

hi-fi news

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& Record Review

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TITAN OF TUBES



Audio Research REF80S – the ‘entry point’ Reference amp

Soundsmith SG-230 pick-up takes the strain

Rogers LS5/9 Classic BBC monitor revived and refreshed



FEATURE

Top 20 demo LPs
Our pick of the choicest vinyl!

Cambridge Audio NQ/M
Flagship network streamer/
monoblock amps have the Edge

Merason DAC1
Purists go back to the future



• **OPINION** 12 pages of letters & commentary • **VINYL RELEASE** Neil Young's... *Gold Rush* on 180g LP
• **CLASSICAL COMPANION** Bach's *St John Passion* • **STUDIO TOURS** Visiting Sun Studios, Memphis
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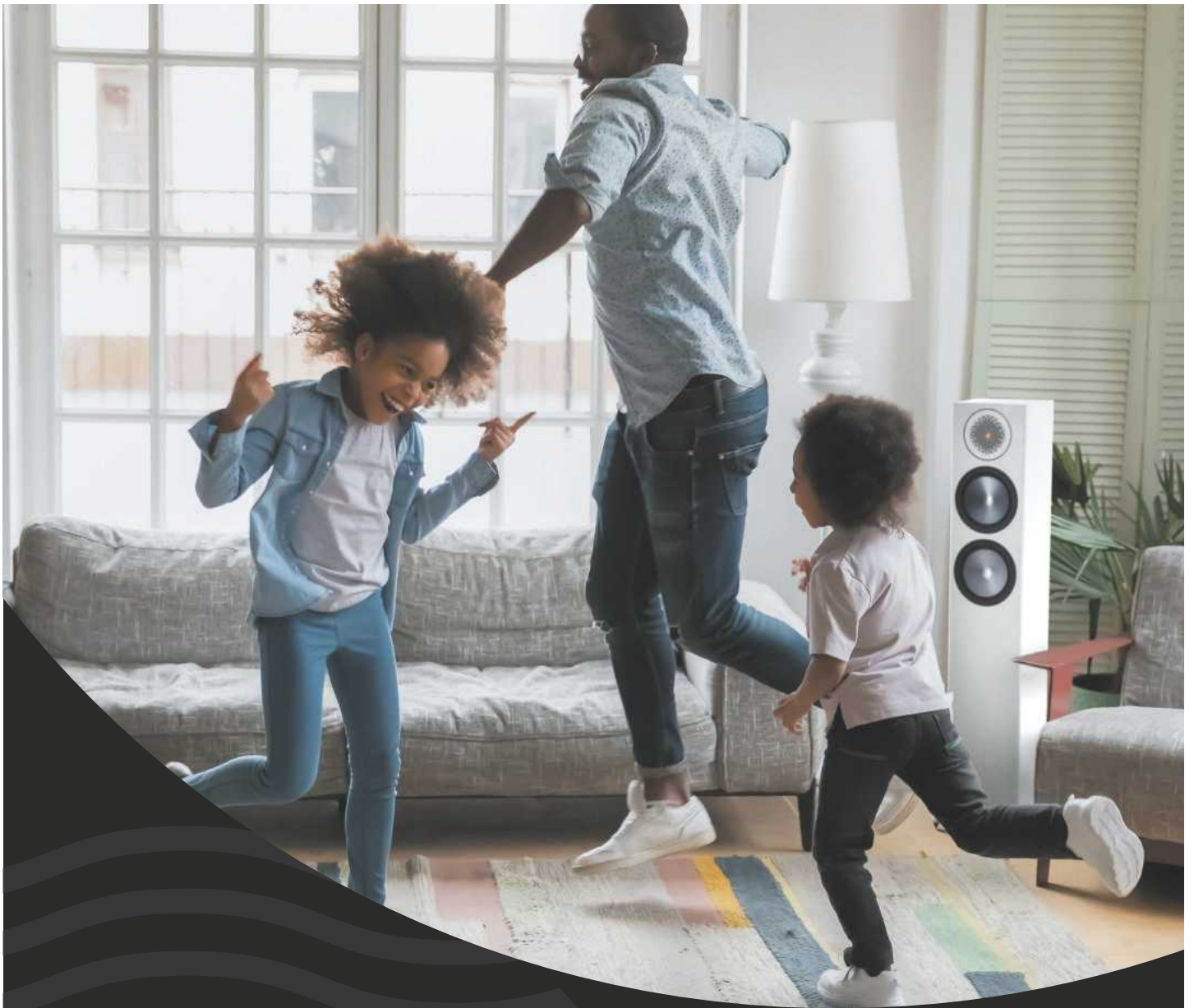


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"There's something deeply alluring about this streaming CD player/integrated amp combination, in both sound and function. In turn, this makes it easier to appreciate the music without being distracted by the technology. Now there's a thought for the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

I35 Prisma + CD35 Prisma: HiFi News Highly Commended



"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



"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



"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



"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



"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 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 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."

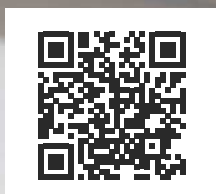
R15: Hi-Fi Choice – Recommended, Five Stars



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

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RIGHT: A new light on vinyl replay? Read our in-depth review of SoundSmith's latest Strain Gauge pick-up. See p64



ABOVE: Top-flight performance within a disarmingly elegant chassis – Cambridge Audio's NQ streamer/preamp teams up with the new Edge M monoblocks on p48



MUSIC: Black Sabbath's eponymous debut, our Vinyl Icon, marked a new age in rock (p82), while Steve Sutherland celebrates genius as Neil Young's *After The Gold Rush* is re-released on 180g LP

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

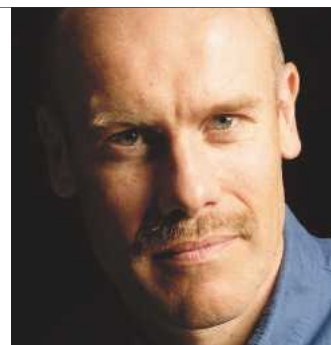


Passion is the fuel, and source of inspiration, that drives much of the enthusiasm and innovation within our very specialised quarter of the broad 'audio' community. We audiophiles are a fastidious lot – we love our music and we love the kit that makes our music come alive at home. It's a recipe we've all come to appreciate even more over the last year, for obvious reasons.

I also know it has brought many more mainstream listeners into our world, those that once consumed music as a bite-sized snack now giving time for, and being rewarded by, the immersive experience of 'real hi-fi's' five-course meal. Welcome, if you've just discovered us!

Passion is also what has kept us going this past year. Thinking about all our readers – many potentially isolated at home – has been motivation enough to ensure you have your regular fill of investigative features, musical celebrations and in-depth reviews, the latter still produced with in-house photography and world-class lab tests. Every month, on time.

The fact that we – *Hi-Fi News* – are specialists in our field, and not part of some amorphous publishing empire, has allowed us to be nimble, responsive and to adapt to what, a year ago, were rapidly changing times.



We're not the only ones. The hi-fi industry and the enthusiasts that support it are a distinct and very wonderful group of people. Distinct, I might add, from the more generalised universe of TVs, mobile phones and other 'fast moving' widgets. We appreciate the convenience and versatility

'We audiophiles are a fastidious lot. We love our music and our kit'

of our smartphones, but few of us are going to get *passionate* about the devices. Perhaps that's just the audiophile in me talking!

Either way, appreciating just who we are, and where we sit in the otherwise faceless panoply of 'consumer tech' is important. And it's something our cover star, Audio Research, understands better than most. Following a buyout, the brand is back where it belongs – a focused, 'family' business, owned and run by passionate, knowledgeable enthusiasts [see p40].

PAUL MILLER GROUP EDITOR

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



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An avid collector of audio treasures, and life-long hi-fi addict, DP lends his ears and experience from analogue to digital



KEN KESSLER
is a long-serving contributor, luxury goods writer and champion for the renaissance in valves and 'vintage hi-fi'



MARK CRAVEN
Editor of our sister title *Home Cinema Choice*, Mark's passion for music extends from stereo to multichannel and Dolby Atmos



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



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



STEVE SUTHERLAND
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

Goldmund SACD

STATEMENT EIDOS CD/SACD PLAYER

Swiss marque Goldmund is bringing its design and engineering nous to the silver disc with the £175,000 Eidos Reference SACD player. Weighing 110kg and available in either 'classic' aluminium or a new matt black finish, the Eidos is intended to meet the demand for ultra high-quality disc players, particularly in Asian markets. Goldmund says it explored all available disc mechanisms before alighting on a device from D&M, which was then integrated into its mechanical grounding/damping systems. Proprietary PSU regulation, DAC and analogue circuitry create a 'perfect audio source for demanding music lovers'. Outputs are on balanced XLRs and unbalanced RCAs, with digital on coax, optical and AES/EBU. A USB input supports 384kHz PCM and DSD512.

Goldmund, Geneva, Switzerland, 0330 111 5653; www.goldmund.com; www.sonatahifi.com



Founder's keepers

PARADIGM ANNOUNCES NEW SPEAKER SERIES

The first loudspeaker range to emerge from Paradigm since it was bought out by original founder Scott Bagby in 2019, the Founder series debuts new driver and 'Cascade' cabinet designs across six models. Prices range from £2400 for the 40B standmount to £8600 for the 120H floorstander

[pictured], an active/passive hybrid with powered bass drivers and ARC Genesis room correction. The speakers are available in walnut and black walnut wood veneer, piano black and midnight cherry, and feature faceted enclosures in place of 'traditional square cabinet geometry'. New drivers include AL-MAC (aluminium/magnesium/ceramic) tweeters, AL-MAG mid units and CARBON-X woofers (140mm-200mm depending on model).

Paradigm Electronics Inc., Canada, 01279 647 039; www.pulsecinemas.com; www.paradigm.com



HI-FI NEWS' NUGGETS

NEW MOON

Streaming DAC products from the Canadian MOON stable that include the latest MIND2 module (MOON intelligent Network Device) are also benefiting from its enhanced feature set. This includes the latest £2950 MOON 280D that not only decodes native DSD64, DSD128 and DSD256 and PCM up to 384kHz/32-bit but also supports Spotify Connect, AirPlay 2, Tidal Masters, Deezer Hi-Fi, Highresaudio and Qobuz Sublime+ music services. Its seven digital inputs include AES/EBU, coax (x2), optical (x2), USB, Bluetooth, and an eighth through the MIND 2 streaming module (via Wi-Fi or wired Ethernet). www.simaudio.com

VERTERE FEET

Designed to support low/medium mass components (2.5kg per foot), Vertere's Iso-paws have a Sorbothane dome located into a hard acetal cup and felt base. Prices are £95 for three or £115 for four. Improved immunity from external vibrations is claimed. www.vertereacoustics.com

Magnesium cans

FOCAL'S NEW CLEAR MG FLAGSHIP 'PHONES

Focal has updated the M-shaped dome driver of its Clear headphone with a new magnesium alloy. Priced at £1400, the Clear Mg is described as 'chic and elegant', its 40mm units housed in full-sized open-back earcups with microfibre pads and honeycomb grilles and supported by a solid aluminium frame in a 'chestnut' finish. The moderate 55ohm impedance should suit the output of portable players as well as the more robust audiophile headphone preamps used by stay-at-home enthusiasts. Should you be on the move, a carry case plus 1.2m mini-jack and 3m four-pin XLR cables, are also supplied.

Focal-JMLab, France, 0845 660 2680; www.focal.com





All aboard the Caruso R

T+A'S ALL-IN-ONE DIGITAL HUB AND AMP – JUST ADD SPEAKERS

While sharing the same core functionality as T+A's earlier Caruso all-in-one system, the new Caruso R jettisons the latter's integrated speakers to appeal to customers seeking a more traditional stereo system (T+A has also launched two aesthetically matched speaker options, the S 10 floorstander and R 10 standmount).

Featuring a 290mm-wide aluminium chassis dominated by a 180mm hi-res display, the

£3000 Caruso R 'multi-source receiver' combines a CD player, streaming client, Bluetooth, plus analogue and digital inputs (coax, optical, USB and LAN). Amplification is rated at 50W/8ohm while the onboard DSP includes 'sound management'. Control is via remote or T+A's latest Caruso Navigator app. **T+A elektroakustik GmbH & Co. KG, Germany, 01225 704669; www.taelektroakustik.de**

Italy's 'art in music'

ITALIAN SYNTHESIS BRAND NOW AVAILABLE VIA HENLEY AUDIO

Good news for tube lovers – Henley Audio has inked a partnership with Italian valve specialist Synthesis. Initially, the UK/Ireland-based distributor will carry the company's Roma series of integrated Class A and Class AB amplifiers – topped by the 2x25W push-pull Roma 96DC+ with built-in DSD256-compatible DAC and phono

stage [£2650, pictured] – plus the entry-level Soprano LE and flagship Action A50 Taurus models. The catalogue also includes the Roma 69DC DAC, 79DC MM/MC phono stage and 14DC+ CD player/DAC, with more arrivals promised for later in the year.

'Synthesis Art in Music', to give its full name, was founded in 1992 by Luigi Lorenzon, and operates a 'Made in Italy' production process that offers customers a choice of metal and lacquered wood finishes for much of its range. **Synthesis SRL, Italy, 01235 511 166; www.synthesis.co.it**



Kudos Cardea refresh

STANDMOUNT AND FLOORSTANDER WITH CROSSOVER UPDATE

Kudos Audio has confirmed the launch and availability of improved versions of its Cardea C10 standmount and C20 floorstanding speakers. Priced £3500 and £4000, respectively, the loudspeakers – which Kudos founder/designer Derek Gilligan says follow the KISS (Keep It Simple, Stupid) principle – now feature an updated first order (LF)/second order (HF) crossover, featuring Mundorf air-cored inductors.

These components are mounted and hardwired to an HDF panel, the same material that forms the speakers' veneered cabinets, which are available in White, Walnut, Natural Oak and Black Oak.

The Cardea series was the County Durham company's first launch [see *HFN* Nov '09], both models remaining two-way bass-reflex designs. The latest versions use a custom 29mm Crescendo K2 dome tweeter from driver specialist SEAS, and a bespoke 180mm coated paper bass/mid unit in a die-cast chassis. Internal wiring is via Kudos' own KS-1 cabling. 'Active' versions of the Cardea series – the Super 10A and



Super 20A – allow the internal

crossover to be bypassed for use with solutions from Linn, Devialet and Naim Audio. **Kudos Audio, County Durham, 0845 458 6698; www.kudosaudio.com**

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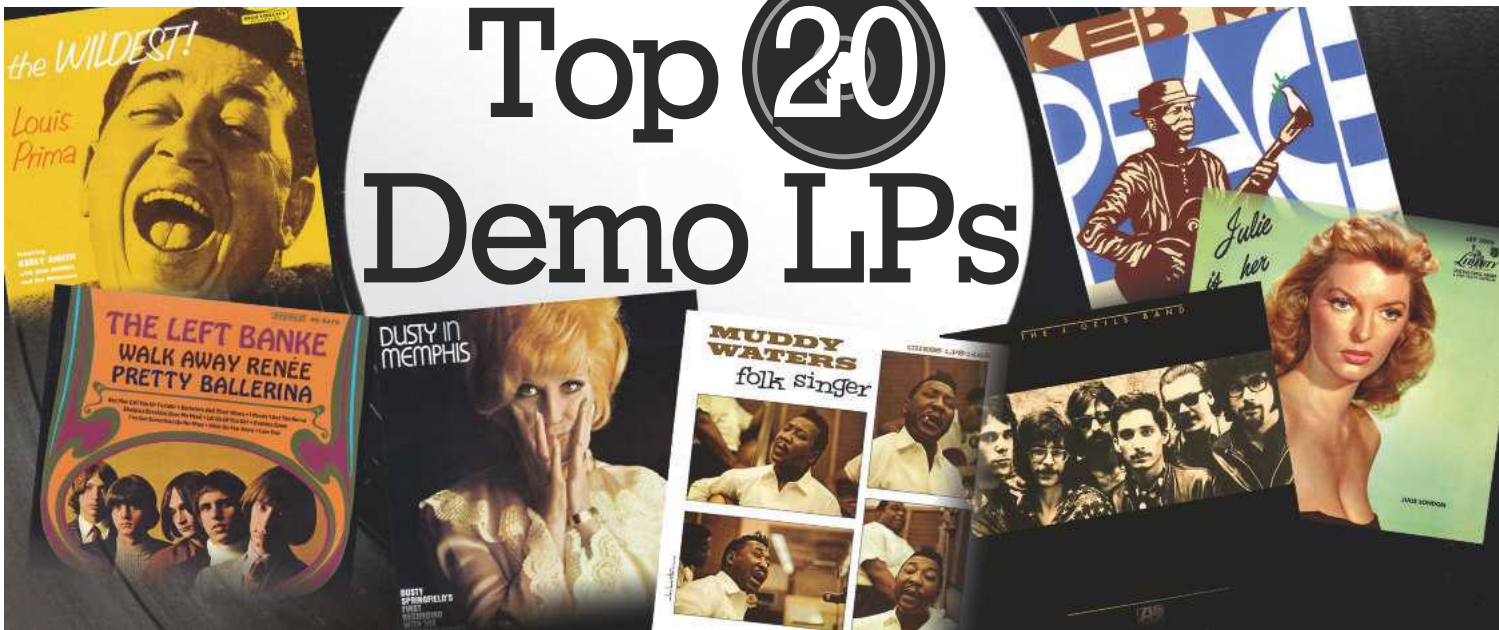
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IF YOU DON'T WANT TO MISS AN ISSUE...



Top 20 Demo LPs



Looking for albums that will challenge your system's strengths but which are musically rewarding too? This month **Ken Kessler** recommends a score of must-own titles on vinyl

As with my list of Top 20 CDs [HFN Feb '21], choosing 20 LPs from my collection of around 12,000 is tough. But there is one rule I stick to, no matter what: I do *not* listen to LPs for their sonic worth alone. With this selection, each is a release I cherish, and though my logic for choosing these 20 may be shaky, here goes...

