-3.1$ dB/100kHz. Distortion increases from 0.003% at 1W to 0.005% at 10W where it holds right out to the rated 100W/8ohm (all at 1kHz). At the high frequency extremes, THD increases to 0.02% (20kHz/10W) but this is still below the level achievable by the best modern tweeters.

The partnering T+A MP 2000 R source is no less impressive, offering a full 4.27V output (balanced XLRs) with a 113.3dB A-wtd S/N ratio and distortion held to a remarkably consistent 0.0016–0.0017% from 20Hz–20kHz via *all* inputs. THD falls to as low as 0.0003% at  $-20$ dBfs via S/PDIF and USB inputs with 24-bit media and 0.0008% via CD [see Graph 1, below]. Frequency and time domain responses depend entirely on the selected digital filter [see boxout, p45]. Completing this clean sheet is the MP 2000 R’s near-perfect jitter suppression – 10psec or less via S/PDIF or USB at all sample rates and 115psec (the 16-bit limit) with CD. Readers may download full QC Suite reports detailing the performance of the T+A MP 2000 R (CD, S/PDIF, USB and filter) and PA 2000 R (amplifier) by navigating to [www.hifinews.co.uk](http://www.hifinews.co.uk) and clicking on the red ‘download’ button. PM



ABOVE: THD versus digital level (1kHz via S/PDIF, red; via USB, black) and CD (1kHz, grey; 20kHz, blue)



ABOVE: Dynamic power output versus distortion into 8ohm (black trace), 4ohm (red), 2ohm (blue) and 1ohm (green) speaker loads. Current limit is 20.2A

### HI-FI NEWS SPECIFICATIONS

Power output (<1% THD, 8/4ohm)	125W / 230W
Dynamic power (<1% THD, 8/4/2/1ohm)	127W / 230W / 390W / 410W
Output imp. (20Hz–20kHz, MP/PA)	45ohm / 0.043–0.045ohm
Freq. resp. (20Hz–20kHz, MP/PA)	+0.0 to $-0.3$ dB/+0.01 to $-0.01$ dB
A-wtd S/N ratio (MP/PA)	113.3dB (0dBfs) / 99.3dB (0dBW)
Distortion (20Hz–20kHz, MP/PA)	0.0016–0.0017% / 0.002–0.021%
Digital jitter (CD/ S/PDIF / USB)	115psec / 10psec / 10psec
Power consumption (MP/PA)	17W/330W (50W idle)
Dimensions (WHD, MP/PA)	460x82x405/460x82x405mm



ABOVE: A plethora of digital connectivity – two coax and two optical S/PDIF, wired and wireless LAN, USB A and B plus balanced XLR and single-ended RCA outs. The amp [below] offers three RCA and three balanced XLR ins, pre and 4mm speaker outputs

appearing rich in tonal subtlety and textures, with lovely ‘dark’ space around all the instruments.

The amplifier sounds extremely assured and dynamically adroit, with firm bass control and power-a-plenty, never stressed even when pushed to deliver high SPLs. Naturally the sound doesn’t match the vivid detail and spine-tingling thrill factor of T+A’s much more expensive HV-Series components. It can appear a little cautious and subjectively soft at high frequencies but the voicing is sensibly balanced considering the components’ pricing and the calibre of loudspeakers with which they’re likely to be partnered.

### THE BEAUTY OF DSD

Of course, the overall character of the sound can be altered quite considerably by switching the media player’s digital filters – the default ‘FIR Long’ filter sounding a tad ‘zippier’ but less open than ‘Bezier’. In my room, with my speakers, the ‘Bezier/IR’ was usually the preferred choice, but your mileage will surely vary, and change depending on the nature of the recording chosen.

Performance moved up a notch with modern hi-res material. Hearing 96kHz/24-bit recordings of ‘Mosaic’ and ‘Blues De Luxe’ from the DVD-A *Guitar Noir* by ex-Wings finger-style guitar maestro Laurence Juber [AIX Records, AIX 80018] highlighted the poise and fine transparency of the T+A 2000 R combo as it portrayed the rich timbres of the instruments.

Juber’s signature Martin acoustic, accompanied by Domenic Genova on string bass and Steve Forman on percussion, sounded tremendously vivid, three-dimensional and sharply focused, with the ensemble projected in a most natural and unforced manner. The music simply ‘bloomed’ in deeply saturated colours, and high-level transients in the musical peaks were finely-etched without any hint of digital artefacts to induce uncomfortable edginess.

And while I’m no DSD evangelist for sure, hearing the manner in which the combo presented the many fine recordings available on nativesd.com’s *Just Listen* compilation reinforced my impression that there’s a sonic ‘beauty’ inherent in DSD that is undeniably beguiling. It’s the imperturbable handling of high-level crescendos, and the gentle ease of the sound that’s so attractive.

That the MP’s network client doesn’t handle DSD might be a deal-breaker for some of you who are collecting DFF or DSF files, but it wouldn’t bother me at the present time, as I still prefer to push from my Windows 10 computer via JRiver Media Centre.

Back to PCM playback – and as I found when auditioning T+A’s heavyweight MP 3000 HV media player during the spring of 2013, reliably identifying any sonic difference between pushing from computer and streaming via LAN proved nigh-on impossible.

I had a friend ‘blind test’ me with a few tracks and soon concluded that I was mostly guessing rather than hearing noticeable differences in sonic presentation, so well-balanced and wholly integrated is the MP 2000 R’s overall design. ☺

### HI-FI NEWS VERDICT

Audiophiles obsessed with separates might consider these slim 2000 R components somewhat middle-of-the-road. But make no mistake: they’re extremely refined and highly capable units, offering a taste of the high-end in a compact form factor. If you’re looking for components that are living-room friendly and look and sound tremendous, you’ll struggle to find a more complete package.

Sound Quality: 87%



# Inspire Hi-Fi Elevation

From the brand that helped resurrect idler-drive and direct-drive turntables comes a new and beefy-looking belt-driven deck that takes aim at the high mass brigade

Review: **Ed Selley** Lab: **Paul Miller**

**A**s one of the newer brands involved in the production of turntables, Inspire Hi-Fi has managed to pack an awful lot of products into its range in a relatively short time. As well as offering an impressive quantity of different models [see boxout], it has also experimented with a wide variety of technologies and materials in their construction. The latest model to join the roster is the Elevation, which Inspire says is intended to deliver a 'high-mass design in an affordable package'.

This mass involves two distinct materials. The first is birch ply, which is used to form the plinth. Sections of ply are layered to form a 90mm-thick teardrop shape that accommodates the motor, bearing and the arm mount. The cavities for motor and bearing are cut into the layers before assembly, rather than hollowing them out after the event, and this is said to improve the rigidity of the plinth. Inspire offers various veneer options, or the deck may be supplied with the layers of ply exposed, as seen here.

## THE STROBO POWER SUPPLY

The unit is then topped off with an equally hefty platter machined from an acetyl polymer: a substance similar to Delrin and a little less dense than acrylic. As the platter is 50mm thick it's certainly no lightweight. It locates directly onto a small sub platter driven via two belts around its periphery, while the spindle block, machined from alloy, drops in on top. This allows the record to be held in place by Inspire's supplied unthreaded weight but ensures there's only an indirect coupling to the aluminium/bronze bearing housing beneath [see PM's Lab Report, p51].

The motor chosen by Inspire is an AC device that makes use of a Pro-Ject Speed Box DS Strobe power supply. The

Strobe is a quartz-locked design that offers electronic speed switching between 33.3 and 45rpm and allows for speed adjustment of  $\pm 0.2\%$  over 40 increments. As the name implies, the Strobe is supplied with a strobe attachment that can be used with a partnering calibrated disc, to ensure that it is running at the correct speed.

The use of this Pro-Ject product works reasonably well but is not without a few minor curiosities. The Strobe itself uses a wall-wart type power supply but then reverts to a full size IEC lead between it and the Elevation – which may look a little odd depending on how the two units are placed. There is also a sense that the motor in the Elevation is working fairly hard, at least initially, to get that platter to spin-up.

From stationary, the Inspire takes a good few revolutions of the platter to reach playing speed although it will do so without needing a helping push! Inspire recommends changing records on the fly, which works well enough in practice. As standard, the Elevation adopts Rega's

armbase geometry although company MD Robert Isherwood says it would not be too difficult to build an Elevation to accommodate other arms if so desired. The Elevation is available without arm for £1390 and Inspire also lists prices with Rega's RB203 and 303 tonearms. The review sample was supplied with the company's own X100 mk2 arm, bringing the total to £2315.

## REGA-BASED TONEARM

While this is a fairly large jump in cost over the basic Rega arms, you can see where the money has gone. The X100 mk2 is based on a Rega bearing assembly but substitutes a tapered carbon fibre arm tube with higher-spec internal and external wiring. The headshell is of a completely different design that allows for the cartridge offset angle to be set via a single fixing and for the vertical axis of the cartridge to be adjusted too. If you choose from one of the cartridges offered by Inspire, it can be fitted at the factory, with all relevant

**RIGHT:** The 50mm-thick platter is machined from an acetyl polymer rather than the more usual acrylic or vinyl. It sits on a small sub-platter that's driven via two short rubber belts







adjustments done there to ease user installation. The X100 mk2 arm doesn't really try to hide its Rega ancestry but appears no less well assembled and, even without the factory alignment, changing cartridges is a fairly simple business thanks to that clever headshell arrangement.

The overall standard of build on the

Elevation is extremely good for the price. Everything feels solid and well thought-out and assembly and installation is simple, aided by the inclusion of some useful tools. The sorbothane feet do a creditable job at minimising external interferences.

Aesthetically, the 'naked' ply plinth looks handsome enough while the platter is alternatively available in a white finish. As seems to be fashionable at the moment, there is no form of dust protection

provided (turntable designers seemingly inhabiting a world free from pets, children and dust) but the footprint is compact enough to allow for a box cover to be used.



## AN OPEN AND AIRY SOUND

Our review sample came supplied with Ortofon's £649 Quintet Black as Inspire's

preferred choice taking the total cost of the package to £2964. As I hadn't spent a great deal of time with this Ortofon before, I also used a Dynavector DV-20X2L low output MC and a Nagaoka

MP150 MM to help get a feel for the character of the Inspire. 'Character' is a suitable word in this case, as the Inspire has a definite sonic fingerprint of its own.

While Inspire describes the Elevation as a 'high mass' design, it isn't as heavy as

'There was no dark tonality that can affect high mass designs'

**ABOVE:** Visually imposing but elegant too, Inspire Hi-Fi's Elevation deck sits on a 90mm-thick birch ply plinth. It's pictured here with the company's matching X100 mk2 tonearm

some rivals and this had a consistent effect on the presentation. Starting with Talking Head's *Remain In Light* [Sire SRK 6095], the Elevation demonstrated a finesse that can be absent in truly high-mass turntables. 'Houses In Motion' was presented with an undeniable sense of force and authority but with none of the slightly 'dark' tonality that can affect some high-mass designs. The Inspire instead has a top end that is open and impressively airy. There was plenty of treble energy which helped to pick out the backing guitar and its relationship to David Byrne's vocals, and a consistent sense of power to the Inspire's performance – but it never dominated the music.

With the glossier presentation of Talk Talk's *The Colour Of Spring* [EMI EMCX 3506], the Elevation was in its element, relaying the vast sound of 'Happiness Is Easy' with a commendable sense of effortlessness. The Inspire gave it all the space it needed, underpinning it with deep, clean and detailed bass that integrated well into the rest of the frequency range.

Voices and instruments sounded vivid and realistic, and moments like the slapped bass in the second verse really stood out from the other instruments. Only with the pared-back and minimalist 'Chameleon Day' did the Inspire show any weakness. The small scale of this track was rendered as a little larger and more potent than it

## TURNTABLES FOR ALL

Nobody could accuse Inspire of lacking ambition when it comes to its product range. The company builds no fewer than seven different models, featuring various belt, idler and direct-drive platter-spinning 'engines'. The price range is also fairly impressive, starting as it does at £560 for the entry-level Black Magic [HFN Jul '14], rising to around £4000 for the flagship direct-drive Monarch [HFN Oct '12]. Not content with this, the company offers a Rega-based X100 mk2 arm in 9in and 12in versions, offers upgrade options for Linn, Technics, Rega, Thorens and Roksan turntables as well as a range of accessories suitable for several more models. Some of these upgrade options – the 'X12' option for the Linn LP12 in particular – are sufficiently comprehensive that the end product is more 'Inspire' than Linn, Technics, etc. All models – Inspire originals and rebuilds – are built in the UK at the company's Chesterfield headquarters.



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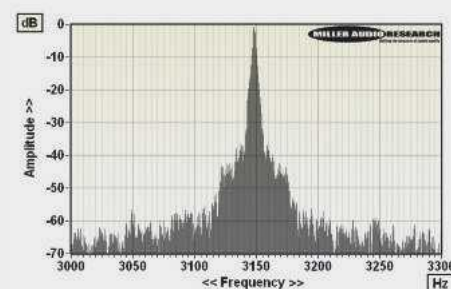


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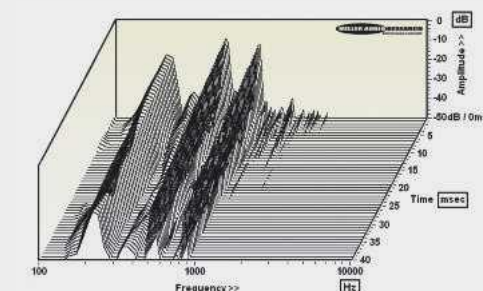
### INSPIRE HI-FI ELEVATION

Vinyl watchers will be delighted to learn that Inspire's first 'big' belt-drive deck is as technically robust as it is visually compelling. Absolute speed accuracy is excellent, our sample a mere -0.03% slow and incrementally adjustable via the Pro-Ject Speed Box DS Strobe supplied as part of the package. Start-up time rather depends on whether you care to give the platter a helping finger – unassisted, the AC motor requires some 9-10 seconds to bring the Elevation up to speed. Nevertheless, once there, the deck is very stable with a peak wow and flutter of just 0.05% (DIN-B weighted) and the lack of any very low-rate wow/drift auguring well for a very pitch-stable, foot-tapping bass. Rumble is low too, the through-groove figure of -69.2dB largely independent of whether the disc weight is employed or not, while the through-spindle rumble (disconnected here from the main bearing) is a very low -72.8dB.

Inspire's modified Rega arm is remarkably 'clean' below 100Hz but otherwise displays three very distinct, high-Q resonances. This is typical with carbon fibre tubes which offer low mass and high rigidity but limited internal damping – the early carbon Pro-Ject tonearms provided plenty of evidence for this when tested in 2010 [see also *HFN* Jan '15]. In the case of the X100 mk2, the tapered tube shows a distributed but high 190Hz/225Hz resonance with harmonics at 525Hz and 850Hz, both clearly illustrated on the cumulative spectral decay plot [see Graph 2, below]. As expected with this tried-and-tested 'donor chassis', bearing play is minimal and friction is <10mg in both planes. Readers can view QC Suite reports for Inspire's Elevation deck and X100 mk2 tonearm by navigating to [www.hifinews.co.uk](http://www.hifinews.co.uk) and clicking on the red 'download' button. PM



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



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

### HI-FI NEWS SPECIFICATIONS

Turntable speed error at 33.33rpm	33.32rpm (-0.03%)
Time to audible stabilisation	9sec
Peak Wow/Flutter	0.02% / 0.03%
Rumble (silent groove, DIN B wtd)	-69.2dB / -69.2dB (w. weight)
Rumble (through bearing, DIN B wtd)	-72.8dB
Hum & Noise (unwtd, rel. to 5cm/sec)	-56.8dB
Power Consumption	10W
Dimensions (WHD) / Weight	430x180x300mm / 12kg



ABOVE: Power for the Elevation is supplied by a Pro-Ject Speed Box DS Strobe [see picture, below]. This is an offboard AC in/AC out power supply that allows for electronic speed control, and incremental adjustment, for both 33.3/45rpm

really should to sound convincing. There was also a sense of the presentation being a little too left/right with a slight gap between the two speakers.

### UNLEASHED ENERGY

But if you gave the Inspire Elevation something large in scale and well recorded, the results were joyous. The fabulous *Fink Meets The Royal Concertgebouw Orchestra* [Ninja Tune ZEN201] allowed it to unleash some of that latent energy to good effect. The slow-building opener, 'Berlin Sunrise', was handled with tremendous drive, with the detail exposed allowing you to perceive individual instruments rather than simply hearing a mass of them.

As the piece reached its impressive climax, the Inspire preserved a sense of complete control without any feeling that the music was being reined in. One aspect of the Elevation's performance that was especially helpful here was that, subjectively, its noise floor felt very low, ensuring that even very quiet effects were not lost in the mix [see PM's Lab Report].

Switching to the Dynavector and Nagaoka cartridges suggested that most of the qualities of the Inspire are present regardless of the pick-up fitted. The £600 Dynavector DV-20X2L was superior to the

Ortofon in some regards with the Elevation. That noise floor dropped even further and the treble gained a further sweetness that was very appealing even if the Dynavector couldn't match the tremendous low-end extension of the Quintet. The Nagaoka was softer at both frequency extremes but still showed what the Elevation could do, with an appreciable cost saving.

One aspect of performance that was consistent across all the cartridges I tried is that the Elevation is fairly forgiving of poorer recordings. *Big TV* by The White Lies [Fiction Records 3740907] is a powerful and entertaining listen but suffers from the bugbear of many modern albums in that recording levels are high but with little resulting dynamic range.

The Inspire Hi-Fi Elevation did a good job of trying to extract a little space from the recording while simultaneously gently smoothing off some of the rough edges. That it could do this while hinting at few signs of compromise when listening to very good recordings makes it rather special indeed. ☺

### HI-FI NEWS VERDICT

The Elevation is a distinctive deck, sonically and visually, and it manages to do an awful lot right. The Ortofon MC undoubtedly helps it deliver an impressive performance but if your budget doesn't stretch this far, the fundamental qualities of the Elevation still shine through with less expensive pick-ups. This is a keenly contested segment of the market but the Inspire competes extremely well.

Sound Quality: 80%



# Aurender N10

Enthusiasts wishing to build a high-res digital audio playback system without a NAS or PC/Mac in the signal chain now have another option, courtesy of Aurender's sleek N10  
Review: **Andrew Everard** Lab: **Paul Miller**

For those of us storing music on computers, there's no shortage of alternatives to the PC or laptop hard-disk: take your pick from USB drives, network attached storage (NAS) devices and even dedicated music servers, connected directly to the audio system or 'plumbed in' to the home network.

The 'dedicated' market currently offers everything from the likes of the Cocktail Audio/Novafidelity range, combining ripping with playback and network capabilities in one unit, through to the Melco servers [HFN Feb '15 and Aug '15], able to deliver not only network music but also direct connectivity to USB audio DACs. Here Aurender offers a third path, in the form of the upmarket N10 model, distributed by dCS and selling for £7099.

## LOADING OPTIONS

What the N10 isn't is a network server of the Melco kind: instead it's both a storage solution and a player, able to 'see' content stored on other network devices as well as directly-connected USB drives, along with playing out digitally from its two internal drives. But as we'll see, even that last part isn't quite as simple as it may sound.

Based in Seoul, Korea, Aurender is owned by TVLogic, founded in 2002. The parent company's main business is in display screens, from viewfinders through to HD broadcast monitors – it was a supplier of HD monitors used during the broadcast of the 2012 London Olympics – and Ultra High-Definition models.

From software to hardware (down to the CPU used to run the N10), it develops the Aurender models in-house, and indeed the same software is shared across the company's digital music range, although with functions tailored to the facilities of the various models. As well as its main line of component digital music devices,

Aurender also has its own DAC/headphone amp, the Flow, which can be converted to a standalone player with the insertion of up to 1TB of mSATA memory.

The N10 isn't quite the flagship of the current Aurender range – that role is filled by the W20, which starts from just under £13,000, depending on the storage onboard. That price covers the 6TB model, while doubling the storage ups the ticket to £13,650. At the other end is the rather simpler N100H, which sells for £2695 and has 2TB of storage.

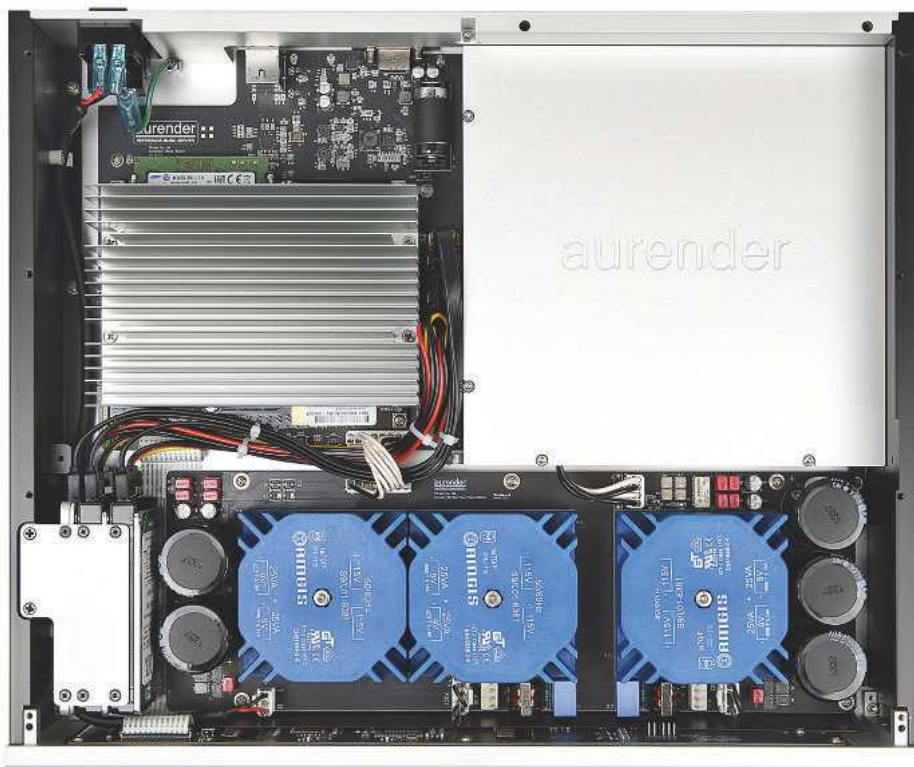
The N10 we have here has two 2TB drives inside, and can be loaded with music over a network connection, which proves to be quite a slow process if you have a large library to copy over. Alternatively you can simply 'point it' at an existing share on a NAS drive or computer, which it will then integrate with the content it has stored internally to show as a single library. Or of course you can just connect external

USB drives to the two sockets on the rear (below the Ethernet port for networking) and their contents will also be assimilated.

## A SELF-CONTAINED SOLUTION

It's worth noting that the N10 doesn't 'see' other network shares as such – it's not a UPnP/DLNA client/renderer – so sees files and folders as content for its own playback software to access and use as it will. What's also unusual here is the way the N10 plays files, whether from its internal storage or external sources. As well as those two 2TB drives, it also has a 240GB SSD fitted, and this solid-state drive operates as a cache, buffering content as it passes to the digital output section, preventing drop-outs and isolating the outputs from any noise, both electrical and mechanical, stemming from the conventional HDDs.

In other words, it enables the 4TB of HDD storage to operate with all the benefits of a solid-state drive – in fact, if



**RIGHT:** Multiple power supplies serve the 240GB SSD (music playback) cache and 2x2TB storage HDDs while the CPU board is described as a 'proprietary Aurender' design. The temperature-control clock is kept under cover





you select music you've played before, and which is already cached on the SSD, the HDDs don't even spin up during playback.

The digital outputs here are available via USB as well as S/PDIF (coaxial and optical) and AES/EBU connections, and while the N10 will output PCM-based formats up to 192kHz/24-bit and DSD128/5.6 via the USB connection, it will also perform on-the-fly conversion from DSD to PCM at 176.4kHz or 88.2kHz using an FPGA running Aurender's custom software.

The N10's digital PLL (Phase-Locked Loop) is also implemented via an FPGA and an oven-controlled crystal oscillator – the latter enclosed in its own compartment and maintained at a constant temperature to eliminate drift.

The Aurender N10 is ostensibly a simple self-contained solution – it doesn't offer network client/server functionality so you can't access it via a remote network music player. But it does offer an extensive capability that extends to Tidal streaming should you have a suitable subscription, and all of this is accessible from the Aurender Conductor app [see boxout].

Suffice it to say the Conductor has a slick and informative interface, allowing the user to play music, filter by file format, set up playlists and the like. It also allows

deeper exploration into the settings of the N10, for example allowing the DSD-to-PCM conversion to be turned on and off, and the selected PCM output rate to be altered. And if you hit problems, you can even send a remote call for help to Aurender direct from the app!

What's not quite so clever is the rather leisurely start-up and shutdown of the Aurender, with the manual giving stern warnings of the effect on the unit if the power is switched off before the shutdown sequence is complete. There is a section of the manual explaining how to

recover from an incorrect shutdown, but with a review to write and PM's lab-testing still to be completed, I wasn't too inclined to force matters in order to find out whether that recovery would work...

### A SMIDGE OF AIR

Ordinarily my editorial brief would suggest I open this section 'with an immediate encapsulation of what the product sounds like'. This is where I hit something of a brick wall with the Aurender, because the N10 really doesn't sound like anything at all: it's a digital transfer device whose

'It did sound very good indeed partnered with the Chord Mojo'

**ABOVE:** Two-section display shows artist information and title: buttons to the right access the main menu, select the display mode and offer previous/next and play/pause controls

performance in my system matches the most transparent of digital connections via NAS, PC/Mac or even from a CD transport.

There's no denying that the Aurender does sound very good indeed when partnered with the hugely over-achieving Chord Mojo pocket DAC [HFN Jan '16], which I still hold is one of the major hi-fi bargains of the moment. Playing Benjamin Britten's *The Young Person's Guide To The Orchestra* with the Kansas City Symphony [DSD 64; Reference Recordings RR-120], the subtlety in the timbres of the instruments was as impressive as the mighty clout delivered with the great brass lines or the imperious conclusion.

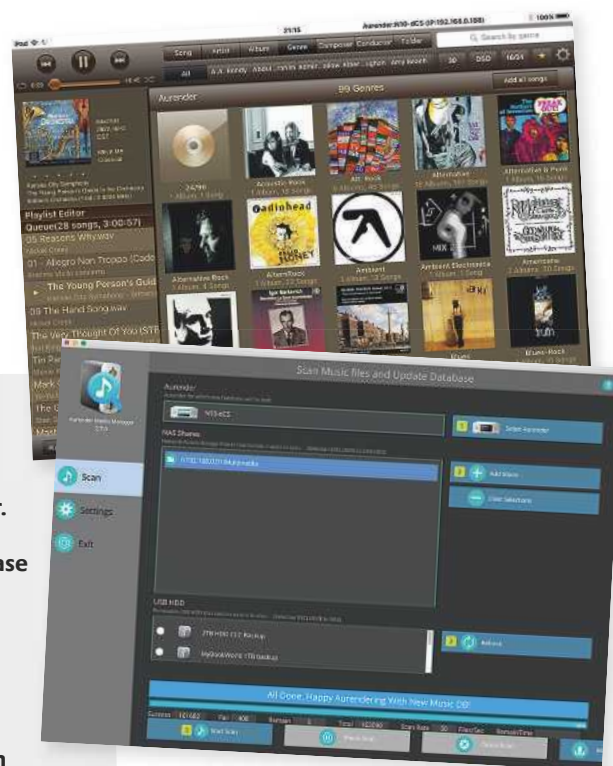
There was maybe a smidge more air in the sound with the Aurender N10 in ➔

## AURENDER'S APPS

Yes, it's possible to add music to the N10's internal drives by the simple drag and drop method using a computer connected to your home network, but there's also Aurender's Media Manager software, available as a free download for Apple computers running Mac OSX 10.9 or higher.

Using this, it's possible to scan all the drives on the network, and all connected USB devices, and add their contents to the Aurender's database for playback, so that all the music available to the user, however stored, appears as a single 'library'. This can take some time on initial set-up – my extensive NAS library took the thick part of three hours to scan – but fortunately subsequent content updates are relatively rapid.

The other beauty of the system is found in Aurender's Conductor app for iPad (this unit is very Mac-centric), which is everything such control software should be in terms of clarity, flexibility and sheer usability, both for playback and for setting up the N10. It rather throws into the shade those rival devices reliant on third-party control apps such as Kinsky or PlugPlayer.



**ABOVE:** Aurender's Conductor iPad app (top) serves up the music which is organised via the Aurender Media Manager (bottom)

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## NETWORK AUDIO LIBRARY

## LAB REPORT

### AURENDER N10

The lab tests accompanying our review of Melco's N1A 'music library' audiophile NAS drive [HFN Aug '15] pitched the performance of its USB output against a high quality PC solution and the same comparative test regime was organised here for the Aurender N10. Once again the differences were significant and repeatable. Residual spurious observed on the noise floor of the excellent Chord Mojo [HFN Jan '16] were all but eliminated by the N10, its A-wtd S/N ratio improved from 103.8dB to a massive 114.1dB and jitter reduced by a factor of 10x from 75psec to just 8psec. A similar reduction in noise and spurious digital 'lines' was evident with Oppo's HA-2 [HFN Jun '15] when measured via its line-level output. Here the A-wtd S/N and low-level resolution was improved by almost exactly 1.5-bits from 96.6dB to 106.5dB while jitter fell from 97psec to 70psec. The Melco N1A bettered this – albeit fractionally – at 106.9dB and 60psec, respectively [see Graph 1, below].

Predictably, perhaps, it is the hub-powered USB DACs that seem to benefit most from the move away from a PC/Mac USB interface to the dedicated implementation offered by the likes of Melco and Aurender. The Cambridge Audio DacMagic XS [HFN May '14] enjoyed an uplift in S/N from 92dB to 98dB while AudioQuest's DragonFly v1.2 [HFN Mar '15] improved from 95.8dB to 103.3dB. The latter represents a gain of over 1-bit of low-level resolution despite this plug-in USB DAC already incorporating some inbuilt line conditioning. Furthermore, jitter was also reduced from 220psec to 160psec [see Graph 2, below], this figure hardly reflecting the very obvious suppression of non-jitter digital spurs. PM



**ABOVE:** Aurender's N10 is equipped with AES/EBU, coaxial (RCA and BNC) and Toslink optical S/PDIF outputs, and one dedicated USB Audio Class 2.0 output. One Ethernet port and two USB 2.0 ports support network connectivity and file transfers

harness, and perhaps just a shade more blare or fruitiness to the brass, but the effect was undeniably subtle – its impact as likely a reflection of the quality of the PC or Mac with which it is being compared.

Similar results were experienced with the other DACs I tried. These included the original AudioQuest DragonFly, the little Korg DS-DAC-100m, and the digital inputs of the Audiolab 8300 CD player – in each case using the USB Type-B 'computer' input (no additional drivers are required to be loaded onto the N10), and the conventional optical/coaxial inputs where these were available.

### DRAWING CONCLUSIONS

Of course, there's an argument that anyone considering the outlay of £7000+ on a digital music store/transport is likely to be using a high-quality DAC commensurate with the N10's price-tag, but I'd counter that with the suggestion that such a converter would have sufficient onboard noise/jitter reduction strategies to nullify much of the good work that's going on within the Aurender, and the more prone to jitter effects the DAC in question is, then the more effect the N10 should have.

PC/Mac quality notwithstanding, this suggests that either the current generation of DACs in the affordable/built-in arena is very good indeed, or the sound quality of the DAC in use plays a much greater part in the appreciation of a recording than the way the digital signal is delivered to it.

That said, I greatly enjoyed a play-through of ELO's 1977 *Out Of The Blue* in 192kHz/24-bit [HDTracks, Epic/Legacy 88697873262-7], appreciating not only the quality of both songwriting and performance but also the way in which the meticulous production holds up after so many years.

Meanwhile Coldplay's latest set, *A Head Full Of Dreams* [192kHz/24-bit; Parlophone 0825646982646], clearly benefits from the ability of its 'hi-res' version to allow the listener to unpick the often dense mix and reveal even the subtlest of touches, which are amply on display even with the Aurender running through very modestly priced digital-to-analogue hardware.

It's exciting stuff but, for example, the Chord Mojo does this nearly as well when hung off the USB output of the MacBook Air, and the same conclusion was reached when using the other DACs. Each has its own balance and tonality, strengths and weaknesses, and succumbed only marginally to the charms of the N10.

