

hi-fi news

& Record Review

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pre/power is a
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JBL HDI-3800

**Super-sized floorstander
pumps up the volume**

BAT VK-3500

**Hybrid integrated is a
riot of musical colour**



**Zesto Andros
Deluxe II all-tube
phono preamp**

FEATURE

Please release me...

**We pick the top LPs
that are ripe for reissue**

Meitner MA3

**Surprise streamer from
masters of the 'custom DAC'**



Pro-Ject Debut PRO
Evolution or revolution?



• **OPINION** 12 pages of letters & comment • **VINYL RELEASE** Grateful Dead's *Skull & Roses* on 180g
• **CLASSICAL COMPANION** Mozart's *Così fan tutte* • **STUDIO TOURS** Jimi Hendrix's *Electric Lady*
• **VINTAGE REVIEW** Beomaster 6000 quad amp • **READERS' CLASSIFIEDS** Hi-Fi bargains galore

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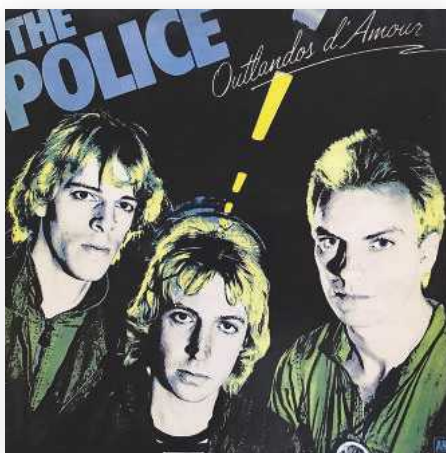
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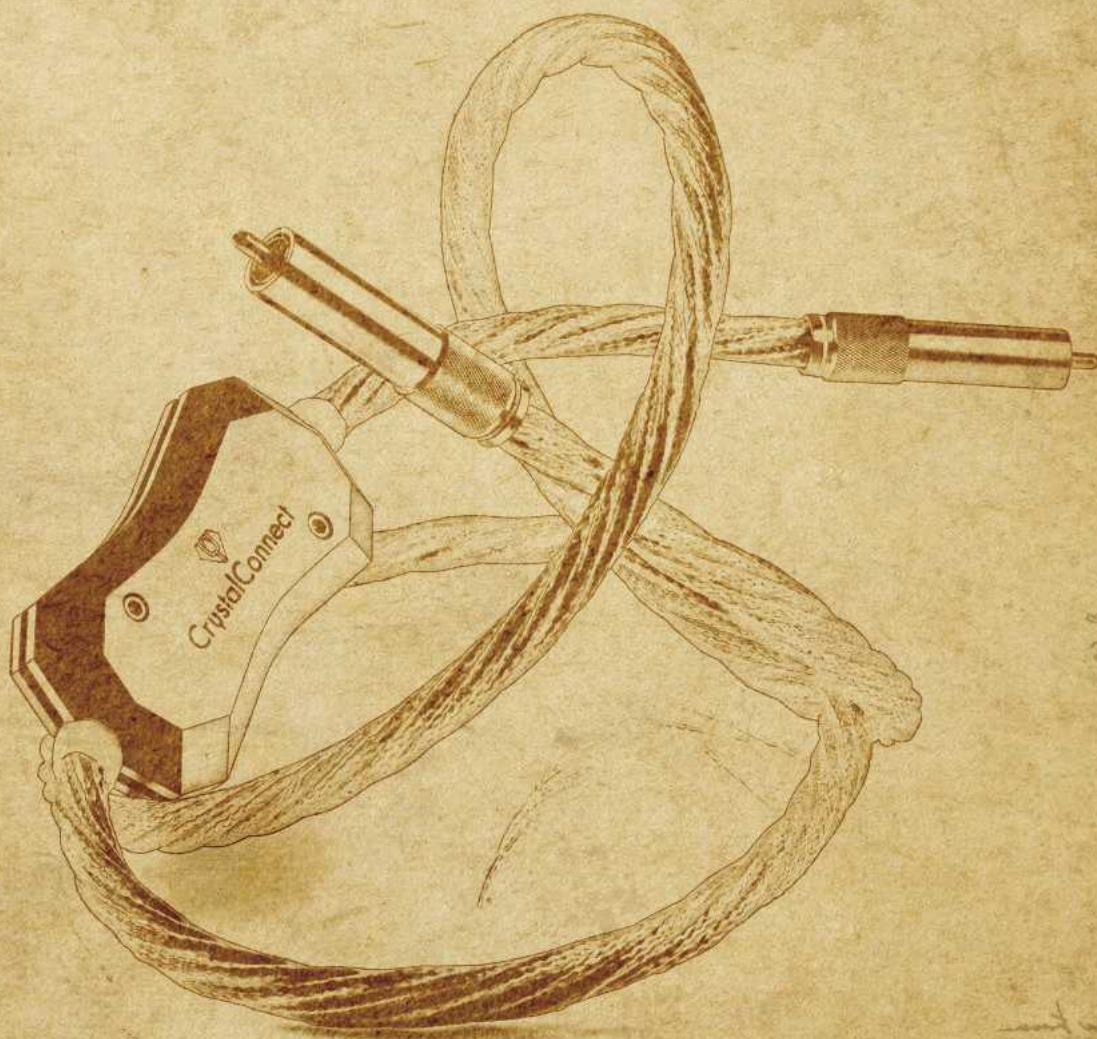
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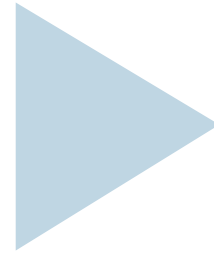
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"There's something deeply alluring about this streaming CD player/integrated amp combination, in both sound and function. In turn, this makes it easier to appreciate the music without being distracted by the technology. Now there's a thought for the future..."

I35 Prisma + CD35 Prisma: HiFi News Highly Commended



"The latest Primare platform is a highly modular amplifier system, but even as just an amplifier the I35 integrated is one of those products that you just love to enjoy!"

I35: HiFi+ Top 100



"If you like a sound that is fast, open, clean, clear, dynamically expressive and devoid of manipulative emphasis, the I25 Prisma ticks all the boxes. Analogue and digital in graceful harmony? That perfectly sums up the Primare I25 Prisma. Enthusiastically recommended."

I25 Prisma: HiFi Choice Five Stars



"Primare R35 – Flagship phono stage is an analogue triumph... it is an incredibly flexible and capable phono stage that seemingly has the ability to extract the very best from any cartridge that crosses its path."

R35: HiFi News Outstanding Product



"Primare's sophisticated PRE35 / A35.2 combination is a class act. Furthermore, while optimised as a pair, both pre and power amp remain very competitive in their own right, the PRE35 as a go-to hub for comprehensive digital systems while the A35.2 is an all-round high-value powerhouse."

PRE35 Prisma + A35.2: HiFi News Highly Commended



"Tonally, the I35 is rich and satisfying rather than bright and breezy, and yet it comes over as both energetic and dynamic sounding."

I35: HiFi+ 2020 Editor's Choice Award



"Make no mistake, products like the Primare I25 Prisma are the best expression of why this is a golden age for audio. This one box does it all, and it does it all damn well!"

I25 Prisma: HiFi+, Integrated Amplifier or Amplifier/DAC of the Year 2019



"Primare's R35 wins HiFi+ phono stage of the year! At the R35's affordable price tag, it's sensational"

R35: HiFi+ Phono Stage of the Year 2020



"Something that Primare has made an art form over the years is their ability to produce equipment that feels special. What results is a product that feels like a deeply clever solution to the business of making an audio system."

I15 Prisma: AVForums, Highly Recommended



"Despite its copious amounts of facilities, you shouldn't think of this amplifier as a lightweight in the sonic stakes. Yes, it has a dry and accurate presentation, rather than embellishing the music, but it's always fun and is backed up by plenty of power, too."

I15 Prisma: HiFi Choice Recommended



"Built with the same care the company brings to its main amplifiers, its low-noise design is informed by the flagship R35 model just as its sound is the familiar 'Primare' mix of weight and substance allied to detail and resolution"

R15: EISA Phono Preamp 2020-2021



"Able to resolve detail, throw a light on dynamic contrasts and pull you into the music without adding its own character, it's an ideal bridge between your vinyl player and amp."

R15: AVTech Media 2020/2021 Best Phono Stage



"In use, its majestic grace, poise and control is matched by a measured and even tonality. Smooth, couth and sophisticated, Primare's I15 Prisma proves that you can have the convenience of app control, stylish elegance and musical satisfaction all in one."

I15: Prisma AVTech Media Award 2018/2019: Best Stereo Integrated Amplifier



"For alongside its fine sound there's extensive functionality including Roon and Chromecast. Decidedly not a minimalist product, the Primare I15 Prisma is a lovely listen that packs a wealth of technology into a small box, and does so with great elan."

I15 Prisma: HiFi News Highly Commended

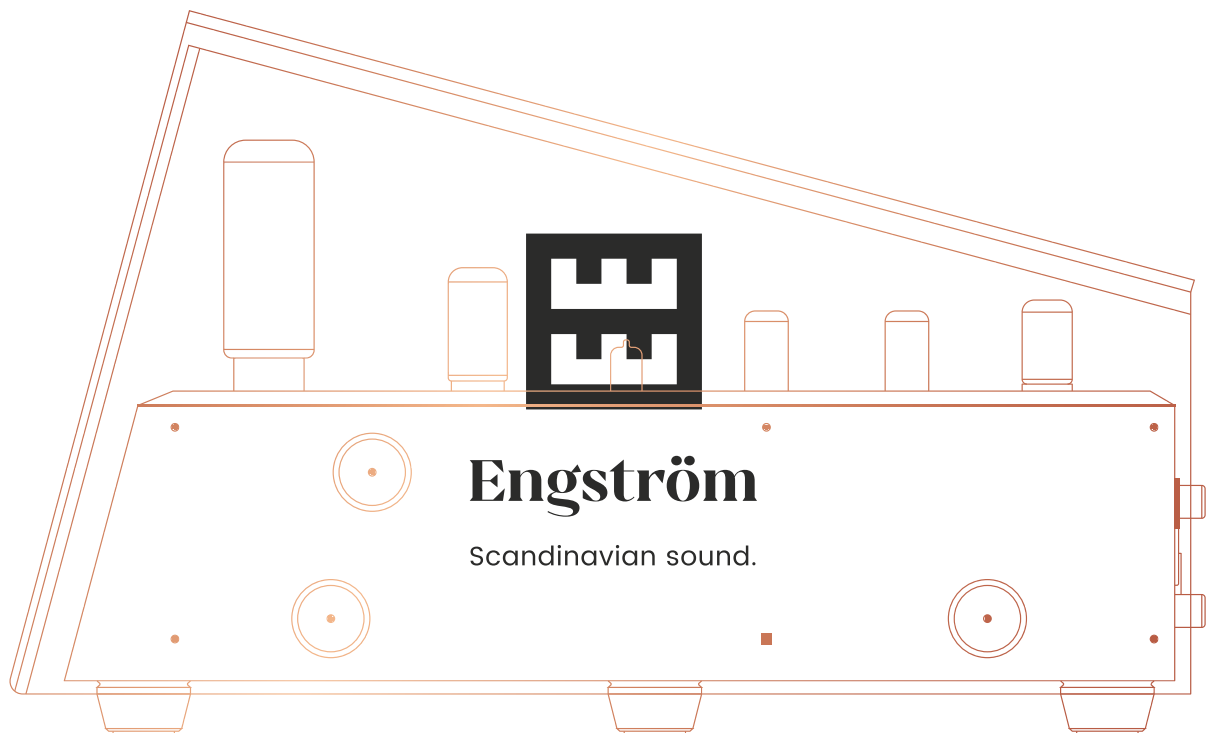
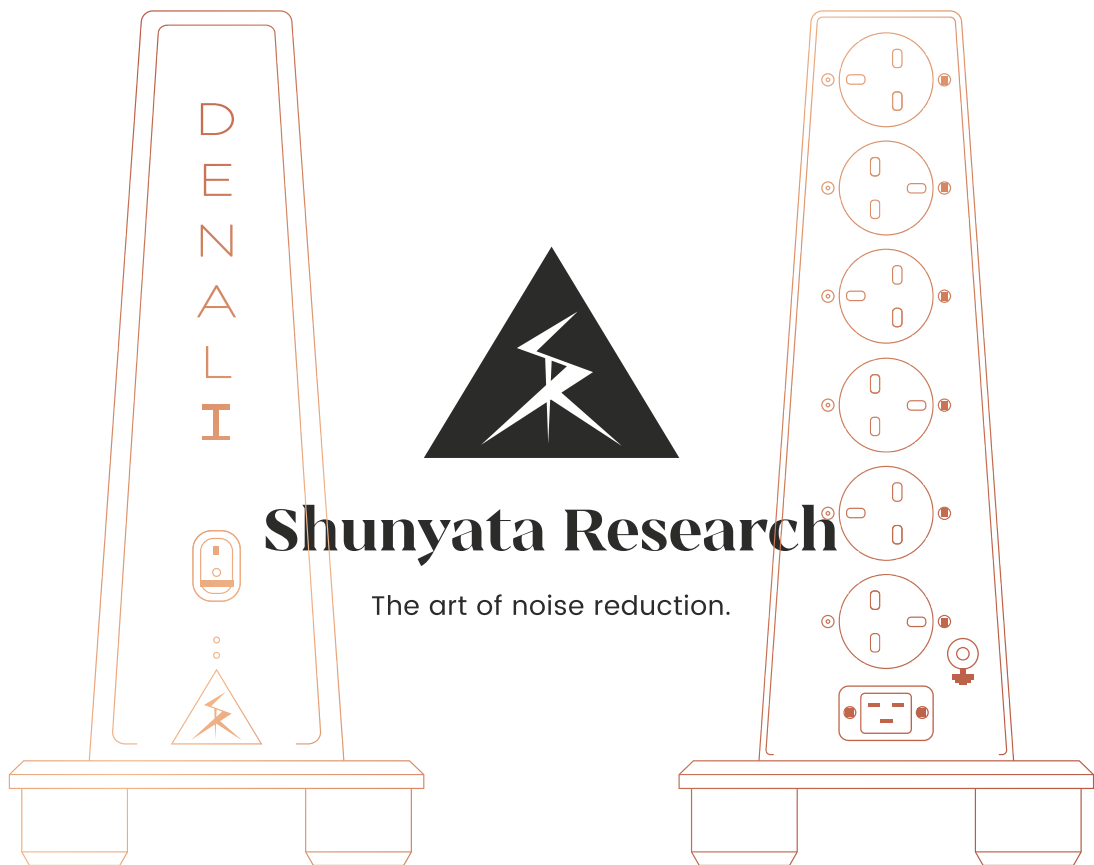


"... a precision and focus that doesn't blunt edges, blur textures or drag tempos and presents the solid and the spacious as a coherent whole with the full spectrum of tonal colours and accurately rendered instrumental timbres."

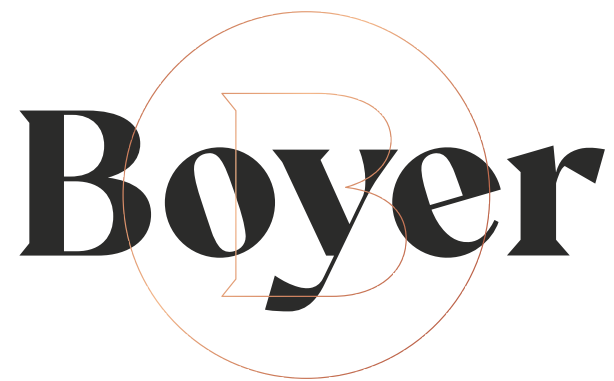
R15: Hi-Fi Choice – Recommended, Five Stars



The quotes above are from only some of the many great reviews and award recognitions the current range of Primare models have received from the UK press. For the full reviews and award citations, as well as many more from both the UK and world press, go to [primare.net](https://www.primare.net)







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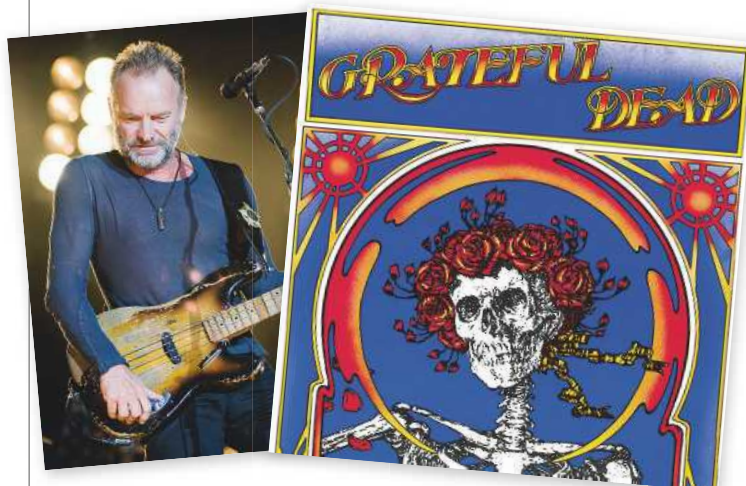
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ABOVE: Put the Zesto into your LP playback with the Andros Deluxe II all-tube phono stage. We get groovy with some choice vinyl on p54



ABOVE: BAT is back with an all-analogue tube/transistor hybrid integrated amp on p62. Does it represent the best of both worlds?



MUSIC: 1978 saw the release of The Police's debut *Outlandos d'Amour*, our Vinyl Icon (p84), while we uncover The Grateful Dead's *Skull And Roses* as the album is re-released on 180g vinyl (p82)

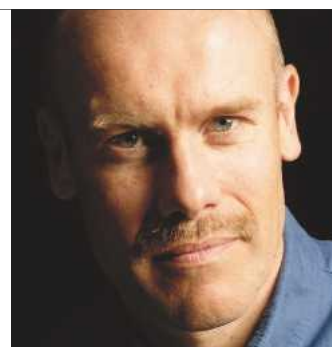
RIGHT: *Hi-Fi News & RR* is the UK's representative of EISA's Hi-Fi Expert Group. Editor Paul Miller took over as EISA's President in June 2016



Like the fabled rolling stone that gathers no moss, Boulder's massive amplifiers do a fairly convincing job of rolling over any lightweight competition *en route* to delivering a speaker-crushing sound. Our cover stars this month are exemplars of heavyweight, component-dense, audio engineering and are about as far from the minimalist audiophile aesthetic as it's possible to get.

Not only are both pre and power amp truly balanced amplifiers – there is not a single-ended RCA input or output to be found – but they adhere to the practice of using a field of (output) devices to properly manage the current demand of high power/low impedance conditions. This, and the fact that the positive and inverting sides of an electrically balanced amplifier doubles the component count, or thereabouts, goes some way to explaining the complexity of their build [see p43].

Why aren't all amplifiers built this way? Many costly, high-end amplifiers are, citing the benefits of suppressed common-mode noise and distortions, but to achieve this without introducing a new set of problems typically demands very tight component matching in both phases of the balanced circuit. Once again, build costs only go one way...



So amplifier design is both a science and an art, the latter expressed in how the designer chooses to 'balance' the inevitable compromises in his/her choice of circuit. Juxtaposing the bountiful harvest of transistors featured in these big high-end amps, designers

'Amplifier design is both the science and art of compromise'

including Gato Audio's Frederik Johansen, previously with GamuT, have turned to a single pair of high-current FETs to eliminate the need for parallel output transistors entirely. This simplicity comes with its own concessions but that, as I say, is all down to the 'art' of audio engineering.

On the subject of art, I hope you all enjoyed our cover design this month. I can't vouch for the geology of the rocks but I can confirm that the stars are from the Colorado night sky. We like to go the extra mile at *Hi-Fi News*!

PAUL MILLER GROUP EDITOR

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STEVE SUTHERLAND
Editor of *Hi-Fi Choice*, Steve was at the helm of *NME* through the Britpop years. Steve brings a unique slant to our music features

Light fantastic

NEW DS AUDIO DS-003 'OPTICAL' PICK-UP

DS Audio has leveraged technologies from its £11,995 flagship Grand Master cartridge [*HFN* Feb '21] for its new DS-003, while targeting a more affordable price point. Utilising the brand's now-familiar 'optical' platform – eschewing all magnets and coils – it replaces the outgoing DS-002 and shares the Grand Master's redesigned independent left/right channel LED and photocell system. Improved channel separation is claimed along with an increased output – all without compromising the signal-to-noise ratio or the pick-up's 'musical clarity'.

Aluminium is used for the DS-003's body and cantilever, the latter married to a line-contact stylus. The internal wiring has been further thickened to lower impedance, while the weight of

the shading plate (deflecting light from the LEDs) has been reduced by 50%.

As with all DS Audio pick-ups, the DS-003 must be partnered with a separate PSU/equaliser. The custom DS-003 equaliser offers four LF roll-off options, and is available with the

cartridge for £4995, or separately at £3147. The DS-003, which is compatible with any DS Audio equaliser, is available for £2298.

Digital Stream Corporation, Japan, 0118 981 4238; www.ds-audio-w.biz; www.soundfoundations.co.uk



Horns of plenty

KLIPSCH FORTE IV WITH REAR 15IN ABR

The latest addition to Klipsch's Heritage series is the £5100 Forte IV, a fresh update on a design the American marque first launched in 1985. This 90cm-tall 'floorstander' claims a 99dB sensitivity and 8ohm nominal impedance, suggesting a very easy drive for any amplifier, and uses a 380mm rear-facing passive radiator in addition to a 300mm woofer. The midrange K-702 compression driver – also used on Klipsch's Heresy IV [*HFN* Nov '20] – and new titanium tweeter are mated to Tractrix horns, while a revised filter network promises a

sound that's 'completely

revoiced' over the previous generation's. Grain-matched wood veneer finishes are American Walnut, Natural Cherry, Black Ash or Distressed Oak. **Klipsch Group, Inc., 01235 511 166; www.klipsch.com;**

www.henleyaudio.co.uk



HI-FI NEWS' NUGGETS

SDD GETS CHARISMA

Canadian brand Charisma Audio's range of MC cartridges, phono stages and turntable components are now available in the UK via Sound Design Distribution alongside high-end marques Kii Audio, Mola-Mola, Lumin, Grimm Audio and Accusound. Charisma's proprietary designs include the MC, Reference and Signature series of moving-coil pick-ups; the Musiko phono pre, turntable and tonearm; and Cabriolet/Function loudspeaker stands. **www.sounddesigndistribution.co.uk**

Q ACOUSTICS APP

Owners of Q Acoustics' Q Active 200 and 400 wireless loudspeakers can now download the partnering Q Active app for Android and iOS. The app offers control over volume, plus full album/track navigation, while also offering an interactive display of the selected album, artist, track name and cover art. The app also simplifies over-the-air firmware updates for these DSP-governed speakers. **www.qacoustics.co.uk**

Roksan refresh

NEXT-GEN ATTESSA SEPARATES ANNOUNCED



New from Roksan is a four-model range it hopes will attract a 'new audience'. The Atessa CD transport (£495), Atessa integrated (£995) and Atessa streaming amplifier (£1495) are all slim-chassis designs, in silver or black, and compatible with Roksan's MaestroUnite control app. Meanwhile, the Atessa Turntable (£995) is available in satin white or satin black, and features a unipivot tonearm, Roksan Dana cartridge and switchable MM phono stage.

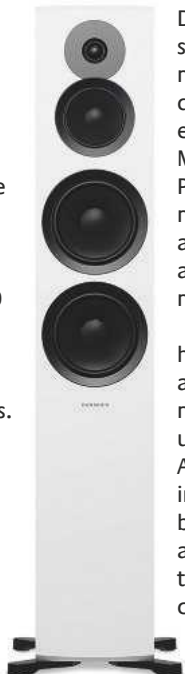
Both amps use a 192kHz/24-bit Burr-Brown DAC, and claim an 80W/8ohm power output supported by a toroidal transformer-based PSU that's derived from the brand's costlier Caspian hardware. Analogue connections include MM phono and two line, coaxial and optical digital audio, plus Bluetooth. The Atessa streaming amplifier adds Ethernet, USB-A and integrates the BluOS hi-res multi-zone platform. **www.roksan.com**

Danish trickle-down

DYNAUDIO ANNOUNCES UPDATED EMIT SPEAKER SERIES

Six years after Dynaudio first introduced its Emit series, it has returned to the entry-level offering for a second-generation overhaul. There are five models in the new range – the Emit 10 and Emit 20 standmounts (£630 and £825, respectively), the Emit 30 and Emit 50 floorstanders (£1300 and £1750), plus the Emit 25C centre (£600) for multichannel systems.

The speakers, which have been tuned at Dynaudio's Jupiter measuring facility in Skanderborg, Denmark, feature trickle-down technology from the company's Evoke series. This includes Cerotar soft dome tweeters that are in turn based on the Esotar 40 unit of



Dynaudio's Special Forty standmount. Woofer, midrange and bass/mid drivers, meanwhile, all employ a proprietary Magnesium Silicate Polymer (MSP) cone material, copper-clad aluminium voice coils and 'dual-stacked' magnet systems.

The crossovers are a hybrid of first, second and fourth-order networks, ensuring 'sonic unity across the range'. Additional upgrades include new dual-flared bass-reflex ports, and a revised styling of the Emit's 18mm MDF cabinets with laminate finishes including Black, White and Walnut.

**Dynaudio A/S,
Denmark, 01638 742427;
www.dynaudio.com**

Wi-Fi via iFi

IFI AUDIO EXTENDS ZEN PLATFORM WITH WIRELESS STREAMER

Priced at £399, iFi Audio's ZEN Stream is described as a 'wireless transport' intended to sit between a router and a DAC or integrated amplifier with USB or S/PDIF inputs. A Linux-based open-source architecture then promises to deliver flexible, futureproof music streaming without the limitations of 'walled-garden' systems or proprietary controllers. File support over Wi-Fi and Ethernet extends to 384kHz/32-bit LPCM and 11.2MHz DSD, and the

ZEN Stream integrates Tidal Connect, Spotify Connect and Apple AirPlay. Chromecast is set to be added later in the year, as is Roon Ready certification (the device is compatible with Roon Bridge software out of the box). The curved aluminium chassis mirrors that of other ZEN accessories, while front-panel LEDs denote connection status and sample rate.

**iFi Audio (Abbingdon Global Group), 01900 601954;
www.ifi-audio.com**



Next level Altair

AURALIC'S NETWORK-ATTACHED STREAMER/DAC

Auralic has upgraded its Altair streaming/USB DAC to G2.1 status, joining the Sirius, Aries [HFN Feb '21] and Vega products that were revised last year. This £4599 network streamer/preamp now also benefits from the brand's EMI-shielding 'Unity Chassis II' enclosure, 'Tesla Platform' processor and 'Dual Femto' clocks, plus 'Class A Orfeo' output modules. Furthermore – and unlike the G1 iteration – the Altair G2.1 is not just a digital diva: joining its USB/AES/coaxial/optical connections are

line-level RCA and MM phono inputs that bypass the digital circuitry and allow it to be used as an analogue preamplifier.

Control comes via Auralic's Lightning DS app, OpenHome-compatible control software, or the streamer's 4in full-colour TFT display. Local storage can be added for non-networked digital playback via an internal drive bay, and Auralic also sells a model pre-fitted with a 2TB SSD for £4999.

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Please release me...



Whether it's '70s folk or landmark '90s electronica, do you have a wishlist of albums you are itching to see re-appear on vinyl? **Johnny Sharp** on the records ripe for reissue

The selling of material from back catalogues makes up an increasing portion of the music industry's revenue, whether on streaming sites or physically reissued and marketed anew. But while many a well-known album has been remastered, repackaged and re-pressed on 180g lark's breath-coloured vinyl in a lavish gatefold sleeve, there's still no shortage of long players that have only resurfaced in digital or CD format (with vinyl aficionados denied) – if they were ever released across all formats in the first place. Others may have seen only limited edition reissues on small overseas labels,

denying all but a lucky few hungry punters, and driving up prices of used copies online.

PRESSING CONCERNS

Making reissues happen isn't always a straightforward business. They may end up being blocked or made prohibitively costly due to label or management disputes, or in a few cases, the artists themselves aren't interested in having their work re-released, even if they stand to make what looks likely to be a tidy sum for doing really very little.

And now, of course, there is much concern within the industry that backlogs at vinyl pressing plants, exacerbated by

the pandemic, might seriously delay new reissue projects. Either way, the customer ends up frustrated. Still, you may well have your own list of releases that you'd like to see reborn in shiny new packaging, perhaps enjoying a state-of-the-art remastering and accompanied by a disc featuring previously unheard studio takes and bonus tracks thrown in for good measure.

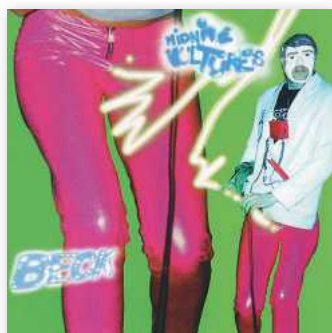
Here's our pick of releases, culled from a variety of genres, that we'd love to see become more widely available. In some cases, our wishes look unlikely to be granted any time soon. But in others, it's hopefully just a matter of time.

BECK

Midnite Vultures

(Bongload, 1999)

Genre-agnostic maverick Beck Hansen took a swerve towards r'n'b on this album, which was preceded by a horn-spattered hit single, 'Sexx Laws'. It's still highly regarded by fans, but his label Geffen didn't bother with a vinyl release. Instead, independent label Bongload issued a limited run of LPs for the oddballs and dinosaurs still insisting on spinning large, unwieldy black discs under a suspended needle. Since the revival of the black stuff,



though, there's high demand for this album to resurface, preferably in a carefully overhauled fashion. Beck himself promises that a reissue is indeed in the pipeline.

GUIDED BY VOICES

Same Place The Fly Got Smashed

(Rocket #9, 1990)

Indie kids are invariably a gloomy bunch, which may be why this concept set concerning the themes of murder and alcoholism retains cult status among fans of Dayton, Ohio's favourite alternative rock institution. Another reason is supply and demand – only 500 vinyl copies of this early album on the Rocket #9 label were pressed, meaning an original LP now fetches up to £1500, despite a 2005 digital reissue.



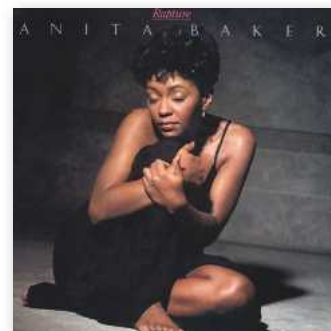
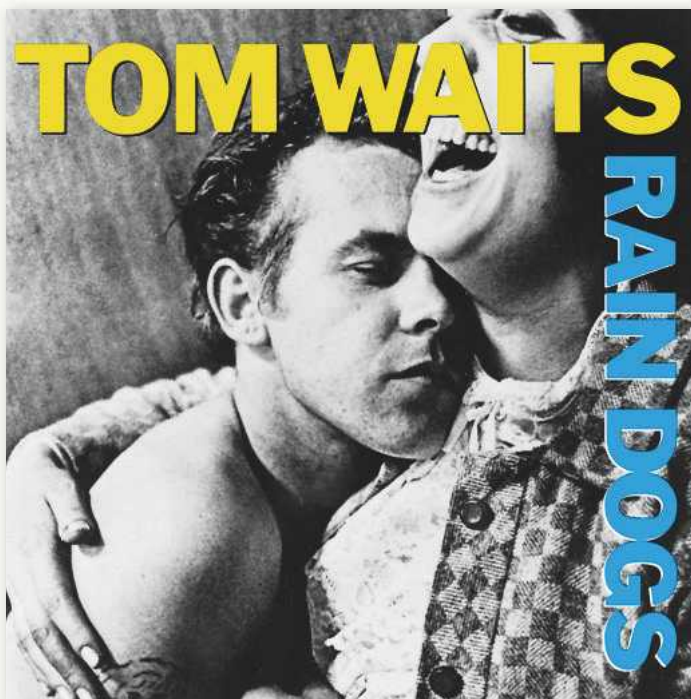
Fans of the group tend to be a keen bunch indeed, and if band leader Robert Pollard ever saw fit to have this early set reissued, he'd make many a GBV completist very happy.

TOM WAITS

Rain Dogs

(Island, 1985)

The release that came in the middle of the tar-throated troubadour's peerless mid '80s run hasn't made it back onto vinyl apart from a limited release by Dutch plastic-fanciers Music On Vinyl ten years ago. No-one can quite fathom why this album hasn't been given the full gatefold treatment. Then again, while it's harder to get your hands on in its original vinyl incarnation than *Frank's Wild Years*, the latter would perhaps benefit more, audio-wise, from a new release in double-disc format, since the original album was a tad too long for the single LP it appeared on, and sound quality duly suffered.



ANITA BAKER

Rapture

(Speakers Corner ELEKTRA75049)

Here is an example of an album that isn't in need of a reissue due to its scarcity on vinyl or massive levels of retrospective cool, but because it's a classic. However, the album has never been re-released with the now standard deluxe remaster, extra tracks and lavish packaging. Could this be down to the assumption that r'n'b fans, like pop pickers, are less taken with such products? We suspect that this is what's known in the trade as 'a gap in the market'.



KRAFTWERK

Ralf & Florian

(Philips, 1973)

If ever there was a forward-looking band, it was this lot. So we can understand Kraftwerk leader Ralf Hütter's disinterest in reissuing their first three albums. Besides, despite containing substantial amounts of influential material exemplifying the Krautrock genre, they came before the band fully realised their electronically oriented vision, or indeed cut their hair. This one is the pick of the trio, and any kind of new version on vinyl would be simply *wunderbar*.

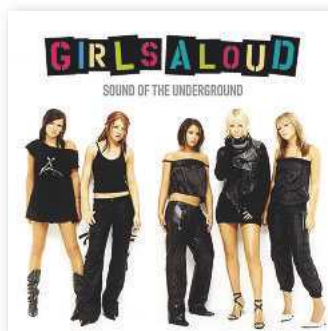


MASSIVE ATTACK

100th Window

(Virgin, 2003)

The trip-hop maestros' fourth LP only featured one of the band's three original members, but it boasts a comparably breathtaking claustrophobic majesty to its predecessor *Mezzanine* (1997). As for the reissue, it's all a bit mysterious. It was up for pre-order as far back as 2017, then again late last year, but somehow it has never actually materialised. Let's hope it's not permanently on ice, as the trifold package in which the original vinyl edition arrived is said to be restored.

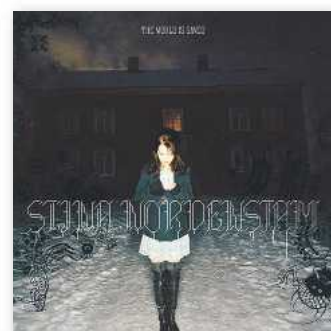


GIRLS ALOUD

Sound Of The Underground

(Polydor, 2003)

Incredibly, despite being one of the world's biggest girl bands for much of the 2000s, precisely no studio albums by these reality show alumni were ever released on vinyl. Neither have any enjoyed the super-deluxe reissue treatment. Could this reflect a common industry belief that reissues are for album-oriented rock artists? It is reported that plans for a reunion of the band are currently on hold, which may mean plans for new products might also be postponed.



STINA NORDENSTAM

The World Is Saved

(V2, Universal, 2004)

It's not always easy to bring an album out of commercial cold storage if the artist that made it has washed their hands of the music industry. This sparrow-voiced Swedish singer-songwriter disappeared from public view after this final long-player, but what a way to say goodbye – this trip-hop-tinged, icily atmospheric set is arguably a career best. Only released on CD at the time, it was pressed again in a 500-copy run in the US in 2015, but she – and we – deserve far better. ➞



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NIC JONES

Nic Jones

(Trailer, 1970)

This guitarist and singer's name is truly hallowed in British folk circles. The albums he made between 1970 and 1980 have since grown in stature, with *Penguin Eggs* arguably his creative high watermark. But while that has been reissued on vinyl over the years his earliest long-players, on the tiny Trailer label, including this stunning debut, remain rare. Unspecified 'legal issues' surrounding rights to the Trailer catalogue are said to have so far blocked reissues. Sort it out, folks!



THE KLF

The White Room

(KLF Communications, 1991)

This set featured Cauty and Drummond at their chart-baiting, populist best and it sold handsomely 30 years ago. So why has it never seen the light of day on vinyl since? These pop shamen's absence from the charts has never been more sorely missed, so can we not persuade them to revisit the scene of their greatest triumph? Money's never been their motivation (after all, they did *literally* burn a million quid) but couldn't they do it for the (overgrown) kids?



MUSIC BOX

Fun Palace

(No label, 1969)

Connoisseurs of psychedelic curios from the late '60s and early '70s could all probably name a lost gem from that era that they'd love to see reissued. This lovably wonky, lo-fi acid-folk affair is a prime example, not least because it's one that was pressed in tiny numbers at the time. Lysergic covers of tunes such as 'Light My Fire' and 'Scarborough Fair' punctuate surreal skits and the band's alluring acoustically oriented originals. It richly deserves rehabilitation.



ORBITAL

Orbital

(FFRR, 1991)

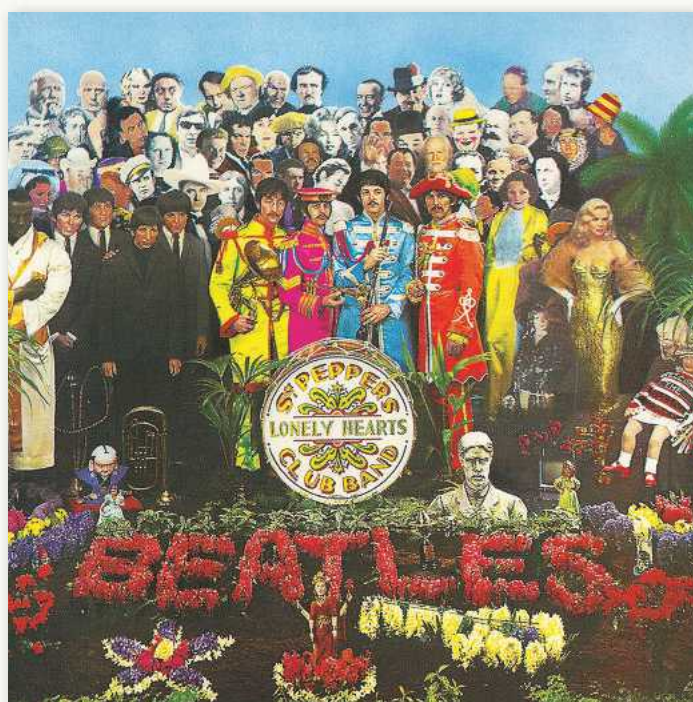
Often referred to as 'The Green Album', the Hartnoll brothers' first LP was a landmark in UK electronica. Like many such albums, it was given a limited reissue – in the Vinyl Collectors series by Warners in this case – in 2015, but that edition in mint condition is already going for nearly £100 online. So, as with many such reincarnations – like Record Store Day-style coloured vinyl re-pressings – there is a lot of demand out there for the album to be given the full reissue treatment.

THE BEATLES

Sergeant Pepper's

(EMI, 1967, Mono)

Remasters are certainly a wonderful thing. But what if you want to hear your favourite records exactly as the artists heard them? That was the case for a long time for Beatles fans who wanted hard-to-obtain original mono recordings of The Fabs' work in the form they were originally produced. They got their wish with 2014's 14LP box *The Beatles In Mono*. But what if you want to own individual albums in mono, and can't afford to fork out hundreds of pounds for a whole set of them, or a rare original? Stand-alone mono versions of what proved to be mighty leaps in the world of the recording arts would be a way to serve that need.



AIR

Love 2

(Virgin, 2009)

Hard to believe that only 12 years after release, this LP is already in dire need of reissue, but that perhaps reflects the continuing rise of interest in vinyl since then. The limited-run 2LP incarnation released by The Vinyl Factory in 2010 will now give you little change out of £200 if you want to track one down online. It may not be the French duo's most celebrated release but it's an underrated gem and deserves the renewed attention a reissue would bring. ♪

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INVESTIGATION



Under the covers...

Johnny Sharp on the creation of the artwork for Fleetwood Mac's pivotal late '70s album *Rumours*



BELOW: Stevie Nicks and Lindsey Buckingham pictured on the sleeve of *Buckingham Nicks*, the only album the couple released as a duo



The '70s had no shortage of puzzling LP sleeve imagery. But if the image that adorned Fleetwood Mac's 1977 album *Rumours* was among the more perverse and baffling, that might have been because the band that made it had been driven to the edge of sanity while doing so.

Yet just as punk rock was supposedly sweeping away the airbrushed soft-rock and indulgent prog that dominated the musical landscape in the mid '70s, this was one of the albums that would prove that the death of traditional rock had been greatly exaggerated.

Sonically, it was a state-of-the-art affair despite the troubled nature of its recording sessions. And the personal turmoil that informed its songs seems to have only enhanced their emotional resonance.

There's something olde worlde about the cover image, as if drummer Mick Fleetwood and singer Stevie

Nicks are posing for a renaissance painting. A tall, well-groomed gentleman with a ponytail stands in tight trousers and waistcoat, like the proverbial dandy highwayman, with one foot on a small stool. A pair of small wooden balls dangle from the front of his trousers.

SPLIT PERSONALITIES

Meanwhile, a woman in a cape, like some supernatural nymph, has one leg draped across his knee, and both appear to be peering into a crystal ball that Fleetwood holds in the palm of his hand.

What were we to make of all this? The crystal ball (which also featured on a similarly intriguing cover for 1975's self-titled album and remains a recurring band motif) appears to represent foreseeing the future. It was a future, curiously enough, in which the two flirtatious protagonists of the image would embark on a chaotic love affair a few months after the album's release.

Meanwhile, Nicks is said to be in character as the Celtic witch Rhiannon, whom she had brought to life in the earlier FM song of the

same name. And the balls? While the fertility symbolism is so obvious it's verging on crass, they were a lucky charm for the drummer, who had appropriated them from a lavatory chain in a bar during the band's early days, and had them hanging from his drumkit at every show.

If there's a sense of power dynamics in the image, wherein the haughty-looking Fleetwood looks unimpressed at the beguiling

antics of Nicks as she attempts to weave her spell over him, that isn't a million miles away from what was happening in the band itself.

John and Christine McVie were in the

middle of a divorce and were barely on speaking terms, with Christine by that point going out with the band's lighting director Curry Grant, about whom she wrote 'You Make Loving Fun'. Meanwhile, 'Don't Stop' was an appeal to John to move on.

Buckingham and Nicks were also splitting, in their case in louder, openly-hostile circumstances. They had met while attending the same school and in 1973 had released *Buckingham Nicks*, before they

'Fleetwood had taken the balls from a lavatory chain'



joined Fleetwood Mac. Their feelings towards each other would be laid out in songs such as Buckingham's angry 'Go Your Own Way'.

LEADER OF THE MAC

Fleetwood, meanwhile, was seeing his own marriage in trouble after his wife Jenny Boyd had an affair with his friend and erstwhile Mac guitarist Bob Weston. 'At least I was spared the in-house, up-front situation', Fleetwood said in 2013. 'I didn't have to actually work with my ex-spouse.'

As the sleeve perhaps indirectly reflects, the beanpole drummer had adopted the role of father to an unruly family, laying down the law in the studio and ensuring the band's increasingly fractious personal lives and recreational habits didn't derail the creative process.

But he was hardly the most reliable of bandleaders. Herbie Worthington [see boxout, p33], the late photographer who created the cover image and conceived the concept – even bringing his own footstool for Fleetwood to use –

TOP: Group shot of the band that appears on the LP's rear sleeve (far left); front cover of the album with Mick Fleetwood and Stevie Nicks

ABOVE: Label of the original LP on Warner Bros (top), group and candid shots from the album's inner sleeve poster and (top right) publicity shot of the band from 1975

LEFT: The group at the photo shoot for the back cover (l-r) Lindsey Buckingham, Stevie Nicks, Mick Fleetwood, Christine and John McVie

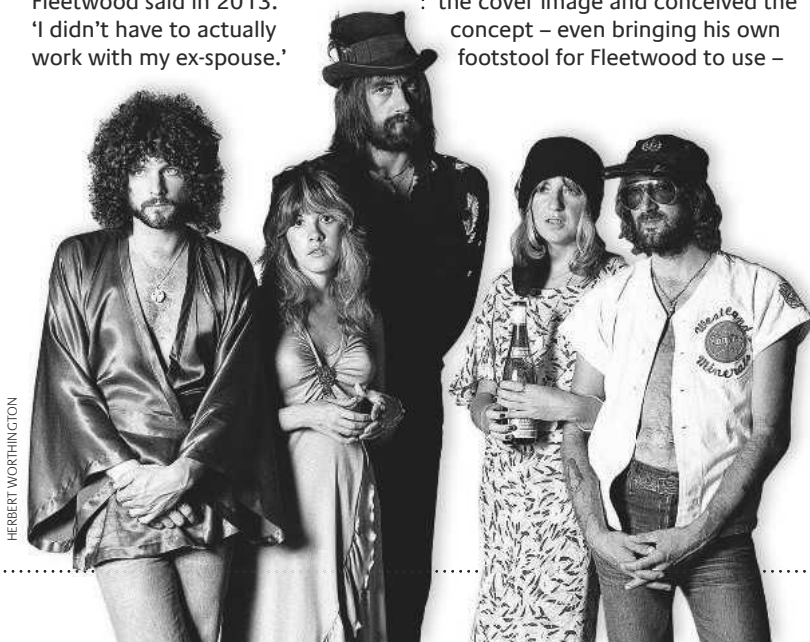
was also in-house photographer for the band, hanging out at the Record Plant studios in Sausalito, California, where they spent a year, on and off, making *Rumours*. He recalled: 'Mick was like the father hen, overseeing everything. He would take the clocks out of the studio so people were less aware of time passing'.