It's a no-brainer for reviewers to be wedded to sonic spectacles, such as the legendary *Sheffield Drum Record*, the nearly-unplayable Telarc *1812* or an audiophile pressing of *Dark Side Of The Moon*. Then again, I know hi-fi reviewers who are not in the business because they like music but because they like toys.

For me, the music is all that matters, the hardware being simply a means to an end. In other words, I care more about the wine than the glass in which it's served. Hence, if a sound system or the individual component being assessed derives more from an LP, CD, tape or stream, thus getting me closer to the performance, then that's the little victory that keeps me going after 53 years as a hi-fi user.

PRESSING CONCERNS

Crucially, I do *not* want to be responsible for causing audiophile psychosis by suggesting you must have, say, the 1972 Ukrainian release of such-and-such, or only pressings from the first stamper, or the

one cut by a particular mastering legend. Conversely, I advise you not to listen to, oh, pirated pressings. I don't think I've ever heard anything worse than the 'unofficial', for which read rip-off, *Abbey Road*.

So, while I have included a lone Mobile Fidelity One-Step release in this list and a number of issues from specialist reissue labels, they do not preclude your being content with standard or reissued pressings of these (and other) titles. Indeed, there are reviewers out there who perpetually seek to find fault with audiophile pressings, seemingly as a matter of principle. Instead, just look at these LPs as 20 joyous musical expressions... which also happen to reveal a lot about your system.

THE ALLMAN BROTHERS

Live At Fillmore East

Mobile Fidelity MFSL 2-434

One of the most reissued LPs of the rock era, this earns its place not just because of the terrific 'concert atmosphere', but because the performance is stellar. It was this album's swampy blues interpreted by Gregg Allman's tortured vocals and brother Duane's sublime guitar playing that turned the band into a supergroup. I chose MoFi's version because it is particularly good, but then I have six different pressings and none will disappoint. This is a



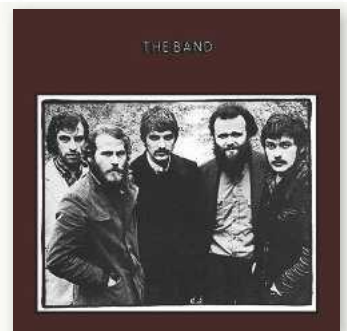
gem for listening to transient attacks and fluidity – opposing sonic traits – while the vocals will send chills down your spine. 'Whipping Post' stands alone in the annals of rock.

THE BAND

The Band

Capitol 00602577842832

It was this or its predecessor, *Music For Big Pink*, but The Band's second LP gets me every time. This is the foundation of 'roots' music, combining folk, country, early rock and other genres into music so pure that it's irresistible. I rely on it for the percussion and bass, along with the sublimely recorded vocals. The standout track for me is 'Up On Cripple Creek', its opening bars telling me just what to expect down below.



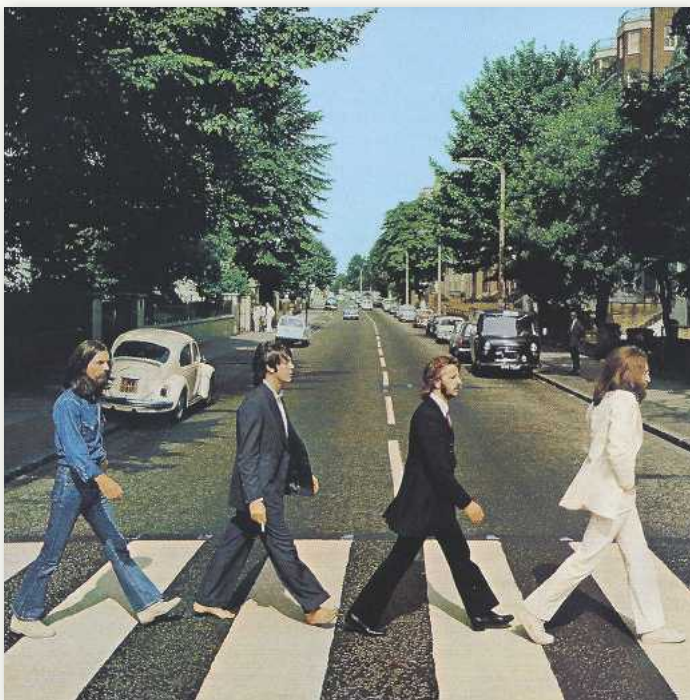
Apologies for citing the 50th anniversary box set instead of just a regular release, but the extras make it worthwhile – and you get to compare the LP with the CD and Blu-ray.

THE BEATLES

Abbey Road

Apple Records PCS 7088

Do not fret over which edition you have, whether UK, US, Japanese, etc – this album remains an exemplar of The Beatles' studio artistry and the sounds are so varied that you can go from the cavernous bass of 'I Want You (She's So Heavy)' to the delicacy of 'Something' to the sound effects of 'Octopus' Garden', for a smorgasbord of tones and transients. I gather this was their only effort on a solid-state desk, or with solid-state recording equipment, but that's almost irrelevant for this album still yields surprises. Spring for the recent box set if you crave extras, or go purist with an original pressing, or the MoFi – they're all brilliant.



CARLY SIMON

No Secrets

Speakers Corner ELEKTRA75049

This recent 180g pressing was chosen not just for the fact that it's readily available, but because the sound is exceptional. Use it for content more than sonic supremacy, its worth found in Simon's distinctive voice, familiar to most Baby Boomers. The material here is luscious, the musicians are A-listers, and the fun is listening to 'You're So Vain' for Mick Jagger. And those who value emotional content will revel in 'The Carter Family'.



BOB DYLAN

Nashville Skyline

Mobile Fidelity MFSL 2-424

Online site Discogs lists dozens of pressings of this, but I am being self-indulgent by opting for Mobile Fidelity's 2x45rpm version of what is my favourite Dylan LP. It isn't typical, but it did more for country rock than anything ever released by Gram Parsons, and it has Johnny Cash guesting, while the musicians are country music legends. Is this the best version? I don't know for certain, but I have never heard the pedal steel sound more fluid. Just go straight to 'Lay Lady Lay'.



BUDDY HOLLY

Buddy Holly

Coral CRL-57210

There are numerous editions of this 1958 release, including sublime audiophile pressings (especially from the Analogue Productions label), while the 13-year-old Ken Kessler used his pocket money for the 1964 Coral reissue. Astounding mono sound, the inimitable hiccupping vocals, the slapping of the cardboard box on 'Everyday', the ferocious guitars of 'Peggy Sue' – one of the most important LPs in the history of rock. Don't take my word for it. Ask Paul McCartney.



BUFFALO SPRINGFIELD

What's That Sound

Rhino R1 566970

Containing the group's three LPs, two in mono and stereo, the third stereo-only, this 2018 set comprises my favourite body of work, so prejudice is at play here. Musically, we are talking 1960s Neil Young, Stephen Stills and Richie Furay, so this band gave us Poco, Manassas, CSNY and ultimately, if indirectly, The Eagles. The music is definitive 'West Coast' rock with hints of folk, bluegrass, country, jazz and more, and the hi-fi value is in the low-level details.



ORIGINAL SOUNDTRACK

Casino Royale

Colgems COSO-5005

Arguably the most praised LP of all-time by audiophiles, first recognised by that visionary hi-fi authority, the late Harry Pearson of *The Absolute Sound*, it gives you Burt Bacharach compositions, Herb Alpert's trumpet and Dusty Springfield singing 'The Look Of Love'. The hype is justified, as the sound matches the excellence of the music and the peerless performances. Originals cost a fortune, and the version from Classic Records is escalating, so take what you can get. ↻



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THE DAVE CLARK FIVE
All The Hits

BMG BMGCAT408DLP

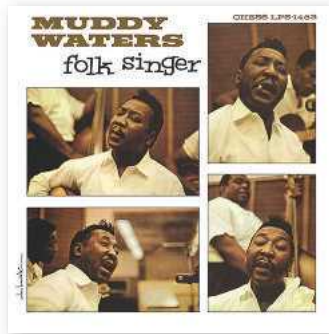
An amazing selection of tracks across two LPs, it represents the periodic reissuing of the band's catalogue when the mood strikes Mr Clark. Every hit is present, thus enabling yet another reassessment of a band that deserves to be mentioned alongside the rest of the often championed 'British Invasion' stalwarts. Even if you don't care for the rest, the sheer power of 'Glad All Over', played as loud as you can stomach, has as much revelatory power as any audiophile track I can name.



DUSTY SPRINGFIELD
Dusty In Memphis

Atlantic SD-8214

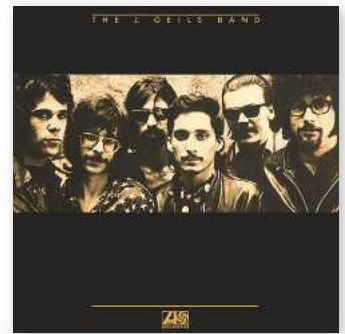
Again, an LP reissued so many times it's impossible to keep track, some with bonus tracks and with at least two different sleeves I know of, I posit the value of this album transcends the version. For 'Son Of A Preacher Man' alone, arguably the finest-ever showcase for the UK's finest-ever female vocalist, you *need* this. Dusty's singing had a breathiness encountered rarely – see Julie London, below right – which shows you all you need to know about authenticity and realism.



MUDDY WATERS
Folk Singer

Chess LPS-1483/Analogue Productions
AAPB 1483-45

Why, you well might ask, has Muddy Waters' LPs – of all of Muddy Waters' LPs – been re-released so many times, and by more than one audiophile label? Because this 'unplugged' recording, with the blues legend backed by a young Buddy Guy on guitar, Willie Dixon on upright bass and Clifton James on drums, is one of the most natural-sounding LPs you'll ever hear. Spring for Analogue Productions' 2x45rpm LPs set.



J. GEILS BAND
J. Geils Band

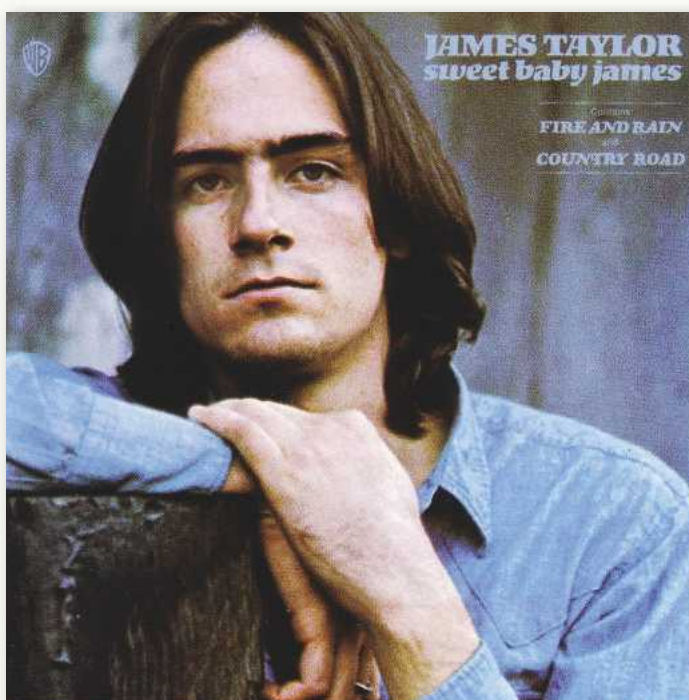
Atlantic SD 8275

OK, so I saw this group more times than I can count because I grew up in New England, hence valid charges of bias, but I consider this R&B gem to be a debut to equal The Doors' first. You'll be dazzled by the harp-playing of Magic Dick, especially the break in 'Pack Fair And Square', and the guitar playing sizzles. High energy, snarling vocals, mellifluous keyboards, vicious transients – if you can't find the original, Speakers Corner's recent reissue is also recommended.

JAMES TAYLOR
Sweet Baby James

Warner Bros WS1843

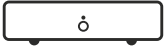
With the recent box set, remastered LP and enough other editions to create confusion, rest assured that this much-loved milestone of a singer-songwriter album sounds as good as you hope it would, whichever the pressing. Taylor's warm voice to the fore on his second release, it corrected all that was wrong with his debut on Apple. Everything about it is so 'right' that its status on many lists as an all-time great and 3m sales are easy to comprehend. It's exceptional material – 'Fire And Rain' breaking more hearts than one could fathom – and the cream of country-rock musicians make this repeatedly listenable. A perfect LP.



JULIE LONDON
Julie Is Her Name

Analogue Production APP-3006-45

Sheer bliss: Julie's debut LP from 1955, reissued here on 2x45rpm LPs in all of its original mono glory. I proffered her second album in my list of CDs, but chose this for the vinyl selection, not least because it's so sparse – voice, guitar, bass – such that it can serve as a welcome calming moment during the otherwise tense atmosphere of a critical listening session. If you haven't heard 'Cry Me A River' via vinyl, you are in for a revelation. ☺



into — the — groove

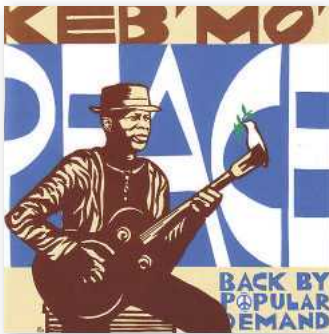
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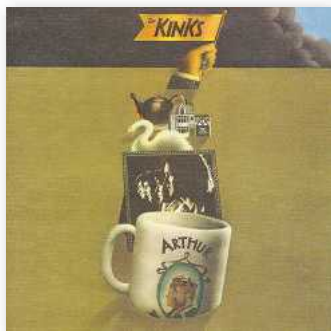
KEB' MO'
Peace... Back By Popular Demand

Pure Pleasure/Epic/Okeh PPAN 92687
Originally issued on CD, this collection of peace-themed covers interpreted by a blues revivalist became a personal fave. I was blown away when Pure Pleasure released it on LP, overjoyed that it sounded even better than I had anticipated. There's much to explore here, including a chilling 'The Times They Are A-Changin'', superbly-recorded piano, exquisite guitar playing and, throughout, Keb' Mo's rich, textured vocals. It's oozing with atmosphere.

THE LEFT BANKE
Walk Away Renée/Pretty Ballerina

Smash/Sundazed SC6276

If you need a poster band for 'cult status', this New York outfit, solely responsible for creating the genre of harpsichord-driven 'baroque rock', is it. 'Walk Away Renée' is better known for The Four Tops' cover version, but here is the fragile, melodic original, along with the haunting 'Pretty Ballerina' and other treasures. Here we have a prime case of the music being far more important than the sound quality, which, though hardly of the calibre of *Casino Royale* [p24] or *Folk Singer* [p27], is as much a test of your love for music as it is of your audiophilic tendency. Mint originals are rare, so opt for the Sundazed reissue.



THE KINKS
Arthur Or The Decline And Fall Of The British Empire

Pye NSPL18317
Another album recently remastered and reissued to mark its anniversary, *Arthur* is enough to undermine any argument that 'concept LPs' have to suck. Ray Davies' ode to a vanishing post-WWII Britain mixed hard rock, vaudeville, hints of George Formby and music hall, and other elements to yield a cornucopia of odd instruments, all delivered with verve and wry humour. The song 'Victoria' should be England's national anthem.



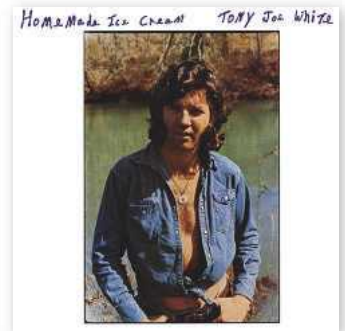
LOUIS PRIMA
The Wildest!

Capitol T755
More mono, from 1956, but sounding like it was recorded last night. Add it up: ace musicians, the sublime Keely Smith on vocals, behind pop-jazz's liveliest front man in Capitol's studios (which I feel yielded better recordings than any other). 'Just A Gigolo', 'Jump, Jive an' Wail', 'Buona Sera' – those three alone are enough to impart musical immortality. When you hear Sam Butera's sax playing, you will understand the notion of 'performers in your room'.



SIMON AND GARFUNKEL
Bridge Over Troubled Water

Mobile Fidelity One-Step UD1S 2-004
Apologies for this for two reasons: the first is it's out of print, and the second is there are those who swear only the early standard pressings are worth hearing as the master tapes disappeared, yadayadayada. All I know is that people swooned when we played this at our show in 2018. The music is faultless, the sound magnificent, and if you can't find this version, they're all good. And you can quote me. 'Cecilia', 'The Boxer', 'Baby Driver' – staggering.