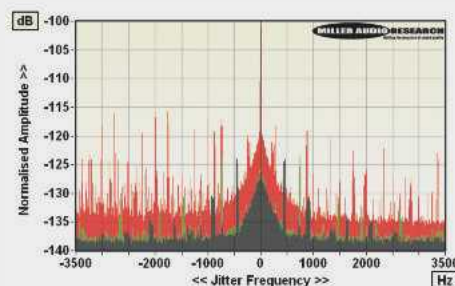
Truth be told, I had hoped for a system 'upgrade' that would be as revelatory as one might expect from the asking price here. In practice those subjective differences which are readily apparent when switching between one brand or design of DAC to another are still typically far greater than those experienced when changing the digital 'source' from a multipurpose device such as a laptop computer or NAS to a dedicated music player like the Aurender N10. ☺

### HI-FI NEWS VERDICT

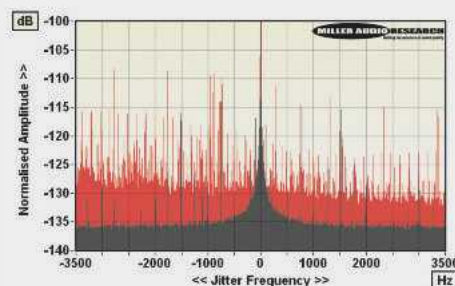
As I suggested earlier, the Aurender N10 doesn't have a 'sound' of its own, so its rating here reflects its ability to get out of the way, and let the DAC to which it's connected do its stuff. Undeniably it can form a very potent partnership with many a DAC, with impressive results, but it's hard to ignore the fact that a minimalist computer/DAC connection might match it to within a few percentage points.

Sound Quality: 80%

0 - - - - - 100



**ABOVE:** 48kHz/24-bit jitter spectra from a battery-powered Oppo HA-2 over USB (red, via PC) and direct (black, via Aurender N10; green via Melco N1A)



**ABOVE:** 48kHz/24-bit jitter spectra from a hub-powered AudioQuest DragonFly over USB (red, via PC) and direct (black, via Aurender N10)

### HI-FI NEWS SPECIFICATIONS

A-wtd S/N Ratio (Chord Mojo)	114.1dB (103.8dB via PC/USB)
A-wtd S/N Ratio (Oppo HA-2)	106.5dB (96.6dB via PC/USB)
A-wtd S/N Ratio (AQ DragonFly)	103.3dB (95.8dB via PC/USB)
Digital jitter (Chord Mojo)	8psec (75psec via PC/USB)
Digital jitter (Oppo HA-2)	70psec (97psec via PC/USB)
Digital jitter (AQ DragonFly)	160psec (220psec via PC/USB)
Power consumption	23W
Dimensions (WHD) / Weight	430x83x353mm / 12kg

# Gauder Akustik Berlina RC 3

Germany's high-end Gauder Akustik speakers – previously branded Isophon – are now in the UK. This new RC 3 is the smallest model in the company's flagship Berlina range

Review: **John Bamford** Lab: **Keith Howard**

**T**hese are the best loudspeakers in the world', boasts Gauder Akustik of its top-line Berlina models.

That's quite a crow when you consider the plethora of cost-no-object designs available around the globe. Still, the company's 250kg 'big daddy' flagship, the £125,000 Berlina RC11, is revered by show-going audiophiles worldwide and Gauder Akustik's high-end models regularly receive awards from hardened audio critics overseas. Chief designer and company owner Dr Roland Gauder must be doing something right!

## NO-COMPROMISE BUILD

Gauder Akustik is a boutique speaker manufacturer based in Renningen, a few minutes' drive west of Stuttgart [see boxout, p53]. From its entry-level Arcona 40 standmount (£1650) to that mammoth Berlina RC11 destined only for the stateliest of listening rooms, the company has some 15 models in its portfolio. It's in its luxuriously appointed Berlina models with their elegantly fluted enclosures deeply lacquered in piano black or arresting piano white where the company showcases its no-compromise build quality.

While there are two less gargantuan – although still mighty large – floorstanding Berlina models, the £79k RC 9 and £21k RC 7/II, the RC 3 we're appraising here is the only standmount design deemed worthy of wearing a Berlina plaque on its baffle. Featuring Accuton ceramic drivers, the compact Berlina RC 3 costs £7290. Optionally it can be fitted with one of Accuton's diamond tweeters, although you'd *really* need to adore it and feel you

couldn't live without it, cost-be-damned, as it adds £4690 to the RC 3's price.

The Berlina RC 3 is a 6-litre sealed box two-way which, like its larger brothers, is built without compromise. Roland Gauder ideally wants his favoured Accuton drive units to be housed in enclosures that are completely inert. But how do you prevent a loudspeaker's cabinet walls from vibrating? Simply put: overkill construction. I was being disingenuous when I mentioned a moment ago that the Berlina models' cabinet walls are 'fluted'. Incredibly, each enclosure is laboriously constructed by stacking individual slices ('ribs') of MDF – each just 30mm thick, formed in the enclosure's tear-drop shape – one above the other, with proprietary damping material sandwiched between the layers to prevent them from touching each other.

*'Wow... such scale from a modest standmount!'*

The 'RC' in the nomenclature stands for Rib Construction, the RC 3's cabinet being formed of 13 stacked ribs. So little wonder they're rather pricey! A decade ago TAD Labs formed

the cabinet of its first Model One floorstander in a similarly elaborate fashion, but gave up because it was just too much of a palaver. Experienced artisans at Gauder Akustik construct and finish the cabinets in that high-gloss lacquer – indeed, apart from the Accuton drivers, everything is built in-house.

Roland Gauder has enjoyed an intimate working relationship for over a decade with Thiel & Partner GmbH, the German manufacturer of Accuton drivers whose 'ultra-light and stiff' ceramic diaphragms are formed by an electro-plating process.

He says: 'I regard them to be the perfect driver in many respects, but of course they are fragile and they resonate terribly when pushed beyond their passband, so implementing them correctly in a loudspeaker design is paramount.'

## ATYPICAL CROSSOVER DESIGNS

Gauder prefers to remain reticent about specific details of the drivers' motor units, as the Accutons are custom-made to his specifications with unique Thiele-



**RIGHT:** 7in ceramic-coned bass/mid driver marries with a 1in ceramic tweeter, both from Accuton. Exquisite 'rib construction' cabinet is formed of 13 slices of MDF, each separated by a proprietary damping material



Small parameters. 'It's taken a long time to get our drivers manufactured in the way they are now. And while the delicate diaphragms have been known to shatter into thousands of pieces in the past, I'm pleased to say we haven't had a driver fail in over three years – no matter how hard they were driven!'

The bass/mid driver in the RC 3 is a 7in-diameter model. It hands over to the 1in tweeter at 3.4kHz, the MDF baffle which the drivers are mounted on being reinforced with thin layers of stone bonded to its surface to increase stiffness. Ceramic diaphragms remain fragile to the touch, so they are protected from prying fingers by open-wire cages. There's just a single set of input terminals at the rear; however, inside the speaker the complex dividing network is split into two halves, the low and high frequency sections housed on separate circuit boards.

Gauder Akustik is atypical in using extremely steep-slope crossovers in all its

## ROLAND GAUDER

**A hi-fi addict since his student days, Roland Gauder gained a PhD in physics at the University of Stuttgart where he developed mathematical models to describe the behaviour of loudspeakers. After graduating, he joined Stuttgart's famous Isophon company: once Europe's largest speaker manufacturer. Its business had become focused on automotive, supplying drive units to many German car makers, and in 1989 Roland was tasked with heading-up design in the company's 'niche hi-fi' department. Isophon subsequently sold its core business to Thompson and in 1997 Roland was able to split off the high-end hi-fi department and form his own company. Initially he continued to market products under the Isophon brand name and still used paper-coned Isophon drivers. But since 2004 he's been developing designs using Accuton ceramic drivers, and in 2012 he decided to change his brand name to Gauder Akustik.**

speaker designs to ensure the passband is very close to ideal for the Accutons, and to achieve the smallest possible overlap between drive units, minimising inter-driver interference effects. The sealed box RC 3 is particularly unusual in employing extra components in the crossover to produce what Gauder describes as 'an acoustical Butterworth-filter of 4th order' [see Lab Report, p55]. By the way, should you ever decide to swap out the tweeter for the diamond version, the replacement Accuton unit drops straight in, without any modification required to the RC 3's network.

## WOW FACTOR

Hearing the Berlina RC 3 for the first time, driven by my Mark Levinson No383 hundred-watter, my first impression was: 'Wow... such scale from a modest standmount!'

Mind you, I *did* have to wind the wick up. I don't believe I've ever asked the No383 to work as hard for its living. Tonal balance was judged to be slightly 'cool' and recessed in the presence region, but this made for a lovely sense of space and image depth.

Listening to Tom Jones' sultry 'All Blues Hail Mary' from *Praise & Blame* [Island 370 182-0] I was taken aback by the size of the image

created by the little RC 3s, which I had sitting on hefty 1m-tall stands from Track Audio's Precision range [HFN Aug '12] positioned about 20cm from the rear wall and with acres of space to their sides (as I was firing the speakers across my listening room). This arrangement seemed to suit the 'baby Berlina' rather well, as the satisfyingly rich bass output sounded nicely balanced overall. Close-to-wall placement should not prove problematic for most users, although your mileage is probably going to vary depending on the room's acoustic properties.

Naturally a 6-litre compact monitor can't entirely defy the laws of physics, nevertheless the image of the drum kit in 'All Blues Hail Mary' was delivered with impressive scale and the kick-drum packed a pretty serious punch, Tom Jones' intimate voice and the eerily stark piano accompaniment hovering seductively in the broad and deep soundstage. The electric guitar sounded fabulous stage-left in the image, with so much tangible space apparent around the player's mic'd-up amplifier combo I felt like sneaking around his back to give his amplifier's control knobs a tweak!

There was an honesty to the sound, everything appearing ultra-tidy and composed, in combination with impressive dynamic capabilities to make instruments sound wholly believable.

The RC 3 truly shone when recreating the sound of acoustic instruments simply recorded in a natural acoustic. Hearing cellist Richard Harwood playing sonatas by Beethoven and Chopin, with other short pieces [EMI Classics 094635964523], proved how adept this speaker is at recreating a true-to-life musical occasion.

Its transparency to the source and its overall comportment allowed me to follow the left and right hand of the pianist Christoph Berner's accompaniment even during the louder and more intense



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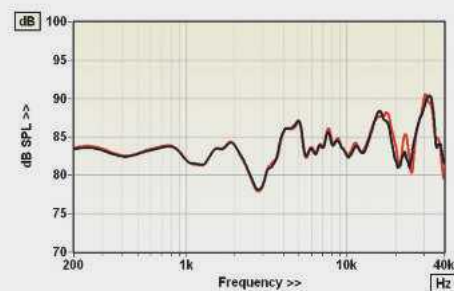


## LAB REPORT

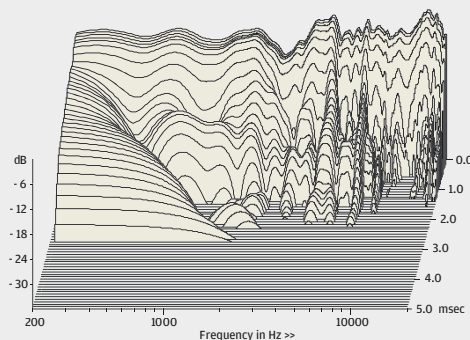
### GAUDER AKUSTIK BERLINA RC 3

Gauder Akustik offers no sensitivity specification for the RC 3 but our measured pink noise figure of 83.8dB suggests that 84dB would be a realistic claim. Even this modest figure, though, has required a low impedance to achieve. Gauder specifies 4ohm nominal but our measured minimum modulus of 2.0ohm suggests that even that is optimistic. Worse, the low modulus at low frequencies is accompanied by a high phase angle, as a result of which the EPDR (equivalent peak dissipation resistance) drops to a challenging low of 1.0ohm at 41Hz. This may well have something to do with the fact that the RC 3 is a filter-assisted closed-box design, in which passive high-pass filtering is used to increase the rate of bass roll-off from the usual 12dB per octave. Our nearfield bass measurement showed the response to fall off steeply below 40Hz with what appears to be a 4th-order (24dB per octave) slope, in accordance with what is stated on the Gauder website. This helps improve bass extension to 43Hz (-6dB re. 200Hz, diffraction corrected) but the response is quite obviously peaked at 50Hz, with uncertain subjective effect.

Forward frequency response [Graph 1, below], measured on the tweeter axis, is flat in overall trend but uneven, particularly in the lower treble. As a result the response errors are disappointing at  $\pm 5.1$ dB and  $\pm 5.2$ dB respectively while pair matching error was also a little high at  $\pm 1.4$ dB but fell to a laudable  $\pm 0.6$ dB below 16kHz (all 200Hz-20kHz). The cumulative spectral decay waterfall [Graph 2, below] shows a series of strong treble resonances – disappointing given the costly drivers and claim of a high-slope crossover. KH



ABOVE: Bass is strongly peaked at 50Hz and while response trend is ostensibly 'flat' it's also uneven



ABOVE: Cabinet resonances are well controlled but there are obvious cone breakup modes above 3kHz

### HI-FI NEWS SPECIFICATIONS

Sensitivity (SPL/1m/2.83Vrms – Mean/IEC/Music)	85.0dB/83.8dB/83.4dB
Impedance modulus min/max (20Hz–20kHz)	2.0ohm @ 50Hz 19.2ohm @ 619Hz
Impedance phase min/max (20Hz–20kHz)	-81° @ 20Hz 59° @ 65Hz
Pair matching/Resp. Error (200Hz–20kHz)	$\pm 1.4$ dB / $\pm 5.1$ dB/ $\pm 5.2$ dB
LF/HF extension (-6dB ref 200Hz/10kHz)	43Hz / >40kHz/>40kHz
THD 100Hz/1kHz/10kHz (for 90dB SPL/1m)	0.6% / 0.2% / 0.2%
Dimensions (HWD)	430x230x330mm

**LEFT:** Sealed enclosure has a single pair of high quality WBT multi-way terminals at the rear. Inside, however, the LF and HF sections of the dividing network are on separate PCBs

artificial reverb. I persevered as the sound of the band became increasingly compressed as they got louder, simply in order to enjoy the fabulous guitar embellishments provided at the climax of the song (courtesy of King Crimson's Robert Fripp whose stylistically sustained *glissando* playing technique was at its zenith at this time in rock history).

The Berlina RC 3 possesses impressive dynamic abilities even at low volumes, but when listening to good recordings I found myself inching the volume control higher and higher due to the speaker's inherently controlled and relaxed sonic character.

But winding the volume up to an antisocial level to enjoy the warm and sumptuous disco-funk sound of 'Get Lucky' and 'Lose Yourself To Dance' from Daft Punk's *Random Access Memories* [88.2kHz/24-bit download, Columbia Records 88883716862] I heard little sense of compression or strain.

I considered this mightily impressive from such a compact, closed box design: Pharrel Williams' voice effortlessly projecting into my voluminous room just as the Gauder Akustik RC 3's long-throw 7in Accuton driver was doing its utmost to massage my innards. ☺

### HI-FI NEWS VERDICT

If you've the budget for a pair of floorstanders but your listening room just isn't large enough to accommodate big boxes, these beautifully finished compact monitors from Gauder Akustik are well worth auditioning. They sound 'clean' and refined and pack a surprisingly powerful punch in the low-end for such a small speaker. Just bear in mind you'll need a reasonably powerful amp to get the best out of them.

Sound Quality: 80%



passages, this diminutive monitor remaining unflustered throughout, although I did crave a little more 'bite' and low frequency precision than that supplied by my vintage Levinson integrated.

### STEPPING UP A GEAR

When I pressed into service the massive T+A Elektroakustik P/A/PS3000HV amplifier combo [HFN Sept '14] the speaker noticeably stepped into a higher gear, crispening up and obviously benefiting from the considerably 'tighter', punchier and more explicit sound of T+A's flagship amplifier. Now I was really hearing into the recording and could more lucidly envisage the space in which piano and cello had been recorded.

I then took a trip back to the 1970s, playing Blondie's 'Fade Away And Radiate' from *Parallel Lines* [Chrysalis CCD 1192]. Clearly of its time, its pinched and lacklustre sound quality certainly wasn't glossed over by the RC 3. The speaker is just too honest to disguise defects in mediocre recordings. But the speaker's treble always appears 'polite', so it does tend to tame the fiery temperament of harsh high frequencies rather than erring towards a warts 'n' all disposition, all the while revealing every last ounce of the production's all-enveloping

# Audiobyte Black Dragon

While the brand is new outside of central Europe, Audiobyte brings a longstanding heritage to this all-singing DAC/preamp which offers both PCM and DSD functionality  
 Review: **Andrew Simpson** Lab: **Paul Miller**

**T**hanks to the continuing success of computer audio and the growing demand for high-res music, the standalone DAC market has expanded significantly in recent years. The choice of music recording and file formats has also evolved to encompass both DSD and LPCM types, up to DSD256 and 384kHz sample rates respectively.

Each 'flavour' has its adherents and Romanian-based Audiobyte clearly recognises the appetites of both camps, so its £1200 Black Dragon has been created to cater for both formats across a wealth of sample rates, bit-depths and inputs. It serves as either a standalone DAC or dedicated headphone amplifier, making it equally at home as part of a desktop system or larger separates rig.

## SIMPLE FASCIA CONTROLS

The Black Dragon is part of Audiobyte's three-strong digital audio product range and joins the Hydra Z USB Audio Bridge (£640), which converts USB audio for DSD, DXD and PCM formats, and its Hydra ZPM PSU upgrade (£450). At the heart of the Black Dragon sits an FPGA that's carried over from the Hydra Z, and this is actually borrowed from Audiobyte's sister brand Rockna and its Wavedream DAC [see boxout]. This chip is custom-programmed to act as the digital receiver and clock manager, and to offer PCM/DSD formatting for single-rate (DSD64) and double-rate (DSD128) DSD, alongside PCM up to 384kHz/32-bit. A pair of 192kHz/24-bit AKM AK4396 DACs operate in balanced mode at the output.

Lifting the Black Dragon's lid reveals separate PCBs for its analogue and digital circuits, with each being fed by its own PSU. The discrete analogue output stage is also fully balanced, as illustrated by the rear panel XLR sockets. Quality casework contributes to the unit's 4.5kg heft while

the 1cm-thick black alloy faceplate has nicely chamfered edges. Although the black hex-bolts holding it in place are visible, they're recessed to make them 'blend in', rather than stand out.

The front panel furniture comprises just four buttons, an IR remote control sensor, 6.35mm headphone socket and a centrally positioned display screen. The largest of the four buttons is the power switch, which is joined by three silver domed pushbuttons – the first marked 'M' for menu and the remaining pair marked '+' and '-' to facilitate its navigation.

Pressing the power button brings the screen to life, which defaults to show the active input and incoming sample rate ('USB/44K', for example) on its red, dot-matrix screen. While this type of display window may seem a bit dated when seen alongside the slick OLED screens of some rival DACs, its bright and bold text does have the advantage of being highly legible from a good distance away.

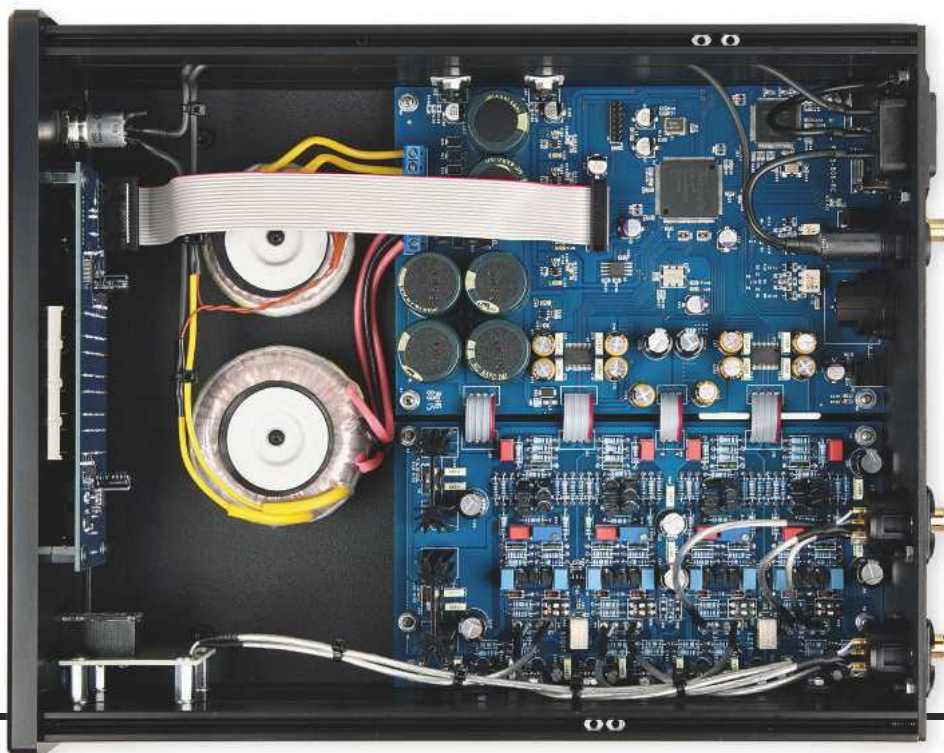
Within the menu you can select from USB, I<sup>2</sup>S (HDMI), S/PDIF (coaxial or Toslink)

and AES/EBU (XLR) inputs. Pressing 'M' a second time displays the DAC's optional filter labelled 'FIR' (Finite Impulse Response), which can be set to on or off. Despite the label, this filter is actually an apodising type, specifically designed to counteract pre-ringing [see PM's Lab Report p63].

Finally, a longer hold on the 'M' button takes you back to your chosen input, with the +/- buttons now changing the output level. Volume control is performed inside the DAC chips, and to use the Black Dragon in fixed output mode – for example when feeding a separate preamplifier – you need to crank the output up to its maximum level. The volume level is stored at power-down, so care needs to be exercised if it's been left at max...

The rear panel sockets are top quality and sensibly spaced to cater for even the most heavy-duty cables and connectors. And while many high-end users will perhaps favour the balanced (XLR) outputs, the gold-plated WBT line-level RCAs are no mere afterthought.

**RIGHT:** PCB for digital circuits (uppermost) hosts a Spartan FPGA and twin AKM DAC chips; the (lower) PCB carries the analogue circuits. Each is fed by its own toroidal transformer







**LEFT:** Minimalist front panel includes an IR sensor and 6.35mm headphone socket. Menu 'M' and  $\pm$  buttons offer volume and input selection. Retro red dot-matrix screen is highly legible

The whole unit sits on four disc-shaped feet with furniture-friendly rubber pads at their bases, which serve to aid vibration damping. The Audiobyte-branded universal remote control is arguably less than tailor-made for this product, as it does sport lots of redundant buttons.

Windows users will need to install a dedicated USB driver from Audiobyte's website [[www.audiobyte.net/products/black-dragon](http://www.audiobyte.net/products/black-dragon)] and then follow

a few simple steps laid out as screen grabs in the product manual. If you are running iOS or Linux-based operating systems then the Black Dragon will play straight out of the box, without any need for extra drivers.

## DISTINCTLY ANALOGUE

I started my listening with a 96kHz/24-bit FLAC download of Eleanor McEvoy's 'Land In The Water' from *If You Leave* [Naim Label MOSCD4010], via the DAC's USB input and with its balanced outputs connected to my Musical Fidelity M6PRX power amplifier

[*HFN* Nov '13], and this DAC's smooth sound was obvious from the outset.

Some DACs that I have heard at this price-point can shine almost too brightly and serve up music with the kind of detail that's overly dazzling. This certainly wasn't the case with the Black Dragon, which, while possessing a good sense of articulation, focused on delivering

the music in a more controlled manner that encouraged you to settle in and enjoy each performance at your own pace.

Through the Black Dragon, the Eleanor McEvoy track was

presented with a richness which had a distinctly 'analogue' flavour to it. The slight reverberation on the Craic Squad's lead guitar's notes, for example, conveyed a genuine sense of warmth, making each chord sound pleasantly full-bodied in its sustained decay.

In a similar manner, the widely spaced bass guitar notes on this track came across as well-rounded and with good textures,

letting me appreciate each string's resonant vibration.

A quick dip into Audiobyte's menu revealed that so far I'd been auditioning the Black Dragon in its default mode, with the optional filter switched on. And so playing Future Islands' 'Spirit' from their *Singles* album [CD-rip, 4AD CAD 3402CD] on repeat, with the filter first activated and then de-activated, gave insight into its influence on the sound.

With the (apodising) filter in play, the music sounded slightly bolder, and this was illustrated by how the track's synthesiser notes across the lower midband gained confidence in their attack. This brought a more dynamic edge to the performance by allowing its pacy percussion to punch more firmly through the air.

With the filter deactivated, all the detail in the track remained, but clearly it wasn't brought out to quite the same extent as before. Activating the filter also tended to let the DAC recreate sounds and instruments with a bit more air and space around them. This gave the music a grander sense of scale, even at lower listening levels, and so I left the filter on for the remainder of the reviewing.

'Activating the filter gave the music a grander sense of scale'

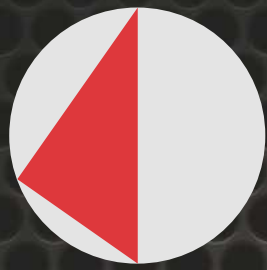
## ROMANIAN HERITAGE

Founded by Nicolae Jitariu in Suceava, Romania, Audiobyte is the sister brand of Nicolae's high-end Rockna Audio company. Established in 1996, Rockna first entered the hi-fi market in 2000 with its Heart monoblock Class A power amps. The range soon grew to include a matching Heart preamp the following year, alongside a MOSFET-based integrated variant in 2004. Rockna's digital products began with the Heart CD player in 2002 which sported a tube output stage, followed by the RD-2 DAC. Next came Rockna's Wavequest DAC and matching transport at the end of the decade, which paved the way for its cutting-edge Wavedream DAC featuring custom code running on FPGAs. This subsequently led to the launch of the Audiobyte line-up which benefited from plenty of trickle-down tech. All Audiobyte/Rockna products are designed and built in the company's Romanian facility. Alongside designing his own products, over the last decade Nicolae also claims to have provided his R&D services to a number of high-end audio brands including Wadia, Goldmund, MSB and PS Audio.

## FINE LEVEL ADJUSTMENTS

Another string to the Black Dragon's bow was the degree to which its output level can be finely adjusted in preamp mode. Thanks to a volume range extending from zero to 127 in very small increments, you get ample scope to find optimum music replay levels appropriate to your system and listening environment.

This point was illustrated perfectly by Massive Attack's 'Teardrop' from their *Collected* album from 2006 [CD rip, Virgin 0094636006826]. With this track, finding the right level to allow Elizabeth Fraser's gorgeous vocal performance to really fill my room, without the sound nudging ➔



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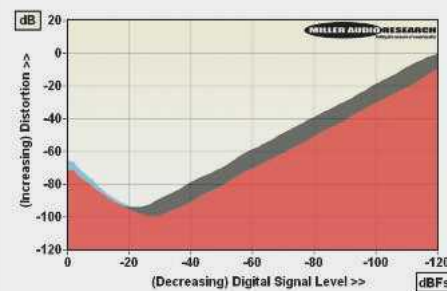
## LAB REPORT

### AUDIOBYTE BLACK DRAGON

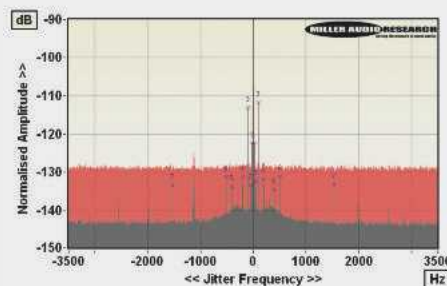
Described by Audiobyte as a 'DSD digital preamp' the Black Dragon DAC's Class A analogue output stage offers a full 3.6V (balanced) from an impressively low 20ohm source impedance. Furthermore, this stage offers sufficient current to support a maximum 109mW/25ohm via its 6.35mm headphone socket – adequate but still 10-100x lower than that offered by standalone (mains-powered) DAC/headphone amps from Simaudio, Oppo and Chord. However, the headphone out also has a low 20ohm source impedance, helping maintain response uniformity even with low and variable impedance 'phones.

The Black Dragon's native response is directed by filter setting but 'FIR off' actually yields an impulse response with strong pre/post ringing and a flat amplitude response (–0.1dB/20kHz, –0.5dB/45kHz and –1dB/90kHz with 48kHz, 96kHz and 192kHz media) that's entirely typical of a 'traditional' linear-phase FIR filter! By contrast 'FIR On' inserts an apodising-type filter with no pre-echo, stronger post-impulse ringing, better stopband rejection (>115dB vs. 50.6dB) and a response with a steep cut-off (–0.05dB/19kHz and –3.2dB/20kHz).

Distortion hovers around 0.03-0.05% from 20Hz-20kHz at peak (0dBfs) levels, reaching a minimum of 0.0002-0.0003% at –30dBfs. Its consistency with frequency is impressive [see Graph 1, below]. The 108dB A-wtd S/N is creditable via S/PDIF but less so via USB which achieves a 16-bit 96dB – an increase in noise clearly visible on the jitter plots [see Graph 2]. Readers are invited to view comprehensive QC Suite test reports for the USB, S/PDIF DAC and headphone output performance of the Audiobyte Black Dragon by navigating to [www.hifinews.co.uk](http://www.hifinews.co.uk) and clicking on the red 'download' button. PM



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



ABOVE: High res. jitter spectra with 48kHz/24-bit data over S/PDIF (black, with markers) and USB (red)

### HI-FI NEWS SPECIFICATIONS

Maximum output (re. 1% THD into 47kohm)	3.61V (balanced XLRs)
Max. power output (re. 1% THD into 25ohm)	109mW
Output impedance (20Hz-20kHz)	1.85-2.08ohm
A-wtd S/N ratio (re. 0dBV/ S/PDIF / USB)	91.0dB / 108.3dB / 95.8dB
Frequency response (20Hz-20kHz/25ohm)	+0.02dB to –0.09dB
Distortion (20Hz-20kHz, re. 10mW)	0.036-0.045%
Digital jitter (S/PDIF / USB)	137psec / 145psec
Power consumption	26W (1W standby)
Dimensions (WHD) / Weight	240x90x300mm / 4kg



ABOVE: High quality balanced (XLR) and single-ended (RCA) analogue outputs sit alongside digital inputs that are spread over S/PDIF (coaxial/Toslink), AES/EBU, I<sup>2</sup>S (via an HDMI socket) and USB type B connections

towards being too forward or overwhelming, can sometimes prove tricky, but with the Black Dragon I was able to find just the right level to bring her voice fully to life, without the setting either raising the roof or leaving her sounding too quiet and restrained.

### AN OPEN WINDOW

Moving on to the 1999 SACD of Canadian singer-songwriter Carla Lothar's 'Don't Look Back' from *Ephemeria* [Chesky JD 183], streamed from my laptop at DSD64 using JRiver Media Centre software, allowed for deeper analysis of the Black Dragon's refined treble. Vocals and strings were rendered with impressive depth as they pushed back into the soundstage.

And the way their leading edges during the more powerfully sung choral parts were presented, without any sibilance, meant that I was able to really push my Dynaudio Focus 260 loudspeakers without fear of any harshness creeping into the mix at these extremes.

Instead, the Black Dragon gave an open window into this high-quality recording, allowing me to access and enjoy each musical layer, from the gentle taps of percussion deep within the mix to the slow-building strings as they extended 'outwards and upwards' across the soundstage.

While I've appreciated the bass drum's echo on this track many times, the way in which the Black Dragon revealed subtle changes in tone as each echo faded, highlighted this particular DAC's ability to get deep into the music,

prompting me to eagerly re-explore the rest of the album.

Serving the Black Dragon some music with a touch more fire in its belly, courtesy of Pink Floyd's 'Coming Back To Life' from their 1994 album *The Division Bell* [96kHz/24-bit download, Parlophone 7243 8 28984 2 9], I opted this time to test the unit's headphone output driving a pair of AKG 242 HD over-ear cans. Unsurprisingly, it showed it was also very capable when working in this mode.

While its bass didn't appear quite as strong via these headphones, channel separation was especially notable, resulting in a stereo image sounding open and focused.

The way that the lead guitar's solo (which kicks in around four minutes into the song) was placed centre stage had me sitting eyes-closed, lost in the moment and nodding along to David Gilmore's fretwork. It seemed to highlight how, above all, the Black Dragon 'DSD digital preamp' allows the music simply to speak for itself. ☺

### HI-FI NEWS VERDICT

With its good build quality, wide range of inputs and file types, and balanced outputs to boot, the Black Dragon offers a compelling investment for those in the market for a do-it-all DAC. With DSD and LPCM files it's a smooth mover that'll surely prove a welcome tonic for more lively systems – so if you like your digital files dished-up with an organic sound then add the Black Dragon to your audition list.

Sound Quality: 78%



# Kennerton Magister

Opposite of a 'Flash Harry', Kennerton's Magister looks like a stolid product of middle America. But wrong continent – and that's just the first of this product's surprises  
 Review & Lab: **Keith Howard**

**C**losed-back headphones with wooden capsule closures are two-a-penny, but here's something novel: a headphone whose capsules are not made of, say, teak like those of the Audio-Technica ATH-W1000Z [*HFN* Jan '16], but of bog oak over 2000 years old.

Like other bog woods, bog oak has been preserved in peat or, as here, at the bottom of lakes where the extremely low levels of oxygen protect it from decay while acidic conditions cause minerals to react with tannins in the wood, causing it to turn dark brown or even black in colour. Traditionally used for tobacco pipes and Scottish dirks, here it serves a dense, hard material from which to fashion a complex internal form.