You could argue that this approach had its pros and cons, given that the drummer was as fond of drink and drugs as were his bandmates. 'It was the craziest period of our lives', Fleetwood said later. 'We went four or five weeks without sleep, doing a lot of drugs. I'm talking about cocaine in such quantities that, at one point, I thought I was really going insane.'

SISTERLY EMBRACE

Throughout the sessions, a black velvet bag of cocaine was kept under the mixing desk, from which the band could help themselves. But considering that Fleetwood often slept under the mixing desk ('I felt it was the only safe place to be') he was perhaps closer to temptation than was strictly wise.

The inner sleeve poster included with the LP is made up of a collage of shots taken by Worthington ➔



HERBERT WORTHINGTON



during his time spent with the band as they recorded the album, some of which hint at the less-than-sober state they were in throughout.

'I'd been working with them since 1974', the snapper recalled, 'so when they started *Rumours*, I was brought in to document it for the inner sleeve. The girls were kind of kept apart... while I lived with the guys in a house about five minutes away'.

This arrangement was perhaps valuable in terms of keeping tensions from boiling over, and one of Worthington's images on the back sleeve shows Stevie and Christine in a sisterly embrace as Fleetwood looks on paternally. This is perhaps reflective of the bond the two women in the band developed during the recording.

When they first travelled to California, the studio gave them a house to stay in. The keyboard

player and singer only spent one night there. 'That house was like the riot house', Nicks said in 2013. 'There were girls everywhere and everybody was completely drunk the whole time. Me and Chris [McVie] decided we couldn't be there.'

CLICKING 'N' POPPING

This recollection was backed up by Fleetwood who described the boys' HQ as 'like a bordello with blacked-out rooms, thick shag carpets... and a liberal sprinkling of assorted drugs'.

Nicks and McVie instead moved into adjacent condominiums by the city's harbour. 'We didn't have anybody else', she said later. 'Because there was this chaos going on with me and Lindsey, the band gave me a friend in this woman and I could hang out with Christine.'

Worthington, meanwhile, managed to capture some of the lighter moments on his inner sleeve poster collage, such as the photo on the far right of John McVie with

TOP: The band in 1977 (l-r) Lindsey Buckingham, Stevie Nicks, John McVie, Christine McVie and Mick Fleetwood

ABOVE: The group as they appeared on the inner sleeve of their album *Tusk*, which appeared in 1979

ABOVE LEFT: Poster for the UK leg of the 1977 *Rumours* tour featuring the album artwork and advertising the single 'Go Your Own Way'

RIGHT: Mick Fleetwood on the cover of the band's 1974 album *Heroes Are Hard To Find*

WORTHINGTON'S WORTH

If there's any creative person outside the band inextricably associated with Fleetwood Mac, it's American rock photographer Herbie Worthington. He first worked with the group on 1974's *Heroes Are Hard To Find*, which proved to be the first of three highly arresting cover images he'd create for them, all featuring the towering drummer who lends his name to the band.

That LP saw him dress Mick in what Fleetwood later recalled were 'lace underpants that belonged to Sandra (a friend)... and I'm holding my three-year-old daughter Amelia's hands as she stands on my shoes'. The follow-up, *Fleetwood Mac*, established a clean, minimal visual style (this time with John McVie kneeling to appear dwarf-like) and featured the crystal ball also seen on the *Rumours* sleeve.

On his death in 2013, Herbie Worthington was fondly remembered by friends, family and those who worked with him as a gentle giant of a character. 'He was... a big bear left over from the hippy era', said Mick Fleetwood. Worthington would often work barefoot.

His working relationship with the band continued with his cover images for Stevie Nicks' 1981 LP *Bella Donna* and 1983's *The Wild Heart*. More diverse covers he also worked on included former Mac man Jeremy Spencer's 1979 album *Flee*, and artwork for Buddy Miles, Lita Ford and Arthur Lee.

His working partnership with Fleetwood Mac then came full circle when he shot the sleeve for the band's last studio album, *Say You Will*, released in 2003.





ABOVE: The band backstage in 1977 and (below) the strip of photos on the LP's rear cover taken spontaneously

a wine bottle turned upside down and taped to his arm so that it looks like an intravenous drip.

Worthington died in 2013, but in 1997 he revealed that he was just as fond of the strip of photos on the back cover of the album as he was of the main cover shot. 'The magic about the back [sleeve] is the top series of photos that we did in rehearsal', he explained.

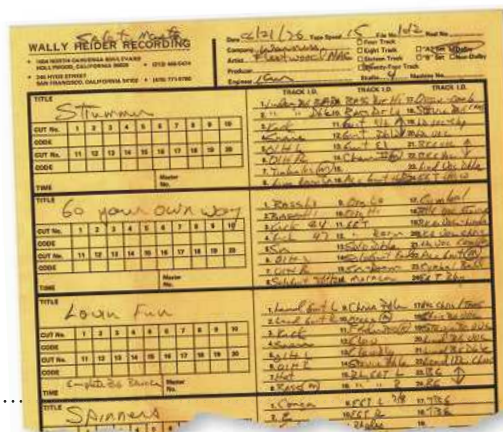
'When John walked across to hug Lindsey, at this particular time nobody was getting along, you know the divorces... and if you notice, Lindsey is a little bit put off

because he doesn't know... you know, this wasn't staged, John just spontaneously walked across and hugged him, and when John walked across, I just kept clicking and popping. And when he hugged him, Christine took a hold of Stevie and like, poor Mick, out in the cold, he's like, "everybody's hugging - poor me, left out". This... is a big deal. Because it's an expression of love.'

DECADENT COOL

John McVie is said to have suggested the title *Rumours* as the songs were dominated by stories about one another, and the machinations going on behind the scenes have helped turn a band producing inspired and timeless but hardly edgy soft-rock into a symbol of decadent '70s rock 'n' roll cool. That infinitely strange sleeve and the images elsewhere in the package only help to reinforce those b(r)and values. Which is surely the primary job of any good album packaging. ☺

LEFT: Studio track sheet shows Buckingham's song 'Go Your Own Way' and McVie's 'Lovin' Fun'



COVER STORIES

If Fleetwood Mac's music has been through a few evolutions since their 1968 debut album, along with plenty of lineup changes, their album sleeves have often seemed to pinball schizophrenically from one visual style to another.

Just within the space of their first two years as recording artists, they lurched from the 'dog and dustbin' backstreet blues image of debut *Peter Green's Fleetwood Mac* [top right] to the wacky, muckabout shot of a gurning Mick Fleetwood (holding a doll, naked save for strategically placed shrubbery) on *Mr Wonderful* to the faintly proggy, mythical appearance of the Maxwell Armfield painting on *Then Play On* [above right] to the cutesy Christine McVie illustration that adorns their 1970 album *Kiln House*.

The arty black and white shots on *Future Games* (1971) and *Bare Trees* (1972) then don't seem to have a lot in common with the pop art stylings of 1973's *Penguin* or the surrealism of *Mystery To Me*. By the time of that 1974 release, though, the penguin mascot was reappearing (John McVie would spend hours at London Zoo observing them) and several would feature on the rear sleeve of 1975's *Fleetwood Mac*. That was the second of three Herbie Worthington [see p34] covers, the first being *Heroes Are Hard To Find* (1974) on which a skeletal Fleetwood (slightly echoing the *Mr Wonderful* cover image) is photographed in a three-way mirror.

Tusk (1979) would feature artwork as eclectic as its musical content, with nature artist Peter Beard's punky, ragged cover image contrasting with an inventive montage of the band walking on a room's ceiling, the work of art photographer Jayme Odgers. Other eye-catching sleeves include *Mirage* [below left] from 1981, whose band shot, some claim, features the optical illusion of an old woman's face, seen in the singers' intertwined hands. Spooky.

But you don't need a striking cover for an album to achieve classic status. The group's 1995 album

Time featured a clean, stylish image of a penguin chick peeking out of an egg, even if according to many observers, the album was the worst of their career. 1987's *Tango In The Night* simply featured a painting that hung on Lindsey Buckingham's wall [left]. It has since become their second-biggest selling album behind *Rumours*. And not a penguin, crystal ball or undead drummer in sight.



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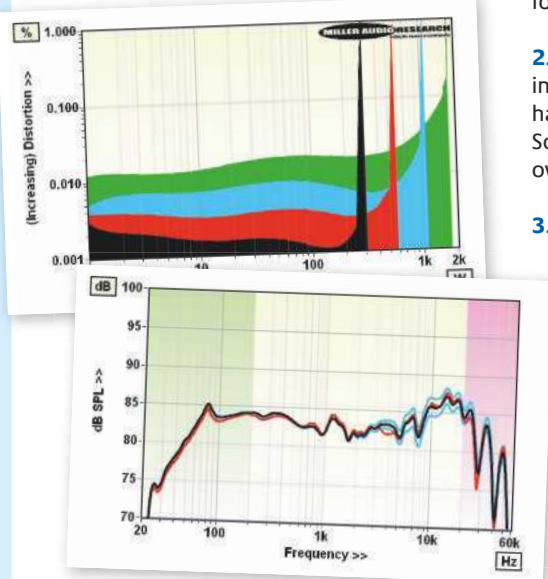
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LEFT: Innovative, research-based test & measurement – with exclusive colour 'data visualisation' – underpins every review in *Hi-Fi News*. Every issue you will discover performance-determining facts that are unique to our reporting



ABOVE: JBL's imposing HDI-3800s in position in our listening room [p46]

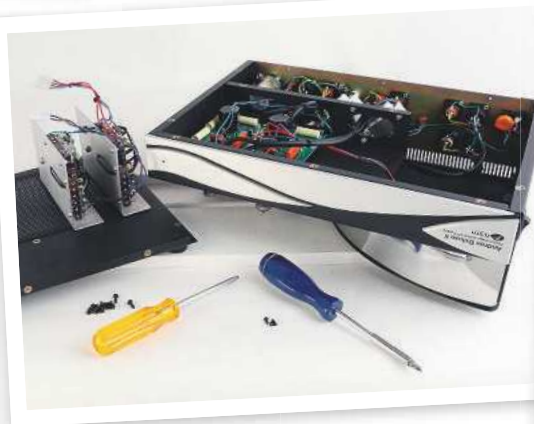
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IN THIS ISSUE...

LEFT: No review in *Hi-Fi News* is complete without an in-depth examination of the internal design and build quality of the product under test. Here's the Zesto Andros Deluxe II [see p54].

RIGHT: George and Chris from distributor Padood land the Boulder 1160 power amplifier outside *Hi-Fi News* ready for unpacking, lab testing and extended auditioning [see p40]



Boulder 1110/1160

The no-nonsense mountain-inspired aesthetic is unmistakable, but despite the heady pricing this pre/power amp combo is from one of Boulder's more affordable ranges
 Review: **Andrew Everard & Paul Miller** Lab: **Paul Miller**

It's the style of the Boulder 1100 series amplification that grabs you first – very different from the common image of US-made high-end hi-fi, even if the £30,000 1160 stereo power amp lives up to at least some of the stereotype with its 61.2kg mass. Instead of the usual scattergun buttons, grab-handles and menacing – not to mention finger-slicing – heatsinks so common in products of this type, seemingly built with no concession to domestic acceptability, the Boulder power amp and its matching £22,500 1110 line-only preamp have a much softer look.

In fact, the company's industrial designers have got a bit playful, with what look like geographic contour-lines machined into the front panels. In fact that's just what they are – a topography of the 2000m+ tall Flagstaff Mountain, around a 30-minute drive from the company's manufacturing centre.

SIMPLE DOES IT

Weight aside, these Boulder amplifiers combine simplicity of initial set-up and operation with the kind of solidity of build you'd expect from a brand with its roots in pro audio, where durability and reliability are vital. That explains a lot about the no-frills design of these two components.

The 1110 preamp is little more than five sets of inputs – on balanced XLRs only – and three sets of outputs, two main and one auxiliary, plus source selection and Boulder's own balanced volume control. If you want to play records, you're going to need an external phono stage: there's the 'entry-level' 508 at £6150 [HFN Jul '19] or Boulder's matching 1108 at £20,500.

Well, things are almost that simple. In fact, each input can be adjusted for polarity (as can the output of the whole preamp), trim (by up to 25dB) and balance (by 12dB in either direction), or converted

into a unity-gain passthrough for use with a home cinema processor. It's also possible to connect the preamp to a computer for detailed set-up, such as changing the name-labels on each input.

Before you get all streaming-happy at the presence of a pair of Ethernet ports on the 1110 (and 1160), 'set-up' is all they're for, along with IP control (including other Boulder components via Boulder Net connectivity) in a custom installation. This connection also allows for 'over the air' firmware upgrades.

DRIVEN BY LOGIC

And while that large volume control looks basic, Boulder cautions that it's actually optically controlled, and not click-stopped at all. Says the manual, 'The volume knob must be given respect as it can rotate

quickly and has ability to raise the volume very fast'. That might explain why this chromed control disc is sunk into the fascia – you know, just in case...

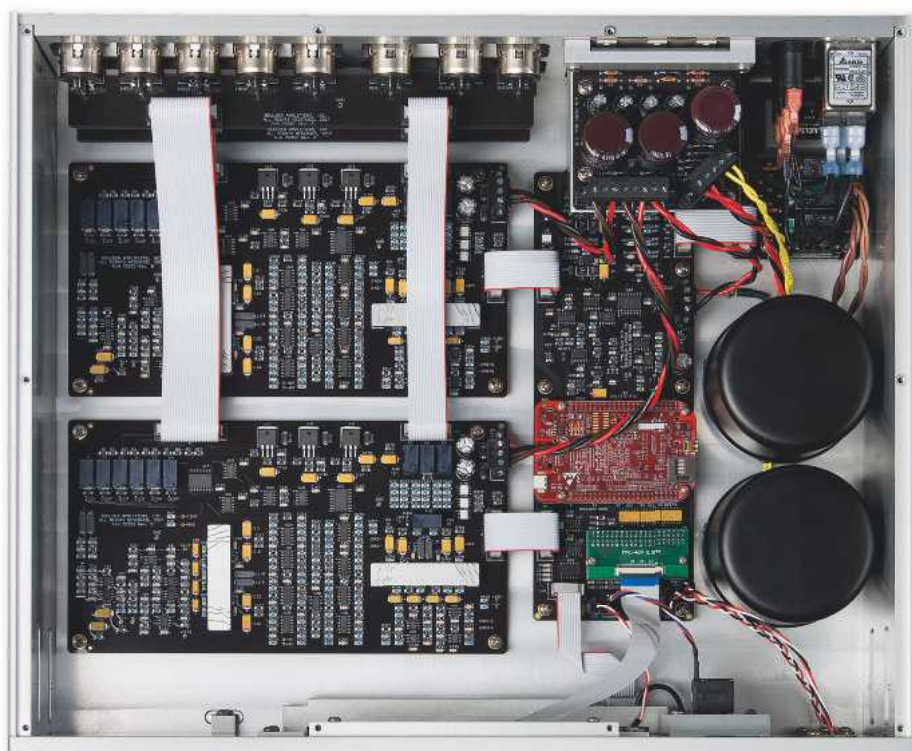
Within, the 1110 uses an ARM processor for all those set-up and operational

functions, while the audio is carried on dual-mono boards, employing the company's 983 gain stage, designed for 'excellent buffering and current drive for long cable runs'. So there should be no problem doing the 'long

interconnects, short speaker cables' thing.

The 1160 power amplifier is far from compact, but the impact of its bulk is softened by its design, not least that 'mapping' on the front panel and the treatment of the heatsinking to each side. Less understated is the massive mains input connector to the rear [see p45],

'The 300W power rating was obliterated in our lab tests'



RIGHT: Dual-mono audio boards with logic-controlled volume [left] are heavily populated with surface-mount components, all done using a pick-and-place machine at Boulder's facility. The Boulder 'Bone' [right] hosts the logic



LEFT: The 3D front panel design of the in-house machined 'non-resonant' alloy chassis is taken from the topographical map of nearby Flagstaff Mountain, west of Boulder. Owners are warned not to arbitrarily spin the 1110's [top] chromed volume dial for fear of raising the level too swiftly!

which looks like it belongs on an industrial transformer for outdoor power tools, and the twin sets of substantial wing-screws on the output terminals.

BALANCED ALL THE WAY

The headline specification here is the 300W output – a figure the amplifier obliterated in PM's lab testing [see also p45]. All this is delivered from circuitry that uses the same gain stage found in the preamp, and is dual-mono in design, fully balanced and powered by twin DC-filtered power supplies ensconced within a welded

steel case. Inputs are, of course, on XLRs only, and the whole amp is microprocessor-monitored against over-voltage/current or excessive temperature. Despite the prodigious power, there's no forced thermal management here, meaning it's all down to good old convection.

By the way, if you'd like the performance of the 1160 but just haven't got space, the company offers an alternative in a more compact form. The 1161 is said to have 'the same operational feature-set as its larger brother', but reduces the power to a claimed 150W, the footprint to the

same as that of the 1110 preamp, and the weight to a more manageable 24.5kg. It's yours for a price closer to that of the 1110, too, at a still-princely £23,500.

MASSIVE ATTACK

With the Boulder 1110/1160 set up in the *HFN* reference system – Melco/dCS front-end [*HFN* Feb '18], B&W 800 D3 speakers [*HFN* Oct '16] – it was necessary to wind down the output level of the DAC to make the volume levels more controllable (which we could also have done with the preamp's input trims). But even then, and using the neat little Boulder remote handset to adjust levels [see p45], it was noticeable just how quickly the amplifiers went from comfortable to full-on attack.

There's massive power on offer here, and the 1110/1160 just loves to unleash it – so make sure you stick to the preamp's default 0.5dB volume increments, not the optional 1dB, and you might want to program the maximum volume limit, too.

That understood, it's immediately evident that the 1110/1160 has some remarkable sonic qualities, not least in its ability to seemingly deconstruct very busy, dense and/or musically complex recordings before, in some instances, reimagining a once-familiar acoustic space and the position of instruments within. More than a few times it caused us to re-evaluate our understanding of a well-worn test track and album. So this is not only a 'big picture' amplifier but one that has its own ideas about the scene itself. ➞

CARVED IN STONE

Like so many hi-fi companies, Boulder has its roots in the pro audio industry, where founder Jeff Nelson owned a studio and built equipment for other users. Taking its name from the city where it was established, Boulder launched its first amplifier in 1984, the '500' being built tough for use in studios, and being followed by the AE – Audiophile Edition – derivative for home use.

Diversifying into the 2000 series, including a DAC as well as pre/power amps, in the mid-'90s, the company then moved its production from Superior, Colorado into Boulder itself. This gave room for expansion and a greater degree of in-house manufacturing that, with the acquisition of a full CAD system, saw the launch of the compact 800 Series in 2005. The new casework oozed 'user appeal' while the reduced footprint also made the components better suited to custom installs. It was this thinking that led to the company's first integrated amp, the 865, which condensed the 810 preamp and 860 power amp into a single chassis.

But if anyone was thinking Boulder was only about amps, in 2008 it rolled out the 1021, a combined disc/network player. Then, as the company continued to grow, in 2015 it started work on a new facility in Louisville, Colorado, designed not only as a production hub but also to enable the company to show and demonstrate its products at their best. More than 35 years on from its start, that's still where Boulder products are designed, engineered and built.

inakustik

PHYSICS NOT VOODOO



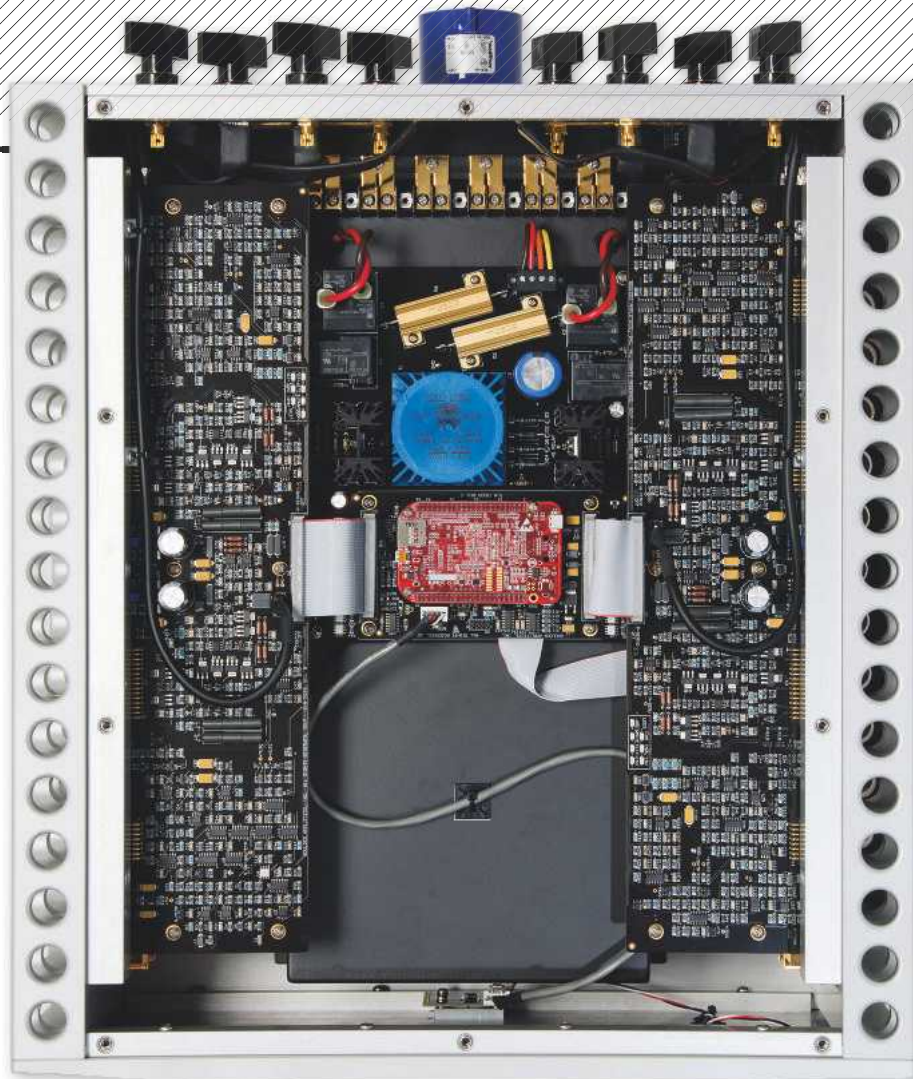
"There's a lot of hand-made cable here for the money, making it a reliable bet for that first 'big upgrade'."

Paul Miller, Hi Fi News, February 2021

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ABOVE: After 24-48hrs of running-in, the 1160's custom heatsinks [far left/right] and alloy top-plate achieve a toasty-warm 40°C courtesy of the 28 pairs of bipolar output transistors. The two PSU transformers are screened in steel casework [centre], servicing each side of this dual-mono amplifier

Again, we were never in doubt of the power available, even when playing at relatively low levels, as the leading edge of notes remained especially sharp and articulate. Play a piece with jangly guitars or a prominent bassline, such as The Ox's grumbling figures in The Who's 'Won't Get Fooled Again' [*Who's Next*; Geffen Records, 96kHz/24-bit download], and the 1110/1160 latches cleanly onto those elements. I'm not sure I've ever heard that bassline sound quite so obvious, set as it is against a mix that's otherwise 'all of a piece'.

BIG SCREEN

Turn things up to let the music fly and that 'hair-trigger' volume effect comes into play, the entire perspective of the track changing like a movie shot pulling focus from one plane of the subject to another. Definitely these amplifiers have a view of what they're playing, and are in their true element when working hard, even though that may well mean you'll be playing music louder than

you might otherwise be accustomed to. This amp does not run out of steam!

Frankly, they're an absolute riot when running at full pelt. The Brothers' take on 'Whipping Post' from last year's Allman Brothers Madison Square Garden tribute concert [Nugs.net download] is full-on and hard-charging, and while it might be argued there's less of some fine detail than with some other high-end amplifiers, the overall presentation remains infectiously involving.

But while that live recording has all the sense of musicians working together, if a track is built on artifice, the 1110/1160 can be ruthless in revealing it. Playing The Three Fates from the eponymous ELP debut album [BMG/Manticore BMGCAT2CD1], the disparity between the recorded environment of the opening organ, Emerson's piano and Palmer's percussion is laid bare. Even the upper and lower manuals of the Newcastle City Hall organ sound like they're in different places, while the piano, recorded in the

'There's huge power here, and they love to unleash it'

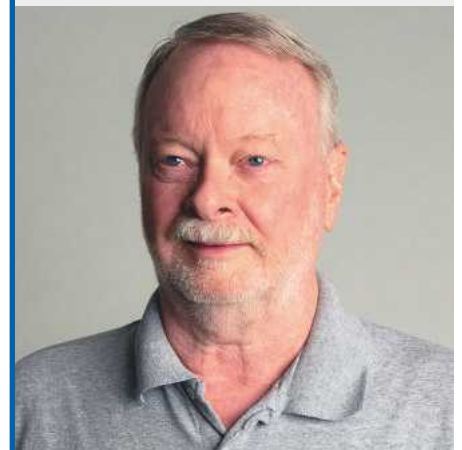
JEFF NELSON

While Boulder remains resolutely tight-lipped about the detail of its proprietary gain stages, we were able to tease some insights from Founder, President and Chief Designer Jeff Nelson. 'Boulder's near 40-year history designing analogue circuits is based primarily on my work in pro audio. Back in the heyday of the '70s and '80s there were some very talented engineers and technicians who were dedicated to making it better, and I was fortunate to have many of them as mentors. That understanding of how an audio signal travels through electronics became, and still is, the basis of all Boulder Amplifiers' products.'

From the outset, Boulder has been committed to fully balanced circuit design. 'Certainly', says Jeff, 'starting with the signal coming into either the preamplifier or power amplifier, there is a high impedance buffer stage for each of the balanced inputs' plus and minus signals. These are matched for all parameters necessary for yielding good CMR (common mode rejection) of hum and other unwanted electrical noise.

'A following stage performs the differential function to recover the audio signal. In both the 1110 and 1160, the bandwidth of each gain stage is more than necessary to pass audio but not so high as to attract "alien" signals. These multiple stages deliver low distortion and uniform group delay in the audio band.'

Ever tempted by FETs? 'We use bipolar junction transistors for the simplified topology and improved thermal performance. Their inherent ruggedness contributes to the value of Boulder's products.' PM



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LAB REPORT

BOULDER 1110/1160

Segmented across the 1110's +20dB to -80dB gain, Boulder's volume control is a precision instrument in its own right, accurate to within ± 0.1 dB over the top 40dB of its dynamic range (volume +0.0dB to -40.0dB), ± 0.2 dB over a 80dB range and ± 0.5 dB over the full 100dB range. Distortion is vanishingly low at 0.0001-0.0003% [20Hz-20kHz; black trace, Graph 2], maximum output more than sufficient at 17.8V from a 49ohm source and the A-wtd S/N ratio very wide at 102dB (re. 0dBV). The frequency response is equally flat and extended to within ± 0.1 dB from 1Hz-20kHz, falling to a mere -0.5dB/100kHz.

The performance of the partnering 1160 power amp is no less impressive in its unflappable linearity. While Boulder rates the 1160 rather ambiguously at '300W into 8, 4 and 2ohm' the real world figures are 2x550/8ohm and 2x950W/4ohm with sufficient PSU reserve to accommodate 668W, 1.25kW and 2.19kW under dynamic conditions into 8, 4 and 2ohm loads at <1% THD. Electronic protection limits the output to 750W/1ohm [see Graph 1, below]. Distortion is extremely low but decreases with increasing power output from 0.0013%/1W to 0.00065%/10W and 0.0003%/100W before reaching 0.00025% at the rated 300W/8ohm (all re. 1kHz). This trend is unaffected by signal frequency although there is a steady increase in THD from, say, 0.00065%/1kHz to 0.0074%/20kHz [all re. 10W/8ohm; see Graph 2, below]. In common with the 1110, the 1160 is designed to offer a flat and extended response (± 0.5 dB, 1Hz-55kHz) from a low 0.005-0.009ohm source impedance (20Hz-20kHz) with very low noise – the A-wtd S/N ratio is 99.5dB (re. 0dBW). Both preamp and power amp are masterpieces of rugged engineering. PM



ABOVE: No digital audio here (the Ethernet ports are for custom control and software updates). The 1110 preamp [top] offers five balanced line inputs, one aux output and two sets of main (variable) outputs, all on XLRs, while the 1160 power amp [bottom] includes XLR inputs, two sets of high-torque speaker cable connections, a ground post, accessible fuses and a truly heroic AC mains inlet

studio, has a strangely muted, slightly distant sound. Professional to the core, these Boulder amplifiers can be unsympathetic witnesses.

So, moving on to the 'jazz section', and you segue into a more intense sound with the sizzle and sting of Palmer's cymbals revealed in all their spiky glory. If you have a bright-sounding source or loudspeakers then the 1110/1160s will let you know all about it!

ALL THAT JAZZ

Play Iiro Rantala's take on 'Caravan', from *My History Of Jazz* [ACT 9531-2], and the dense mix is punctuated, illuminated even, by the attack of the violin pushing the instruments forward, sounding large and confident. Stick with jazz and another favourite tester, the Espen Eriksen Trio's 'In The Mountains',

from *Never Ending January* [Rune Grammofoon RCD 2173], and the sound is initially slightly claustrophobic, the opening drums deep and ponderous, before

Eriksen's spritely piano brings light to the scene and, once again, the 'big picture' is revealed.

Without doubt, what the Boulder 1110/1160 does well, it does very well indeed. Even with orchestral works such as the testing, but superbly recorded and mastered, Britten 'Young Person's Guide To The Orchestra' [Reference Recordings RR-120SACD] there's just no denying the sense of orchestral scale and weight on offer.

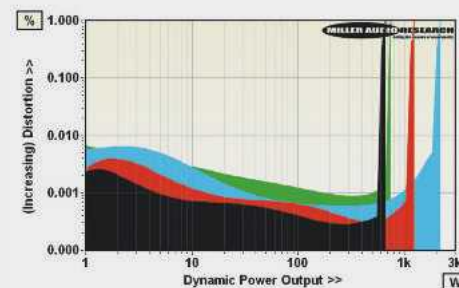
The 1160 is a big amplifier that begs for big loudspeakers. So, yes, in tandem this amplifier combination is insightful almost to the point of being idiosyncratic at times. But if you like the way they do what they do, and have a penchant for playing your music at adventurous levels, chances are you'll love them. ☺

HI-FI NEWS VERDICT

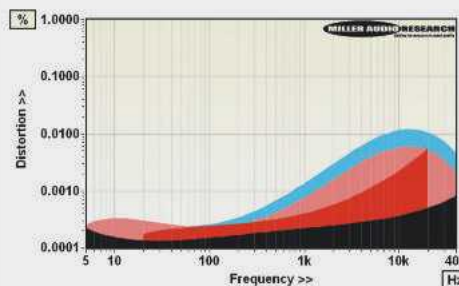
The brand-name could almost have been written without the 'u', so big and bold is the sound delivered by this preamp/power amp combination. There's little to match their sheer musical brio, especially when driving at high levels. While they have a remarkable ability to 'reimagine' complex recordings, majoring on the attack of instruments, it's hard not to find much to enjoy in this exciting-sounding, dynamic duo.

Sound Quality: 88%

0 - - - - - 100



ABOVE: Dynamic power output versus distortion into 8ohm (black trace), 4ohm (red), 2ohm (blue) and 1ohm (green) speaker loads. Max current is 33.1A



ABOVE: Distortion vs. freq for 1110 (re. 0dBV, black) and 1160 (re. 1W/8ohm, blue; 10W, pink; 100W, red)

HI-FI NEWS SPECIFICATIONS

Continuous power (<1% THD, 8/4ohm)	550W / 950W
Dynamic power (<1% THD, 8/4/2/1ohm)	668W / 1.25kW / 2.19kW / 750W
Output imp. (20Hz-20kHz, pre/power)	48.9ohm / 0.005-0.0085ohm
Freq. resp. (20Hz-100kHz, pre/power)	+0.0 to -0.5dB / +0.0 to -1.5dB
Input sensitivity (for 0dBV/0dBW)	100mV (pre) / 141mV (power)
A-wtd S/N ratio (re. 0dBV/0dBW)	102.2dB (pre) / 99.5dB (power)
Distortion (20Hz-20kHz, 1V/10W)	0.0001-0.0003% / 0.0002-0.0074%
Power consumption (idle/rated o/p)	124W / 1.35kW (28W, preamp)
Dimensions (WHD, Pre/Power)	457x146x389/457x236x565mm



LEFT: Boulder's all-alloy remote is very comfortable in the hand, offering control over volume, balance, mute, input selection, polarity and display

JBL HDI-3800

Promising the 'iconic JBL sound' from modern cabinets, we hear the flagship HDI floorstander
 Review: **James Parker** Lab: **Paul Miller**

Some speakers are large, but manage to conceal their bulk through clever styling, but the £4000 HDI-3800 flagship of JBL's 'High-Definition Imaging' series manages to do exactly the opposite. It may only stand 1.1m tall, yet the combination of width and depth – 30cm and almost 42cm respectively – and a particularly upfront driver array makes this a rather imposing speaker to have in the room, with echoes of the company's PA range.

OK, so it's not pretty, and you can hide those drivers with the magnetically-attached grilles supplied, but there are signs the designers have at least tried to make these big, heavy (38kg), bluff speakers more acceptable in a domestic location. The radiused edges of the front baffle softens things a little, and the grey oak wood veneer finish seen here, while unusual, does lighten things a bit, giving the enclosures a more contemporary feel.

LITTLE WELLY

Moreover these large, if not huge, speakers need more care with positioning than in choice of partnering amplifier. They might not quite have the suggested 92dB 'party mode sensitivity' [see PM's Lab Report, p49] but the HDI-3800 still doesn't need a lot of power to 'go loud'. Having cranked-up the Classé amplification [*HFN* Jun '21] to high levels for last month's review of the huge PMC Fenestria speakers [*HFN* Aug '21], I was amused to discover just how little welly these JBL boxes required to fill the room with sound at high levels. A 75W/8ohm amplifier is perfectly sufficient.

The HDI-3800 sits atop the HDI range, above the £1499 HDI-1600 standmount and a more compact £2999 HDI-3600 floorstander. There's also a hefty five-driver HDI-4500 centre speaker (£1399) and matching subwoofer – the £1900 HDI-1200P, complete with a 30cm driver and 1kW amp – available to complete a surround sound system.

Common to all but the sub is JBL's 2410H-2 25mm compression tweeter, mounted in the waveguide from which the

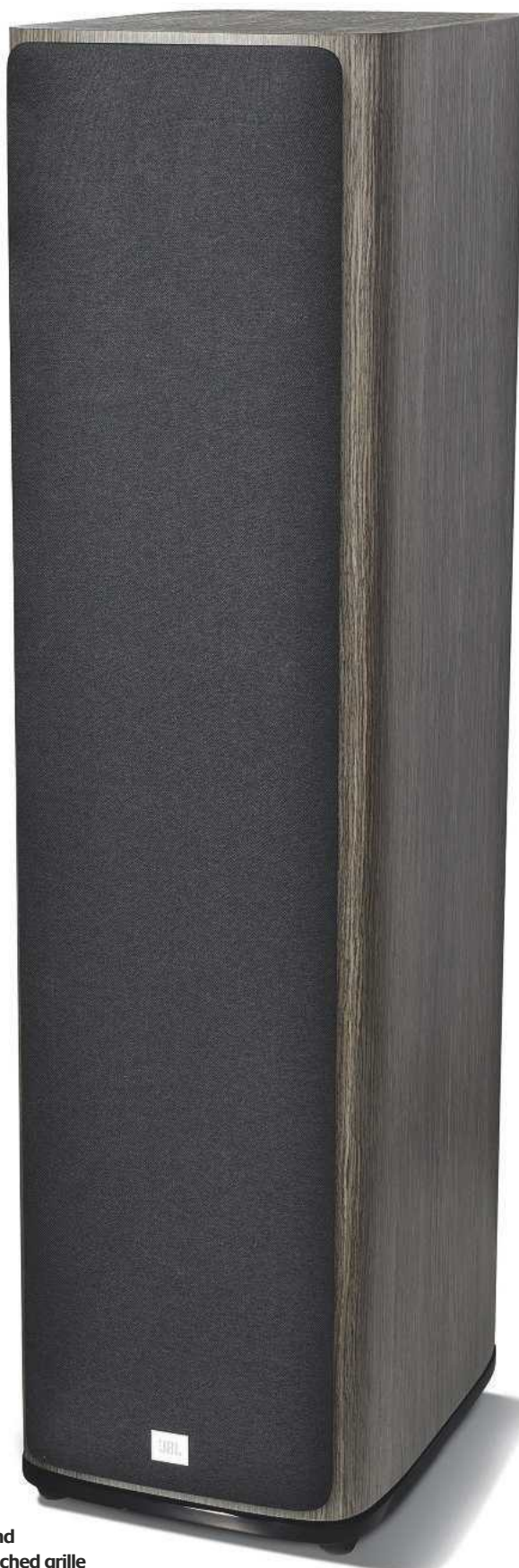
HDI range takes its prefix [see PM's boxout, p47]. Meanwhile the model numbering indicates – well, almost – the number and size of the mid/bass drivers used: the HDI-1600 uses a single 165mm unit, and the HDI-3600 three of the same; the centre speaker has four 130mm drivers; and the HDI-3800 we have here sports a trio of 8in/200mm units.

PORT AUTHORITY

In all but the standmount, the drivers operate in a 2.5-way configuration, with the uppermost 200mm driver here covering bass/mid up to 1.8kHz and the two lower units working up to 800Hz, down to a claimed 37Hz. These drivers use what JBL calls an Advanced Aluminium Matrix cone – combining stiffness and low mass – together with a long-throw voice coil, a flux stabilisation ring and a copper shorting ring, designed for maximum output without distortion. The HDI-3800's bass is tuned with two large-diameter ports on the rear panel, above the twin sets of terminals to allow for bi-wiring or bi-amping.

In other words, while the speaker uses no shortage of proprietary technology developed at JBL's design and engineering facility in Northridge, California, the overall design of the speaker is fairly conventional, this placing one significant constraint on their positioning in the listening room. While the instructions suggest the speakers be kept at least 50cm from the side walls,

RIGHT: The HDI-3800's curved and substantially braced cabinet is offered in auto-grade gloss black, satin walnut or gray oak wood [pictured] veneers and includes a full-height magnetically-attached grille



AROUND THE HORN

If there's one brand synonymous with horn-loaded loudspeakers then that's JBL, not least because of its footprint in the pro-audio/sound reinforcement industry where horns help achieve the high sensitivities and constant directivity necessary for controlled audience coverage. Continued research into optimum horn profiles, and the compression drivers at their throat, have also kept JBL at the forefront of domestic implementations, most notably with the flagship Project Everest DD67000 [HFN Aug '14]. The horn-loaded tweeter featured in the HDI-3800 is a little less sophisticated although its claimed range – down to 1.8kHz – remains ambitious [see Lab Report, p49].

The driver is based on JBL's iconic 2410 pro-series model, although the alloy diaphragm is replaced here with a softer (Teonex) dome that improves its efficiency by compressing the small volume of air trapped immediately in front. A concentric, exponential phase plug is placed just ahead of the dome in an effort to provide multiple, equal-length pathways for the sound waves to navigate out to the throat of the flared horn. In practice it's impossible to avoid unequal pathlengths out of the horn, just as non-ideal impedance matching with the air at the horn mouth causes reflections and resonance, but JBL is well versed in optimising what is inevitably an imperfect solution. PM

and the diagram indicates the distance from the wall behind them can be somewhat less, the time I spent listening to them suggests otherwise. If they're at all close to the rear wall, the massive bass of which they're capable will dominate the sound at the expense of the midrange and treble.

MAGNETIC IMAGING

For our listening, until we hauled the speakers to a position at least a metre clear of the walls, I was reminded of those massively-woofered Cerwin Vega! models once all the go with a particular type of listener back in the age of hip-hop and rave. In other words, fun as party speakers, but not what you'd expect from a £4k design. Drag them out into the room, and things improve markedly.

The manual's guidance on toe-in is worth following, however. Setting the speakers so they form an angle of no greater than 60° at the listening position will give the most stable and focused stereo image – and imaging

is one area in which these speakers excel when set up correctly, going a long way towards living up to that HDI billing.

Having tamed the bass, I found the speakers to be on the exciting side of neutral. The bass is still forceful, even with optimal positioning but it's well-controlled, contributing to rather than dominating the overall sound. Even with a minimal recording such as the Oyster Duo's *Stolen Pearls* [Channel Classics CCS43121], the HDI-3800s still remain a little bigger and

bolder than one might wish for, bringing out the resonance of the double-bass and making the piano sound a little recessed despite the fine imaging.

On the other hand, they're on much more solid ground with the

simplicity of 'Water Of Love' from the first Dire Straits album [Vertigo UIGY-9032]. There's a slight sense of Mark Knopfler's vocal coming from the corridor outside the studio, but the instrumentation has good bite, detail and character.

The impression that these are fine rock speakers is reinforced when playing Zappa's '88: *The Last US Show* [Zappa Records ZR 20036-2]. Here the live version of 'Peaches En Regalia' is powered on by the drums and bass, while Zappa's take on 'Stairway To Heaven' reveals good detail in the vocals and the oddball effects. It's not the cleanest sound, but then neither is the recording, but without a doubt these speakers rock – and yes, they'll go very loud without signs of distress. You don't have to

'There's
deep bass
you hear and
also feel'

LEFT: Three 200mm 'aluminium matrix' drivers dominate this tower, the lower pair working up to 800Hz, the upper to 1.8kHz before crossing over to a 25mm Teonex compression driver mounted into an 'HDI' waveguide



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With the medley of 'Steal Away' and 'Hidden In Plain Sight' on Paula Cole's *American Quilt* album [675 Records 538668572] there's perhaps a little too much sibilance on the singer's voice in the opening section, but when the track moves on there's fine ambience and good percussive punch as well as instrumental detail. I've heard this track sound subtler and more nuanced through comparably priced speakers, but there's no denying the 'JBL version' is highly involving.

Even at lowish levels, these speakers do the 'bass you feel as much as hear' thing, for example with the growing complexity of Porcupine Tree's epic 'Arriving Somewhere But Not Here' from

LEFT: JBL's compression tweeter is further isolated from the mid/bass drivers by its split crossover and dual sets of 4mm cable posts, supporting both bi-wiring and bi-amping. The woofers are reflex-loaded by two huge rear ports

Deadwing [KSCOPE 986], where the combination of information and scale serves well the almost symphonic scale of the track.

STATELY WEIGHT

That said, there's a slight sense that the bass can be a tad slow at times – Andreas Bye's crisply forceful drumbeats opening 'In The Mountains', from the Espen Eriksen Trio's *Never Ending January* album [Rune Grammofon RCD2173] have a little of the 'plastic barrel' about them. However, the balance when the entire trio joins in is entertaining enough, Eriksen's piano having stately weight in the lower octaves and fine delicacy in the right hand, while Lars Tormod Jensen's bass is suitably sonorous, and the soundstage image unforced.

With the testing Britten 'Young Person's Guide To The Orchestra', from the Michael Stern/Kansas City Symphony *Britten's Orchestra* set [Reference Recordings RR-120], the HDI-3800s sail through the masses of detail, presenting a persuasive view of each instrumental section. The vivid percussion is particularly enjoyable, and all the while there's a well-realised picture of the orchestra as a whole. And the great fugue with which the piece concludes sounds magnificent, not least due to the drama the speakers deliver with massed forces and bass slams. ♪

HI-FI NEWS VERDICT

The HDI-3800 speakers may not be the purest-sounding, but their big, bold sound makes for an enjoyable listen – and not just with the rock music that's their obvious forte. You need some space to let them breathe if their prodigious bass isn't to dominate – perhaps JBL should consider some port bungs? – but they're undemanding when it comes to amplification, and many will like the way they play music.

Sound Quality: 83%

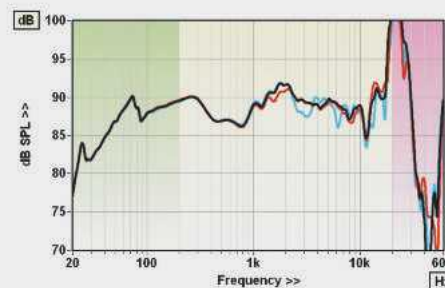


LAB REPORT

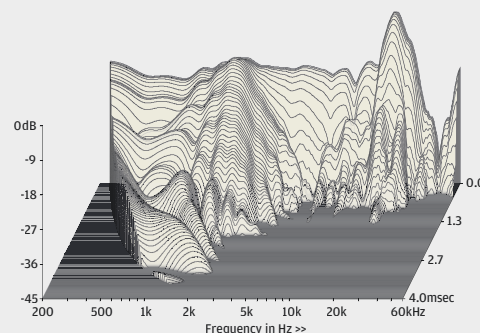
JBL HDI-3800

The breakup mode of the Teonex compression driver, or its interaction with the horn throat, is clearly illustrated just outside of the audioband [pink shaded area, Graph 1] at 22kHz, rising some +15dB above the mean midband output of the HDI-3800. The CSD waterfall [Graph 2] suggests this is short-lived but it also reveals a broader mode/reflection around the 1.8kHz crossover frequency at the limit of the topmost 200mm alloy-coned woofer (-6dB bandwidth of 45Hz-1.4Hz). The midband emphasis between 1-3kHz is visible on the forward response [yellow shaded area, Graph 1], which looks smoother thereafter *without* the diffraction of the grilles in place [blue trace], but the high ± 8.4 dB and ± 8.1 dB response errors are due to the lift at 20kHz. The errors fall to a more respectable ± 2.8 dB/ ± 2.5 dB between 200Hz-10kHz while the pair matching remains tight at 1.3dB.