TONY JOE WHITE
Homemade Ice Cream

Analogue Productions APP-2708-45
White was a swampy, folksy, down-home singer-songwriter better known for delivering hit material to other artists, including Brook Benton and Dusty Springfield. This 2x45rpm version of his 1973 LP exposes sonic delights not that obvious in the regular edition. I realise this contradicts my premise that these 20 are great even in standard form, but Analogue Productions squeezed out more than I'd heard before, and White's molasses vocals never sounded more visceral. ☺

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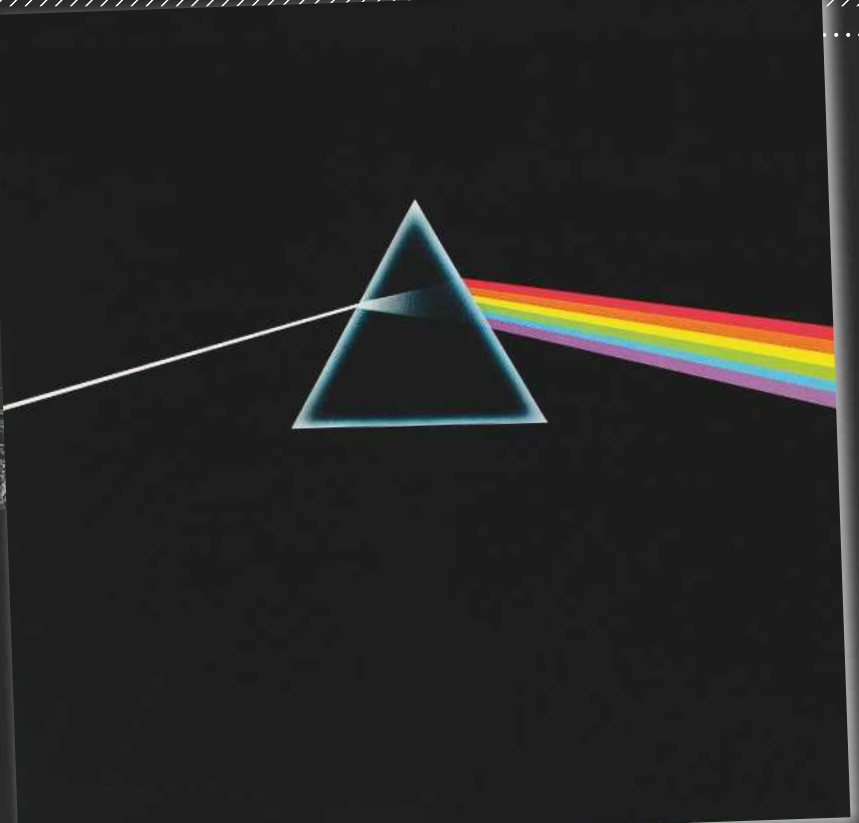
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INVESTIGATION



Under the covers...

Johnny Black on the creation of the iconic artwork for Pink Floyd's *Dark Side Of The Moon*



BELOW: Storm Thorgerson, who in 1968 founded the graphic art group Hipgnosis with Aubrey Powell, pictured in July 2010



A piece of art that can today be found in 45m homes around the world was kick-started by a simple, none-too-detailed instruction to 'do something clean, elegant and graphic'. The instruction came from Pink Floyd keyboardist Rick Wright, and was given to Storm Thorgerson and Aubrey Powell, the founders of Hipgnosis, a London-based art and design group whose first sleeve design had been for the Floyd's 1968 album *A Saucerful Of Secrets*.

Hipgnosis had earned their spurs creating innovative covers for The Pretty Things, Free and several

others, but this particular 1973 design would rocket them to the position of probably the most admired and in-demand independent rock imagineers in the creative world.

The Dark Side Of The Moon was the Floyd's eighth album, and they'd started work on it in May 1972. Effectively, it was

a suite of songs built around the concept of aspects of life that drive people to insanity, and was widely perceived as the band's homage to their original leader, Syd Barrett, who had fallen foul of his abuse of psychedelic drugs and had to leave the band as a result.

BARKING MAD

Thorgerson Told *Mojo* in March of 1998 that 'I'd had conversations with the band about what they wanted on the sleeve. [Floyd co-founder Roger Waters] explained the intellectual thrust of the music, the theme of madness – the madness of rock 'n' roll and madness in general'. Nevertheless, it was Wright's blunt instruction that provided the real impetus. 'He basically said, "Let's have no f***ing pictures this time. I'm bored with pictures". I was quite taken aback because he was so definite about it.'

Hipgnosis had long since established the idea that Floyd album covers would not feature the traditional images of handsome young men, but *Dark Side* offered

them an opportunity to move even further away from record company dictates and expectations. Being employed directly by the band, rather than by the label, also conferred on them a freedom rarely enjoyed by other sleeve designers.

They presented several possible sleeves to the group. 'We did six or seven complex roughs of all sorts of different things that were eminently suitable', remembers Thorgerson.

Pressed for more details, however, he rarely recalls any of these alternatives, except one which featured the Marvel Comics character The Silver Surfer. 'We were excited

and looking forward to showing these different ideas to the band.'

LIGHT FANTASTIC

From the start, though, their design showing a prism with a ray of light being refracted through it was the clear favourite. 'They took all of about three minutes', Thorgerson has recalled. 'They just looked at each other, said, "That's the one. Right, we're going back to work". Then they went back to the studio.'

'One idea for the LP sleeve featured The Silver Surfer'



The origin of the image had come from Thorgeron remembering a monochrome illustration in a book of photographs showing the process of light refraction through a glass prism. (Intriguingly, Hipgnosis had previously suggested such an image to Charisma Records when it was planning on launching a new label, Clearlight. Fortunately for Pink Floyd, the label never happened.)

Thorgeron's memory was made real by graphic designer George Hardie, a Hipgnosis collaborator, who has revealed, 'I drew a line artwork and indicated colours using percentages of magenta, cyan,

yellow and black from a printer's chart... The lines act as the edges of each colour and the printer fills in the colours.'

It is undeniably Hardie's image that first comes to mind when *Dark Side Of The Moon* is mentioned among music buffs, but that was far from where the process of creating this classic sleeve ended.

HEART OF DARKNESS

Given that the sleeve was to be a gatefold, Roger Waters suggested that Hardie's image should extend across the gatefold and that the inside sleeve should include an

TOP: Images of Pink Floyd seated and backstage taken by Hipgnosis and original inserts and sleeve of the first UK pressing of the album [SHVL804] with Harvest labels bearing a solid blue prism. Later pressings bore a hollow prism

illustration depicting the blip of a heartbeat as it would appear on a hospital monitor. Thorgeron has confirmed that, 'It was Roger's idea to turn the light into a heartbeat inside the sleeve – the sound that starts the music'. By this simple device, the music became integrated with the cover art.

Thorgeron explained in the book *The Work Of Hipgnosis – Walk Away Renee* (Paper Tiger, 1978), how the process proceeded. 'The artwork was mainly mechanical – the spectrum was drawn up in black line and the colours indicated. The prism was airbrushed, black on white, and the separator reversed it out of a printer's black background.'

COLOUR PURPLE

One perhaps unexpected creative decision was that, 'We purposely omitted one colour, purple [indigo], because we thought it would not "read" clearly. The continuation of the light onto the back of the sleeve involves an impossible diminishing of the spectrum when it enters the second [inverted] prism so as to form a thin white beam again, ☺



LEFT: Photo of the band from the gatefold sleeve of their 1971 album *Meddle* (l-r) Roger Waters (bass, vocals), Nick Mason (drums), Dave Gilmour (guitar and vocals), Richard Wright (keys, vocals)

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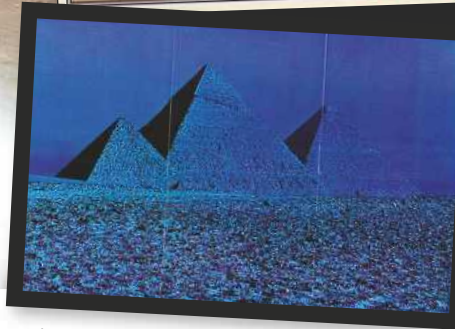
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HIPGNOSIS HISTORY

Cambridge natives Storm Thorgerson and Aubrey 'Po' Powell knew members of Pink Floyd while at school, and found themselves thrust into the world of rock music when the band asked them to design a cover for their 1968 album *A Saucerful Of Secrets* [see p37]. Thorgerson and Powell worked at EMI, but felt so restricted by company rules that they soon formed their own company, Hipgnosis.

Working with Pink Floyd opened the doors to creating innovative covers for countless other artists, mainly in the prog rock and metal genres, including Led Zeppelin, Yes, Wings and Genesis. Once described as a 'modern day Dali, Magritte and Man Ray all wrapped into one', Thorgerson has described the surreal aspects of his works by saying, 'I like to mess with reality... to bend reality. Some of my works beg the question of whether it is real or not?'

Hipgnosis moved into video production as Greenback Films, and in the early '90s Thorgerson founded Storm Studios, an aggregation of art-oriented freelancers. He suffered a stroke which partially paralysed him in 2003, and was subsequently diagnosed with cancer, leading to his death in 2013, aged 69.

His partner, Powell, continues to direct films as well as album artwork, for artists including Paul McCartney and the Floyd's David Gilmour. The latest manifestation of the Hipgnosis brand is the Hipgnosis Song Fund, a music publishing business founded by one of Thorgerson's former associates, rock manager Mick Mercuriadis.

which then enters the first prism on the front sleeve.' Thus, if the sleeves were opened out and viewed side by side, they formed a single continuous image, no doubt to the delight of many thousands of fans. Unusually too, for that era, neither the band's name nor the title of the album appeared on the cover.

PYRAMID SCHEME

Hipgnosis also created the inserts which fans drooled over after opening the album. It is indicative not just of how much moolah was sloshing around in record company budgets in those days, but also of how much clout the Floyd could exert on their label EMI that, to secure a photo of the Pyramids at Giza in Egypt for the inserts, Thorgerson, his girlfriend and baby son, and Powell were all flown there to get the shot.

However, after arriving, a bout of food poisoning laid low everybody except Thorgerson, so he ended up totally alone in the starlit desert in the middle of the night, pointing his camera lens at one of the seven wonders of the ancient world.

'I hired a taxi at 2am to take me out to the pyramids', Thorgerson revealed. 'So there I am, thinking I'll be fine, and I put the camera on the tripod to do a long time exposure. It's a wonderful, clear night, and the moon is fantastic.'

But the shoot did not go entirely smoothly. 'At like 4am these figures come walking across – soldiers, with guns. I thought, "This is it. Young photographer dies a strange death in a foreign land". I was actually

really scared. Of course, all my fears were unfounded. They kindly pointed out that where I stood was a firing range, and it wasn't very cool for me to be there. If I was

there first thing in the morning, I might get a bullet up my butt.'

DIAMOND GIZA

Delighted to be alive, Thorgerson got his shot, a beautiful infrared image which succeeded in making the pyramids appear even more mysterious and mystical than they already were. The Giza image was just one of two posters included as inserts with *Dark Side*. The other ↻

'He was alone in the desert in the middle of the night'

TOP LEFT: EMI promo shot of the band in the desert taken in the 1970s – Gilmour, Mason, Waters, Wright

ABOVE: The two stickers on a pyramid theme – the yellow version signifying day, the blue one, night – and the poster showing Thorgerson's night shot of the pyramids at Giza

RIGHT: Hipgnosis co-founder Aubrey Powell pictured in 2014. His career began in 1965 when he took a job as an assistant scenic designer, creating sets for TV series such as *Z-Cars* and *Dr Finlay's Casebook*



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ABOVE: Pink Floyd pose for a promo shot in the early '70s (top) and the outer sleeve showing the two prisms

presented the band in concert, overlaid with scattered letters that formed the words 'Pink Floyd'.

As if all of this wasn't enough, the original album also came with two stickers, both illustrations of the pyramid theme, one representing day and the other night.

Asked for his perspective on the sleeve, the Floyd's guitarist Dave Gilmour said in 1988 that, 'When Hipgnosis came in with the prism thing, we pretty well all agreed

instantly that it fitted perfectly. And, in fact, the amount of times that people have tried to copy the idea, and tried to do something similar, has proved that most people think of it as a very, very powerful image'.

PACKAGE DEAL

Gilmour has also commented on the album as a whole, stating, '*Dark Side Of The Moon* is the next, sort of, stage on from [*Meddle*] where we actually really got it right. We got the record right and we got the cover right and the whole package.

'We didn't think that it would do that well, but, um, we definitely knew that it would do considerably better than anything we'd done before.'

Or, for that matter, since. It's worth reflecting on the fact that while the band has earned millions in royalties from *Dark Side*, Thorgerson and his partner Powell, being freelancers, were paid £600 each for their efforts. ☹

LEFT: Cover for the band's LP *Meddle* represents an ear under water. Unlike Gilmour, Aubrey Powell hated it...



COVER STORIES

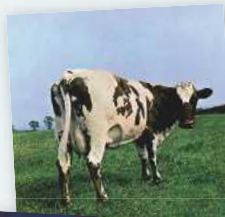
While Pink Floyd have been associated with Hipgnosis for the designs of all their albums since 1968, their debut LP *The Piper At The Gates Of Dawn* (1967) was fronted with an image typical of the period – band portrait intended to simulate an LSD trip (top). Society snapper Vic Singh recalls, 'I had a prism lens that George Harrison had given me a few weeks earlier which I had never used. Stuck over the camera lens it multiplied and fused the image together, creating a psyche effect straight on the colour film, so I decided to use it'.

Although reportedly very happy with the *Piper* cover, by the time of 1968's *A Saucerful Of Secrets*, Floyd had decided that another band portrait would not be acceptable and were determined to explore more adventurous psychedelic imagery (above).

With this in mind, they approached their old school friends Storm Thorgerson and Aubrey Powell of the recently formed Hipgnosis design group and asked for something suitable. The pair delivered a dreamlike collage intended to represent three 'altered states of consciousness' – religion, drugs and Floyd music. Subtly interwoven into the artwork was a panel from a 1967 Dr Strange comic (*Strange Tales Vol 1 No 158*) and, at EMI's insistence, a tiny photo of the band was included. This was only the second time a group signed to EMI (The Beatles being the first) was permitted to hire outside designers for an album cover.

The Hipgnosis-Floyd partnership continued through 14 more albums – too many to detail here – so I'll focus on a couple of the most memorable. The Holstein-Friesian cow on the cover of 1970's *Atom Heart Mother* remains one of the most startling images in rock album art history (below). 'I wanted to design a non-cover', stated Thorgerson later, 'something that was not like other covers, particularly not like other rock or psychedelic covers'. He certainly achieved his aim and, while EMI hated it, the album became the band's first UK No.1.

Later, the cover of the group's 1977 album *Animals* depicted a 12m helium-filled balloon pig 'flying' over Battersea Power Station (bottom). When it accidentally broke free from its moorings, it floated over Heathrow causing flight cancellations before it was recovered from a field in Kent. Always controversial and imaginative, Hipgnosis were never less than entertaining, and frequently quite brilliant.



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Audio Research Reference 80S

Since last year's management buyout, Audio Research has been very busy reimagining its ranges of the future – the Reference 80S (REF80S) is just the first step on the road
 Review & Lab: **Paul Miller**

If life is a journey, rather than a destination, then some brands, Audio Research included, have rather more air miles under their corporate belts than others. From a boutique audiophile business to a period swept up in the fast lane of venture capital [see boxout, p41], Audio Research has now returned to its roots. It's a gloriously niche brand that understands 'what it does' and is now, once again, driven and engineered by a team that is passionate about serving the diehards of the audiophile community.

What Audio Research 'does', in the main, is make very fine tube amplifiers, and while the brand was busily circumnavigating the globe, its amplifiers have been on a journey – an evolution – of their own. So while the REF80S featured here may well be a new and, viewed via the colourful prism of high-end hi-fi, 'affordable' step into the realm of ARC's Reference series, it's not some fresh experiment on us audiophile guinea pigs. This is fine wine, not home brew...

IT'S IN THE DNA

In practice, the genetics of this latest 70W-rated stereo power amp can be traced back through a few generations of Audio Research thinking. The industrial design, dominated by those etched-onto-acrylic 'GhostMeters' is a masterwork in its own right, while the frontal aesthetic and footprint of the REF80S is clearly modelled on the bigger REF160M and REF160S [HFN Aug '18 & Feb '20]. These big beasts of the tube amp jungle also feature 6H30 double-triodes as phase-splitters/drivers and bulbous KT150 output tubes, albeit twice as many as we find in the REF80S. They also offer switchable Ultralinear (UL) and Triode tube configurations, a popular novelty carried over into the REF80S.

Other production engineering updates are enjoyed by the REF80S, including the

RIGHT: Cover removed reveals the 6H30 driver triodes and pairs of KT150 output tubes per channel. Auto-biasing will also accommodate lower output 6550, KT88, and KT120 tubes, should you wish...

four-layer PCBs debuted in the REF160M/S. However, I'm tempted to suggest that many of the core circuit features that actually inform the *sound* of the REF80S owe more to the earlier 6H30/KT120-equipped VT80 [HFN Oct '17]. This was not only the first ARC amp to utilise an auto-bias regime but its custom-built output transformer is the blueprint for the lump of iron and copper weighing down the rear of the REF80S.

Incidentally, ARC's transformers have been made in North America for some 40 years – a third-party relationship that gives it decisive control over the sound and consistency of its tube amplifiers. Another tradition, despite the modern quad-layer boards, is ARC's avoidance of any flow soldering in its Minnesota production facility. Everything is

hand-assembled, hand-wired and hand-soldered. Since the buyout, an increasing amount of assembly has been brought back in-house, or kept very local, including the laser-etching of the meters and chassis painting. Even some staff who had left in recent years have returned – important

in ARC's ambition to offer service for every tube product it has ever made.

STEP ON THE LADDER

The REF80S also marks a renewed emphasis on providing more accessible avenues into the ARC

product family. We reported recently [HFN Feb '21] on Audio Research's new, and even more affordable, 50th Anniversary I-series that'll kick off with the I-50 integrated and be joined by the P-50 pre and A-50 power amp

'The "Forging" chimes were spectacularly vivid here'





by the end of 2021. This marks a return to the, in my view, sensible strategy that gave us the SP17 preamp, VS60 power amp and VSi60 integrated some 7-8 years ago.

But back to now, and the REF80S's ghost in the machine. I've commented before on the accuracy, or otherwise, of ARC's metering. The old-school meters fitted to the REF75 [*HFN* Nov '12] were reliable, the large-format meters on the GS150 [*HFN* Jan '15] and the embryonic 'GhostMeter', unveiled on the REF160M,

proving of decorative value only. Perhaps ARC's technicians read my Lab Reports because the subsequent REF160S's meters were better calibrated, as are the ethereal apparitions that grace the REF80S's visage.

Very low and very high power outputs tend to under-read here, so a 0.75W/8ohm output appears as 0.075W on the REF80S's 'Pentode' scale while 75W/8ohm, just prior to clipping, registers at the tick midway between 7.5-75W. However, a mid-power 7.5W/8ohm – not an unlikely output in

ABOVE: Under the statement 'GhostMeters' are four buttons catering for power on, meter illumination, tube monitoring and Ultralinear/Triode modes, the LED changing green to blue

common usage – finds the needle flickering near enough bang-on the mark.