## HAILING FROM RUSSIA

Just how much of the Kennerton Magister's £695 asking price is accounted for by these bog wood capsules is an unknown, of course, but because of its rarity the material is expensive to buy and then time-consuming to machine and to treat. What the Magister isn't – to my eye at least – is visually attractive.

With its dark capsules, dark brown headband and dark grey lambskin earpads, the Magister is dour in appearance, and the plastic components at either end of the headband, and which attach the yokes to the capsules, look rather low-rent for a product of this price and pretension. The silver Kennerton medallions let into each capsule appear to complete a not untypically staid design from the US but, actually, Kennerton – the high-end arm of Fischer Audio – hails from Russia, and the Magister is made there.

It's a shame that there's no way of peeking inside the capsules because the inner surface is more interesting than the outer, despite the latter's

unusual wood texture. Fischer has filed a patent application describing two different internal forms it terms 'Amphitheatre' and 'Helix'. In the former the inner surface is stepped, as in a Roman amphitheatre, to help break-up internal reflections and resonances (Fischer refers to 'a pattern of favourable reflections').

In the Helix case there is a single step but it spirals downwards into the capsule space. This provides a constantly varying distance from the rear of the drive unit that 'disperses sound waves inside the cup chaotically'.

Kennerton isn't specific about which is used in the Magister, but as Fischer says Helix is reserved for its more expensive products I presume it's that. The 42mm drive unit is interesting too because, similar

to the Focal Spirit Pro [*HFN* Dec '15], it has a Mylar diaphragm with a thin titanium coating applied. Kennerton claims that diaphragm and voice coil weigh just 15% of that of 'other current models' in order to provide a fast transient response.

Connection is via a 3m Y-cable that connects to each capsule via mini-jack

sockets in their bases – so there is no sharing of earth wiring by the two channels and thus no electrical crosstalk as a result. OFC conductors are used, terminated in a gold-plated mini-jack plug. A sleeve adapter is

*'McCartney's lyrics were clear, and propelled the musical action'*

supplied to facilitate use with ¼in output sockets. The one other accessory is a large foam-lined zip-up carrying case for storage or transport.

Comfort is OK but falls short of being outstanding. While the earpad openings are large enough not to scrunch or squash most pinnae, head-clamping force is such that the Magister is not exactly forgettable when you're wearing it. The upside of this is that the artificial ear measurements recorded unusually tight consistency of low frequency response (headphones are removed from and replaced on the ear for each of ten measurements to assess this), so the earpad sealing is first-class.

It's ironic, given Kennerton's use of stiff bog wood capsules with interior surfaces contrived to ameliorate reflection and resonance, that the Magister is yet another high-end headphone to suffer from resonance in its headband. It's not as bad in this respect as the aforementioned Focal but, like the ATH-W1000Z, it can be heard to carry quite high-pitched sound over to the right capsule when just the left is playing pink noise.

The components responsible for this are the steel 'tongues' which slide in and out of the headband – grasping them in forefinger and thumb to damp them

**RIGHT:** Parts of this headphone are over 2000 years old! The bog oak capsules have been carbon-dated to an age of 2090 years plus or minus 50 years







**LEFT:** Styling is more 20th century than 21st and, like too many costly modern headphones, the Magister suffers headband resonance due to the steel tongues within the hoop

metred its upper-mid and treble actually have a somewhat relentless, sometimes even harsh quality to them.

In this respect the almost-flat presence band of the diffuse-field-corrected response may actually be a bad thing: it's a notable feature of the headphones I find most neutrally balanced subjectively that they actually have a dip in this region – more than the Kennerton does.

### MISSING INSIGHTS

I found myself constantly resorting to the volume control to try to extract more life and more insight from its sound. So, for instance, it was difficult to enjoy Robin Ticciati's marvellous *Adagio* from Schumann's Symphony No 2 [192kHz/24-bit download, Linn Records], a recording and performance that through the best headphones – and over the best loudspeakers – I find sublime. The subtle, intimately detailed string sound that makes this such a riveting listen came over as rather bland and characterless via the Magister, with a coloration that made the upper violin registers sound coarse.

Similar characteristics were evident with Chesky's natural, spacious recording of Christy Baron's 'Got To Get You Into My Life' [HDtracks, 96kHz/24-bit download]. This begins with a crisp but distanced drum break to the right of the soundstage before the entry of Baron's smooth, stylish vocal. The mood is pacy, upbeat, sophisticated and fun. But the Magister diminished the soundstage and made the performance sound matter-of-fact. Bass, as expected, was a bit too prominent for my own taste but, to its credit, was clean and tuneful. ➔

collapses the pink noise back to the left capsule where it belongs.

### CLEAN AND TUNEFUL

For the listening I used my Teac HA-501 headphone amplifier [HFN Apr '14] fed analogue signals from a Chord Electronics QuteHD DAC, itself supplied an S/PDIF digital signal from a TC Electronic Impact Twin FireWire audio interface. A second-generation Mac mini running Windows XP and JRiver Media Centre v19 acted as music server.

The lab report's diffuse-field-corrected response [p67] suggests that the Magister has a neutrally balanced upper-midrange and treble, without the marked presence band dip of so many modern headphones. But below 300Hz the lower midrange and bass output shelves up by 7dB in less than an octave. According to research conducted by Sean Olive at Harman, this type of response is desirable for a headphone to have a similar tonal balance to a neutral pair of loudspeakers in an acoustically well-behaved room, but I disagree: I find headphones balanced in

this way to sound manifestly bass-heavy. So I expected the Magister's tonal balance to be too warm for it to be as lithe and adroit-sounding as I like a headphone to be.

What I didn't anticipate was the closed-in quality of its sound. It has little of the spacious, airy imaging that the best headphones achieve, whether open-back or closed-back, and far from sounding finely

### STEPPING OUT

Fischer Audio's 'Amphitheatre' and 'Helix' capsules beg the question: how much can you influence resonance within the enclosed air space of a closed-back headphone by artfully shaping the capsule's interior surface? Unlike with loudspeakers, internal air resonance in headphones is a high frequency effect, which only becomes significant when the capsule's interior dimensions are comparable to the wavelength in air. At bass frequencies, where wavelengths are longer than the largest internal dimension, the capsule simply acts as a pressure chamber. So if the biggest interior dimension is 10cm (not untypical), we can expect there to be no resonance below about 1.7kHz, where 10cm is a half-wavelength. Resonances associated with the spacing between the driver diaphragm and the rear of the capsule – a shorter distance – occur at still higher frequencies. A lot of benefit can be gained just by avoiding parallel internal surfaces and using an elliptical rather than circular capsule cross-section. Beyond that, shaped capsule interiors are probably minor in their effect.

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## HEADPHONES



**LEFT:** The 42mm drivers have a Mylar diaphragm coated in titanium. The separate wiring to each capsule obviates a shared earth impedance

'Country Dreamers' [Band On The Run, HDtracks 96kHz/24-bit download], is no audiophile showpiece but has a rough and ready charm and a jaunty rhythm. There's no natural acoustic here but nonetheless the Magister narrowed the image, sounding somewhat uptight rather than relaxed and flowing. This characteristic wasn't a deal-breaker – McCartney's lyrics remained clear and enough sense of rhythm remained to propel the action – but the Magister suppressed some of the fun and served up a 4:3 image in place of a colourful, widescreen one.

### AN AURAL FINGERPRINT

I searched for a genre, or single piece of music, that the Magister would excel on but the characteristics I have described (particularly the contraction of the stereo image) were an aural fingerprint the Magister impressed on everything played.

Solo voice? James Griffett's moving, unaccompanied rendition of 'The Turtle Dove' [ripped from Regis RRC1112] was recorded in Boxgrove Priory near Chichester, so a spacious, natural acoustic is an indivisible part of the performance. Played over the Magister, the overtones of Griffett's voice were emphasised, and this added a slight hardness. The sense of acoustic was both narrowed and foreshortened; tweaking the volume control proved a vain attempt to recover what was missing.

Jazz trio? Fred Simon's Poetspeak [24-bit/96kHz Naim label download] is a relaxed, contemplative piece

that can easily suffer from a thickened piano sound but, as compensation, has a very natural drum and cymbal sound, and a realistic rendition of double-bass too. The Magister did the double-bass well enough but the piano tone was hardened and the cymbal strokes and brushed drum skin lost their sparkle and sheen. Plus, as I hardly need relate by now, the spaciousness of Ken Christianson's purist recording was perceptibly suppressed.

Live rock? If anything really needs playing over loudspeakers, and pretty loudly at that, it's Eric Clapton's *Just One Night* [ripped from Polydor 531 827-2]. But a good pair of headphones recreates at least some of the atmosphere in the Budokan Theatre that night in Dec '79: the buzz of the crowd (and the PA), Slowhand's distinctive blues playing and his surprisingly fine vocal. Via the Magister, much of this was lost. At least partly because of the shrinking of the soundstage the palpable sense of atmosphere was reduced here, and there was a distinct sense of coloration that made this live recording sound older than it should have. ☹

### HI-FI NEWS VERDICT

When a manufacturer is new to *HFN* I always hope it will bring something novel to the party. It doesn't have to be sound quality that's special: it could be looks, usability or, in the case of headphones, comfort. But the Magister is unexceptional in all respects, the more so at its price. It's not a blast to look at, it's not notably comfortable, and its narrow stereo image in particular may well spoil its sound for many.

Sound Quality: 70%



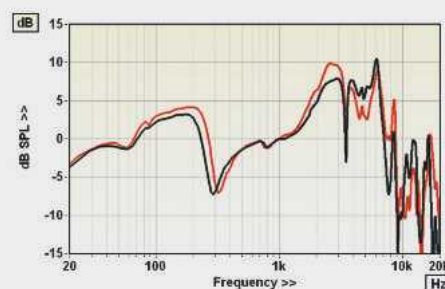
## LAB REPORT

### KENNERNTON MAGISTER

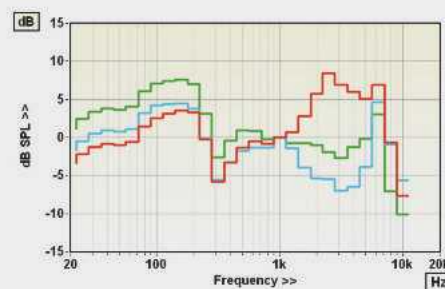
Kennernton specifies the Magister's sensitivity as 98dB but doesn't define an input level. If we assume it to be 1mW, the voltage sensitivity would be 106.0dB for 1V across the specified 160ohm nominal impedance – distinctly low for a modern medium-impedance headphone. But the Magister's impedance is nothing like 160ohm: we measured the value, 20Hz to 20kHz, as varying from a minimum of 64.6ohm to a maximum of 72.5ohm. So let's perform the sensitivity calculation again assuming 65ohm nominal impedance, which makes the voltage sensitivity 109.9dB for 1V input. That's still conservative but rather closer to the 113.6dB we measured at 1kHz, which is much more typical for a headphone of this type.

With a source impedance of 10ohm the impedance variation gives rise to a frequency response error of just 0.13dB (20Hz-20kHz), and with a 30ohm source this rises to 0.31dB but is still commendably small. So the Magister can be used from almost any headphone output without significant change to its inherent frequency response. The uncorrected frequency responses for each capsule are overlaid below [see Graph 1]. Notable features are the dip around 300Hz, below which the output shelves up before declining gently at bass frequencies. The capsule matching error of  $\pm 5.9$ dB reflects the two capsules' different acoustical interaction with the left and right artificial pinnae which, like real ears, are not identical.

With diffuse-field correction applied [Graph 2, green trace] we get a better idea of how the frequency response affects perceived tonal balance. Above 300Hz the response is pretty flat, with only a modest 2.5dB dip through the presence band, but below that the LF output shelves up. This broadly accords with the recommended target response suggested by Harman, and regularly referenced in our reviews, but in our experience often results in overly-full bass and lower-midrange. KH



ABOVE: This uncorrected response plot shows the Magister's shelved-up <300Hz bass response, arguably better reflected in DF-corrected response, below



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

### HI-FI NEWS SPECIFICATIONS

Sensitivity (SPL at 1kHz for 1Vrms input)	113.6dB
Impedance modulus min/max (20Hz-20kHz)	64.6ohm @ 20Hz 72.5ohm @ 160Hz
Capsule matching (40Hz-10kHz)	$\pm 5.9$ dB
LF extension (-6dB ref. 200Hz)	23Hz
Distortion 100Hz/1kHz (for 90dB SPL)	<0.1% / <0.1%
Weight (inc cable and 0.25in connector)	442g

# Monitor Audio Bronze 2

The latest generation of MA's entry standmount is very affordable and sounds anything but cheap  
Review: **Andrew Everard** Lab: **Keith Howard**

**T**he ability of British loudspeaker companies to make over-achieving little speakers with cut-throat pricing always used to be a thing of wonder among those overseas. They just didn't get how the likes of Mission, Wharfedale, KEF, Tannoy and Mordaunt-Short managed to squeeze so much sound out of foot-high boxes many of which sold for around £100 a pair.

OK, so we've moved on a bit from those glory days, and prices have inched up to the point where the Monitor Audio Bronze 2 speakers we have here are £280 per pair, in a market where sub-£200 is now the entry-level norm. What's more, many of the companies once caught up in the budget speaker trench-warfare of the 1990s and the early years of this century are now either owned by foreign conglomerates or at least making their products in lower-cost countries – even if their headquarters are still ostensibly back here in Blighty.

However, those celebrated names still make excellent speakers with very sensible pricing, and prove up to the task of continually innovating to stay ahead of the game. The Monitor Audios are a case in point. The company has long had a range simplified by 'colour-coding' – Bronze is the entry-level, and the line-up goes up through Silver, Gold and Platinum.

The Bronze 2 is the larger of two standmount models in a line-up starting with the £230 Bronze 1, and going all the way up to the Bronze 6 floorstanders at £700, taking in dedicated centre and surround speakers, plus a powered subwoofer, along the way. That pattern is echoed all the way up the range, offering the buyer the choice of either a no-frills dedicated stereo set-up, or the ability to build a surround system without compromising two-channel quality.

Launched in May 2015, the current Bronze Series is the latest generation of a line-up that's been a mainstay of the Monitor Audio offering for some years, and develops the old BX range with the adoption of technology from further up the hierarchy. The tweeter is the familiar 25mm 'Gold Dome' Monitor Audio model, but the more striking visual aspect of the speaker – and indeed the entire Bronze range – is the use of a 16.5cm 'dish' C-CAM driver for the mid/bass, this enabling the whole diameter of the driver to be used as the radiating area, without the change in geometry at the centre caused by a conventional centre-cap or phase-plug design [see boxout, facing page].

## BOLT MOUNT DRIVERS

The bass is tuned using a front-venting port, itself a second-generation version of Monitor Audio's HiVe (high-velocity) design – trickled down from the company's Gold range, this uses rifling grooves to speed the airflow within the port tube, and is designed for more bass power and enhanced transient response. Bungs are provided to restrict the airflow in the tube should the speaker have to be positioned in a location

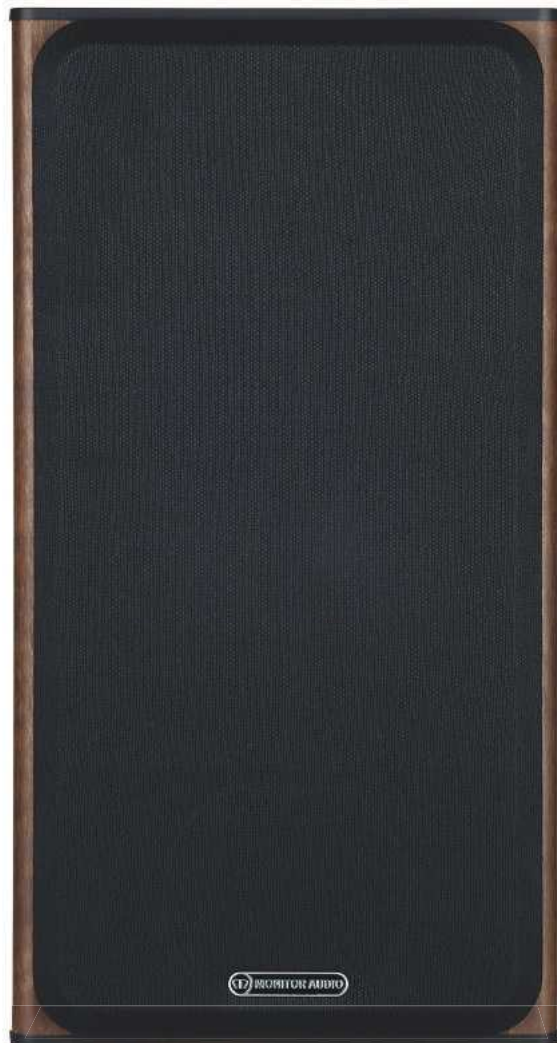
giving rise to bass boom.

The crossover design has also been revised for the new Bronze series, using polypropylene capacitors and both air-cored and laminated steel core inductors, with bi-wirable terminals provided with the usual jumper bars. The crossover point here is 3.1kHz, and the impedance has been raised slightly compared to the previous

Bronze BX range, to a claimed nominal 8ohm, combined with a stated 90dB sensitivity [but see Lab Report, p71]. The idea is to make the B2s better suited for use with price-comparable amplification.

The drivers are held in place with a 'through-bolt' mounting from the rear panel of the enclosure, a method the company first used in its Radius speakers and has now extended through the range. Again, it's not a unique design idea, but it does have the advantage of holding the driver to the cabinet under tension, as well as bracing the cabinet itself. So it also reduces resonances while – as Monitor Audio puts it – 'simultaneously boosting aesthetics' with the absence of visible fixings for either drive units or grilles.

An Allen key is provided with the speakers to fit the head of this through-bolt, which is mounted in the rear panel just above the terminal block. It needed a turn or so to tighten up the review speakers' fixings, which was something of a



*'It delivers toe-tapping sounds with not a hint of a rough edge'*





## CERAMIC COATING

Monitor Audio's proprietary C-CAM driver technology is used for both tweeter and woofer here, emphasising the fact that the company still makes its own drivers. At the heart of these Ceramic Coated Aluminium Magnesium drivers is an alloy core, chosen for lightness and stiffness, to which is applied the ceramic material to further enhance the rigidity without significant weight increases.

The dome tweeter, though it looks just like the ones used as an MA hallmark for several decades, is a new design, its geometry and 'motor' claimed to improve accuracy and extension at the top of its range (~30kHz). Improved venting into the rear loading chamber is said to improve damping, reduce air compression effects and mechanical resonances.

The design of the woofer is also all about rigidity, reducing cone 'break-up', just as the direct coupling of the voice-coil to the back of the cone improves its thermal stability and power handling under load.

**LEFT:** MA's Bronze 2 is a two-way design featuring a 165mm C-CAM bass/mid driver, loaded through a front-firing port, and 25mm gold treble dome crossing over at 3.1kHz

and at around 35cm tall are still more than compact enough to be used on conventional 60cm/24in speaker stands.

## TAKING A STAND

As is usual with speakers of this kind, I placed them on my long-serving, trusty (and only slightly rusty) Atacama SE24 stands – the oxidation came from a period during which they were filled with sand some years ago; these days they're about two-thirds filled with Atacama's Atabytes interlocking metal chips.

They proved a good match with the Monitor Audios, tightening the bass when compared with the 'on shelves' alternative, so I guess a more modern equivalent, such as the same company's Nexus I 600mm or Duo 6i models, would be suitable. Only if you sit on a very low sofa while listening would I suggest a lower stand, as I found the treble response on these speakers relatively sensitive to ear-height, and if the speakers are too high the mid/bass can dominate a little. In that case, some slightly shorter stands, such as the Atacama Nexus I 500mm, might be advised, but I'd suggest trying, if at all possible, to get a listen to the speakers on stands of different heights to discover which is preferable.

In terms of positioning, following Monitor Audio's suggestions – 1.8-3m apart, 20-45cm from rear walls and 1m from side walls – serves pretty well as an initial set-up. Pushing the speakers back much closer to the rear wall did instil some slowness and boom to the bass, which could be partially ameliorated with some judicious bunging. Pulling them out too far into the room did give a very tight low end – just not much of it! ➔

surprise given that I couldn't find anything in the manual about the need to do this.

At its price, the Bronze 2 is a rather fine-looking speaker, with neatly-radiused edges to the front baffle, and a choice of high-quality finishes: yes, the covering is a vinyl wrap rather than 'real' (which is only to be expected at this level), but it's clearly of a superior quality. Given Monitor Audio's past history in finishes from piano lacquer through to a range of exotic woods, it's pleasing to see that attention is still being paid even down at this level of the range.

The Bronze speakers look good in a choice of Black Oak, Walnut, Rosemah – which is halfway between rosewood and mahogany – and White Ash. The darkish Walnut of the review pair, with its matt finish, was particularly distinctive and yet subtle in its appearance.

## RHYTHMICALLY ADEPT

What's immediately striking about the Bronze 2 speakers is that not only do they

look rather superior to the average £250-£300 box – they also sound it. Positioned correctly and driven by decent, if not excessive, electronics (of which more in a moment), they have excellent bass power and control for their size, being as adept with kicking rhythms as they are with the weight of orchestral strings and percussion.

Add to that a fine, fresh view of the midband and treble, enabling them to bring out the character of voices and lead instruments, and a high treble that's detailed while at the same time sweet and clean-sounding, and you have a speaker fully able to take the listener into the heart of the music. System-friendly and at the same time highly involving – sounds like a pretty good deal for the money...

Setting up the Bronze 2s is pretty simple, thanks to a design and specification clearly aimed at making them as fuss-free as possible. It's worth noting that they feel solid and well-built straight from the box, weighing a decent 5.3kg each,

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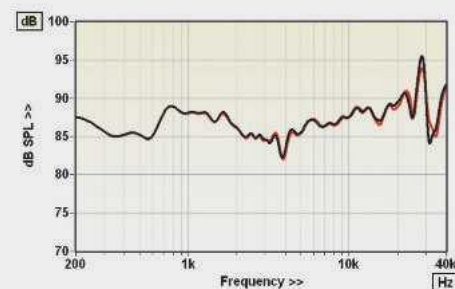
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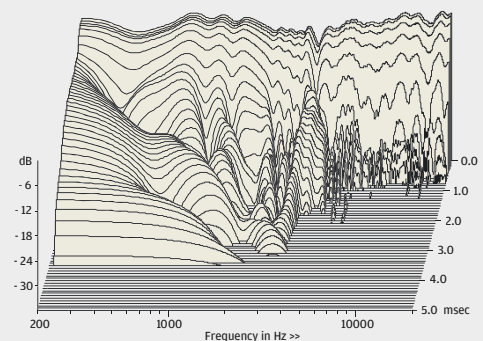
## MONITOR AUDIO BRONZE 2

Monitor Audio claims 90dB sensitivity for the Bronze 2 but that substantially exceeds what we measured, our pink noise figure of 86.8dB and music spectrum figure of 86.5dB suggesting that 87dB would be more representative. This is achieved without resort to low impedance. While the 3.7ohm minimum modulus we recorded is incompatible with the stated 8ohm nominal value, it's still higher than we typically encounter in modern speakers. Moreover, the impedance phase angle is well controlled, remaining within an absolute value of 40° throughout the audible range. As a result the minimum EPDR (equivalent peak dissipation resistance, which takes into account both modulus and phase angle) of 2.2ohms at 125Hz is a full 0.5ohm higher than typical, although this good result is rather diluted by there being four other dips to below 2.6ohm in the range 20Hz to 400Hz.

Forward frequency response [Graph 1, below], measured on the tweeter axis without grilles, is not flat in trend but the departures are sufficiently well contained for the response errors to be modest at ±3.6dB for both of the review pair. Pair matching, over the same 200Hz-20kHz, was exceptionally good at just ±0.6dB, indicating excellent driver matching and quality control in the MA factory. Bass extension of 55Hz (-6dB re. 200Hz) – determined using diffraction-corrected nearfield measurement – is what you'd expect of a speaker of this size and sensitivity. The CSD waterfall [Graph 2] is clear of resonance in the upper treble but evinces an obvious ridge at just under 4kHz, coinciding with a dip in the frequency response and probably caused by bass-mid driver cone breakup. KH



ABOVE: Forward response shows a strong mid and high treble with some loss of presence band output



ABOVE: Small cabinet is well damped but the C-CAM bass/mid driver shows a resonance mode at ~4kHz

## HI-FI NEWS SPECIFICATIONS

<b>Sensitivity</b> (SPL/1m/2.83Vrms – Mean/IEC/Music)	87.5dB/86.8dB/86.5dB
<b>Impedance modulus min/max</b> (20Hz–20kHz)	3.7ohm @ 182Hz 15.7ohm @ 95Hz
<b>Impedance phase min/max</b> (20Hz–20kHz)	–40° @ 105Hz 37° @ 28Hz
<b>Pair matching</b> (200Hz–20kHz)	±0.6dB
<b>LF/HF extension</b> (–6dB ref 200Hz/10kHz)	55Hz / >40kHz/>40kHz
<b>THD 100Hz/1kHz/10kHz</b> (for 90dB SPL/1m)	0.7% / 0.6% / 0.3%
<b>Dimensions</b> (HWD)	350x185x281mm

**LEFT:** The two-way crossover is split, enabling separate bass/treble connections in bi-wired or bi-amped systems. Note the large bolt – this ‘pulls’ the bass driver into place on the baffle

accomplished and much pricier speakers will deliver more room-shaking low-end impact and increased clarity from this, or indeed large-scale orchestral music, but all things considered the Monitor Audios do a fine job, sounding more like great speakers subtly rolled-off at either end of the frequency spectrum, rather than compromised designs having anything significant missing from the music.

## HONEST AND ATTRACTIVE

That's also true with Adele's 25 [XL Recordings XLCD740]. Having sold squillions of copies of her past albums, Ms Adkins was clearly able to get a great recording team to keep the numbers rolling, and it shows in the big, bold presentation of tracks like 'I Miss You' and 'River Lea'. Via the Bronze 2s, now driven by my usual Naim reference system – around £21,500 of electronics powering £280 of speakers! – those production values are very much in evidence, as they are with the intimacy of 'Million Years Ago'.

OK, I wouldn't swap the Monitor Audio Bronze 2s for the big floorstanders which they replaced temporarily, but would I enjoy them if they were at the limit of my loudspeaker budget? Very much so – these are honest, attractive and classy little speakers, and they're a great buy. ☺

## HI-FI NEWS VERDICT

Monitor Audio has been making its Bronze series range for many years, picking up plaudits along the way, and it shows: these are beautifully finished speakers with a refined, mature sound for the money, and yet have that spark of vitality and excitement destined to grab the listener's attention. It's a real world design, perfect for use on the end of modest electronics yet capable of withstanding future upgrades.

Sound Quality: 84%



As has been my experience with most speakers of this size – and it's hardly surprising given the vertical dispersion effects I mentioned above – the Bronze 2s did give the best stereo imaging when toed in a little towards the listening position. Just enough to make the outer sides of the cabinet visible seemed to do the trick nicely.

That really snapped into focus the positioning of the performers on Kyle Eastwood's *Time Pieces* set [Jazz Village JV 570034], played via the excellent £200 Onkyo A-9010 amplifier and using the £40 Gramofon network player as a source to show just what the Monitor Audios could do on the end of affordable electronics.

And what it could do was deliver an entirely convincing, toe-tapping sound, with no shortage of subtlety and not a hint of rough edge even with the hard-working brass of Brandon Allen and Quentin Collins, while Eastwood's lightning-fast bass work is presented with both weight and drive, and the percussion well-balanced in mixes clearly in the hard-bop idiom. It's impressive stuff for a speaker this small and affordable, to show so convincing a blend of control and expression.

Change gear to the tight and deep synth-bass of Jean-Michel Jarre's *Electronica 1 – The Time Machine* [Aero Productions/Sony Music 88875123472] and the Bronze 2's are by no means out of their depth. Yes, bigger, more

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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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# Classical Companion

BEHIND THE MUSIC WITH HI-FI NEWS & RECORD REVIEW

## Sibelius *Symphony No 5*

You need to hear the original version from 1915, says **Christopher Breunig**, as well as choosing a library version of this most popular Finnish symphony in its final form

Some of the Sibelius symphonies (not the more abstract Nos 4 and 6) suggest to me a kind of journey. None more so than No 5 – at journey's end those mysterious six spaced *ff* chords, the last two introduced by the timpanist.

Sibelius conducted the Helsinki premiere on his 50th birthday (1915) but wasn't satisfied with the outcome. He introduced a revised version one year later (the material has not been found since) but then continued to work on the score – not only changing the structure from a four- to three-movement symphony but adding the opening horn-call and changing the ending, which at first had been more like that in his Symphony No 2.

With its admirable commitment to this composer, BIS recorded the original with Osmo Vänskä and the Lahti SO in 1995, together with

➔ BIS has a 1995 recording of the original score of the Symphony

➔ Akseli Gallen-Kallela's 1894 watercolour portrait of the composer



*En Saga* in its 1892 scoring. And it's an essential companion for anyone who loves the symphony. Listen to it and you begin to be lulled by familiarity, but then suddenly the landscape has changed because the instrumentation is different – the last movement has slashing brass accents cutting through, which subsequently were dropped. It's like having a dream about listening to The Fifth!

### HMV'S SIBELIUS SOCIETY

In the 1930s Walter Legge organised a six-volume HMV subscription series of 78rpm world premiere recordings, Beecham a major contributor – although he never recorded the Fifth commercially. Vol 1 (from June 1932) was Symphony No 5 and two symphonic poems, with the LSO and the Finnish conductor Robert Kajanus. You can listen to a free download at [www.archive.org/details/SibeliusSocietyAlbumNo.1](http://www.archive.org/details/SibeliusSocietyAlbumNo.1) but, while it has documentary value (and LP transfers by Anthony Griffith were issued by World Record Club in 1974) it's not that rewarding musically. Koussevitzky made the

first American recording in 1936 at Boston [now on Naxos 8.110170].

Looking at the 1951 *Record Guide* I found the only 'starred' recommendation was a soon forgotten Decca 1946 recording with the LPO under a young Erich Leinsdorf. Even that finally found its way on to CD [Dutton CDBP9788]. The 1950s brought the admirable Decca series with Anthony Collins, last year appearing as gorgeous vinyl transfers – his Fifth superseded an earlier LP with Eric Tuxen.

The 1956 Philips LP by the Philadelphia Orchestra under the Hungarian émigré Eugene Ormandy was something of a bargain, with the symphony accommodated on one 12in side (coupling No 4). You

'Sibelius's grim profile, it was feared, might deter purchasers'

can download these recordings at [www.shellackophile.blogspot.co.uk](http://www.shellackophile.blogspot.co.uk). In the States it was feared that the all-black sleeve front with

Sibelius in grim profile would deter collectors, yet it remained in the Columbia catalogue for 20 years – it remains interesting and is especially exciting in the opening movement.

Ormandy was overwhelmed on meeting the composer: 'He was a towering man with a magnificent head and powerful face.' (You can read more at [www.kennethwoods.net/blog1/2006/11/02/ormandy-on-sibelius/](http://www.kennethwoods.net/blog1/2006/11/02/ormandy-on-sibelius/).)

Leonard Bernstein had been a Koussevitzky student in 1940. Three years later he was assistant conductor at the NYPO, then (1958) Music Director. Recently remastered by Sony [see boxout], his Sibelius cycle had an outstanding Fifth Symphony from 1961. The conductor's working score is reproduced at [www.archives](http://www.archives).

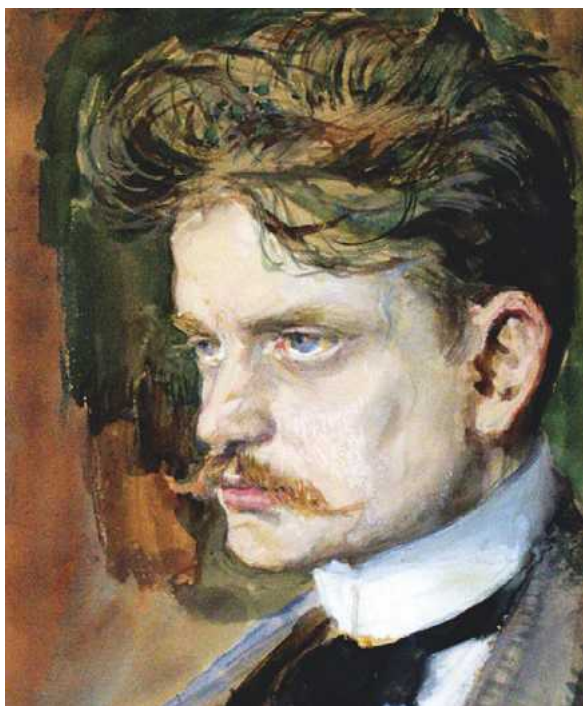


PHOTO: BIS RECORDS AB



nyphil.org, and it shows that, where Sibelius marked the ending of the Symphony *stretto* ('tightened') Bernstein had noted that this extends over those six monolithic chords too – as I suggested, puzzling when, if mistimed, they don't seem to 'belong' to the performance.