Sensitivity, rated at 92dB, is still very generous at 89.0dB, both at 1kHz or averaged between 500Hz-8kHz. However, as anticipated from JBL's '4ohm nominal' specification, this has not only been achieved by the surfeit of reflex-loaded woofers and horn-loaded top but also by a moderately current-hungry load. The latter drops to a minimum of 4.4ohm/129Hz (sub-8ohm from 75Hz-2.08kHz and with an ultrasonic dip to 3.4ohm/30kHz) and with maximum phase angles of -60° /66Hz/16.2ohm, getting tougher in the midband at $+55^\circ$ /2.1kHz/8.1ohm. The paralleled pair of lower woofers operate over a narrower 48-410Hz (-6dB), rolling off steeply below 72Hz, but the output of this trio, with the low 25Hz port(s) tuning, delivers a bass extension of 35Hz [-6dB re. 200Hz; green shaded area, Graph 1]. PM



ABOVE: Response inc. nearfield summed driver/port [green], freefield corrected to 1m at 2.83V [yellow], ultrasonic [pink]. Left, black; right, red; w. grille, blue



ABOVE: Woofer breakup mode/horn mouth reflection at 1.6/2.9kHz with treble dome resonances thereafter

HI-FI NEWS SPECIFICATIONS

Sensitivity (SPL/1m/2.83V – 1kHz/Mean/IEC)	89.0dB / 89.0dB / 87.0dB
Impedance modulus: minimum & maximum (20Hz–20kHz)	4.4ohm @ 129Hz 36ohm @ 59Hz
Impedance phase: minimum & maximum (20Hz–20kHz)	-60° @ 66Hz $+55^\circ$ @ 2.1kHz
Pair matching/Resp. error (200Hz–20kHz)	4.6dB / ± 8.4 dB/ ± 8.1 dB
LF/HF extension (-6dB ref 200Hz/10kHz)	35Hz / 18.5kHz/17.9kHz
THD 100Hz/1kHz/10kHz (for 90dB SPL/1m)	0.2% / 0.2% / 2.0%
Dimensions (HWD) / Weight (each)	1101x300x418mm / 38kg

Meitner Audio MA3

If there's one man synonymous with the 'custom DAC' it's Ed Meitner, who has crafted his own digital tech for 30 years. His latest outboard DAC is a chip off the digital block
 Review: **Nick Tate** Lab: **Paul Miller**

Twenty years or so ago, standalone DACs were fast becoming an endangered species. The breed had a brief moment in the sun in the early '90s, with almost all CD player brands fitting digital outputs, but until the advent of USB audio, the add-on digital box was on the wane. Now, with the rise of digital streaming, network-attached DACs are the gift that keeps on giving, for hi-fi brands and buyers alike.

Streaming DACs have become digital sources in themselves, able to play music collections kept remotely on network attached storage – and that's before you count legacy CD and DVD playback, plus computer connectivity via USB. Just as we have an elite breed of 'superdeck' turntables in the wake of the vinyl revival, so too do we have 'superDACs' including the £9750 Meitner MA3 featured here.

ONE FOR ALL

This is a deceptively sophisticated high-end source that claims – by virtue of its company's founder's provenance – serious audiophile kudos. Yet it's no niche product, designed for a few tweaky purists. Its 'lossless' volume control makes it a digital preamplifier, and there's streaming functionality and a choice of front panel, remote control or app operability.

As well as PCM with support for MQA, it caters for DSD128 and DXD conversion over USB and network streaming. And the latter enables connection to high-resolution streaming services such as Tidal and Qobuz, plus support for popular music services like Spotify, Deezer and vTuner, provided you've signed up. The MA3 is also Roon Ready. In addition to the multiple digital inputs and connectors, there are both balanced and single-ended analogue outputs via XLRs and RCAs, respectively.

RIGHT: Powered by a compact switchmode PSU [right], the MA3 includes a Nexel network solution [green PCB], XMOS USB [bottom left], Xilinx FPGA running custom Meitner code [top blue PCB], clock and discrete Meitner 1-bit DACs under screening cans [centre left]

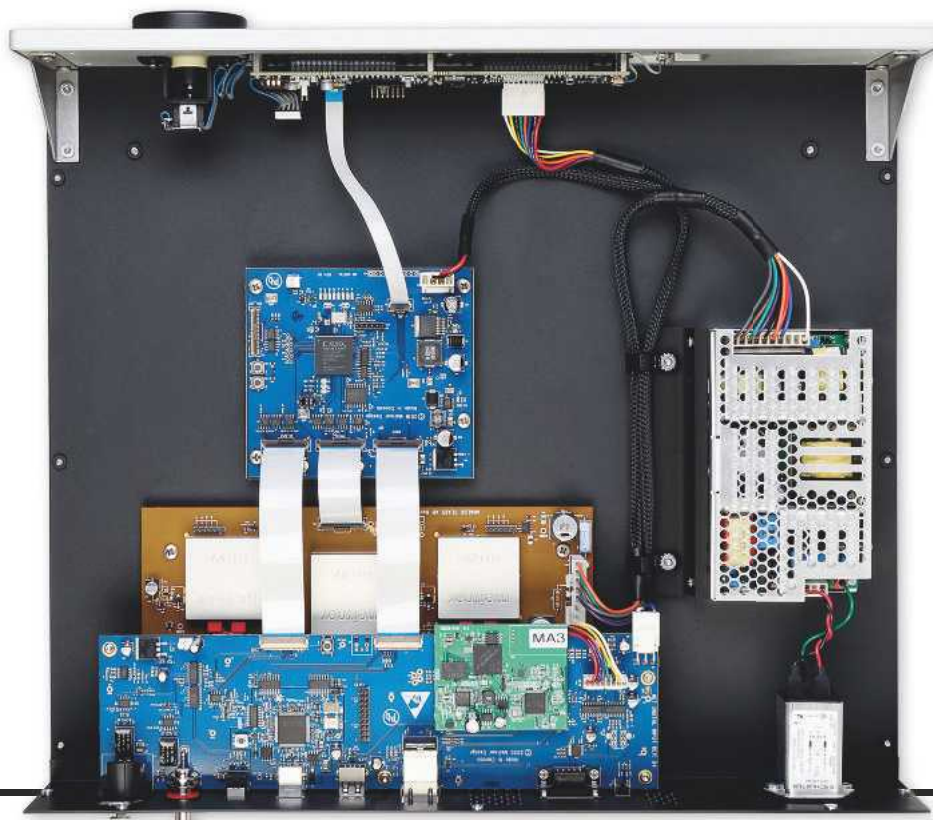
Bespoke is the operative word here, defining where the MA3 stands out from the crowd. It sports brand founder and CEO Ed Meitner's fully discrete single-bit MDAC2 converters, driven via custom upsampling/digital filter code running on the MDAT2 DSP [see PM's boxout, p51]. Ed Meitner headed up the engineering team for the MA3 project – an evolution of Meitner's proven technologies now benefiting from enhanced processing power – working alongside Mariusz Pawlicki who was in charge of the adaptive MDAT2 filter code.

It's worth noting the MA3 is a long way from being the company's top product, sitting between the MA-1 V2 and the EMM Labs DAC2X V2. Apparently it took two years to fully develop – remember, there are no 'flavour of the month' DAC solutions from TI, ESS or AKM, etc, in here but bespoke DAC and digital filtering code executed via an FPGA, à la dCS, Chord Electronics, MSB and other progressives.

Meanwhile, a Nexel chip was bought-in for network music playing duties, though, as you might expect, its implementation has been carefully fettled to suit. Ed Meitner says that the company's own MFAST2 asynchronous 'jitter avoidance' technology, and custom-built MCLK2 clock, play an important role in getting the best out of the streaming platform as well as the discrete DAC elements themselves. Furthermore, a custom-designed switching power supply was chosen in order to further reduce noise across all digital sources [see inside picture, below].

WELL CONNECTED

In day-to-day use, the MA3 isn't especially different to any of a number of streaming DACs from dCS, Auralic, *et al*, although rather than having its own app, it uses the generic mConnect Control. This is nice enough to work with, being fast and stable in use and a cinch to hook up to





the Meitner DAC. Indeed, it barely took seconds to add my Qobuz account to it, although many will simply use Roon.

Operationally, the unit's large volume control, allied to an excellent, informative and crisp display made it a pleasure to handle – although I am less convinced about the touch controls for the source switching which add little to the user experience. In this respect, the similarly-priced dCS Bartok [*HFN* May '19] is arguably more enjoyable to operate, and certainly appears more robust in build. While the MA3's casing and fascia appear somewhat less exotic than the technology inside, the package is at least partially redeemed by the lovely aluminium-cased remote control handset [pictured, p53].

LET IT FLOW

But, of course, sound is where it really counts, and here the MA3 is undoubtedly

a top-tier performer. It displays Meitner's characteristically enjoyable presentation, which means a spacious soundstage, natural tone and a terrier-like grip of rhythms and dynamics. This digital source never sounds processed or contrived, but rather lets the music flow just as it should.

'Guitars are supple yet super-crisp and grippy'

It makes listening fun, without ever appearing fussy, stylised or contrived. Indeed, one might even say that it possesses that most rare of attributes in a DAC – charm.

The MA3 is distinguished by its superb rhythmic prowess. This DAC sounds fleet-of-foot and involving; it was a joy with the stout '80s American rock of REM's 'Texarkana' [*Out Of Time*; Warner Bros WPCP-4195]. To be brutally frank, this recording is of middling quality, yet it came alive with this digital converter. This hi-res Qobuz stream acquired a life and

ABOVE: Dimmable display is flanked by a 'lossless' digital volume control and input select button. Network streaming functions are accessed via the generic mConnect Control app

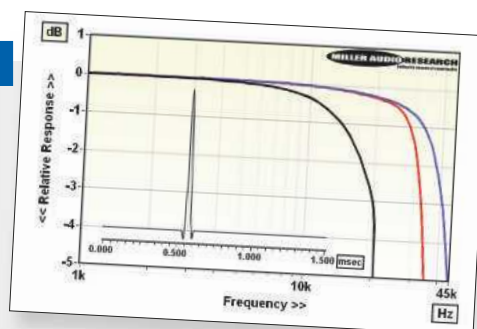
a swagger to it that I normally only hear through top-notch vinyl sources. The sound had a refreshingly natural and carefree nature and there was a sense of all three band members performing along with one another and loving it.

This, in part, comes courtesy of the DAC's lightning-fast transient response – the bass guitar work being rendered in a super crisp and grippy way, yet still supple, fluid and tuneful too. In other words, it sounded unexpectedly natural, and beautifully syncopated with the tight, emphatic percussion work. More than this, the vocal line seemed to function as a rhythmic instrument as well as a melodic one. The phrasing of singer Mike Mills was lovely and dialled-in perfectly with the backing instrumentation – the result was a really rousing rendition.

TRANSLATING TRANSIENTS

The MA3's response and time domain behaviour is entirely determined by Meitner's proprietary MDAT2 adaptive digital filter algorithm executed on a Xilinx Spartan DSP. Other brands, Denon included, also employ a degree of signal-dependent adaption in their digital filters, but Meitner was the first with its IDAT D/A processor back in 1992/3. Meitner's approach aims to maintain the integrity of transient signals, specifically avoiding the time-domain artefacts that we see with conventional high-order linear phase filters, for example. Specifically, while incoming data is upsampled to a noise-shaped 16xDSD (45.16MHz) bitstream, transient signals are detected using a 'history' of only a few samples and the filter applied that incurs the absolute minimum pre/post-transient 'echoes'.

The most extreme example [see inset Graph] shows the filter applied in response to a momentary transient – note the variable roll-off of -3.9dB/20kHz (44.1kHz data), -3dB/20kHz (48kHz data, black trace), -3dB/40.5kHz (96kHz data, blue trace) but a reduced -3dB/33kHz (192kHz data, red trace). By contrast, the response of Meitner's MDAT2/MDAC2 DSP and 1-bit DAC to signals judged to be more 'steady state' in nature would, by comparison, be ruler-flat. With constantly changing music signals, the digital filter algorithm adapts and segues between filters to maintain the lowest time domain distortion. PM



TAKEN ABACK

This seems largely down to the MA3's ability to dig deep into any recording it's asked to play without sounding unsympathetically analytical in the process. JB Rose and Maximum Style's 'Wake Up' [*Keep The Fire*; Associated Records AICT 146] is a crisp-sounding slice of early '00s electronic dance.

It's a classy production alright, but not something that normally makes me sit up and listen. But, in this instance, I was quite taken aback by what it was doing to the music, allowing me follow every strand of the mix with absolute ease, enjoying the song's spacious synthesiser glides, and then capturing me with the dramatic high tempo rhythmic backing.

Ordinarily, when listening to this song, I tend to focus on the interplay between the hi-hat cymbals and the rim shots, but such was the clarity of the MA3 that I noticed some extra tom-tom drums set back slightly behind the lead rhythm track. As my listening progressed, subtle revelations



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Renaissance ESL 15A

NETWORK-ATTACHED DAC



ABOVE: One of every digital 'flavour' is offered here – AES/EBU, coaxial, optical, USB-B for computer connection, USB-A for an external drive/device, and wired Ethernet. Analogue outputs are offered on balanced XLRs and single-ended RCA's

of this sort would become the norm as it excavated low-level detail with forensic precision. Yet this never distracts from the wider enjoyment of the track; rather it adds to the wider listening experience. So despite being pedantic at retrieving tidbits of detail, everything still gelled together harmoniously.

POWER PLAY

The MA3 is great at tracking the dynamics of a recording, too. The vocals on 'Wake Up' sounded expressive and lucid, with the singer's subtle accents beautifully carried. And via the DAC's USB input from my MacBook Pro, some classic rock from Rush really drove this point home. 'Red Barchetta' from the band's *Moving Pictures* [Mercury 800 048-2] can sound quite a dirge via lesser digital sources, but this DAC got its teeth right into the densely layered recording.

It conveyed the power of the multitracked lead guitar work, the explosiveness of the drumming and the pulsating bass guitar with heady abandon, producing a captivating result that was real edge-of-the-seat stuff. All that detail, grip and dynamic articulation was a powerful

cocktail – and such a long way from the bad old days of digital, not long after this album was released in 1981.

The MA3 is not just a basher-out of big techno

LEFT: Meitner's 'milled-from-solid' remote offers control over input selection, volume, mute, absolute polarity and display brightness

tunes and stadium rock, though. The same ingredients that make these aforementioned genres such fun, worked wonders with prim and proper classical programme material. At the risk of being a contrarian, I often find classical music is less enjoyable via digital audio. The clicks and pops may be gone, but all too often so is the natural scale of the music. Again this DAC proved hard to fault, with Beethoven's Piano Concerto No 3 [Linn CKD 336], soloist Artur Pizarro singing like a bird.

This particular recording, by the Scottish Chamber Orchestra, can sound a little closed-in at times – but not here. There was a tangible sense of the concert hall, with more atmosphere than is often heard. The piano, for example, was located so solidly it might as well have been nailed to my listening room wall.

This improved further when using this DAC's balanced outputs, as did the bass which was weightier overall. In a nutshell, the Meitner MA3 excelled in reproducing both the technical aspects of the recording, and – more importantly in my view – the emotion behind the musical performance. ☺

HI-FI NEWS VERDICT

A highly impressive performer, the Meitner MA3 is one of the finest streaming DACs at or near its price. It offers a taste of the best high-end designs in a slightly more affordable, practical and flexible package. I'd have liked a slightly more opulent finish but still it makes a great case for itself – and also the breed as a whole. Most examples are way behind this, but at least they have something to aim for!

Sound Quality: 88%

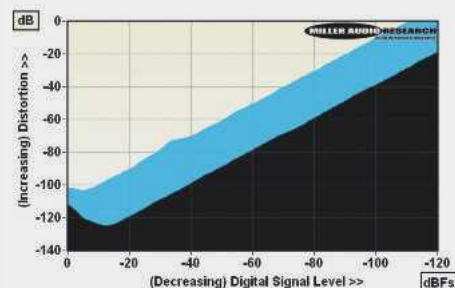


LAB REPORT

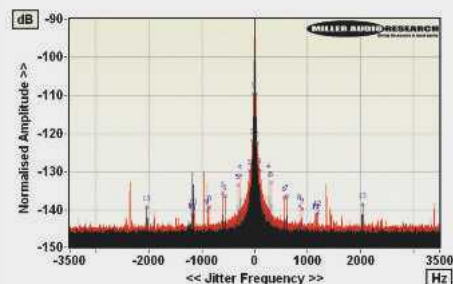
MEITNER MA3

I discuss Meitner's innovative MDAT2 upsampling and 16xDSD MDAC2 DAC technology in our boxout [p51] but while the former determines the frequency response, stopband rejection (106dB at 48kHz) and time domain behaviour [see inset Graph, p51], it's the '16xDSD' DAC that has greatest influence over noise, low-level resolution, high frequency distortion and jitter. Here there's a maximum (balanced) 4.21V output offered from a 145ohm source impedance where distortion is lowest at –10dBfs (1.35V) through the bass/mid at a fabulous ~0.00005%, lifting to 0.0006% at 20kHz. At lower digital levels the ultrasonic requantisation noise from the 16xDSD DAC architecture becomes more significant but, at –30dBfs/20kHz, noise at 100kHz is still a full 90dB lower in level. This is consistent with a DAC processing what might otherwise be described as 'raw DSD128' data [as seen in our HD Music section] but it is sufficient to explain the ~25dB 'step' in THD+N between 1kHz and 20kHz [black vs blue infills, Graph 1. Note shifted 0dB to –140dB Y axis].

The S/N is a wide 113dB (A-wtd, re. 0dBV) and resolution good to ±0.05dB over a 100dB dynamic range and ±0.2dB over a full 110dB dynamic range, suggesting an effective and very fine resolution of some 19-20 bits for the MA3. Both digital and analogue engineering are at play here, the latter also assisting in the super-wide 135dB midrange channel separation, falling to a still-impressive 110dB at 20kHz. The channel balance is good to ±0.01dB, as expected with Meitner's precision digital volume control. Digital jitter is low but not vanishingly so, with a correlated figure of ~110psec at most sample rates joined by an uncorrelated, noise-like jitter seen as a broadening of the J-Test signal [see Graph 2, below]. PM



ABOVE: Distortion vs. USB 24-bit digital signal level over a 120dB range at 1kHz (black) and 20kHz (blue)



ABOVE: High res. jitter spectrum via S/PDIF and USB (black, 48kHz/24-bit; red, 96kHz/24-bit with markers)

HI-FI NEWS SPECIFICATIONS

Maximum output level / Impedance	4.21Vrms / 145ohm
A-wtd S/N ratio	112.8dB
Distortion (1kHz, 0dBfs/–30dBfs)	0.00055% / 0.00014%
Distortion & Noise (20kHz, 0dBfs/–30dBfs)	0.0018% / 0.005%
Freq. resp. (20Hz–20kHz/45kHz)	+0.0 to –3.0dB/–5.3dB
Digital jitter (48kHz / 96kHz)	112psec / 105psec
Resolution (re. –100dBfs / –110dBfs)	±0.05dB / ±0.2dB
Power consumption	24W (1W standby)
Dimensions (WHD) / Weight	435x92x400mm / 7.4kg

Zesto Andros Deluxe II

From California via London comes the shapely form of Zesto's Andros phono preamp – all tubes and transformers and now, courtesy of an uprated PSU, in 'Deluxe II' guise

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

If you demand full control over your cartridges, an all-singing/all-dancing phono preamp like the Zesto Andros Deluxe II is the only thing that will suffice. At £7500, it occupies the lower reaches of the extreme phono stage market – there are £40k-plus units if you're inspired to go further – but one should still be hyper-critical when the market is awash with exceptional, fully-adjustable phono amps for under £1000.

With the Deluxe II version of Zesto's Andros we are looking at an all-tube phono amp with more than enough features to excite and satisfy the multiple cartridge/arm/turntable user. In an era when balanced outputs are no longer a rarity, the Andros Deluxe II offers not just balanced alongside conventional single-ended RCAs, it also provides both RCA/XLR inputs for MC. (MM is single-ended only.)

BACK STAGE

Only one of the two MC inputs can be used at a time, so lateral thinkers can forget about simultaneously connecting two MC pick-ups via both sets of inputs. I don't own an arm terminated in XLRs, so that was the one area I didn't audition, but I did hook up the Andros Deluxe II to my preamps in both modes. And balanced is preferred.

While there are no controls on the front – a loaded fascia comes with the model up, the two-chassis Tessera – the back is packed [see p57]. A study of the manual will save you time-wastage later on, but briefly, this unit will accommodate one MM and one MC at the same time, serving users of two decks or a deck with two arms.

If this seems like overkill, the Tessera offers MM and MC for both sets of inputs, effectively allowing four cartridges to be connected should you need it. As *outré* as this appears, some hard-core LP users are known to keep stereo, mono and 78rpm

cartridges available at all times, so it's not an outrageous option.

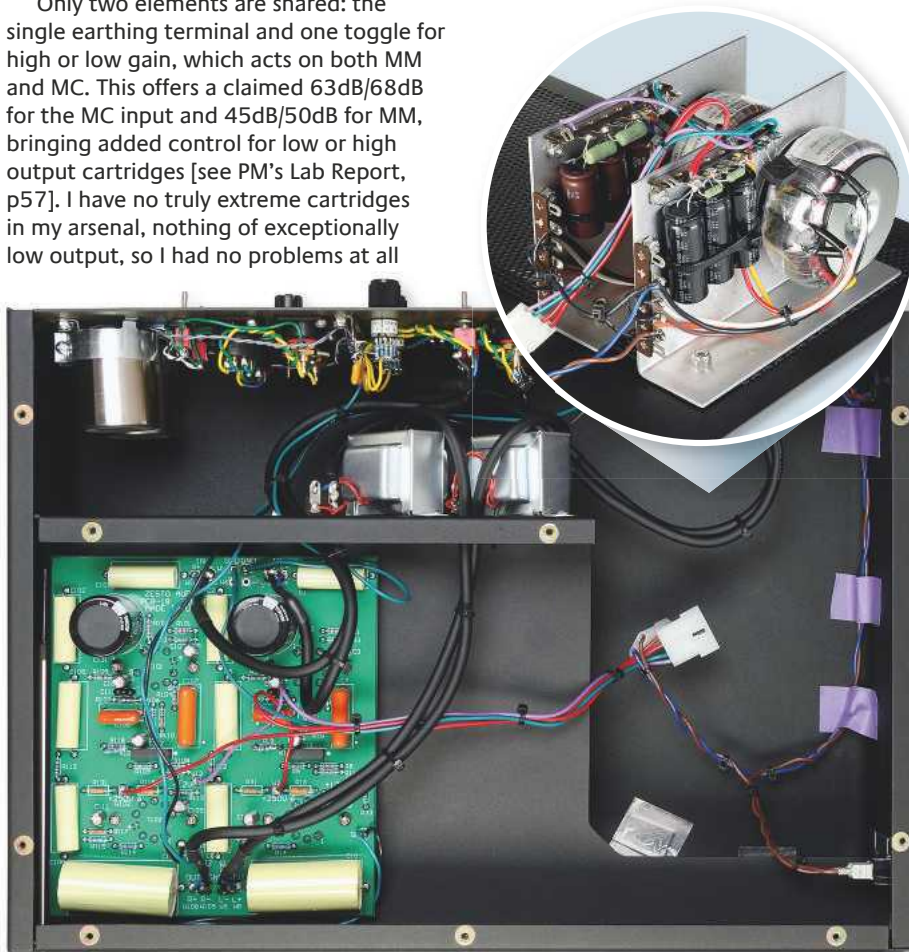
When you install the Andros Deluxe II, in addition to the choice of MM/MC and balanced or single-ended, you are faced with duplicated controls for most of the settings because the unit is effectively two mono stages in one chassis. Thus, when you switch from MM to MC or vice versa, you trip not one but two toggle switches; the same goes for earth on/off. MC loading is applied via separate rotaries for left and right channels, these offering 50, 100, 200, 300, 400, 500, 600, 700, 800 and 1000ohm settings... surely enough to cover the majority of MCs.

Only two elements are shared: the single earthing terminal and one toggle for high or low gain, which acts on both MM and MC. This offers a claimed 63dB/68dB for the MC input and 45dB/50dB for MM, bringing added control for low or high output cartridges [see PM's Lab Report, p57]. I have no truly extreme cartridges in my arsenal, nothing of exceptionally low output, so I had no problems at all

accommodating four MC pick-ups from different manufacturers, nor a brace of MM cartridges. The only absent adjustment is capacitance for MM cartridges, for here the unit is set at 220pF.

FAST TALKING

Company founder George Counnas explained his design choices over a phone call and emails, admitting to a love for valves, believing them to be, among other virtues, 'faster than solid-state devices'. He is a fetishist about the retrieval of fine details, arguing succinctly that this is required for convincingly authentic reproduction, so low noise is also a primary



RIGHT: Jensen audio transformers are used for the MC input [top left] and balanced output [top, centre]. The two-stage tube RIAA network [green PCB] is powered by separate 12V LT and 300V HT linear PSUs [inset picture]



concern. That was his justification for using an MC transformer for the step-up. 'It provides a better impedance match for cartridges, with low noise', he declared.

He employs a two-stage valve amp with switchable gain, noting that, 'It actually has four stages, with each tube incorporating two stages. And they're switchable to match more cartridges'. Passive rather than active RIAA was preferred because, 'There's no negative feedback in the unit. Negative feedback is required for active RIAA'. As for the transformer-coupled balanced output, Counnas proudly points out that 'this is not usual or common with phono stages. It provides true – not faux – differential balanced output that's not related to ground, so it's quieter'.

CLEAR THE AIR

With these pronouncements running through my head, perhaps I was primed to expect a quiet unit, rich in low-level detail. I was not disappointed. My listening

'Every crack, thud and thump had body and resonance'

notes reflect the strengths and weaknesses common throughout the sessions, the only observation relative to cartridge or output type is that this unit begs to be heard in its most untrammelled form: with a thoroughbred moving-coil cartridge and using the balanced output.

While the Andros Deluxe II extracted everything I could get out of a sub-£100 MM cartridge and a budget MC, I only really experienced the full measure of its finesse and grace with top transducers such as the TechDAS TDC01 Ti [HFN Sep '14] and a pair of Koetsu pick-ups.

The biggest surprise, however, and an unexpected showcase for this phono stage's cavernous soundstage, was a venerable Denon DL103, which it cosseted.

It was The Band's *The Last Waltz* – 40th Anniversary [Rhino R1 78278] which first alerted me to this special ability. This is a performance I have only ever paid close attention to in video form, eg, the Blu-ray

ABOVE: Zesto's two-stage RIAA network uses a pair of 12AX7/ECC83S and 12DW7/ECC832 double-triodes. The sweeping mirrored section of the chassis contains the PSU [see p54] and affords some limited protection for the tubes

set. Because the visuals stayed in my mind, I could correlate what I was hearing when, for example, The Staples Singers belted out their remarkable version of 'The Weight'. It was enough that the vocals had all the power one expects of that family in full force, but the air and space around them added to the authenticity.

When the focus turned to Levon Helm, his percussion enjoyed a depth and airiness that begged to be described in terms of the stretching of skins. I'll avoid that purple prose and simply tell you that every crack, thud and thump displayed the requisite body and resonant quality needed to make you think you were at the gig.

RARE BREED

Another performer from that legendary evening was Joni Mitchell, whose first four LPs have been remastered for the box set *The Reprise Albums 1968-1971* [Rhino R1 653984]. Her first two – *Song To A Seagull* and *Clouds* – are essentially unplugged, Joni on guitar or piano, with support on bass from Stephen Stills. These sets served as precisely the sort of refined recordings that would address Counnas' statements about detail and realism.

Mitchell's high, clear voice should be instantly recognisable. What the Andros Deluxe II does is present this sublime instrument in an appropriate aural context. Instead of it seeming disembodied, it has form and substance, in direct contrast to its innate fragility. Each word of every one of her compositions came through free of sibilance, ripe with expression.

While I have always preferred Judy Collins' 'Both Sides Now' simply because of familiarity – she recorded it first and had ➔

AUDIO WITH ZESTO

Having seen Zesto products at countless shows, I was fascinated by their brave styling. I always hoped they sounded as good as they looked because breaking away from any norm takes guts. With experience encompassing everything from PA systems to 24-channel mixers, Zesto founder George Counnas – an expatriate Londoner living in California for many decades – wasn't bound by hi-fi convention. His background in electrical engineering at a professional audio level, including a stint with Decca Navigator before emigrating to the USA, found him doing favours for friends with hi-fi aspirations. This led him to servicing and ultimately developing hi-fi equipment, planting the roots of Zesto in 2010.

Inspired by a friend to produce that first Andros PS1 phono stage, Counnas committed to high-end audio, resulting in a full family of valve products. This includes a trio of phono stages, the Andros Deluxe II being the middle model of the group comprised of the Andros II and the two-chassis Andros Tessera. To enhance existing phono stages, there's also the Andros Allasso step-up transformer while standalone amplification includes the Leto Ultra II preamp, the Bia 120 stereo power amp and the Eros 300 'Class A' monoblocks.



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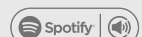
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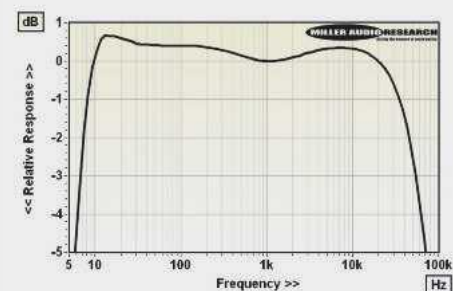


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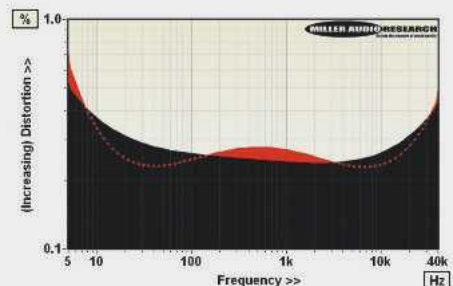
ZESTO ANDROS DELUXE II

There's an inventive coupling of a high gain, low noise 12AX7 triode (two 6AV6 triodes in one bottle) with a high current, low noise 12DW7 (a combined ECC83 and ECC82) in each of the Andros Deluxe II's 'dual mono' L/R channels. This two-stage gain block is wrapped around a purely passive RIAA network and offers a +5dB boost between 'Low' and 'High' gain settings while the MC transformer brings another +18dB. Zesto rates the MM gain as 45dB/50dB and the MC gain as 63dB/68dB while, in practice, this is closer to +47.4dB/+52.4dB (MM) and +65.3dB/+70.4dB (MC) via the transformer-coupled balanced output. This is a wide range that will accommodate standard MMs with its 4.3mV Low Gain/MM sensitivity all the way up to low/medium output MCs with the High Gain/MC sensitivity of 300µV (all re. 0dBV balanced output).

Nevertheless, with the passive RIAA soaking up a lot of gain, the headroom is not especially generous for any of these four input settings. For example, instead of a typical ~100mV margin for the Low Gain/MM input this is just 18mV, or +12.5dB headroom before output THD reaches 1%. However, this being a low-feedback tube circuit, 'clipping' is progressive rather than abrupt and so the headroom increases to 32mV at 2% THD and 40mV (or +20.4dB) if we relax the limit to 3% THD. For the same reason, THD is a fairly consistent 0.2-0.3% (20Hz-20kHz, re. 0dBV) regardless of gain or MM/MC input [see Graph 2]. Similarly, the RIAA equalisation is unaffected by gain or input and remains flat within ±0.25dB from 8Hz-27kHz combined with a usefully steep sub-bass filter [see Graph 1, below]. Noise is also fairly low – not a given with a high gain tube stage – yielding A-wtd S/N ratios of 74dB and 69dB for the MM and MC inputs, respectively. PM



ABOVE: RIAA-corrected frequency response from 5Hz-100kHz (MM input) re. 0dBV balanced output



ABOVE: Distortion extended frequency re. 0dBV balanced output (5Hz-40kHz; MM, black; MC, red)

HI-FI NEWS VERDICT

In a world with ace phono stages at all price points, Zesto's Andros Deluxe II ticks nearly all the boxes: handling two turntables or two arms by accepting an MM and an MC cartridge simultaneously, and providing balanced and single-ended inputs and outputs. That alone earns a spot on high-end shortlists, but those are practicalities, for it's the lush, airy, yet detailed sound that makes this tube phono a stand-out.

Sound Quality: 86%



HI-FI NEWS SPECIFICATIONS

Input loading (MM/MC)	76kohm / 50-1000ohm
Input sensitivity (re. 0dBV)	4.29mV / 2.41mV / 0.54mV / 0.30mV
Input overload (re. 1% THD)	18mV / 11mV / 2.5mV / 1.5mV
Max. output (re. 1% THD) / Imp.	4.1V / 145ohm (balanced)
A-wtd S/N ratio (re. 0dBV)	74.0dB / 68.7dB (MM/MC)
Freq. resp. (20Hz-20kHz/100kHz)	+0.58dB to -0.02dB / -9.2dB
Distortion (20Hz-20kHz, re. 0dBV)	0.235-0.31% (MM)
Power consumption	22W
Dimensions (WHD) / Weight	430x127x304mm / 9.5kg



ABOVE: MM (on RCAs) and MC inputs (RCAs and balanced XLRs) include rotaries that select the latter's 50ohm-1kohm loading. Other toggles include a ground lift and high/low gain options. Outputs are on balanced XLRs and single-ended RCAs

a massive hit with it – I listened to Mitchell's version with a fresh mind-set. This Zesto phono preamp has that effect on you, reintroducing you to known recordings by virtue of its remarkable transparency. It is a rare occasion when this happens, but this is also an indicator of a component's ability to extract more than was previously exposed.

HIGH VELOCITY

Mitchell's LPs, however, weren't auditioned in isolation, and I compared them with my reference phono stages, also all-valve. What was evident is that the Andros Deluxe II makes one or two utterly minor trade-offs in its quest for absolute refinement. It took a bludgeon to my ears to reveal this, but the vastly underrated Runaways can do that to you. Their eponymous debut [Mercury SRM-1-1090] kicks off with 'Cherry Bomb', that relentless assault of throbbing bass, sneering vocals and more attitude than a 14-year-old.

Here I was reminded of the good old/bad old days, when systems were described as 'Classical', 'Jazz' or 'Rock' – eg, Quad, AR and JBL, in that order. This phono stage II errs on the side of polite, which is amusing when you consider the deliberate, built-in trashiness of The Runaways. What turned the tables, though, was speed: the attack, transient stops, even the cowbell on 'Rock And Roll' benefited from the near-breathless velocity of the Andros Deluxe II.

I drew the line at digging out my Plasmatics LPs, or testing the thunder of Whitesnake, imagining that Counnas is probably not a headbanger. This didn't represent any sort of weakness or failure. It was, as with everything at this level, a matter of minuscule degree, and The Runaways still sounded as menacing as a girl posse should. I suppose that if an analogy were begged, listening to The Runaways

through the Zesto Andros Deluxe II is not unlike drinking Ripple out of a Zalto wine glass.

Having rediscovered the joy of George Benson via an ancient Mobile Fidelity pressing of *Breezin'* [MFSL 1-011], I delighted in the silkiness and fluidity of his guitar playing, which found the Zesto preamp to be a perfect accomplice. The aforementioned attack of the guitars thrashed by The Runaways manifested itself in this context as an exhibition of precision. Each note, every nuance – I wish I was a guitarist so I could better appreciated Benson's mastery, especially the tonality.

If the guitar is Benson's primary instrument of expression, his voice may be the one that provided him with crossover chops, from jazzier to crooner. Zesto's phono stage respects vocals with the kind of deference which created the personality of the BBC LS3/5A. If the Andros Deluxe II is a touch sweet at the top, and extra rich at the bottom, the midband can only be described as lush and warm. Even Joni Mitchell's brittle vocals – as far removed from the velvety sound of Benson's as is possible – acquired a touch of this temperate seasoning. ☺

Scansonic M20

The middle model in Scansonic's trio of M-series loudspeakers is one of the growing breed of 'compact floorstanders'

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

Take a look at these Scansonic floorstanders, and you'll notice they look big and impressive, especially for speakers selling for a sensible £1499 in very on-trend black or white silk finishes. But don't let our photographs of the M20 fool you for those mid/bass drivers are just 10cm in diameter – or four inches in old money – and the baffle a few cm wider still. Recalibrate your view based on those figures, and you'll realise these speakers are well short of a metre tall – 93.5cm, in fact – and that, if not quite knee-high to a grasshopper, means these aren't what you'd call 'room-dominating'.

GIVE ME A RIBBON

True, compact floorstanding speakers aren't exactly new [see boxout, p59] but even by the standards of their class the M20 speakers are small. Indeed, they occupy less carpet space than the company's smaller standmount models in this series, the diddy M5, and the more conventionally-proportioned M10, when these are mounted on their dedicated stands. Which, by the way, are very pretty but do cost some £499 a set.

If you want something with more conventional floorstanding stature, you need look to the M40 model, which sells for £500 more than the M20, but stands a more respectable 108.5cm tall, even though it manages that by doubling up on the mid/bass drivers. Mind you, they're still the same 10cm units, so the flagship speaker is no less slender.

The M series lineup draws on the technology of stablemate Raidho, part of the Danish-based Dantak group, and uses a version of the planar/ribbon AMT tweeter found across the range. Its ultra-light kapton/aluminium sandwich membrane measures just 20µm thick and weighs in at only 0.03g, the driver mounted in an oval faceplate to match the 10cm mid/bass and bass drivers that crossover at a fairly high 4kHz.

These latter two drivers use a fibreglass cone with honeycomb reinforcement and, for the mid/bass, a central phase plug. This upper driver reaches across a wide 4kHz down to

300Hz where it's joined by the second driver for the really low stuff. And as you'll have noticed, Scansonic hasn't gone down the conventional 'full-length fabric grille' route but, instead, has mounted the mid/bass drivers in oval cut-outs to match the tweeter. Each has its own push-on cover punched through with a pattern of perforations, and while they can be removed it's worth remembering that the uppermost plate also plays a role in controlling the dispersion of the tweeter.

In case you're harbouring any concerns that these svelte speakers might be no more than a much smaller design raised up with a cabinet rather than a stand – as has been the case with some two-way floorstanders we've encountered in recent times – then be assured that the M20s use all of their cabinet volume, with two slot-shaped bass reflex ports just below the mid-point of the rear panel. This speaker may be small, but an all-up weight of 12kg speaks to the fact

it's solidly built. There's decent internal bracing, the cabinet walls feel suitably dead and, lest you're worried about the stability of that slim cabinet, it's supplied with outrigger feet to spread the footprint. You don't have to use them if you don't want to, but such plinths are commonplace

with today's tall, thin speakers so that they pass health and safety regulations regarding the 'topple-ability' of the cabinets.



FOLK MUSIC

I've been picked up in this month's letters pages [see p117] over the positioning requirements of a more expensive Scansonic model, so suffice it to say that after some experimentation I found the M20s to sound best at least half a metre out from the wall behind them, and rather further from the side walls, with a generous toe-in to firm up the stereo image. These aren't hugely bass-heavy

RIGHT: Part protection, part decoration but also acoustically 'functional' the M20's detachable metal 'grilles' locate into oval slots around the drivers, the topmost plate assisting in controlling the high frequency dispersion of the bespoke AMT treble unit

'They don't
need a huge
amplifier to
do their stuff'





RISE OF THE COMPACT

The appeal of small floorstanding speakers isn't hard to fathom: they look more 'of a piece' than standmount models atop stands, however elegant those stands may be. And when you're up into the world of more ambitious small speakers, the economics make sense, too. For example, a pair of KEF's LS50 Metas [HFN Jun '21] will set you back £999, with the matching stands at £400/pr, and we're already close to the price of this Scansonic model...

So, it's not surprising that many manufacturers now make compact floorstanding speakers. The B&W 603 S2 Anniversary Edition [HFN Jan '21] stands under a metre tall and is a slender 19cm wide – though the stabilising plinth adds a bit to those dimensions – while even Wharfedale's Diamond 12.4 is just 1.1m tall. And companies have worked on ways of overcoming the performance limitations of small floorstanders. The Kudos Cardea C20 [reviewed next month] is only 92cm tall and uses a downward-venting bass-tuning port, making it easy to place in the room.

Meanwhile Neat Acoustics has gone even further with its Iota Alpha model [HFN Oct '16], mounting its mid/bass driver and AMT tweeter on an angled panel, aiming the sound higher for a 'floating in air' effect, while a downward-firing woofer fills out the low end. The company's larger – but only 74cm tall – Iota Xplorer speaker [HFN Jul '18] follows the same design, but sports twin bass units in an isobaric arrangement for even more extension and clout.

speakers, as PM's Lab Report [see p61] makes clear, so there's less low-end to over-excite things if they're placed relatively close to a rear wall, for example.

If your stereotype of Scandinavian hi-fi listening revolves around low-slung IKEA sofas, or sitting on an artfully folksy rug on the floor and letting the music wash over you as you sip a cheeky Akvavit or an eye-wateringly expensive Mikkeller craft beer, the M20s are going to confirm that image. You see, these speakers sound best when the listener's ear-height is at or around the level of the tweeter, and for most sitting positions they're just too short to make that possible.

BRICKING IT

In fact, my initial listening suggested the treble here was very refined, though this view might just as easily be interpreted as 'slightly soft', for what they lacked in brashness they traded for a concomitant dilution of atmosphere and ambience, even with the tweeter grille off. This impression was reinforced when I slipped off the sofa and listened sitting on the floor, albeit without the artfully folksy handwoven rug, at which point the treble became somewhat more apparent, insightful and engaging.

The manual suggests some juggling with spike lengths to give the speakers a slight 'few degrees up on the bow planes' tilt backwards, but even this didn't do the

trick when I listened from my not exactly high sofa. Some small wooden blocks I had around helped a bit more – I knew I'd find a use for those cable lifters some time! – but the best results were achieved when lifting the speaker bodily up from the floor by some 20-30cm, in my case with further improvisation using a set of handy bricks.

LIGHT BUT TIGHT

I'm sure if you were seeking a more hi-fi-friendly alternative to bricks then such things exist, but I have to say that the only low speaker stands I found seem rather expensive. The Atacama SLX200, for example, would do the job for around £179, but its top plate is 25mm shallower than the speaker, even though the baseplate is more than large enough. In this particular case you would need to check how firmly the Scansonic M20 could be fixed in place.

If that hasn't put you off – or if you happen to listen lounging on bean-bags on the floor – then you'll find the M20 to be a fairly entertaining listen, albeit one very much in the 'light but tight' mould when it comes to bass extension. It's not going to shake your world, as I suggested when discussing the position of the speakers, but the trade-off for this is good speed and rhythmic drive, whether with rock tracks or the interplay of a chamber ensemble. It's not lightweight, and gives a good impression of warmth and substance, and of course has that advantage that it'll do all this even in small spaces without overexciting any tendency of the room to boom.

So, these probably aren't the speakers to buy if you're a fan of full-on dance or electronica, or indeed a devotee of the ➔

LEFT: Sealed ribbon/planar tweeter features a kapton/aluminium sandwich membrane, crossing over to the 100mm fibre-glass/honeycomb mid/woofer (with integral phase plug) at 4kHz. The 100mm fibre-glass woofer works up to a notional 300Hz [see Lab Report, p61]

MUSICAL FIDELITY



INTRODUCING THE:

M8 xi

The M8xi is a preamp with two monobloc power amps combined. Each has its own heat sink and separate transformer. The preamp has its own dedicated power supply that is mounted close to the input sockets; consequently, PCB tracks are very short. This elegant idea ensures that both channels signals are ultra low impedance the instant they get into the amplifier. Each channel has twelve bipolar transistors - 200 amps peak to peak is easily achievable. The front panel is a custom made fine line extrusion of milspec aluminium keeping its clean style easy to maintain.

Dont Settle for anything less than perfect Musical Fidelity.



church organ, as true room-shaking ability isn't really on offer. Listen to a set such as organist Jean-Paul Imber's *Passacaglia* [Base3Music Base206, DSD128] and the M20s certainly play the tunes well, and present an involving view of the music. Yet the lack of absolute weight in the bass, plus that slight treble softness even with the speakers 'jacked up', mean that the sense of presence of a huge instrument in an even larger space is somewhat diminished. This isn't an album majoring on the pedals and big pipes end of the organ, but all the same it sounds rather lightweight.

TOO EASY

Similarly with an entirely different genre, Jazmine Sullivan's *Heaux Tales* EP [RCA FLAC download, n/a cat no] suffers a little from the lack of low-end conviction, sounding just a bit too easy-listening as a result. These tracks, recorded mainly in Sullivan's Philadelphia home, really need a dash more punch and sting. The same, by the way, applies to British singer Laura Mvula's *Pink Noise* album [Atlantic 0190296738968]. This is a fine-sounding set, but here it's merely pleasant enough. While there's certainly good drive and clarity to be enjoyed, really this recording would benefit from better low-down punch.