MUSIC ON TAP

There are certainly no 'bangs' when you fire-up the REF80S, its output muted for a couple of minutes as the PSU and KT150s cycle up and back down again to stabilise the tubes' temperature and biasing. Connection to the rear 16, 8 and 4ohm speaker taps is not necessarily so straightforward – in Triode mode you'll achieve the best results with 4ohm nominal speakers connected to the 4ohm tap (circa 40W), but the same is not true in UL mode. Here the KT150's screen grids are connected to an additional transformer winding – the 'feedback' squeezing down tube distortion – this configuration causing the REF80S to deliver more power into tougher 4ohm loads from its 8ohm output (~80W) than via its 4ohm tap (~45W).

I reported the same 'feature' in our VT80 review and here, as there, I heard my 'reference' B&W 800 D3s [*HFN* Oct '16] singing most confidently via the REF80S's 8ohm terminals. I'd dearly love to have experienced the REF80S with the high impedance/high sensitivity DeVore Fidelity O/96s [*HFN* Apr '21] as these would be one of the very few speakers to make good use of ARC's unusual (these days) 16ohm option. Sadly, the Audio Research REF80S and DeVore O/96s passed in and out of my listening room like ships in the night... ↻

FULL CIRCLE

Bill Johnson, Audio Research Corporation's founder, built and sold tube products under the Electronic Industries banner through the 1960s before he consolidated the ARC brandname in 1970. Thirty-eight years later, aged 81, Bill sold his company to Fine Sounds who, in 2008, already owned the Italian Sonus faber brand. It was a good match and Bill remained as Chairman Emeritus until he passed away in 2011. Fine Sounds, under the auspices of Mauro Grange, grew with the purchase of Sumiko in 2010, Wadia in 2011, and McIntosh in 2012 from D&M Holdings. In 2014 the entire group was sold by Quadrivio (the venture group behind Fine Sounds) to LBO France, another investment company.

Renamed The McIntosh Group in 2016, and with ARC still firmly ensconced, Mauro left at the end of the year, leaving McIntosh's Charlie Randall in charge before Jeff Poggi – previously at Harman Automotive and the HK Luxury Audio Group – was hired as co-CEO in 2017. Charlie looked after McIntosh and Jeff took control over Sonus faber, ARC and Sumiko (also distributing Pro-Ject in the US). With Audio Research keen to focus on its core expertise, and with little chance this brand could 'grow' into the home theatre, custom install or automotive sectors, it was eventually allowed to fly solo once again.

A very amicable buyout was agreed in Sept 2020 with Trent Suggs, ARC's ex-sales manager, now President and owner. The McIntosh Group continues with all its previous brands. Now, while visitors to international hi-fi shows are unlikely to have bumped into the corporate owners, many of us will have spun a disc or two with ARC stalwart Dave Gordon – including at our own Hi-Fi Show *Live* at Ascot. Dave Gordon joined the company in 1989, from Magnepan, circling back after a short detour to Thiel from 1992-96. Dave is now Audio Research's MD.

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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AUDIO RESEARCH REF80S



ABOVE: Small toggles switch between single-ended (RCA) and balanced (XLR) inputs, fan speed and auto-shut off (signal sensing). Tube hours are indicated beside a bladed IEC mains inlet, while 4mm speaker binding posts offer 16ohm, 8ohm and 4ohm taps

Nevertheless the REF80S commands sufficient presence, and down-to-earth 'grunt', to marshal tremendous sonic forces – necessary in realising the likes of Wagner's *Ring Cycle* [Duisburger Phil/Jonathan Darlington; Acousence ACO21309, 192kHz/24-bit]. This it does with not a little substance and style, the panoramic richness of the 105 players – including guests! – revealed across a gloriously wide and deep soundscape.

The instruments, from violins to oboes to tympani and harps are all sharply drawn but their union is a richly coloured tapestry, not a contrasty black-and-white sketch. The chimes and other percussion that mark the Nibelungs' 'Forging' sounded spectacularly vivid here, the hollow metallic ringing bringing a very realistic sense of height to this orchestral drama. If you fancy being swept away by music of such scale, then the REF80S makes for a very secure lifeboat.

It does intimacy too. Chip Taylor and Carrie Rodriguez's 'Sweet Tequila Blues' [*Let's Leave This Town*; Train Wreck Records TW019] is about as undemanding but sensitively-played a C&W set as will caress your ears, Chip's world-weary lament juxtaposed by the punchier quality of his more youthful fiddler and vocalist companion. With the REF80S in tow you are not so much invited as compelled to drum your fingers and tap your feet as you are wrapped in the close, but never cloying, acoustic of this very honest, stripped-back recording.

READY TO ROCK

But can the REF80S rock? You bet! I could feel the raw electricity generated by Lifeson's opening riff to the 96kHz remix of Rush's one-time chart hit 'The Spirit Of Radio'

[*Permanent Waves 40th Anniversary*; Mercury Records]. Peart's drums, and the backing sequencer, possessed all the impact and energy I'd expect to hear from the big Constellation amps [HFN Oct '19] that ordinarily put the hammer down on my 800 D3s. Like these monoblocks, the REF80S has genuine 'slam', delivering bass with richness, texture and speed – there's none of the laziness or overhang you might hear from a more 'traditional' tube amp.

TUBES OR TRANSISTORS?

Time passes, to be sure, but the security and 'positivity' of the REF80S's presentation reminded me of listening to the fabulously eccentric KR Audio Kronzilla DX [HFN Sep '15] with late-lamented colleague and contributor John Bamford. KR's custom T-1610 direct-heated double-triodes are an entirely different kettle of filaments, but the REF80S shares with them a solidity of sound, a definition and precision that's as close to 'solid-state' as any tube amp would care to attempt. This is 'tube sound' curated for 21st century listening. ☺

HI-FI NEWS VERDICT

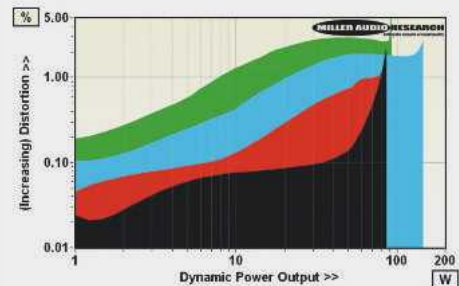
If Audio Research's first act of freedom was to embrace the 'everyday' audiophile then the forthcoming I-series looks to be just the ticket, just as this REF80S is surely the most accessible and compelling gateway to its top-tier Reference range yet offered. It's hardly beer-budget stuff but the fiscal strain will likely prove secondary to the emotional wrench if you hear this amp in full flight but then must walk away.

Sound Quality: 89%

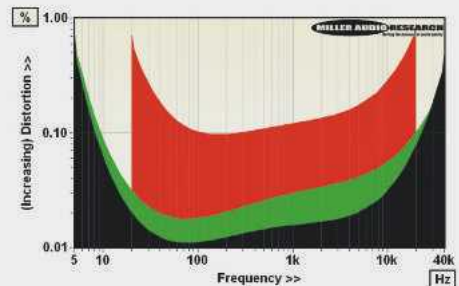


Where does the REF80S sit in the ARC performance landscape? Far *quieter* than the similarly-specified 75W GSi75 [HFN Jan '16] which featured the same complement of 6H30 double-triode drivers and KT150 output tubes – the latter was an integrated amp offering +33dB gain with a 76.8dB A-wtd S/N ratio (re. 0dBW) while the REF80S provides +24.7dB and a spectacularly wide 98.0dB S/N. In this respect it's up with the 6H30/KT120-equipped VT80 [HFN Oct '17] and REF75 [HFN Nov '12] before it, these offering the same +24.8dB gain (balanced input), wide 97.8dB S/N noise and >80dB stereo separation (20Hz-20kHz). All three amplifiers share the same (or very similar) output transformer with its usefully low 1.0-1.3ohm impedance, so the amp/speaker response is less influenced by loading.

Into 'flat' 8 and 4ohm loads the REF80S mirrors the REF75, VT80 and beefier KT150-equipped REF160S [HFN Feb '20] with an extended -0.3dB/20kHz and -4.0dB/100kHz response via 8 and 4ohm taps into 8/4ohm loads, respectively. There's a greater high-treble roll-off in Triode mode of -0.5dB/20kHz to -9.6dB/100kHz into 8ohm. Distortion, too, follows the trends we've seen in these earlier ARC amps at 0.017-0.095%/1W increasing to 0.095-0.88%/10W (UL mode, 20Hz-20kHz), and fractionally lower at 0.011-0.08%/1W in Triode mode [Graph 2, below]. Distortion increases gently with output, and at low bass frequencies through transformer core saturation. Power output also follows a predictable pattern – the REF80S achieving 2x80W into 8/4ohm loads (2x38W in Triode), increasing slightly to 85W into 8/4ohm and 140W/2ohm under dynamic conditions [Graph 1, below], the 9.6A current limit realised at 92W/1ohm. PM



ABOVE: Dynamic power output versus distortion into 8ohm (black trace), 4ohm (red), 2ohm (blue) and 1ohm (green) speaker loads. Max. current is 9.6A



ABOVE: Distortion vs. frequency (20Hz-20kHz, 10W, red; 5Hz-40kHz, 1W Ultralinear, green; Triode, black)

HI-FI NEWS SPECIFICATIONS

Power output (<1% THD, 8/4ohm)	79W (38W) / 80W (38W)
Dynamic power (<2% THD, 8/4/2/1ohm)	85W / 85W / 140W / 92W
Output imp. (20Hz-20kHz/60kHz)	1.04-1.30ohm / 2.06ohm
Freq. response (20Hz-20kHz/100kHz)	+0.0dB to -0.3dB/-4.0dB
Input sensitivity (for 0dBW/70W)	165mV / 1395mV (balanced)
A-wtd S/N ratio (re. 0dBW/70W)	98.0dB / 116.5dB
Distortion (20Hz-20kHz, 10W/8ohm)	0.095-0.88%
Power consumption (Idle/Rated o/p)	211W / 400W
Dimensions (WHD) / Weight	470x260x470mm / 28kg

Rogers LS5/9 Classic SE

One time staple of BBC monitoring, and with feet in both professional and consumer camps, this large standmount has been resurrected and refreshed by a master of the art
 Review: **Ken Kessler** Lab: **Paul Miller**

One cannot but think of the notion that 'Once is chance, twice is coincidence, third time is a pattern'. Following the revived 1970s JBLs and Rogers' return to LS3/5A manufacture [*HFN* Jul '19], the arrival of a dead-accurate, reborn BBC LS5/9 as part of Rogers' 'Classic' range is further proof that a trend is under way. All those Instagram images of systems made up of 50-year-old components tell us the past is back with a vengeance.

With a difference: now you can recreate 'golden age' sound with new kit rather than used, free of the risks of running aged hardware. Allowing for inflation and other concerns, though, the new LS5/9 will set you back considerably more than a decommissioned, ex-BBC pair. Beaten-up LS5/9s exist online for £1000, minters for £2000. Peace-of-mind, in the form of these factory-fresh LS5/9s, costs £4899 for a pair in walnut, olive and Amazaque finishes; add £50 for rosewood.

PANZER POWER

Reviewed and pictured here, however, is the deluxe 'SE' version finished in the Amazaque veneer (an African hardwood, and it is gorgeous). What you get with the SE, at £5499 in the basic finishes and £5599 for rosewood or RAL colours, are gold badges and a Panzerholz front baffle [a resin/hardwood composite also used in the Clearaudio Ovation turntable *HFN* Feb '13]. According to designer Andy Whittle, 'although that sounds a lot, this stuff costs a fortune and is a nightmare to manufacture... but you get the most marvellous open, natural bass'. The £1599 stands are made entirely from the same material (£1499 for the LS3/5A version) and feel as hard as metal.

As with Falcon Acoustics' search for utter faithfulness to the originals [*HFN* Dec '18], and JBL reviving its waffle grilles for the L100 [*HFN* May '19], Rogers specified Tygan, that heavy woven fabric which is

tuned to the speaker. (If you don't believe that the grille is an integral part of the design, try them without. Or see PM's Lab Report, p47.) The Rogers badge is gilt and the rear speaker sockets are the same 4mm silver-plated orifices found on the revived LS3/5A, also with a gold rear label.

SURROUND SOUND

Panzerholz aside, the rest of the UK-made cabinet is the standard BBC design of thin-wall 9mm birch ply with damping sheets. Andy explained that Rogers is 'adhering strictly to the original BBC design brief, so the latest version is as

close as possible to the original specification. The 34mm Audax HD34 tweeter is still made in France, modified by us in the UK. The

crossover is assembled in the UK to the same BBC specification. We're using high-power, iron-dust-cored inductors with high quality capacitors'.

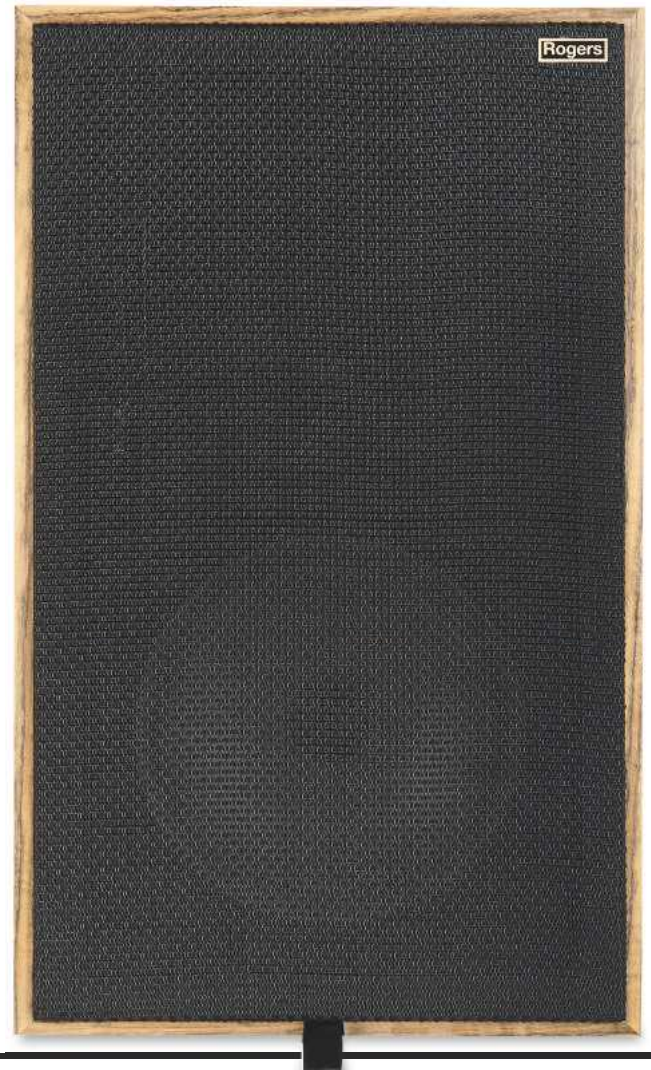
Rogers reverse-engineered the 210mm bass unit, which is fitted with the correct BBC specified PVC surround. Says Whittle, 'The surround is critical for the midrange performance where the BBC demanded the best possible sound

quality'. The high frequency adjustment tag strip is visible on the baffle as per the original studio speakers, although it is not user-adjustable; for tight pair-matching, the speaker is tuned via this tag strip in a similar way to the LS3/5A, where tweeter level is matched via an auto transformer.

Weighing only 12kg each and measuring 460x275x285mm (hwd), the LS5/9s are compact and easy to handle. Supported on Rogers' dedicated Panzerholz stands, no toe-in was needed – I set them up in an equilateral triangle

'Silky? It could be an advert for La Perla'

RIGHT: The 9mm birch plywood cabinet is available in walnut, rosewood, olive and Amazaque veneers or RAL colours. The speaker is optimised for use with the Tygan-fabric/frame grille left in place



from the hot seat, swiftly learning that too far apart will create a serious ‘hole in the middle’. This effect is so obvious that you will soon find the optimum spacing in your own room. While these LS5/9s are modestly sensitive and not a tough load [see PM’s Lab Report, p47] I found that they love power and revel in being driven hard. I was also warned that the PVC surrounds ‘need to do some work before they warm up, about half an hour, to fill the bass out!’.

REAL ROMEO

Enamoured as I am of the LS3/5A and the BBC sound *per se*, I admit to being predisposed toward the LS5/9. If the prices stopped me in my tracks, that ended when I fired ‘em up. Over the years, having owned more than ten pairs of LS3/5As in assorted iterations, Spendor BC1s and other BBC or BBC-ish designs, I was hoping for two things: natural midband/upper-bass and realistic vocals. I was not anticipating cavernous bass, because these are not huge, woofer-filled speakers like

AUNTIE BEEB’S BOXES

Part of a lineage dating back to 1970, when Rogers began its relationship with the BBC, the LS5/9 is a true studio monitor in hi-fi clothing – and with domestically acceptable dimensions. The series began with Rogers’ first BBC design, the LS3/6 studio monitor. Four years later, the immortal LS3/5A arrived, the smallest (‘Grade Two’) in a family that would grow to include speakers of various sizes to suit both studio and outside broadcasting and monitoring.

Production of the LS5/9 began in 1983, this ‘Grade One’ model designed to fit in spaces where the LS5/8 would be too large. The LS5/9 used the same tweeter as found in the LS5/8, the BBC requiring consistency across the range. In ascending order of size, the classic 1980s/1990s Rogers lineup of BBC and BBC-inspired home models eventually comprised the LS3/5A, LS2, LS5/9, LS6, LS7, Studio 1 and LS5/8. Rogers ceased LS5/9 production in the late-1990s. Twenty years on, under the guidance of Andy Whittle (formerly Rogers’ Technical Director) the much-loved BBC models are back. And I don’t think the LS5/9 will be the last to be resurrected.

the Wilson Sasha DAWs [HFN Mar ’19] I use as a reference. And yet, I was not quite prepared for what they delivered, despite the decades of conditioning.