On contrasting videos we have Lenny brimming with energy with the LSO in 1966, then on a 1987 Unitel DVD (nearly all in claustrophobic close-up), a seemingly impassive VPO led by a drawn, ill-looking figure.

### BRITISH CONDUCTORS

During his New York tenure, John Barbirolli was conducting Sibelius in the late 1930s, and later when he returned to Britain to rebuild his Hallé Orchestra the Fifth Symphony became something of a party-piece. I'd suggest the 1957 Pye recording, engineered by Bob Auger as the one to hear [SIB 105354].

There are some who will remember Sir Malcolm Sargent's



PHOTO: BIS RECORDS AB

performances: his 1958 recording [now Guild GHCD2414] has passages where nothing much seems to happen, but he knew how to light up key moments and EMI's early stereo engineering was good.

Sir Colin Davis's first Sibelius cycle [Philips] was made at Symphony Hall Boston, parts at least recorded for four-channel reproduction [see boxout]. The first of two LSO cycles followed, including the *Kullervo* and nine orchestral pieces by Sibelius [RCA 8876543 1353, 7CDs] and this, I think, has his finest Fifth. The later LSO Live series [see boxout] at least allows you to buy separate works.

Only a few minutes into Davis's Sibelius and you feel the presence of real authority, with wonderful orchestral balances and atmosphere.

According to Legge, Karajan was the conductor whom Sibelius

→ Sir Colin Davis's final version of Symphony No 5 is on the LSO Live label

← Okko Kamu has now recorded a complete Sibelius symphony cycle with the Lahti Orchestra

thought best understood his music. This view was endorsed by Glenn Gould, when he made his only appearance with Karajan in 1957 and the Fifth was also programmed: 'One of the truly indelible musical-dramatic experiences of my life.'

Karajan's studio recordings were made in 1951-2 (Philharmonia), 1965 and 1976 (Berlin Philh). One review suggested this last showed a deeper understanding than ever, yet I find it musically contentious and acoustically implausible, and it's the DG which I far prefer [see boxout].

Something of an outsider's, the 1989 Decca recording by Herbert Blomstedt and the San Francisco SO proves, on rehearing, highly competitive with chilling menace

in some of the string passages in (i), made all the more telling as Blomstedt had antiphonally placed violins [E4757677; download only].

The 150th anniversary, last year (2015), brought new complete cycles from John Storgårds [Chandos], Sir Simon Rattle [BPO own label], and Okko Kamu with the Lahti SO [BIS] – produced in its new concert hall, which you can see at [www.youtube.com/watch?v=2S4YUwkPKss](http://www.youtube.com/watch?v=2S4YUwkPKss).

Beautifully recorded, especially when heard at 96kHz/24-bit resolution, Kamu's Fifth is almost too self-effacing albeit totally faithful, but there are other symphonies in the set that impress more [full review next month]. ☺



## ESSENTIAL RECORDINGS

### BPO/Herbert von Karajan

DG 478 2604 (two discs)  
Symphonies Nos 4-7, etc: the best Karajan Fifth? (His later Sibelius is on Warner Classics.)

### Lahti SO/Osmo Vänskä

BIS BIS-CD-863  
Vänskä went on to re-record the symphony at Minneapolis (96kHz/24-bit option) but musically I prefer this earlier reading, here recoupled with the 1919 original score.

### NYPPO/Leonard Bernstein

Sony Classical 88875026142 (seven discs)  
Bernstein's Sibelius cycle remastered with extras. The Fifth Symphony was the highlight of the set, along with *Pohjola's Daughter*.

There's also an unmissable DVD with the LSO (1966) on ICA Classics ICAD 5082 [see text].

### LSO/Sir Colin Davis

LSO Live LSO0537  
This disc just couples Symphony No 6 while a complete cycle, including *Kullervo*, is on LSO0191 (four SACDs). Sir Colin's 1975 Boston SO Fifth is remastered on a Pentatone multichannel SACD: PTC5186177.

### LSO/Anthony Collins

ELQ4429493 (mono; two discs)  
Still worth hearing, the classic 1956 mono with Symphonies Nos 6 and 7, four orchestral pieces and the *Karelia* Suite with Danish RSO/Thomas Jansen as an extra.

# Vinyl Release

BEHIND THE MUSIC WITH HI-FI NEWS & RECORD REVIEW

## Arcade Fire *Funeral* (180g vinyl)

Anthemic, operatic and with a slow-burning ballad or two, this debut LP is said to be one of the greatest ever. **Steve Sutherland** re-listens as it appears on 180g vinyl

Ever heard of The Scene That Celebrates Itself? Well, way back in the late 1980s, some of us who were working for the music press scrambled together an inordinate amount of purple prose promoting a bunch of UK bands who were blissfully happy turning their volume knobs up to 11, kicking in the flange and flailing away behind long, floppy fringes, reluctantly approaching the microphone upon occasion to proffer a few fey whispered attempts at a vocal.

Writers at the *NME* referred to them as Shoegazers because that's what they did – stared at their shoes making little effort to engage with their audience. I was working at *Melody Maker* at the time and, noticing that all these bands habitually turned up at each other's gigs around the Camden vicinity, I coined the term The Scene That Celebrates Itself – a clunky phrase I'm not ashamed to admit is nowhere near as pithy as Shoegazing and hence, doesn't deserve its longevity. But hey ho.

### IN PIECES

It was during this time that I came into contact with David Bowie who was peddling one of his least critically-admired incarnations as part of the gang he called Tin Machine. Inspired by a crazy desire to subjugate his superstar persona to the democracy of a no-frills, hard-working club band, Bowie was at a rather weird point in his career even for him. In short, it looked as if he could do with some help.

Now, knowing his reputation as a magpie, scarfing up other

people's ideas, sprinkling some genius dust on them and then successfully representing them as his own, I figured Dave might benefit from an earful of TSTCI so duly made him a cassette.

The tracklisting went something like Lush, Moose, Chapterhouse, Adorable, Slowdive, Jesus & Mary Chain, My Bloody Valentine, Telescopes, Ride – a veritable who's who of bands in the Scene and a line-up I felt sure would rekindle Dave's creative fires. Just goes to show how wrong can you be!

A few weeks after I sent him said tape, I received a very nicely wrapped package which contained a small broken-up jigsaw of Michelangelo's David. When the pieces were all put in place, there was

### 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...



a message handwritten on the back in, if I recall correctly, green ink, the gist of which went something like, 'Thanks for the lovely tape. Not really my cup of tea. Try this instead.' The 'this' was a cassette tape of *Different Trains*, an interminable modern classical piece by avant-garde composer Steve Reich performed by the dreaded Kronos Quartet. Shudder.

Anyway, I recount this tale only to

**'The tracks match anything Bowie achieved at his imaginative peak'**

highlight the fact that, no matter what people may say about Mr Bowie, it's my experience that, far from being an opportunist scavenger, his personal taste in music is highly refined

and individual. Any influence he might set out to absorb or any collaboration he might consider would not be done lightly. Let's take a quick look at a CV of

his collaborators – Brian Eno, Iggy Pop, Lou Reed, John Lennon, Mick Jagger, Freddie Mercury, Nile Rodgers. This is not the calibre of people whose numbers you just pluck from the phone book. Which is why Bowie's love of Arcade Fire makes them so remarkable.

### SOUNDS OF STYLE

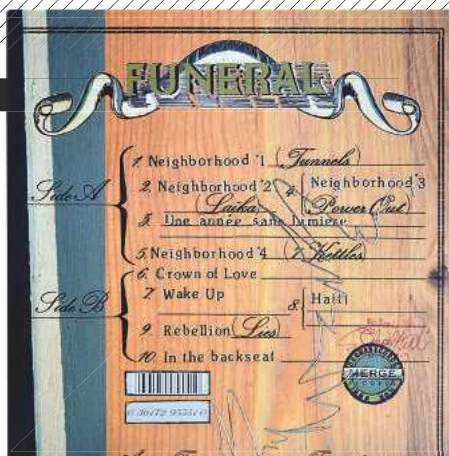
Dave loves the Fire. Loves them! Loves them so much he turned up to do backing vocals on the title track of their fourth LP, *Reflektor*, in 2013 – an expression of his admiration that was first made manifest on the 8th of September 2005 when he returned to the stage for the first and virtually last time since his on-tour German heart attack, as part of the Arcade Fire ensemble gathered to raise funds at a charitable New York bash called Fashion Rocks.

Record company shot of Arcade Fire from 2013 with husband and wife founding members Régine Chassagne and Win Butler standing front row



GUY AROCH





➔ Priced £14.75, the 180g vinyl reissue of Arcade Fire's *Funeral* on the Merge label is available to order online at [www.juno.co.uk](http://www.juno.co.uk)

He did a shaky 'Life On Mars' with just a piano accompaniment, then hit his stride with the Fire, doing his own 'Five Years' and their 'Wake Up', one of the many stand-out tracks from what is surely one of the greatest debut albums of all time, *Funeral*.

## OUT OF NOWHERE

Released a few months earlier, *Funeral* pretty much came out of nowhere, self-produced with astonishing confidence by a band few people outside of their chosen base in Montreal had ever heard of. They were centred around the creative core of singer/keyboard player and percussionist Régine Chassagne, her lanky singer/guitarist/songwriter husband Win Butler, and his guitarist brother Will, augmented by multi-instrumentalist Richard Parry, bassist Tim Kingsbury, and drummer Howard Bilerman – a bunch of students with a penchant for swapping instruments and putting on exhilarating stage shows.

Recording at their local Hotel2Tango, a 24-track analogue studio, they pieced together an album of stunning depth and breadth, so-named *Funeral* because several of the band members had suffered recent family bereavements. The album was a bit Goth, a bit indie, a bit exotic, heavily dramatic and, like similarly rare epoch-defining works, sounded at once wholly familiar and utterly fresh. It's best described as a kind of new widescreen urban folk.

The vast terrain of subjects covered was not so much out-of-the-ordinary as out of this world. Four of the ten tracks were titled 'Neighborhood' and numbered with adjoining parentheses – a fact that continues to evade reason but ladle on the intrigue. Win has let slip that the woozy accordion lament 'Neighborhood #2 (Laika)', which appears to be a song of encouragement to an explorer called Alexander, was actually inspired by the first being from earth to be sent into orbit. Laika, it seems, was a stray dog sent



into space by Russia on their Sputnik 2 in November 1957 to see whether there was any chance that we might survive weightlessness and other such stresses to be encountered during space travel. Sadly, Laika didn't make it home alive.

'Neighborhood #3 (Power Out)' is slightly less elliptical, inspired as it was by the 1998 ice storm which immobilised much of Canada and North America leaving millions without electricity for weeks, felling forests and TV masts.

## ON THE MONEY

The thoughts behind the other "Hoods", (Tunnels) and (Kettles) aren't quite so clear, the former about love and escape, the latter something to do with time. 'Haiti', however, is solid on the money, railing against Francois Duvalier aka Papa Doc's brutal Voodoo-driven dictatorship, which forced many of Regine's family to flee their native country while others were murdered by the dreaded Tonton Macoute during 1964's Jérémie massacres.

Then there's the aforementioned 'Wake Up', in equal parts bleak, terrifying and rabble-rousing, a cry for help and call to arms for a disenfranchised youth, and the equally galvanising 'Rebellion (Lies)' (they do like a bracket!), its Siamese twin. Both would easily make the top 100 of any poll aggregating the best indie tracks of the last ten years; literary, dream/nightmare

like, anthemic, superb and pretty much the match of anything Mr Bowie achieved at his own imaginative peak.

Arcade Fire followed *Funeral* with *Neon Bible* in 2007, *The Suburbs* (2010) and the double *Reflektor* (2013). All remain extremely worthwhile additions to any cultured collection but none is quite so perfectly formed in tone and atmosphere as the band's debut.

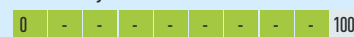
'Fantastic', is how Mr Bowie, a man of few public words over the past decade, chose to describe them at the time. And who on earth are we to disagree? ☺

## RE-RELEASE VERDICT

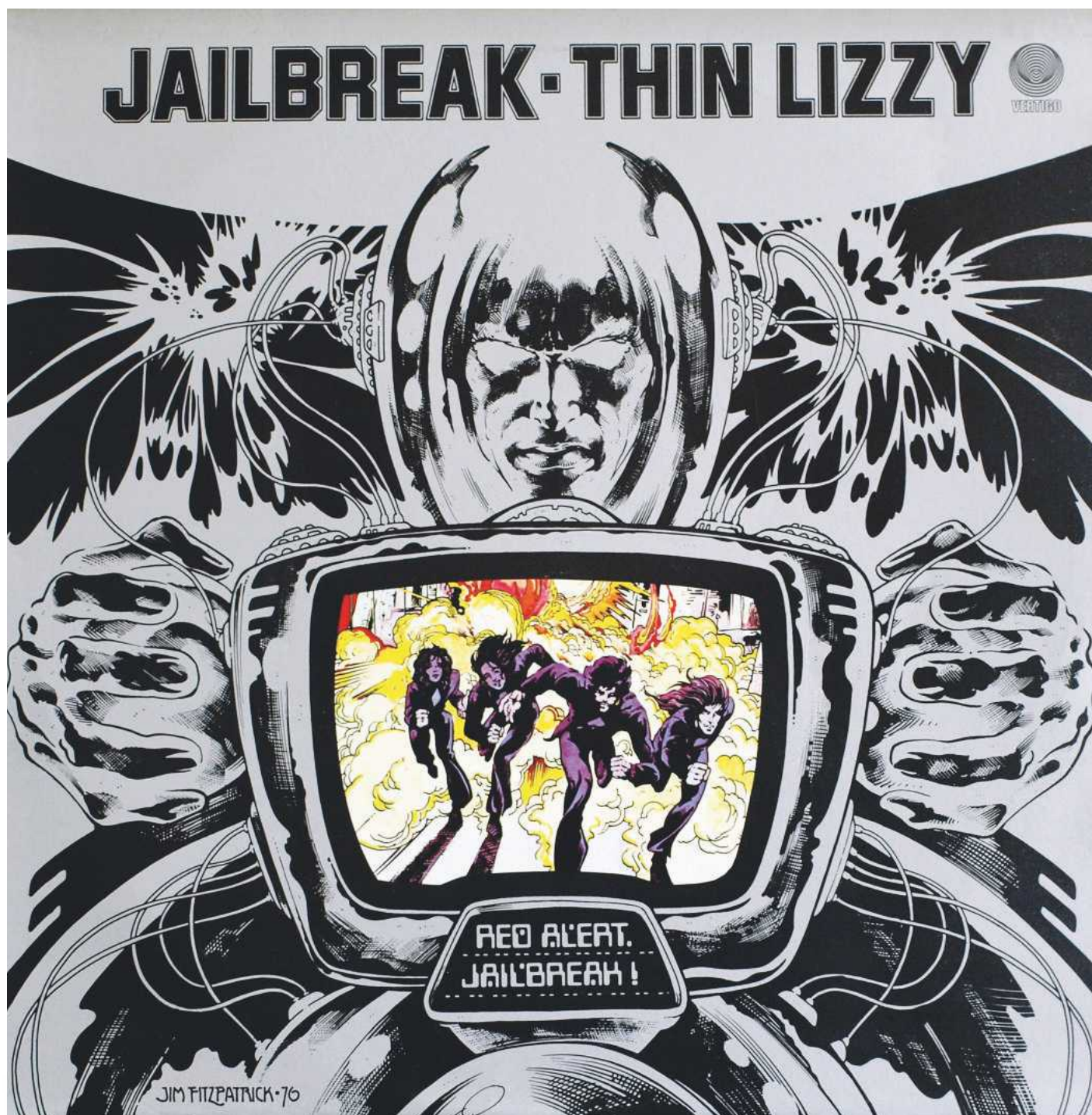
Released on the US indie label Merge Records with the lacquer cut at the Golden Mastering facility in Ventura, California, this 180g reissue comes in an embossed gatefold sleeve and includes a four-page leaflet with liner notes plus a coupon to download a digital copy of the album:

Sound quality was excellent given that for the most part there are scores of instruments fighting for space in the speakers and that the recording budget was low. Our copy was of high quality, flat and noise-free too. Best played loud. HFN

Sound Quality: 90%







# Thin Lizzy *Jailbreak*

By 1974 the group were considered has-beens, their one hit single dismissed as a novelty record and their label later threatening to drop the band should their next album not hit the spot commercially. With two new guitarists on board, it was time to play tough...

Words: **Mike Barnes**



**B**ack in 1974, Thin Lizzy comprised just two members: bass guitarist Phil Lynott and drummer Brian Downey. The band's take on the traditional Irish ballad 'Whiskey In The Jar' – a song Lynott had played in Dublin folk clubs back in his younger days – had been released the previous year without the group being consulted and had reached No 6 in the UK singles charts. Then, in late 1973, guitarist Eric Bell left due to health problems brought on by the stresses of touring.

A number of guitarists had since come and gone. These included Gary Moore from the Irish hard rock band Skid Row. His tenure in that group had overlapped with Lynott who had been Skid Row's singer from 1967 to '69, but although Moore would later join Thin Lizzy, his stint was only temporary.

### IN A STATE OF FLUX

The situation around the band's very existence was in flux as Lynott had received an offer from Deep Purple's Ritchie Blackmore, who was on the verge of forming a new group with drummer Ian Paice. But despite rehearsals taking place, that idea proved to be short-lived.

Things happened fast in those days and by 1974 Thin Lizzy had already been in existence for five years. To those of a jaundiced disposition, they were already considered to be one-hit-wonder has-beens. Worse still, although 'Whiskey In The Jar' is now considered a rock classic, at the time it was thought of in some quarters as a novelty record. Lynott had even thought about disassociating himself from the group's past by



HARRY POTTS



↑ Live at The Manchester Apollo, 1983

↗ The band in early '74 (l-r): Brian Downey, Phil Lynott, Gary Moore

↗ German and Dutch singles with different B-sides

↙ Inner sleeve and the Vertigo label

changing their name and starting completely afresh.

Instead, the group auditioned a number of guitarists – Lynott was now keen to recruit two lead guitarists into the line-up – and the successful applicants were a classically trained 18-year-old Scot, Brian Robertson, who was already a relative veteran of the Glasgow scene, having played since his early teens, and Californian Scott Gorham. Gorham had left for England initially hoping to join Supertramp – for whom his brother-in-law Bob Siebenberg played drums – but that hadn't worked out and he was now playing pub gigs while waiting for his visa to expire.

Robertson knew all about the band in advance, while Gorham had no idea about them before the auditions, and the new twin guitar line-up showcased two very different styles and approaches. Robertson was technically superior and, in his own words, more 'orthodox', whereas Gorham



'Lynott had thought about changing the band's name, starting afresh'

was a more intuitive player. This contrast was also their strength and, crucially, the pair meshed together in what would become the group's trademark: their unison harmony lines.

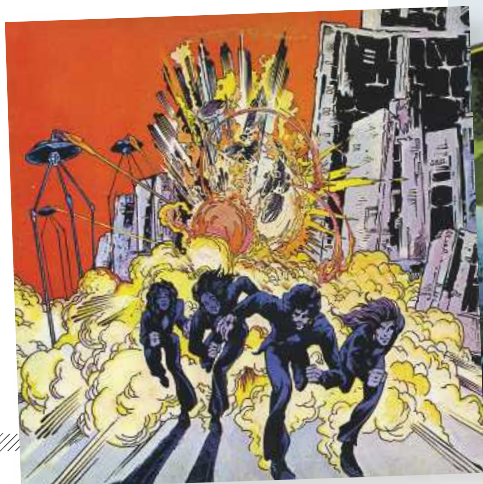
Gorham has admitted that in hard rock this kind of harmonising was unusual, but that it had essentially been done many times before by

the likes of The Eagles, The Allman Brothers and going back as far as Les Paul and Mary Ford. Lynott was reputedly a fan of Andy Powell

and Ted Turner, the high-profile dual lead guitarists in Wishbone Ash.

### OUTLAWS 'N' OUTSIDERS

The first two albums on which this line-up played were *Nightlife* (1974) and *Fighting* (1975) and on these Lynott began to develop fully his romanticised, almost mythological tales of outlaws and outsiders, which became inextricably linked with his own persona – that of the loveable rogue with the rock 'n' roll lifestyle. This tendency towards romanticisation included accounts





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## VINYL ICONS

### PRODUCTION NOTES

*Jailbreak* was set to be recorded at The Who's Ramport Studio in London's Battersea. Scott Gorham's brother-in-law, Supertramp drummer Bob Siebenberg, directed them towards John Alcock for production duties. Alcock was not a name producer – in fact he was relatively inexperienced – but he'd done uncredited work for The Who and for Alice Cooper, and had helped set up the Ramport studio.

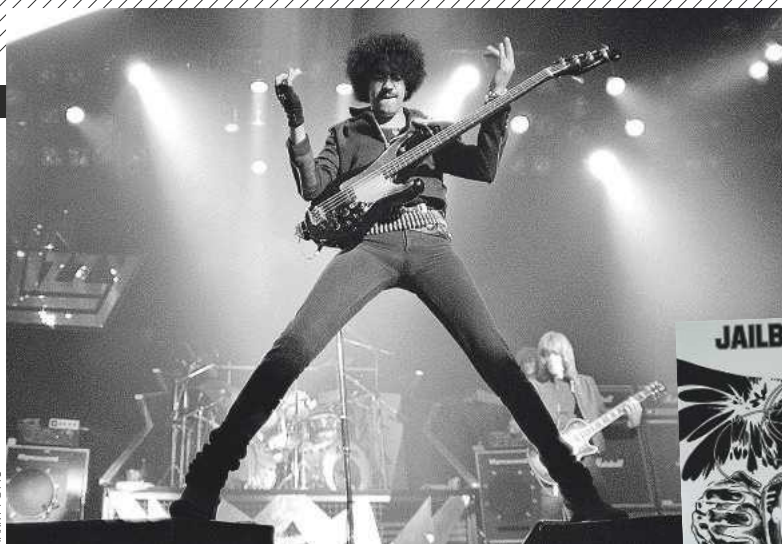
Alcock proved to be both an inspired choice and also something of a taskmaster. The group had demoed 13 songs of which they planned to record ten. He went to see them play live at Bracknell and to their rehearsal studios in Buckinghamshire, but begged to differ on the quality of the material that he heard. He actually put back the recording dates of *Jailbreak* by a month in order that the songs should be worked on further and restructured. In the end, the album comprised nine songs.

The group respected his views, but in his desire to tighten up their inherent looseness, some thought that he had made the music too rigid. He also suggested bringing in extra musicians to help boost the album's commercial appeal, with Lynott's approval. Tim Hinkley plays uncredited keyboards on the soul-infused 'Running Back', which also features uncredited sax.

Lynott particularly liked the track and compared it to work by one of his main influences, Van Morrison. Robertson had originally been assigned to play piano and bottleneck guitar, which would have given the song more of a blues feel, and was less than enamoured by Hinkley's simplistic keyboard hook. Later the guitarist commented harshly: 'I liked the song but I didn't like the way we did it. It was real Bay City Rollerish s\*\*t.'

As it turned out, 'Running Back' was never released as an A-side. Before recording, the group's manager Chris O'Donnell had rescued a song from the chuck-out pile called 'GI Joe' and suggested that the band rework it. Lynott added new lyrics and it morphed into what would become Thin Lizzy's signature tune, and their second UK Top Ten Hit, 'The Boys Are Back In Town'.

HARRY POTTS



← Lynott astride the stage monitors in 1983

of his own life story. He had claimed his father was a Brazilian sea captain whereas in fact he was Cecil Parris, originally from Guyana, who Lynott's mother had met in Birmingham.

Lynott moved to Dublin aged four and his youth as one of the city's few black children was a time he apparently enjoyed. It couldn't all have been easy, though, and according to friends the tall youth could certainly handle himself.

### TOUGHER SOUND

*Fighting* reflected the band's tougher sound, although the group look rather unconvincing pictured as thugs brandishing weapons on the album's cover, an image Gorham was later to dismiss as 'both punky and dumb' with Robertson reckoning it was one of the worst album covers he'd ever seen.

But the band had taken a collective step forward on *Fighting* and now, combined with Lynott's rich voice and fast developing songwriting, it felt that they were in grasping distance of it all coming together in a big way.

Behind the scenes it was spelled out in no uncertain terms that this improvement with each album had to continue. Thin Lizzy had signed a three-album deal with Vertigo and were told that if this third album didn't show an improvement in sales, it would be the end of the band's contract with Vertigo and probably the end of the band.

Lynott was the main songwriter, but as on *Fighting*, he welcomed creative input from the other

group members. He would often come into rehearsals with his lyric book, a bass line and a vocal melody and the guitarists would then suggest ideas. Both have a compositional credit as does drummer Downey, who contributed to one of the album's highlights, the yearning 'Cowboy Song'.

Compositionally, one of the strengths of *Jailbreak* is the space in the music. Phil Lynott has admitted to being influenced by songs like The Kinks' 'You Really Got Me' and its combination of lean riffing and a fully developed vocal melody. This influence can be clearly discerned on

the album's title track with its spare, punched-out chords.

Even back in 1976, Lynott was fed up that his lyrical articulacy and slice-of-life street poetry had him rather crassly touted as something of a 'black Bruce Springsteen', an artist who had suddenly struck big →

'Lynott was fed up being touted as the "black Bruce Springsteen"'



↑ Original poster from 1974 advertises both the vinyl and cassette versions of the album

← Thin Lizzy's Phil Lynott and Scott Gorham play live at the Sophia Gardens in Cardiff in 1981



ANDREW KING

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# audioemotion





# Alternate Format Discography



HARRY POTTS

➔ Lynott photographed in the early '80s. He died in 1986

with 1975's *Born To Run*. There are some similarities in approach, but stronger are echoes of Bob Dylan and Van Morrison not to mention the mix of poetic compassion and braggadocio found in the lyrics of Jimi Hendrix – another of Lynott's musical heroes.

Apart from a few transatlantic phrases peppering 'The Boys Are Back In Town', the album is based on universal themes such as Lynott's idea of the Overmaster – or 'The Man' – the oppressor of youth and denier of freedom on the Hendrix-inspired 'Warrior'. Meanwhile, with its sci-fi battle cries set to folk-infused guitar figures, 'Emerald' is more specifically Celtic.

## UNTIMELY DEATHS

Lynott was thoughtful about the 'Warrior' theme. On the one hand it represented the potential for escape yet it also referenced the untimely deaths of major rock 'n' roll figures like Duane Allman and Hendrix.

'They didn't sit at home reading about it,' said Lynott. 'They gave up everything and lived life to the full when they had it.' But he added a disclaimer and a warning: 'I wouldn't want to influence kids into running out and killing themselves on smack.' This advice took a horribly ironic turn when, in 1986 aged only 36, Lynott died of pneumonia as a result of heroin addiction.

*Jailbreak* was without doubt the powerful yet melodic statement that fans, band, management and record label accountants had all been waiting for. It charted in the UK at No 10 and in the US at No 18, and rocketed the band to stardom. As Scott Gorham says, '*Jailbreak* totally changed the band's life... it was like overnight success after all the cr\*p we had gone through before.' ☺



## ORIGINAL LP

The initial LP version of *Jailbreak* was released on Vertigo in the UK and Ireland [9102 008] in a gatefold cover in black with silver metallic ink. The band – only three of whom are visible – are pictured through a monitor screen cut out of the sleeve which is held by a sinister-looking android figure. They band members are depicted in comic-book style as fugitives, fleeing from fire, explosions and general mayhem.

Open up the sleeve and in Jim Fitzpatrick's painting we see all four figures being targeted by towering *War Of The Worlds*-style robots with telescopic legs, firing at them and laying waste to the entire neighbourhood. The artwork relates to Lynott's idea of the Overmaster, a symbol of persecuting authority.

Versions released in Scandinavia and Canada under the same catalogue number came in similarly lavish packaging, but in most territories the album came in a single sleeve, including the US version on Mercury with the catalogue number SRM-1-1081.

Some early vinyl rarities include the limited gatefold sleeve release in Zimbabwe on Polydor [STAR 5097] and the Japanese version in a single sleeve with its Obi strip and liner notes in Japanese [Vertigo RJ-7090].

## CASSETTE AND 8-TRACK CARTRIDGE

*Jailbreak* was released on 8-track Cartridge in the US on Mercury [MC8-1-1081] and in Canada on Vertigo [7739.031]. In the UK and Netherlands the cassette version was released on Vertigo [7138 075] and in Canada and the US on Vertigo [MCR411081].

In 1983 the cassette was reissued as part of the Vertigo Priceless series in the UK [PRIMC

50/ 7138 075]. The last cassette version arrived unusually late in the day, in the US on Mercury in 1990 [822 785-4 M-1].

## VINYL REISSUES

With Vertigo's Priceless UK cassette reissue in 1983 came a vinyl reissue [PRICE 50], notable for the fact that the positions of 'Warriors' and 'Fight Or Fall' are switched. This is indicated on the record label but not on the rear sleeve.

In 1987 the UK album was reissued in the Netherlands and Greece with its successor, 1976's *Johnny The Fox*, as a double album entitled *2 Great Pop Classics* [Vertigo 830 191-1].



## FIRST CD RELEASE

The album first appeared on CD in Japan in 1989 with a characteristic obi strip, which proclaimed 'Buurn! Rock Legends CD'. Now all four group members can be seen in the monitor screen. The label was Vertigo [28PD-546]. In 1990 it was released on CD in the US, UK and European territories on Vertigo [822 785-2].

The first remastered CD arrived in 1996 in the UK and Europe [pictured above] in a jewel case with an eight-page booklet on Vertigo [532 294-2]. A remastered Japanese version then followed as part of the Vintage Rock Paper Sleeve Collection on Mercury in 2002 [UICY-9232].

In 2011 a deluxe remastered double-CD set was released in



the UK on Mercury/Universal [332052] with a second CD of bonus tracks [pictured below left]. These comprised two remixes of 'The Boys Are Back In Town' (one with different lyrics) and one of 'Jailbreak' and 'Emerald'; 1976 BBC session versions of 'Jailbreak', 'Emerald', 'Cowboy Song' and 'Warriors'; an extended rough mix of 'Fight Or Fall'; an early live version of 'Cowboy Song' called 'Derby Blues'; and a previously unreleased song, 'Blues Boy'.

The package came in fold-out digipak set with a picture booklet containing new sleeve notes, rare photos and memorabilia. This remastering has been contested, with claims made that the version is actually the 1996 remastering and that further recent attempts to remaster were abandoned shortly before this release.

The US version, also in a Digipak, was released on Mercury/Universal [B0015199-02]. The Japanese version came in a CD-sized gatefold paper sleeve album replica, with obi-strip, printed inner-sleeve and two sleeve note inserts. It was released on Mercury [UICY-25095].

There was also an SHH-CD release of this double CD set in Japan in 2011 [pictured top], this time on Vertigo [UICY-75031/2].

## 180G VINYL REISSUES

In 2008 Vertigo released a remastered LP on 180g vinyl [600753103760] in its Back To Black series, which started in 2008 to celebrate the 60th Anniversary of 'long-playing vinyl'.

In 2011, Back On Black, a subsidiary of Let Them Eat vinyl, released a remastered 180g LP in a gatefold sleeve. This was initially a limited edition of 2000 copies and came in either black or marble grey vinyl [RCV031LP]. It was again reissued on Back On Black in 2014, via Mercury [535 3 563].

# Carnegie Hall, *New York*

One of the most prestigious venues in the world, this concert hall in Manhattan has played host to such luminaries as The Beatles, Martin Luther King and Maria Callas. **Steve Sutherland** takes you to the heart of the live music experience at Carnegie Hall

A little over a decade ago, the comic actor David Walliams was interviewing Liam Gallagher's brother Noel for the now-defunct *Observer Music Monthly* and Noel told him this story about how the Gallagher bros happened to be at a Spinal Tap show taking place for charity at the famous Carnegie Hall in New York.

According to Noel, before the mighty Tap appeared to render red hot rockin' versions of 'Break Like The Wind', 'Big Bottom' and, of course, their prog epic 'Stonehenge', band members Michael McKern (aka David St Hubbins), Christopher Guest (aka Nigel Tufnel) and Harry Shearer (aka Derek Smalls) took to the stage in the guise of The Folkmen, the woolly-jumpered, finger-in-the-ear outfit they had portrayed in the movie *A Mighty Wind*.

At which point Liam, a huge fan of the 'Tap, threw a mighty wobbler and stormed out. Seems up until that moment he'd believed Spinal Tap to be a real band, had never suspected they were a spoof and, says his brother, couldn't handle it.