Fed with the familiar symphonic work-out that is Britten's 'Young Person's Guide To The Orchestra', here played by the Kansas City Symphony Orchestra under conductor Michael Stern [from *Britten's Orchestra*, Reference Recordings RR-120SACD], the strength of these Scanasonic speakers is in the detail they bring out in the various instrumental groups, and their speed and lightness of touch. But as the great final fugue builds to its climax, one can't help but want for a bit more grunt and scale.



LEFT: The cabinet rear hosts two narrow reflex-loading 'slots' while the crossover, split at 4kHz between the bass/mid and treble drivers, exits in dual bi-wire/bi-amp 4mm terminals

That said, these speakers don't need massive amplifier power to do their stuff. With a Supernait 3 integrated from Naim, which admittedly falls below the lower limit of Scanasonic's suggestion, they were easily capable of going more than loud enough with no signs of stress, while still sounding both open and dynamic.

BIG KICK

In fact, the fast but weighty Naim amp brought out the more appealing traits of these speakers, sounding both fresh and fleet of foot with them, even when powering out some vintage 1980s rock in the form of INXS's 1987 *Kick* album [Mercury 832 721-2]. Here they made the most of the set's big, bold, lush mix without ever threatening the structure of the listening room. And that's the appeal of these speakers: they're entirely enjoyable

without ever scaring the horses. Or the neighbours, for that matter. ☺

HI-FI NEWS VERDICT

If you want a speaker well-suited for smaller spaces, and with more style than a premium standmount perched on a chunk of wood or angle-iron, then the compact Scanasonic M20 is definitely a better-looking alternative. However, the trade-off is with a sound that's resolutely compact too, while the diminutive size poses some problems getting your ears on the optimum treble axis. Beanbags, anyone?

Sound Quality: 82%



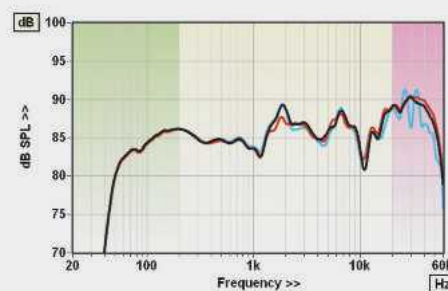
LAB REPORT

SCANASONIC M20

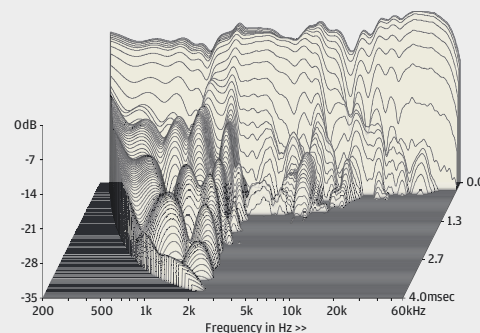
Rating its M20 at a nominal 8ohm while also acknowledging a '4ohm minimum', in practice the nominal impedance is 4ohm with a lower 3.35ohm minimum at 3.07kHz. Maximum swings in phase angle are $-43^{\circ}/124\text{Hz}$ and $+47^{\circ}/5.09\text{kHz}$ with the toughest $40\text{hm}/+36^{\circ}/3.9\text{kHz}$ suggesting the M20 is a little more demanding of your amp than the average compact floorstander.

So does this hungry 2.5-way reward with a high sensitivity? In practice, Scanasonic's rated 86.5dB sensitivity is not especially ambitious or over-realistic, our mean figure of 85.8dB (500Hz-8kHz) only slightly behind – the far lower 83.6dB/1kHz figure denoted by the dip in forward response [see Graph 1]. Measured some 6in above the top of the cabinet – the 'average' seated height – the response reveals a deep 14dB notch at 6kHz, so elevating these speakers is recommended. The perforated grilles [blue trace, Graph 1] have little effect from 20Hz-20kHz.

The 'flattest' response, with errors of $\pm 2.9\text{dB}/\pm 3.4\text{dB}$ (200Hz-20kHz), is achieved on the planar treble unit's main axis where there's a uniform bass/mid but boosted mid/presence [black/red traces, Graph 1]. The latter is reflected in resonant modes up to ~2kHz above which the tweeter is better controlled [see Graph 2] and extended to ~62kHz [shaded pink region, Graph 1]. The mid/bass unit is responsible for the boosted 750Hz-2kHz region, and modest $\pm 1.9\text{dB}$ pair matching, below which it mirrors the response of the lower driver (85Hz-1.3kHz, re. -6dB). The latter is reflex-loaded via rear slots, tuned to 53Hz – but also showing modes at 275Hz, 510Hz and 780Hz – the M20 realising a diffraction-corrected extension of 50Hz (-6dB re. 200Hz). PM



ABOVE: Response inc. nearfield summed driver/port [green], freefield corrected to 1m at 2.83V [yellow], ultrasonic [pink]. Left, black; right, red; w. grille, blue



ABOVE: While the presence/treble is very clean, there are resonances near the top of the mid driver's range

HI-FI NEWS SPECIFICATIONS

Sensitivity (SPL/1m/2.83V – 1kHz/Mean/IEC)	83.6dB / 85.8dB / 84.1dB
Impedance modulus: minimum & maximum (20Hz–20kHz)	3.35ohm @ 3.07kHz 14.2ohm @ 96Hz
Impedance phase: minimum & maximum (20Hz–20kHz)	-43° @ 124Hz $+47^{\circ}$ @ 5.09kHz
Pair matching/Resp. error (200Hz–20kHz)	1.9dB / $\pm 3.4\text{dB}/\pm 2.9\text{dB}$
LF/HF extension (-6dB ref 200Hz/10kHz)	50Hz / 62.2kHz/62.6kHz
THD 100Hz/1kHz/10kHz (for 90dB SPL/1m)	0.9% / 0.23% / 1.5%
Dimensions (HWD inc. feet) / Weight (each)	935x220x250mm / 12kg

BAT VK-3500

Promising 'extraordinary power with exquisite tube finesse' BAT's new VK-3500 integrated marries the brand's REX 3 triode preamp with a robust solid-state output
 Review: **Mark Craven** Lab: **Paul Miller**

Please indulge me while I discuss the design of BAT's (Balanced Audio Technology) VK-3500 amplifier. Beauty is in the eye of the beholder, and all that, but I'd be surprised to find anyone who didn't admire the styling of this hybrid integrated. Even without the 'BAT' logo conjuring images of Gotham City's caped crusader, it has a purposeful, high-quality look and feel. There's an argument that the appearance of a hi-fi product is unimportant, but at this price you expect some attention to detail and craftsmanship – and that's what you get. Of the silver and black finish options, the latter is the obvious choice if you really want to emphasise the *Dark Knight* vibe...

But on to the amplifier itself. Arriving this year as part of a wave of products celebrating BAT's 25th anniversary [see boxout, p63], the £11,995 VK-3500 replaces the outgoing VK-3000SE (launched in 2014) and is once again the only hybrid model in the Wilmington, Delaware company's stable. The claimed 150W/8ohm power output [see PM's Lab Report, p65] matches BAT's solid-state VK-255SE power amp, and comfortably exceeds the specification of its all-tube power amps and integrations.

SUM OF ITS PARTS

Read through BAT's literature and you get a sense that the VK-3500 isn't just a hybrid design, but something of a Frankenstein's monster, comprising tried-and-trusted technologies, including the 'zero global feedback' appellation, from its wider range. Even the etched styling is borrowed from the marque's flagship REX 3 components.

BAT has called upon the 'Unistage' topology of its flagship REX hardware – a single-gain/single-stage 6H30 triode circuit – and married it here with a 'wide

bandwidth' complementary bipolar output stage derived from its reference VK-6200 power amp. Also previously featured in the company's products are the Mundorf silver/gold oil capacitors used in the preamp circuit that are claimed to offer better damping of 'ringing artefacts'.

For the VK-3500's asking price, you might expect an integrated amplifier with a lengthy feature list and connections roster. Yet BAT isn't a brand with an interest in all-in-one hi-fi convenience or networked audio, and the VK-3500 is a strictly analogue design. Therefore, the back view [p65] is uncluttered. Located between its sets of gold-plated speaker binding posts are two balanced XLR inputs and three single-ended RCA inputs, joined by a balanced preamp output for direct or second zone use, plus an RCA tape loop.

The only concession made to further decluttering a hi-fi rack is the inclusion

of an MM/MC phono stage (designed by company co-founder Victor Khomenko) to the VK-3500's third 'line' input. Note that this is fitted as standard, but was originally proposed as an optional extra – as such, the input (No5) isn't in any way labelled. And if you wish to switch the phono module between its high (58dB) and low (44dB) gain settings it's a lid-off job.

NO SHORTCUTS

I did find BAT's 'simplicity without compromise' strategy coming up slightly short when it came to the in-depth setting-up of the VK-3500. Specifically, the adjustment of some feature parameters relies on using the amp's volume control and text-based front-panel display to scroll through options and make choices. Basic tweaks can be time-consuming, and one option – renaming inputs – is hampered by the display's four-character limit.



RIGHT: A single PSU transformer [top, centre] feeds a 'dual-mono' layout including an electro-harmonix 6H30P double-triode preamp [centre] and rugged output stage with four pairs of ON Semiconductor transistors [left/right heatsinks]. Phono PCB sits edge-on near the rear of the case



There are useful features, however, particularly the option to adjust the relative volume of individual inputs and apply maximum or fixed gain settings. There are also balance, mono/stereo operation and phase inversion controls. The blue display, which is certainly easy to read, if not particularly informative, can also be dimmed if so desired.

The VK-3500's machined aluminium remote [p65] is less handsome than the amplifier itself, and its IR 'window' is quite narrow, so make sure you're aiming it properly. Most of its controls are replicated by small buttons on the amp's front fascia, with the exception of 'fade', which provides a gradual – and pleasing – level up/down alternative to mute.

The amp's 23kg weight is perfectly manageable, but the 483mm width of its jutting face plate might possibly require reconfiguration of your kit shelf, especially if you abide by BAT's recommendation of

maintaining six inches of clearance. The amp has internal heatsinks, visible through the chassis sides [see inside shot, p62], and these do a good job of keeping it cool.

CUTTING THE MUSTARD

I immediately felt in safe hands with the VK-3500, thanks to a power output that was so obviously up to scratch that

I quickly stopped even thinking about it. Paired with my regular B&W 705 S2 standmounts, there was an effortless feeling to how it cajoled them along, making them sound large, exciting and sprightly. Paradigm's

triple-woofer Founder 100F floorstanders [HFN Jul '21] ostensibly presented more of a challenge, but again this amplifier didn't seem bothered, driving the loudspeakers without so much of a hint of strain.

Overall, the VK-3500's sound mixes crisp, sparky treble and fast, precise bass with a deliciously dynamic delivery

*'Its sound mixes
crisp, sparky
treble and fast,
precise bass'*

ABOVE: Precision-cut alloy fascia and chassis is available in black or silver, the faceplate hosting a large volume rotary and discreet buttons for input selection, phase, mono and mute

and confident, detailed soundstaging. It gives a mostly transparent view of recordings without descending into clinical indifference while treble is typically more wholegrain mustard than buttery smooth. I was guilty of expecting a little more softness to its presentation – having recently experienced exactly that with Copland's easy-on-the-ear CSA150 hybrid integrated amplifier [HFN Jun '21] – but instead found myself captivated by its energetic and revealing nature. It's an attention-grabbing performance.

'It Never Rains', the closing track on Dire Straits' *Love Over Gold* [CD, Vertigo 800 088-2], begins with a major key keyboard melody, gentle percussion and floating guitar licks, but ends with an extended instrumental section where Pick Withers' drumming gains intensity, Knopfler lets his bluesy guitar notes fly and a phase effect threatens to render it a sonic soup. BAT's VK-3500 artfully handled both sides of the coin, approaching the introduction with a light touch but matching the drive and dynamics later on beat for beat, while keeping the various elements distinct.

DROP KICK

Queen's 'Death On Two Legs' from *A Night At The Opera* [EMI CDP 7 46207 2] – which has an everything-but-the-kitchen-sink production befitting an album reported at the time to be the most expensive ever recorded – left me grinning. Each note of the piano intro sounded cleanly struck, and then, as if snapping its fingers, the VK-3500 launched into the guitar riff, bringing bite and edge to Brian May's tone. Musical flourishes sparkled left and right while the drums sounded weighty and intense. ➔

THE BATMEN

Balanced Audio Technology first appeared at the 1995 CES. Founded by Victor Khomenko and Steve Bednarski (who met working at Hewlett Packard, and are now BAT's chief engineer and general manager respectively), its debut design was the fully balanced VK-60 power amplifier. It has maintained its devotion to balanced architecture ever since, across a range that has expanded to include integrated amplifiers, preamps, a phono stage and an outboard DAC.

Last year the company celebrated its 25th anniversary with the release of third-generation models of its flagship REX hardware, including the REX 3 DAC [HFN May '20]. Its plan was to launch the VK-3500 (as well as updates on its 80 and 90 series components) at the same time, but this was halted due to the coronavirus pandemic. Explains Steve Bednarski: 'The pandemic delayed the launch of this second wave... Something as simple as working face to face with our mechanical and industrial designers became difficult during the past year. Everyone stayed safe, and the new models are now here'. Buyers are therefore assured that the VK-3500 shares the 25th Anniversary Design circuitry brought to the REX flagships – just a year later than intended.

SUMIKO

PHONO CARTRIDGES



REFERENCE

Songbird Line

The Songbird line represents the penultimate step in SUMIKO'S cartridge series, elevating overall performance and expectation firmly into the high end arena.

From the Songbird with its exceptional tracking ability and wide compatibility, through to the long-standing Blackbird and its exceedingly low noise levels and wide dynamic range, up to our reference open architecture design, Starling, with its microridge stylus on a Boron cantilever; each model promises to sing as beautifully as its name suggests.



SONGBIRD

The sophisticated and smart Songbird design with its open architecture construction, new aluminium mounting body, low mass elliptical stylus and Alu coated cantilever results in a high end cartridge that lives up to its name.



BLACKBIRD

The classic Blackbird design has a level of performance and clarity that competes with cartridges twice its price. Its been designed for exceedingly low noise levels exceptionally wide dynamic range and the highest possible fidelity.



STARLING

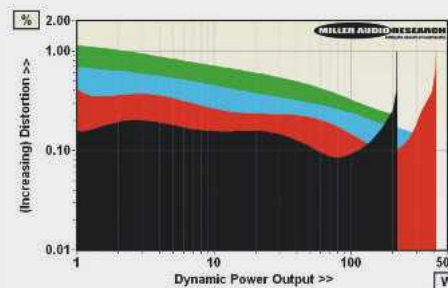
No aspect of the Starling's design was left to chance. Our flagship open architecture cartridge renders the grandeur of an orchestra while still preserving air and space, also delivering responsive dynamics and deep silences.

LAB REPORT

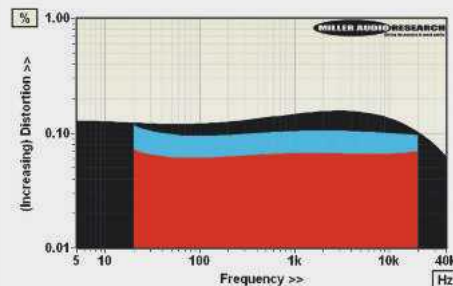
BAT VK-3500

So-called hybrid amplifiers – combining a triode tube line/preamp stage with a bipolar/FET power amp stage – can either combine the ‘colour’ of tubes with the grunt of a solid-state output, or... not. Copland’s CSA150 [HFN Jun ’21] and PS Audio’s BHK Signature [HFN Jul ’16] showed us that the inclusion of a high voltage tube line stage needn’t translate into higher distortion at the output, and Musical Fidelity’s use of Trivistor tubes in various products typically delivered vanishingly low THD. BAT’s VK-3500 is rather different because its technical ‘fingerprint’ is a true amalgam of low-feedback tube/transistor thinking. Power output is generous at 2x170W/8ohm and 2x275W/4ohm, increasing to 220W, 425W, 390W and 215W into 8, 4, 2 and 1ohm loads under dynamic conditions, but distortion is higher at lower power (0.18%/1W to 0.08%/100W) and into lower impedances [see Graph 1, below]. This same decreasing distortion profile remains consistent right across the audioband [see Graph 2, below] and it’s this feature that, subjectively, may prove a boon.

Meanwhile, the 0.22-0.25ohm output impedance is high for a transistor amp and though still lower than might be expected from a tube output stage it will still have some impact on frequency response, depending on your choice of speaker. Into a ‘flat’ 8ohm load the HF response rolls away above 10kHz, reaching -0.25dB/20kHz and -3.6dB/100kHz while achieving -3dB/4Hz in the sub-bass. Overall gain (balanced in) is fairly high at +43dB and the A-wtd S/N slightly below average at 79dB (re. 0dBW), the latter a product of both LF hum and HF white noise. Stereo separation is held to at least 70dB while the fine volume control maintains an impressive 0.08dB channel balance. PM



ABOVE: Dynamic power output versus distortion into 8ohm (black trace), 4ohm (red), 2ohm (blue) and 1ohm (green) speaker loads. Max current is 14.7A



ABOVE: Distortion vs. frequency at 1W/8ohm (black, 5Hz-40kHz), 10W (blue, 20Hz-20kHz) and 100W (red)

HI-FI NEWS SPECIFICATIONS

Power output (<1% THD, 8/4ohm)	170W / 275W
Dynamic power (<1% THD, 8/4/2/1ohm)	220W / 425W / 390W / 215W
Output impedance (20Hz-20kHz)	0.215-0.235ohm
Freq. response (20Hz-20kHz/100kHz)	-0.1dB to -0.25dB / -3.6dB
Input sensitivity (for 0dBW/150W)	19mV / 245mV
A-wtd S/N ratio (re. 0dBW/150W)	79.1dB / 100.9dB
Distortion (20Hz-20kHz, 10W)	0.095-0.12%
Power consumption (Idle/Rated o/p)	77W / 570W (40W standby)
Dimensions (WHD) / Weight	483x146x394mm / 23kg



ABOVE: Alongside the two balanced XLR inputs, one of the three RCA line inputs is given over to the ‘Victor Khomenko-designed MM/MC phono module’. Tape and balanced XLR preamp outs are joined by single sets of 4mm speaker terminals

A particularly notable trait of the VK-3500 is the fun it has with deep bass. Low-end transients come and go like momentary explosions, as exemplified by the one-note bassline progressions in Eminem’s ‘My Name Is’ [The Slim Shady LP; Interscope 490 287-2], or the bouncy kick drums of Regina Spektor’s ‘Fidelity’ [Begin To Hope; Sire 9362-44112-2] – in both instances the listening experience took on a physical dimension. The latter track’s title proved apt here, too, as the amplifier relished Spektor’s lilting, articulate vocal and the plucked string accompaniment, expressing them with remarkable clarity.

PARTY UP

So the VK-3500 sounds detailed and alive, speedy and rhythmic. Does it have a weakness? I can imagine some might prefer more warmth to its presentation, and a softer edge to its upper registers – a weekend filled with high-volume listening to the likes of Aerosmith, The Rolling Stones and AC/DC did throw up the occasional shrill moment. Yet I was never deterred from continuing to enjoy these rock ‘n’ roll dinosaurs, such was the verve and snarl this BAT amplifier brought to the party.

And when

I moved on to more tonally nuanced material, cherishing the three-dimensional soundstaging and textured trumpet of Nils Wülker’s ‘Just Here, Just

Now’ [eponymous, Ear Treat Music; 88.2kHz/24-bit], it wasn’t because I was seeking respite from a brash-sounding amplifier.

The more time I spent with the VK-3500, the more strings I found to its bow. When fed some modern, techy electronica (and even with a regular-sized standmount), the impression is that it wouldn’t be out of place doing front-end duty in a nightclub. Paul Oakenfold’s ‘Save The Last Trance For Me’ [A Lively Mind; Perfecto PERCD003] came straight out the gate at full-throttle, a pounding drum track underneath waves of reverberant synths. Yet this slab of euphoria was peppered with surprisingly delicate touches, such as an isolated high-pitch woodblock that echoed serenely right-of-centre.

And with a track where bass is less prominent, the VK-3500 is able to shift gear easily. Through the big Paradigm Founder 100F loudspeakers, the sustained organ notes, soft strings and falsetto vocals of ‘Pause’, by multi-instrumental outfit Emily Barker & The Red Clay Halo [Almanac; Everyone Sang; 88.2kHz/24-bit], were painted in varying subtle shades. The recording was utterly spine-tingling. ☺

HI-FI NEWS VERDICT

BAT’s VK-3500 integrated amp ably serves as a celebration of the company’s 25 years in the ‘balanced audio’ business – offering an imperious blend of lush looks, audiophile engineering and stellar performance across all musical flavours. Not the honey monster some might expect of a big tube/solid state hybrid, but it’s never less than enjoyable. As birthday presents go, this is far better than a pair of socks.

Sound Quality: 85%



LEFT: BAT’s all-alloy VK-R5 remote provides access to input selection, volume, mute and limited display and menu items

Simaudio MOON 280D MiND 2

If it isn't broken, don't fix it... but Simaudio's MOON 280D outboard DAC is certainly enhanced by the addition of the updated MiND 2 streaming module and app

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

There are two ways to make a network music player. One is to take a streaming platform and integrate a DAC to provide analogue outputs, while the other is to start with a DAC and then build in the network playback capability. The two approaches have their strengths and weaknesses. Typically, the network player with DAC will be just what it says: a full-featured machine, usually complete with a display, but with limited connectivity for external digital sources. The DAC with streaming, meanwhile, will commonly have more digital ins, but sometimes less network audio capability.

Canadian company Simaudio has managed to tread the narrow path between these extremes with its £2950 MOON 280D MiND 2, which is available in black, silver, or silver with a black fascia. That tightrope act is made possible by the integration of its second-generation in-house MiND – Moon Intelligent Network Device – network audio platform. The 280D sits above the company's entry-level MiND 2 network player which sells for £2100 and offers only digital outputs. So the unit we have here is akin to the MiND 2 player with the addition of an £850 integrated DAC, as part of a range going all the way up to the company's £13,500 MOON 780D v2 [HFN Sep '20].

TAKE THE TABLET

The new MiND 2 platform is now common to all the company's streaming devices, bringing with it a range of additional functionality. It's now compatible with both Apple AirPlay 2 and Bluetooth with aptX, while Spotify Connect, Tidal Masters, Deezer Hi-Fi, HighResAudio and Qobuz Sublime+ have also been added – all of course subject to the user having the appropriate subscriptions. In addition, the

280D MiND 2 has onboard MQA decoding, is also Roon-ready, and can combine with other MOON devices around the home to offer synchronised multiroom playback.

If there's a downside to the 'DAC with streaming' approach, it's that while a conventional remote is supplied (see p69), it's not going to get you very far when it comes to using the 280D MiND 2 as anything other than a conventional 'dumb' DAC. The absence of a display means it's impossible to navigate the streaming capability, so the answer is an app, named MiND Controller [see boxout, p67].

For those who balk at the need to spend a few hundred pounds on a tablet to 'drive' the MOON DAC – which, by the way, is much more pleasurable an experience than via the largest of smartphone screens – the answer is twofold. First, you'll face the same obstacle with every network-capable product on the market, and second, if you really want to do it on the cheap, you can pick up an Android tablet

for well under £100 from that retailer named after a South American river.

FIDDLE FREE

The network input, available on both Wi-Fi and Ethernet, brings the total number of digital inputs to eight. There are two coaxial, two optical, an AES/EBU input, Bluetooth, and an asynchronous USB port, so a computer can be connected directly. Meanwhile, playback at up to 384kHz/32-bit, DXD and DSD256 is handled natively from the USB and network inputs.

A slight operational quirk on set-up is that the 280D MiND 2 will look for a wired network connection on initial start-up and, if none is found, default to Wi-Fi, for which the usual stub antenna is provided. That happened when I first plugged the unit in, and the only way to then force the wired connection was to power the unit off, then power it up again with the Ethernet plug inserted – that'll teach me to cut corners in my haste to get things singing!



RIGHT: PSU board [near left] feeds separately regulated supplies for the Stream 810 Wi-Fi board [blue], the network adapter [brown, underneath] and main audio board with its ES9018K2 DAC [far right]



That aside, there's not much to discover here. There's a centre standby button, and three to the left that handle input selection and Bluetooth pairing, with red LEDs alongside to indicate the source chosen, and eleven(!) LEDs to the right to indicate the incoming PCM/DSD sample rates. The latter information is also displayed, in greater detail, via the MiND Controller app.

All that makes the 280D MiND 2 refreshingly fiddle-free, right through to the analogue outputs – on both unbalanced RCAs and balanced XLRs – that are at fixed level. Furthermore, as PM notes in his Lab Report [p69], the company has picked its favoured digital filter setting for the ESS Sabre ES9018K2 DAC and offers no additional user adjustment. This gets my vote as I've wasted far too much reviewing time flicking between all kinds of digital settings on some rival devices.

ON POINT

That directness of set-up and use carries on through to the sound of the DAC, which is direct, to the point, free from any significant foibles, and entirely enjoyable.

'The celebrated
bass motif
is resonant,
deep, yet tight'

Whether used as a conventional DAC or as a network source, the 280D MiND 2 is totally consistent in its presentation of the music, even though buying this device to use it purely as a DAC might seem somewhat perverse, so complete is the network integration here.

So yes, I tried it coupled to a MacBook Air, and indeed from the digital outputs of a couple of legacy source components I had to hand, but I was happiest using

this unit as it is intended – connected to my home network, and fed from my NAS-full of music, as well as various streaming services. And of course, it also saw service as a Roon end-point, where it could handle just about every

format in my music collection.

There's a precision about the sound here that's immensely rewarding, but the MOON 280D MiND 2 never sounds excessively 'technical', as can some extremely revealing digital components. With the crisp rhythms and dark tonal colours of The Soloists of Byzantine Music's *Misa Flamenca* set [Psalmus PSAL037; DSD128], the atmosphere is evoked in striking style,

ABOVE: The 280D MiND 2, available in black or silver/black two-tone finishes, can be operated using the three little buttons, the remote (p69) or the MiND 2 Controller app (boxout, below)

while the focus is always on the vocals and instruments, from solo voices in a reverberant church acoustic to the snap and speed of guitar. Its soundstaging is persuasive and well-focused, too.

STING AND SIZZLE

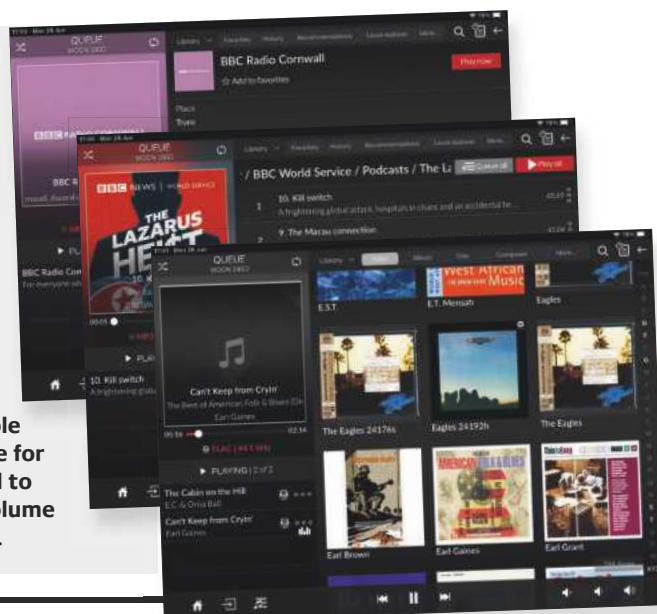
The 280D MiND 2 is also beautifully detailed and well-balanced with Roberta Flack's take on Carole King's 'Will You Love Me Tomorrow?', from the recent 50th anniversary remaster of her *Quiet Fire* album [Rhino Atlantic], with a really intimate view of her voice – as there is throughout the album – and an entirely natural drawing of the accompanying instruments. It's all rather tinglesome, as is the way it helps the system present an entirely 'in the room' perspective.

But this unit can slam, too, as is clear with The White Stripes' much-chanted 'Seven Nation Army', from *Elephant* [Third Man Records TMR200]. Here the celebrated bass motif is resonant, deep, yet tight, while Meg White's percussion has real

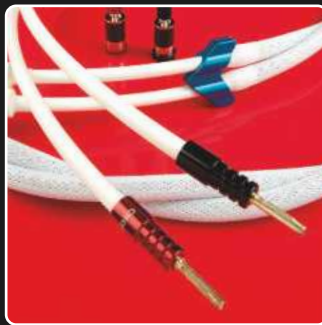
MIND CONTROL

MOON's MiND 2 app has been designed as an intrinsic part of its streaming platform – and it shows. Installed on an Android or iOS device – the latter seems just a bit more responsive – it finds the 280D MiND 2 as soon as it's connected to the home network, and then looks after the very small amount of set-up required. Mainly this involves signing in for any of the streaming services you want to use, selecting favourite Internet radio stations and then pointing the device at your local music stores. The 280D MiND 2's 'locked-down' digital design means you can just get on with listening to the music, selecting tracks or albums and adding them to your playlist.

Also available to Tidal users via the app is Tidal Mix, which uses algorithms to create playlists based on past listening preferences, while the various DAC inputs can be selected via the app, and multiple MOON network products combined in synchronised multiroom mode for 'whole house' audio. What's more, with the 280D MiND 2 connected to other MOON components via its 'SimLink', you can also adjust the volume and settings of the amplifier into which the streamer/DAC is playing.



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NETWORK-ATTACHED DAC



ABOVE: Wired and wireless network inputs join another six digital inputs – USB-B, two coaxial and two optical S/PDIF, plus AES/EBU. Single-ended (RCA) and balanced outputs (XLR) are joined by RS232 control and 3.5mm 'SimLink' triggers

thump, sting and sizzle, the whole impression being of a fresh live performance despite the familiarity. And as for the cover of 'I Just Don't Know What To Do With Myself', this is pleading, then angst-ridden, and then just majestic, the 280D MiND 2 giving it full breathless expression.

DEEP DIVE

What's more, this streamer/DAC is able to bring this wide-open, yet entirely human-scale, insight to whatever one chooses to play. So Sonya Bach's *Rachmaninov* recital [Rubicon RCD1058; 192kHz/24-bit] benefits not just from the speed and precision here, but the warmth and generosity of the sound, giving a presentation as gorgeous musically as it is rewarding in hi-fi terms.

Nor are these qualities limited to the playback of gentle, audiophile-quality recordings. With the bonkers bombast of *Origin Of Symmetry (XX Anniversary RemiXX)* by Muse [Warner 96kHz/24-bit download], the 280D MiND 2 allows the listener to get deep into the mix – and

boy, is there a lot of depth there! – while keeping the tracks pounding and driving. It's all gloriously over the top, but still rather wonderful in its excess, and the streamer/DAC delivers it all.

Arguably its best aspect is the ability to bring out all that

detail while using it to contribute to, rather than distract from, the musical experience. This is clear on the cover of 'Human Nature', made famous by Michael Jackson and recorded by Miles Davis live at the Vienne Jazz Festival very shortly before his death [Merci Miles!; Rhino R2 653962].

It starts jazz-lite, and then Davis starts to fly into ever-greater improvisations, as part of a cracking set including a smoky cover of Cyndi Lauper's 'Time After Time' and tracks by Prince and Marcus Miller. OK, so it's not Miles at the height of his powers but, in the hands of the 280D MiND 2, even this very late career recording is as thrilling as the crowd on the night in 1991 found it.

That combination of detail and generous warmth also serves well a large-scale orchestral recording, such as the Iván Fischer/Budapest Festival Orchestra Brahms 3rd Symphony [Channel Classics CCS SA 43821; DXD]. Here the might of the orchestra is as impressive as the soundstage focus the 280D MiND 2 conjures up and the way one can listen in to the various sections, not to mention the drama of the great opening movement. ☺

HI-FI NEWS VERDICT

A fine example of an integrated streaming platform, DAC and control app, the 280D MiND 2 is a stronger proposition thanks to expanded compatibility with streaming services, all accessed through the well-designed, easy to use MiND Control software. It may be something of a plain Jane among a field of rivals with large colour displays, touchscreens and the like, but it sounds excellent and is a delight to use.

Sound Quality: 86%



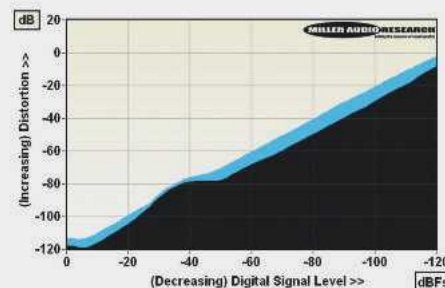
LEFT: The slender but comprehensive-equipped MOON CRM-3 system remote caters for its amps, players and DACs. For the 280D it offers input select and mute

LAB REPORT

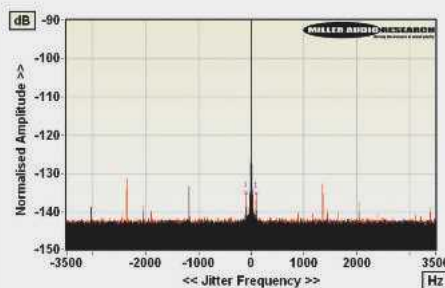
SIMAUDIO MOON 280D MIND 2

Now equipped with the MiND 2 streaming module, the 280D still employs the evergreen Sabre ES9018K2 DAC from ESS in preference to the newer 9028Q2 and 9038Q2 versions. And, credit where due, Simaudio extracts a very fine performance from this 'low consumption' DAC from the very low distortion that holds to just 0.0002% over the top 15dB of its dynamic range [see Graph 1, below] and wide 109.0dB A-wtd S/N from its standard 2.04V peak output (the single-ended RCA and balanced XLR outputs are identical). This DAC comes with three pre-installed digital filter options and Simaudio has elected to use the 'default' fast roll-off linear phase type which offers a fine 81dB stopband rejection with flat -0.2dB/20kHz, -0.9dB/45kHz and -2.4dB/90kHz frequency responses (48kHz, 96kHz and 192kHz, respectively) at the expense of moderately extended pre/post ripples in the time domain.

Simaudio has chosen to use slower/lower-order roll-off minimum phase filters in its costlier MOON DACs [HFN Sep '20] although the use of ESS silicon is a constant, the latter bringing with it supreme levels of jitter suppression [see Graph 2, below] – the correlated residual remaining below 8psec with 48kHz, 96kHz and 192kHz/24-bit sample rates. Because of their proprietary 'Hyperstream' architecture, ESS DACs will also usually offer very fine low-level linearity and, once again, the 109dB S/N here is sufficient to resolve signals to within ±0.3dB over a full 110dB dynamic range. Finally, Simaudio MOON's op-amp based analogue output stage bests its rated 100ohm source impedance with a lower 70ohm measured here (balanced XLR) while the methodical analogue PCB layout confers a wide 125dB stereo separation. This is all very solid stuff. PM



ABOVE: Distortion vs. 48kHz/24-bit digital signal level over a 120dB dynamic range (1kHz, black; 20kHz, blue)



ABOVE: High res. jitter spectrum via S/PDIF and USB (black, 48kHz/24-bit; red, 96kHz/24-bit with markers)

HI-FI NEWS SPECIFICATIONS

Maximum output level / Impedance	2.04Vrms / 70ohm
A-wtd S/N ratio	109.0dB
Distortion (1kHz, 0dBFS/-30dBFS)	0.00010% / 0.0056%
Distortion & Noise (20kHz, 0dBFS/-30dBFS)	0.00015% / 0.0052%
Freq. resp. (20Hz-20kHz/45kHz/90kHz)	+0.0 to -0.2dB/-0.9dB/-2.4dB
Digital jitter (48kHz / 96kHz / 192kHz)	5psec / 7psec / 6psec
Resolution (re. -100dBFS / -110dBFS)	±0.2dB / ±3dB
Power consumption	5W (1W standby)
Dimensions (WHD) / Weight	169x34x131mm / 7.5kg

Triangle Antal 40th Anniversary

French brand celebrates its Ruby Anniversary with a rose-gold tinted treble and two fabulous cabinet finishes
 Review: **Mark Craven** Lab: **Paul Miller**

There's a definite feeling you're getting your money's worth when you encounter Triangle's Antal 40th Anniversary loudspeaker.

This French floorstander, reasonably tall at 113cm and surprisingly deep at 35cm, arrives in an oversized box and, once excavated, greets you with 40th Anniversary branding on the front baffle and its quartet of drivers with eye-catching rose-gold anodised aluminium trims. I wouldn't say it looks a million dollars – there are too many right angles for that – but it certainly looks like it should cost more than the £3000 ticket (less still via some online retailers).

Of the colour options, the Blonde Sycamore of our sample has an on-trend natural matt finish. For something a little more ostentatious, opt for the glossier Santos Rosewood. Triangle has released this special edition version of the Antal – a longstanding model in its range, first produced in the mid-1990s – to mark 40 years (well, 41) since the company was established [see boxout, p71]. It has doubled down on the idea, too, also launching an anniversary edition of its Comète standmount (£1500).

CH-CH-CH-CH-CHANGES

You might have expected the company to celebrate this milestone with a re-engineering of its flagship Magellan or premium Signature Series, but both the Antal and Comète are from its close-to-entry-level Esprit Ez range – only the Borea series sits below in Triangle's conventional loudspeaker stable. The standard Antal Ez, which is now in its seventh generation, remains on sale at £1899.

Beyond the Antal 40th Anniversary's 'signature' rose-gold embellishments, which you'll also spot on the speaker's logo plate and bi-wire connections, it doesn't look that different from its Ez sibling. Cabinet dimensions are close to identical and it's again supplied with a full-length

magnetic grille, rectangular glass plinth, and rubber and metal spike options. Yet there's more here than a slight cosmetic tweak with very real changes to the enclosure interior, drivers and crossover.

So, the horn-loaded compression tweeter now uses a magnesium dome, rather than the titanium of the Antal Ez. Triangle has also coated the horn in anthracite chrome and reworked the phase plug in a bid to improve dispersion, while upgrading the rear chamber and magnet.

Below this HF unit are a 135mm midrange and two 135mm bass drivers. The former features a new 'cellulose pulp membrane' cone with bullet-shaped phase plug, while the latter, which are made from a pulp/carbon fibre/flax composite and backed by a 120mm ferrite magnet, are a development of the woofers on Triangle's Australe Ez floorstander.

CHAMBER PRACTICE

On to the cabinet. This employs internally reinforced HDF panels up to 23mm thick, as found on Triangle's Magellan and Signature Series models. The bass drivers, which are reflex-loaded via a wide, circular, front-firing port, are given their own separate chamber. Proprietary DVAS (Driver Vibration Absorption System) technology, where a high-density foam gasket couples the rear of the motor assembly to horizontal bracing, is claimed to further reduce both driver and cabinet resonances.

Getting these 26kg towers in place is only mildly arduous, but note that even with those front-firing ports the recommended rear-wall clearance is still 40cm, and 50cm from the side. Factor in

RIGHT: Topped off by Triangle's horn-loaded compression driver (a rose-gold plated magnesium dome) this sensitive floorstander also includes a wide-range 135mm pulp midrange and two reflex-loaded pulp/carbon fibre/flax woofer cones operating below 185Hz



BIRTHDAY BOYS

Founded in 1980 by Renaud de Vergnette, in the French town of Soissons about 60 miles north-east of Paris, Triangle has since developed a product lineup that runs the gamut from wireless desktop speakers to its Magellan Grand Concert flagship, plus its own cabling range and custom install options. And throughout its history, it's often avoided conventional loudspeaker design thinking in favour of innovation. Triangle's debut model, the 1180, placed a pyramid-shaped two-way enclosure atop a floorstanding cabinet, and it followed that a year later with the cuboid CX2, its first speaker with an external tweeter housing (an acoustic principle continued by its contemporary Signature Series).

The more recent Magellan range, meanwhile, features mid and tweeter drivers mounted fore and aft to create a more diffuse, 360° soundstage. Triangle is not unique in this approach, but it's still rare in contemporary floorstanding loudspeakers. Network, cabinet and driver design, including the horn-loaded compression units that grace many of its models, take place at the brand's purpose-built Soissons facility, in addition to acoustic simulation and measurement. It's also here where Triangle's premium models, including the Antal 40th Anniversary featured here, are assembled.

the cabinet depth and you end up with a pair of fairly imposing floorstanders placed a good distance into the room. Don't consider these if you're looking for a discreet installation!

BANG ON THE MONEY

The size of these well-priced cabinets is reflected in the size of the soundstage they create. There's an impressive feeling of height and depth to the Antal 40th Anniversary's delivery and, even better, imaging and integration is excellent. Set up around 2m apart the two enclosures become a single sonic entity, the space between them filled with nuanced, musical details.

It's a performance that plays well with orchestral compositions and horizon-wide electronica, while providing precision staging for a rock 'n' roll four-piece. What's arguably missing is a real grip on the lowest octaves, and the energy and top-end sparkle of (typically more expensive) rivals. This is a very well-behaved loudspeaker generally, an attribute that's suits the music perfectly at times – though not all the time.

Swayed by the cabinet's classy looks, I dialled-up a copy of Max Richter's hypnotic 'On The Nature Of Daylight' [*The Blue Notebooks*;

'There's flair in a barrage of lightning-fast banjo'

DG 4835014], a piece blending cello, violin and viola with some low-range synthetic accompaniment. The opening notes showed off the Antal 40th Anniversary's natural tone, while texture and separation were bang on the money, even as the instrumentation became more layered and the high-string violin motif ramped up at the conclusion.

However, the speaker's handling of Richter's bassy keyboard swells lacked a degree of both weight and definition. Even partnered with my punchy Class G Arcam amplifier, it didn't quite have the confidence to give the track the rich, saturated bottom end it deserves. That's not to say it sounded bumpy or unbalanced, just a little shy and somewhat soft around the edges – a touch sluggish compared to the tighter performance achieved elsewhere. Perhaps I was

hearing something of the steep LF roll-off [see PM's Lab Report, p73], along with a deliberate voicing favouring smooth – as opposed to overtly punchy – bass.

GOING HIGHER

Nor was this a one-off. Paul Simon's 'Boy In The Bubble' [*Graceland: 25th Anniversary Deluxe Edition*; Sony Music, 96kHz/24-bit] lacked the bounce to its bassline that I'm familiar with, while the speaker didn't quite lock into the deep, strident bass of Chase and Status's 'Fire In Your Eyes' [*No More Idols*; Mercury 2745135]. With this track, in an effort to wake up the woofers, I pushed the volume higher. The result was in part what I desired – the low-end sounded

LEFT: Seen here atop its 10mm-thick glass plinth with anodised alloy inserts and adjustable rose gold-coloured spikes, the 20-23mm-thick HDF cabinet is offered in high gloss-finished Santos Rosewood and Blonde Sycamore veneers [pictured]



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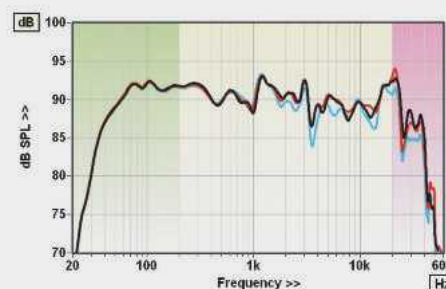
AURALIC PRESS AWARDS



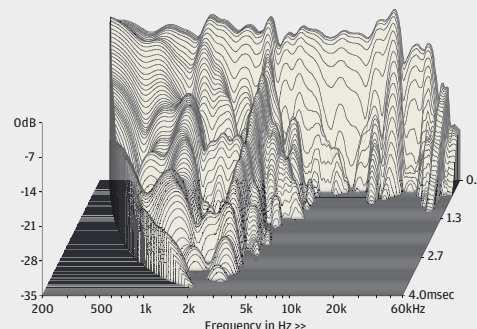
TRIANGLE ANTAL 40TH ANN.

Rated at a high 92dB sensitivity, the 40th Anniversary edition of Triangle's Antal floorstander achieves a not inconsiderable 89dB/1kHz and 90dB/500Hz-8kHz, the latter figure boosted by the resonant 'bumps' in its response [see Graph 1] where it's most uneven from 800Hz-5kHz. Here the peak and dip at 3-3.6kHz (just below the notional 3.9kHz crossover) is as likely a misterrmination between the mid cone/stiff surround as any resonance associated with the horn. It's especially obvious on the CSD waterfall [Graph 2] but relatively narrowband and arguably of reduced subjective significance bearing in mind the typically low <0.2% midband THD (re. 90dB SPL). At least the resonances were consistent in our samples, ensuring a tight 1.3dB pair matching up to 7kHz with some relaxation to 1.5dB up to 20kHz where there's a 4-5dB lift in high treble. The output of the HF unit is sufficient to extend the responses to 24.8kHz and 30.9kHz [-6dB re. 10kHz; pink shaded area, Graph 1] while the magnetically-attached grille has a broadly attenuating effect above 2kHz [blue trace, Graph 1].