As these are inherently ‘professional monitors’, I concentrated on open-reel tape as well as vinyl and CD. The initial reaction?

These are as revealing as one would demand and require of a ‘tool’ speaker at the Beeb.

Verve recordings have always stood for excellence, and *Sound Tour: Spain* [Verve VSTC 272; 7½ips tape] proved the perfect opener. This series, with an unnamed orchestra had listed the musicians, including Doc Severinsen on trumpet and Hank Jones on piano. Oddly enough – but not unusual when you consider what might have been played through speakers at the BBC – the ‘tour’ element of the recording includes traffic sounds, with the box even identifying

LEFT: Rogers’ own 210mm polypropylene bass/mid driver is joined by a 34mm soft-dome Audax tweeter with phase plate. This SE version of the LS5/9 features a rigid Panzerholz baffle

an Alfa Romeo, a familiar enough sound if you’re a car nut. The recording afforded a fabulous sensation of space, the car sound so real that I first thought it was an actual vehicle passing by outside.

With trumpet, piano, castanets, massed girls’ voices and a host of others to create the sonic picture, the LS5/9 Classic SE swiftly revealed a number of qualities beyond excelling as described above. Of course, the bass was smooth, realistic, non-aggressive and substantial. Yes, the voices were clear, sibilance-free and utterly convincing. What I certainly did not expect, given that this is still a ported two-way box, was the way the speaker disappeared.

This isn’t so much of a surprise with its smaller sibling, the LS3/5A, so tiny that it’s almost a point source. But the LS5/9 is a substantial box, for goodness’ sake, and it’s just not supposed to escape its wooden crate constraints unless fashioned from some space-age material that relegates vibration to another dimension or bracing that wouldn’t shame the Eiffel Tower. Maybe it was the recording, maybe it was the room, but, hot damn, these made me think more of panel speakers and dipoles.

LIFE ON TOP

Before switching to vinyl and CD, the last open-reel I played was Jackie Gleason’s lush double on Capitol, *Today’s Romantic Hits/For Lovers Only Vol 1&2* [ZWW2074; 7½ips tape], which reminded me again that there is no other label to match this one’s 1950s/1960s sessions for sonic supremacy. Somehow, the LS5/9 Classic SE manages to sparkle at the top end, with even the most delicate upper frequency information enjoying a glittery, shimmering effervescence, without turning edgy or sibilant for even a microsecond. Silky? It could be an advert for La Perla. ➔





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LOUDSPEAKER

LAB REPORT

ROGERS LS5/9 CLASSIC SE



LEFT: The rear face of the LS5/9's cabinet is finished in a real wood veneer, although the single set of 4mm speaker cable sockets and 3kHz crossover will not support bi-wiring or bi-amping

such a mindset is like listening for pleasure, which is what hi-fi is all about unless you are using it in a professional capacity. This speaker serves both audiences.

But how does the LS5/9 stack up against the LS3/5A at half its price? The larger speaker has deeper bass and the ability to go much louder, but you knew that. The LS3/5A simply cannot fill a room larger than, say, 15x20ft with anything even remotely convincing, so it remains a small room/nearfield

There's a superb live take of 'Lola' with the Danish National Chamber Orchestra and the Danish National Vocal Ensemble on CD2 in the 50th Anniversary CD box set of *Lola Versus Powerman And The Moneygoround Part One* [BMG 434BOX]. This is a blockbuster of a track with a full soundstage and a lovely unplugged feel, utterly realistic applause, rich bass and the sheer majesty of a choral group behind Ray Davies. He's positioned dead centre and – in this instance – standing in the room. There is no denying the 3D capabilities of this speaker, within spitting distance of the LS3/5A.

HOLY GRAIL

Please note that I have never harboured any desire to be a musician (well, not after the age of 15), a recording engineer, a broadcaster or anything other than a scribbler, as I know my limitations and lack of talent. Despite this, and notwithstanding its design dating back almost 40 years, the analytical capabilities of the LS5/9 puts one in mind of a studio dweller listening for minutiae. I am not suggesting that

monitor. But the LS5/9 offers slightly less than pin-point imaging – this matters, principally, to analytically soundstage fanatics and reviewers, which is why I noticed it. Also, the LS3/5A, for whatever reasons, appears to deliver greater image height. Then again, nothing sounds exactly like a scaled-up LS3/5A, the creation of which has been a Holy Grail quest in hi-fi for 45 years. But, wow, this comes close. ☺

HI-FI NEWS VERDICT

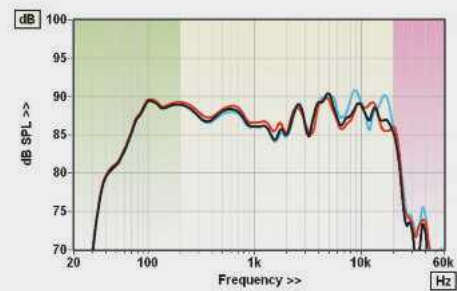
Ignore my reservations about price. If you are enamoured of the classic BBC sound, want something bigger than an LS3/5A but not too large, with emphasis on midband authenticity and vocal realism, these will charm you for what they are: LS3/5As with more level and deeper bass. I sat there rapt, the sound so natural and uncoloured that such matters as cost vanished. The LS5/9 is simply magical.

Sound Quality: 86%

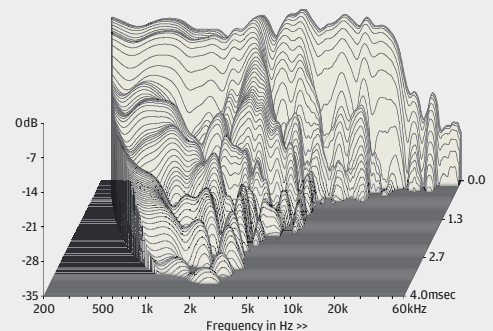


If the 'naked' LS5/9 looks rather utilitarian then it's as well to know it was designed to be seen and heard with the tight-fitting Tygan grille left in place. So be careful how you read Graph 1 – the blue trace here is the forward response *without* the grille (where responses errors increase to ± 3.3 dB above 6kHz), rather than *with* as is usually the case! But let's first recap – the larger cabinet and reflex-loaded 210mm polypropylene bass/mid driver offers fundamental advantages over the smaller, closed-box LS3/5A. Sensitivity is higher despite the 27-element/3rd-order crossover, meeting Rogers' 87dB specification, at 86.6dB/1kHz and 87.2dB/500Hz-8kHz. Measured on Rogers' preferred mid-baffle axis, the forward response retains a suggestion of the 'BBC dip' through mid and presence, partially masked by undulations between 2-6kHz. These contribute to the overall ± 3.0 dB and ± 2.4 dB response errors [see Graph 1] and are reflected in the cone/surround mode seen on the CSD waterfall [see Graph 2].

The bass unit has a -6dB bandpass of 72Hz-288Hz [green shaded area, Graph 1], free of obvious spurs until breakup, and supported by the front port, tuned to 38Hz but with a useful 29Hz-113Hz (-6dB) output. The diffraction-corrected nearfield response indicates a LF extension of 59Hz (-6dB ref. 200Hz). So is this encouraging sensitivity and good bass achieved with recourse to a punishingly low impedance? Fortunately not... With relatively *high* minima of 5.69ohm/172Hz/-8° and 5.89ohm/2.9kHz/+2° combined with maximum phase swings of -47°/103Hz and +30°/74Hz (all > 12ohm) the LS5/9 Classic SE will not prove burdensome for the 'average' integrated. PM



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



ABOVE: Treble and cabinet modes are well damped, leaving breakup in the PP bass/mid cone at 2-6kHz

HI-FI NEWS SPECIFICATIONS

Sensitivity (SPL/1m/2.83V - 1kHz/Mean/IEC)	86.6dB / 87.2dB / 85.2dB
Impedance modulus: minimum & maximum (20Hz-20kHz)	5.69ohm @ 172Hz 24.1ohm @ 89Hz
Impedance phase: minimum & maximum (20Hz-20kHz)	-47° @ 103Hz +30° @ 74Hz
Pair matching/Resp. error (200Hz-20kHz)	2.1dB / ± 3.0 dB/ ± 2.4 dB
LF/HF extension (-6dB ref 200Hz/10kHz)	59Hz / 22.1kHz/22.7kHz
THD 100Hz/1kHz/10kHz (for 90dB SPL/1m)	0.6% / 0.07% / 0.2%
Dimensions (HWD) / Weight (each)	460x275x285mm / 12kg

Cambridge Audio Edge NQ/M

Named after founder Prof. Gordon Edge, Cambridge Audio's flagship series is reinforced by the new 'M' monoblock amp. With the NQ Streamer, does this combo have an *edge*?
 Review: **Andrew Everard** Lab: **Paul Miller**

Nothing if not ambitious, Cambridge Audio's Edge series first broke cover three years back as part of the company's 50th anniversary celebrations. It took its name from Gordon Edge, one of the company's founders and the brains behind its first product, the P40 amplifier. Designed to take on the best in high-end audio, these Edge separates also serve as 'halo' products for the company's lower-tier ranges.

Of course, high-end as realised by the Cambridge Audio team, known for decades for its value-for-money products, was never going to mean 'impossibly priced'. The Edge A integrated amp [*HFN* Nov '18] sells for £5499, and the 100W-rated Edge W stereo power amp for £3499, while the new Edge M monoblocks, good for 200W/8ohm are pitched at £3999 each. Its natural partner is the £4499 Edge NQ streaming preamplifier.

OUTSIDE EDGE

Yes, these are affordable high-end products, but sold outside the purview of most traditional high-end retailers. In the UK they're available through Cambridge's longstanding retail partner, Richer Sounds, or direct from the Cambridge Audio website – you can even buy them online and have them delivered next day!

Do so, and you'll be treated to the first part of the Edge experience – the company takes to the next level the luxury unboxing experience we first encountered when some manufacturers started packing their products in bespoke fabric bags. Open up the hefty packaging and you'll find the unit nestling in tailored coverings, and supplied with stretch 'stockings' you can even use as dust-covers when the system isn't in use.

Of course, all this doesn't influence the sound, but it is part of the 'reveal', and as such plays a part in the pride of ownership,

RIGHT: One huge PSU transformer with dual secondaries [top] feeds separately regulated supplies on each power amp module [left and right, with heatsinks]. Each mono side comprises four pairs of ON Semiconductor transistors

bringing the buyer to the superb build and finish of the Edge products. And from the engineering within to the looks and the experience of using them, these are designs giving nothing away to the pricier high-end models they've been created to challenge. With hefty build, simple styling and minimal controls, they are designed to be chic, sleek and easy to operate, while still delivering where it counts – in their performance.

For example, given the wide-ranging capabilities of the Edge NQ – this is, after all, a network music player, DAC and analogue/digital preamp all in one unit – one might expect a fascia bedecked with controls. Instead there are just two: an on/standby pushbutton, and a concentric rotary for everything else – turn the front part for volume, and the rear for source selection. There's also a remote handset [p53], but

the majority of the 'driving' of the NQ is going to be handled by two apps.

SABRE INSIDE

The Edge app handles all the set-up, while the app designed as part of Cambridge Audio's proprietary StreamMagic network audio platform [p51] deals with the streaming capability.

And while the Edge NQ will play music from network storage, using streaming services including Qobuz, Spotify Connect, Tidal, Bluetooth (with aptX), Airplay, Chromecast and Internet radio, and is also Roon-ready, this is more than just a network player with a choice of fixed- or variable-level unbalanced and balanced analogue outputs. It's also a fully-functioning DAC, with five inputs including two optical, one coaxial, an HDMI (ARC), a USB-B port supporting 384kHz/32-bit PCM

'It takes the luxury unboxing experience to another level'





and DSD256, plus a USB-A port to which storage media can be connected.

All the digital sources are handled by a tried-and-tested ESS Sabre ES9018 DAC, and there are also three sets of analogue inputs – two on unbalanced RCAs, the other on balanced XLR. Networking is via wired Ethernet or Wi-Fi, the latter using a supplied dongle connected to a dedicated USB-A port, the sole conventional antenna merely serving its Bluetooth capability.

IN-HOUSE TECH

The Edge M power amplifiers follow the ethos of the rest of the range in that, while mighty powerful, they're anything but huge, and follow the same sleek design language as the NQ. They're just

a smidge taller at 15cm, but occupy the same footprint, and use the company's in-house Class XA amplification technology, as found throughout the Edge range [see PM's boxout, below]. The amps offer both XLR balanced and RCA inputs – given the balanced layout here the former is clearly preferable, and so that was how I tested them with the NQ streaming preamp – plus 'loop-through' outputs to allow further amplifiers to be daisy-chained. In addition, 'Link' in/out sockets allow the amps to be powered up and down remotely by the NQ, for which cables are supplied.

For those tweed-clad, mustard-waistcoated and red and spluttering of face, two points to note: 1) The Edge range is designed and engineered in London, and

ABOVE: Pictured atop one Edge M mono amp – with matching curved alloy fascia – the NQ streamer can be navigated via its remote [p53], custom app [p51] and full colour display

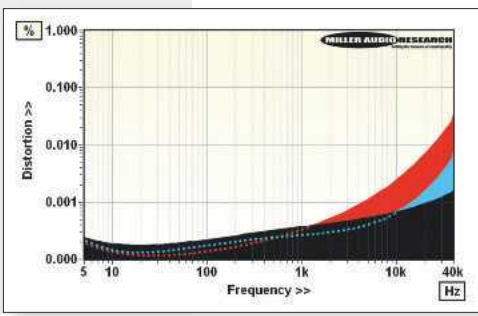
built in China; 2) these components are not just built to a standard to shame many an 'establishment' high-end rival (many of whom are also assembling offshore), but deliver a level of performance that's up there with the very best. What's more, they're a delight to install and use, with logical set-up and operation right down to that upside-down-repeated connection-labelling for those peering over the back of the units, and a wonderfully tweak-free speedy process from unboxing to listening.

PASSION PLAY

High-end hi-fi without the high-falutin' installation? You bet – these substantial separates just work, and how! Whether running in network mode, fed via USB from a Mac computer, or in analogue using my Naim ND555 [HFN Apr '19] as a source, this Cambridge combination is just about all the amplifier one could ever want. ➔

A CLASS ACT

What Cambridge Audio once called Class XD (Crossover Displacement) is reborn in its Edge A integrated [HFN Nov '18], Edge W power amp and now the Edge M as 'Class XA'. It's a novel method of bypassing the crossover distortion produced when music signals 'cross' from positive to negative-going (and vice-versa) and the complementary pairs of power transistors momentarily switch off. Class A operation – maintaining sufficient quiescent current to keep all output transistors 'on' at all times – is the brute force method, but it's inefficient and costly. Cambridge's elegant alternative doesn't eliminate the transition between NPN and PNP transistors, but simply shifts it away from the zero-crossing point of the waveform – hence the original name 'Crossover Displacement'. It does this by applying a negative bias current, shifting the position of the crossover point without creating a DC offset. Where crossover distortion is most audible, at low signal levels [black trace, Graph], Class XA/XD moves the crossover point below the maximum negative swing of the audio waveform, yielding the benefits of pure Class A without the heat. PM



LEFT: The Edge M's very low distortion versus frequency (5Hz-40kHz) at 1W/8ohm (black), 10W (blue) and 100W (red)

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your *music*
to *life*

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AURALIC PRESS AWARDS





ABOVE & BELOW: The Edge NQ's toroidal transformer [top] feeds multiple PSUs. The StreamMagic 'Black Marlin' streaming platform [centre] is the NQ's beating heart – and controlled via its own app [see bottom of page] – while an ES9018 DAC forms the core of its balanced output stage [bottom]

Playing the recently-released recording of Handel's lesser-known *Brockes-Passion* [Alpha Classics ALPHA644], the Cambridge NQ/Ms do a fabulous job with the work's near-operatic scale, with glorious detailing on the voices plus speed and definition with the accompanying ensemble. There's drama, persuasive soundstaging and imaging and, if you don't mind the pun, no shortage of passion. It's a fabulous experience, both sonic and musical.

From the off, this is a playback/amplification system to connect the listener with a performance, as is abundantly clear with the raw, but lovingly recorded, Lucinda Williams *Live @ The Fillmore* double album [Lost Highway B0002368-02]. It captures the nuances of Williams's voice, from

gentle folksy introspection to snarling rock, while the musicianship of her band is well served by both the massive slam these amps can deliver [see PM's Lab Report, p53] and their ability with the finest detail of tonality and technique. Then there's

'It has drama, persuasive soundstaging and real passion'

the multilayer, multi-instrumental *Help!* set [2xHD 2XHDRL1198], the Cambridge trio bringing out all the details of what is a certainly complex recording, on which composer Robert Len plays every instrument from brass and woodwind to percussion.

LIGHT INDUSTRY

This album is all beautifully recorded, originally in DXD, so that despite the sheer density of the sound every instrument is given space to breathe. This sings through via the Edge NQ's streaming section and the powerful Edge M monoblocks, creating an enthralling sonic picture in which every performance can be appreciated.