If you think that makes Liam Gallagher weird, then he's not as weird as the guy who built the place we're here to celebrate. Andrew



➔ The venue today at 881 Seventh Avenue in Midtown Manhattan New York and (inset) the hall's exterior lit up at night

➔ Still from *The Kid* with Charlie Chaplin and child actor Jackie Coogan. The movie was Chaplin's first full-length work and premiered at Carnegie Hall in 1921, with full orchestra

Carnegie was born in Dunfermline, Scotland, in 1835, and emigrated aged 13 to America with his impoverished parents whereupon he made his fortune in railroads, oil, bonds and steel. By 1901 he was worth over \$500 million (that would be about \$300 billion by today's reckoning), 90% of which he proceeded to give away to charities and other worthy causes!

## LACK OF VENUES

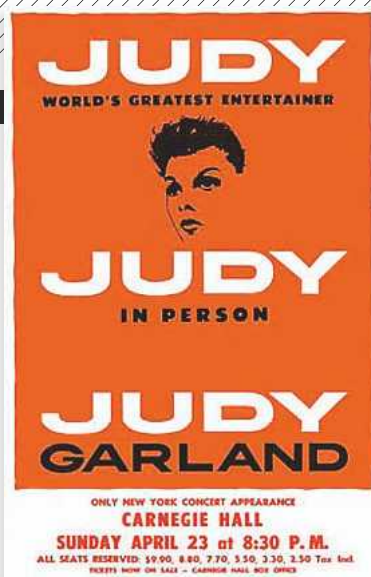
We come across Mr Carnegie in 1887, cruising back to Scotland on his honeymoon. Here he falls in with a certain Mr Walter Damrosch, a conductor with the Oratorio Society of New York who is bemoaning the lack of venues that are available in support of his business.

His tale piques Andrew's interest and within two years he's instigated the Music Hall Company Of New York, purchased a large plot of land between 56th and 57th Streets, and hired architect William Burnet Tuthill to create a Music Hall with the emphasis on acoustic perfection over decorative finery.

The Hall opens on the 5th of May 1891 with Tchaikovsky conducting his 'Marche Solennelle', an event which sets the scene for numerous prestigious classical performances and premieres over the next century or so, including appearances by Bartók, Dvořák, Strauss, Prokofiev, Stravinsky, Mahler (whose performance with the Philharmonic on the 21st of February 1911 turned out to be the last before his death), Rachmaninov (who took the Music Hall stage on almost 100 occasions), and Gershwin, whose *Rhapsody In Blue*, of course, became a famous hymn to the city of Gotham.

In 1893, the Music Hall took Carnegie's name and, classical highlights aside, the venue played host to a rich potpourri of cultural significance. For instance, in 1901 the 26-year-old Winston Churchill arrived to deliver a lecture on the





Boer War, Enrico Caruso raised the rafters in 1918, Charlie Chaplin held the premiere of his first full-length silent movie, *The Kid*, here in 1921, complete with full orchestral accompaniment while, six years later, maestro violinist Yehudi Menuhin made his Carnegie debut at just 11 years old.

## COSMIC INSTRUMENT

Other notable events included a gentleman called George Antheil premiering his *Ballet Mechanique* in 1927, the piece including anvils, airplane propellers and sirens amongst the pianos and percussion. Leon Theramin introduced his new cosmic instrument to the world with his *Music From The Ether* in 1928, Paul Robeson introduced the sultry sound of the South in 1929, Albert Einstein and Ernest Hemingway delivered speeches in 1934 and '37 respectively, jazz king Benny Goodman performed with one of the first racially integrated orchestras in 1938 and, in the same year, archivist John Hammond presented 'From Spirituals To Swing – An Evening Of American Negro Music', an extravaganza which boasted among its 40-plus performers Sister Rosetta Tharpe, Count Basie and Big Joe Turner.

Duke Ellington debuted his orchestra at the Hall in 1943, a show which was such a success that it was repeated annually with the maestro usually delivering a new work each year. With jazz now happily ensconced alongside classical, it was only a matter of time before the Hall recognised the drawing

Poster for Judy Garland's concert at the venue in 1961. The live recording was rewarded with five Grammys

In 1943, Duke Ellington made his first appearance with his orchestra

Six songs from Bob Dylan's 1963 set at the hall were released by Columbia in 2005

Bessie Smith on a 1938 poster advertising 'From Spirituals to Swing'

Blues singer Etta James



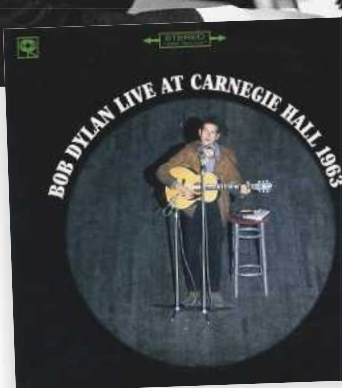
power and cultural significance of the latest musical force, rock 'n' roll, which arrived in the rather portly shape of Bill Haley & His Comets in May 1955.

Bo Diddley and Etta James followed soon after in the Top Ten Revue, while, on the folk front, The Weavers – the inspiration for the aforementioned 'Tapesque Folkmen' – ended three years of being blacklisted by the McCarthy administration with a triumphant show on Christmas eve 1955.

Enter the '60s and the Hall hosted an even more eclectic bunch including a young and feisty Bob Dylan, an emotional Judy Garland (a debut

recorded live that rendered no fewer than five Grammys) and doomed country legend Patsy Cline (1961). The Man In Black Johnny Cash followed in '62, then came The Beatles on the 12th of February 1964.

The Fabs had made their massive American breakthrough just three days earlier with their legendary appearance on *The Ed Sullivan Show* and they travelled by train from Washington to be greeted by 10,000 screaming fans at Penn Station. Smuggled to the Plaza Hotel under police escort, they were then



"It wasn't a rock show, it was a circus where we were in cages"

bundled out through the kitchens to avoid the crowd outside, arriving at the Hall pretty much unscathed to romp through two 12-song, 34-minute performances – the first at 7.45, the second at

11.15. Numbers included all their famous crowd-pleasers up until that point – 'From Me To You', 'I Saw Her Standing There', 'All My Loving', 'Please

Please Me', 'She Loves You' and 'I Want To Hold Your Hand'.

But John Lennon didn't remember the occasion too fondly: 'Carnegie Hall was terrible! The acoustics were terrible and they had all these people sitting on the stage with us and it was just like Rockefeller's children backstage and it all got out of hand. It wasn't a rock show, it was a sort of circus where we were in cages. We were being pawed and talked at and met and touched, backstage and onstage. We were just like animals.'

Four months later, on the 20th of June, The Rolling Stones followed suit, playing two sold-out shows full of cover versions such as 'Not Fade



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## CLASSIC VENUES

CERED MANKOWITZ/ARCO RECORDS



Away', 'I Just Want To Make Love To You' and the Beatles-penned 'I Wanna Be Your Man'.

A few months later, in 1965, an up-and-coming performance artist called Yoko Ono performed her Cut Piece in the Recital Hall, encouraging the audience to scissor off her paper dress while the event was filmed by the Maysles brothers who would go on to document The Stones at Altamont in the movie *Gimme Shelter*.

The 1970s at the Hall were equally ace: Jethro Tull, The Beach Boys, Neil Young, Frank Zappa, Led Zeppelin, Free, The Allman Brothers and T Rex just a few of the acts worthy of mention. Pink Floyd brought their mega-selling *Dark Side Of The Moon* in 1972, The Kinks recorded their Carnegie shows of the same year to make up part of their *Everybody's In Showbiz* LP, while The Doors did one of their first shows sans the recently departed Jim Morrison in November 1971.



**"In 1972 Bowie brought his Ziggy concept. Tickets were \$6"**

David Bowie brought his Ziggy Stardust concept to the States with a sold-out Carnegie show on the 28th of September 1972.

Tickets were \$6 each, with scalpers getting five times that from ticketless fans huddled outside under the marquee banner 'Fall In Love With David Bowie'.

The star-studded audience, which included Andy Warhol and The New York Dolls, were treated to an intro of the 'Theme From Clockwork Orange', 'Ziggy', 'Starman' and a cover of The Velvet Underground's

'Waiting For The Man' (which, a flu-ridden Bowie quipped, was 'like bringing coals to Newcastle').

The affair was recorded for an album that, for one reason or another, never actually saw the light of day.

### OPERA GREATS

Of course, as you'd expect with a venue as prestigious as Carnegie Hall, it wasn't all wall-to-wall rock 'n' rollers. Opera greats were also showcased: Pavarotti made his debut in '73 and a year later Maria Callas bid her last farewell. Liza Minelli began a fruitful relationship with the Hall in '79, performing ten sold-out shows, a record she held until her return in '87 when she did a three-week sold-out run.

Other luminaries who stand out in a list literally too long to mention include Frank Sinatra and Willie Nelson who contributed to a celebration of Irving Berlin's 100th



birthday in 1988, tragic comedian Robin Williams who took the stage in 2002, J K Rowling who did a reading from her *Harry Potter And The Deathly Hollows* in 2007, and something called the Youtube Symphony Orchestra, which featured an ensemble assembled from audition videos presenting the one and only performance of something called the 'Internet Symphony No 1 Eroica' by composer Tan Dun.

### SPIRIT OF FREEDOM

But of all the incredible occasions hosted by this monumental venue, perhaps the most memorable was that of Martin Luther King on the 23rd of February 1968.

Speaking at a benefit marking the 100th birthday of W E B Dubois, the first Afro-American to earn a doctorate from Harvard and instigator of the National Association For The Advancement Of Coloured People (NAACP), Dr King said: 'He has left us but he hasn't died. The spirit of freedom is not buried in the grave of the valiant.'

Just six weeks later King was assassinated in Memphis; the words he uttered at Carnegie Hall a fitting epitaph for a great, great man. ☺



↑ Poster for the farewell recital of Maria Callas

← The Stones mid-1960s

← Poster for The Beatles' 1964 appearance

← The second disc of The Kinks' *Everybody's In Showbiz* was recorded at the venue

← The Doors in 1971 – (l-r) John Densmore, Robby Krieger, Ray Manzarek

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## ALBUM REVIEWS: VINYL



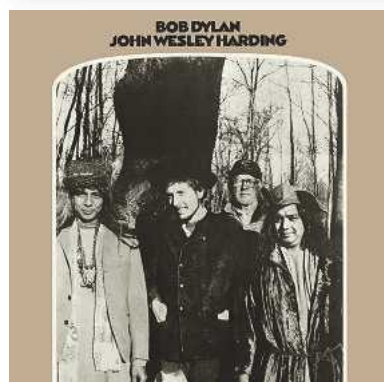
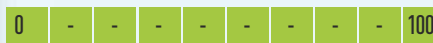
### MADELINE BELL

Blessed With Your Love

STS Records 6111144 (180g vinyl)

Ms Bell is one of those amazing soul singers, like Darlene Love, who deserved but never achieved superstar status. Her CV is rich, backing everybody from Elton John to the Dave Clark Five to Giorgio Moroder, but her solo releases are like diamond mines. This one, for audiophile label STS, adds spectacular sound quality to stellar performances, the singer showing superb taste and eclecticism in her choice of material to cover, alongside some fine originals. Her Beach Boys medley includes a heart-stopping 'God Only Knows' and she revisits her past with a fresh take on Blue Mink's 'Good Morning Freedom'. The opener will dazzle creatures of habit: a stunning account of 'The Look Of Love'. **KK**

Sound Quality: 93%



### BOB DYLAN

John Wesley Harding

Mobile Fidelity MFSL 2-423 (two 45rpm LPs)

What a grand time this is for Dylan fans, with his tour underway, a new addition to his official bootleg series and MoFi continuing its run of 45rpm LPs. This album from 1967 kicked off his period of releases containing undiluted country music and the backing from Nashville heavyweights. The arrangements are lean, with Dylan fronting Kenny Buttrey on drums and Charles McCoy on bass, though pedal steel maven Pete Drake graced two tracks. Less blatantly a C&W affair than *Nashville Skyline* (1969), it contained one of Dylan's most magical numbers: 'All Along The Watchtower'. And we know what one Jimi Hendrix did with that. Do not miss this. **KK**

Sound Quality: 92%

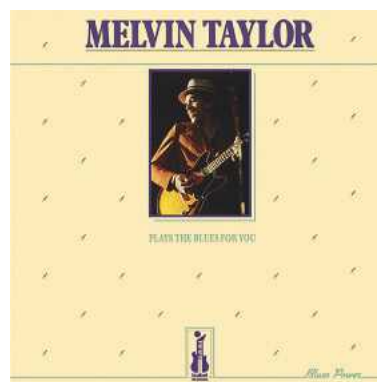


### THE FIVE ROYALES

Sundazed LP5494 (mono; 180g vinyl)

Like buses, we've waited years for this legendary vocal group's 1950s material to reappear on fresh pressings. After the 'best of' collection which we reviewed in June last year – *The Harbingers Of Soul* [History Of Soul HOS1] – here is the 1959 LP release on King Records, which contained the A and B sides of a cluster of singles from 1958-9 and album-only tracks. As mentioned in June, the group finally received the honour of being inducted into the Rock 'n' Roll Hall of Fame in 2015, receiving the Early Influence Award, so it's likely that more might follow. This is a wonderful amalgam of doo wop, gospel and jump blues, punctuated by the pioneering sound of Lowman Pauling's guitar. **KK**

Sound Quality: 88%



### MELVIN TAYLOR

Plays The Blues For You

Pure Pleasure PPANO20 (180g vinyl)

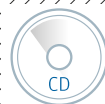
Wonderful, polished stuff: mid-1980s blues, that fecund period after the revival of the 1960s. This release is an exemplar of the era that gave us Robert Cray and Stevie Ray Vaughan when it had settled into a sophisticated groove, embracing the urbane and the gutbucket, the coarse and the smooth, in a single set. Taylor emerged in that period, wise beyond his years on this, his second LP, recorded at the age of 25 but with Taylor sounding like veteran Albert King. This finds him backed by Lucky Peterson on keyboards – then, too, a hot, young player. It's the super-sharp guitar playing that lifts this above the norm, with Taylor clearly a fan of the jazz greats. **KK**

Sound Quality: 89%





## AUDIOPHILE: DIGITAL



COMPACT DISC



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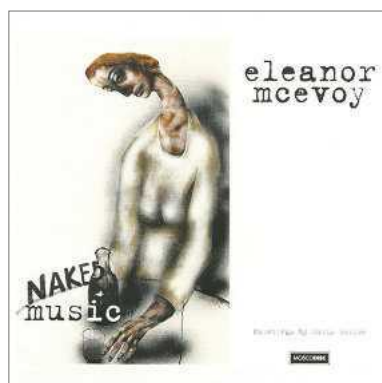
BLU-RAY



VINYL



DOWNLOAD



### ELEANOR McEVoy

Naked Music

Moscodisc MSCD4014

A no-brainer: take a singer adored by audiophiles for all the right reasons – great music *and* great recordings – and an innately philo-audiophilic form: ‘unplugged’. Well, not quite unplugged in the non-electric sense, so much as unprocessed and unaccompanied. This is strictly McEvoy and electric piano, acoustic or electric guitars, tapping on an acoustic guitar or singing *a cappella*, with all but one of the songs self- or co-written with Lloyd Cole or Rodney Crowell. ‘The DJ’ – in *a cappella* – is a track that will make any hi-fi sound incredible. A display of emotion and intimacy as naked as the title suggests, this CD happens to sound astounding, too. KK

Sound Quality: 93%



### ALLMAN BROTHERS BAND

5 Classic Albums

Mercury Universal 00753 59223 (five discs)

Purists will love this case of mild ‘backlash’ against the flood of expanded editions. This bargain set contains the *The Allman Brothers Band*, *Idlewild South*, *Brothers And Sisters*, *At Fillmore East* and *Eat A Peach* in card sleeves – no gatefolds, alas, but otherwise as they were originally issued (bar ‘*Peach*’, which is Disc 1 only): no bonus tracks to redefine the albums. It raises a point: should we not respect the original track listings as definitive, with extras as distractions? As a lifelong fan, I hope it keeps the memory of the early Allmans thriving. This is the Duane Allman/Berry Oakley era, containing some of the best swamp rock/southern blues ever. KK

Sound Quality: 86%



### BOB DYLAN

Bob Dylan

Mobile Fidelity UDSACD2122

A recent BBC Four programme about cover versions of Dylan songs, this year’s live tour, the release of the 12th volume in his *Bootleg* series: who would have foreseen this 53 years ago when his low-key, eponymous debut appeared? Of course, it’s impossible to banish hindsight, so this may seem at first – *if* you can disregard his stature – to be a pedestrian, acoustic folk album of the era. Here, in clean-as-a-whistle stereo, it astonishes, because Dylan’s reinterpreting of standards – especially ‘House Of The Risin’ Sun’ – belie his age of then 21. This album offers few clues to his nascent song-writing prowess, but it is no mere artefact: it’s chilling. KK

Sound Quality: 92%



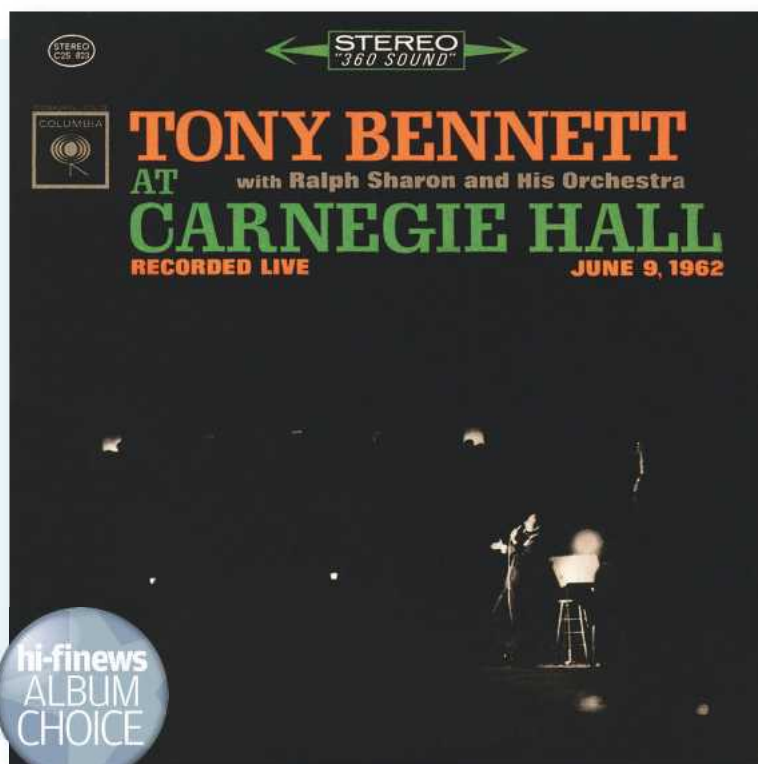
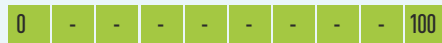
### TONY BENNETT

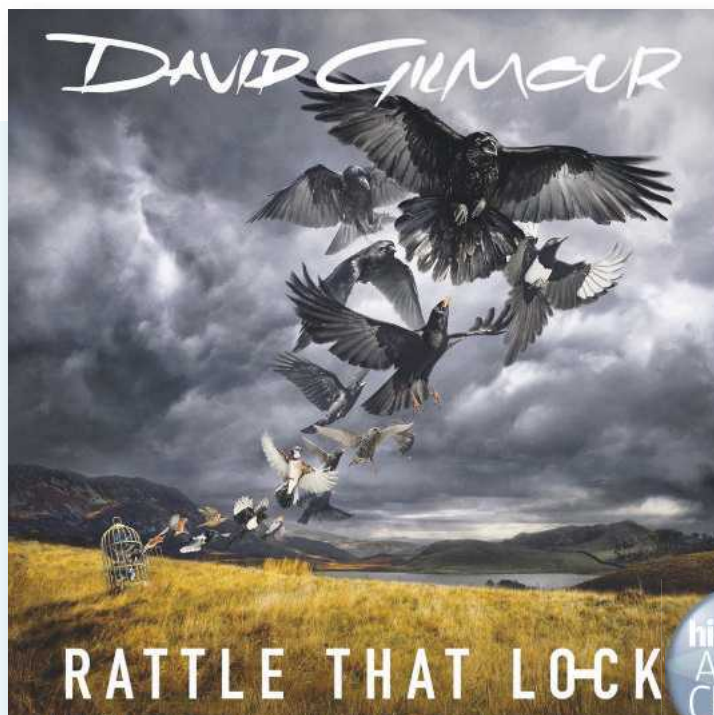
At Carnegie Hall

Analogue Productions CAPP 823 SA

Columbia recordings of this period are audiophile nectar, but this live set from the 9th of June 1962 transcends the norm by so wide a margin that it ought to be a demo standard. Yet that would be to disrespect its real worth: the music. Bennett’s performance is so heartfelt, so joyous, so suave, that you’ll wish you were there. It’s enough to be thankful that you can own it for less than a bottle of Le Serre Nuove. Twenty-eight magnificent songs, including his signature ode to San Francisco, all delivered with utter panache and perfect accompaniment: you’ll jump when you hear Candido’s congas-and-bongs solo in ‘Ol’ Man River’. My father always said that Tony Bennett could out-sing Sinatra. Here’s proof. KK

Sound Quality: 94%





### DAVID GILMOUR

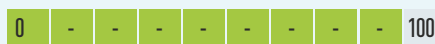
Rattle That Lock (96kHz/24-bit, FLAC)

[www.hiresaudio.com](http://www.hiresaudio.com); Columbia 88875123262

Sounding much more like a Pink Floyd album than last year's 'Endless Album' of cutting-room sweepings [Endless River; see HFN Apr '15], David Gilmour's first solo outing for almost a decade has all the familiar traits and musical clues to keep the faithful more than happy. There's the soaring guitar, and little things like the title track fading out into steam-hammer-like industrial sounds. Similarly, the track 'Faces Of Stone' might well have come from any Floyd album you care to mention.

And Mrs Gilmour, Polly Samson, can write perfectly Floydesque lyrics! With exemplary production and sound, and a guest roster encompassing David Crosby and Graham Nash, Robert Wyatt and Jools Holland, this is just what you might expect from David Gilmour as he approaches the ripe age of 70 – although some might suggest that's both its greatest strength and its major weakness. **AE**

Sound Quality: 85%



### JS BACH

Harpsichord Concertos, BWV1052-1058

Andreas Staier/Freiburg Baroque Orchestra (96kHz/24-bit & 16-bit, FLAC)

[www.ecclassical.com](http://www.ecclassical.com); Harmonia Mundi HMC 902181.82

For these 2013 Freiburg Ensemblehaus recordings of the seven keyboard concertos with strings – BWV1057 more familiar as the Fourth *Brandenburg*, BWV1054 and 1058 derived from violin concertos – Staier has chosen a modern copy of a 1734 Hass instrument. We also hear a harpsichord continuo in BWV1055/58, and the two recorders in the transcribed *Brandenburg*, which Bach retained – possibly too forwardly balanced here. Staier's rippling fingerwork will make you smile, and these players have sharply differentiated one concerto from another. Possibly in the great D-minor you'll find things a little overdone, so you may prefer the more simply expressed version by the Retrospect Ensemble on Linn CKD 410 [HFN Feb '13] – 192kHz/24-bit option too. **CB**

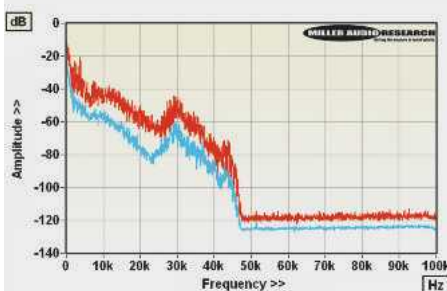
Sound Quality: 85%



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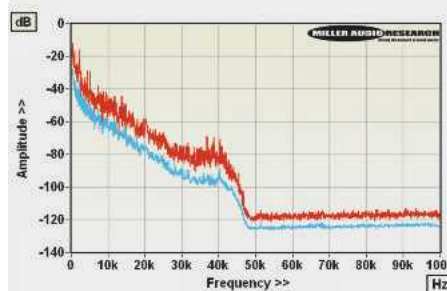
Following our Investigation feature [HFN, Jun '11] where we examined the claimed quality of high-resolution downloads, *Hi-Fi News & Record Review* is now measuring the true sample rate and bit-depth of the HD music downloads reviewed on these pages. These unique reviews will be a regular source of information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

### LAB REPORT



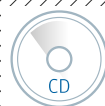
Analogue noise levels vary by up to 20dB on this 96kHz download with trk 5, 'Dancing Right...' one of the highest. Others show some sampling artefacts [trk 8 '...Yellow Dress' – see Graph], but most remaining tracks look clean. **PM**

### LAB REPORT



Recorded at the Teldex Studio in Berlin, this 96kHz download is a clean rendering with a useful dynamic range. The upper harmonics of the period harpsichord reach far higher than the 8-10kHz typical of a fortepiano, etc. **PM**





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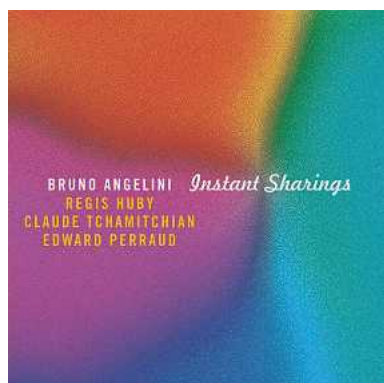
BLU-RAY



VINYL



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## BRUNO ANGELINI

Instant Sharings (88.2kHz/24-bit, FLAC)

[www.hiresaudio.com](http://www.hiresaudio.com); La Buissonne RJAL397022

Taking its title from the idea that 'Music starts and then you have to broadcast, listen, share, make quick decisions... so as to turn this four-person adventure into one', this album could so easily have become another one of those exercises in indulgent, meandering music. Fortunately, though, pianist Angelini has here partnered with some clearly very talented musicians – Régis Huby on violins and electronics, bassist Claude Tchamitchian and Edward Perraud on drums and percussion – to come up with a constantly interesting set of originals and homages to the likes of Wayne Shorter. Full of sonic light and shade, it was recorded with excellent clarity and powerful dynamics by Gérard de Haro at Studio La Buissonne, on whose house label it's released, and yes, it delivers a very real sense of musical exploration to keep the listener hooked. *AE*

Sound Quality: 80%



## BEETHOVEN

Symphonies Nos 5 and 7. Pittsburgh SO/Manfred Honeck (192kHz/24-bit, FLAC)

[www.hiresaudio.com](http://www.hiresaudio.com); Reference Recordings FR718

In a lengthy booklet essay Manfred Honeck explains all his interpretative decisions: live recording, a large orchestra with divided violins, pizzicati continued right to the end of 7(ii) – as suggested to him by Kleiber when Honeck was an orchestral violinist – and various minutiae, with timing/bar reference details. He writes about changing styles since the very first recordings of No 5 in 1910/13. But – oh dear! – the motto theme in the first movement is slowed for every appearance: that's a write-off for me, I'm afraid. There is also a distracting rhythmic pattern unearthed in the finale, 9m 10s-9m 19s. A needless accelerando in the introduction apart, the Seventh is far more convincing – and Honeck does make you listen intently to both works. Soundmirror has captured the sound in a large, resonant acoustic (Heinz Hall). *CB*

Sound Quality: 75%



## ELIANE ELIAS

Made In Brazil (96kHz/24-bit, FLAC)\*

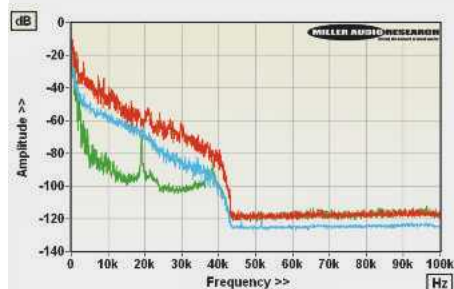
[www.hiresaudio.com](http://www.hiresaudio.com); Concord Records 36693

This album does just what it says on the tin – well, sort of. For while Elias did return to the country of her birth to rehearse and record this set, other elements were recorded in the USA and the UK, giving the whole thing a slightly 'samba by the numbers' feel. Yes, it's desperately commercial, and focuses the attention on the obviously very talented pianist/vocalist. However, the over-lush strings, which swell and shimmer away in the background, and without which the sound would have lost very little, do give this set a bit too much of the 'latin Diana Krall' effect. The recording is suitably warm and rich, and just the thing for *Strictly Come Dancing* fans' late-night after dinner party listening, in a kind of tinkly undemanding way, but given the 'back to her roots' intention here, just a bit more attack and fire would have gone a long way. *AE*

Sound Quality: 70%

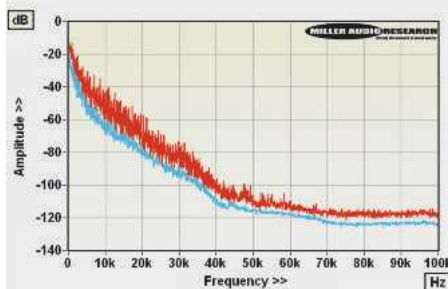


### LAB REPORT



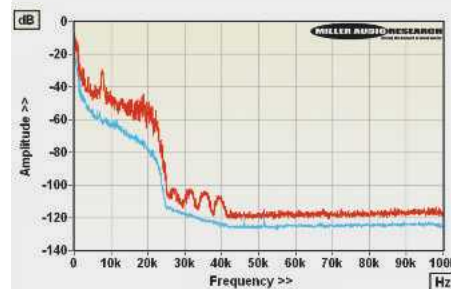
This is an 88.2kHz recording (though trk 7 is a 44.1kHz upsample) but with two strong interference patterns at 19.5kHz and 39kHz [green trace] associated with the piano feed. The peaks are absent through the percussive intro to trk 4. PM

### LAB REPORT



Recorded live and also subsequently post-produced at DSD64 (2.8MHz) on a Pyramix workstation – perfect for direct release on SACD – this bitstream is evidently resampled to 192kHz for release as an LPCM download. PM

### LAB REPORT



With the contents of this album recorded at various studios in Brazil, New York and Abbey Road (orchestration) it's perhaps not surprising the final mix was at a unifying 48kHz, subsequently upsampled to offer this '96kHz download'. PM

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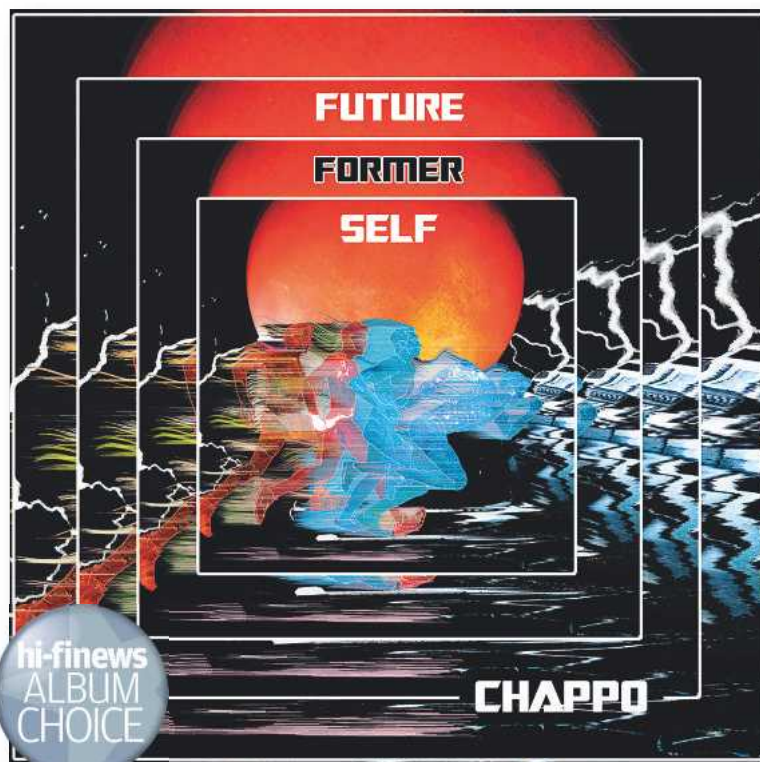
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### CHAPPO

Future Former Self

Caroline International 00857235002756; LP 00857235002763

At first I thought this was a rather fey, not very well recorded, wishy-washy baroque-pop mess, but something about its sheer, hard to define, oddness made me give it another spin. And another. Now, I'm rating it as one of the most interesting contemporary psychedelic releases I've heard in ages. Chappo is a Brooklyn-based singer-songwriter and guitarist who, with Seattle-born keyboardist Chris Olson, forms the backbone of the band. This imaginative duo throw everything and the kitchen sink into every free-wheeling, ethereally unhinged track, utilising funky guitars, spacey electronics, digital effects and soaring vocal melodies to achieve soundscapes that are absolutely their own. Weird, but take a chance. *JBk*