Bass [green shaded area, Graph 1], courtesy of the 56-350Hz/-6dB bandwidth of the woofers and substantive 38Hz output of the reflex port, extends to 35Hz (-6dB re. 200Hz) rolling away steeply below 40Hz. Meanwhile, as expected, the speaker's high sensitivity comes at the expense of a tough load as Triangle's nominal 8ohm rating is rendered moot by its 3ohm minimum spec. In practice the *nominal* load is 3ohm and the minimum a punishing 2.5ohm/136Hz with a sub-4ohm from 80-400Hz where the impedance phase swings through -53° to +34°. PM



ABOVE: Response inc. nearfield summed drivers/port [green], freefield corrected to 1m at 2.83V [yellow], ultrasonic [pink]. Left, black; right, red; w grille, blue



ABOVE: While HF horn modes seem well suppressed the two 1.2kHz/3kHz driver resonances are obvious

LEFT: With 2nd/4th-order slopes at 185Hz and 3.9kHz the split crossover services bi-wire or bi-amp operation via its dual sets of 4mm terminals. Two bass units work into their own cabinet space and are braced against the rear panel

and vocals shone through. The Gina Furtado Project's cover of bluegrass staple 'Kansas City Railroad Blues' [eponymous; Mountain Home Music] spilled out of the Antal 40th Anniversary speakers with rhythmic flair, a barrage of lightning-fast banjo picking and swing-style guitar.

ROCKING CHAIR

There's a lot going on here (violin, double-bass, and mandolin too), but the celebratory Antal admirably coped with the chop-and-change of timbres and left my foot tapping. Meanwhile, Lee Haslam's 'The Future' [*Slinky Concepts*; Tidal] made brilliant use of the loudspeaker's wide, full-range soundstage, its electronic soundscapes leaving me feeling almost pinned to my chair.

Finally, with 'Georgia' [*The Seven EP*; n/a cat no.], a sparse production by singer/songwriter Emily King that seems designed to mainly highlight her vocal talents, the loudspeaker put her right in front of me, all breathy and close-mic'd. Admittedly, this is the sort of song we've all heard countless times at hi-fi shows, but I was surprised by how this floorstander made it sound so intimate and articulate. And it wasn't just King's presence. Other details – acoustic guitar, gospel-style backing vocals, a gentle kick-drum – stood back a little, creating an image with an easy-to-visualise depth. ☺

HI-FI NEWS VERDICT

If Triangle, freshly turned 40, is having a mid-life crisis, it doesn't show. This comprehensively upgraded edition of its Antal three-way floorstander offers impressive value for money. The performance is large-scale and musical, with wonderfully cohesive imaging, and the cabinet finish and styling are exceptional. Just be prepared to give it plenty of amp power, and don't expect explosive bass...

Sound Quality: 81%



more purposeful, but mids and highs hardened too. I had no such worries with up-tempo, upper register basslines, such as the one driving Dire Straits' 'Sultans Of Swing' [eponymous; Vertigo 800 051-2]. But there are other options, around and under the price, that seemingly have more fun below 100Hz.

So, its bass performance won't suit all tastes, but the speaker earns its crust elsewhere. With a number of tracks it sounded completely effortless, lapping up everything from well-recorded jazz and acoustic blues to the beeps and beats of modern dance music. It combined resolution with speed when necessary, but also revelled in more sedate recordings, where its rendition of both instruments

HI-FI NEWS SPECIFICATIONS

Sensitivity (SPL/1m/2.83V – 1kHz/Mean/IEC)	89.4dB / 90.2dB / 88.0dB
Impedance modulus: minimum & maximum (20Hz–20kHz)	2.53ohm @ 136Hz 18.2ohm @ 25Hz
Impedance phase: minimum & maximum (20Hz–20kHz)	-57° @ 72Hz +44° @ 665Hz
Pair matching/Resp. error (200Hz–20kHz)	1.5dB / ±3.3dB/±3.1dB
LF/HF extension (-6dB ref 200Hz/10kHz)	35Hz / 30.9kHz/24.8kHz
THD 100Hz/1kHz/10kHz (for 90dB SPL/1m)	0.35% / 0.15% / 1.1%
Dimensions (HWD) / Weight (each)	1128x118x169mm / 27kg

Pro-Ject Debut PRO

Dubbed the 'most audiophile' Debut turntable yet, this deck/arm/cartridge solution takes over from last year's Debut Carbon model with a host of detail refinements

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

Like the Land Rover and Ray-Ban sunglasses, the Pro-Ject Debut comes in many flavours. What started as a pure entry-level product has been joined by enough siblings over the last 20 years [see PM's boxout, p75] that the new Debut PRO reviewed here can be regarded as the range's flagship and crowning glory. The numerous improvements elevate the price to £699, but even that hasn't undermined this record deck's bargain status.

Pro-Ject CEO Heinz Lichtenegger maintains that the steps up the scale continue the mission statement of the most recent Debut, the Carbon EVO [HFN Dec '20]. Lichtenegger says, 'The Carbon EVO was designed to give people with a moderate budget a record deck with an "entry audiophile" attitude. The idea of the PRO is to further squeeze any compromises you'd expect in a budget turntable'.

ON THE UP

This even extends to the name, which is particularly evocative for any product in the domestic sector. "PRO" was chosen, he explains, 'to motivate the people who may be considering digging deeper into real high-end turntable design, but who still do not want to spend crazy money'.

Accounting for the £250 uplift over the Debut Carbon EVO, Lichtenegger recites a list of features which starts with improved motor isolation, on to height adjustment achieved through TPE-damped metal feet, while VTA adjustment has been added to fettle cartridge upgrades.

This flexibility is almost a mantra for Lichtenegger, as he mentions MCs frequently. The aluminium platter is more heavily damped, and anti-magnetic, which he says is a boon for upgrades to MC cartridges, noting, 'You almost never see a 1.6kg platter at this price point – usually it's 300g, glass and prone to ringing'.

RIGHT: With the 1.6kg non-magnetic alloy platter removed, the sub-platter, belt and AC motor are all revealed beneath. Flip the switch [lower left] right for 45rpm and left for 33.33rpm

He takes a breath and continues. 'The tonearm is a sandwich of a central tube of aluminium surrounded by carbon fibre, for better damping and higher effective mass.' He stresses that this, too, is important for moving-coil upgrades. 'As you know, ultimately an MC is the heaven of analogue.' The new tonearm also utilises massive gimbals, and nickel coating, the latter said to provide improved damping and a longer-lasting finish. 'After the passage of time, painted or anodised black surfaces will turn greyish.'

Getting into his stride, Lichtenegger explains the importance of the positioning of the Debut PRO in the Pro-Ject turntable lineup. He emphatically wants it to top the Debut line, revealing that, 'Yes, the Debut PRO is the ultimate manifestation of the Debut line. It is our 30th anniversary product, so we put in all that we could

think about improving a Debut, taking it beyond the Debut Carbon EVO'.

BODY LANGUAGE

'When you go to costlier high-end decks, if they're really better, you should experience greater quietness, less nervous behaviour, and more authority', he explains further. 'With the new Pick it PRO cartridge, the new heavy platter, the massive feet and, of course, the new tonearm design, it's all about more stability and greater subtlety, without sacrificing any retrieval of details.'

Pro-Ject co-designed the new MM cartridge with Ortofon's Leif Johanson, 'to give a more substantial, more full-bodied sound', says Lichtenegger. 'In Leif, we found a great partner who worked out exactly the sound balance we wanted for the Debut PRO. We intended to give it more

'It extracted each of the three voices in their own sonic turf'





body, very pleasant to hear, but still keep the refinement of the 2M cartridge line.'

Initial press pictures preceding the arrival of the deck showed a puck, but none was provided with the PRO. It turns out that this is an option, but I found the Debut PRO categorically benefits from a puck or clamp, so I used one throughout the listening sessions. Lichtenegger explained that they have designed a dedicated puck, as seen in the preliminary literature, 'which matches the Debut PRO perfectly, not too heavy for the type of bearing – for more weighty pucks, you also need bigger bearing assemblies'.

The new puck, a plated metal disc, will sell for around €49. Or you could use the £75 'Clamp it', which promises an even tighter grip and, at 120g, applies pressure to the record without stressing the bearing.

PRO-FESSIONAL

There's no escaping it: the Debut PRO is easy to adore. I had it up and running in 15 minutes, and that's without a manual, as we were treated to the first production

sample, before the user guide was ready. Then again, anyone who has set up a Debut will recognise every element, by now aware, too, that there is also a spare belt for 78rpm usage [see PM's Lab Report, p77]. I settled on 1.8g for the tracking force of the new cartridge, based on my experience with a 2M Red for some years.

FIGHTING FORM

As the Pick it PRO is a straightforward Ortofon 2M in many ways – any differences to the cantilever, stylus, etc, being kept under wraps – it was an easy feed into the MM stages of four wildly differing phono stages I had to hand, ranging in price from under £400 to over £6000. This package will cause you no worries whatsoever, for it's as close to plug 'n' play as a turntable/arm/cartridge combo can be.

In other words, a *soupçon* of experience and a load of common sense will have this optimised for your system. The only proviso is that the gains of a puck are too great to ignore, the felt mat slipping around if not secured from above. With the classic

ABOVE: A neat and compact, modern-looking turntable, the new Debut PRO has a hand-painted plinth, new one-piece alloy/carbon-fibre tonearm and nickel-plated bearing block

edition of George Benson's *Breezin'* [Mobile Fidelity MFSL 1-011] dating from the label's West Coast days, it was easy to hear the effect of a puck in nearly every area.

I stress this because the puck I used was a £10 purchase from Amazon, so we are not talking about breaking the bank. While the PRO invites upgrades, and not just Lichtenegger's prediction that owners will court MCs, I used the supplied cables and felt mat. Just mentioning them, though, tells you that you can have a field day experimenting with tweaks, which is as it should be, when they don't cost the earth.

In fighting form, the most staggering element of the Debut PRO to my ears was the solidity and extension of the bass. This extracted all the weight of the Benson recording, ultra-expressive lower registers courtesy of the legendary Phil Upchurch. But a Benson LP is about voice and guitar, and the Debut PRO was a more-than-competent deliverer of richness in all areas, a boon for Benson's honeyed tones.

STATEMENT OF INTENT

As for his guitar work, speed and attack are as much about the experience as the fluidity, however mutually exclusive the two might seem. The Debut PRO – and, for that matter, the Pick it PRO – managed to balance the two, so Lichtenegger was right: the PRO conveys body and fatigue-free listening without any blatant loss of detail. Probably the only thing missing, which would be a reason to consider an MC, is a touch more air and space.

Not that the sound was congested – I am being brutal about this, having played with the Debut PRO right after using a package costing ten times its price. But the gains you would achieve over this, when the time comes to upgrade, would be matters of scale, perhaps a touch more stage depth. But auditioned in context, the

DURABLE DEBUT

The Debut was born out of an idea formed in the summer of 1998 by long-time UK distributor of Pro-Ject Audio Systems, Laurence Armstrong, and company founder Heinz Lichtenegger. The two were together in Austria discussing ideas to develop the 'analogue market' and soon returned to Lichtenegger's original thinking behind the formative Pro-Ject 1 turntable launched in 1991. The brief was simple: a turntable that was affordable enough to be considered an 'add-on sale' in stores, but that could wow would-be purchasers with a convincing audiophile performance as soon as it was plugged in. Within a day of their new concept taking shape, a sample was produced in the company's Czech factory by Jiri Kroutil, Pro-Ject's original product manager, and within a matter of months the Debut was flying off shelves and an audio icon was born...

In the early 2000s, the Debut II arrived with a variety of colour finishes and new features including a built-in speed controller and phono stage. This was swiftly followed by the Debut III, also among the first hi-fi turntables to include a USB output. The Debut's status was consolidated at its highest ever price point in 2012 with the Debut Carbon and its carbon fibre tonearm [HFN May '12]. In 2020, over 20 years since the original concept, the latest iteration – the Debut Carbon EVO [HFN Dec '20], was launched to the same generally high praise, suggesting, if we hadn't realised this before, that Armstrong and Lichtenegger really were on to something all that time ago! PM

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TURNTABLE PACKAGE



ABOVE: Stereo RCA sockets are mounted under the left of the plinth, PSU input to the right. Three machined feet screw into place for levelling and vibration control

Debut PRO yields nothing, as I heard with William Bell's *The Soul Of A Bell* [Speakers Corner STAX S719]. This is more about voice than anything else, despite the usual peerless backing all Stax releases employ.

His sublime composition 'You Don't Miss Your Water', exhibited vocal textures so convincing I was having second thoughts about MCs. The warmth in the voice defied the technology of the phono stages, vivid and apparent whether through all-valve or solid-state step-ups. 'Coherent' replaced 'competent' as this deck certainly earns its suffix, 'PRO' being less of a conceit and more a statement of intent.

JUGGLING ACT

This was made even more evident when I cruelly subjected it to a slightly knackered copy of *The Best Of The Lettermen* [Capitol ST2554]. I have no way of knowing how much HF content had been shaved off over the years by abuse, but the Pick it PRO extracted each of the three voices in their own sonic turf, blending them with such authority that I had to dig out my copy on open-reel tape for comparison purposes. I no longer felt their takes of 'Yesterday' or 'When I Fall In Love' were exercises in schmaltz.

Even better, as harmonising was dominating my mood, was the sublime Analogue Productions release of The Beach Boys' *Smiley Smile* [APP068]. Even the weird numbers like 'Vegetables' and 'Wind Chimes' were captivating, but the LP's two masterpieces – 'Heroes And Villains' and 'Good Vibrations' – were further evidence that the retrieval of detail hadn't been compromised. Both are studio creations of almost absurd complexity, on a par with The Beatles' releases of the same period, that heady year of 1967.

Whatever bizarre sounds Brian Wilson chose to employ, the Debut PRO handled with aplomb. And that includes the Theremin, the signature sound of 'Good Vibrations' and a rare example of electronic sound that doesn't immediately suggest artifice. Throughout the album, though, were the harmonies of a group that ranks in the permanent Top 10, along with The Mills Brothers, The Ink Spots, The Hollies, The Everlys and the rest. As with The Lettermen (Capitol Records must have had a thing about harmony), the sound was ethereal yet palpable. How's that for a juggling act?

Having spun over 30 LPs on the Debut PRO, I leave it convinced that it begs to be heard by the sort of audiophile-in-waiting Lichtenegger designed it for, just as it begs the use of a puck or clamp. I would love to have one just to see how far the various upgrades can take it, the easy swaps like trick cables, *outré* mats, and whatever MC cartridge one cares to fit. But even in stock form, it joins the best of sub-£1000 front-end combinations. 'Entry level' has a new champion. ☺

HI-FI NEWS VERDICT

Having lost count of the Debuts I've tried, I'll confirm one thing: each new model delivered an advance on its predecessor. If, as CEO Heinz states, the PRO is the ultimate expression of the Debut concept, and further gains mean moving up to the next range in the catalogue, he couldn't have come up with a more fitting way to mark Pro-Ject's 30th anniversary. Simply stated, the Debut PRO is a knock-out.

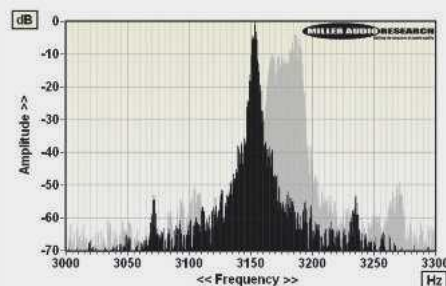
Sound Quality: 87%



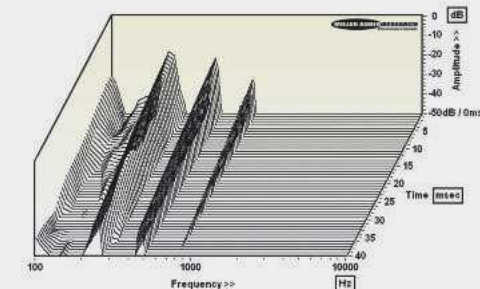
PRO-JECT AUDIO DEBUT PRO

Pro-Ject's Debut PRO turntable/arm/MM combination shares the same PSU, motor and MDF chassis as the earlier X1 [HFN Aug '19] and X2 [HFN Nov '19] models but there's a new nickel-plated bearing here, a new arm (bearing) and 1.6kg alloy platter with peripheral TPE damping. Once again, the deck is supplied with both glued round-section (78rpm) and continuous flat-section (33.3/45rpm) rubber belts but still I'll urge HFN readers to leave the former in the packaging and use the flat rubber drive. The round belt (with glob of adhesive) causes a marked deterioration in W&F [shaded spectrum, Graph 1], rumble and a speed error of +1% that some listeners might mistake for extra 'pace'. By contrast the flat belt delivers a very fine 0.02% peak-wtd wow [black spectrum, Graph 1] with a $\pm 82\text{Hz}$ flutter that's also obvious on the unwtd rumble spectra [not shown here]. We saw the same rumble component on the Pro-Ject X2, and while the bearing rumble here is a little below average at -63.8dB (DIN-B wtd) this improves to -66.2dB measured through-the-groove.

The partnering 8.6in tonearm features the same one-piece alloy/carbon tube seen in earlier Pro-Ject designs but is supported here in a new bearing yoke with a marginally underhung and decoupled counterweight system. The main tube mode is lower than expected at 75Hz [off the X axis of Graph 2, below] and accompanied by a trio of high-Q and clearly-defined harmonic/twisting modes at 245Hz, 475Hz and 830Hz, the latter possibly associated with the carbon headshell fingerlift. The new arm bearing is well adjusted, free of play and offers low $\sim 15\text{mg}$ friction, but the latest 'superstructure' is clearly livelier than we saw in the X2 model. PM



ABOVE: Wow and flutter re. 3150Hz tone at 5cm/sec (plotted $\pm 150\text{Hz}$; flat belt, black; round belt, grey)



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	33.37rpm (+0.1%)
Time to audible stabilisation	3-4sec
Peak Wow/Flutter (Peak wtd)	0.02% / 0.03%
Rumble (silent groove, DIN B wtd)	-66.2dB
Rumble (through bearing, DIN B wtd)	-63.8dB
Hum & Noise (unwtd, rel. to 5cm/sec)	-55.7dB
Power Consumption	6W (1W standby)
Dimensions (WHD, with lid) / Weight	415x113x320mm / 6kg



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BEHIND THE MUSIC WITH HI-FI NEWS & RECORD REVIEW

Mozart *Così fan tutte*

A silly farce or a social experiment gone wrong? There are no right answers – though a few wrong ones – to the riddle of this *dramma giocoso*, says **Peter Quantrill**

Giochiam', says Don Alfonso, to set in motion Mozart's final collaboration with Lorenzo da Ponte: let's play a game. The nature of the game is a wager over feminine fidelity, laid with two soldiers to prove that, in the moral of the untranslatable title, 'all women are like that'.

Thus Ferrando and Guilelmo, engaged to two sisters, must each court the other's fiancée in the guise of lovelorn Albanians as a day-long social experiment, and accept the consequences of deception and betrayal in the light of the opera's subtitle, 'The School for Lovers'.

PROBLEM PIECE

In the wake of the opera's successful first run in January 1790, interrupted by Emperor Leopold II's passing which closed all the theatres in Vienna, there was no sign of the controversy which swirled around it throughout the 19th century and well into the 20th. Bourgeois audiences took exception to what they saw as da Ponte's amoral

→ The dry wit and sure Mozartian style of Karl Böhm made him a *Così* conductor of distinction



pessimism (women are all hussies) as voiced by Alfonso, and frivolous humour (but never mind).

It was Richard Strauss, above all, who restored both the fortunes of *Così* and its place in the repertoire with pioneering productions which honoured the piece as Mozart and da Ponte left it, rather than bowdlerising the plot for the sake of contemporary sensibility.

One German staging restored propriety by having the sisters courted by their own fiancés. Wagner thought the libretto trivial; Herbert von Karajan's telling reaction was 'Wonderful music, but in the theatre – well, I must say it is not to my taste'. As both the supreme Mozart conductor of his age, and the composer of *Der Rosenkavalier*, Strauss grasped what a radical and yet perfect work for the lyric theatre *Così* is.

The nature of the passions expressed – and initially rejected, then gradually accommodated, first by Dorabella and then her sister Fiordiligi – drew from Mozart a new language of parody homages to old

lyric genres (love duet, seduction scene, oneupmanship between both men and women), pitched precisely in the same key as the libretto. Take Ferrando's 'Un aura amorosa' from Act 1: only the context and the performer can tell us that this is no ordinary suave serenade.

Before that, the opera's unstable balance between irony and sincerity is set up by 'Smanie implacabili', Dorabella's initial reaction to her fiancé's sudden call-up. The vocal and instrumental gestures place the aria in the lineage of 'woman on the verge of a nervous breakdown' scenes from Monteverdi to Donizetti, but they are too extreme, too brief and too premature to fit the bill.

SOCIAL CHANGE

Così was not staged at the Royal Opera House in London until 1947, and only then in a touring production from Vienna. A home-grown staging had to wait until 1968. Around that time of tumultuous social change, the wider operatic public began to catch up with what audiences

at Glyndebourne had known (along with Strauss) for decades: that *Così* is an uncomfortable masterpiece of lyric psychology.

The libretto gets under your skin, like

'The libretto gets under your skin, like Seinfeld'

Seinfeld or *Motherland*. Rather than the conventional imagery for musical masterpieces of a landscape crossed by many paths – but you can take only one at a time – *Così* more nearly resembles a 'sandbox'-style role-player game, in which performers (and listeners!) must make choices at every stage which affect what happens next.

Serious or send-up? Is Despina in league with Alfonso, or another

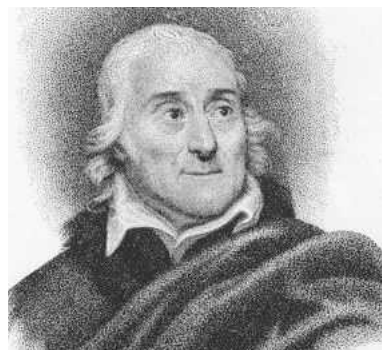


← Jonathan Miller's now-classic staging of *Così fan tutte*, filmed at the Royal Opera House and released on Opus Arte

innocent victim? Will the couples forgive, or forget? You decide.

Home listeners to *Così* in the 78 era were spoilt for choice by a single set, decades ahead of its time. This wasn't simply because of the familiarity of Glyndebourne's cast and instrumentalists with both the piece and each other. There was also the breathing tempi and phrase-making of Fritz Busch and the light-touch wit of the piano continuo and the sheer presence of the Columbia recording. This is vividly preserved on the EMI/Warner remastering of Busch's Glyndebourne legacy [9029580174] over nine CDs.

Precious few stereo recordings lived up to those standards until period-instrument directors began to revive the scale, the colours and the decorations which composer and librettist took for granted in the late 18th century. Among those rare birds is Otto Klemperer [EMI/Warner, 4043612], unevenly miked and edited but unsentimentally sensitive to the instrumental textures



Johannes Maria

Kränzle as Don Alfonso in last summer's Salzburg Festival *Così*, now on Erato



Lorenzo da Ponte

– grocer, priest, moral philosopher, playwright and librettist

supporting a youthfully fiery cast, especially strong in the women led by Margaret Price's Fiordiligi.

Listeners demanding both digital sound and 'modern' instruments can comfortably settle for the Chamber Orchestra of Europe under either Georg Solti [Decca, 4783050] or Yannick Nézet-Séguin [DG, 4790641], both glamorously cast and expertly driven but neither of them as responsive to sudden or imperceptible changes of temperature (Fiordiligi's painful yielding to the 'wrong' lover, for example, in 'Fra gli amplessi') as Solti's first recording on Decca [4757033, download only].

My *Così* may not be yours. I'm not looking for the night in an expensive hotel put up by



PHOTO: MONIKA RITTERSHAUS

Barenboim, Levine and Muti. My enjoyment of characterfully sung versions by Jacobs, Currentzis and Rattle is continually interrupted by ideas from the podium, an artful pause here and a funky continuo embellishment there. Several versions by Nikolaus Harnoncourt throw out ideas, such as Don Alfonso as a Diderot-like professor of Enlightenment, as if presenting an illustrated lecture rather than a sex comedy turned serious.

STAGE AND FILM

Great interpreters of their roles demand to be seen as well as heard, if possible. These include Christa Ludwig's Dorabella, especially when playing off Gundula Janowitz's regal Fiordiligi (go straight to YouTube for Václav Kšílik's Unitel film of 1968

for an old-school *Così* masterminded by Karl Böhm at his most pointed); Graziella Sciutti and Lucia Popp as Despina; Walter Berry, Thomas Allen and Carlos Feller as Don Alfonso.

Modern stagings tend to emphasise that, in the English title of David Freeman's 1988 Opera Factory production, 'All can be faithless'. As well as the versions listed below, I like the pace and detail of Arnold Östman in Drottningholm [L'Oiseau-Lyre 4831809] and even edgier on film [Arthaus 102005]; the emotional truth and bewildered passions of Patrice Chéreau's staging in Aix-en-Provence [Erato, 3447169].

Whether old or new, in English or Italian, any successful *Così* beats with the heart of tragedy as well as laughing with the soul of farce. ☺

ESSENTIAL RECORDINGS

ROH/Hengelbrock

Opus Arte OA0970D/OABD7035D
Sexy, funny, realistic in every detail: Jonathan Miller's now-classic staging, led by Thomas Allen's matchless fixer.

VPO/Mallwitz

Erato 9029505032
A slightly cut, Covid-friendly 2020 Salzburg staging by Christof Loy, marked by deep and wounded feelings from all parties.

Teatro Real, Madrid/Cambreling

C major 714508/3447169
Even darker and more sinister, Michael Haneke's production tests the limits of love and resilience like his films.

OAE/Fischer, Glyndebourne

Opus Arte OA0970D/OABD7035D
A safe first choice for period instruments and costumes, with angst left to simmer under the surface of Nicholas Hytner's stage direction.

RAI Rome/Maag

Arts Archives 430352 (2CDs)
Dry sound and ragged playing, but full of intimate banter and sudden flare-ups, with every irony pointed up by Maag's sure hand.

OAE/Mackerras

Chandos CHAN3152 (3CDs)
No libretto needed: *Così* in (Victorian) English, with every word relished by Allen's Alfonso and another experienced Mozartian maestro.

Vinyl Release

BEHIND THE MUSIC WITH HI-FI NEWS & RECORD REVIEW

Grateful Dead *Skull And Roses*

Steve Sutherland tells how the group's name resulted from a chance find in a reference book and highlights hidden subtleties in this 1971 live set, now on 180g vinyl

Ever heard of bibliomancy? No? Read on... Once upon a time, long, long ago, there was this chap. Let's call him Jerome. Jerome is travelling down a country road when he comes upon a crowd of blokes kicking a corpse and creating a hullabaloo. Our hero stops and he's told the deceased had snuffed it without paying a number of debts he owed to some in the assembled crowd, so there's no way they're going to stump up for a grave-digger to bury him.

TRAVELLING COMPANION

Jerome reaches into his pocket, produces his last penny and hands it over so that the dead 'un can be given a decent burial. He then moseys on down the road and he's later joined by a companion who (and here you can take your pick): helps him perform some impossible task, saves his life when he's suddenly attacked, or helps him discover a fortune. The companion then reveals himself as the man whose corpse Jerome had enabled to be decently buried.

This tale was written up by a Quaker-educated scholar called Maria Leach. She was the editor of the *Dictionary*

Of Folklore, Mythology, And Legend, published in 1949, and a lexicographical contributor to the 1955 edition of *The Funk And Wagnalls New Practical Standard Dictionary, Britannica World Language Edition*. Which is where another Jerome, the true hero this piece, comes in.

Jerome – you surely know him better as Jerry – Garcia was in a bit of a pickle. His band had morphed from the remnants of a folksy outfit called Mother McCree's Uptown Jug Champions into The Warlocks and were making a name for themselves playing experimental blues and rock 'n' roll around the San Francisco bay area.

Things were going swimmingly until they discovered that there were at least two other bands called The Warlocks at the time – one of them just happening to be the nascent Velvet Underground. Anyway, this is Nov '65, and Jerry and his bandmates are stumped for a new name and are all lazing about smoking DMT at bassist Phil Lesh's apartment on High Street in Palo Alto. Frustrated at the lack of

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...



progress, Jerry strolls over to the bookshelf, pulls down the first *Funk And Wagnall* volume, opens it up at random and, as he was fond of telling it in later years, there it was, Maria Leach's tale, and within it, the words 'Grateful Dead'.

'It just cancelled my mind out', Garcia recalled. 'Those words juxtaposed. It was one of those moments, you know, like everything else went blank, diffuse, just sort of oozed away, and there was Grateful Dead in big, black letters edged all around in gold, man, blasting out at me, such a stunning combination.'

EVOCATIVE POWER

So what's in a name? Well, here's Robert Hunter, Jerry Garcia's long-time lyric writing buddy, on the magic of those two words: 'The evocative power of that strange, not at all comical name is considerable. I know that my words were heavily conditioned by that powerful name. It called down sheaves of spirits on us all'.


'The Grateful Dead' is a phrase that has come to express a philosophical standpoint for the band's millions of followers across the globe. For Deadheads, it suggests karma, reflected in the band's mantra, 'what goes around, comes around', or more simply, give with no thought of reward, and you'll be rewarded.

Not that that's why the live double album we're here to venerate is officially called *Grateful Dead*. It was supposed to be called *Skull F**k* in reference to a phrase the band were prone to use to describe their mental state on their frequent communal LSD trips. But their label Warner Brothers freaked and refused the name.

So the band omitted the title of the album altogether, fans referring to it as 'Skull And Roses', after the Alton Kelly and Stanley Mouse psychedelic masterpiece of a gatefold cover, which was based on a 1913 illustration by Art Nouveau illustrator



WARNER BROS. RECORDS-HERB GREENE

 The band in 1970 (l-r): Bill Kreutzmann, Ron 'Pigpen' McKernan, Jerry Garcia, Bob Weir, Mickey Hart, Phil Lesh and (inset) sticker that came with original release



➔ Priced £27.99, the 180g vinyl reissue of The Grateful Dead's *Skull And Roses* is available at www.whatrecords.co.uk

Edmund Joseph Sullivan for an old edition of the *Rubaiyat Of Omar Khayyam*.

SHINING ORIGINALS

They could have called it 'Live Dead', of course, but they'd already released a marvellous double LP under that name two years earlier. That was the one with their crowning glory, 'Dark Star' on it. This one is in some ways more conservative. It features spirited live versions of Merle Haggard's outlaw country classic 'Mama Tried', Papa John Phillips' cowboy cutie 'Me And My Uncle', Jimmy Reed's cool blues hit 'Big Boss Man', Kris Kristofferson's 1969 road epic 'Me And Bobby McGee', Noah Lewis' 'Big Railroad Blues', Chuck Berry's immortal 1958 classic 'Johnny B Goode', and Buddy Holly's equally classic 'Not Fade Away' which segues into the trad 'Goin' Down The Road, Feelin' Bad'.

All of these became stalwarts of the Dead's marathon sets over the next 25 years or so, but it's the four originals here that really shine. 'The Other One' takes up the whole of Side Two and captures the band at their improvisational drum-based, inspired and intricate best, the track never, ever, played the same way twice. 'Bertha' is a lovely, breezy, rockin' delight, and 'Playing In The Band' now considered an autobiographical highlight up there with 'Truckin'.

And then there's the jewel in the crown: 'Wharf Rat', an Ancient Mariner of a tale about a down-and-out who's done jail time for 'some other f**ker's crime', seeking reassurance that, when he finally quits the bottle, his lady will still be there for him. It's a wonderful piece: heart-breaking lyrics from Hunter, maudlin, cracked vocals from Garcia – some of his best ever.

The characters are movie-vivid, and here's the fun: like the name they adopted, Dead songs have a way of revealing more under scrutiny. In this case, the sozzled

"There it was,
Grateful Dead
just blasting
out at me"

bum is called August West and there just happened to be a real life August West, a runaway slave who, in cahoots with a farmer called Alexander Beatty, cooked up a plan back in the 1800s to raise money to purchase his own land. The pair would

travel to the deep south, Beatty would sell West back into slavery, help him escape and then the two would split the profits.

On at least three documented occasions the two employed this money-making scam and West

purchased land in Fayette County, where he built a house with a dirt road leading up to his front door known as Abolition Lane.

SOLVING THE RIDDLE

The Wharf Rat's lady friend is called Pearly Baker and he claims to love her 'more than my wine'. And here's the joke: historically, Purley Baker was a man – the head of an American temperance organisation in the early part of the 20th century. The song's so powerful that a 12-step group of Deadheads fighting their addictions call themselves The Wharf Rats.

Grateful Dead (to give the album its official name) was one of the last outings on which founder member Ron 'Pigpen' McKernan was featured before succumbing to alcohol abuse and an early grave in

1973, aged just 27. His contris here are beefed up by keyboard overdubs courtesy of master musician Merle Saunders.

As a footnote, it took nearly a decade for Deadheads to ratify the Grateful Dead/dictionary naming riddle as no-one had been able to find evidence anywhere in any resource until 1977 when a diligent soul named Kimball Jones finally found the phrase in the *Funk And Wagnalls*.

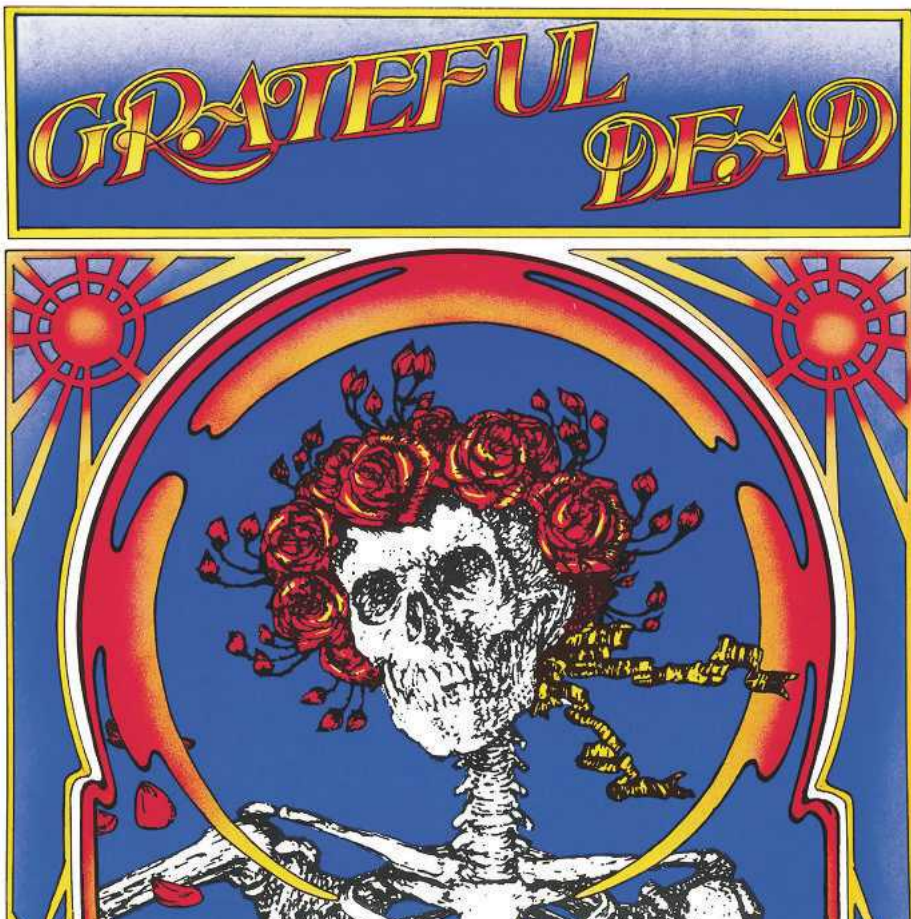
Oh yeah. Bibliomancy. It means the practice of foretelling the future by interpreting a randomly chosen passage from a book. You're very welcome. ☺

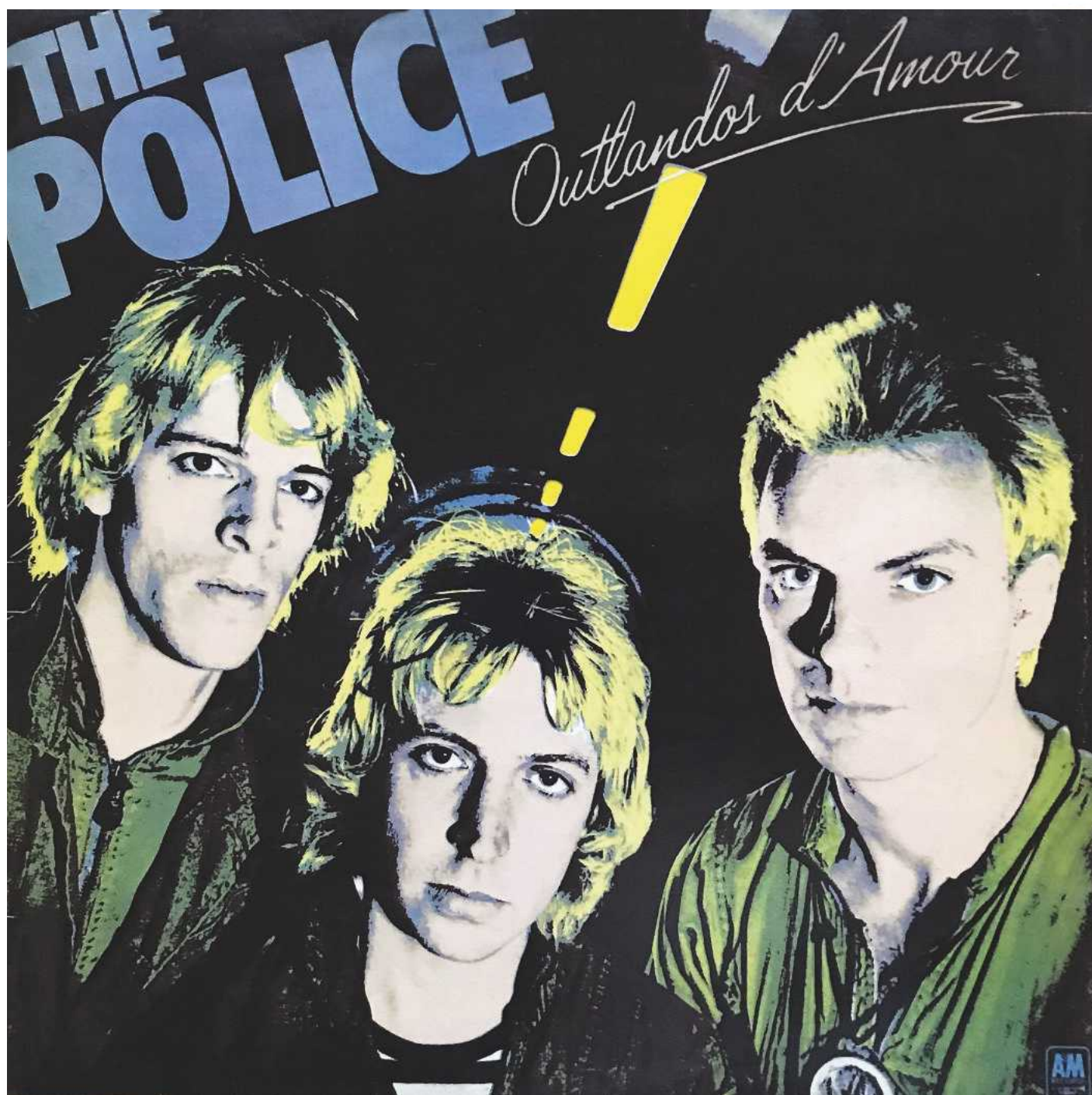
RE-RELEASE VERDICT

The Grateful Dead's second live double album was published by Warner, *sans* title, in October 1971 [K 66009] – the iconic artwork (which folded out to reveal a full skeleton) prompting the name *Skull And Roses*. Captured at The Fillmore East, New York in March/April '71, it was the group's first album to be certified gold. Rhino has now reissued it as a limited edition release, pressed on black 180g vinyl. Remastering was by Grammy Award-winning engineer, David Glasser. *HFN*

Sound Quality: 85%

0 - - - - - 100





The Police *Outlandos d'Amour*

It was a debut LP with a difference as three seasoned musicians set about serving up an edgy yet smooth blend of melodic pop and soft reggae to an audience still hungry for the energy of punk. Would the fans of the emerging new-wave of bands bite?

Words: **Mike Barnes**

In the UK in the late '70s, the convulsion that was punk may have been short-lived but the ripples it sent out were far reaching. According to The Jam, this was now *The Modern World*, so if you considered yourself a new-wave band, or were venturing into the pop field and didn't want to look like some kind of throwback, you needed to look sharp or look 'street'. And it helped if you had a snappy name that included a definitive article. Hence monikers like The Motors, The Yachts, The Rich Kids, and The Police.

The Police were the brainchild of Stewart Copeland, who had played drums with progressive rock group Curved Air until they disbanded in 1976. When they'd performed at a show in Newcastle upon Tyne, Copeland had met singer and bass player Gordon Sumner – who was nicknamed Sting due to his wasp-like black and yellow striped sweater. Copeland encouraged Sting to contact him should he ever come to London, which he did in January 1977 with his Tyneside jazz-rock fusion band called Last Exit.

DEBUT SINGLE

It wasn't long before half of Last Exit went back home, and Sting joined up with Copeland and guitarist Henry Padovani, naming themselves The Police. They released a debut single 'Fall Out' on Illegal Records, the label owned by Copeland's brother Miles, and toured the UK supporting Cherry Vanilla and Wayne County & The Electric Chairs.

As the musical landscape was changing, a suspicious music press scrutinised groups who seemed a little too keen to jump on to the new-wave bandwagon, and The Police had already set their antennae twitching.

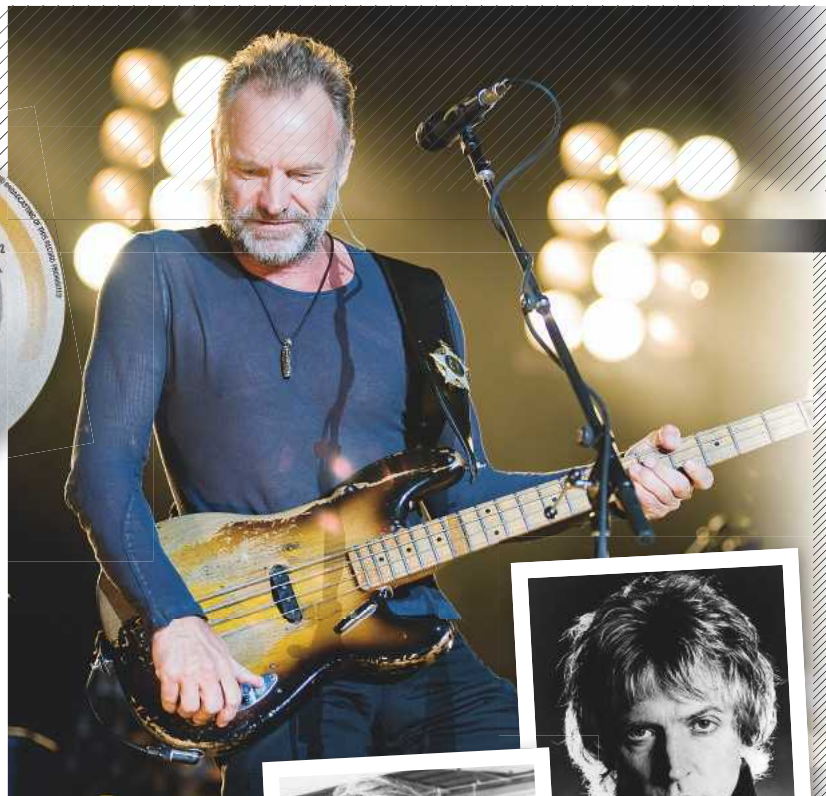
But unlike many of his prog rock peers, Copeland had embraced and been energised by punk rock, and with his partner, Curved Air singer Sonja Kristina, had seen bands play at notorious Covent Garden punk hangout The Roxy. Sting soon stopped wearing flared jeans on stage – something

Side 1 of the original UK LP release on A&M, which the band signed to in March 1978

Sting on stage with The Police at the Sleep Train Amphitheater in Marysville, CA during the band's 2008 reunion tour

The group's drummer Stewart Copeland autographs a fan's arm, promo shot of guitarist Andy Summers, and Sting pictured in the late '80s

Sting, Stewart Copeland and Andy Summers pose for a publicity photo in 1983



of a cardinal sin at the time – but the doubters would have been able to add far more fuel to their argument had they twigged that in the summer of 1977, former Gong bass guitarist and vocalist Mike Howlett had asked Sting and Copeland to perform in his jazz rock project Strontium 90.

This short-lived group played live and recorded demos, but importantly it introduced The Police rhythm section to guitarist Andy Summers. He'd been a member of psychedelic band Dantalion's Chariot in 1967, had a short-lived gig as guitarist in Soft Machine in 1968, and had played with Kevin Ayers, Kevin Coyne and Eric Burdon And The Animals. He had also taken part in the 1975 *The Orchestral Tubular Bells* concert – Last Exit being the support act.

Already having hit his mid-30s and with those credentials, Summers could hardly have been less punk. Miles Copeland was even worried that Summers' inclusion might damage the group's credibility. The guitarist had heard a demo Sting had made of 'Every Little Thing She Does Is Magic' and by his own admission was 'not blown away',

but he was excited by the band's energy and saw potential.

NEW GUITARIST

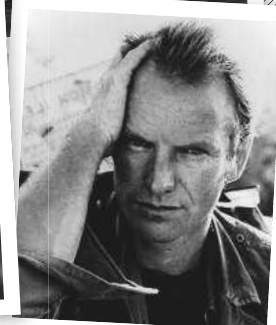
Henry Padovani was well-liked but Sting had become frustrated by his limitations and when Summers offered to join the band in August 1977, with the stipulation that he

should be the sole guitarist, Sting and Copeland accepted. As soon as they started playing together as a trio they expanded musically and Sting's songs developed from

the slightly unconvincing punk-by-numbers of 'Fall Out' into a more distinctive and individual style, and he began to write new material.