What the Cambridge combination does so well – and this is as true whether using digital or analogue inputs, or the onboard network streaming – is carry its massive power lightly. There's a lot on tap here, but the combination is equally at ease with a delicate solo instrument or accompanied voice as it is when charging through a

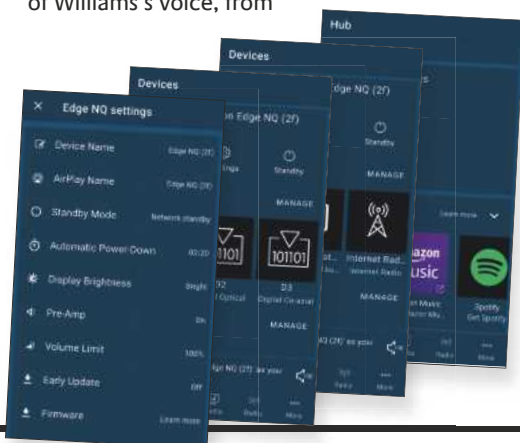
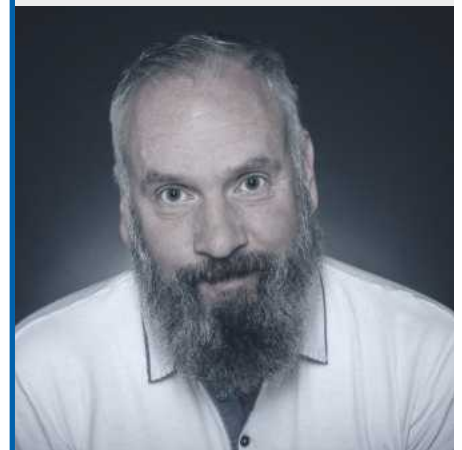
TONY STOTT

Having spent almost ten years working on brand development for Panasonic, Tony Stott joined Cambridge Audio in 2017, and is now Head of Product Marketing. So he is clearly the man to ask whether there ever a plan to produce separate network player and preamp units, rather than the all-in-one NQ?

'No', he says, 'the original lineup of A, W and NQ is what the brand intended from the outset, and we only added the Edge M monoblock later due to feedback from our customers'. Tony also clarified that Cambridge has no plans for an Edge series phono stage, as 'we're very happy with our current offering in terms of turntables and phono stages', though he added, 'we are working on some exciting new developments elsewhere in the range'. Watch this space...

With this 'all eggs in one basket' approach for the Edge NQ, how upgradable is the StreamMagic platform at its core? 'A dedicated team of engineers has spent the last 11 years constantly refining and upgrading its capabilities, and the majority of those engineers were around at the launch of Cambridge Audio's first network player.

'We're currently working on our 4th generation module but, wherever possible, we continue to support and upgrade our older network players long after their on-shelf life has ended. This was most recently demonstrated by the arrival of TIDAL Connect, not only on our StreamMagic 6 (v2) and CXN network players, both of which have been out of retail circulation for a while, as well as on the current lineup.'



Klipsch HERITAGE LOUDSPEAKERS

Cornwall



Titanium Diaphragm Hi-Frequency Driver

Polyimide Diaphragm midrange Compression Driver

15" Fibre Composite Cone Woofer

Stylish Magnetic Woven Grill

MDF Cabinet With Three Fine Veneer Finish Options

Tractrix Horn Ports for Improved Airflow

Effortless EFFICIENCY

The Cornwall IV derives its name from being the first Klipsch loudspeaker designed to operate from either a corner or against a wall (corn/wall). The new Cornwall IV is an excellent combination of wide frequency response, low distortion, and high power output. The new Cornwall IV delivers deep bass response that comparebale to even fully horn-loaded designs.



FINISH
OPTIONS:



LAB REPORT

CAMBRIDGE AUDIO EDGE NQ/M



ABOVE: The full stack! NQ [top] has three line ins (one on XLR) and variable/fixed pre outs (on RCAs and XLRs). Digital ins include 2x optical (96kHz), coax (192kHz), USB-B (384kHz/DSD256), Wi-Fi (USB dongle), wired Ethernet, Bluetooth and HDMI (ARC). Mono Ms [bottom] offer XLR/RCA ins/daisy-chained outs plus a set of 4mm cable posts

big rock or orchestral piece. There's never any harshness or excessive brightness here, despite the levels of detail the DAC/preamp can extract from everything from BBC AAC radio streams upwards. Even the odd track streamed from a phone via Bluetooth sounds more than reasonable – yes, they give away detail and extension to 'full-fat' content at CD quality and above, but they're none too shabby.

MASTER CLASS

What's more, the amplification keeps a ruthless grip on speakers, but does so without trading any exuberance. One gets the feeling the Cambridge combo is always in command, but knows how to party, even when thrashing through the full-on live title track of the Patti Smith Group's *Radio Ethiopia* [Arista/BMG 07822 18825 2] or alternatively – very alternatively! – the chugging, thundering space-rock of peak-era Hawkwind on 'Master Of The Universe' from



LEFT: Elegant alloy handset includes album/track navigation, volume and four user-programmable keys

the ever-so-dense *Space Ritual* [EMI Premier 7243 8 35487 2 9].

I tried to wrongfoot this combo – I really did, with everything from podcasts to spikey atonal modern classical music – but every time, this system came up trumps, driving everything from a 'light but tight' pair of Scansonic mini-floorstanders to my usual Neat Iota Xplorers [HFN Jul '18] and aged PMC OB1s, both of which benefit from being grabbed by the whatsits and made to work.

In the end I gave up trying to catch the amps out, and was instead thinking this would make a fine minimalist set-up, with just the NQ on display and the Ms out of sight behind the speakers. But it would be a shame to hide them away! ☺

HI-FI NEWS VERDICT

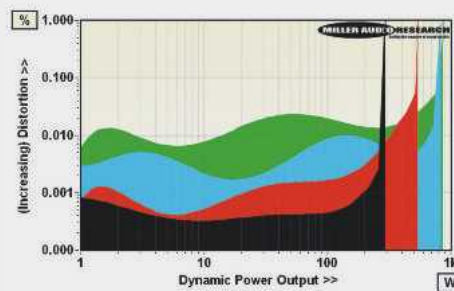
This streaming DAC/power amp combination has a lot going for it – gorgeous looks and a sound and build quality to match. It's simple both to install and use, and you won't need any tweekery to tease out their best. Cambridge Audio has got its 'no limits' series pretty much bang-on, and anyone who still thinks the brand is just about 'budget hi-fi' needs to know it's playing with the big boys now – with great success.

Sound Quality: 86%

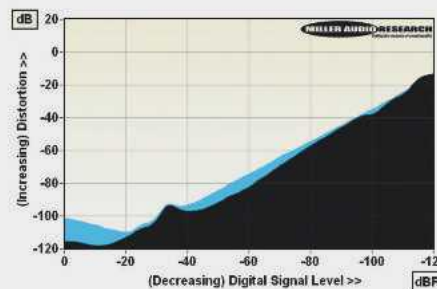


Rated at twice the output of the Edge A [HFN Nov '18] and Edge W at 200W/8ohm and 350W/4ohm, the new Edge M delivers 259W/8ohm and 435W/4ohm (a stiff +2.3dB increase in power) with reserve to accommodate 293W, 535W, 835W into 8, 4 and 2ohm under dynamic conditions at <1% THD [see Graph 1, below]. There's a current 'limit' of ~30A/885W into 1ohm [green trace]. The field-cancelling toroidal transformer flattens hum and helps the Edge M achieve a wide 92dB A-wtd S/N ratio (re. 0dBV) from a gain of +22.4dB (balanced ins). The response reaches out to 2Hz-75kHz ±1dB from a source impedance that rises from 0.015ohm through bass and midrange to 0.12ohm/20kHz before lifting to 1.3ohm/100kHz. As expected [see boxout, p49] distortion is fabulously low at 0.0002-0.0003% from 1-200W/8ohm through the midrange and from 0.0001-0.008% (20Hz-20kHz), again from 1-200W/8ohm.

The NQ's analogue preamp offers a huge >20V maximum output (balanced), a gain of +9.2dB, distortion of just 0.0002-0.0003% (0dBV, 20Hz-20kHz) and a wide 102dB A-wtd S/N ratio. The response is flat to within ±0.1dB from 1Hz-100kHz although the ES9018-based DAC section, with standard linear phase filter selected by Cambridge, has its 'own' response of -0.2dB/20kHz, -1.35dB/45kHz and -3.6dB/90kHz with 48kHz, 96kHz and 192kHz media, respectively. The balanced outs achieve 11V with a peak level 0dBFS digital input, holding THD to 0.0002-0.001% (20Hz-20kHz). Distortion falls to a minimum of 0.0001-0.0002% at -10dBFS/48kHz [Graph 2] and low-level linearity holds good to within ±0.1dB over a full 110dB dynamic range. Jitter meanwhile is suppressed to ~10psec across all inputs/sample rates. PM



ABOVE: Dynamic power output versus distortion into 8ohm (black trace), 4ohm (red), 2ohm (blue) and 1ohm (green) speaker loads. Max. current is 29.8A



ABOVE: Distortion versus 24-bit digital signal level over a 120dB range (1kHz, black; 20kHz, blue)

HI-FI NEWS SPECIFICATIONS

Continuous power (<1% THD, 8/4ohm)	259W / 435W
Dynamic power (<1% THD, 8/4/2/1ohm)	293W / 535W / 835W / 885W
Output imp. (20Hz-20kHz, Pre/Amp)	91ohm / 0.015-0.120ohm
Freq. resp. (20Hz-20kHz/100kHz)	+0.0 to -0.15dB/-1.6dB
Digital jitter (USB / S/PDIF)	10psec / 11psec (48kHz/24-bit)
A-wtd S/N ratio (DAC/Amp)	118.2dB (0dBFS) / 92.4dB (0dBW)
Distortion (DAC, 0dBFS/Amp, 0dBW)	0.0002-0.0009%/0.00018-0.001%
Power consumption (Preamp/Amp)	27W / 368W (98W idle)
Dimensions (WHD, each unit)	460x120x405/460x150x405mm

Merason DAC1

Top dog in a range of just two outboard DACs from Swiss brand Merason, the DAC1 is a modern-day example of ‘less is more’ audiophile thinking. We lift the lid and investigate
 Review: **James Parker** Lab: **Paul Miller**

In common with a lot of *HFN* readers, I have a bit of a ‘thing’ about overly complex digital devices. I’m not referring to input flexibility – many of us will have systems in which different flavours of digital connection are accommodated, from USB links from a computer to good old S/PDIF from a CD player or the like. No, what I really find obstructive is devices bristling with digital-domain options, from filters to dither to PLL bandwidth and the like, all of which often look like an exercise in ‘because we can’ – a facilities arms-race – rather than being of any real-world assistance to the user.

I’ve found myself railing against such over-provision, suggesting that buyers will be tempted to spend too much time fiddling, to the detriment of, well, you know, actually listening to the music. By contrast, there’s absolutely no such problem with the Merason DAC1 we have here. This £4195 converter, available in a choice of black or white fascia finishes (with chromium nickel steel available at a slightly startling £2400 premium), is designed as a simple, straight-down-the-line unit. You plug in a digital source, connect the output to your amplifier or preamp via unbalanced RCAs or balanced XLRs, and you’re done.

BEAT THE CLOCK

That’s not to say that care hasn’t been taken in the build of the unit. Located in Worb, a short distance east of Bern, manufacturer Niedal Audio Lab makes great play of the Swissness of its products, from the precision of the build to the accuracy of the crystal clock, and while the Merason DAC1 doesn’t exactly boast bank-vault heft at just 8kg (the optional stainless steel front slab upping that by 3kg), it feels solidly put together and beautifully finished, as one might expect at the price.

RIGHT: Two encapsulated transformers [red] feed well-regulated PSUs [lower left/right] for digital and analogue stages. Amanero USB input [top centre] joins two PCM1794A DACs [centre right] and discrete I-to-V and filter circuits [above]

The simplicity is a conscious decision, the company taking a stand against the complexity and what it sees as pandering to fashion found elsewhere in this market sector. Eschewing the ultra-high sampling rate capability of many rivals, and the likes of DSD and MQA, the DAC1 is designed purely for PCM-based files, from 44.1kHz/16-bit up to 192kHz/24-bit. It says that the idea ‘was not to build a unit to enable the adoption of multiple, new formats using new-to-market technologies’. It continues, ‘rather, the goal is to take proven concepts and components, that are assembled with care and attention’, adding that the DAC1 is designed as ‘one that allows the music to shine brighter than over-inflated specification sheets’.

Admittedly that stance may dissuade as many potential buyers as it encourages – I’m not sure I’d now buy a DAC unable to play my collection of DSD files in native form (rather than crunching them down through a PCM-sized ‘hole’) – but it does allow the company to keep the construction of the DAC1 simple and

direct, optimising the circuitry for its singular task rather than having to make concessions to flexibility.

SILVER SERVICE

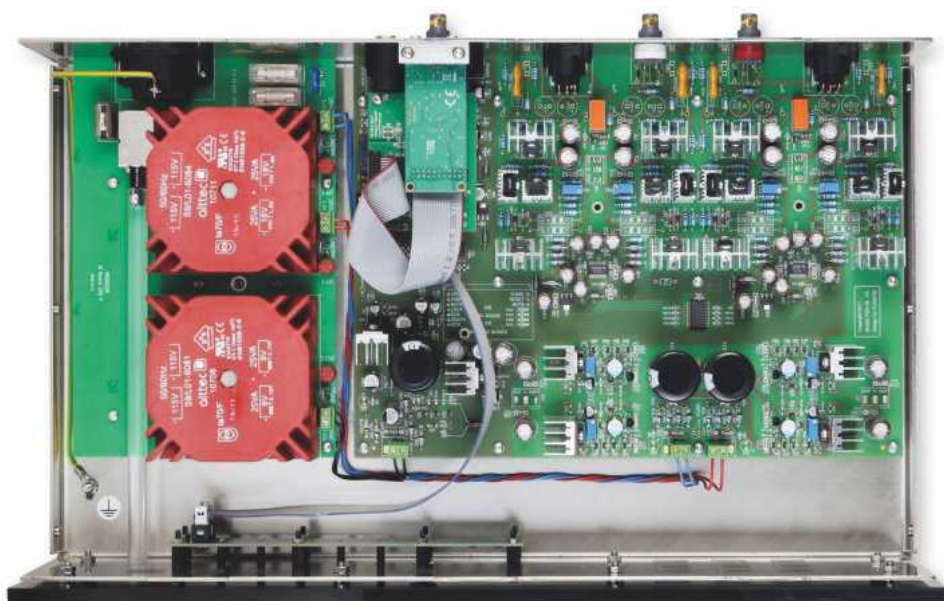
Editor PM examines the digital workings in more depth [see boxout, p55] but in essence the DAC1 uses a pair of Burr-Brown/TI PCM1794A converters in differential mode. Downstream of this

is a proprietary stage that converts the DACs’ current output to a voltage that feeds a Class A buffer and low-pass filtering. Choice passive components include silver mica capacitors.

Meanwhile, the signal path is fully balanced from

the output of the DACs to the output stage of the unit, and uses symmetrical L/R signal paths, with foil capacitors to protect against DC at the output. The designers also say that ‘great attention has been paid to the layout of the motherboard so that an extraordinarily high signal-to-noise ratio could be achieved’, the specification claiming this as greater than 120dB [see PM’s Lab Report, p57].

‘It might be considered the “antidote to digital”’





As you might expect from its brief, the DAC1 is easy to set up and use: one button on the front panel powers it on and off, while the other selects between the optical, coaxial, AES/EBU and USB inputs. The latter may, at some point, mutate into an I²S input, but I'm not sure about the wisdom of this. Yes, there may be a growing number of digital devices employing I²S, but surely for most users a simple USB-B 2.0 port is of more use?

Indicators for the various inputs are provided on the front panel, along with a 'lock' lamp and one to show a USB link is connected, but that's about your lot.

While the limited range of files the DAC1 can handle may matter to some

– anyone frequenting the NativeDSD store for instance – for many it will be no limitation, and in some ways the very simplicity of this unit will be a plus-point in a still-evolving world of digital music. One can buy an all-in-one network-connected DAC, needing only to be hooked into the home Internet feed and then controlled by an app on smartphone or tablet. However, unless you buy a device with plenty of upgradability built-in, there's always that worry that the arrival of the Next Big Thing in streaming will leave you high and dry.

SMOOTH TALKER

Opt for a dedicated DAC, connecting to it via either a (relatively) inexpensive

ABOVE: The DAC1 is available with a black or white [see below] Perspex fascia or, at extra cost, a stainless steel panel. A pushbutton serves to select between the indicated input options

streaming bridge such as Pro-Ject's Stream Box S2 Ultra [HFN Oct '18], a laptop running suitable software or even one of the many variations on the Raspberry Pi/ Asus Tinkerboard/Intel NUC theme, and you are effectively future-proofed. And that's (almost) how I chose to test the DAC1. Admittedly I did feed it from the digital output of a couple of conventional network music players, but mainly it was used fed from one of my Mac computers, on the end of the little Pro-Ject box or via the USB output of the Intel mini-computer I use to run my Roon Core.

What was immediately apparent was that this DAC has a sound that's both best described as 'characterful' and agnostic when it comes to the way digits are delivered to it. Whether fed via S/PDIF connections or USB using a variety of forms of playback software, the DAC1 remained entirely consistent, presenting music in a way not always as hyper-detailed as some DACs can manage, but warm, rich and smooth without submerging what's being played in excessive lushness.

REAL DELICACY

The DAC1 could be considered as the 'antidote to digital'. That said, I wouldn't describe it as sounding 'analogue', as that gets into far too many sweeping generalisations regarding the 'sound' of analogue and digital. Instead, I think 'organic' just about covers it, this DAC dispelling any thoughts of the mechanisms ↻

NUMBER CRUNCHING

Arguably, the biggest leap in DAC technology – for better or worse – occurred through the late 1980s/early '90s as resistor-ladder style converters were replaced with PDM and PWM-based silicon. These so-called 1-bit/low-bit/delta-sigma types are the great-granddaddys of all the modern DACs seen in today's equipment. All operated on a similar principle – the incoming CD audio data was upsampled to very high rates (up to x256) while the wordlength was truncated from 16-bits down to between 3-to-5-bits in the PWM converters and 1-bit in the PDM converters. Trying to describe 16-bits of information in just a few bits inevitably causes a significant 'error' realised as a big increase in noise spread across the x256 bandwidth. In all cases a technique called 'noise shaping' was employed to squeeze the noise out from the audio bandwidth, restoring its original 16-bit dynamic range, while redistributing it across higher ultrasonic regions.