Sound Quality: 90%



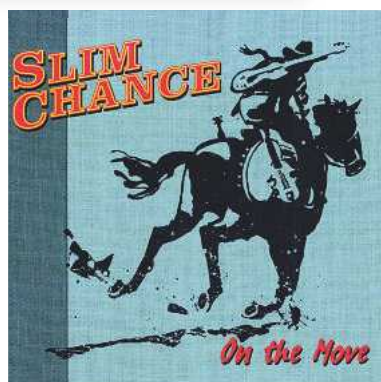
### BALSAMO DEIGHTON

Unfolding

earMUSIC 0210549EMU

Folk music buffs who love The Deighton Family and country-rock fans who love The Strays will be pleased to hear that Rosalie Deighton of the former and Steve Balsamo of the latter have come together as a single unit. Given the renewed interest in roots-oriented musics, the time could be right for their warm vocal harmonies and beautifully crafted melodies, often in collaboration with Julian Wilson of Grand Drive. There's nothing ground-breaking here, but their love of '70s singer-songwriters shines through in everything they do. Don't expect the earth to move, but do expect to find yourself singing along at the top of your voice after just a couple of plays. *JBk*

Sound Quality: 85%



### SLIM CHANCE

On The Move

Fishpool Records FSHACD002

Those who remember Slim Chance in their '70s heyday, led by the now sadly deceased Ronnie Lane at the peak of his songwriting and performing powers, will be intrigued by the notion of what his highly competent band might sound like now. Unfortunately, competent though they still are, there's nothing much else to commend this outing. Trundling through sundry unmemorable folksy-bluesy busks, they sound bored and listless, and even their re-makes of classic Lane songs ('The Poacher', 'Ain't No Lady' and 'Done This One Before') are but pale shadows of the sparkly originals. It's undemanding fare for those smitten with terminal nostalgia, but nothing more. *JBk*

Sound Quality: 75%



### THE ALTERED HOURS

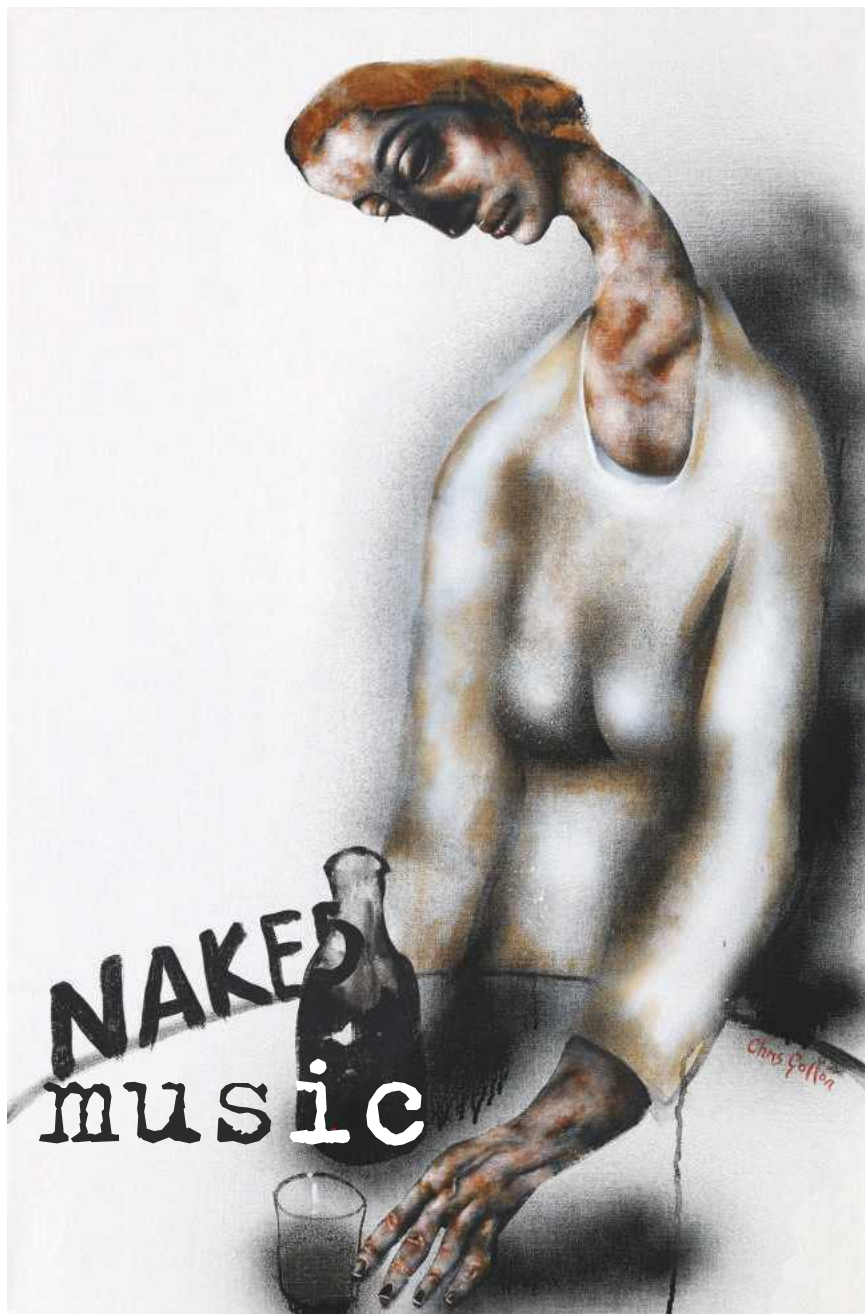
In Heat - Not Sorry

Art For Blind Records AFB-49

The monotonously repetitive opening moments of this Irish band's abrasive debut LP tested my patience severely but I'm glad I stuck with it to discover a dark, disturbing musical world shot through with pretty melodies, chilly feedback, twinkly guitars, hypnotic basslines and a sense of menace rarely encountered outside the work of the early Velvet Underground, Sonic Youth or Big Star's *Third*. The intertwining vocals of Cathal Mac Gabhann and Elaine Howley could almost be duets by Leonard Cohen and enigmatic German chanteuse Nico. The set is split into two parts of which I find the *Not Sorry* section the more entrancing, but the whole album is worth hearing. *JBk*

Sound Quality: 85%





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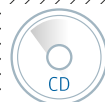
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Wed 9	Sheffield	Greystones
Thu 10	London	Surya
Sat 12	Kingskerswell Devon	St Mary's
Sun 13	Bath	Chapel Arts
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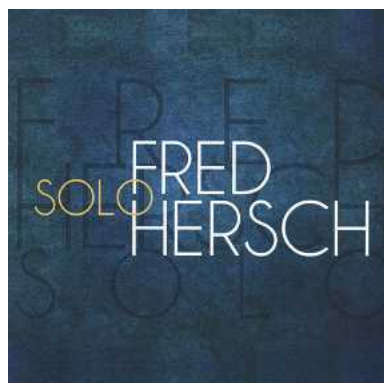
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### FRED HERSCH

Solo

Palmetto PM2180

For his last trio album, *Floating*, Hersch said he'd programmed the material as if the group were doing a live set. Now we have Hersch alone, live before a small audience in a church in the Catskills, where a benign acoustic gives a warm and inviting piano sound. Hersch's gently-cantering 'Caravan' conjures an imaginary landscape too rich and colourful to be a desert, and he makes 'The Song Is You' simply beautiful as a wistful, lilting ballad. Needless to say, Hersch can liven things up when he wants to, as on a sparkling 'In Walked Bud'. But when he closes with a heartfelt 'Both Sides Now' you no longer just wish you were there, you feel that you *are*. *SH*

Sound Quality: 90%



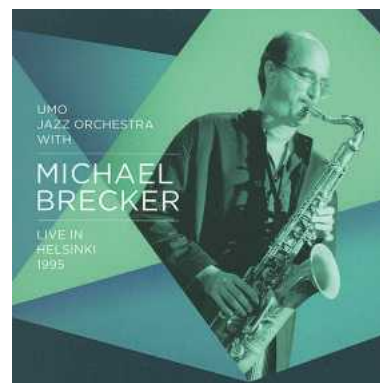
### SONS OF KEMET

Lest We Forget What We Came Here To Do

Naim Jazz naimcd217

As a Birmingham teenager, Shabaka Hutchings was inspired by Soweto Kinch's blend of jazz and hip-hop, but then moved to London to study clarinet and saxophone at the Guildhall. From 2007, when he worked with Courtney Pine, he quickly gained recognition as a sideman, before launching *Sons Of Kemet* in 2011. For this follow-up to their 2013 debut *Burn*, the group is still based on the powerhouse drumming of Seb Rochford and Tom Skinner but tuba player Oren Marshall is replaced by Theon Cross. Hutchings calls the album 'a meditation on the Caribbean Diaspora in Britain' and the themes dig deep into Afro-Caribbean roots. Intense and arresting. *SH*

Sound Quality: 85%



### UMO JAZZ ORCHESTRA WITH MICHAEL BRECKER

Live In Helsinki

Random Act Records RAR1018CD

This 1995 Finnish radio concert recording marks the first time the late saxophonist has been heard on disc as sole guest star in front of a big jazz orchestra. UMO is a magnificent band, and Brecker rides the crests of their punchy, hard-swinging arrangements superbly. One track, 'Ginare', was composed and arranged with a dedication to Brecker by Kirimo Lintinen. But in rehearsal Brecker suggested that UMO's star saxophonist Manuel Dunkel take the melody, and proposed that they should then trade eights in an extended coda section. Their exciting tenor 'battle' is only one of the highlights of a great set. *SH*

Sound Quality: 80%



### NATIONAL YOUTH JAZZ ORCHESTRA

NYJO Fifty

Whirlwind Recordings WR4679 (two discs)

For this half-century celebration, two well-filled CDs feature NYJO's current under-25 line up, with stellar guests too. Disc 1 offers the band's contemporary material, Julian Siegel guesting on the opening 'Mama Badgers' while Gareth Lockrane rips into the Yellowjackets' 'Rush Hour' and pianist Zoe Rahman plays her own 'Red Squirrel' in a new big-band arrangement. Disc 2 includes more traditional big-band sounds, with Mark Nightingale sumptuously reprising his one-time NYJO trombone feature, a Basie-like arrangement of Jerome Kern's 'Bill'. Meanwhile, NYJO vocalist Jessica Radcliffe bridges old and new, sounding equally fine on 'Lullaby Of Broadway' and on Laura Jurd's 'No Man Is An Island'. An impressive package. *SH*

Sound Quality: 90%



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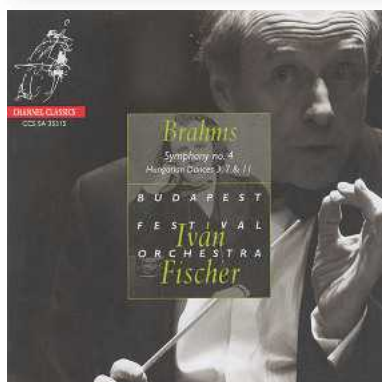
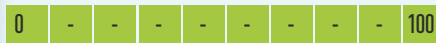
### RAVEL

*L'enfant et les Sortilèges; Shéhérazade; Alborada del gracioso*  
Isabel Leonard, Susan Graham, et al, Saito Kinen Orch & Ch/  
Seiji Ozawa

Decca 478 6760

In every way magical – singing, staging, and sound quality – Ozawa's telling of the story of the naughty child (Isabel Leonard), cat, crockery, clock, nightingale, et al, comes from a 2013 Saito Kinen Festival production. I can't imagine going back now to, say, the classic Ansermet stereo version, let alone the well-regarded Maazel/DG – to which I never warmed anyway! It is followed on this 80th birthday tribute CD by a feisty *Shéhérazade* sung by Susan Graham: her second version with Ozawa. Luminous and subtly shaded, *Alborada del gracioso* surpasses the one in Ozawa's fine 1975 Boston/DG [now Eloquence] Ravel set. **CB**

Sound Quality: 95%



### BRAHMS

*Symphony No 4; Hungarian Dances Nos 3, 7 and 11*  
Budapest Festival Orchestra/Ivan Fischer

Channel Classics CCS SA 35315 (downloads to 192kHz/24-bit or DSD)

At the start of the Symphony, the honeyed tones of the Budapest Festival Orchestra reminded me of Karajan's Fourth from his Philharmonia days – though wind parts are more strongly sculpted here. The work ends well too, but overall the reading seems to lack real sinew and the slowing from 2m 39s in the finale threatens to come to a complete halt. (The Carlos Kleiber never loses momentum: DG 457 7062.) As you might expect, Fischer is entirely in his element, though, in the three selected *Hungarian Dances*, where folk music from the Sic region is interpolated between Nos 11 and 3. **CB**

Sound Quality: 75%



### ELGAR

*Sea Pictures; Polonia; Pomp and Circumstance Marches 1-5*  
Alice Coote, Hallé Orchestra/Sir Mark Elder

Hallé CD HLL 7536

As the 'B-side' to du Pré's iconic 1965 Elgar Cello Concerto LP, perhaps Janet Baker's *Sea Pictures* refocused interest in the cycle (Elgar's word settings not in the class of Mahler's or Strauss's, in my view), and Alice Coote's version complements it nicely. But the real interest here is in the rarely heard *Polonia*, a 'symphonic prelude' written in response to Polish support in the First World War, quoting national themes, Paderewski (the dedicatee) and a Chopin *Nocturne*. The Hallé *Marches* are straightforward if arguably too swift in No 1: I prefer the genial Andrew Davis set on Chandos. **CB**

Sound Quality: 75%



### MENDELSSOHN

*A Midsummer Night's Dream – incidental music; Overtures – The Hebrides; The Fair Melusine*  
Swedish CO and Radio Ch/Thomas Dausgaard

BIS BIS-2166 (SACD; downloads up to 96kHz/24-bit resolution)

It was Frühbeck's 1969 Decca LP that brought us the first *MND* recording to include the little *melodramas* Mendelssohn wrote for stage performances. Mostly they are fragmentary, quoting key themes but pleasing to have – as here in a version for chamber orchestra. Topped and tailed by two overtures (*The Hebrides* suitably stormy) Dausgaard's version is crisply played but warm, with delightful precision in the *Scherzo*. Sung in German, the vocal movements are equally enjoyable with Camilla Tilling and Magdalena Risberg set on either side of the soundstage. **CB**

Sound Quality: 90%





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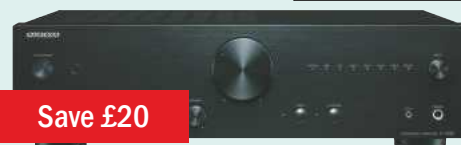
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## Paul Miller Editor

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

# Twist and stream

New music technologies seem only to widen the gulf between the rich and poor of the songwriting business. **Paul Miller** wonders whether we'll ever see another multi-generational mega group again

Unless you are one of the industry's big beasts – record company or mega band with a legacy to match – then the music biz is not what it was. So when The Beatles announced that their full back catalogue would finally become available on Xmas Eve 2015 via live-streaming services including Spotify, Apple Music, Google Play, Amazon Prime and the hi-res capable Tidal, many music pundits sensed change in the air. Physical media and even file downloads look to be in the doldrums as streaming surges ahead.

Unfortunately, for many struggling artists, this is a tech-driven change in music consumption that benefits the very few rather than the vast majority. Compare the thousands of potential 'super groups' that get fractions of a penny, or cent, for every download with those that have already achieved generations of adoring fans and a critical mass of legacy content that will be seemingly forever remastered, repackaged and reissued.

### LEVERAGE

Record moguls will say they are only fuelling demand, but those names with real power – the likes of Led Zeppelin, The Rolling Stones and The Beatles *et al* – can afford to bide their time and wait for new consumer channels to prove their viability before negotiating their own terms.

This is not a recent phenomenon. The Beatles didn't re-release their content on CD until the format was established for four years and held-off agreeing a download deal with Apple until 2010, some seven years after iTunes grazed the public's awareness. And since Led Zep's 18-month exclusivity deal with Spotify drew to a close in mid-

'Channelling social media is as important as playing a guitar'

2015 this is another super group that can now be streamed from a variety of service providers. This includes their hi-res remasters, now offered via Tidal.

I'll not criticise the obviously shrewd management of these group's musical estates, but those following on their coat tails face a tougher prospect. Back in the days of the LP, the musicassette and CD, bands would often tour at break-even cost, or even at a loss, because the live tour coincided with the release of a new album

and it was these sales that brought home the bacon. In a *volte-face*, today's up-and-coming bands must pretty much give away their content, grow an audience and then attempt to survive by encouraging as many fans as possible to buy tickets to a local gig.

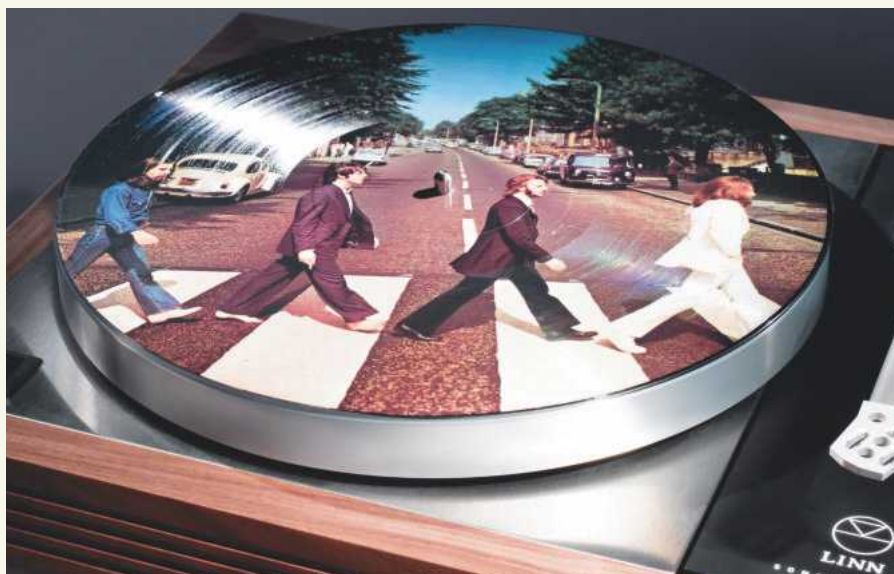
Other performers are groomed, if not grown, for TV audiences rather than 'discovered' by record company scouts.

For a band in 2016, being adept at channelling social media is clearly as important a skill as playing a guitar.

### WHO'S LISTENING?

But back to The Beatles and Spotify, which has released some early data on the popularity of its streamed tracks. The top five, in descending order, were 'Come Together' followed by 'Hey Jude', 'Here Comes The Sun', 'Let It Be' and 'Twist And Shout'. I'll not debate the most iconic Beatles tracks but 'Yesterday' must surely rank among them and yet it failed to make the top ten. But then Spotify also revealed that the majority of listeners choosing Beatles tracks through its service were under 34 years of age.

Clearly, most of these consumers were born at least a decade *after* The Beatles had split. So if The Beatles' management really had waited until this new technology could deliver yet another new audience, and another generation of sales, who's betting against them? ☺



ABOVE: The Beatles have kept in step with every proven music technology, from LP to streaming

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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

# Fly on the wall

If you've recently jetted off to some far away destination, did you while away the hours using the aircraft's in-flight entertainment system? **Barry Fox** did, but he was far from entertained...

**F**lying recently to New Zealand, with a full day in the sky each way, I kept thinking about Akio Morita, the charismatic founder and former head of Sony.

In the 1970s, Morita was frequently flying round the world to promote the company. Long-haul flights then had some in-flight entertainment – projected movies and taped music and speech – but the content choice was very limited. The headphones, which plugged into holes in the seat armrests, were uncomfortable acoustic stethoscopes, distortion was high and fidelity was as low as a telephone.

### PLAYBACK ONLY

Morita tried taking a Sony TC-D5 cassette recorder with him, along with some favourite tapes, but it was heavy to carry and gobbled big batteries. So he came up with the idea of a playback-only version of the recorder, with only a headphone jack and no speaker. With small, efficient headphones and no recording or audio power amp circuitry to drive, small batteries lasted far longer. In 1979, without any advice from market researchers, Morita pushed through the launch of a consumer version.

Various called the Sound-About, Stowaway, and Walkman, it was the success we now all remember – despite twerps like me who initially disparaged the idea of a tape recorder that didn't record. The rest is history.

Because Sony never patented the idea, all Sony's competitors launched similar players under different names. Dolby noise reduction helped stereo quality and pre-recorded music cassette sales took off. Eventually, of course,

'Plugging in a decent pair of headphones delivered only one channel to one ear'



ABOVE: A slow news day – the author makes a selection on the in-flight entertainment server

Walkman and Walkman-clones were superseded by solid-state players and the Apple iPod. But Walkman deserves the credit for creating an appetite for personal, mobile entertainment.

Meanwhile a similar revolution had taken place in the airline industry. Onboard 16mm film projectors were replaced by VHS tapes and video projectors, with screens that dropped down from the aircraft ceiling. Or TV monitors were dotted round the cabin.

Later, small, coarse quality LCD screens were fixed to the seat backs. VHS gave way to 8mm video.

The horrid stethoscopes were replaced by real headphones, often

from Sennheiser. These were collected at the end of each flight, for sterilisation and re-use. Unfortunately the airlines soon found it cheaper to give passengers nasty little earbuds 'with compliments'.

As the size/weight/capacity ratio of hard drives dropped, the airlines experimented with computer servers that let each passenger choose their own entertainment from a menu of sound and vision. Yet as I found out from two days coach-class in the sky, this system also has its downsides.

The jack sockets used by the airline I had chosen to fly with were non-standard,



being two separate mono plugs. Plugging in a decent pair of headphones into one socket delivered only one channel to one ear – and exposed the high distortion and low quality of the audio circuitry.

The in-flight server was creaking under the strain of delivering individual choice programming to several hundred passengers, all supposedly able to fast forward, rewind and pause at will. On one flight the whole system had to be shut down and re-booted. On all flights the data buffered and paused unpredictably.

Response to commands from the awkward handset was so sluggish that the system often appeared to have frozen. Sometimes it had frozen. Other times it was just storing commands like an oil tanker taking its time to turn.

### LEARNED MY LESSON

Selecting the option of World News, to 'keep updated with news around the world', consistently returned the message 'No news available at this time'. I declined the offer of airborne Internet at \$1 per megabyte. Grabbing a music track could easily cost a tenner.

Some airlines do better; some worse. But I've learned my lesson. Next time I fly coach long-haul, I'm taking my own DIY in-flight entertainment – an audio player or tablet with a halfway decent audio output stage and real headphones just like the ones the airlines used to loan. ☹



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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

# A new retailing paradigm

Will a rethink of the relationship between manufacturers and traditional hi-fi stores bring music lovers now used to shopping online back into the shops? **Barry Willis** on the 'store within a store'

**B**efore the Internet ruled, retail electronics shops thrived – large and small alike. Large cities could support a half-dozen high-end dealers and many more at the middle and lower ends of the shopping scale. A town of 150,000 people might have supported ten or 12 shops, all doing consistent business.

In those days, retailers vied with each other to carry prestigious brands, popular brands, and brands with high profit margins. This put manufacturers in an enviable position and they could dictate terms to retailers. 'You'll have to buy ten model X and six model Y,' the pitch might go, 'and a dozen of last year's discontinued model Z, all at net 30' – 'net 30' meaning that the best price would be available if the order were to be paid within 30 days, with punitive add-ons for each month that retailers were in arrears.

### DESPERATE TIMES

This system put retailers in sometimes desperate circumstances, forcing them to sell at deep discounts or to send products 'sideways' to competitors in order to maintain cash flow and to stay on good terms with suppliers.

This system also provided promising opportunities for shrewd shoppers, who might play one dealer against another to achieve the best price. It also gave maximum exposure to many products from many different sources.

In the US, the rise of Internet shopping, big-box discount stores, and their associated rock-bottom pricing spelled the end for most independent dealers. Major cities still have some old-line dealers, but most are out of reach for the vast majority of potential

**RIGHT: Another retail environment that has been known to bring a twist to the traditional hi-fi buying experience is Cacciari Salvati in Italy [see HFN Dec '13]. Here, Bé Yamamura's €500,000 Dionysus system can be seen in residence, yet the shop is known for selling time-pieces and precious stones**



customers – those who read journals such as this one. These enthusiasts spend much of their free time reading about products they can see only at rare exhibits like the ones covered in HFN's Show Blogs.

This has created a serious conundrum for manufacturers, whose potential end-purchasers perceive desirable products as existing in an unattainable fantasy-land.

It's also created a new opportunity for adventurous retailers. Manufacturers are feeling an upswell of pressure from consumers clamouring to experience these products in more than virtual form. This means that retailers are now in the driver's seat

regarding which products they carry and how they'll be financed.

At least one new large high-profile shop in Northern California is exploring a new paradigm in which manufacturers eager for retail exposure are supplying goods to be paid for after being sold at retail.

In short, manufacturers are fronting the goods, agreeing to be reimbursed at the end of the sales trajectory. This transfers the financial burden to them while

providing breathing room for the dealer. More importantly, it enables real-world interaction for hobbyists and consumers with products that they might otherwise only dream about.

This high-profile shop – to remain nameless out of respect for all involved – is also exploring the 'store within a store' concept, providing demo space at no cost to distributors with the understanding that profits will be shared after goods are sold. It's too early in the experiment to see how well it's going to work, but the concept looks promising.

### MARKET DISRUPTER

The advent of online shopping was a classic market disrupter, but perhaps one disruption engenders another. The plan to shift financial burdens in orthodox ways and to alter traditional concepts of distribution-chain responsibilities may be one that pushes the now well-established Internet model in unexpected directions.

We probably won't see the revival of the mom-and-pop corner store, but at the very least it will give experience-starved audio fans and music lovers a big opportunity to touch, feel and listen to equipment they have previously seen only in pictures. It's a tremendously encouraging development. ☺

'Manufacturers are supplying goods to be paid for only when they are sold'

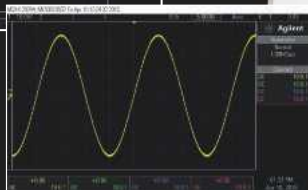
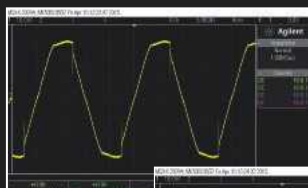
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## Jim Lesurf Science Journalist

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

# Pump up the volume

Are the volume controls used in today's amplifiers a true match for the precision instruments found on '80s Japanese super amps, or have they all gone to pot? **Jim Lesurf** shares his thoughts

**W**e tend to take the humble volume knob for granted. Yet when you think about it, the volume control is a vital part of an audio system. Peter Walker of Quad used to say that the ideal for an amplifier was a 'straight wire with gain'. On that basis, the ideal volume control should be a 'straight wire with a controllable loss'. However, as is all too often the case in real-world engineering, there can be distinct differences between the ideal and the real.

People are generally aware that transistors and integrated circuits have developed and improved over the decades. Modern silicon power transistors, for example, can reliably deliver high audio power in a way 1960s users of fragile germanium devices could only have dreamed. Yet while volume controls also improved, this almost went unnoticed. As did the fact that in later decades the performance of those chosen was inferior in some cases.

When I started working on practical electronics, the potentiometers used as volume controls were pretty poor by modern standards.

Often tracks of grainy carbon were employed, which were uneven, abrasive, easily worn, degraded by damp, etc. As a result they were prone to making

odd noises when adjusted, and only gave a poor degree of control when it came to setting the audio level. In particular, when adjusted they tended to change the volume of the two channels by significantly different amounts.

This lack of accurate stereo tracking affected the balance of the stereo image. It could also mean the background noise and frequency response of the two channels were different. The result

**RIGHT: Typical '60s volume control (left) with carbon tracks and (right) superior 40mm model from the 1980s with detent control allowing for more accurate setting. Due to their high cost the use of these '80s volume controls has now died out**



was a subtle alteration of the stereo image and overall sound quality. Human perception being what it is, this can easily be perceived as unsatisfactory without the slight shift in stereo positioning being recognised or the cause realised.

### NEW MATERIALS

During the 1970s the quality of controls improved and new materials and ways to make them developed. By 1980 companies such as Alps were producing some really

superb volume controls. The best were used in 1980s Japanese 'super amps' that had laboratory-standard levels of technical performance. Others – including myself – used these controls

when we could. They were low-noise, smooth in operation and reliable.

The best examples provided a set of steps or 'detents' so you could move back and forth repeatedly between known levels. And the stereo tracking was very close. They could also keep the adjustments of the left and right channels to within a couple of tenths of a decibel, even when wound down almost into silence. They were vastly better than the

older designs, gave the user a feeling of being in control, and were particularly useful when doing comparisons.

They were also big – typically around 40mm as opposed to the 20mm or less for the more common types – but were also expensive. In the case of a preamp they might be the most costly electronic component by far, apart from the mains transformer! As a result, they seem to have largely died out and some of their smaller brethren have come to be regarded as the 'best' controls for audio.

### URGE TO TWEAK

I now think of the precise 40mm detent controls as I do Quad electrostatic speakers: once you become accustomed to them and like them, none of the more common designs seems as satisfactory.

Yes, the smaller controls can do a decent job, but they can also leave me with an urge to tweak the level and adjust the balance control to get the stereo image 'in focus'.

As usual with hi-fi it's hard to tell at times how much this is a matter of having confidence in the settings, but in use the bigger controls allow me to relax and enjoy the music more easily. Having said all that, these days digital-domain volume control is becoming common. But that's another story... ☺

*'In a preamp, only the transformer might have cost more than the volume control'*



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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

# Ace up their sleeve

They're albums that aren't easily categorised musically, but what these releases also share is the fact that they've been issued on CD. And not all with standard packaging. **Steve Harris** explains...

When the online revolution took hold, beginning guerilla-style with Napster and finally winning supremacy, respectability and the popular vote with iTunes, the traditional strongholds of the record business seemed to be falling one by one.

Yet even as the once-wealthy record companies found themselves scrabbling for the revenue from ring-tones, it became an industry truism to say that more people were listening to more music than ever before. And the truism must be the truth, if only because there are more and more people in the connected world.

So we still have CD, but for how long? It's a sign of the times that jazz label Edition Records, for instance, has taken the step of issuing an album on vinyl and on download, but *not* on CD.

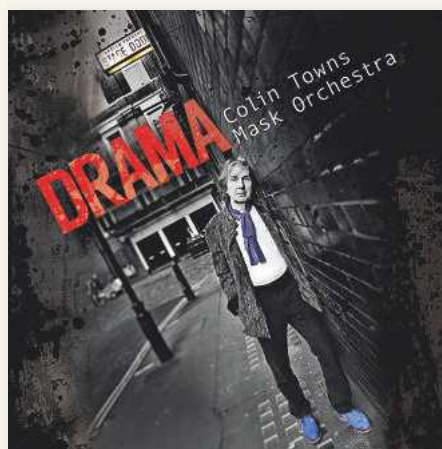
### LOVING PACKAGING

Other companies have jettisoned the jewel box and banished the booklet. But many CDs do still appear with loving, lasting packaging.

One recent example is *Drama*, a great double album from the latest incarnation of the Colin Towns Mask Orchestra [Provocateur Records PVC1044]. In his

earlier days, Towns worked with Deep Purple frontman Ian Gillan. Then he began writing music for the theatre, and never looked back. Although perhaps that's what he's doing here.

The track titles are all the names of great plays, from *King Lear* to *The Cherry Orchard* to *Equus* and *One Flew Over The Cuckoo's Nest*. Some of the pieces are from original productions, while others are 'revisits, musical reinterpretations or impressions of the plays'. An elegant



ABOVE: Colin Towns' *Drama* and Oktober's *Sandcastles*, featuring guitarist Gary Bennett

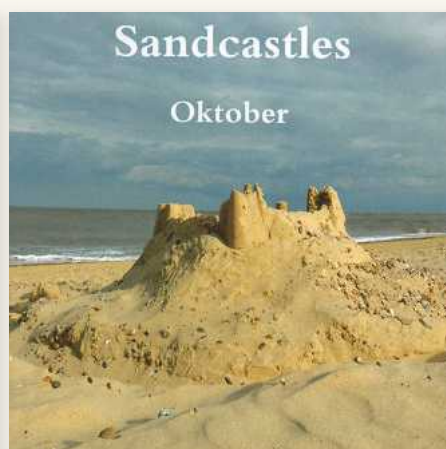
drop-in booklet gives you a stage shot of each production, so that the album feels like a memento. Anyone who keeps old theatre programmes will love it.

*Swansongs* is another sort of memento, this time issued in the simplest of cardboard sleeves by Georgie Fame on his own label [Three Line Whip TLW 010].

Fame achieved fame and even immortality early on, when he took a tune that had been first recorded as a Latin instrumental by Mongo Santamaria and transmuted it into a perfect piece of hip, jazzy pop.

Ever since 'Yeh, Yeh' Fame has recorded prolifically, but at 72, he's decided that this is it. The album is credited to 'Georgie Fame And The Last Blue Flames', who are in fact an all-star band of old friends along with Fame's sons James and Tristan.

Always ready to give credit to others where due, Fame's new songs here are packed with nods and tributes to all the influences on his long career. No need for written blurb or gushing goodbyes on the sleeve. It's all in the music.



Finally, nestling by contrast in a traditional jewel box with a standard-format eight-page booklet containing nice pictures and all the lyrics, is *Sandcastles*, from a three-piece group called Oktober [OKCD1]. It features the charming vocals of Molnár (János) Kinga, the drumming of David Speight, and the many instruments, electronics, writing and arranging of Gary Bennett.