One of the factors that separated The Police from their peers was their adeptness at mixing-up rock and reggae. History is littered with rock groups making ham-fisted attempts at reggae. Punk bands had an affiliation with the West Indian music and The Clash approached

'They tried to avoid playing the tape of "Roxanne"'



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VINYL ICONS

PRODUCTION NOTES

Outlandos d'Amour was recorded from January to September 1978 at Surrey Sound Studios in Leatherhead, Surrey – a converted community hall with the control room in the former stage area and the recording space in what had been the auditorium. It was a low budget affair undertaken at night at a cheap rate, the group using a secondhand multi-track tape found in Miles Copeland's garage.

The studio had been established in 1974 by Nigel Gray as a demoing and rehearsal facility with a four-track machine. But in 1977 Gray had installed a 16-track Alice desk and an Ampex MM1000 16-track tape machine. The mics used for the sessions were a Valve Neumann U-67, a couple of C-451s as overheads, an AKG D-12 for the bass drum and some Beyer Dynamic microphones for the toms. Gray would use two mics on Summers' guitar amp, one close up and one further away to



pick up the room sound. The drums were usually put on eight tracks with one track for bass, two for guitar and one or two tracks for Sting's vocals, leaving spare tracks for Summers' and Copeland's backing vocals.

The Police recorded their backing tracks live with a guide vocal. Sting was in the monitoring room with Gray, his bass sound achieved by a mix of one line DI'd into the desk and a mic going through a wall to pick up his bass amp in another space. The room was not the largest, and laughter heard at the start of 'Roxanne' is because Sting slipped and accidentally sat on the piano.

After 'Roxanne' was released as a one-off single in April 1978, attempts were made to remix 'Can't Stand Losing You' at another studio, but the band were unable to improve on the originals made at Surrey Sound. Finally A&M approved the release of the album in its original form.



it with varying degrees of success. But their 1977 version of Junior Murvin's 'Police And Thieves' sounded stiff indeed.

SOUNDS LIKE MARLEY'S

Where The Police excelled is that they could play it well and with the right feel – drummer Stewart Copeland especially – and they even picked up some approving nods from reggae musicians. And if Sting's light, high-pitched voice had sounded strained on the 'Fall Out' single, he then came into his own performing this newly written material.

'Next To You' starts off as an urgent rock song but segues seamlessly into reggae sections. Sting explained at the time this was part of British musical culture and as Bob Marley had an English father he felt comfortable approaching that music. His vocal style became a unique mix of Geordie vowels and phrasing at times sounding uncannily close to Marley.

When The Police started sessions for their debut album Sting recalls being excited and inspired by what they were creating and would drive back from all-night sessions to his flat in Bayswater improvising lyrics, and on waking in the afternoon he would start to piece the ideas together. These were a mix of personal material like

'Hole In My Life' and 'So Lonely' and character-based songs like 'Roxanne', a tale of a man who falls in love with a sex worker (which had been inspired by his stay in a hotel in the red light district of Paris) and the dark tragi-comic scenario of the jilted lover taking his own life, 'Can't Stand Losing You'.

Miles Copeland lent The Police £1500 to record the album, but he had been critical of their music to the extent that when he dropped into Surrey Sound Studios in Leatherhead, they tried ☺

'Sting then slipped and sat on the piano'



← The band in 1980 (l-r) Andy Summers, Sting and Stewart Copeland

← Poster for the band's appearance in 1979 at the Halloween Show in Austin, Texas

← Rear sleeve of original LP. Later releases featured a yellow roundel declaring 'Includes "Roxanne"'

← Surrey Sound Studios in Leatherhead pictured in 1984 after having been upgraded with a Harrison MR4 console and Sony digital recorders

← The band in 1983 from a photoshoot that was used to promote their fifth and final studio album, *Synchronicity*

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➔ Copeland, Summers and Sting just prior to their split in '83

to avoid playing him the 'Roxanne' tape. 'The band didn't think I would like it because it was really not a punk song, it was kind of a ballad', Miles told Radio 2's Johnnie Walker in 2021. 'The next thing I know I am listening to "Roxanne" and I thought, "this is unique".'

He became the band's manager and landed them a deal with A&M Records in March 1978 initially just for 'Roxanne' as a single, and then for 'Can't Stand Losing You', both released ahead of the album. Copeland got A&M to agree to release the album, but didn't ask for an advance and presented it as a risk-free investment.

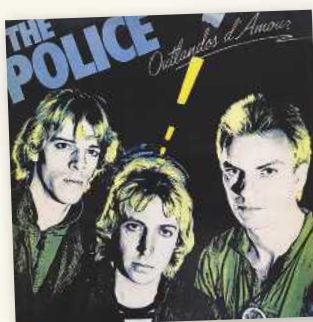
CHART SUCCESS

Initially he had wanted to call the album *Police Brutality*, a perfect punk title, but now he was managing a blonde triumvirate with a potential pin-up lead singer who were clearly starting to overlap with the world of pop, and he wanted something sexier, so he came up with *Outlandos d'Amour* (derived from 'outlaws' and 'commandos').

Reviewing the album in *Sounds*, Phil Sutcliffe wrote: 'They began rather like The Vibrators, older musicians inspired by the energy of punk. Their initial efforts to peel away the sophistication of their hard-earned skills were fairly uncomfortable'. But overall he was impressed, concluding, 'These guys have got ideas and a future'.

Writing in *NME*, Paul Morley said, 'The Police achieve as much dynamic energy as The Clash and the same poetic intensity of The Jam even if they are twice as studied'. But he reckoned they had, 'No ambition and too much complacency'.

If only he could have foreseen the events of the next six years. As it was, although *Outlandos d'Amour* gained mixed reviews, it charted in the UK at No 6 and No 23 in the US. And as Copeland had not asked A&M for an advance, he had negotiated an enhanced royalty rate – a very wise business decision indeed. ☺



ORIGINAL LP

The original LP was released in a single sleeve in 1978 on A&M in the UK [AMLH 68502]. (All the following releases are on A&M unless otherwise stated.) A blue vinyl LP also appeared that year with the same catalogue number.

Across the Pond the LP came with slightly amended cover artwork, minus the white line road markings and with the group's name written variously in yellow, red and green lettering, rather than the standard blue lettering of the UK release [SP-4753].

Initial American pressings featured the collage design that appeared on the UK back cover, but with later pressings the back cover was black with tracklisting and credits set at an angle.

This version of the artwork, with the band's name in red, has been the most commonly used worldwide across all formats. One of the few licensed versions was co-released in the former Yugoslavia by A&M and the state-owned label PGP RTB in 1985 [2223 104; SP-4753]

CASSETTE AND 8-TRACK

The first 8-track cartridge was a club edition released in Canada in 1978 [8T-4753] which came in a khaki coloured shell. The US 8-track followed in 1979 in an olive shell, and with the same catalogue number.

In the UK the cassette came in black shells with red paper labels in 1978 [above left] with a facsimile of the UK LP artwork on the cover [CAM 68502]. The US cassette had cream printed shells with the amended artwork of the US LP with red lettering.



Alternate Format Discography

FIRST CD

The Compact Disc version of *Outlandos d'Amour* was a very early example of the format. It was released in the US in 1983 on A&M's premium Audio Master Plus series [pictured below right; CD-4753], which also featured half-speed mastered LPs pressed on an audiophile compound manufactured by Vitec, and on cassettes made with BASF chrome dioxide tape.

Following on in that series were a 1984 European CD manufactured in West Germany [394 753-2] and a Japanese release in 1986 [D32Y3022]. Another European CD came out in 1991 [CDMID 126; 394 753-2], which included a black-and-white photo insert. All of these releases had red lettering and the 'tracklisting' back cover. The CD was remastered in 1995 by engineer Dave Collins for US release [75021 3311 2].

ENHANCED CD

In 2003 a series of 'Enhanced' CDs remastered by Bob Ludwig, was released in several territories, and included the video to 'Roxanne'. It came with a black and white insert based on the original UK 'collage' back cover, with a disclaimer saying that 'although every effort had been made to ensure that the product would not damage the purchaser's computer, the Sonic Arts Development Team could not accept responsibility in this respect'. The number for the European release was 493 652-2.

ANNIVERSARY SACD

Outlandos d'Amour was also released that year as a 25th anniversary SACD [069 493 602-2] remastered by Tony 'Tone' Bridge. It was released in Europe as a hybrid SACD in both jewel case and digipak based on the Bob Ludwig remaster [493 706-2]. Meanwhile, the Japanese edition came in a digipak with a black, white and red obi strip [UICY-7027].

Unusually for an album of its status, *Outlandos d'Amour* has not been released with demos, outtakes or extra tracks. When

manager Miles Copeland landed a deal with A&M, several of the band's punkier songs were wiped, but versions of 'Wanna Know', which had featured in early live sets is known to exist on 1/4in master together with other unreleased

outtakes, including an extended version of 'Roxanne'. But it seems unlikely now that these will see the light of day.

AUDIOPHILE LPs

In 1979 a half-speed mastered



vinyl LP in A&M's Audiophile Series was released in Canada [SPJ 4753] which had a gold border around the front cover and special labels. A limited edition audiophile pressing was made in 1999 on A&M in conjunction with Vivante Productions [SP-3311; VPLP 003].

In 2007 A&M and Universal released a 200g reissue in Japan [see below] in the '100 Selected LP Masterpieces' series with the original UK artwork on both the front and back covers [UJY-9026]. Lyrics were printed in English and Japanese on the inner bag. Then in 2009 A&M's Back To Black series produced a 180g LP also with the original UK artwork restored [0082839475310].

The most recent audiophile LP was a US release. This version, from 2018, was mastered at half speed at Abbey Road Studios and was also pressed on 180g vinyl [676325-1].



Inside the Studio

BEHIND THE MUSIC WITH HI-FI NEWS & RECORD REVIEW



CLUS PHILIPAS/WFUV



Electric Lady, NY

Built by Jimi Hendrix, this studio is not only steeped in rock history but is still used by the top recording artists of today. **Steve Sutherland** catches the Greenwich Village vibes

The sum was \$1,032,425.26. That's how much, in today's money, that his engineer Eddie Kramer reckons Jimi Hendrix was paying every year renting studio time in the late 1960s. And that's why, when Hendrix and his manager Michael Jeffery told Kramer they'd bought a venue at 52 West 8th Street in New York's Greenwich Village and were planning to turn it into a nightclub, he told them they were crazy.

NEW GENERATION

The building was known at the time as The Generation, and it had just shut down after recently hosting gigs by Big Brother & The Holding Company, B B King, Chuck Berry and Sly & The Family Stone among others. Hendrix had often jammed there and was fond of the place.

↑ New York radio station WFUV broadcasts live from Studio A and (inset) street entrance to the studio

↑ Eddie Kramer at the mixing desk in 2008

↑ The *Electric Ladyland* album, which inspired the studio's name



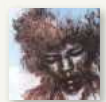
It had been built in 1929 as the Film Guild Cinema, one of the earliest examples of modernist architecture in New York, designed by architectural theoretician and De Stijl member Frederick Keisler. He intended the theatre to be, 'the first 100% cinema', with a design to fully immerse the viewer in the film.

BIG COUNTRY

By the end of World War II, the constructivist ornament and marquee on the theatre had been stripped away and the building's basement was host to The Village Barn nightclub and diner.

Resident from 1930 until 1967, the VB spawned an eponymous country music programme on NBC, the first country music show on American network television. It ran from 1948 to 1950, and featured weekly performances from the likes

KEY RECORDING TIMELINE



1971

Cry Of Love features some of the first ever recordings Jimi Hendrix made at Electric Lady Studios



1980

Overdubbed and mixed at Electric Lady, AC/DC's *Back In Black* sells over 50 million copies worldwide



1999

The Roots record *Things Fall Apart* featuring 'You Got Me', which on release picks up a Grammy Award

of Pappy Howard And His Tumbleweed Gang, Harry Ranch And His Kernels Of Korn, and Oklahoma Governor Roy J Turner, who performed his single, 'My Memory Trail'.

So the place had history. But Kramer had a mission. Quite apart from the financial advantages of owning your own studio, Kramer reasoned, the last thing Hendrix needed in 1968 was somewhere else to party with his hangers-on – an abiding distraction from work and a drain on his talents. The argument proved persuasive and John Storyk was hired as designer. Hendrix had spotted his work in *Life* magazine and admired what Storyk had done with New York's Cerebrum club.

IN THE ROUND

Before Kramer's intervention, Storyk had been directed to create a small control room with an eight-track in the back of the club to record live sessions. When Kramer convinced Hendrix to change the plan, Storyk was asked to rethink it all and fashion a big control room that represented the dawn of a new era for studios. Storyk was told by Hendrix, 'I just want things to be soft and curvy, to be white, and then I want the light to be able to change'.

Work took nearly double the time and money planned. There were delays to permits, the site flooded during demolition, and sump pumps had to be installed, then soundproofed, after it was discovered that the building sat on the tributary of Minetta Creek, an underground river. It's said a six-figure loan from Warner Brothers was required to save the project.

Created faithfully to its owner's specifications, Electric Lady sported round windows, a concave brick interior and a machine capable of generating ambient lighting in myriad colours. It was designed to have a relaxing feel to encourage



➔ Jimi Hendrix pictured backstage in late 1966

➔ Patti Smith on the sleeve of *Horses*, recorded at the studio in 1975

➔ A peek inside Studio B with its 80-channel SSL 9000J console

➔ John Storyk (left) and Eddie Kramer shake hands outside Electric Lady in 2009

➔ *Talking Book* from 1972, and Stevie Wonder pictured in the mid '70s



Hendrix's creativity, although Kramer nonetheless subsequently refused to allow any drug use during session work. Artist Lance Jost painted a 100ft-long floor-to-ceiling psychedelic space-themed mural and Electric Lady, named after Hendrix's incredible 1968 double *Electric Ladyland* LP, eventually opened with a party on the 26th of August, 1970, the only recording artist-owned studio at the time.

According to one party go-er, it looked 'like a New Orleans pleasure house embedded in a psychedelic space capsule'. In her memoir *Just Kids*, Patti Smith claims to have been at the opening bash, along with Ronnie Wood, Eric Clapton and Steve Winwood. All four would go on to record there.

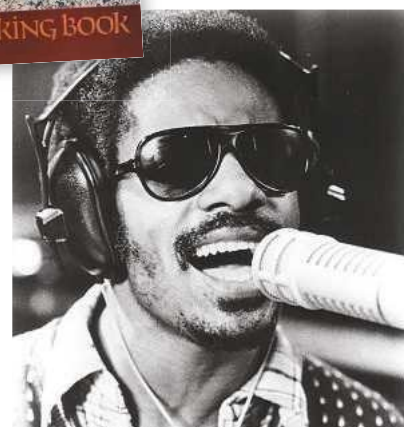
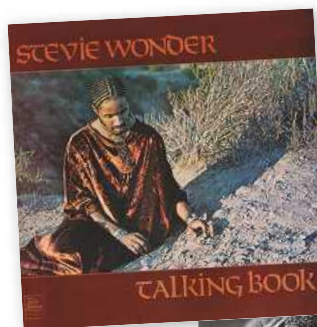
In the book, Smith says Hendrix saw her sitting on the steps, like a 'hick wallflower', and told her he wanted Electric Lady to be a place where artists of all kinds would record the 'abstract universal language of music'.

The very next day Hendrix laid down an instrumental known as 'Slow Blues' in his new studio, then boarded an Air India flight to perform at the Isle of Wight Festival. Less than three weeks later, on the 8th of September, he was found dead in a London apartment after ingesting an excess of barbiturates. He was 27 years old.

BYE BYE BABY

Kramer stepped into the studio breach, serving as Director of Engineering there from 1970 to 1974, and the studio started to flourish. Stevie Wonder partly recorded his *Music Of My Mind*, *Talking Book* and *Fulfillingness' First Finale* albums in Electric Lady

during the early 1970s, describing it as his 'Self-contained universe', allowing him to depart from the 'Baby love' sound of his 1960s Motown recordings and 'get as weird as possible'. ➔



2000

D'Angelo records *Voodoo* between 1998-99, during The Soulquarians' residency at Electric Lady Studios



2015

Mark Ronson enters Electric Lady to make *Uptown Special*. It becomes his first No 1 on the UK album chart



2020

Taylor Swift checks into Electric Lady to record *Folklore*. It wins the 2021 Grammy for 'Album of the Year'

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John Atkinson, Stereophile, October 2020



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In January 1975 David Bowie and John Lennon jammed there, creating the *Young Americans* track 'Fame'. A year later Patti Smith used the studio to record her legendary debut *Horses*, followed in '78 by Chic and their disco smash 'Le Freak'.

SOUL COLLECTIVE

Other seminal works that emerged in whole or part from Electric Lady during this era include Richard Hell & The Voidoids' debut album *Blank Generation*, Blondie's *Eat To The Beat*, Joni Mitchell's *Mingus*, The Clash's *Sandinista* and *Combat Rock*, Alice Cooper's *Welcome To My Nightmare*, Billy Idol's *Rebel Yell* and Run DMC's *Tougher Than Leather*.

By the end of the 1990s Electric Lady was serving as the headquarters of the innovative Soulquarians, an experimental black music collective, which spawned D'Angelo's *Voodoo* LP, The Roots' *Things Fall Apart* and *Phrenology*, and Erykah Badu's *Mama's Gun*. The Roots' Questlove recalls those days thus: 'You'd come into A Room, you don't even know who has a session, but you call me: "Who's down there?". "Common's in there today". So, you come down, you order some food, sit down and bulls**t, watch a movie, and then it's, "Let's play something". And I say, "Who wants this [track]?". And it would be, "I want it!". "No, I want it!".'

Eventually the collective fell apart and the studio fell into decline – ten whole months went by without a single booking! – until 2010 when it was taken over by an investor Keith Stoltz and studio manager Lee

Foster who gave the enterprise a whole new lease of life, renovating and expanding the facilities, adding a second floor mixing studio and another studio to the third.

Foster is now regarded as Electric Lady's saviour and guardian angel. Dan Auerbach of The Black Keys launched his new band, the Arcs in Studio A and says, 'Since Lee's been here, it's started to form into something more like what the founders had in mind'. Weird beard folkie Devendra Banhart (who feels such blood-brotherhood with

Foster that he inked him with a tattoo at the studio) says, 'Lee was the person who single-handedly reanimated Electric Lady'. And to Mark Ronson, most of whose hit 2015 album, *Uptown Special*, was



View of the 35x38ft live room in Studio A. The 16x26ft control room can be seen through the glass

Folk singer and visual artist Devendra Banhart on stage in 2017

Nile Rodgers of late '70s band Chic at work in his own studio, Le Crib, in 1990

Singer, DJ and producer Mark Ronson performs at the Dcode Music Festival in Madrid, Spain in 2016

mixed at the studio, Foster, 'made it somewhere that musicians and creative people and singers want to be'.

Back on its feet, Electric Lady now regularly hosts the likes of Lana Del Rey who has partly recorded all of her albums there, plus Taylor Swift (2019's *Love* and 2020's

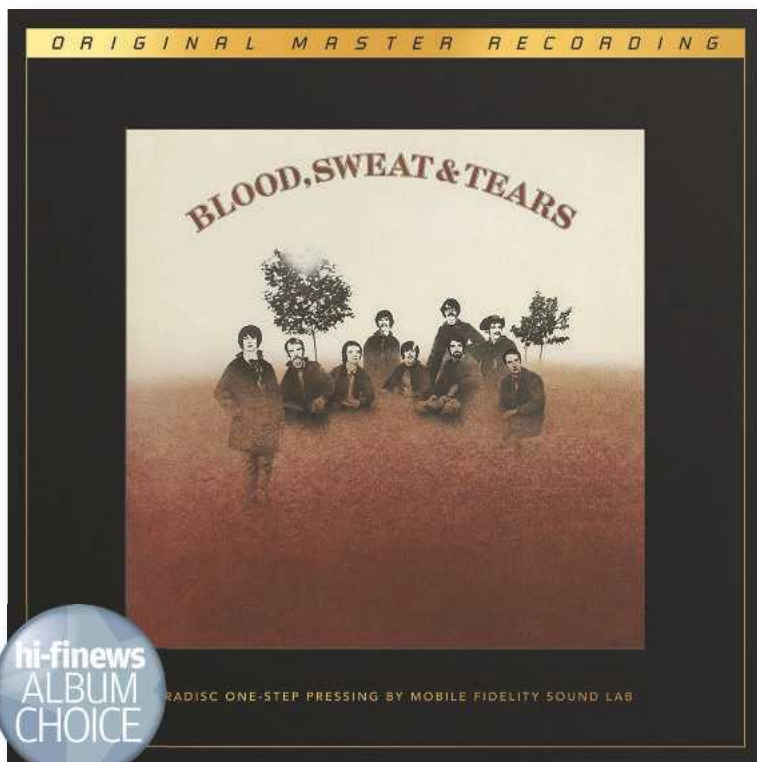
Folklore), Lady Gaga (2016's *Joanne*, 2020's *Chromatica*, and 2018's *A Star Is Born* soundtrack), Beyoncé (*I Am... Sasha Fierce*, 2008), ASAP Rocky (*At. Long. Last. ASAP*, 2015), Kanye West (*My Beautiful Dark Twisted Fantasy*, 2010) and French electronic music duo Daft Punk (*Random Access Memories*, 2013).

MAGIC NUMBER

Checking out the website today, you'll find Studio A advertising its Neve 8078 analogue console outfitted with Martin Sound Flying Faders II and a live room measuring 35x38ft, Studio B boasting its SSL 9000J 80-channel console and 21x19ft live room, Studio C listing its recent successes as a mixing room, and Studio D celebrating its Altec 9200 custom 16-channel console and 25x19ft live room.

'These days, if you're here, you're running into Mark Ronson, Lady Gaga, Lorde, Frank Ocean, Tyler, The Creator... For me, as a fan of music, it's like watching The Avengers walk around', says Lee Foster.

Recalls Nile Rodgers: 'I was working with Daft Punk and Thomas [Bangalter] said, "You're kidding! You did Chic records here? Give me the mystique of what you guys created". And that's when we did "Get Lucky". It flowed from being in that space and being in that room and feeling the magic of history.' 🎧



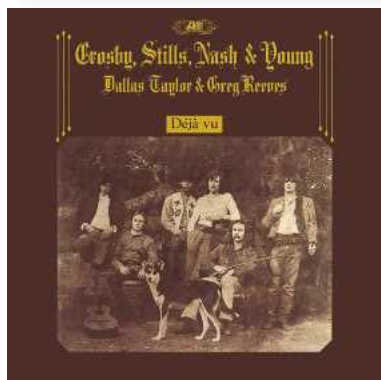
BLOOD, SWEAT & TEARS

Blood, Sweat & Tears

Mobile Fidelity UD1S 2-016 (two One-Step 45rpm LPs)

BS&T's 'difficult second album', this slaughtered the debut in sales, establishing the group. Along with Chicago, BS&T showed that 'big band'-orchestrated prog-rock could attract listeners during the psychedelic era. David Clayton-Thomas's bellowing vocals, peerless musicians, songs from Laura Nyro, Cream, Billie Holiday, Eric Satie, Motown, Stevie Winwood: how could it miss? It didn't, somehow beating the far superior *Abbey Road* to Grammy Album of the Year for 1970. Despite that fluke (for true idiocy, check out *Rolling Stone's* 500 Best Albums of All Time), it's an amazing LP, never sounding better than this. 'You Made Me So Very Happy', 'Spinning Wheel'... It's a masterpiece. **KK**

Sound Quality: 95%



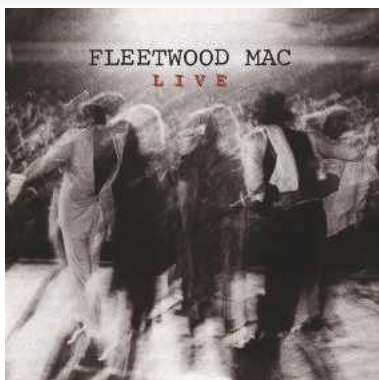
CROSBY, STILLS, NASH & YOUNG

Déjà Vu

Rhino/Atlantic 03497 84802 (LP + four CDs)

If not for *Blood, Sweat & Tears*, this other magnificent 'difficult second album' would be LP of the Month. It's on this page instead of the digital because the remastered vinyl is audibly superior to the CD – reason enough for buying the set. But it's aimed at devotees: three entire CDs contain demos, outtakes and alternates to keep 'em busy for hours. Here is a magnificent '50th Anniversary Deluxe Edition', one of the best so far and one of my all-time fave LPs. The sound from the opening track is proof it's unabashedly 'demo-worthy'. 'Our House', 'Woodstock', 'Helpless', 'Teach Your Children' – every track a gem, and no rock library is complete without it. **KK**

Sound Quality: 95%



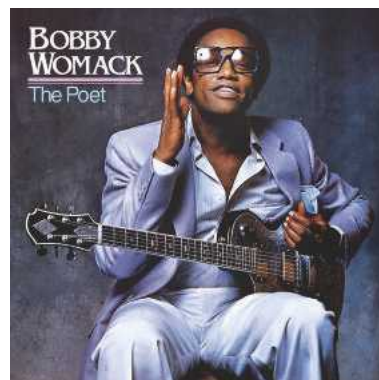
FLEETWOOD MAC

Live

Warner R2 599176 (two LPs + 7in single + three CDs)

Although I didn't see them live until a few years ago, I knew Fleetwood Mac would be breathtaking – this remastered LP from 1980 confirms they were 40 years ago, too. *Live* followed *Tusk*, but the band covered its entire career, including Peter Green-era's 'Oh Well' plus their best-loved songs: 'Rhiannon', 'Monday Morning', 'Over My Head', 'Go Your Own Way' and enough to fill two LPs. The CDs include the original LP plus 14 unreleased live tracks, while the single gives us two unreleased demos. The sound is excellent by any measure, a marvel for a live recording. Actually, it's better than when I saw them, measuring circa-110dB+ at 200m from the stage! **KK**

Sound Quality: 90%



BOBBY WOMACK

The Poet

ABKCO 8789-1 (180g LP)

This faultless reissue marking the 40th anniversary of a soul/funk classic reminds the music world once more that Womack was a genius. Many of us fell in love with his music upon learning he penned The Rolling Stones' 'It's All Over Now', as well as J Geils Band's 'Looking For A Love'. Released in 1981, it showed Womack conquering another genre in a long career, that of smooth, grown-up funk. Side 1 kicks off with the irresistible 'So Many Sides Of You', this remastered version going deeper and tighter than on the original pressing. Side 2 is the silkier, sexier side, the total package reviving his career as *The Healer* did for John Lee Hooker. Absolute joy. **KK**

Sound Quality: 90%



AUDIOPHILE: DIGITAL



COMPACT DISC



SUPRAAUDIO



DVD



BLU-RAY



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THE GEORGIA SATELLITES

Ultimate

Cherry Red Records QCDEMT239 (three discs)

Hot damn, I loved this band! Like The Black Crowes (reviewed last month), Dogs D'Amour and others inspired by the joyous, loose rock of The Faces, Delaney & Bonnie and the like, this southern outfit was a breath of fresh, boogie-fied air in the second half of the 1980s – one of the duller, most gutless periods in rock history. This pack contains their three albums with the Dan Baird lineup, plus a generous 19 live and studio bonus tracks. Fabulous originals and well-chosen covers formed their repertoire, but if the only thing they ever did was the mind-blowing 'Keep Your Hands To Yourself', they earned a place in the rock pantheon. £20 for three CDs? Buy it. *KK*

Sound Quality: 85%



PAUL SIMON

Still Crazy After All These Years

Mobile Fidelity UDSACD 2212 (stereo SACD)

Simon's fourth solo album, from 1975, may be overshadowed by *Graceland*, but was no less fecund. Surrounded by a panoply of studio geniuses including Steve Gadd, Richard Tee, Toots Thielemans, Phil Woods and too many others to list, with Phoebe Snow on vocals, he gave us '50 Ways To Leave Your Lover', the lush title track and a reunion with Art Garfunkel on the exquisite 'My Little Town'. This is an absolute gem, but take my advice: get in contact with your local vinyl supplier as soon as you can and order the pending One-Step vinyl edition if you love this album as much as I do. But if this proves too late, Mobile Fidelity's SACD should suffice. *KK*

Sound Quality: 90%



THE ROSENBERG WITH TIM KLIPHUIS

Live

STS Digital 601111102

Alert the media! An STS CD with actual liner notes! You'll want to know this sublime two-guitar/double bass/violin set was recorded on audiophile-approved kit and the sound is precisely what you would hope to hear: delicate, natural, all-strings renditions of a smattering of originals plus Cole Porter's 'Night And Day', some traditional tunes, 'How High The Moon', a tribute to Chick Corea and more. The sound is unplugged gorgeousness, but it's about spatial authenticity too, for this CD recalls the best of the audiophile albums of the 1970s and '80s. (STS has also issued *Live* on LP and open-reel tape, if those are your preferred listening formats.) *KK*

Sound Quality: 90%



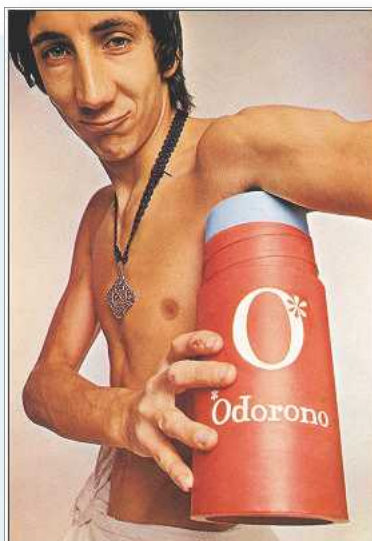
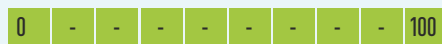
THE WHO

The Who Sell Out

Polydor 02577 11420 (five CDs + two 7in singles; mono/stereo)

Didn't see this coming: a five-CD set for what isn't even remotely their best? What could the vaults yield? Here are mono and stereo versions of the original album with bonus tracks on a CD each, one CD of unreleased tracks, a CD called 'The Road To Tommy', and a fifth of unreleased Pete Townshend demos. The pic sleeve singles contain the earlier 'Magic Bus' and *Sell Out*'s one classic, 'I Can See For Miles'. Gubbins include a sticker, posters, etc., and, amusingly, two 45rpm adapters. Their fans will wallow in this, but some might find the concept album nature irritating and dated. Forget that: the sound is superb, while the music shows why The Who deserve mention alongside The Beatles, The Stones and The Kinks. *KK*

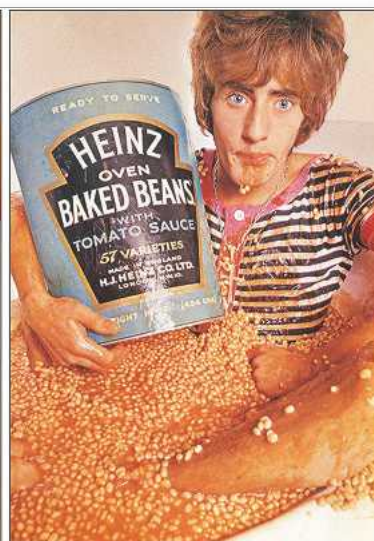
Sound Quality: 95%



THE WHO SELL OUT



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taste of success,
who, like nine out of ten stars,
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inspiration into inspiration.



THE WHO SELL OUT

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Baked Beans every day is a super day".
Those who know how many beans make five
get Heinz beans inside and outside at
every opportunity. Get saucy.



FRANK PETER ZIMMERMANN/ MARTIN HELMCHEN

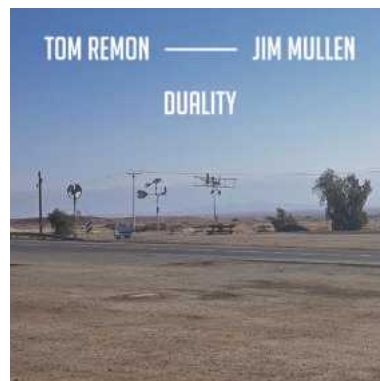
Beethoven: Violin Sonatas Op.24, 'Spring', and Opp.30:1 & 2 (96kHz/24-bit, FLAC)

www.hi-resaudio.com; BIS BIS2527

We've had fine BIS recordings of the String Trios with Zimmermann, and last autumn he began recording the Violin Sonatas with the excellent Martin Helmchen [Nos 1-4: BIS2517]. As then, Helmchen is playing a Chris Maene straight-strung concert grand (like the much publicised one commissioned by Daniel Barenboim in 2013). Zimmermann has a 1711 Cremona Strad. If you want period instruments there's Viktoria Mullova

with Alasdair Beatson in Opp.24 and 30:1, where every expressive drop is drained from the music [Onyx ONYX4221; HFN Sep '21]. Here, the playing is more 'traditional' but fresh and very well prepared. As with all good performances you think more about the music itself: eg, the huge gap between the A minor and C minor Sonatas, albeit both composed around the same time. **CB**

Sound Quality: 95%



TOM REMON & JIM MULLEN Duality (44.1kHz/16-bit, FLAC)

www.lunariarecords.com; Lunaria Records n/a cat no.

If there's one positive thing the 'current situation' has brought us, it's an outpouring of simple, intimate and beautifully recorded sets – and that's exactly what this cross-generational album from 75-year-old legendary jazz guitarist Jim Mullen and lauded newcomer Tom Remon delivers. All you get here are two guitars, beautifully recorded, and bouncing off each other like they've been playing together for decades. This may 'only' be a 16-bit CD-quality download, but it sounds gorgeous through a fine system, with the easy rhythms and skilled playing taking it way beyond a simple easy-listening experience, right from the opening 'East Of The Sun West Of The Moon'. Yes, there are standards, but the original tracks really shine, from the melodic blues of Remon's 'Sarah' to the thoughtful 'Jaffna'. This is a delight from start to finish. **AE**

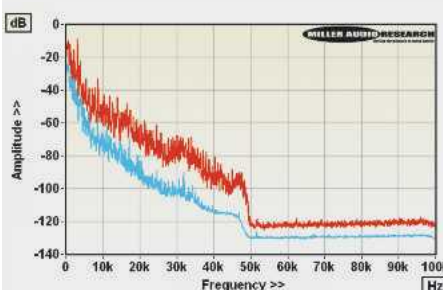
Sound Quality: 90%



OUR PROMISE

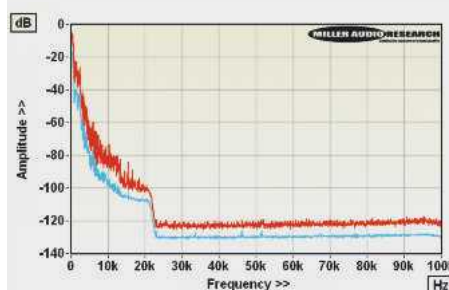
Following our Investigation feature [HFN Jun '11] where we examined the claimed quality of 'high-res' downloads, *Hi-Fi News & Record Review* continues to measure the true sample rate and bit-depth of HD music downloads. The Graphs show peak [red] and RMS [blue] spectra. These unique reviews will be a regular source of information for those seeking new and remastered recordings offered at high sample rates and with the promise of delivering the very best sound quality. (Note: an asterisk in the heading denotes a technical reservation – see Lab text). **PM**

LAB REPORT

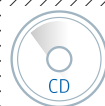


Recorded in 94kHz/24-bit format via Sequoia and Pyramix workstations, this native download is free of spurious, peaks at -0.5dBfs and has good dynamic range (typically 20dB peak-to-RMS). Violin harmonics reach out to ~40kHz. **PM**

LAB REPORT



Offered here at CD resolution, the 16-bit quantisation is still more than sufficient to accommodate the ~14dB peak-to-RMS dynamic range as the ~22kHz response is able to capture the bandwidth of the guitars. Trks 3, 5 and 7 reach 0dBfs. **PM**



COMPACT DISC



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BLU-RAY



VINYL



DOWNLOAD



BASQUE NATIONAL ORCHESTRA/ ROBERT TREVINO

Ravel: *Alborada del grazioso*, *Une barque sur l'océan*, *Boléro*, *Pavane pour une enfant défunte*, *Rapsodie espagnole*, *La Valse* (44.1kHz/24-bit, FLAC)

www.hifiresaudio.com; Ondine ODE 1385-2

Ravel, of course, had Basque roots. There's just one other current Ravel recording with this orchestra [Claves] and it too has the *Alborada* – at a conventional fast tempo, Trevino's slow initial speed proves equally effective but he rather spoils things with a speed-up at around one-minute. But throughout this programme the American conductor holds your attention. Appointed music director in 2017, he writes a foreword here defining his orchestra's special links with Ravel. I was reminded how André Cluytens's '60s Ravel with the Paris Conservatoire [now Warner downloads] suggested an 'authentic' sonority. It's a shame the recordings come only as rather lo-res but the sound is decent. *Une barque...* is the highlight here. **CB**

Sound Quality: 85%



MIGHTY OAKS

Mexico (44.1kHz/24-bit)

www.copaceticpr.com; n/a cat no.

Mighty Oaks are based in Berlin, with vocals shared between Ian Hooper, from the US, Italian Claudio Donzelli and Brit Craig Saunders, and on this fourth album the indie folk-rock vibe is strong, with tight harmonies and accompanying guitars and mandolins. Recorded in Hooper's home studio – for obvious reasons – this set is warm, natural and intimate, with a strong sense of the musicians just doing their own thing. Pooling their recording equipment for the project, Hooper explains that the set-up included 'an array of fantastic Beyer-dynamic and trusty Townsend Labs L22 mics; Telefunken V76, Neve 1073LB, and Capi VP28-Platinum preamps; and a Revox B77', and while some of the tracks here concern themselves with themes apparent in many an 'age of corona' project, both the performances and the recorded sound are uplifting and positive. **AE**

Sound Quality: 85%



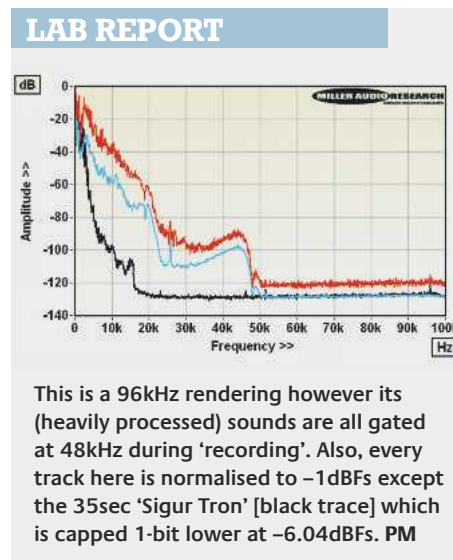
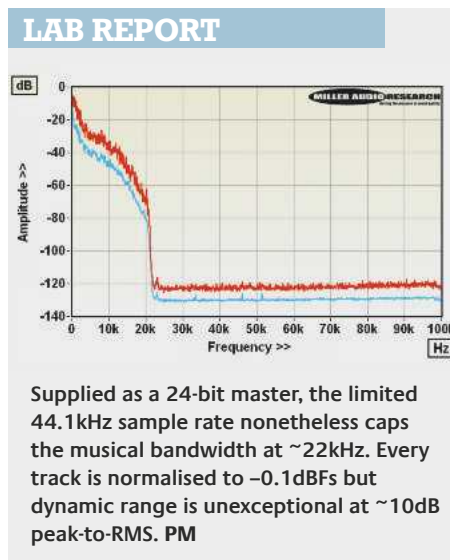
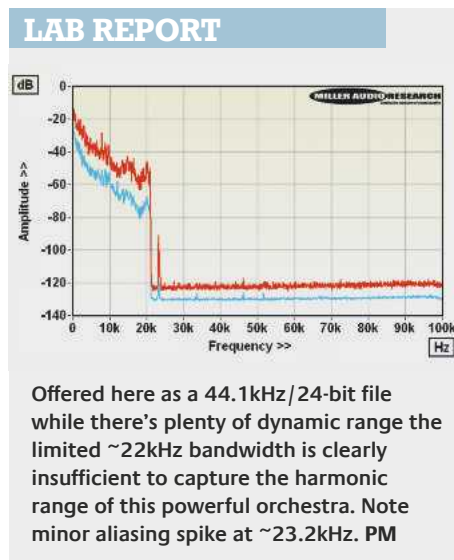
LINN MORI

Metamorphosis (96kHz/24-bit, FLAC)*

www.rockwell-product.net; Rockwellproductshop ROC222

After emerging from a four-year hiatus in 2020 with his Digital Church, said to express 'how people understand each other's beliefs by being saturated, colliding and mixing in a cyber space called digital', Tokyo-based Japanese producer/DJ/writer Linn Mori offers us *Metamorphosis*. This latest short poetry compilation is described as a 'collection of interludes, created as a sequel from the previous work'. So what we have here is an assemblage of very short tracks, none apart from the concluding 'Unseen' even running to two minutes. While there are some interesting themes in there among the electronic noodling, none of them seems to come to any fruition before, typically, stopping quite suddenly. To these ears the frustration of this set is that while these underdeveloped ideas can sound potentially rather promising, all too quickly they are gone. **AE**

Sound Quality: 80%



eleanor mcevoy love must be tough

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eleanormcevoy.com

A homage to Americana, further tales of love and passion gained, lost and fought over, including songs written by Eleanor McEvoy with Johnny Rivers, Rodney Crowell, Brad Parker and Dave Rotheray.

Featuring tracks originally recorded by Terry Allen, Priscilla Bowman, Rodney Crowell, Nick Lowe, The Rolling Stones, Sly Stone & The Texas Tornados, with two extra tracks—The Fratellis 'Whistle For The Choir' & 'Please Heart, You're Killing Me'.