There are many variations on this technique used today, including hybrids like the 'Advanced Segment' PCM1794 DAC launched by Burr-Brown in 2004. Now part of the TI (Texas Instruments) family the updated PCM1794A has a split architecture with the first 6-bits of a 24-bit input, beginning with the LSB, separated from the remaining 18-bits, up to the MSB. The wordlength of the 6-bit block is retained while the 18-bit block is upsampled by x64, truncated into ~2.32-bit words and then subject to 3rd-order noise-shaping to restore the original 18-bit S/N. The two 'segments' are then summed into a single upsampled stream of some 6-bit resolution before hitting a differential-current segment section – the DAC proper. This offers a balanced current output, providing audiophile designers the opportunity to build their own I-to-V converter, and 'voice' the sound – just as we see here in the Merason DAC1. **PM**



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USB DAC



ABOVE: Simplicity itself as the DAC1 offers a single USB-B port (also I²S in the future), one balanced AES/EBU alongside S/PDIF on optical and coaxial inputs. Fixed-level analogue outputs are offered on XLRs (balanced) and RCAs (single-ended)

behind what's being heard, and instead throwing all the listener's concentration on the music. And even better, it pulls off the same trick with almost any style of music one chooses to play.

Ella Fitzgerald – The Complete Piano Duets compilation [Verve 00602508525803] is a glorious chronological survey of the singer's voice from early sessions with Ellis Larkins to her 1970s recordings with Oscar Peterson, and Merason's DAC1 affords the opportunity to revel in her glorious intonation, diction and phrasing, delivered with both force and delicacy. It's an enchanting sound, with weight in Fitzgerald's lower registers juxtaposed against a featherlight sweetness in the upper, and the effect is entirely captivating.

HOLD YOUR HORSES

Come bang up to date with the jazz and blues-infused Lake Street Dive album, *Obviously* [Nonesuch 075597919585; 48kHz/24-bit], and the DAC1 handles with ease another remarkable voice. In this instance it allowed the vocals of Rachael Price to soar above the beautifully judged playing of the rest of the band on the opening 'Hypotheticals', with its driving beat and tight, clean bassline, while the torchy 'Anymore' retained a wonderful glow about it.

Don't for a moment think that these compelling qualities are only reserved for deliciously recorded tracks, 'audiophile' or otherwise. All that warmth and generosity is still in evidence almost regardless of source or genre. So the DAC1 handles just as well the looser sound of Patti Smith's 2005 Royal Festival Hall take on her *Horses* album [from Sony/BMG 88697352452], delivering with conviction the rawness and spontaneity of the live performance. And with the murky 'wall of sound' production of Alice Cooper's *Detroit*

Stories set [Ear Music 0215653EMU], the big, powerful bass is a delight, as is the drawl and slur of the lead vocal, showing that this DAC can rock with the best of them.

Some might want for more snarl and bite, even if that was at the cost of a brash or brittle sound, but the Merason DAC1 instead keeps its music big, grown-up and really rather magnificent. Switch to the powerful percussion of drummer Dave Smith's *Live At The Vortex 11.11.17* EP [Bandcamp download] and there's no doubting the punch or definition the DAC1 can deliver with this improvised set from the London Jazz Festival.

Similarly, this combination of weight and resolution is just as apparent with large scale orchestral music, such as the beautifully light-of-touch Budapest Festival Orchestra/Iván Fischer recording of Dvorák's Suite In A major [from Channel Classics CCSSA30010] in which the full orchestral weight is deployed deftly and with precision. Indeed, whatever I played, within the 192kHz remit of the DAC1's universe, it never sounded less than passionately committed. ☺

HI-FI NEWS VERDICT

The richness of the sound won't be to every taste, but it's never cloying or overplayed: instead, Merason's DAC1 backs up its smoothness with power and unforced detail to consistently appealing musical effect. True, the limited format handling may rule the DAC1 out for some – it takes a stand against digital expansionism! – but its singularity of purpose pays off in a sound as appealing as it is easy to enjoy.

Sound Quality: 83%

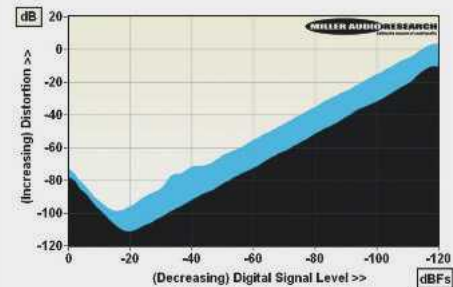


LAB REPORT

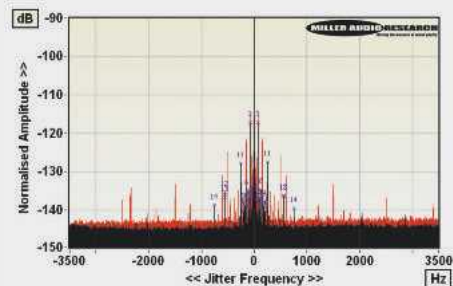
MERASON DAC1

The PCM1794 and later 'A' version has been used in many successful, fine-sounding players and DACs – it supports LPCM and I²S, but not DSD, inputs and sample rates up to 200kHz (in practice this means 192kHz). In a further twist, the DAC1 does not support 176.4kHz over S/PDIF but it does via USB. The PCM1794A is known for its excellent S/N, low-level linearity and potential for very low distortion. In this implementation it achieves a wide 111.4dB A-wtd S/N ratio via a custom, balanced analogue output stage that max's out at 2.95V from a 145ohm source impedance (increasing below 100Hz to 335ohm/20Hz). Low-level resolution is good to ±0.5dB over a full 110dB dynamic range while distortion falls to a low 0.0003-0.0012% at –20dBFS across 20Hz-20kHz [see Graph 1, below]. Distortion increases from –20dBFS to 0.018-0.028% at peak output (0dBFS) but this is a function of the I-to-V and output buffer. While TI recommends using a generic NE5534 op-amp for this purpose, Merason's discrete, Class A circuit permits far finer 'sound tuning'.

The PCM1794A DAC chip comes with integral 'sharp' and 'slow' roll-off 8x oversampling digital filters, and will also accommodate external upsampling solutions, but Merason has chosen a standard, sharp roll-off linear-phase type offering an 84dB stopband rejection with 48kHz inputs. The frequency responses are gently and sensibly tailored, reaching out to –0.7dB/20kHz, –2.8dB/45kHz and –6.6dB/90kHz with 48kHz, 96kHz and 192kHz inputs, respectively. The dual-mono layout also maintains a superb >120dB channel separation (20Hz-20kHz). Back in the digital domain jitter, too, is more than adequately suppressed down to 111psec with 48kHz/24-bit data and 85psec with 96kHz/24-bit data [see Graph 2, below]. PM



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



ABOVE: High resolution jitter spectrum via USB (black, 48kHz/24-bit, with markers; red, 96kHz/24-bit)

HI-FI NEWS SPECIFICATIONS

Maximum output level / Impedance	2.95Vrms / 145-335ohm
A-wtd S/N ratio (S/PDIF / USB)	111.4dB / 111.4dB
Distortion (1kHz, 0dBFS/-30dBFS)	0.018% / 0.0003%
Distortion & Noise (20kHz, 0dBFS/-30dBFS)	0.028% / 0.0012%
Freq. resp. (20Hz-20kHz/45kHz/90kHz)	+0.0 to –0.7dB/-2.8dB/-6.6dB
Digital jitter (48kHz / 96kHz)	111psec / 85psec
Resolution (re. –100dBFS / –110dBFS)	±0.2dB / ±0.5dB
Power consumption	17W
Dimensions (WHD) / Weight	450x100x290mm / 8kg

System Audio Legend 60.2 Silverback

Danish brand's flagship floorstander really comes on song in fully active 'Silverback' guise, with room bass-tuning to boot
 Review: **Mark Craven** Lab: **Paul Miller**

There's more to System Audio's flagship floorstander than meets the eye. Outwardly, the £7000 Legend 60.2 Silverback, available in satin black and satin white, appears to be an archetypal slender, tower loudspeaker. Peer around the back, however, and you'll find a metal plate – the Silverback of its title – with IEC mains inlet, XLR and USB connections, plus a bank of status LEDs below legends including 'Wireless', 'Centre' and 'Subwoofer'. So not only is this an active model, it's one with wireless and multichannel ambitions. Furthermore, above this amp/control panel are two rear bass-reflex ports, even though this is described as a sealed loudspeaker. As I said, more than meets the eye...

'Wireless' and 'subwoofer' are perhaps words to be made a bona fide stereophile shudder, so I must stress that the wireless element here is smarter than average. WiSA, a transmission standard developed by the Wireless Speaker and Audio Association (a 60-member organisation founded by HDMI-partner Silicon Image), claims low latency and rapid synchronisation, and supports up to eight 96kHz/24-bit channels simultaneously – hence the multichannel potential.

MEET THE HUB

A WiSA module is built into the 60.2 Silverback meaning it can be paired with any WiSA source (*aka* 'transmitter'). Options include hardware from the likes of Harman Kardon and Primare, but System Audio steers buyers towards the Stereo Hub, a compact 170mm-wide unit from fellow Danish brand Platin Audio and Chinese OEM company Hansong.

Priced £400 when bought with System Audio's Silverback speakers (or £700 separately), the Stereo Hub is lightweight in build but heavyweight in terms of connectivity – three optical, one coax, USB-B, HDMI ARC for connection to a TV, and 3.5mm aux and

RCA analogue inputs. System Audio describes it as 'the meeting point for all your audio devices', and this refers to wireless ones too – Chromecast, Bluetooth, Spotify Connect and Apple AirPlay are also integrated. It also facilitates sub-300Hz low frequency in-room bass correction [see boxout, p59].

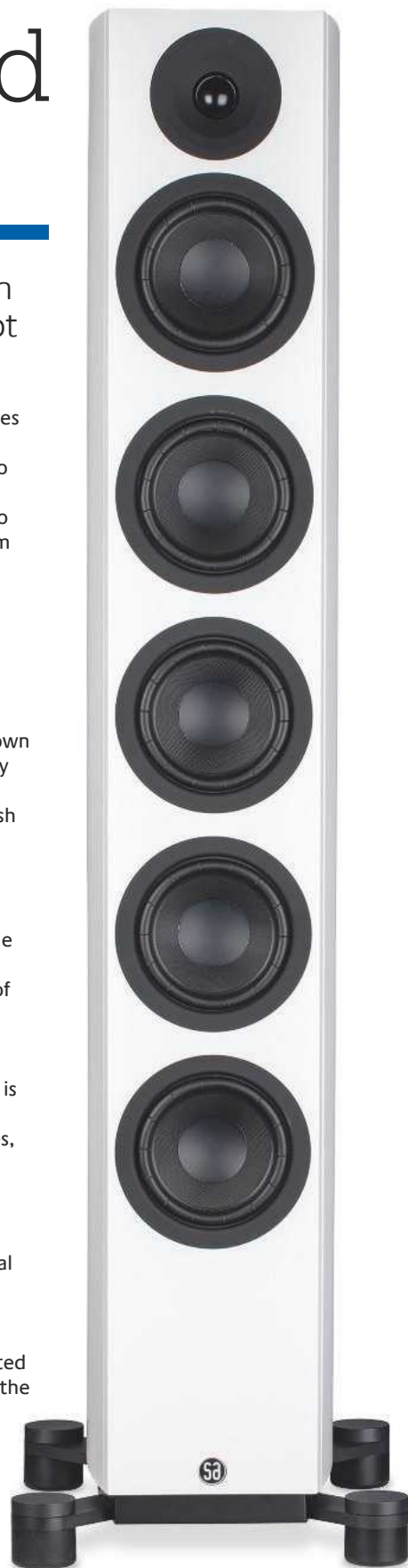
FOUR BY THREE

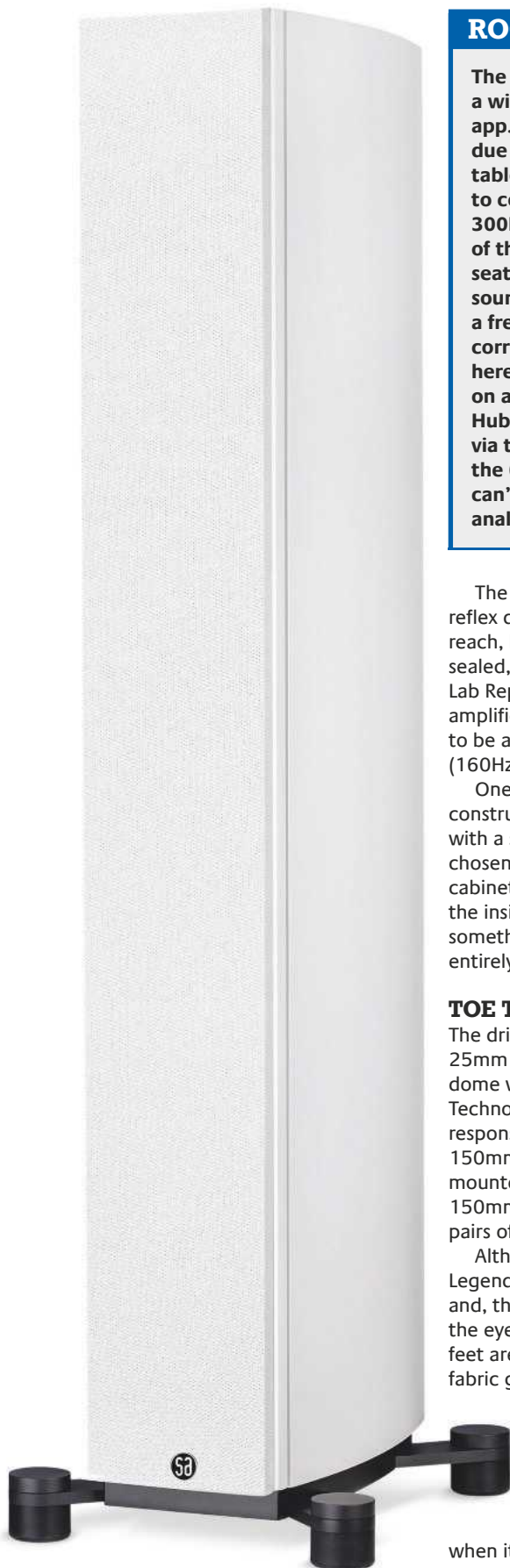
One curious omission from this little black box is an Ethernet port. This would surely help streamline an installation process that may prove frustrating depending on your general attitude towards 'smart tech'. My own experience took nearly 30 minutes courtesy of a repeated error message within the Google Home app, which is used to establish a network connection to the Hub (a web browser is an alternative) – although once set-up is complete WiSA doesn't use your home network to stream.

There's also quite a lot of pressing of buttons on the back of the Hub, the back of the 60.2 Silverbacks, the Hub's remote and your own smartphone until everything is singing from the same hymn sheet.

Anyway, back to the speakers themselves, and those two rear ports. System Audio, which builds all of its loudspeakers by hand at its Danish plant, sells both active and passive versions of its Legend models. The Legend 60.2 Silverback is therefore identical in appearance to the passive Legend 60.2 (£5400). However, the introduction of an Analog Devices DSP-based crossover and 560W-worth of Class D amps (with integrated DACs) has allowed the company to rethink the loudspeaker's sound profile.

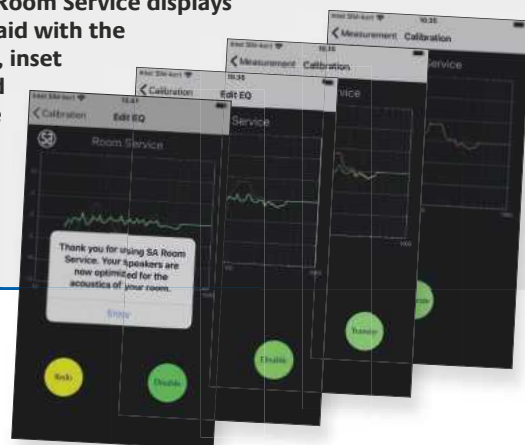
RIGHT: 150mm woven-fibre midrange [top] and four 150mm bass drivers look identical but the mid unit has a shorter (lighter) voice-coil. The tweeter with DXT lens/waveguide was developed with the Danish patent holder





ROOM SERVICE

The Platin Audio Stereo Hub is not simply a way to feed the Legend 60.2 Silverback a wireless signal – it also works in conjunction with System Audio’s Room Service app. Available at present for iOS (Apple) devices only, but with an Android version due to arrive soon, Room Service uses the microphone within your smartphone/tablet to measure the response characteristics of your listening room. It then aims to correct the Hub’s output signal to compensate for bass peaks and troughs below 300Hz, while capturing higher-frequency data to help ‘identify the natural response of the loudspeaker’. Unlike some platforms that work on one or more specific seating positions, here a one-minute sweep across the soundstage (‘continuous soundfield sampling’) is performed. Room Service displays a frequency plot of your room, overlaid with the corrected response [see screenshots, inset here]. This EQ’d profile is then stored on an Analog Devices DSP within the Hub, and can be disabled if desired via the app. As it’s not stored within the 60.2 Silverback’s own DSP, it can’t be used with playback via the analogue XLR input.



The Legend 60.2 is a three-way bass-reflex design with a rated 30Hz low-end reach, but the Silverback version is sealed, and claims to hit 17Hz [see PM’s Lab Report, p63]. Because of those four amplifiers, System Audio deems the speaker to be a ‘four-way’, but it retains a three-way (160Hz/3.2kHz) crossover.

One could argue that the best way to construct a sealed loudspeaker is to start with a sealed box. Instead, System Audio has chosen to retain the Legend 60.2’s ported cabinet and then block the outlets from the inside. This strikes me as unusual, and something that my listening suggests isn’t entirely fool-proof.