### SIX SONGS

If you know Christine Collister's album *Love* [Rega ENS 002], listen to the title track of *Sandcastles* and you'll instantly recognise Gary's distinctive guitar sound.

You can easily find Oktober and hear their music via Facebook [[www.facebook.com/oktobertheband](http://www.facebook.com/oktobertheband)], and while there you'll find a picture that shows Rega's Roy Gandy listening to a take. With just six songs, it's 'not quite a full album, but at over 30 minutes, a bit more than what we oldies used to call an EP', as Facebook friend Andy Schooler puts it.

And hopefully, Oktober will gather the fanbase they deserve online. But it's great to have this on disc. One day, perhaps, we'll be referring to it as 'what we oldies used to call a CD'. ☺

'Edition Records has issued an album on vinyl and download, but *not* on CD'

## 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.

## A DIGITAL RED HERRING LP AND CD ALBUM MASTERED IN ANALOGUE

I read Steve Harris' Opinion piece entitled 'Into the groove' in the October 2015 issue followed by his reply to a letter on the subject of vinyl pressing in the Sound Off pages of the same issue. This was just hours after I had made an interesting comparison.

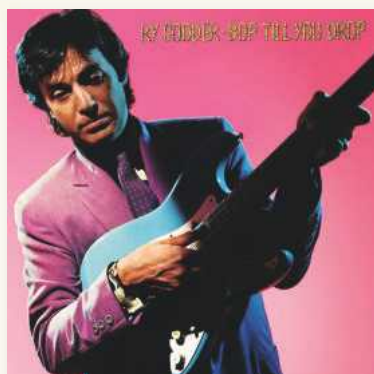
I recently purchased a copy of Ry Cooder's *Bop Till You Drop* on CD, having somehow never bought it on vinyl when it first came out in 1979. I recall it being quite a favourite with exhibitors at hi-fi shows back in the day.

Some time ago a friend had given me a box of vinyl and, browsing through it, I came across a copy of the very same Ry Cooder album (much to my annoyance). Having cleaned it thoroughly using my Moth record cleaning machine I decided to compare the vinyl version with the CD. Yes, you guessed it – to my ears the vinyl sounded so much better!

The point is that I understand this album was one of the early pop albums to be digitally mastered, so surely it should have sounded better on CD. Also, the vinyl had not only been produced during the 'decline in pressing quality' mentioned by Steve Harris in his reply on the Sound Off pages, but had not been particularly well cared for. Yet the difference between the formats was markedly noticeable (even by my long-suffering wife).

So does this support ex-*HFN* editor John Crabbe's argument regarding vinyl replay or does it reveal that poor consistency exists even with CD transfers? Or perhaps it just comes down to my 'preference' for the sound of vinyl.

Thanks for the years of enhancement of our passion through the pages of *HFN*, I've



**ABOVE:** Ry Cooder's *Bop Till You Drop* was rock's first all-digital recording

been a reader/subscriber since the tape recorder days!

*Chris Davies, via email*

Steve Harris replies: I can't help agreeing with Chris about the sound of *Bop Till You Drop* on (original) LP versus CD. Although you might intuitively think 'it was recorded digitally, so it ought to sound better on CD', this is in a way a red herring.

The album was recorded on a 3M 32-track digital system [see 'Investigation', p26], which, as I understand it, had no digital outputs, only analogue-out from its own D/A converters. After all, no one in 1979 would have had any digital inputs to connect it to.

So I can only guess that the CD must have been mastered from the 3M machine's analogue outputs, just as the LP would have been, but necessitating a conversion back to digital. Thus the CD wouldn't have gained any advantage from the digital nature of the original tracks.

That said, you'd hope and expect that the remastered CD of 2007 might sound better than the original 1984 CD issue, as by then A/D converters had become so much better, but I confess I haven't done that comparison.

Send in your views to:  
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## Why no DSD music reviews?

### READER'S PLEA FOR FORMAT'S INCLUSION IN MUSIC REVIEWS

In his column in the *Yearbook 2015*, Andrew Everard said that he was viewing with some delight the revival of the DSD format. I then realised that you do not cover DSD files in the music reviews section. Is there a reason for this?

Today there are several high-res download sites that offer DSD files and I am beginning to try these through my Oppo HA-2 headphone amp/DAC. My interest comes from my previous experience with SACD, which I very much like the sound of, though ironically some of these recordings are PCM in origin. This is the case with the classical SACDs issued by DG.

*José Luis Pérez, Buenos Aires*

Paul Miller replies: José makes an interesting point when he says that much of the available DSD content was either recorded, mixed or mastered as LPCM before being truncated into a DSD bitstream. Rather like vinyl reissues having been taken from a CD 'master'! Nevertheless, *HFN* has the technology to lab test DSD music downloads and you'll see more of these appearing in our in-depth hi-res music section.

## WhitWorld

### OUR HI-FI WORLD THROUGH THE EYES OF WHITWORTH



"I'D LIKE THIS ANALOGUE REMASTER OF THE DIGITAL TRANSFER OF THE ORIGINAL MASTER TO REPLACE MY CD, WHICH REPLACED MY FIRST PRESSING. FUNNY THING IS I'VE NEVER LIKED THE ALBUM."



# A case of hall or nothing?

READER TAKES ISSUE WITH ASSERTION THAT DSP CAN'T ENHANCE THE ENJOYMENT OF MUSIC

In his Opinion piece 'Canned acoustics' in the December issue I do think Barry Fox has been unfair about Yamaha's DSP (Digital Soundfield Processing) system. Yes, of course, it's not the proper conduct of an audiophile to superimpose the acoustics of one venue over the efforts of another recording team in another venue. But very judiciously applied, the effect can be very satisfying – particularly if the two venues are the same. It is important, though, that the four 'effect' speakers to the front and rear can be separately adjusted from the main stereo pair.

And perhaps Barry's choice of recordings do not lend themselves to the effects? I listen exclusively to classical music and some of the concert hall 'effects' can be very good if wisely chosen and adjusted. 'Plugged-in' music won't suit.

I use Yamaha's DSP-AZ1 AV amp, purely for the rear-out effect channels with two-channel CDs, etc. (Wisely its DSP effects cannot be used for multichannel SACDs or BD-Audio.)

Yamaha has been somewhat reticent as to the actual locations of some of the halls used, but I have ascertained that 'Frankfurt' is the Opera House, 'Vienna' is the Musikverein, 'Boston' is the Symphony Hall, 'Amsterdam' the Concertgebouw, 'Live Concert' is The Albert Hall, and 'Freiberg' and 'Royaumont' are the cathedral and monastery respectively. It's silly (but somewhat interesting) to, say, put

## CONCERT HALL 1

### I Europe Hall A

This is a large fan-shaped concert hall in Munich which has approximately 2500 seats. Almost the whole interior is made of wood. There is relatively little reflection from the walls, and sound spreads finely and beautifully.

### I Europe Hall B

This is a large shoe-box type concert hall with less than 2400 seats located in Frankfurt. This hall has a very solid, powerful sound. The listener's virtual seat is in the center-right section on the first floor.

## CONCERT HALL 2

### I U.S.A. Hall D

This is a large 2600 seat concert hall in the United States which features a fairly traditional European design. The interior is relatively simple, in the American style. The middle and high frequencies are richly and beautifully reinforced.

### I Europe Hall E

This is a large 2200 seat shoe-box type concert hall in Amsterdam. It has a circular stage with seats located behind the stage.

**ABOVE: The Yamaha DSP-AZ1 offers a wide choice of concert hall soundfield programs**

the 6 O'Clock News on Radio 4 or a string quartet in a cathedral but the appropriate music in an appropriate hall can work very well.

The effect is nicely demonstrated (with the surround channels judiciously adjusted) when it is switched off during a programme – too much 'effect' and it's quite daft.

*Humphrey Britton-Johnson, via email*

Barry Fox replies: Thanks, Humphrey, for your interesting input, which is just what I was hoping to stimulate. Yes, agreed, it can be fun to fiddle with settings, like colour balance on a TV or car engine tune-up or PC optimisation. But I find there comes a time when I start wondering why I am doing it.

The Denon multichannel amp which I use also has many surround and DSP options and I tried most of them when I first set it up. But then I just relaxed into listening to music, mainly in stereo. Still, being able to experiment is a good thing.



ABOVE: Yamaha's DSP-AZ1 AV amp from 2002 is still enjoyed by reader Humphrey

# JITTERBUG

USB Filter



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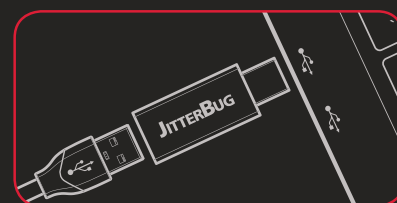
**Noise** is the problem. Real noise—the kind you can't hear directly. Most often, the word "noise" is used to describe tape hiss or a scratch on a record, but these sounds aren't noise; they are properly reproduced sounds that we wish weren't there.

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# Hidden cost of hi-fi

WHY PRODUCT SUPPORT CAN BE AS IMPORTANT AS SOUND QUALITY

I was interested to read Barry Willis's Opinion piece in the December 2015 issue in which he wrote about the different approaches taken by manufacturers when it came to offering support and repair for expensive high-end equipment.

As readers of *HFN*, we all have an interest in an area of hi-fi that is not understood by those of the MP3/earbud brigade, and if I had a pound for every time someone has said 'but you can't really tell the difference', well, you know the rest.

Aside from this, our passion can be an expensive pastime and most of us think long and hard before buying or upgrading components. And this often requires negotiation with family members. One thing that can swing it is that we won't need to buy again for a very long time.

This means the cost per year of a new piece of equipment is actually not much more than throwing away a cheap and useless piece of awful sounding plastic every couple of years. Servicing and repair in perpetuity are key to this longevity.

There are financial imperatives that the companies have to be aware of when they commit to long-term support, but it builds brand loyalty and leads to recommendations to friends and like-minded folk.

I wrote to one well-known manufacturer in the hope of having a CD transport from 1991 repaired, but never heard anything back. On the other hand, I was happy to have two pieces of Musical Fidelity kit – an A100 amplifier, also from 1991, and an X-Ray CD-player from 1999 fine-tuned and serviced a few years ago. They now sound better than ever.

Repairing/upgrading the A100 after 20 years of use is pretty good.



ABOVE: Dr Green's Musical Fidelity A100 integrated amp, revamped after 20 years' use



ABOVE: Barry Willis writes on post-sale servicing of hi-fi in the US in *HFN* Dec '15

The question is what do I do when these fail beyond economical repair? First negotiate with loved ones and second, choose replacement products based not just on sound quality but product support too. If the latter isn't in place then it becomes a hidden cost of hi-fi.

Dr P Green, via email

Barry Willis replies: Dr Green, consider yourself lucky to have gotten two older units repaired. Your experience with your 1991 CD transport is more the norm. The difference may be the ready availability of purely electronic parts versus model-specific mechanical parts. This side of the Pond, only Canada's Bryston offers essentially cradle-to-grave service to my knowledge. The opposite is far more likely to be the case. Truth be told, the financial liability of supporting great-sounding but unreliable products has doomed many audio companies.



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# The kit that we wished we'd kept

A READER AND OUR REVIEWERS REMINISCE OVER THE COMPONENTS THAT GOT AWAY – OR WENT MISSING IN ACTION

I'm sure that many readers have owned a particular component in the past that they remember as having brought them musical bliss. In my case it was a pair of Celestion SL6 speakers, which I bought to go with an Ariston RD80 turntable and Nytech 252 amplifier.

I owned the Celestions for just six months only to wake up after a Saturday night house party to discover one of them missing. Presumably it had been 'borrowed' by one of the numerous gate-crashers in attendance once the music had been turned off and the more raucous visitors asked to leave.

This leads me to wonder whether your reviewers have any firm favourites when it comes to older components, either because they later became classics or simply brought music to life in a way that made them unforgettable. Perhaps they're still sorely missed.

*Thomas Lee, via email*

Steve Harris replies: That theft of one speaker strikes a chord of sympathy with me. I owned a Rogers Cadet valve pre/power until the power amp was stolen. The preamp was then useless to me, as it only worked when connected to the matching power amp.

As to other old favourites, I could make a really long list but, like many other people's I guess, it would have to start with the Quad Electrostatic (known as just that until the ESL-63 had come along, when it started to be called the ESL-57).

Then of course there was the Spendor BC1. My memories are probably unduly rose-tinted but I still remember the magic of the early BC1, and how things were never quite the same with the later pair that I actually owned. At around the same time I had a Sugden A48 amplifier, highly-regarded in its time but not one to die for today.

I think I'd still quite like to own a classic 1970s/1980s Audio Research combination,



**ABOVE:** The Sony TC-229SD cassette deck from 1976 even boasted remote control



**ABOVE:** Technics' SL-10 was released in 1979 and came with a Technics EPC-310MC cartridge while (right) the Celestion SL6 speaker, as once owned by reader Thomas, appeared in 1981



and as I write this I can just smell the warmed-up chassis, but there have been many wonderful-sounding amplifiers, both tube and solid-state. In the latter category, I'd be happy with the Renaissance Unity pre and power combination.

As for turntables and arms, well, where do I start? I'll never forget the way the Linn/Grace/Supex transformed my listening, but after that, rather than following an orthodox path through Linn's own arms and cartridges, I converted to the Roksan Xerxes.

Yet there's another record player, of quite a different kind, that I always coveted simply as a gorgeous piece, and that's the Technics SL-10. This original 'jacket-sized' player, with its arm built into the lid, is a breathtaking example of how the Japanese engineers could deliver what the marketing men asked for, however impossible it might seem. I'd love to have one of these now. And as a piece of design, it would probably make more impression on 'non hi-fi' people than any of the great high-end turntables.

Tim Jarman replies: When it comes to older equipment, my personal preference is for components and systems from Bang & Olufsen's High Fidelity line. These were engineered to give the best performance considered technically practical at the time.

Classics like the late '60s Beolab 5000 system, the Beogram 4000, the Beomaster 4400 and the early '80s Beosystem 8000 are, to my mind, are some of the best vintage components available. You have to go a long way to beat their combination of performance and style.

Other favourites of mine are the original Philips 14-bit/4x oversampling CD players. The budget CD150 wasn't the greatest example, but the earlier ones (CD100, CD303, CD104, etc) are all excellent and durable enough for everyday use. They seem to have held up better over the years than the Japanese alternatives and have laser pick-ups that last a long time. The Technics SL-P1200 is another CD player that I really like, although finding decent examples that haven't been messed about with or aren't completely worn out is not easy.

I also do a lot of listening from cassette and, as well as the big B&O decks such as the Beocord 8004, I really admire the Sony TC-229SD – a large and sturdy machine with virtually wear-proof ferrite heads and a chunky transport with no flimsy bits inside to break. I've also been trying out JVC's little KD-2 portable which looks super cool and is an amazing performer if set up properly. The Philips N2521 is another great deck, although it's often overlooked; correctly set up it can make seriously good recordings.

I think a decent tuner is an essential part of any hi-fi system. Any midrange (and above) Japanese model from the '70s and early '80s with mechanical tuning (ie, a knob and a dial, not a digital readout) is a useful asset. These seldom seem to go wrong and I've yet to hear a calamitously bad one.

As for models that use digital tuning, one really fine way to enjoy radio is via the British-made Nytech CTA-252XD receiver. I used one for years and now really regret selling it for peanuts. Definitely one for the 'should have kept that' list.



# Cartridge matching

CAPACITANCE, COIL INDUCTANCE AND REAL-WORLD SNAGS

Could you please provide a deeper explanation of the interaction between the coil inductance and capacitance of cables and amplifier input [see *HFN* Oct '15] and the best way to optimise this if my MM amp input is 47kohm?

David Egvide, via email

Jim Lesurf replies: In terms of the physics, the important point is that inductors and capacitors act as places to store electromagnetic energy. The current in an inductor creates a surrounding magnetic field holding energy. The potential (voltage) between the plates of a capacitor also creates an electric field between them that stores energy.

The result is that when you try to change their voltages and currents you have to put energy into them or draw it out. As a result, both capacitors and inductors take time to respond to signals like musical ones carried as fluctuations in signal voltage or current.

Moving-magnet cartridges tend to have coils with surprisingly large inductances. Values around 0.5 Henries are fairly common. The signals generated by the cartridge as it plays an LP have to make energy flow back and forth from these coils into the wiring and amplifier you're using. The cables and amplifier have some capacitance. The result is the system has a frequency response that may not be correct because of the ways signals take time to shuffle from place to place. In effect the system acts like a low-pass filter, generally with a response that isn't as flat as we would wish.

Applying AC circuit theory allows us to estimate the 'optimum' amount of capacitance. You can calculate this as follows: start with the amplifier's load



ABOVE: Shure suggests 400-500pF as the ideal load capacitance for its V15 Type III

resistance (say, 47kohm). Square that value, multiply it by the magic number 2, then multiply the result by the inductance of the coils in the cartridge (say, 0.5 Henries). Finally, divide this number into 1 (ie, take its inverse). In this example that produces a result of about 450 picoFarads (pF). Which is the sort of total capacitance value that tended to be recommended for the old Shure moving-magnetic cartridges.

From the point of view of theorists, that's the correct result to achieve the flattest possible response. However, there are some real-world snags. Firstly, do you actually know the inductance of the cartridge? Get that value wrong, and the result given by the calculation will also be wrong. Secondly, the cables you are using will already be contributing some capacitance. Typical coaxial cable from a turntable to an amp might have a capacitance somewhere between 100 and 300 picoFarads. So you'd need to know how much this already brings to the party in order to allow for their contribution.

Finally, the mechanics of the stylus may already be causing the output not to be flat. That means a different amount of capacitance might give a better result by partly correcting for mechanical effects!

John Crabbe, editor of *HFN* for many years, found that the best approach was simply to experiment to determine the value of additional capacitance required. So while the above theory gives you a starting estimate, in practice some adjustment may be required.



ABOVE: Shure's V15 Type III MM cartridge, which was first marketed in the UK in 1973



EXTREME?

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# Sansui 5000A receiver

Its sheer size and weight meant this powerful Japanese amp/tuner failed to catch the imagination of UK buyers on release. Could it now be a vintage bargain? We find out  
Review: **Tim Jarman** Lab: **Paul Miller**

**W**hile selling well in Germany and the US, the Sansui 5000A is typical of a style of equipment that was never especially popular in the UK: the large high performance receiver. This is a shame because some very fine equipment was produced in this class, most notably by the big Japanese brands of the time.

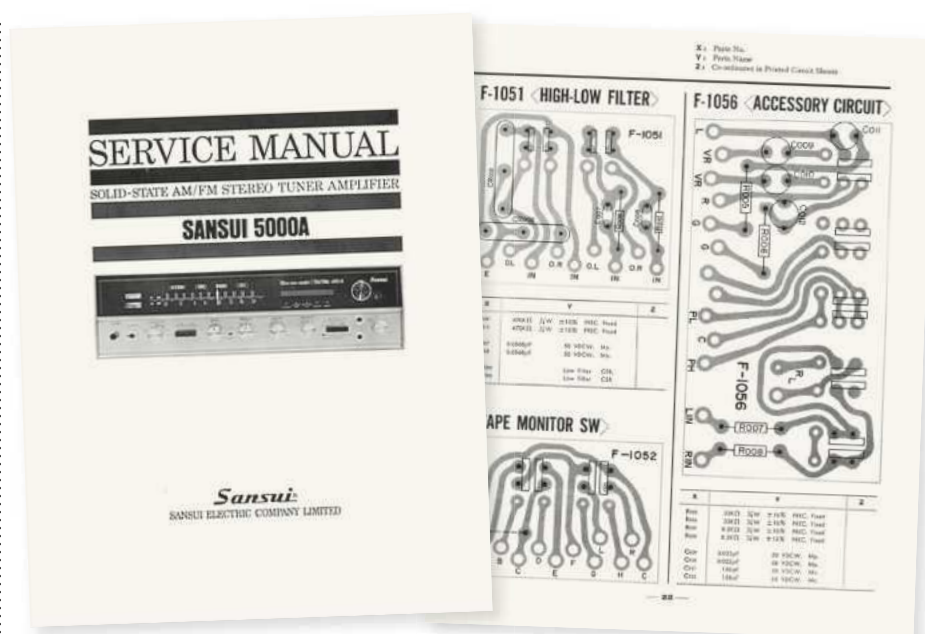
Sansui was still producing valve amps in 1968 when the original 5000 receiver appeared, but only solid-state techniques could meet the new model's requirements for facilities and power.

## FLAGSHIP SERIES

The 5000A seen here appeared in 1969 and was essentially the same as the 5000 but featured a re-designed FM front-end employing three MOSFET transistors and a slightly revised stereo decoder. In 1970 the 5000X was launched which, although similar in appearance, had more far-reaching changes inside, most notably in the area of the power supply.

The 5000 series had been Sansui's top receiver model but after the 5000X it was replaced by the 'Model Eight'. This brought DC-coupled output stages and numerous other technical updates and refinements.

In the late 1960s console mounting was still popular so the sets could be supplied with a simple painted metal 'bonnet' to protect the works. For free-standing use the wooden sleeve, as fitted to our sample, was preferred. This adds considerably to both the size and weight of the unit, not that minimising either of these appears to have been a particular design goal.



**ABOVE:** Original Sansui service manual with cover showing the 5000A receiver in chassis form. Contrast this with the wooden-sleeved sample used for our review, which is pictured below left

The specification was generous. As well as a mighty power amplifier (a claimed 75W per channel into 4ohm), the 5000A offered switching for three pairs of loudspeakers, two tape loops (one with duplicated connections on the front panel), a facility to allow direct connection of the tape head of an open-reel transport, a phono stage for MM-type cartridges and, of course, a fully featured tuner.

This had totally segregated AM and FM sections. Even the tuning capacitors were separate components (it is more usual

to combine the vanes for each function on a common shaft) linked only by the dial cord. Meanwhile, the FM IF strip used four matched integrated circuits between tuned transformers to achieve the necessary gain, which was advanced technology for the late 1960s.

## MONO 'N' METERS

The stereo decoder also boasted interesting features, such as a link to the muting system so that the user could opt to hear only those stations being broadcast in stereo, and a mono switch that disabled the circuit rather than simply summing the left and right outputs.

Meters for both signal strength and tuning balance completed what is clearly a well thought out part of the unit. The absence of Automatic Frequency Control (AFC) is the only obvious omission.

In contrast to the tuner's sophistication the amplifier was perhaps a little crude, relying as it did on an unusually high single supply rail (80V) and big, chunky components. The large custom-made







mains transformer comes as no surprise since Sansui's origins were as a transformer manufacturer. Paralleled rectifiers and capacitors fed the output devices while other electronically smoothed and regulated supplies provided for the lower-level parts of the set.

The preamp followed the common practice of this era of routing all the input signals through the phono stage but reduced its gain to unity and disabled the RIAA EQ for the line-level inputs. This made it easy to apply the extra gain and NAB EQ for the tape-head input. The drawback was that the amplifier's noise and overload performance via the auxiliary input suffered as a result. A background hiss, which rises

with the setting of the volume control, is evidence to this layout. Demanding users should be aware that the tape loop inputs bypass this stage and therefore give the best performance from modern high level sources, such as DACs and CD players.

Comparatively simple the circuit may be, but the facilities offered were still comprehensive. The tone controls were ganged in such a way that each channel could be adjusted separately and, although not often used in a well-planned system, there was the option to switch in 'loudness' compensation. The two channels could be summed into mono or reversed left to right and both high and low filter switches were present on the front panel.

*'Belting out the low notes is the Sansui 5000A's real strength'*

**ABOVE:** Lots of lights and knobs... the 5000A's front panel is well stocked. The tuning dial goes dark when the phono or auxiliary inputs are selected. Note the extra tape connections

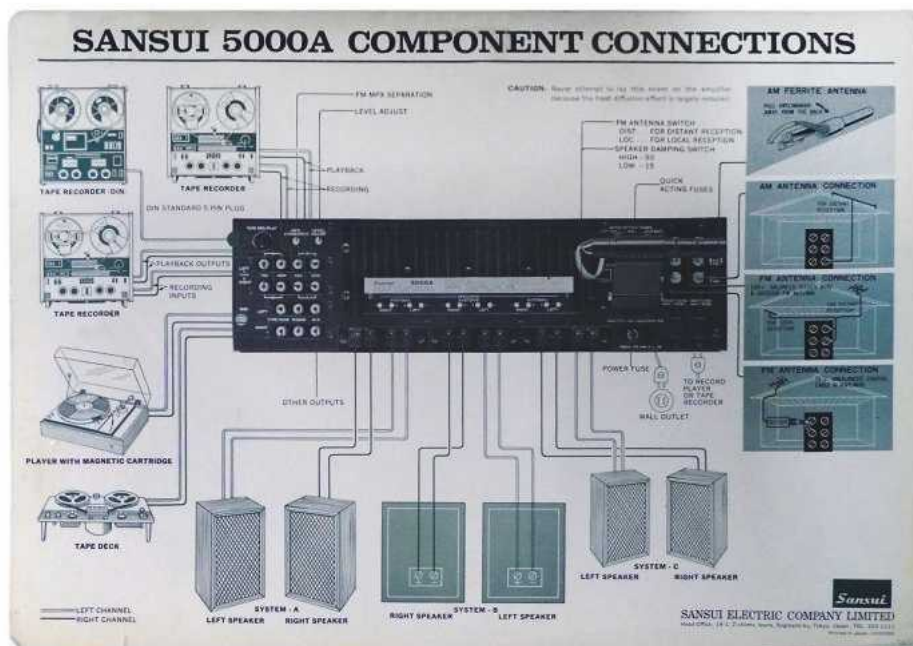
An interesting little switch lurked at the back. This gave a choice of two levels of speaker damping and worked by adding a low value (0.3ohm) resistor in series with each loudspeaker output, reducing the maximum achievable damping factor by a small amount. Why one would wish to do this is not made clear, especially as the amplifier does not seem to suffer from any stability problems.

Although not an absolute necessity with an AC-coupled circuit such as the one found here, the 5000A did include a basic protection circuit, which sensed an excess of drive to the output transistors. Under overload conditions the supply to the preamplifier was cut and a light on the fascia turned red. The circuit had a latching action so it was then necessary to cycle the power to clear the condition. This light is but one of 12 glittering bulbs that illuminate the dial and the displays. Some kind of record, surely?

### SOCKETS APLENTY

Setting up the 5000A in my listening room posed no problems as there appeared to be a socket or a connection for everything. The FM antenna input gives the choice of 75 or 300ohm impedance and offers two levels of sensitivity to suit the antenna used and location. Despite the noise issues mentioned, I chose to employ the Aux input to connect my Cyrus CD8 SE2 CD player, so as to gain a better measure of the amp's intended performance. ☺

**LEFT:** The 5000A could serve at the heart of a complex system, connecting to three tape decks, three pairs of speakers and a turntable





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**RIGHT:** Tuner circuits are located at the front of the chassis, amps and mains transformer at the back. The AM and FM tuners are completely separate, linked only by the dial drive

The speaker connectors are spring-clips but they are nicely engineered and work well. Short adapters were used to avoid having to cut the plugs off my Chord Odyssey 2 loudspeaker cables.

The Calypso interconnects used fitted easily into the input sockets, which have sufficient spacing around them to take all but the bulkiest modern plugs.

## TIM LISTENS

The sound level that the Sansui 5000A can produce confirms that is a powerful unit. It is not difficult to believe that the claimed ratings are a fair reflection of the amplifier section's basic capacity. When listening at low levels a slight background hiss and hum were just noticeable and the former rises as the volume control setting is increased. However, at higher levels this unit really comes alive.

Level 42's *World Machine* [Polydor 827 487-2] needs a big amp for maximum enjoyment and the Sansui delivered. The big bass lines came across as solid and confident and the sound's overall integrity was maintained even when playing really loudly.

Tonally the balance was characterised by a noticeably expanded bottom end which tended to dull one's appreciation of the treble – belting out the low notes is this design's strength – but control in this register could be better. Even with the damping switch set to high, the impression

*'On Radio 3 the chesty nature of violins was a joy to listen to'*

was of looseness. One-note bass would be too strong a criticism, but things were certainly heading that way.

Tracks like 'Dream-Crazy' demonstrated that the rest is pretty good, the midrange sounding smooth and the treble well integrated, if a little recessed at times.

The story was much the same when it came to imaging. It wasn't pin-sharp, but there was a feeling of solidity

to the spread of sound. This isn't a subtle amplifier by any means, but if you like to rock the chances are you'll love it.

It was time to try out the tuner section. In contrast to the rather basic nature of the amp, the latter proved to be a surprisingly

accomplished performer – and subjectively at least – a match for all but the most exacting separate tuners of its era.

Connected to my rooftop antenna, the Sansui's dial was filled with stations from end to end, almost all of good entertainment quality. Despite this impressive sensitivity (and the absence of AFC), tuning was still straightforward with an easily identifiable and centrally located correct point of tune for each broadcast – a sign that the alignment of our test example was still close to optimal.

## TONALLY CORRECT

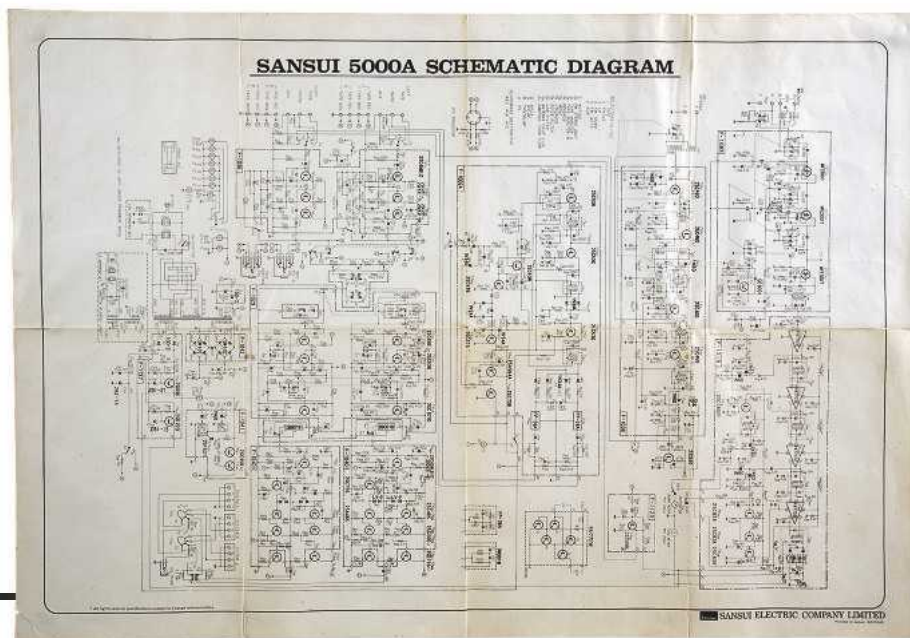
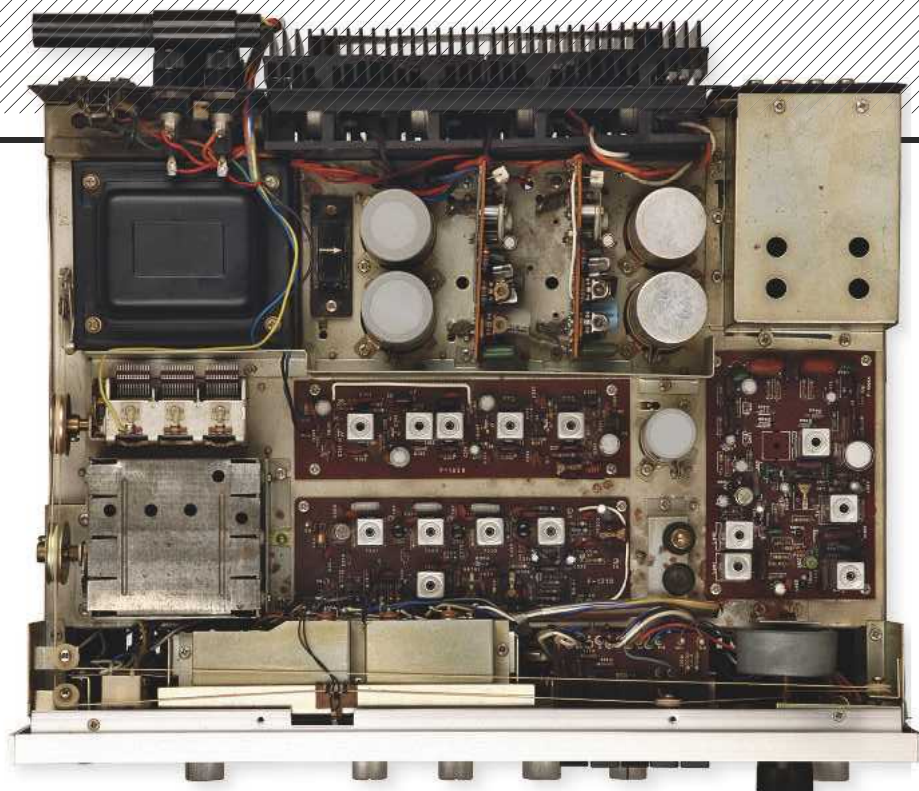
Now that all FM programmes are transmitted in stereo, the 'stereo only' muting function was sadly redundant, but the ordinary muting system worked well enough, eliminating the most distant stations cleanly.