.....
"Eleanor is the most real-sounding woman you'll ever hear on disc. The album is a great mix of originals and well-chosen covers that she makes entirely her own." — Classic American

"This is a superb blend of covers & originals. Like a female Van Morrison, she swings from the Stones to Dave Edmunds and from country to jazz, the most booze-sodden balladry since the Pogues. McEvoy sounds like the sort of woman who might greet you with a bottle of red one night and a rolling pin the next." — Truck & Driver ★★★★★ *Album of the Month*

"This is a band album, rich with brass and Hammond organ, and we're back in the Sixties again in some smokey nightclub... Love Must Be Tough may have been around for a while but it still may be the best thing you'll hear this year." —Dai Jeffries *RnR, May 2021*

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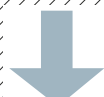
DVD



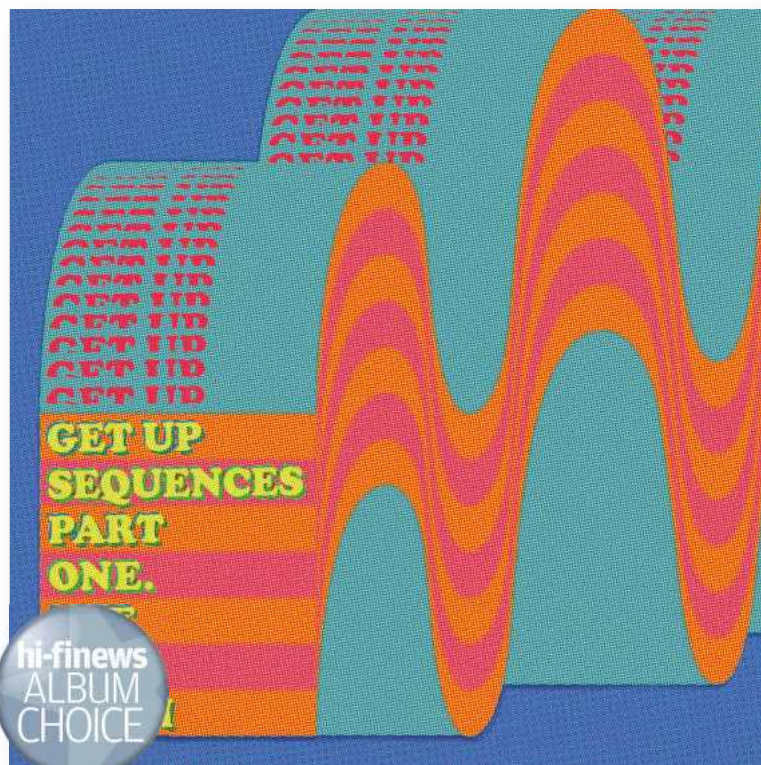
BLU-RAY



VINYL



DOWNLOAD



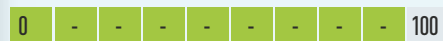
THE GO! TEAM

Get Up Sequences Part One

Memphis Industries MI0684CD; LP: MI0684LP

The Go! Team's sixth album begins with 'Let The Seasons Work', an overture of bleeping synths, Zappaesque brass figures and flute arpeggios, all buoyed up by a funky rhythm section. Ian Parton's arrangements brilliantly dovetail samples and played instruments – part finely crafted structure and part multi-stylistic mash-up. On 'I Love You Better' harpsichords borrowed from John Barry dance around revved-up My Bloody Valentine-style guitars and vocalist Ninja's sweet, primary coloured melodies. 'World Remember Me Now' is the highlight, a hybrid of big grinning synths, brass parps and steel drums, all surmounted by an irresistible pop tune and ethereal backing vocals from the Kansas City Girl's Choir. **MB**

Sound Quality: 90%



STEPHEN FRETWELL

Busy Guy

Speedy Wunderground SWP004CD; LP: SWP004VS

The former Ivor Novello Award nominee's first album for 13 years is a song cycle of sorts, played on acoustic guitar, with electric guitar and cello overdubs. Fretwell – an excellent name for a guitarist – draws the listener into these enigmatic tales, with their dreamlike, cinematic flow. He surveys the strangeness of London from his window on 'Oval', and on the kaleidoscopic 'Almond' he sings, 'Gripping the railings in Tavistock Square/A paper lantern steals breath from the nitrous air'. 'Embankment' is narrated from the perspective of someone whose body has just been dragged out of the Thames and, like a good detective yarn, will take some unravelling. **MB**

Sound Quality: 80%



GARY KEMP

IN SOLO

Columbia 19439863462; LP: 19439863461

If anyone had said, back in Spandau Ballet's '80s heyday, that in 40 years' time Gary Kemp would be singing 'See Emily Play' with Saucerful Of Secrets, they would have been considered insane. But Kemp reckons that his spell in that group has improved his reputation as both guitarist and lead singer. His first solo album for 25 years is soul-infused pop with subtly deployed strings, brass, vocal harmonies and his own psychedelic guitar. On 'In Solo' Kemp offers poignant observations on time passing and trying to make sense of the present. There are nods towards Ray Davies and Paul McCartney, and on 'Waiting For The Band', *Dark Side Of The Moon*-era Floyd. **MB**

Sound Quality: 85%



SNAPPED ANKLES

Forest Of Your Problems

Leaf BAY126CD; LP: BAY126LP

Onstage, Snapped Ankles present themselves in shamanic garb, or like more streetwise versions of the Ents from *The Lord Of The Rings*, or disguised in homemade masks. They make a propulsive, twitchy, techno-infused rock with drums, sequencers, keyboards and bleeping synths. It all fits conceptually, though, embodying a desire to be close to nature even if that entails driving failing technology into it like a wedge. 'It's a great time to be alive if only you've got some funds' they state laconically on 'Shifting Basslines Of The Cornucopians'. This album is about ecological and economic collapse but also having fun before all that happens. **MB**

Sound Quality: 80%

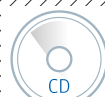




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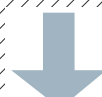
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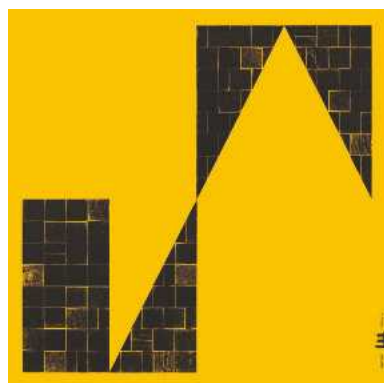
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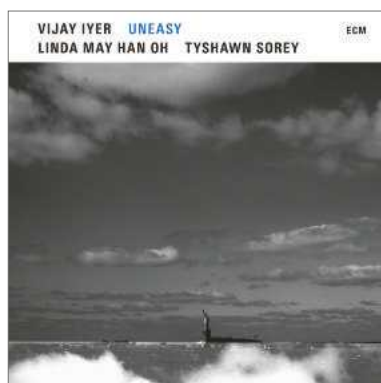
DAVE HOLLAND

Another Land

Edition Records EDN1172; 2LPs: EDNLP1172

Living-legend bassist Dave Holland has formed a solid touring partnership with virtuoso guitarist Kevin Eubanks, once of *Saturday Night Live* fame. Completing their high-energy trio here on Holland's first release for Edition is the exciting and versatile New York-based drummer Obed Calvaire. The opening 'Grave Walker' is a cobweb-dispelling blast of funk that belies its name but it's followed by the album's supple and atmospheric title tune, with Eubanks' glossy guitar slipping smoothly over a rhythmically-deceptive bass figure. There are more other-worldly sounds later, often resolving into bluesy, rocking grooves that you'll love to slide into. *SH*

Sound Quality: 85%



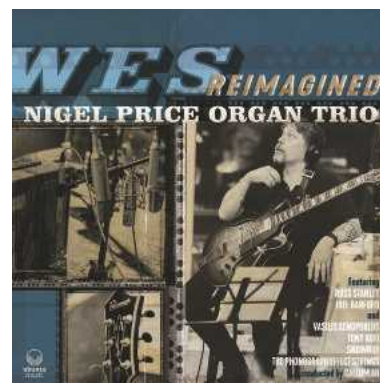
VIJAY IYER, LINDA MAY HAN OH, TYSHAWN SOREY

Uneasy

ECM Records 3520696; 2LPs: 3536241

It's six years since *Break Stuff*, the last of the pianist's three albums with an earlier trio, but he's been working with the current lineup since 2019. Drummer Tyshawn Sorey is a colleague of many projects while bassist Linda May Han Oh is a new collaborator and a fine soloist. Iyer's own pieces often address social issues, *eg*, 'Children Of Flint' refers to the Michigan lead-poisoning scandal, while 'Combat Breathing' was written at the start of the BLM movement. The album's title is also that of a 2011 ballet Iyer scored, but although the word now seems 'too mild for cataclysmic times', his music brings peace and calm. *SH*

Sound Quality: 90%



NIGEL PRICE ORGAN TRIO

Wes Reimagined

Ubuntu Music UBU0080 (CD and LP)

It was Wes Montgomery's *Movin' Along* that inspired a young Nigel Price to move on from rock and fusion. Here you get that album's title tune and others of Wes's in a heartfelt but never slavish tribute. You get more than an Organ Trio too. Along with Ross Stanley's Hammond brilliance and the drums of Joel Barford come the tenor sax of Vasilis Xenopoulos (a cohort in Price's XPQ quartet and other projects), the alto of Tony Kofi and three string arrangements by Callum Au. To finish, Price flawlessly reprises Wes's 'Accustomed To Her Face' solo from *Full House* to launch a full-blown finale with all his forces. A great British guitarist here at his very best. *SH*

Sound Quality: 85%



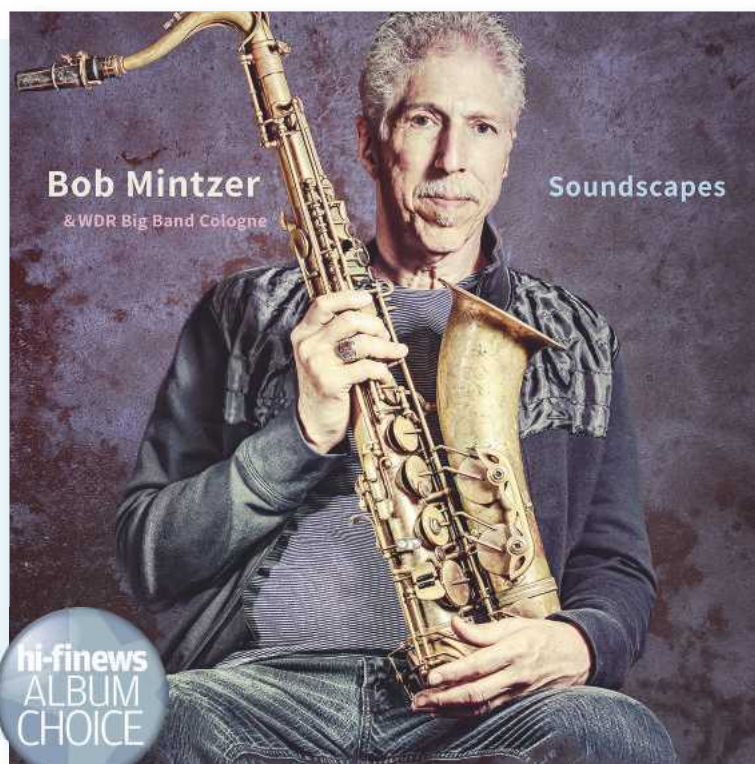
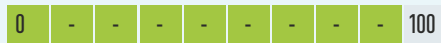
BOB MINTZER & WDR BIG BAND COLOGNE

Soundsapes

Jazzline D77082; 2LPs: D78082

In the early days of CD, Mintzer first reached the ears of audiophiles with *Camouflage* on the digital-recording label DMP. A member of Yellowjackets since 1990, he's also a formidable composer and arranger who's been chief conductor of the WDR band since 2016. These two worlds met last year with the fusion band's WDR collaboration *Jackets XL* [Mack Avenue]. But here Mintzer leads the Cologne orchestra in ten new arrangements of his own music, with some fresh, engaging tunes in flavours from Afro-Cuban to swing – to, in one piece, what Mintzer whimsically describes as 'atonal funk'. We hear him on tenor sax and EWI but there's plenty of scope for the WDR band's own outstanding soloists too. *SH*

Sound Quality: 90%



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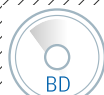
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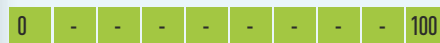
ZÜRICH TONHALLE ORCH/PAAVO JÄRVI

Tchaikovsky: Symphonies Nos 2, 'Little Russian', and 4

Alpha ALPHA735 (downloads to 192kHz/24-bit resolution)

Järvi's Zurich cycle had an unpromising start [HFN May '21] but these are recommendable performances that easily surpass the Bychkov/Decca equivalents, however attractive the Czech PO timbres there may sound – eg, the horn solo at the start of No 2. The grandeur with which the finale starts is anything but 'Little' (the nickname relates to Tchaikovsky's use of Ukrainian folk tunes), and if No 4 doesn't shift my allegiance to the LSO/Markevitch on Philips it's nevertheless an account that equally will invite repetition. In (iii) you twice hear a couple of accents in the second violins not in my score, or noticed with other versions, but they may be authentic. The sound is very good indeed – as is the orchestral playing. **CB**

Sound Quality: 95%



VIKTORIA MULLOVA & ALASDAIR BEATSON

Beethoven: Violin Sonatas Opp.23; 24, 'Spring'; 30:2

Onyx ONYX4221 (downloads to 96kHz/24-bit resolution)

It's over a decade since Viktoria Mullova's first pairing of Beethoven Sonatas with fortepiano accompaniment, where we had the 'Kreutzer'. Now comes the equally popular 'Spring' but in a different partnership. Playing an 1805 Walter replica instrument, against Mullova's gut-strung 1750 Guadagnini, Alasdair Beatson also writes the booklet intro. Working from the latest Bärenreiter Edition, these realistic recordings were produced in 2021 by Mullova's husband, at Wyaston Leys. The unison runs in the Op.24 *scherzo* show the hand-in-glove nature of the partnership, Mullova not once hogging the limelight. **CB**

Sound Quality: 90%



ISABELLE FAUST, ORCHESTRE DE PARIS/PABLO HERAS-CASADO

Eötvös: Alhambra Concerto/Stravinsky: Rite of Spring

Harmonia Mundi HMM902655 (downloads to 96kHz/24-bit res)

The third violin concerto by Péter Eötvös is dedicated to these two artists and was premiered in Granada in 2019. His fascinating explanation of it all – the cryptograms and mandolin 'pursuing' Faust, etc – is in the HM booklet (and online). And how wonderfully she plays. Recommended strongly, but do we need another *Rite of Spring*? Pablo Heras-Casado brings out every detail but smoothes away all sense of excitement: like coasting through the Stravinskian landscape in a Bentley. The irony is that Eötvös led a superb recorded German youth orchestra 2006 performance for the BMC label. **CB**

Sound Quality: 80%



BERLINER PHILHARMONIKER/CLAUDIO ABBADO

Mahler: Symphony No 10 – Adagio

Berliner Philharmoniker BPHR2003649 (48kHz/24-bit resolution)

This is excerpted from the Berlin orchestra's eight-conductor, 2011 to 2020 Mahler live cycle: €59 as a download, a lot more in physical formats, although there you can see all ten performances too. The single work download includes the lavish 128pp booklet PDF. The Digital Concert Hall also has a 3m video clip from Abbado's May 2011 account of the 10th *Adagio* (memorised from the Cooke Edition). This is a very great account of a piece that ranges from despair to life-embrace (those Berlin winds in glorious brightness) and compels the attention from start to finish. Extraordinary – good sound too. **CB**

Sound Quality: 95%





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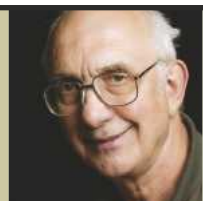
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Barry Fox Technology journalist

Barry Fox trained in electronics with the RAF and worked as a patent agent, but he gave that up to enter journalism. He is one of the world's top technology writers

Bit of a mixup

Barry Fox looks into the realities of some of today's 'analogue' LP remasters and high-res streaming services, where customers may not quite be getting what they're anticipating...

Welcome to the new era of Uncompressed, Studio Master, High Res, High Definition, High Fidelity, High Quality, streaming from popular platforms like Amazon, Apple and Spotify. Welcome, too, to a new era of confusion.

I am not just talking here about the lack of an agreed name, definition or standard for these various better-than-MP3 streams, or lack of compatibility between existing devices and new streams. Neither am I addressing the question of what the Bluetooth compression used for wire-free headsets does to *uncompressed* source material. Rather, I am talking about the long-term issue of source material pedigree.

MOSTLY DIGITAL

This matters because consumers who are paying for HD (or whatever it happens to be labelled) may start wondering why they are not hearing the better quality they thought they were paying for. And, as it ever was, trying to get sensible comment from the music industry will be a hiding to nothing.

Nowadays, although many vinyl enthusiasts don't realise it, there are reissue LPs sold at a high price for their analogue quality that have been mastered from digital copies of analogue tapes. If the original tapes even exist, they can no longer physically be played.

I ask about this whenever I visit cutting rooms and although the engineers give honest answers, they are clearly not encouraged to shout about the fact that the master source for vinyl is often a CD digital master tape – or even pressed CD – coded at 44.1kHz/16-bit with a maximum bandwidth of 20kHz.

So my ears pricked up when a colleague recently chanced on what looked like an interesting new approach

to vinyl LP releases. If you go to the Discogs website you will see a listing for Talk Talk's *Spirit Of Eden*, on Warner/Parlophone, packaged as an 180g LP with a DVD copy. The DVD is not a DVD-Audio, needing a DVD-A player, but an ordinary DVD Video disc that plays audio on any DVD player [www.discogs.com/Talk-Talk-Spirit-Of-Eden/release/14865244].

To its credit, Discogs tries hard to give whatever useful information it can get. An explanatory note refers to 'a 2019 reissue (of 1988/2012 issues) differentiated... by new matrices... cut from a new lacquer commissioned specifically for this reissue, therefore meaning that it is not a repress or variant of any previous issue of the album... with an audio-only DVD-Video... containing the album delivered as a 96kHz/24-bit LPCM stereo mix'.

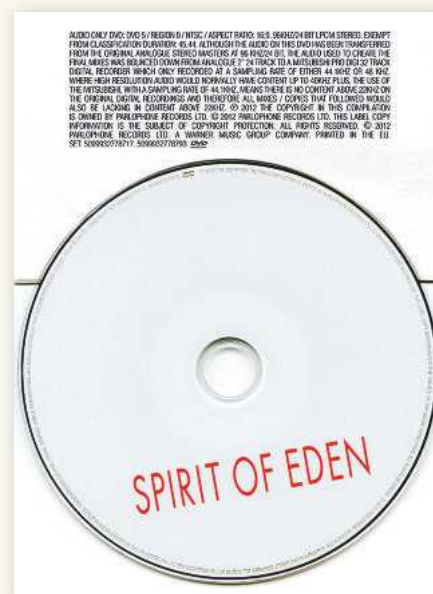
Inside the sleeve there is a disclaimer which explains a lot more to people who understand its significance; and Discogs puts a rather garbled version of this note online. 'Although the audio on this DVD has been transferred from the original analogue stereo masters at 96kHz/24-bit, the audio used to create the final mixes

was bounced down from analogue 2in 24-track to a Mitsubishi pro digi 32-track digital recorder which only recorded at a sampling rate of either 44.1kHz or 48kHz.

'Where high resolution audio would normally have content up to 40kHz

plus, the use of the Mitsubishi, with a sampling rate of 44.1kHz, means there is no content above 22kHz on the original digital recordings and therefore all mixes/copies that followed would also be lacking in content above 22kHz.'

So how many more 'HD' recordings are out there, or are coming out, which were sourced from masters with nothing over 20 or 22kHz? The Mitsubishi machines were widely used in studios round the



ABOVE: The DVD Video disc of Talk Talk's album *Spirit Of Eden* with disclaimer (top)

world. I contacted Warner – was there any press briefing note I could read?

'I'm afraid not', came the reply. 'That release was a good few years ago and it was the only release that we did this with... [and] there wouldn't be someone that we could put forward for interview on this given it happened a while ago.'

MORE TALK

Actually that's not correct. Warner also put out Talk Talk's previous album, *The Colour Of Spring*, at the same time and the publicity blurb also says the 180g vinyl comes with an audio-only DVD-Video disc 'containing the album delivered as a 96kHz/24-bit LPCM stereo mix'.

For these releases there is no warning of no content over 22kHz.

Does this mean it was differently recorded and mastered? Your guess is as good as mine. But the point remains the same. A 96kHz/24-bit label could mean nothing better than CD quality. ☹

'I ask about this whenever I visit vinyl cutting rooms'



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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 nasty intersection

Can art be separated from politics? Should we let our enjoyment of art be sullied by artists' bad behaviour, or worse? **Barry Willis** finds he's still tempted by tracks recorded by a few fallen idols

In March 2013, singer/songwriter Michelle Shocked lived up to her adopted name. Before her planned second set at Yoshi's, a landmark San Francisco music club, she launched a tirade against the rising tide of same-sex marriages, claiming that it would bring about the 'end times' and an outpouring of almighty wrath that would destroy the world. 'God hates homosexuals', she shouted to an astonished crowd, most of whom left the venue in protest.

SHUT DOWN

Somewhere along the way, the former punk-folk icon had become a born-again Christian, and took the between-sets interlude as an opportunity to share her new convictions with an unreceptive audience. Yoshi's management shut off power to the stage, apologised to patrons, and offered refunds. In the manner of miscreant celebrities and politicians everywhere, she later tried to clean up the mess by saying she had been misunderstood or misquoted.

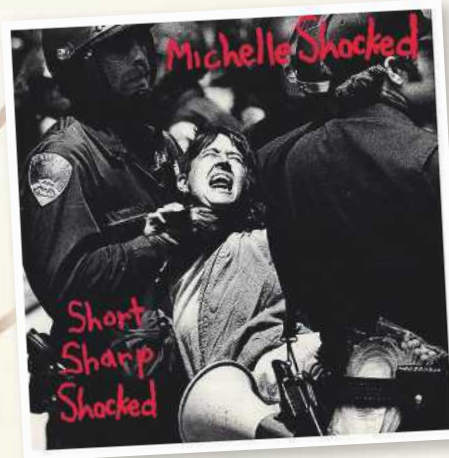
She hadn't. It was a bone-headed, career-crushing move. Her US tour extending well into that summer was cancelled by every venue on the schedule. I don't know what became of her after that, but I hope she came to realise – after same-sex marriage was legalised nationwide by a conservative Supreme Court – that the earth continues to spin and the sun continues to rise.

Her meltdown was a bit of minor-key sadness for me, because even though I wasn't a rabid fan, I had seen her perform a couple of times and have several of her albums. The best of them, in my opinion, is 1988's *Short Sharp Shocked*, a disc that I still have within easy reach for the tracks 'Graffiti Limbo', a protest against police brutality; the melancholy 'Memories Of East Texas'; and the haunting 'The L&N

'Shocked's US tour was cancelled by every venue'



ABOVE: Cat Stevens (left) pictured in the early '70s before he changed his name to Yusuf Islam in 1980 and (right) Michelle Shocked on the cover of her 1988 album *Short Sharp Shocked*



Don't Stop Here Anymore' – a lament for a vanished economy. Has my dismay at her eagerness to offend her fans diminished my enjoyment of her music? I like to think not, but probably on some subliminal level it has.

Shocked's self-induced problem was not an isolated incident. The 1970s superstar Cat Stevens had a similar experience. His albums such as *Tea For The Tillerman*, sold by the millions, but commercial success didn't fulfill him. In 1977, after toying with multiple religions, the London-born former Steven Georgiou became

a convert to Islam, changed his name to Yusuf Islam a few years later, took up residence in a mosque, and completely withdrew from public performance.

In 1989, after the publication of Salman Rushdie's novel *The Satanic Verses* and a resultant fatwa issued by high Islamic authorities calling for Rushdie's death, Yusuf (as he is now known) reiterated his allegiance to Islamic law. Like Michelle Shocked, he tried to

backtrack, without success. After the terrorist attacks of the 11th of September 2001, he was denied entry into the US. He has spent subsequent years trying to reconcile his old life and his new one, and has engaged in many philanthropic efforts, but a couple of unthinking responses went a long way towards scuttling what remained of his career.

QUESTIONS TO ASK

Should the allegations against Michael Jackson made in the 2019 documentary *Leaving Neverland* affect our response to *Thriller*, the singer's blockbuster 1980s album? 'Billie Jean' and 'Beat It' are still brilliant pop songs that can make even the most recalcitrant curmudgeon get out on the dance floor and shake booty.

Should we ban the films of Hollywood legends due to claims they were involved in domestic abuse? Or the works of artists said to be womanising jackasses?

We often assume that because their work engages beauty and truth, our musical and cultural icons should be enlightened and self-aware. Almost as often, we're dismayed to discover that they are as flawed as the rest of us. ☹

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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

Musical mystery tour

Jim Lesurf recounts his own musical journey but begins to wonder 'just what is music?', and how best should it be served by audio manufacturers facing seemingly irreconcilable demands

I've enjoyed listening to music all my life. And as I've got inexorably older and older I've continually discovered more genres, which make different sounds. Sometimes I didn't enjoy them on first listening, while other times I have been instantly gripped and moved. And sometimes I found that after a while I started to enjoy recordings that failed to engage me the first time round.

The earliest examples were the BBC's 'Light Programme' bands, or now-quiet 78s such as the 'Happy Wanderer'. Then came the The Shadows, The Beatles and The Danettes. Later I discovered that I liked some of the 'classical' music that one of my teachers played at school.

BUT WHAT IS IT?

Latterly it has been jazz, Indian classical music, or items that feature in a Prom concert – like the one recently rebroadcast which played works by various 'electronic music' composers.

The more diverse the examples, the more I've come to ponder one seemingly simply question: what exactly is music?

This matters because if we want to enjoy music via a good audio system, then the aim is that such a system has to be 'good' at being able to play 'music'.

OK, we can come up with various names to describe what music includes, such as rhythm, cadences, tone, instrumental timbres, etc. Yet how do you convert all these into the technical requirements for an electronic system that reproduces music? Traditionally, as an engineer or physicist I'd start talking about frequency responses, noise levels, sample rates, and so on. But the limits of what are actually required become somewhat hard to pin down with proper precision.

Partly this is because different kinds of music may make quite different demands

RIGHT: You can design a power amp to meet different assumed conditions, trading wattage for overall cost to the music lover



on the technical performance of one's audio set-up. This might be reflected in the speaker choices made by someone heavily into Heavy Metal and, say, someone who likes Gamelan music or listening to a simple sitar and tabla duo.

POWER PUZZLE

I first had to wrestle with this when designing power amps. Often the average power output needed might be well below 10W, but occasional peaks might

require well over 100W. Most listeners probably don't need an amp that can output over 100W continuously, yet to allow for 'unknown unknowns' a designer may simply make the amp able to do that.

There are downsides to this approach. The

first is that it can mean said amplifier will cost more to produce. The second is that it may mean compromises are made in some other aspect of the amp's performance. Still, an amp whose power supply 'adapts' to allow even higher peaks may be smaller, more reliable and consume less electric power overall.

But that, in turn, throws up an even more challenging problem: how to take into account examples of music the designer doesn't even know exists!

The issue here isn't what is 'typical' or 'average' but to cover the entire envelope of what 'music' may throw at the system... And whatever the resulting requirements may be, they have to be applied to the entire chain from the microphones to your speakers.

So the almost unanswerable question 'what is music?' matters when we want to buy and use an audio system. Yet the answer remains elusive because both the music and individual reactions to it vary so much. In engineering/science terms we need a way to mathematically pin down not just what is 'typical' but what covers every genre that someone might recognise as 'music'.

ELUSIVE SPECS

LPCM dodges this to some extent as it hopefully uses a sampling rate that more than covers the range of frequencies and a number of bits-per-sample that covers the range of sound pressure levels involved. Other systems, from MP3 to FM stereo broadcasting, take other approaches but mean sacrifices.

As yet, I've never seen any approach that mathematically, scientifically – or even just in engineering terms – specifies what we need for every possible form of sound that some will regard as 'music'. Perhaps there just isn't one. Music is indeed mysterious... ☹

'The limits become a bit hard to pin down exactly'



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Christopher Breunig Music Journalist

Christopher Breunig trained as an architect but became won over by music and collecting classical recordings. He was Hi-Fi News' Music Editor from 1986-2000

Mercury rising

Christopher Breunig welcomes a remastered set of the recordings made by Czech conductor Rafael Kubelík during his unhappy stay with the Chicago Symphony Orchestra in the 1950s

Is mono the 'new black' (and I'm not talking about vinyl)? You might think so with Sony releasing all of Eugene Ormandy's Philadelphia pre-stereo recordings: a 120CD set [*The Columbia Legacy*; 19439757482]. And now Eloquence has reissued Rafael Kubelík's Chicago early Mercury monos [ELQ4843028, 9CDs + bonus disc].

The Czech conductor came to the Chicago Symphony in 1950, having quit his country after the communist takeover of 1948. Resident in the UK and making records with the Philharmonia, he could have become Sir Adrian Boult's successor at the BBC SO. Instead, he went to the CSO, but it was not a happy choice for him – thanks in part to the persistent caustic criticism by the *Tribune* music and theatre journalist Claudia Cassidy – and he left after three years. Cassidy called Kubelík 'a second-rater' and the booklet quotes some of her writing.

A LIVING PRESENCE

Founded in Chicago in 1945 and largely producing popular music, Mercury Records was keen to create its own catalogue of classical recordings. Symphony Hall was a difficult venue but the engineer C Robert Fine thought a single suspended microphone would work well. He set up a Neumann U-47 mic above and slightly behind the conductor and Kubelík expressed delight, saying this was how he heard the orchestra. While the single-microphone technique became standard, later on the more sensitive Schoeps M201 mic was used.

The Chicago sessions – which ran from April 1950-April '53 – began with the Mussorgsky/Ravel *Pictures*. The *New York Times* reviewer Howard Taubman described the sound as 'like listening to the living presence'. This, of course, was adopted as the label's banner [see photo].

'Fine thought
just a single
mic would
work well'

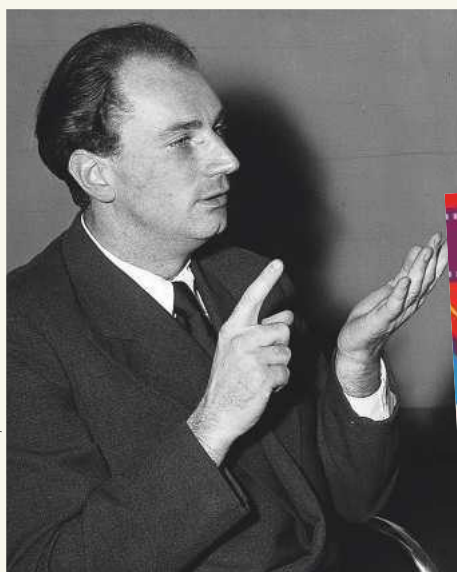


PHOTO: WINTERBURGER/WIKIMEDIA COMMONS

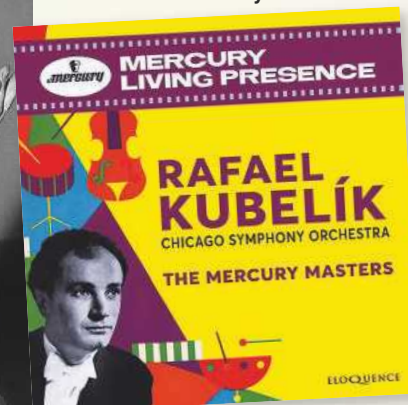
Working with Fine, the producer Wilma Cozart was then aged only 24. They married, and went on to become a legendary team. After Chicago Mercury went to Minneapolis, Detroit and London to build the catalogue and were even

permitted to work in Russia in 1962, during the Cold War, shipping their own equipment to Moscow. 'Balalika Favourites' became a best-seller.

One of the complaints voiced against Kubelík was that he introduced too much contemporary

music to Chicago audiences (in 1953 he actually gave the US premiere of Vaughan Williams's *Sinfonia Antartica*!). And this is reflected in the set here, with Bartók's *Music for Strings, Percussion and Celesta*, Schoenberg's Op.15 *Five Orchestral Pieces*, Hindemith's *Symphonic Metamorphosis* and Bloch's *Concerto Grosso* with strings and piano. (Kubelík had a flair for Bartók: you can still get his excellent 1959 RPO *Concerto for Orchestra* as a Warner download.)

LEFT: Conductor Rafael Kubelík pictured in Amsterdam in 1950, the year he was appointed to the Chicago Symphony Orchestra. And the 10CD Eloquence reissue box of all his early Chicago recordings made for the Mercury label



Standard fare are Tchaikovsky's Symphonies Nos 4 and 6, Brahms's No 1, Mozart's Nos 34 and 38, 'Prague', and – from his own country – the 'New World' Symphony and Smetana's *Má vlast* (the earliest of four versions). Each CD comes in a card sleeve with original artwork and completely new remastering by the Fines' son Thomas, done at Abbey Road. He's candid in the booklet section on second-generation tapes as the only sources for the Brahms and Tchaikovsky *Pathétique*.

EXPERIMENTAL STEREO

CD10 has some interesting 'extras' – a short radio interview with Wilma Cozart, the very first test taping, from the Hindemith, and some early stereo tracks. The sound enthusiast Bert Whyte (founder of Everest Records) had been permitted to bring equipment to Mercury sessions.

He had a staggered-head binaural tape recorder and this disc has 'Tabor' from *Má vlast* and excerpts from the Mozart 'Prague' using different mic set-ups. Besides this historic set, Eloquence has recently packaged all of Kubelík's Decca recordings [ELQ4841452, 12CDs].

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Steve Harris Contributor

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

Barber's cuts

There's a limited edition CD set of the British jazzman's work. **Steve Harris** describes how his bands developed, and how skiffle became a craze after a Lonnie Donegan Decca single release

Said Bill Wyman (and he should know), 'Without Chris Barber, The Stones and The Beatles would not be where they are now'. Many others expressed similar sentiments when the great trombonist and bandleader passed away in March this year at the age of 90. He'd officially retired only in 2019, after an unparalleled career spanning no fewer than seven decades.

You can find recordings from all those decades in the recently-launched limited-edition 4CD set, *Chris Barber: A Trailblazer's Legacy* [The Last Music Co LMCD227], starting with the first issued studio recordings of Chris Barber's New Orleans Jazz Band from 1951 and ending with a number from his last recorded session in December 2018.

THE JAZZ MEN

With it comes an absorbing book-length discography and biography by jazz author and critic Alyn Sipton, which tells the whole story of the band's evolution, and shows how in later years Chris Barber embraced the musical revolution that he himself had helped bring about.

After those very first recordings, Chris formed a new band with the intention of going professional, and was able to book a three-week tour of Denmark for March 1953. But trumpeter Pat Halcox pulled out, having decided to continue his career working instead as an industrial chemist.

So Chris invited Ken Colyer, who'd played in the early British traditional bands of the 1940s, and had actually got to New Orleans, to join and lead the band. Now known as Ken Colyer's Jazzmen, they went on to do the tour and recorded for the newly-formed Danish label Storyville. But within a year there was a split, and Colyer left. Fortunately, Pat Halcox was ready to rejoin full-time.

RIGHT: Ronnie Wood, Mick Taylor and Chris Barber join US Blues guitarist Stephen Dale Petit on stage at a benefit gig for the threatened 100 Club. Barber is known as the Grandfather of British Blues



The group at last became Chris Barber's Jazz Band, and soon afterwards they recorded their first LP for Decca.

Chris was now featuring a band-within-a-band, with a singing role for his banjoist/guitarist. As he recalled in a 1989 interview: 'We had difficulty to convince Decca to allow us to put on that LP Lonnie Donegan singing a song called "Rock Island Line", with The Skiffle Group – which was myself on the bass and Beryl Bryden on the washboard. Which was a record that eventually made Lonnie

Donegan's name as a very successful act and also made Decca Records a few million pounds'.

'Rock Island Line' was finally released as a single, the skiffle craze swept the country, and Lonnie Donegan left to pursue his solo career. He was briefly

replaced by ex-pat American country singer Johnny Duncan. But, under the aegis of record producer Denis Preston, Duncan soon had his own skiffle hit with 'Last Train To San Fernando'.

By then, a girl who'd wowed the band with her blues singing on her first trip to London had given up teaching in Belfast to join full-time. Chris Barber's Jazz Band with Ottilie Patterson was soon

filling large venues in the UK and touring regularly and successfully in Europe.

And in 1957, Sister Rosetta Tharpe became the first of many American artists invited by Chris to join the band on tour here. She was followed by blues duo Sonny Terry & Brownie McGhee and by Muddy Waters and Otis Spann.

ELECTRIC SHOCK

So it was thanks to Chris Barber that UK audiences got their first chance to experience live electric Chicago blues. The concerts Muddy Waters did with Chris Barber in 1958 are often described as 'electrifying' and indeed they must have been. You can hear Waters and Spann with the band in Manchester, not in the *Trailblazer's* box set but on Chris Barber's own record label via the ongoing www.chrisbarber.net website.

While all this was going on, of course, a young John Lennon was in Liverpool playing skiffle with The Quarrymen. Then, within a couple more years, the first electric blues groups appeared in Britain, and The Rolling Stones named themselves after a Muddy Waters song.

Eventually, The Stones made the pilgrimage to Chess Records in Chicago, where they found Muddy engaged in painting the studio walls. But that's a story for another day. ☺

'So Ken Colyer was invited to join and lead the band'

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.

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TALKING TUBES

MULLARD VALVES AND 'THE MODERN THING'

I'm pleased to have stirred up interest in the Mullard valve circuits for home-build. As Dr Craggs and Mr Mansell later pointed out [*HFN* Dec '20], Mullard's EL34-based amplifier design was called the 5-20 and not the 5-30, as I wrote. Also, I glibly wrote-off the KT88 as a low 'gm' type when it actually possessed quite high 'gm'. Guilty as charged!

Mullard was the major UK valve manufacturer at that time. The strong links with Philips were not then made evident despite it being wholly owned by Philips. The 'eight shillings and sixpence' book, *Mullard Circuits For Audio Amplifiers*, makes no mention of Philips. Also, the valves shown in this publication are Mullard.

The opening pages state that the circuits were all developed by Mullard Research Laboratories in the UK and, I presume, were aimed at a British market. In later years, Philips gradually took a lead role and I have component catalogues from the '70s and '80s bearing both brand names. Philips dropped the Mullard name in 1988.

When I was a young and keenly involved apprentice, the Mullard range of valves and the EL84 in particular, were favoured by home constructors and were regarded as 'the modern thing'. They were also relatively inexpensive.

Mullard's promotional material was also a significant factor here. Cost was crucial. My wage as an apprentice in 1962 was £5/4s/6d and a half penny per week (£5.22). Valves could cost £1 to £3 or more, which was a big chunk of anybody's pay. Mullard's pre-eminence meant that a host of suppliers produced reasonably priced output transformers and other components needed for the



ABOVE: Mullard catalogue from 1960 showing specs for EL84 and EL34 valves

build, making the brand even more attractive. Clearly, other valves such as the 6L6, KT66 and KT88 were in wide use, but mainly in professional or industrial designs.

Nick Willans, via email

Steve Harris replies: Mullard's 5-20 circuit, using EL34 pentodes instead of the smaller EL84s, was a more powerful version of the 5-10, which was also widely adopted in the industry. Dating from 1954, the 5-10 design appeared as a home constructors' feature in *Practical Wireless* magazine, where it was described as a five-valve, 10W 'hi-fi unit'. As with the 5-20, the voltage gain stage used an EF86 pentode and was followed by an ECC83 double triode phase-splitter to feed the two output tubes in push-pull. Distortion was kept down to 0.3% at rated output. The fifth valve used was the rectifier.

Meanwhile the simpler 3-3 circuit, introduced in 1955, became the basis of many a record player, having an input sensitive enough for crystal or ceramic cartridges, plus built-in volume and tone controls. This three-valve, 3W circuit again used an EF86 for voltage gain, plus a single EL84 in single-ended mode. Heavy negative feedback was used to keep distortion down to around 1% at 3W output!

More Emotion

DID HFN LAB TEST 'LEADING EDGE' LOUDSPEAKERS?

While recently sorting through my back issues of *HFN* I came across an Opinion piece by Barry Willis in the Nov '07 edition in which he talked about a pair of speakers made by High Emotion, a company based in Nashville. He praised them as being 'a great leap forward in sonic realism'. Did you ever lab test these speakers?

W D Ray, via email

Barry Willis replies: *HFN* has not lab tested the speakers I referred to in my Opinion column and, to my knowledge, no formal reviews of High Emotion Audio products have appeared in any English-language audio publication. The company's 'leading edge transducer' (LET) tweeter design is intriguing, said to yield wide dynamics, bandwidth, and upper-octave transparency with very little amplifier power.

In a phone conversation (early July), HEA founder Craig Oxford stated that during the previous 18 months, the company was in pandemic-induced repose, but is 'in the process of being reformulated' and will return to the market with a revised product line, new website, and new business model. Among the challenges to be overcome are revisions to HEA's complex and costly cabinet designs. Oxford also hopes to duplicate the previous lineup's sonic properties at more accessible prices.

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Something to chew on...

READER FEARS BUDGET TURNTABLE WILL GNASH THROUGH HIS RECORDS' GROOVES

First of all, thank you for an enjoyable and informative magazine. The review of the Musical Fidelity M3x Vinyl phono preamp by Ken Kessler [HFN May '21] did cause me some concern, however. Having recently purchased an Audio-Technica AT-LP60 turntable (£99!) in order to start playing my vinyl again, I was somewhat alarmed to read in the MF review that such units are 'likely to chew up more LPs than they actually play'. I am now wondering if it is safe to use. It has an Audio-Technica cartridge with a spherical stylus.

Trevor Sear, via email

Ken Kessler replies: Worry not, Mr Sear. I wasn't referring to entry-level models from serious companies such as Audio-Technica, who fit a proper cartridge to the AT-LP60. My concern is for those unsuspecting newcomers to vinyl who buy £59 turntables online, with flip-over styli and arms that track in ounces, not grams. Unfortunately, for example, an 18-year-old circa 2021 taken with the idea of owning 'vinyls', probably doesn't



ABOVE: The Denon DL-103, which arrived on the scene in 1962, is still available today

have growing-up years with vinyl in the house, unless he or she spent time with the grandparents. So no background on record handling, cleaning, storage, etc. It's like those YouTube tropes where little kids are shown cassettes and a tape deck and can't figure out how to insert them. If vinyl is to survive the long haul, we must not let the cheapo decks undermine the renaissance. By the way, two of my fave cartridges use spherical styli: the Decca Maroon and the Denon DL-103!



ABOVE: Musical Fidelity's 'entry-level' M3x Vinyl MM/MC phono preamp costs £1200

Play it again... and again

WHERE HAS ALL THE NEW MUSIC GONE, WONDERS READER FED UP WITH REISSUES

Reading through the lists of records reissued for this year's Record Store Days [HFN Jul '21] it seems artists have stopped releasing new music altogether. It's 40th anniversary Doors this, or Jonathan Richman masterpiece re-release that. Or it's a CD of a vintage recording but with bonus tracks. Are new artists unable to write new music equally as remarkable and breathtaking as rock was in the '60s and reggae in the '70s, not to mention punk and acid jazz?

Remi Balestie, via email

Johnny Sharp replies: Record Store Day is a wonderful thing, Remi, but it doesn't necessarily reflect the whole world of music. It's become a focal point for limited edition vinyl and box set releases, which tend to be reissues [see p26] because new releases need a full roll-out across all formats. Also new releases, especially those from current artists, are likely to rely on streaming and downloads, partly due to a younger fanbase. Great new music is still being made... it just may not be showing up on the shelves where you're looking.

JITTERBUG

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Yes and no: Using the same equipment and a quality DAC, a 24/96 file (for example) will always sound better than a CD 16/44.1 file ... but, even a single JitterBug will often allow a CD file to be more musical and more emotionally stimulating than a Hi-Res file without the benefit of a JitterBug.

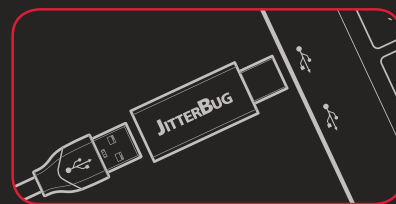
Noise is the problem. Real noise—the kind you can't hear directly. Most often, the word "noise" is used to describe tape hiss or a scratch on a record, but these sounds aren't noise; they are properly reproduced sounds that we wish weren't there.

Problem noise is essentially random, resonant or parasitic energy, which has no meaning. It can't be turned into discrete sounds, but it does compromise signal integrity and the performance of everything it touches.

JitterBug's dual-function line-conditioning circuitry greatly reduces the noise and ringing that plague *both* the data and power lines of USB ports, whether on a computer, streamer, home stereo or car audio front-panel USB input.

A single JitterBug is used in between devices (i.e., in series) as shown below. For an **additional "wow" experience**, try a second JitterBug into another USB port on the same device (such as a computer). Whether the second port is vacant, or is feeding a printer or charging a phone, JitterBug's noise-reduction ability is likely to surprise you. No, the printer won't be affected—only the audio!

While a JitterBug helps MP3s sound a lot more like music, high-sample-rate files have the most noise vulnerability. Try a JitterBug or two on all your equipment, but never more than two per USB bus. There is such a thing as too much of a good thing.



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Irked by speaker advice

DO DESIGNERS HAVE NO IDEA OF HOW THEIR PROSPECTIVE CUSTOMERS LIVE?

I look forward to every issue of *HFN* and eagerly devour the contents, but one particular issue raises its head time and time again. This relates to the placement of many floorstanding speaker designs. It was the review of the Scansonic MB5 B that appeared last year [*HFN* Jun '20] that first raised my hackles. It said that 'Scansonic is very particular about the placement of its MB5 B floorstanders'. They must be placed, it continued, 'far apart but close to the listener... plenty of toe-in... at least 3ft from rear walls...'.

Am I missing something here? I don't know how the Danes live and how their houses are designed but does the team at Scansonic have any concept of how most of

its prospective customers live? It may well be that if you're spending over £6k on speakers you will have a dedicated listening room. But I suspect the majority of us have many compromises to make in our shared living spaces. If these speakers require such precise placement surely Scansonic is reducing its potential customer base significantly? Thank goodness for companies who design products for more family-friendly environments.

It's probable that I am in a minority of your readership as much of the products you review are way beyond my meagre means. However, I fell in love with hi-fi in the 1970s and sometimes despair where the industry is heading. I know Ken Kessler has previously expressed concerns about how the industry is to thrive and grow if current trends are adhered to. I love music and I love to hear it well reproduced in my home. But not if I have to rearrange the furniture every time I want to listen!

Rob Miller, via email

Andrew Everard replies: You can lower those hackles now, Rob – although some manufacturers offer specific advice on positioning, and others less so, it's fair to say that this should be taken more as a 'serving suggestion' than an imperative. Of course you're completely free to position the speakers in the room as you want, or at least wherever you think they sound best, and different room acoustics will have almost as much effect on the sound as the distance from the walls.

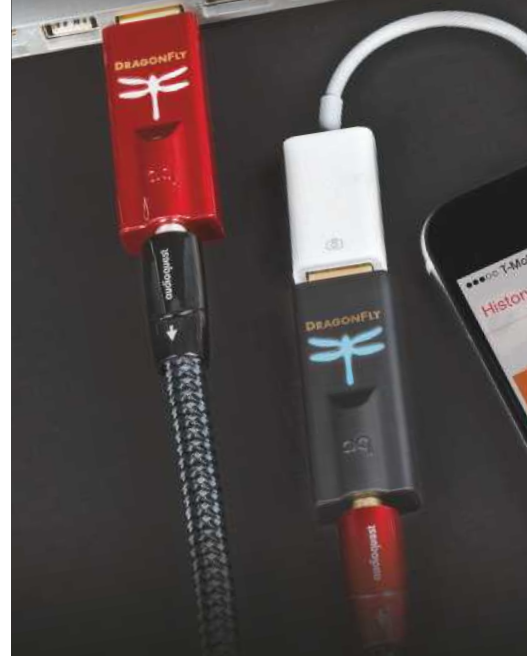
If you have 'soft' walls – curtains, for example, or shelves full of books or records – behind the speaker, these will have much less effect on the bass than solid flat surfaces. Indeed, some choose to have sound treatment panels behind their speakers, though somehow I suspect this will do little to assuage the state of your hackles. And some manufacturers are much less specific in their positioning advice – see our review of JBL's HDI-3800 [p46] for an example of that! But it all shows the importance of trying to arrange an audition of the speakers you like in your own room – especially if it's a design with a reputation for being fussy about positioning.



ABOVE: Scansonic's MB5 B speakers sport rear ports, so heed the positioning advice

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The word is out: DigitalAudioReview.net's John Darko calls DragonFly Red and Black "the finest examples of everyman hifi to ever grace these pages. Their value quotients explode the dial."

Let the joyful experience begin!

audioquest

Amplifiers: no flight of fancy

IT BEGAN WITH AN ARCAM AND ENDED WITH AN AUDIA FLIGHT, BUT CAN THIS ALL-ANALOGUE AMP ACCEPT A DAC?

I loved your review of the Audia Flight FLS 9 [HFN Feb '21] integrated amp as I have the older FLS 10 [HFN Dec '17]. It's certainly a big beast, but its sound makes it worth each pound in weight and every pound in Sterling. As for my journey to Class A, at home my choice of components is constrained somewhat by my listening room being referred to by my wife as 'the living room'. Nevertheless I am very happy indeed with the sound I now enjoy. For most of the last 30 years Arcam amplifiers and sources have made up the core of my system. Any reference to their having a warm sound is, I think, rooted in the company's early history, as this does not apply to the 21st century electronics.

Arcam's first 'Mega amp' was the now discontinued A49, a 200W Class G design with all the aesthetics Arcam-lovers enjoy but a clarity and power most would not have heard. It was a stunning integrated – I know, because I bought one – and Class G piqued my interest as to what full-bore Class A might deliver. But I'll come back to this.

As for the rest of my system while I ran the A49 as my main amp, ProAc was my go-to speaker brand, beginning with the gorgeous Studio 125 and culminating in the amazing D30 RS. A couple of years ago, these were replaced by active ATC SCM40s and the A49 was relegated to preamp duties. A bit of a waste, but I can't bear to part with it.

So where does the FLS 10 fit in? Well, I was born and bred in the Lakes and now have an apartment there which allows me far more room to play with hi-fi options. And I've played with a good few over the last five years. My keeper system here centres on the aforementioned FLS 10, fed by an Arcam FMJ CD23T CD player, T32 tuner and DV139 DVD player feeding, in turn, my head-turning Posselt Albatross speakers. I confess I'm not very good at dedicated listening, but this system keeps dragging me away from whatever I'm doing on my laptop. It's hard to describe the sound – creamy yet detailed, crisp yet warm. It basically does everything I could ask of a hi-fi system, and more.

But back to your FLS 9 review. I was particularly interested in your comments on the FLS 9's digital inputs, which has increased my interest in adding



ABOVE: Turntable is a Michell GyroDec SE equipped with an Origin Live Illustrious arm and an Apheta 2 MC cartridge from Rega

the same DAC board to my analogue-only FLS 10 (I believe the DAC board is a plug-and-play affair). However, I note that in Paul Miller's Lab Report he was able to use only one of the seven available filters. I'd be grateful if he could confirm whether or not he was ultimately able to try the other filters

ABOVE & LEFT: Nigel's system with his Audia Flight FLS 10 amplifier (top of rack) and Arcam electronics driving Posselt Albatross speakers

and/or whether instructions are available that tell you how to do this.

To reassure me before committing to such a substantial investment, I've sought a copy of the user manual from a local UK dealer and also direct from Audia Flight. At the time of writing neither has been able to provide one. This would also tell me, I presume, whether the DAC board is basically a plug-and-play affair I can install myself or whether it requires a return to the dealer or even to the manufacturer in Italy. For £1850, surely a user manual isn't too much to ask? Many thanks, and keep up your excellent work.

Nigel Bell, via email

Paul Miller replies: As you surmise, Nigel, Audia Flight's USB-equipped/DSD124-compatible DAC module is a retrofittable option but, in my view, if you order this £1850 card from a dealer then the same specialists would surely be keen to load it into the empty bay at the back of your amplifier. Regarding the digital filters, although the AKM DAC solution employed by Audia Flight offers six pre-programmed algorithms, in practice only one of these – the linear phase/sharp roll-off filter – was enabled in our sample. This wouldn't be the first occasion that selecting ostensibly different digital filters actually brought up the same default option each time!

The best 'buy' I ever made

REVIEW OF NEW ROGERS SPEAKERS BRINGS BACK MEMORIES OF BBC MONITORS OF OLD

The May issue brought another review of a speaker designed by the BBC decades ago. I'm referring to the Rogers LS5/9 Classic SE. Like many audiophiles I was a lucky owner of a pair of LS3/5As, which in my case cost me nothing. I was friends with *Stereophile* founder Gordon Holt and he was dumping a pair of speakers that the manufacturer didn't want returned. They were big and used KEF drivers, except for an electrostatic tweeter. I had friends who owned an audio store that were interested in them and they offered me the LS3/5As as a straight swap. The best 'buy' I ever made.

I recall the first time I heard LS3/5As. It was in the mid '70s at

DS Audio in Reading, Berks County in Pennsylvania. I knew little about them at the time. They were sitting on top of a pair of IMF TLS80 speakers – large four-way transmission-line designs that I knew fairly well. They weren't playing loudly and the piece didn't have much bass extension. And for a while, until I got closer to the two sets of speakers, the sound was so good I thought I was listening to the IMF speakers. It was certainly an auspicious first experience.

I also recall hearing a pair of Rogers LS3/6 speakers at DS Audio. That one experience was so special it has remained with me over more than four decades. I recall a monitor quality sound with just a very subtle warmth that made me imagine the speakers glowed with a magic aura.

But my best memory was living with a set of Rogers LS5/8 speakers in the early 1980s. It was an early pair with Quad 405 amps modified with a built-in electronic crossover for the two-way LS5/8 and with the slot loading for the 12in polypropylene woofer that was dropped in later production. It's been four decades and I recall basic BBC sound like an LS3/5A but with significantly greater dynamics and bass bandwidth plus a smaller sense of the famous BBC dip.

Ken Kessler's description of the sound of the new Rogers LS5/9 chimes with my distant sonic memory, which isn't surprising since the LS5/9 was designed to be a smaller speaker with the same sound as the LS5/8.

Allen Edelstein, via email

Ken Kessler replies: Mr Edelstein accurately describes the traditional 'BBC Sound', the primary quality of which I posit was mid-band authenticity to serve best the delivery of voice over the airwaves. The Beeb insisted on consistency, to maintain standards which ensured that, for example, all LS3/5As sounded the same regardless of the supplier; trust me that variations between, say, a 15ohm Rogers and a 15ohm Chartwell are subtle, not gross. Thus the various models sound similar save for maximum SPLs/dynamics and bass extension. It's a pity the BBC no longer leads the way in audio engineering.



ABOVE: The Rogers LS5/8 active monitor, with trolley stand, and Quad amp below

A close-up photograph of a white Apple logo on a device. In the foreground, a black cable with a silver connector is visible. The background is dark and out of focus.

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B&O Beomaster 6000 4Ch

With its four-channel amp and on-board SQ decoder, this '70s receiver was the lynchpin in what was arguably the most leading-edge quadrasonic system of its time...

Review: **Tim Jarman** Lab: **Paul Miller**

The era of quadrasonic sound was not the hi-fi industry's finest. Appearing around 1973 but moribund by 1978, quadrasonic was the first big marketing failure by a sector that had so far enjoyed unalloyed success in convincing the public to buy into its latest developments. Confusing advertising, a damaging format war and a lack of consumer demand all played their part in the downfall of a concept which, at its peak, had been hailed as the future.

Format-wise, Sony/CBS led the way with the SQ system, while Sansui promoted its similar (but incompatible) QS method. Meanwhile, Victor (JVC) offered its CD4 technique, which saw four independent channels cut into a conventional-looking LP that was also stereo-compatible.

GANG OF FOUR

The big Japanese brands wasted no time in stacking up enormous four-channel receivers and complex decoders of every type to go with them, while in the USA quadrasonic 8-track tape cartridges made an appearance. In Europe, Philips and Grundig produced stylish quadrasonic music centres but it was Bang & Olufsen

of Denmark who, in 1975, announced arguably the most advanced quadrasonic system of all. And at its heart was the Beomaster 6000 4Channel receiver here.

B&O's quadrasonic suite was expensive, costing 'a little over £1000' when introduced. The complete outfit included a specially adapted version of the firm's famous tangential tracking turntable [*HFN* June '14] and four Beovox P45 Uni-Phase 'panel' loudspeakers, which were designed to be mounted on a wall.

The system was designed to play both Sony/CBS SQ and Victor CD4 records, and also be compatible with a four-channel tape recorder. SQ was a 'matrix' system, meaning that rear channel information of limited separation was encoded as phase differences in the two channels of an otherwise conventional stereo recording. This was then decoded by an upgradeable module that was fitted inside the Beomaster 6000 4Channel receiver.

CD4 was different as it was a 'discrete' system that provided four completely independent channels. It worked by including a high-frequency carrier (45kHz) on the record and used a system similar to FM stereo radio to turn two channels into four. This created all manner of technical challenges, some of which were eased by mounting a special phono stage and the CD4 decoder in



ABOVE: The matching Beogram 6000 turntable included a special cartridge along with a built-in decoder for JVC CD4 quadrasonic records

the matching Beogram 6000 turntable to eliminate HF losses in the connecting leads. The Beomaster 6000 4Channel's DIN turntable input therefore catered for four line-level signals without RIAA equalisation.

PROBLEM SOLVED

The Beomaster 6000 4Channel could also receive FM stereo radio broadcasts. The tuner circuit was similar to that used in the Beomaster 3000 receiver, a model noted for its excellent FM performance. The tuner's output could be routed through the Beomaster's SQ decoder but when, after five years of deliberation, the BBC started quadrasonic broadcasts in 1978, it chose the incompatible 'Matrix H' system.

On paper the 6000 4Channel's power amplifier produced 4x40W [see PM's Lab Report, p127], a substantial figure from such a slim piece of equipment. Despite the space constraints, AC coupling to the loudspeakers was used so four bulky capacitors had to be crammed in, along with a large mains transformer. For this last component, B&O chose a toroidal



LEFT: Look, no knobs! Every major control on the receiver is flush and sleek, electronic switching and motorised attenuators making normal projecting control surfaces unnecessary



type and encountered the same problem of mechanical noise when the mains waveform was not exactly symmetrical as many other designers did. However, a simple circuit of capacitors and diodes cured the problem. This was patented and remained in use in B&O equipment into the 1990s.

Yet for all its intriguing technology, it was the Beomaster 6000 4Channel's striking appearance that won it the greatest praise. The work of designer Jacob Jensen, the receiver finally achieved the goal of having no projecting major controls, everything being sleek and flush. This was achieved by the use of electronic signal routing, meaning that all

BELOW: B&O's 'quick start guide', 1975 style! The receiver was so different to rivals that its operation represented a new 'user experience'

'The system could play both SQ and CD4 records'

the unit's functions could be selected by short-travel push buttons that were cut into the stainless steel fascia.

A practical electronic means of volume and tone control had not yet been developed so the volume, balance (both left to right and front to back), treble and bass controls were all motorised. A single servo motor was used, with electromagnetic clutches to engage the relevant adjustment. A moving orange cursor showed the setting of

each function. These refinements made it possible to add a comprehensive remote control, optional at first and standard thereafter (almost all of them had it in any case). Ultrasonic sound was used to convey the commands, the system used being the same as that employed in the later Beomaster 2400 [HFN Dec '19].

ABOVE: The gentle, refined take on futurism won the unit numerous awards, and a place in the New York Museum of Modern Art (MOMA)

An important ergonomic innovation to appear on the Beomaster 6000 4Channel was the use of what B&O would later call 'electronic covers'. This saw certain functions only visible when relevant and in use. For example, the radio dial could only be seen if the FM free-tuning mode was selected (five pre-set programmes could also be called up). And the tuning meter was only on show if the AFC (Automatic Frequency Control) function was disabled.

IT'S A HOLD UP

Setting up the Beomaster 6000 4Channel is not straightforward as all the connections are located in a small bay underneath it. Accessing them involves holding the heavy unit up at an odd angle and hoping that nothing falls out once it is laid back down →

FUNCTIONS OF THE BEOMASTER 6000.

1. Switches the set ON and OFF.
2. Increases volume in all connected speakers. The balance between the sound from the individual speakers remains unchanged.
3. Reduces volume in all connected speakers. The balance between the sound from the individual speakers remains unchanged.
4. INCREASES TREBLE.
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FUNCTIONS OF THE BEOMASTER 6000 COMMANDER.

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3. Reduces volume in all connected speakers. The balance between the sound from the individual speakers remains unchanged.
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again. A single socket caters for the turntable, although any four-channel source could be connected here as the inputs are at line level. Two tape connections are provided, one for front and one for rear. This is sensible as a stereo machine could be connected to either and used normally if desired.

THE WHEEL DEAL

A further auxiliary socket is provided and this can be used to connect a stereo tape machine (playback and record) or a stereo turntable with a magnetic cartridge, there being a stereo MM phono stage built into the receiver. Selection is by a recessed push-button next to the socket. The slitted stainless steel operating panel works well, but the action of the keys is heavier than one might expect. The flush-mounted tuning wheel is a joy to use though, thanks to its smooth-running flywheel action.

The group of push buttons to the rear of the display panel control how the four amplifier channels are used. With nothing but 'front' and 'rear' pressed, stereo sources reach the front loudspeaker pair only, the rears remaining silent. Pressing 'stereo' routes the front signals to the rear as well, but the gain of the system is halved to keep the overall sound-level constant.

'Mono' does the same thing, but all the input channels are summed and sent to

all the loudspeakers. 'Ambio' generates a Hafler effect (eg, the difference between the left and right signals) in the rear channels from stereo recordings. 'SQ' routes the front stereo inputs through the SQ decoder, and this is used when playing back an SQ LP. Meanwhile, surface noise exaggerated by the action of the Ambio and SQ modes can be suppressed with the 'Hi' filter, which in all but the first units produced works on the rear channels only.

TIM LISTENS

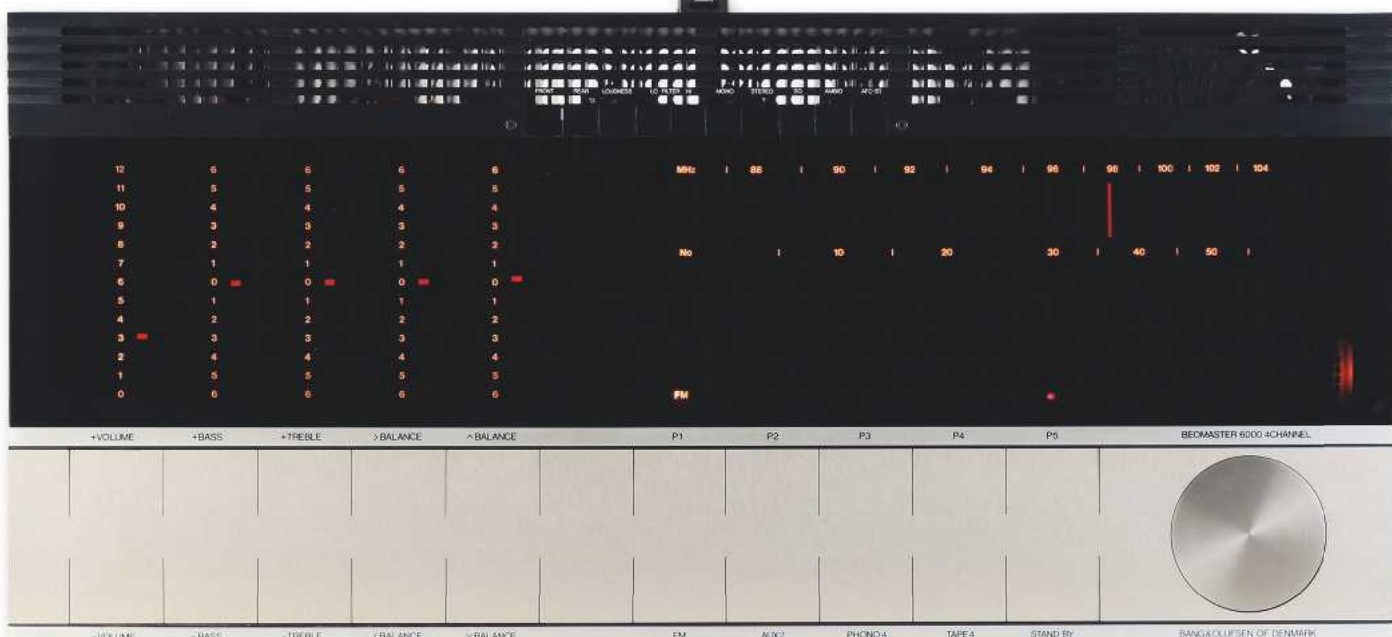
Interesting though it would be to audition this unit with period quadraphonic material there is something of a dearth of this to be found, especially CD4-encoded LPs. B&O did issue a CD4 recording of Mahler's Symphony No 5 as a free gift to 6000 buyers but to my ears it isn't the most exciting production in the world, either technically or artistically. SQ LPs are more common, but to get the measure of the big Beomaster I felt it was fairer to audition it as a stereo amplifier using CD as a source.

ABOVE: B&O dealers presented 6000 system buyers with this two disc box set of Mahler's Symphony No 5 in CD4 quadraphonic

At a basic level the design gets a lot of things right. It sounds muscular and powerful, especially with two loudspeakers to drive. Tonally it is reasonably even too, with a pleasingly extended bottom end. Treble can seem a little curtailed, soft even, but not excessively so by the standards of its peers. The FM tuner too is every bit as good as it needs to be, accepting that it comes from a time before PLL stereo decoders and quartz-locked digital tuning became the norm. It would take a separate unit of the highest calibre to usefully improve on its performance.

Yet, for all its power, the Beomaster 6000 4Channel lacks the dynamics and excitement of the best amplifiers of the period. Compared to even the Beolab 5000 [HFN Dec '13] and Beomaster 4400 [HFN Jun '12] it doesn't have the arresting quality which makes the other two such a

BELOW: The display panel of the Beomaster 6000 4channel showed only those functions that were actually in use. The grille at the back helps to keep the four power amplifiers cool



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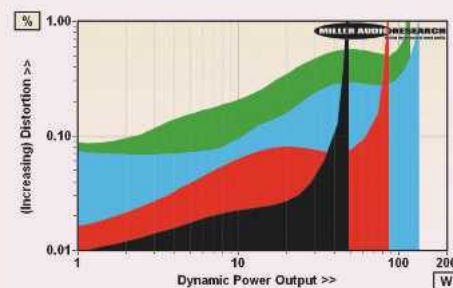
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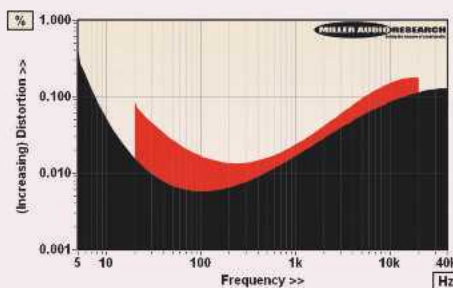
B&O BEOMASTER 6000 4CH (Vintage)

A generous proportion of the Beomaster 6000 4Channel's 16kg weight is given over to its substantial PSU transformer [see pic, left] and this, in turn, helps support an equally generous 4x35W/8ohm and 4x60W/4ohm power output in SQ/quad mode. B&O rated this 670mm-wide behemoth of a receiver at just 4x30W/8ohm and 4x40W/4ohm but we discover in practice that it is considerably more powerful and load tolerant, maintaining a full 2x44W/8ohm and 2x72W/4ohm at <1% THD with sufficient in reserve to support 46W, 85W, 130W and 115W into 8, 4, 2 and 1ohm loads under dynamic conditions [see Graph 1, below]. The Beomaster 6000 4Ch even includes sophisticated over-current protection that lifts and resets a series of output relays in the event of overload – so no crude in-line fuses for this elegant 1970s creation. Distortion is lowest at 2-300Hz (0.006%/1W), increasing gently with frequency (0.017%/1kHz to 0.11%/20kHz) and with level [0.025%/1kHz to 0.17%/20kHz at 10W; Graph 2].

Gain is a sensibly modest +34.6dB ('70s receivers typ. offered 40dB+), noise is impressively low and the A-wtd S/N ratio up with the 'average' amplifiers of today at 85dB (re. 0dBW), though channel separation (just 40dB) and balance (1.1dB re. 0dBW) are somewhat weaker. With all tone controls in their defeat position, the 6000 4Ch's response shows a sweetening presence/treble roll-off of -0.35dB/10kHz, -0.9dB/20kHz to -5.2dB/100kHz. This trend is emphasised into lower impedances (output impedance is 0.5ohm) while the 'LO' filter extends the pre-existing -1.7dB/20Hz bass roll-off to a steep -3dB/58Hz and -26dB/20Hz. The latter is ideal should your big, reflex-loaded woofers of the day be flapping in the wind of a warped LP and too-low arm/MM resonance. **PM**



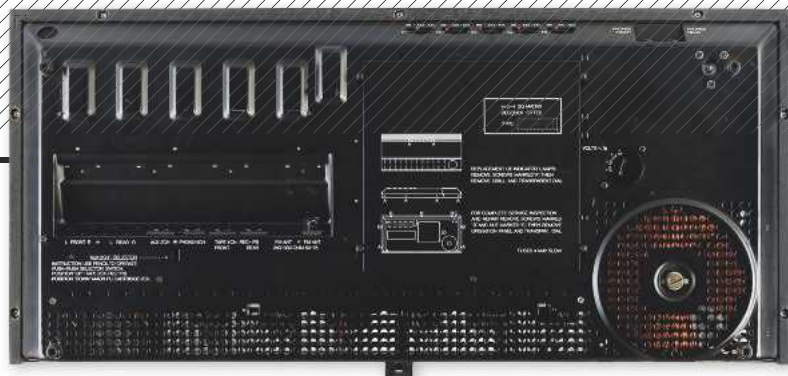
ABOVE: Dynamic power output vs. distortion up to 1% THD into 8ohm (black trace), 4ohm (red), 2ohm (cyan) and 1ohm (green) speaker loads. Max current is 10.7A



ABOVE: Distortion versus frequency at 1W/8ohm (5Hz-40kHz, black) and 10W/8ohm (20Hz-20kHz, red)

HI-FI NEWS SPECIFICATIONS

Power output (<1% THD, 8/4ohm)	44W / 72W (4x35W/4x60W)
Dynamic power (<1% THD, 8/4/2/1ohm)	46W / 85W / 130W / 115W
Output imp. (20Hz-20kHz/60kHz)	0.42-0.56ohm / 0.75ohm
Freq. resp. (20Hz-20kHz/100kHz, 0dBW)	-1.7dB to +0.85dB/-5.2dB
Input sensitivity (for 0dBW/30W)	53mV / 365mV
A-wtd S/N ratio (re. 0dBW/30W)	84.8dB / 99.6dB
Distortion (20Hz-20kHz, 10W/8ohm)	0.013-0.17%
Power consumption (Idle/rated output)	41W / 136W
Dimensions (WHD) / Weight	670x80x320mm / 16kg



ABOVE: The underside shows the location of the socket bay (all DIN) and the large toroidal mains transformer needed to drive four loudspeakers. The upgradeable SQ decoder is fitted behind the hatch in the centre, a label showing which type is fitted

compelling listen. This is not evident with every type of music, however. Chopin's Nocturne No 20 [DG 447 098-2] has a beautifully liquid sound when played through the two front channels of this receiver, each note being exquisitely formed before falling from the loudspeakers. 'Polished' was a word that kept coming to mind, with any rough edges invisibly blended away.

A pleasing impression of space was also noted, albeit upon a soundstage I felt to be a little more constricted than I

know to be possible. It was more up-tempo material that tripped the B&O up, tracks like 'Enjoy The Silence' by Depeche Mode [Violator; Mute CD Stumm 64] were not

rendered with all the energy that I know to be there. This was not a matter of restricted bandwidth or lack of power, more that the presentation had an oddly two-dimensional quality that struggled to really project itself into the room.

Bass too became wayward at high listening levels, a not uncommon problem with some AC-coupled designs. Both these effects were limited in their extent, but I had hoped for better from B&O's costliest model, especially as some of the models that came before it performed so well. I doubt, however,

that any of this will

LEFT: Chunky, optional (ultrasonic) remote control governed input selection, volume, left / right and front / back balance, and five FM radio presets

matter to prospective buyers. This is one of hi-fi's true design classics, a bold and elegant form which instantly made everything else look clumsy and out of date. For that you have to forgive it for not being the most exciting listen in the world.

BUYING SECONDHAND

A common fault is the catastrophic failure of one or more of the power amps. This occurs when the central PCB warps and touches the sides of the steel trough where it is housed.

All the transistors in the affected channels are usually destroyed and replacing them is made awkward by many of the connecting leads being seemingly too

short. This can be avoided by adding a sheet of insulation in the trough between the track side of the PCB and the surrounding metalwork.

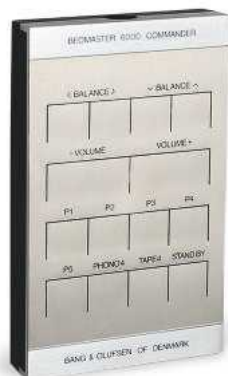
The rubber belts linking the clutches to the four gang potentiometers and displays that regulate the volume and tone functions are another weak point. Make new ones from O-ring cord and bond them into loops in-situ. ☹

HI-FI NEWS VERDICT

Despite its rather relaxed sound the Beomaster 6000 4Channel wound its way into my heart. Ergonomically brilliant and technically rich – if dauntingly complex to repair – it is a superb collector's piece and a product to which the term 'state of the art' truly applied. Not without its frustrations when it comes to set-up and probably not for main system use, this iconic receiver is nonetheless an object of desire.

Sound Quality: 75%

0 - - - - - 100



A very British amplifier

Martin Colloms hears the A&R Cambridge C200/SA200 pre/power duo

Hi-Fi
News
Dec 1982

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These new products from A&R Cambridge have been long in the pipeline. In an unusually brave step for such a small company, it has invested in moulding tooling for the front panels and also the casework of the preamplifier. Its aim was to achieve close tolerances, and considerable effort has been expended in achieving a good fit of parts, particularly for the array of controls on the preamplifier.

While the two products are clearly intended to go together, and indeed, with only a minor degradation in hum, the preamp may be stacked below the power amplifier secured by optional large side panels, they may also be considered as separate entities. Sensibly, their designer has made them self-contained and of more or less universal compatibility.

A&R's deserved reputation comes from its first amplifier, the integrated A60 model, which has enjoyed



consistent support in its modest price and performance category. The 200 series marks the company's entry into the upmarket equipment arena, with a complete system price of around £600 (just under three times higher than that of the A60), the separates retailing individually for £293.25 (preamp – two disc inputs) and £299 (power amp).

SA200 POWER AMPLIFIER

Weighing 10kg and measuring 46.4cm wide, 9.5cm high and 35cm deep, the SA200 is of starkly simple appearance with a dark charcoal grey fascia flanked by light wood side panels. The controls comprise one push-button on/off switch with an adjacent green LED indicator to confirm power on/off. This LED is a two-colour type, a colour change to red signifying overload. If either or both channels overloads or clips, a latching circuit holds the red LED 'on' long enough for the overload to be visually noticeable.

The specification describes a 20dBW (100W) stereo unit, with 4-8ohm speakers provided for, plus an indication that load impedance dips to as low as 2ohm would be tolerated on music programme. The input impedance is 20kohm, a lower value than usual, but not low enough to bother any modern preamplifier that I can think of. CCIR/ARM weighted signal/noise ratio is

ABOVE: The A&R Cambridge SA200 power amp is stacked atop the C200 preamp using optional large side panels

claimed to be better than 100dB referred to 100W, 8ohm, and since the IHF standard relates to 1W this would read better than 80dB IHF.

The power rating is specified for a 20Hz-20kHz bandwidth, with a distortion figure of below 0.08% for 8ohm loads, both channels driven. A supplementary figure suggests that midband distortion is typically –74dB, for 4ohm loading up to a 160W output. The both-channels-driven supplementary power rating for 4ohm is 190W per channel, hinting at large power reserves, a claim fully confirmed on test.

The amp's rear panel carries two deep, finned, cast alloy heatsinks, and speaker connection is via close-mounted 4mm sockets, with screw down terminals. Signal input is via a 5-pin DIN socket whose connections are clearly indicated on an adjacent label, with mains feed a 13A IEC type socket.

Unscrew the lid of the SA200 and a spacious roomy layout inside means all parts may be easily reached. Mains wiring is well shrouded for safety and the interior showed a high standard of construction using fine quality components. In a dominant position lies the massive power supply

toroidal transformer which has a separate secondary winding for each power amplifier. The rectification and smoothing reservoir systems used are entirely independent for left and right channels.

These latter supply components are, in fact, integral with the power amplifier assemblies and for service can be removed as complete modules, less heatsinks. Output transistors are paralleled pairs for each channel, comprising four high current devices – selected

MJ5003s in a quasi-complementary, direct-coupled, push-pull class A/B configuration. A quick-blow fuse, nominally rated at 3.15A is present for loudspeaker protection, and both the fuse and the fuseholder contacts are heavily silver-plated.

In addition, the small but significant injurious non-linearities of the fuse may be largely negated by ensuring that the negative feedback loop is taken from the output terminal, after the fuse rather than, as is usually done, before it. The fuse is thus included within the loop and is subject to the linearising effect of the amplifier's negative feedback. Separate 3.15A quick-blow fuses are also present in each supply line.

TO THE LIMIT

The overload indicator is worth a note. Based in an idea previously used by both B&O and Lentek, a circuit monitors the input and output signals for both amplifiers, checking for errors. Once a deviation is detected, overload has occurred,

no matter how momentary. The indicator is fitted with a delaying hold. Whatever the loading conditions, the amplifiers are allowed to work right to the limit before the indicator illuminates.

Such a feature is useful with the SA200 since it intentionally does

not carry the usual current or current voltage protection limiters which can often degrade sound quality. Within the peak capacity limits of the passive fuses the SA200

should be happy to tackle virtually any loudspeaker load. Conversely, this very feature would make it impractical in pro applications, where a fuse failure during a performance would be disastrous.

SOUND QUALITY

The sonic performance of this design was undeniably impressive. Presenting a high standard on uncomplicated loading (KEF R105.4 and Spendor BC1 loudspeakers were used), it provided a high degree of stereo separation with fine clarity, transparency and depth, the latter being particularly good for a model in this price range.

The bass seemed well extended as well as tight and powerful, demonstrating good 'attack'. The midrange was essentially

neutral with perhaps a mere hint of 'coldness' or lightness, while high frequencies were also very good, with clear sibilants and a pleasant differentiation of the harmonic timbre of treble-based instruments.

In terms of dynamic range it is undoubtedly a 'big' amplifier, easily delivering 100W plus, with little tonal differentiation at full power and a graceful, quick recovery from clipping. However, it really came into its own on more difficult loads.

A pair of the new AR98LS speakers were tried and sounded dismal with the TAN901 power amp (a smaller Sony Esprit, although to do the 901 justice we later found out that it was an 8ohm preferred model). Not only was the sound with the 901 second-rate, there also seemed to be little available power.

Substituting the SA200 brought a transformation. The AR98LS came to life, with power, dynamic range and depth seemingly impossible with the small Esprit. By the time the red overload had come on, the sound levels were shaking the room. Subjectively judged, then, the SA200 is an effortless performer with a wide dynamic range.

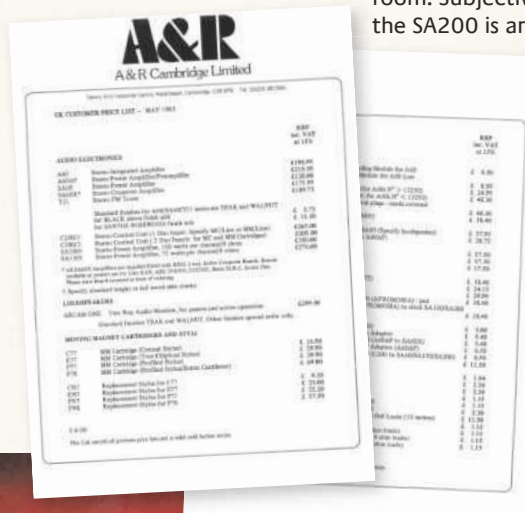
On the debit side, I was mildly worried by a very slight mains hum emanating from the loudspeakers, audible notably with the more sensitive types, while some mechanical transformer hum, especially in the evenings, was also observable. The latter could not

be entirely removed by placing the amplifier in a cupboard.

CONCLUSION

In our lab tests the SA200 amp demonstrated a generous power capacity and exceptional load tolerance, plus wide frequency response and a low incidence of distortion. An equally good result was obtained from the listening tests, and in its price category (£300+ level) this would appear to be one of the best British-designed-and-built power amps to have ➤

BELOW: A&R Cambridge price list from 1983 shows the cost of the C200 preamp with different Disc Input options and (bottom) brochure shot of the amp combo. Both components were designed to be used as a pair or separately with other pre or power amplifiers



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FROM THE VAULT

appeared for some years now – a warm recommendation is in order here. Its nearest performance relative is probably the Hafler DH-200, another fine design.

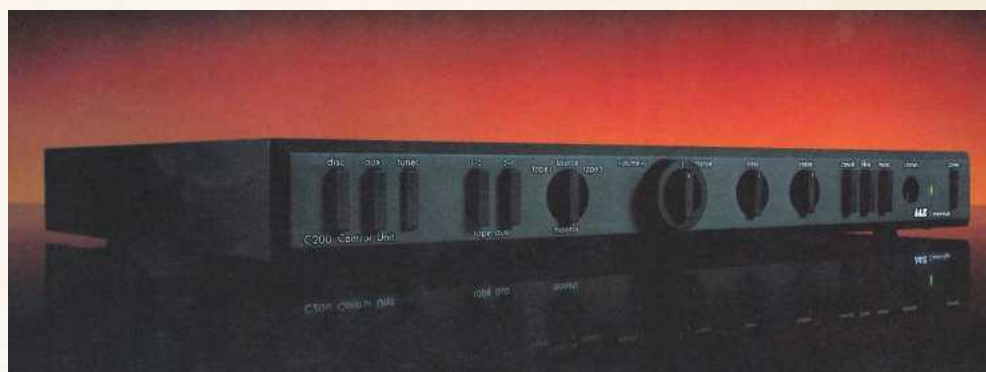
C200 PREAMPLIFIER

Simultaneously released with the SA200, the C200 physically is a low-profile unit which may be tucked beneath the power amplifier when the latter is fitted with the optional larger side panels. Many facilities are provided and A&R has clearly been aware of the need for an optional 'straight line' mode. Consequently, the tone controls here may be bypassed. Interestingly, the designer also realised that many of the subjective criticisms of poor tone control systems concerned their audibility when switched in.

While speculation concerning the change in sound quality due to the accompanying circuitry is sometimes justified, equally often the audible changes may be due to a phase inversion, a change in gain, or a non-flat frequency response at the indicated zero positions, or a combination of any – or all – of these factors. Both by design and by specific calibration on the final test, the C200 tone controls are adjusted so that these effects are avoided. The result is that any change is negligible when the tone control circuitry is engaged.

As supplied, with facilities for moving-coil and moving-magnet cartridges, the C200 costs around £300, with a reduction of £50 or so for deletion of one or other of the two cartridge inputs, their plug-in space then occupied by a passive auxiliary input board. Alternatively, both may be line level, or moving-coil or moving-magnet types.

Before describing the input options the output possibilities need covering. As standard, a passive so-called output board is fitted carrying the multiple tape socketry and the main output. This board may be detached on removal of the moulded exterior casing, and an active crossover board substituted. A&R has notable experience in the electronics for active speaker systems, this gained with various



combinations of the A60 series, and while the SA200 is obviously a passive partner for the C200, in the context of an active system, the sub-amps might logically comprise a C200 with a pair of A60X crossover amplifiers capable of typically 50W programme per output into 8ohm.

With one cartridge output, such a bi-amped system would cost around £600 and possess a 200W total capacity, but using an SA200 the output would be 500W total, setting one back around £900 and representing a very powerful system.

Surveying the C200's front panel, allows a rundown of the facilities. The group of three vertical buttons on the left comprise the selector section – disc/aux and tuner, the aux doubling as a second disc when suitably adapted. The input options possess considerable versatility and will match virtually any known cartridge. Furthermore, the selection offered here will give the owner some opportunity to 'fine tune' his own cartridge sound,

ABOVE: The low profile C200 preamp, or 'Control Unit', offered bypassable tone controls and a choice of modules for line level or MM/MC phono inputs

BELOW: Pages from the original C200 'Owner's Handbook' shows the connections on the unit's rear panel and the location of the alternative (phono socket) version of the output module

'The input options will match virtually any cartridge'



particularly where moving-magnet types are involved.

The next switches comprise Tape Dub, 1 to 2 and 2 to 1, followed by a rotary tape monitor control. Centrally located, the volume and balance controls are concentric and are followed by bass and treble with zero detents but uncalibrated scales. Unmistakable clock settings are used instead, these specified as 1dB increments of lift and cut in five steps. The points of action are specified at the 20Hz and 20kHz frequency extremes and hence offer rather subtle tonal correction.

The remaining buttons are responsible for tone defeat or cancel; filter, a rather high frequency 'rumble' operative at 30Hz with a 12dB/octave slope; 'mono'; and finally power on/off. Nearby is the headphone socket; engagement of a phone jack automatically mutes the connected power amplifier.

ON THE RAILS

The rear panel carries the IEC mains socket, with two complementary IEC outlets. All the socketry is DIN, with the exception of the disc inputs which are duplicated in phono. Tape replay gain may be adjusted to match the system properly via two slotted-head potentiometers, while the disc options are actuated via miniature DIL switches accessible on the underside of the unit. Clear information is printed on the bottom cover of the preamp regarding the settings, connections, plug wiring and matching levels.

Circuit information was not made available by the company, and the following had to be gleaned from an internal inspection. Fed from a small toroidal transformer located in a separate screened box, the circuits would appear to employ two power rails, these individually

FROM THE VAULT

stabilised by IC regulators for each channel. Passive RC filtering is used thereafter in the power feed to each circuit board. Meanwhile, discrete transistors are employed throughout except for the tone control stage and the headphone amplifier.

The latter comprises a separate plug-in board to produce the high quality drive to the headphones, and this is separate from the C200's normal output amplifier. The overall circuit here revolves around the selector switching, these involving equalised input signals, whether from the MM/MC disc cards or from other sources – tuner or tape. These are fed, without buffering, to a 20kohm volume control.

COMPLETE ENTITIES

This is a rather low value since it is responsible for the preamp's total line level input resistance. Normally input impedances are in the region of 100kohm and it is just possible that some older (valve?) equipment will be affected by this. However, most modern sources should happily drive a 20kohm input. The variable level tape sockets, though are lower still at 10kohm. As for the disc boards, these are complete entities. For example, the moving-coil board includes both a head amplifier and full RIAA equalisation.

A buffer amplifier follows the volume control feeding the non-inverting feedback-type tone control, which may easily be bypassed. The mono switch and balance control follow, leading to the output amplifier which incorporates a switchable subsonic filter. A delayed relay mutes the output to 'ground' on switch on, until circuit conditions are stable.

SOUND QUALITY

Used with the SA200 power amp, the combination gave a good account of itself, though we did have some slight misgivings. A separate audition indicated that these were down to the preamp rather than the SA200.

It is difficult to convey our feelings in words. The C200 did possess many positive attributes – it was felt to sound both open and neutral, with a pleasant tonal

'The C200 sounded both open and neutral'



balance and a good presentation of stereo information. Transients seemed fairly clear and precise while the general definition was quite satisfactory over most of the frequency range. Nonetheless, it proved a disappointment overall – perhaps we were just expecting too much, especially in view of the success of the SA200.

There was a feeling of blandness and a mild suppression of detail, while the bass showed a lack of apparent weight with reduced definition. The treble demonstrated a slight 'lipiness' spread across the stereo stage, reducing the precision and apparent depth. Compared with other and better preamplifiers, although

these were admittedly often more costly, the C200 sound seemed to be less 'interesting', and all things considered we felt the subjective performance to be average.

CONCLUSIONS

The C200 undeniably has a lot going for it. The constructional quality was high, the input/output facilities exceptional, and it delivered a fine performance by conventional standards. Subjectively judged, however, it gained a rather lukewarm reception.

Again it set a good standard, but it did not possess that edge which would give it the right to rank with the exalted few, certain of which are not too far removed in price from the C200. It remains well worth trying, but I feel the SA200 deserves a better partner than this. ☺

TOP: Original pages from the December 1982 issue of *HFN* in which Martin Colloms took the A&R Cambridge C200 and SA200 pre/power duo out for a test run. The review formed part of a wider look at 'amps, accuracy and double-blind testing' as flagged on the cover of the issue



Also in HFN this month in 1982

SOME AMPS ARE DIFFERENT

A US report on double-blind testing by David Carlstrom, Army Krueger, and Larry Greenhill.

AMPLIFIERS AND ACCURACY

Armstrong designer Jim Lesurf outlines what he sees as the necessary requirements.

A SYNTHESISED TONE CONTROL

John Bingham describes a versatile add-on circuit for minimalist preamps.

BLUMLEIN VS OMNI MICS

Barry Fox examines some questions raised by US guru Mark Levinson.

A MATTER OF COINCIDENCE

Alan Moseley has a few doubts concerning 'purist' miking.

AMPLIFIERS & CASSETTE DECKS

Alvin Gold takes a subjective look at Exposure amps, and the B&O BeoCord 9000 and Nakamichi ZX-7 cassette decks.

FOUR BUDGET AMPLIFIERS

Gordon King hears the Sansui AU-D22, Rotel RA-820, Marantz PM520DC and NAD 3020.

FIVE DIVERSE CASSETTE DECKS

The Alpine/Alpage AL80, Aurex PC6GR, Nakamichi LX-5, Technics RS-M275X and Sony TC 1010 examined by Denys Killick.

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LAST WORD

OFF THE LEASH!

KEN KESSLER TELLS IT LIKE IT IS...

Ken Kessler reels in a US accessory and puts a stand (or two) under his speakers to good effect

How many of you change at least one component in your system every week? Imagine what life is like for hi-fi scribes who rattle out reviews like an assembly line. I focus on assessing one or two items a month, simply because I learned that initial impressions work for 90% of the sound, but it's that last 10% which really takes the *time* to hear.

CURRENT COMPONENTS

Still, I do treat my system to periodic upgrades, while keeping the core constant for consistency. However I review only with gear that's in current production, budget allowing, so you could duplicate what I've heard. For example, if I reviewed a pair of Falcon Acoustics LS3/5As with a PMC Cor integrated amplifier, that is do-able in a hi-fi shop. If, on the other hand, I used Quad's 33/303s or a Rogers Cadet III, you'd have every right to feel miffed.

But what about my tape fetish and my devotion to Marantz's CD12/DA12, you ask. No sweat: I have current turntables, cartridges, phono stages, and new-ish CD transports. No reviews have been conducted by me without employing a contemporary system.

Of late, though, I have undertaken a few changes, though most of you know I am ambivalent about most *tweaks*. Those outside of the signal path worry me not a bit, so I have no issue with Shakti 'the Stone'



Stabilisers, 'bricks', platforms or record clamps. None of these worsens the sound, so there's no harm done.

STAND AND DELIVER

Three alterations, however, are making me smile repeatedly: two passive, one in the signal path – one affecting the sound not at all. So worthy are they that I feel (in that embarrassing, American, fashion) a 'need to share'. The first is the rediscovery of the fabled IF and Foundation speaker stands, which are dedicated to LS3/5As.

I know that's going to aggravate some of you as both appear to be out of production. Because I use them mainly with LS3/5As, it took reviewing the KEF LS50 Meta on them [*HFN* Jun '21] to drive me to experiment with stands. I'm not suggesting other makes are useless, but there's no doubting these, for LS3/5As, also revealed the brilliance of the KEFs and inspired sessions with Tannoy's Autograph Mini and JBL's wee 4312M.

Hence, I was forcibly reminded of the role of stands. This meant trials with Blu-Tack, spikes and the like, and one thing soon became obvious: the area in my set-up most audibly affected by these stands was the extreme bottom end. In fact I was gobsmacked by the bass extracted from all four of the speakers mentioned above, not least the Tannoys. Reminder, then: tighten your spikes, and replenish the Blu-Tack!

'I was forcibly reminded of the role of stands'

Next, I tried fresh cables for the first time in years. I am truly content with the Transparent and YTER cables which handle wiring duties, but a chat with the inimitable Max Townshend led to my trying his 'Fractal' F1 interconnects and speaker cables. These are merely 'expensive', rather than 'so offensive that the manufacturer should be put in stocks in the town square'.

Max explained his 'fractal' tech to me, which piqued my curiosity. I'm still 'learning' them, but the differences were so marked – I'm not yet saying 'better', 'worse' or merely 'different' – that I am now forced to try them in different parts of the replay chain. So far, the all-F1 array covers the turntable-to-phonostage-to-integrated-amp-to-speakers path. Now, explain to me why the system appears to have a quieter background?

Lastly, I've fallen in love with something which plays no part at all in the sound, but which accomplishes two things: they handle my precious tapes with greater care and they look so cool that I want to post my system on Instagram. Thus they 1) address my nerves about tape safety; and 2) add a touch of luxury. The redoubtable Dave Denyer, of Reel-to-Reel Rambler fame and a fellow tape fetishist, sent me a couple of RX Reels (see rxreels.com) and blow me down if they didn't deliver smoother spooling.

SPOOL PROOF

All of my 10in reels are branded metal (eg, TDK) but spooling can be inconsistent. And that's certainly a worry when you consider that 15ips, ½-track tapes can be worth hundreds of pounds. The RX Reels are made from carbon fibre, offered in six colours, are flat as can be and – forgive me, those of you clad in hair shirts – so snazzy that you'll sit there ogling your system.

That may seem childish, but tell me you've never switched off the lights in your listening room to see the glow of valves or your electronics' front-panel illumination? RX Reels are expensive, but cost less than a new pre-recorded tape. They are nicer to use because the grippy hub surface makes threading the tape easier. And you only need one, to act as a take-up spool (unless you run multiple machines at the same time, for some reason). Now, roll on a 7in version. ☺

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