BBC Radio 4's speech-based output demonstrated the Sansui tuner's basic tonal correctness, with a pleasing rendition of the presenter's voice. An excess of richness with some presenters can be put down to the amplifier's apparent bass lift, but this is preferable to an excessively dry characteristic with this type of material.

BBC Radio 3's live concerts (13:00 on Sundays) are the traditional test for FM tuner quality and a fine selection of pieces played on violin, clarinet and piano showed the 5000A to be a serious piece of kit.

FM stereo decoders improved markedly in the decade after this set was made, but there was still a clear space in the

**LEFT:** Should it be needed, this circuit diagram was included with each set, tucked into an envelope pasted to the bottom of the cabinet



- Jon Myles, Hifi World 2015

"I have just stumbled upon a speaker cable that I'm very tempted to put in a class of its own"

- Mono&Stereo, June 2015

- Kurt Lassen, Nomono 2015



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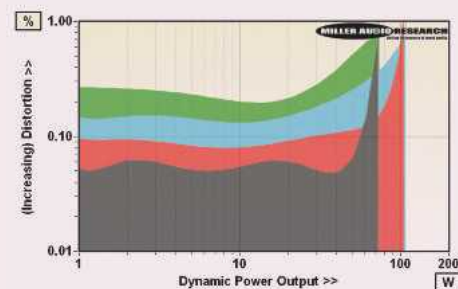


## LAB REPORT

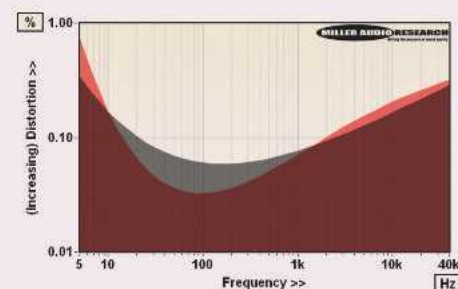
### SANSUI 5000A (Vintage)

As Tim mentions in his review, Sansui's 5000A receiver included what was arguably the most powerful amplifier of its day – rated at 75W/4ohm. Our sample managed exactly 2x75W/4ohm and 2x55W/8ohm with a dynamic output of 2x66W/8ohm. Its single-channel dynamic capability [see Graph 1, below] amounts to 73W, 105W, 109W and 75W into 8, 4, 2 and 1ohm loads, the latter representing a maximum current capability of 8.6A (10msec/1% THD). The performance of this 5000A looks to be broadly representative, even though the 70dB A-wtd S/N ratio (re. 0dBW) is compromised by its line-level routing via the MM stage [see review]. Distortion is very consistent with level – a good thing from a subjective standpoint – and hovers around 0.07% from 1W to 50W/8ohm at 1kHz. Versus frequency there's necessarily some increase at HF, the trend here gently rising above 100Hz and amounting to 0.03–0.22% from 20Hz–20kHz at 10W [see Graph 2, below].

By the standards of the day, the 5000A's frequency response is very flat through the audioband (–0.3dB from 100Hz–20kHz) with –3dB points at 13Hz and 58kHz. The 'Low' filter has a –6dB point at 90Hz (–24dB/20Hz) and the 'High' filter a –6dB point at 6kHz (–14dB/20kHz), the pair combined yielding a –1dB bandpass response of 290Hz–2kHz. Set at 0dBW output with an IEC standard 500mV input, channel balance was a relatively poor 1.3dB – this is a conventional analogue pot, after all. Similarly, PCB layout limits stereo separation to <50dB through the midrange. Readers may view a QC Suite test report for the Sansui 5000A receiver by navigating to [www.hifinews.co.uk](http://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 (cyan) and 1ohm (green) loads. Maximum current is 8.6A



ABOVE: Distortion versus extended frequency, 5Hz–40kHz at 10W/8ohm (left, black; right, red)

## HI-FI NEWS SPECIFICATIONS

Power output (<1% THD, 8/4ohm)	55W / 75W
Dynamic power (<1% THD, 8/4/2/1ohm)	73W / 105W / 109W / 75W
Output impedance (20Hz–20kHz)	0.45–1.2ohm
Frequency resp. (20Hz–100kHz, 0dBW)	–1.7dB to –6.9dB
Input sensitivity (for 0dBW/50W)	27mV / 210mV (Aux input)
A-wtd S/N ratio (re. 0dBW/50W)	69.6dB / 86.6dB
Distortion (20Hz–20kHz, 10W/8ohm)	0.03–0.22%
Power consumption (Idle/rated output)	13W / 180W
Dimensions (WHD) / Weight	440x125x350mm / 13kg



ABOVE: Well equipped rear panel is dominated by a large heatsink and connections for six loudspeakers. The damping switch is hidden behind the AM rod antenna

soundstage which each instrument occupied, albeit with a slightly soft focus around the edges.

Clarinet came over as pleasingly fruity whereas the chesty nature of violins was a joy to listen to. Only deep piano notes that seemed to resonate onwards (a possible artefact of the amplifier's lack of bass rigidity) counted against it.

Unusually, the owner is given access to the 'MPX separation' adjustment, which in the majority of tuners is locked away inside. The setting varies from almost mono to a 'stereo wide' type of imagery, though is also somewhat noisy.

### BUYING SECONDHAND

The Sansui 5000A is a well made product and has proved to be durable in service. Certainly there is no need for the blanket replacement of components so often required when buying on the secondhand market. Indeed, such is the quality of the original parts that it is best to leave things alone if possible.

Anyone who is familiar with Japanese equipment of this era will not be surprised to hear that when things do go wrong it is often

the small transistors that are the cause. They either become noisy or low in gain due to the hygroscopic nature of their moulded plastic encapsulation, or suffer from broken or corroded lead-out wires. The original types are now unavailable, but modern equivalents are not difficult to identify and source.

With so many lamps built into the fascia it is not uncommon to find one or two that have failed. Most are easy to replace but some, notably the FM stereo indicator, are a bit of a trial to get access to. Check, therefore, that everything lights up correctly if you are sensitive about this kind of thing.

The AC-coupled output stage is more tolerant of slight maladjustment than are the later DC-coupled types but it is still worth checking in order to achieve the best performance. The bias adjustment is commendably easy to do but offset isn't, since it requires an oscilloscope and a high wattage load to perform properly.

Finally, note that if the lamp that indicates that the protection circuit is active fails there will be no output. It is worth checking this first should the amplifier suddenly become stubbornly silent. ☹

## HI-FI NEWS VERDICT

Unusually, it is the tuner that shines in this package. The amplifier is a gutsy performer with no shortage of power but it lacks the final polish that marks out the very best models of the period. The tuner, on the other hand, need make no excuses. It works superbly, is highly sensitive and has proved to be durable over the years. For the serious radio listener this model has much to recommend it.

Sound Quality: 73%



ABOVE: Impressive view in the original brochure, as befits the flagship model

# The scintillating Apogee

John Atkinson and Ken Kessler on a full-range ribbon speaker from the US

Hi-Fi  
News  
Sep  
1985

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from our vast  
archive of  
features and  
reviews from  
yesteryear

One product – two reviewers? Doesn't this seem like journalistic overkill at best or self-indulgence at worst? The answer would be 'Yes', if the product in question were conventional, but from the moment I first heard the Apogee Scintilla, playing a John Diamond PCM-F1 Beethoven recording at the 1984 Chicago CES, I knew that not only was this loudspeaker unconventional in concept, it was also out of the ordinary regarding its sound quality.

I had never heard such a breathtakingly natural reproduction of orchestral sound and image in the adverse circumstances of an hotel room in my life. I vowed then that the Scintilla would get the full review treatment, afforded in the past to a mere handful of products that have blazed new trails.

Stanley Kelly, responsible for the design of the ribbon tweeters manufactured by Decca Special Products, looked at the history of



**ABOVE:** The Scintilla was a three-way system comprising a coalescent tweeter and midrange, with woofer ribbons

this most basic of magnetic drive units in the Jan '85 issue of *HFN/RR*. It is nothing more than a practical realisation of Fleming's Left Hand Rule: a conductor loosely hangs between the poles of a magnet; when a DC voltage passes down the conductor it moves one way; when the current passes up, it moves the other. Apply an AC voltage and the ribbon oscillates, moving the air and producing sound.

## PAST RESTRICTIONS

Unfortunately, unless the magnetic field is very strong, or the ribbon is large but light, it doesn't produce much sound. The ribbon also has a tiny impedance compared with a conventional speaker and if driven directly by the amplifier will cause large currents to be sucked from it.

These restrictions in the past have meant that the ribbon principle has been almost exclusively used as

a tweeter: transformer matched, to bring the load impedance up to a level compatible with conventional amplifiers; and with a horn in front of the diaphragm to increase the

sensitivity to a level where useful sound pressure levels can be achieved without the use of prohibitively expensive magnets. There

is nothing in principle, however, that prevents a ribbon being used as a full-range driver, and it offers advantages in having inherently low levels of resonant coloration and, with attention paid to the magnetic circuitry, low distortion. Additionally, as the driver has a very large surface area and is a very good conductor of heat, its power handling capability can be very high indeed.

It was two years ago that new company Apogee Acoustics launched a three-way loudspeaker using true direct-radiating ribbons

'They arrived in January, ten stone each and taller than my wife'







for the mid and treble and an 'almost' ribbon for the bass. Nearly 7ft high, it came in two sections, a trapezoidal woofer and a mid/HF enclosure. The woofer and 80in long ribbon tweeter had a high enough impedance to be driven direct; the 0.1ohm 2in-wide midrange ribbon was matched via a transformer.

Awesome in its dynamic range capabilities – 120dB maximum SPLs are possible – it set the stage for the appearance of the more domestically acceptable Scintilla, selling for £4950 in the UK, which uses a smaller version of the woofer coupled with a five-ribbon array – not a transformer in sight – for frequencies above 500Hz.

## THE COMPANY

Apogee is a Massachusetts company run by two people: Jason Bloom, an art dealer, audiophile and music lover; and his father-in-law Leo Spiegel, an engineer recently retired from Northrop, and who has spent his life in the aerospace industry.

Leo and Jason, with a friend Gary Walker, now no longer with the company, had become involved in loudspeaker design, and although their first thoughts were more conventional, Leo felt that the true ribbon, neglected commercially apart from Stanley Kelly's work, held out the potential for dramatic improvements in definition and clarity compared with conventional box loudspeakers.

Back in the '60s, the only magnets available for use with a ribbon driver were very expensive and very bulky. The advent of the ceramic magnet, however, meant that what had hitherto been

rather too exotic for realisation as a commercial product became practicable. Practicable is not the same as easily achievable, though, and a considerable degree of research had to go into the evolution both of the Apogee speakers and of the most efficient ways of making them.

Apogee had to invest heavily in its own unique tools, jigs, and such items as precision foil corrugators and a half-million ampere-turn magnetiser. It now boasts its own woodworking shop, paint shop, coil-winding set-up, drive-unit assembly plant and loudspeaker manufacture and testing facility.

What you have, therefore, is a company which has made a major investment in hi-fi, with aluminium foil, wood, steel, magnets and high

**ABOVE:** Cover of company brochure from 1989 and pages inside showing the complete series of full-range ribbon loudspeakers. Current owners can visit [www.apogeepackers.com](http://www.apogeepackers.com) for servicing information

**BELOW:** Scintillas in the company's Massachusetts factory await finishing touches. The internal wires were made by Monster Cable



quality passive components entering their factory at one end, and unique, individually tested, heavy, cumbersome, and expensive ribbon loudspeakers leaving the other. The proof is in the listening, so how did the Scintillas fare? Time to hand you over to Ken Kessler...

## KEN KESSLER LISTENS...

In March 1983 I stumbled across an early pair of the Apogee Scintillas' 7ft-tall brothers. I'd just driven 60 miles through a blizzard during rush hour to reach a shop in Framingham, Massachusetts, where a couple of copies of the Mobile Fidelity UHQ-pressing of *Sgt Pepper* could be found. I caught sight of these huge panels and wandered into the sound room. I sat. I listened. I was hooked.

It was one of those rare moments – not just in hi-fi – when something grabs you, impresses you with such force or intensity that you have to sit back and revise your standards.

They arrived at my house in January, ten stone each and taller than my wife. We had to unpack them in the street, because the instruction manual says 'clear a space 8x8ft'. Once we'd got them in the *salon d'hi-fi*, we set them on their sides and fitted the metal baseplate and the struts.

Unlike the majority of loudspeakers, the Apogee Scintillas are truly amp-fussy, cable-fussy and position-fussy; they can be driven in three ways (single amp, single amp →





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bi-wired, bi-amped); and the user has a choice of nominal 4ohm or 1ohm (yes, a one ohm) impedance. I had to use the Apogeess in the 4ohm mode (because of my valve fetish).

Your own finances will determine whether or not you use a single stereo amplifier or bi-amplify, but bi-wiring, if you choose the former, is mandatory. The Apogeess can be driven by a single set of cables to a single pair of binding posts; bi-wiring is a desirable option requiring two sets of cables from the amplifier's output terminals to separate pairs of binding posts for the bass ribbons and the mid/treble ribbons.

I tried the standard, single-cable method when a crazed DIY mood hit (yes, you have to dig inside to change the terminals for single or bi-wire mode), just to see if the cost of extra cables was justified, and it proved to be so, especially in the area of bass control.

## WHAT IT NEEDS

I don't listen at earth-shattering levels but think of the Krell KSA-100 as the minimum safe bet. Otherwise, be prepared to watch amp after amp fail to meet the challenge. Resisting solid-state equipment, and desperately wanting to stay with components I knew, I begged the indulgence of Bill Beard, who – in rapid order – whipped up a pair of his 200W mono versions of the P100. Here were amps which, while liable to clip if driven to excess, were able to drive the Scintillas to slightly beyond the levels I prefer, before going edgy.

I quickly learned that the Scintillas were giving me more music than I'd ever heard before. The remarks to follow apply to the Scintillas' use with the Oracle/Zeta/Garrott-Decca Microscanner cartridge, the Beard P505 MkII preamp and P100 MkII monoblocks.

Cables were Monster Interlink Reference A, and the bi-wiring was done with Monster PowerLine 2 for the mid/treble panels. Absolute Wire was used for the bass ribbon.



**RIGHT:** A worker planes a Scintilla frame by hand while wearing a mask. Later in the process, very precise tolerance woodwork is required to achieve predictable spacing of the woofer ribbon and magnet over the large distance involved



**BELOW:** Jason Bloom, co-founder of Apogee with father-in-law Leo Spiegel and co-designer of the Scintilla, is pictured here alongside an Apogee Stage ribbon speaker

So how do you select music when you want to hear your entire collection from first LP to last? As I listen to about 30 new LPs per month because of my duties as a reviewer, I had no problem guaranteeing a variety of material. But what would mean more to me was how the speakers handled music with which I felt intimately familiar.

I could list, *ad nauseam*, the usual Sam & Dave, Ella Fitzgerald, and Howard Tate tracks which occupy so much of my life but felt it necessary to feed the Scintillas as broad a diet as possible. Mono, stereo, analogue, digital, DMM, direct-cut, half-speed... I tried 'em all.

As sonic spectaculars like Sheffield's *James Newton Howard & Friends* seem to make all systems sound that much better, I didn't let the frighteningly fast attack or carpet-curdling bass impress me too much.

No, I needed some standard issues for the acid test, LPs of the sort that we really listen to for pleasure, rather than for impressing our friends. Take something as mundane as The Eagles' *Hotel California*. By mundane, I mean you don't have to look hard for people familiar with the music. As with most mega-hit bands, The Eagles were able to command the best, and their recordings are terrific despite being studio-generated and thus artificial as hell.

Enter the title track: to pick out a single instrument from a wash of six or eight or so seems trivial, but as I grew up with a drum-playing brother I find simple, real hit-the-skins bass percussion a telling sign of a speaker's bass transient proficiency, power delivery, and – if there's a bass guitar trying to smother it – resolution. As The Eagles placed equal importance on all the members, their drummer got his fair share of the tape width.

## GENUINE ARTICLE

The kick drums in 'Hotel California' more often than not sound like a wet cardboard box or a boxer's punching bag. Surprise, surprise:

through the Apogeess, the sound was that of a real bass drum. If you've heard the genuine article, you'll know that you can feel it, too, and that it's a lot

louder sound than you'd think a man could produce using a foot-operated mallet and a skin stretched over a frame. No soggy, no overhang, just simple reality.

When the bass guitar comes in, the drum remains. So much for 'following the line' when in truth you probably have two or more.

But drums ain't everything. For me it all gets down to the most important instrument in music, and how it's presented in scale: voice.

The good thing about voice is that you don't have to travel very far or pay money to hear real ones. So, to show me just how good or bad a component is, I feed it The Persuasions' *No Frills, a cappella* ➤

*'As a non-hi-fi oriented guitar-playing friend said, "Wow..."'*

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from alpha to omega. When a system is asked to reproduce five or more voices which by design are meant to blend as one without losing a single singer, the system has to have resolving properties beyond reproach. And – as in reality – it doesn't mean just being able to hear each individual sound. It means being able to pinpoint each vocalist in his or her own space.

The Apogeos not only locate each Persuasion in the left-to-right and front-to-back planes, they also tell the listener which vocalist is a giant and which a runt. And, yes, Jason Bloom is a Persuasion fan.

### ROOM FOR CONFUSION

But on to another, this time a guitar. Adrian Legg's LP, *Technopicker*, is solo guitar, but he makes it sound like three. The recording is superb, and the power he conveys just with a lone guitar will tax most set-ups. As he produces notes faster than MacDonalds makes fries, there's lots of room for confusion. You can bet he gets all three ribbons working.

What the Apogeos did with Adrian Legg was to put him right in the room; no more and no less. You could hear the fingers on the strings, the guitar's body, and the odd fingernail or ten.

Or, as a non-hi-fi oriented guitar-playing friend said to me, 'Wow...'

Even with something as wholly artificial and multi-layered as the 12in version of the Human League's 'Don't You Want Me', the Apogeos did not show a weakness. Indeed, no matter how cluttered or chaotic a performance I selected, I could not get the Scintillas in a muddle.

What this means for lovers of complex works like Schoenberg's *Variations For Orchestra* (Op.31) is the unsullied portrayal of pieces which might otherwise suffer in translation from groove to ear.

Not that all was sunshine and glory, of course. Some people object to the styling, thinking them too *Star Wars*-y; to them I say 'So what?'. Others object to the price of the speakers or the size; to them I say 'You get what you pay for/it's big for a reason'. But most, like me, say, 'Where can I get £5k?'.

*'The Scintillas have, for me, no rivals below twice the price'*



No apologies are needed for the cost, size or styling or the difficulty in driving these speakers. The results speak for themselves, and if that's what it takes – ribbons are swine to manufacture – then so be it.

### DESERVE TO BE HEARD

The Apogee Scintillas have, for me at least, no rivals below twice the price, they reproduce music with such sheer competence as to make

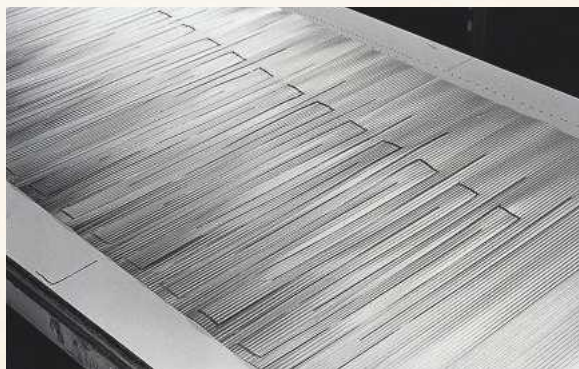
all previous standards redundant, and they deserve to be heard by every music lover – whether he or she can afford them or

not – in the same way that every art lover should visit the Jeu de Paume, even though he or she will never own the paintings inside.

Apogee named these well, but I think that the company should change its name to Apogee-nius. ☺

**ABOVE:** Original pages from the September 1985 issue of *Hi-Fi News* in which John Atkinson and Ken Kessler gave their take on the Apogee Scintilla – the first modern full-range ribbon loudspeaker to reach the UK

**BELOW:** The Scintilla bass panel, fabricated from aluminium foil, has the 83-slit conductor pattern cut by hand. The bass ribbon takes an hour to fabricate



Also in *HFN* this month in 1985

### HOW HI THE FI?

Andy Giles on the implications of the word 'fidelity' and thoughts on the politics of reviewing.

### THE 1985 GOLDEN TURKEYS

Ken Kessler and John Atkinson team up to examine hi-fi of the gallinaceous kind.

### POINTS & PLOUGHSHARES PT 2

Stanley Kelly looks at the evolution of the diamond stylus.

### POT POURRI 1

James Boyk on the Music of Sound, John Crabbe on Objectifying the Subjective, and Christopher Breunig on the diversity of critical opinion.

### STARTING POINT

Martin Colloms advises on system matching within tight budgets from the £300 system to the £750 CD-based system.

### POT POURRI 2

A round-up of short reports from Martin Colloms and Ken Kessler: TEAC R-999X cassette deck, Denon PMA-737 amplifier, Harman/Kardon PM645 amplifier, Monster Interlink Reference interconnect, Monster Powerline 2 speaker cable, Linn Index speaker, Proac Tablette EBT speaker, JBL TLX-4 speaker, Marantz SD-64 cassette deck and Marantz ST-64L tuner.



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Audio Research LS25 (mkI)	£1,800
Audiovalve Eclipse	£1,500
B.A.T. VK-53 SE	£8,240
BMC Audio DAC1PreHR NEW	£3,990
Boulder 1010 Pre	£6,950
C.A.T. SL1 Ultimate	£7,295
Cary SLP 98L	£2,295
Classe Audio CP - 800	£4,000
Concordant Exquisite + Exclusive Pre Amp NEW	£1,150
Crimson Electronics 710	
Pre Amp NEW	£3,995
Gryphon Sonata Allegro	£5,490
Jadis JPL	£1,700
Klyne Audio Arts 7LX (with phono stage)	£1,990
Krell Evolution 202	£4,990
Linn Klimax Kontrol	£4,250
Luxman C800f	£8,990
Mark Levinson 380s	£1,999
Mark Levinson No 326s NEW	£8,170
Mark Levinson No 380	£1,790
McIntosh C2200	£3,750
McIntosh C2500	£4,500
Naim Audio HiCap	£295
Naim Audio HiCap	£325
Naim Audio HiCap	£275
Naim Audio NAC82 & NAPSC	£895
Sony TAE 900	£2,990
Tom Evans The Vibe pre & Pulse power supply	£2,750
Unison Research C5P	£995
VTL TL 6.5 Signature Line Pre NEW	£11,350

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ATC SCM300AT based custom model	£8,550
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Audio Physic Tempo 3i	£675
Auroral A1 MK	£445
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Avalon Indra	£9,990
Avalon Time	£42,500
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Diapason Adamantes 3 25th Anniversary	£2,490
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Dynaudio Contour S1.4	£1,400
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Linn LP12	£1,500
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GAMUT D-200 FEW HOURS USE.....	AS NEW/BOXED.....	£4500
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DPA 3 BOX PRE AMP.....	EXCLT.....	£995
BEL CANTO PRE-1 REMOTE PRE AMP.....	EXCLT.....	£995
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AUDIO INNOVATIONS 1000 SILVER PRE-AMP.....	EXC.....	£599
H-CAT P-12B PRE AMP (E2500?).....	DEM.....	£1295
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JOHN SHEARNE 2.5 INTEGRATED AMP.....	1 OWNER.....	£375
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OPERA CONSONANCE A-100 RAMP 1 OWNER.....	MINT/BOXED.....	£495
PRIMARE I-21 INTEGRATED 1 OWNER.....	MINT/BOXED.....	£595
DENSEN B300XS POWER AMP 1 OWNER.....	MINT/BOXED.....	£849
MERIDIAN 501 PRE AMP.....	MINT/BOXED.....	£395
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ROKSAN K2 POWER AMP 2 MONTHS USE.....	MINT/BOXED.....	DUE
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(13K NEW) ONE OWNER FANTASTIC AMP.....	MINT/BOXED.....	£4995
ANTIQUE SOUNDLABS AQ-9 845 MONOBLOCS.....	DEM.....	£2850
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JOLIDA JD801A KT88 INT. ONE OWNER FROM NEW.....	MINT/BOXED.....	£695
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MELODY M89Q KT88 MONOBLOCS.....	MINT/BOXED.....	£2250
ART AUDIO INTEGRA EL-34 VALVE INTEGRATED.....	EXCLT.....	£1195
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ANTIQUE SOUNDLABS LH-01 PRE-AMP HIPHONO AMP.....	EX.DEM.....	£375
MULLARD 5-20 MONO'S EL-34.....	EXCLT.....	£595

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B&W 801 MATRIX SERIES 2 WALNUT 1 OWNER.....	EXCLT.....	£1750
MARTEN MILES CHERRY (8K+ ONE OWNER).....	EXCLT.....	£3250
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QUAD FM-4 TUNER 1 OWNER FROM NEW.....	EXCLT/BOXED.....	£295
AVID SCT STANDARD BLUE 1 METRE RCA.....	NEW/BOXED.....	£295
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Ortofon Cadenza Blue, plenty of life used 499  
Project PhonoBox SE phono stage, excellent value dem 99  
Project RPM 10 turntable with arm and platform dem 849  
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Project Xpression mk2, arm and cart used 199  
Project RPM 4 Turntable/Arm with cover, great! used 249  
Project Perspective, Speedbox SE, Shure V15Mx used 599  
Project PhonoBox S, excellent used 99  
Rega Planar 2, vgc+ boxed used 179  
Roksan Xerxes 20+, DS1.5, Phono, Tabriz used 2499  
Roksan TMS 2 with Reference PSU, boxed as new dem 2899  
SME 3009 improved, vgc+ used 199  
SME V, excellent boxed no cable used 1299  
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SME V12, nr mint boxed used 2249  
SME M2/9, nr mint boxed used 649  
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Thorens TD170 Auto excellent boxed dem 249  
Thorens TD160 replinched c/w RB250, Denon cart used 399  
Thorens TD160 original, boxed used 199  
Thorens TD209 turntable package dem 699  
Thorens TD2030 Blue turntable new 999  
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VDH Concor M/C cartridge new 1999  
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Arcam T61, vgc+ used 79  
Audiolab 8000T, vgc+ used 249  
Cyrus FM7, excellent boxed used 99  
Meridian 504, excellent used 249  
Musical Fidelity A5DAB, sealed box used 499  
NAIM NAT101 & SNAPs, excellent £500 NAIM service used 899  
NAIM NAT05 excellent (no remote) used 349  
Nakamichi C02, excellent used 99  
Nakamichi CR7e, B&W service 2013 excellent used 1199  
Nakamichi BX2, excellent used 149  
Nakamichi 580, near mint boxed used 249  
Nakamichi ST7e, rare tuner used 199  
Pure 701ES DAB Tuner used 89  
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Revox H2, just serviced, great condition used 499  
Sony TC-K611S, 3 head, vgc used 79  
Tandberg TC0440a, superb! used 499  
TEAC V8000S, superb used 299  
TEAC X1000M, serviced, superb used 599  
Technics RS1500 in flightcase near mint used 2499  
Yamaha KX1200 excellent used 199

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Anthem Integrated 2 Valve Integrated used 499  
Arcam Alpha 8P, vgc+ boxed used 199  
Arcam Alpha 7, vgc+ boxed used 99  
Art Audio Jota 520b, excellent used 3999  
Audio Flight Pre and Flight 50 Class A power dem 3999  
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Audio Analogue Maestro Settanta v2 used 999  
Audio Project ap60 Integrated dem 499  
Audio Research VS115, excellent boxed used 2499  
Audio Research Ref 610 Monoblocks, vgc boxed used 14299  
Audio Research D240 Power, excellent boxed used 749  
Audio Research SP9 Preamplifier, VGC+, MM phono used 749  
Audio Research LS26 Preamplifier, excellent boxed used 2249  
Audio Research Ref 3 Preamplifier, AS serviced, boxed used 3749  
Audiolab 8000Ms, UK versions, vgc used 499  
Audiolab 8000S excellent UK version with remote used 249  
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BAT VK55 Power Amplifier, excellent boxed used 1599  
Beard P101, excellent boxed, just serviced used 749  
Bryston B100sst excellent boxed used 2249  
Boulder 1010/1060 Pre/Power, near mint boxed used 10999  
Cayin MT 34L Valve Integrated, excellent boxed used 499  
Chord Electronics 1200E Power Amplifier, ex boxed used 2999  
Classe CAP2100 Integrated with phono, ex boxed used 1999  
Consonance Cyber 211 monos c/w Pavane valves dem 2999  
Consonance Reference 8.8 Integrated, boxed dem 99  
Creek OBH21, excellent used 119  
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## LAST WORD

# OFF THE LEASH!

KEN KESSLER TELLS IT LIKE IT IS...

There's big money being spent on hi-fi right now, but not by audio geeks.

Ken Kessler explains...



**A**udiophiles form a rarefied segment of society. It is populated by people who still care enough about sound quality to invest time and money in *outré* equipment and equally *outré* practices normal people cannot for a moment fathom. Neither are they even willing to recognise that our pursuits are fundamentally harmless to all but our bank balances.

We are prepared to tinker until we hear, or think we hear, improvements that bring us that bit closer to the original sound. We are, to people in the real world, anachronistic freaks. Lower even than Trekkies, who are at best amusing because they're so bizarrely infantile. (If you're gonna worship something from the world of SF, at least worship Philip K Dick or Jules Verne instead of derivative nonsense.)

In truth, we have as much relevance or credibility as train-spotters in 2016, when all the trains are modern corporate lookalikes.

The analogy is not that far-fetched if our hi-fi systems are to the world of headphones, iPhones and servers what the Sir Nigel Gresley is to the cloned engines traversing the rail network in 2016.

Indeed, I cannot recall the last time I saw a train-spotter, and I use the trains at least 30-50 times a year. They have been driven out of existence because their *raison d'être* – the variety of rolling stock – no longer exists.

What challenge is there writing down the registration numbers of identical carriages?

Like the be-anoraked ones, we are disappearing, and two recent occurrences illustrated it with the vividness and veracity of a painting by Norman Rockwell. Poignant, if shocking, was the first.

### ABSOLUTELY NO IDEA

I was at a party, talking with a colleague and her daughter. The daughter is 17 and clearly a music lover. And yet she had absolutely no idea what two terms that came up in the conversation meant: 'stereo' and 'hi-fi'. I suppose I felt like an elderly shoe salesman in

1955, who mentioned 'spats' to the Saturday boy. As depressed as it made me, that was nothing compared to what hit me next.

I will not identify the company because their clients pay for

precisely the anonymity you would expect of a concern which liaises with security firms who install alarms, CCTV and 'panic rooms' for wealthy – and therefore high-risk – individuals. Suffice it to say, the home entertainment equipment they are asked provide tends to be for mini-cinemas that seat 20, with 7.1 surround and plush reclining seats that hold drinks and rattle when there's an on-screen explosion.

Such customers do not blanch at invoices for £1,000,000. They are not audio geeks

(well, maybe one-in-1000 are) but they hire this firm because of its reputation for excellence. Instead of discussing anything we would deem of immediate concern (Which speakers? What wire? Solid-state or valves?), they say, 'Give us the best'.

By that, they mean no amps failing at 9pm on New Year's Eve. They do not want to read owners' manuals. They want less complexity than the most basic smartphone. These people are unlike the rest of us who have to scrimp and save to feed our hobby.

So, as you and every maker of extreme hi-fi might be thinking, these people should be the salvation of the high-end industry, and we should convert them. Dream on.

### THE SHOCKER...

Speaking with the company's engineer, who deals with patricians and plutocrats on a daily basis (and who just bought himself a new turntable), I asked if the vinyl revival even surfaced in that world.

Here came the shocker. His reply was that their *annual* sales of turntables was less than any hi-fi store would sell in a week. Maybe three or four. And his company deals with people who could buy multiple TechDAS Air Force Ones without having to call the bank. They *own* the banks.

He knows what I do and is utterly sympathetic with proper hi-fi, but has to stifle it. (Although I said last month I wouldn't dwell on the lies told about the vinyl revolution – I mention it solely as synecdoche for specialty audio *per se*.) He said that we are poison to, for example, self-made Russian billionaires who own football teams. Or who graduated from the Bratva.

No valves – too much hassle housing heat-producing electronics. Wires? They give you the look that says, 'Do you think I was born yesterday?'. But, alas, these are probably the only people around who can still afford the stuff.

I grow jaded of tales of hi-fi shows 'bursting at the seams with visitors like it was 1978', because very few of said visitors will be an oil magnate/Swiss investment broker/Beverly Hills plastic surgeon. Primarily, it'll be 'just us' and I hope that there'll always be enough of us left who know what the words 'hi-fi' and 'stereo' really mean. ☺

*'As depressed as it made me, that was nothing to what hit me next'*

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