TOE THE LINE

The drivers remain the same, of course. The 25mm high-frequency unit is a woven silk dome with a DXT (Diffraction eXpansion Technology) lens to fine-tune its off-axis response and better integrate with the 150mm woven-fibre midrange driver mounted below it. There are then four 150mm woven-fibre woofers, running in pairs off separate internal amplifiers.

Although certainly tall at 118cm, the Legend 60.2 Silverback is just 20cm wide and, thanks to its curved sides, easy on the eye. Outriggers with spikes and rubber feet are supplied, as are full-length black fabric grilles. System Audio’s placement recommendations are for a toe-in of 15°, a listening distance between 2.5m and 3m, and rear wall clearance of 20cm-40cm.

After experimentation, I found the greater distance gave better results when it came to bass performance, even


with the sealed design making near-wall positioning more appealing.

FULL THRUST

There’s a feeling of latent energy when listening to this towering active speaker. A dozen drivers in your eyeline implies a full-range, full-scale sound, and that’s what the Legend 60.2 Silverback delivers. It’s therefore a clear-cut partner for cinematic, instrument-packed soundscapes, but proves equally at home with ‘the small stuff’.

The voicing replaces overt bass warmth with sheer bass weight and energy (arguably too much energy at times), while there’s a bright, sparkly grasp of upper registers and impressive imaging. My initial grumbles about the set-up process rapidly started to fade when the music began to flow.

All of the above is largely true whether you opt for wireless connection or the analogue XLR input (give or take any changes to response characteristics introduced by the Room Service app, see boxout, above). With a Primare PRE35 preamp [HFN Dec ’19] connected directly to the speakers, the Silverback sounded a shade richer, with more of a forward thrust to vocals.

Yet using the Stereo Hub with room correction applied (which aimed to correct bass dips at around 70Hz and 150Hz in my room) helped smooth a low-end performance that, at times, could sound rambunctious – even though the Room Service compensation never approached the 

Bricasti Design



M3 DAC



M20 PRE
M25 AMP



M3 DAC



M3 DAC



M3 DAC

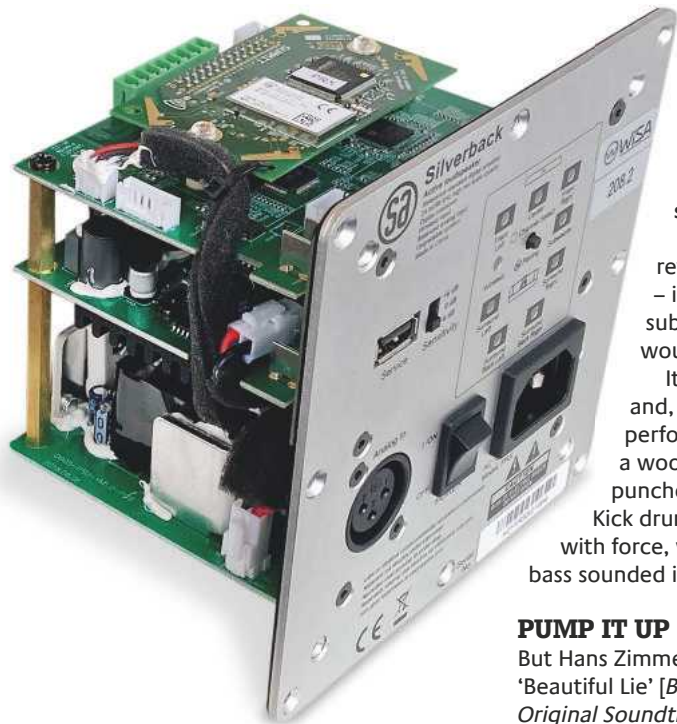
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ACTIVE LOUDSPEAKER



LEFT: The wireless WiSA receiver, ADCs, DSP-based three-way crossover, and four Texas Instruments-sourced Class D amps are all contained in the Silverback 'pack' built into the lower section of the 60.2's cabinet

revealed a bass extension – in my room – that some subwoofer manufacturers would be proud of.

It was rather eye-opening and, thankfully, this facet of the performance didn't come with a woolly edge – this speaker punches like its gorilla namesake. Kick drums, in particular, arrived with force, while the metallic-tinged bass sounded impossibly huge.

PUMP IT UP

But Hans Zimmer and Junkie XL's 'Beautiful Lie' [*Batman v Superman Original Soundtrack*; Water Tower Music 88985301172] caused a raised eyebrow, when one particularly low note came with an audible flutter from one of the Silverback's sealed ports. Thankfully, at all other times the ports were as quiet as a church mouse.

Okay, this active speaker can come across as a bit over-eager in the bass department, but it's tailor-made for high-volume listening and sounded sublime with well-mastered tracks. Mike Oldfield and York's remix of 'Ommadawn' [*Tubular Beats*; Ear Music] delivered a soundscape that washed over my listening position and felt completely removed from the slim cabinets up front. Nudging the volume via the Hub's remote found the active 60.2 retaining clarity and tonality – the onboard amplification seems up to the challenge presented by the driver sextet and cabinet size.

'Rocket Man' by Elton John [*Honky Chateau*; Mercury 528 ↪

LEFT: Front (top) and rear views (bottom) of System Audio's wireless Stereo Hub. Analogue ins are on RCAs and a 3.5mm jack socket with digital via optical (x3), HDMI (ARC), coax, USB-B and USB-A. Google Chromecast, Apple Airplay, DLNA UPnP, Spotify Connect and Bluetooth are supported

'night-and-day' feeling of, for example, the Dirac Live system used by Arcam and NAD.

System Audio's claim is that the Legend 60.2 Silverback musters 'the deepest bass' even at low listening levels. There was an element of truth to this. With Robbie Williams' 'Shame' [*In And Out Of Consciousness*; Tidal Master] burbling away quietly via Chromecast, there was still a chewy, textured and fulsome quality to the bassline. Yet it's when you crank the volume that the 60.2 Silverback's bass energy becomes its party trick. KOAN Sound's 'Funkblaster' [*Funk Blaster EP*; Tidal Master]

'Mick, Keith and gang sounded imperious'



OLE WITTHØFT

Denmark's System Audio was founded in 1984 by Ole Witthøft – a former musician – after he wondered why loudspeakers 'were competing about the best technical specifications when it is the sound that matters'. Thirty-seven years later, he's head of R&D at a company whose speakers never seem to stand still. An example of this is something System Audio calls 'RAM Tweaks'.

'RAM Tweaks are upgrades that you download and install [via USB] in your Silverback speakers', explains Witthøft. 'Digital technologies are developing at speed – a RAM Tweak is a way to stay updated, if you want.'

System Audio intends to roll out a selection of these DSP overhauls offering different sound profiles – at the time of writing it had begun with the smaller Silverback 40.2. 'I hope that people will try RAM Tweaks to find the perfect match for speakers and room. It's a unique tool and far easier to hear than experimenting with cables and spikes.'

Such upgrades might appeal to those who aren't using the speaker's wireless input and SA's Room Service app. Yet the latter is also being redesigned, and not just for Android compatibility – the new version will include Room Service, plus 'manual EQ and setup management of wireless WiSA speakers'.

So why the initial delay on an Android app, by far the world's most popular smartphone platform? 'Android does not have a strict standard for mics, so we can't rely on an Android device for precise acoustic measurements', says Witthøft. 'Android users will use a wireless microphone supplied by us.'



nucleus

by

roon



*July 2018

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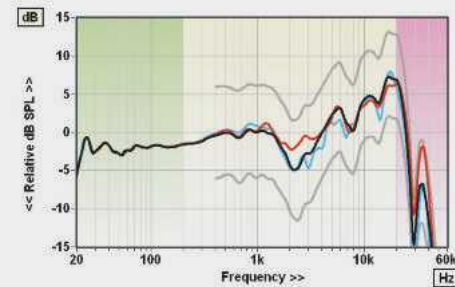
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SA LEGEND 60.2 SILVERBACK

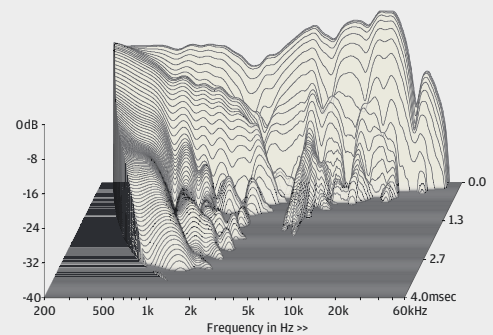
As Mark discusses in our review, this 'Silverback' version of the Legend 60.2 is very much more than an actively-driven version of the 'passive' 60.2. Same cabinet and same combination of four 150mm carbon-fibre reinforced bass units, except the ports in the Silverback are internally 'shorted' to yield something closer to a 2nd-order sealed-box bass alignment. In practice these foam bungs do not provide an hermetic seal, so the alignment is slightly 'leaky'. Moreover the quad woofers are separated into two pairs, each driven in parallel from one TI Class D amp and delivering a useful -6dB bandpass of 18Hz-130Hz. With Room Service correction applied [see boxout, p59] the bass is extended to circa-20Hz [-6dB re. 200Hz; green shaded area, Graph 1].

The forward response, however, shows a generally uptilted trend from bass through to treble, albeit with an upper mid/presence band depression. This was a more significant -5dB/2.1kHz dip in the 'left' speaker compared to -2.5dB in the 'right' and responsible for the below average 4.7dB pair matching [black/red traces, Graph 1] and higher ± 6 dB response error in the 'left'. That the mid/treble crossover is increased from 1.85kHz (passive 60.2) to a higher 3.2kHz in the 60.2 Silverback, thereby stretching the reach of the 150mm mid driver, may not be coincidental, but toeing the speakers a little off-axis certainly tempers the brightened treble.

The blend of rigidity and self-damping offered by SA's bass/mid cone material is ably illustrated by the low-level of breakup modes [CSD waterall, Graph 2]. THD, meanwhile, is a low 0.3-0.35% through bass and mid (re. 90dB SPL/1m) and principally 3rd harmonic, though this segues to 2nd harmonic at higher frequencies as the ultrasonic response is limited to ~26kHz (-6dB re. 10kHz) via the soft dome tweeter [pink shaded area, Graph 1]. (TI's 'Ultra-HD/PurePath' Class D modules will accept 96kHz digital inputs, conferring a potential ~48kHz bandwidth.) PM



ABOVE: Response inc. corrected nearfield <200Hz [green], freefield corrected to 1m [yellow], ultrasonic [pink]. Left speaker, black (with grille, blue); right speaker, red; ± 6 dB settings, grey (from 400Hz)



ABOVE: Low-level modes visible from the four bass units up to 2kHz and mid at 6kHz but tweeter is clean

LEFT: The 'Silverback' version of the 60.2 has its ports plugged to give a sealed-box bass alignment. Input is via XLR or wireless via the Stereo Hub. Gain/sensitivity can be adjusted by ± 6 dB and the speaker configured for stereo or multichannel duty via the back panel

gang sounded at their imperious, foot-tapping best. Switch to low-key compositions, and the appeal of the 60.2 Silverback becomes more about its sense of mid and treble clarity, and expansive soundstaging. J J Cale's 'After Midnight' [*Naturally*; Mercury] has an oddball stereo mix – the kick drum patrols the left channel, while the snare sits right – but Cale's voice and guitar solo shone through, the former blessed with a close-mic'd presence that hung in the centre, the latter seeming to emerge from nothing.

FREE FLOW

It's a revealing presentation too, so you'll need to accept the deficiencies of some of your favourite tunes, or upgrade your diet. Listening to a CD-res stream of Lynyrd Skynyrd's 'Call Me The Breeze' [*Second Helping*; MCA] had me hankering for something else, for both the soundstage and dynamic range had shrunk, with just the Floridian rockers' tight groove to latch on to.

Something else came in the form of Adele's tear-jerker 'Hello' [25; XL Recordings XLCD740]. Not always my cup of tea, but I lapped it up here. The way these floorstanders planted the singer in my room, revealed every vocal inflection and handled the dynamic ebb and flow was stop-what-you're-doing captivating. 🎧



162-2] began with a widescreen soundstage of rolling piano, clean, upper-range bass guitar and well-resolved vocals. It was here I got a better understanding of the 60.2 Silverback's delicate higher-frequencies and imaging capability. The opening hi-hat 'tings' had a crisp, precise nature, while cymbal crashes hit without hashy noise. The ARP synthesiser added another instrumental layer for the 60.2 Silverback to dig into, and it painted a picture of both width and height.

Sticking with classic tracks from 1972, The Rolling Stones' 'Shine A Light' [*Exile On Main Street*; Polydor] showed this level of performance wasn't a one-off. Mick, Keith and

HI-FI NEWS VERDICT

System Audio's slim, active Silverback speakers mix the powerful bass-rich sound you'd expect with top-end refinement and a wide, open image. The Stereo Hub brings welcome extra functionality and connectivity – but it does lengthen the set-up process! While unlikely to appeal to traditionalists, these are still a smart choice for those looking to incorporate modern sources while also cutting cable clutter.

Sound Quality: 84%



HI-FI NEWS SPECIFICATIONS

Pair matching/Resp. error (200Hz–20kHz)	4.7dB/ ± 6.1 dB/ ± 4.3 dB
LF/HF extension (-6dB ref 200Hz/10kHz)	20Hz 25.5kHz/26.7kHz
THD 100Hz/1kHz/10kHz (for 90dB SPL/1m)	0.35% 0.30% 0.50%
Dimensions (HWD) / Weight (each)	1180x200x335mm / 27kg

Soundsmith SG/SG-230

Singular driving force behind the revival of the strain gauge generator system first seen in phono pick-ups from the '60-70s, Soundsmith's latest offering is nothing if not flexible
 Review: **Ken Kessler** Lab: **Paul Miller**

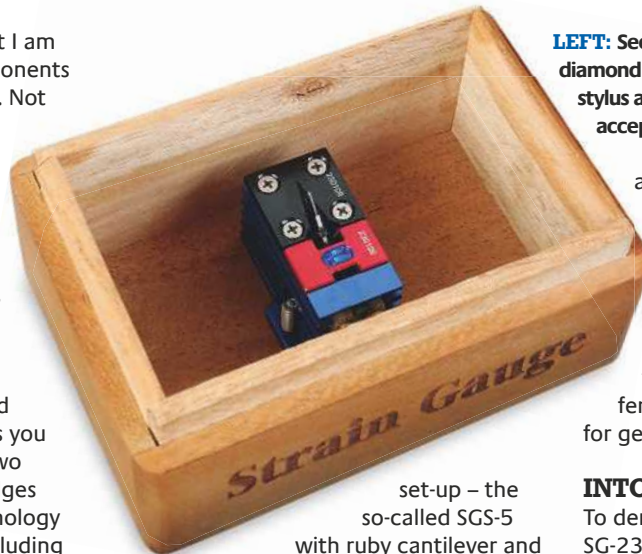
Hardly scientific, I know, but I am predisposed toward components that cause binge-listening. Not knowing what to expect of the Soundsmith Strain Gauge cartridge and the accompanying SG-230 preamp/energiser at a pound shy of £16,000, I will declare my surprise upon discovering that it was so engaging, I listened to 14 LPs in a row in their entirety. I repeat: *fourteen*.

Yes, it's that kind of a device, but getting to the stage where it wowed me into submission was tortuous, as you will see. I had only ever heard the two pre-Soundsmith strain gauge cartridges of which I am aware [see PM's technology boxout, p65] in the distant past, including a Sao Win design in a system in California some 35 years ago, and brief exposure to the UK-made Euphonics Miniconic from the late-1960s. Audio memory ain't that great, so I had no preconceptions about Soundsmith's realisation of this technique.

CHOICE OF SIX

Soundsmith Founder, CEO and Chief Engineer Peter Ledermann has deep high-end audio roots, having worked for the now-legendary speaker manufacturer Bozak, detoured to IBM, made cartridges for Bang & Olufsen and other activities, while embracing strain gauge cartridges along the way. It's now 20 years since Ledermann unveiled his Strain Gauge cartridge at CES in 2001, and I am embarrassed to admit that it has taken me that long to hear one in my own system.

First, a bit about the lineup and nomenclature, which is your initial taste of the complexity. In addition to a complete range of fixed-coil cartridges, including one with a cactus needle cantilever (!), the Strain Gauge cartridge (*aka* 'SG') has its own, dedicated section on the company's website. By virtue of its user-replaceable stylus assembly, the SG can be purchased a number of ways. Of the six different cantilever/stylus assemblies available, the configuration here is the one-from-the-top



LEFT: Seen here, boxed, and fitted with the nude diamond stylus and ruby cantilever of the SGS-5 stylus assembly, the strain gauge pick-up will accept six different cantilever/stylus variants

accidents. Among the supplied items are two separate 24V 'wall wart' power supplies. These, however, do not connect directly to the SG-230 but via a small black box labelled WWE-24X2 (a PSU filter, I presume), which then connects to the SG-230 with two wires fitted with ferrite rings. That's just the rigmarole for getting power to the unit.

set-up – the so-called SGS-5 with ruby cantilever and nude line contact stylus.

Back to the nomenclature: SG-230 is not the model of the cartridge, but of the energiser (or 'bridge') and full-function line preamp supplied with the review sample. If you want to purchase an SG cartridge without a full preamp, there is the SG-200, or you can purchase the SG-210, identical to the SG-200 but with a volume control.

In addition to the SG circuitry, the SG-230 provides four line inputs, with remote control for input selection, volume and muting. As this review is about the cartridge rather than the SG-230 *per se*, I fed its fixed outputs into my regular preamplifier.

That said, the SG-230 is a superlative control centre, ghostly quiet and versatile. Soundsmith supplies a host of connectors and out of necessity, an operating manual that is hi-fi's answer to Proust's *Remembrance Of Things Past*. Anyone buying this package should read the full set of instructions before unpacking to avoid

INTO THE BLUE

To derive a balanced output from the SG-230 Soundsmith supplies split-phase RCA sockets which convert to XLRs with the supplied RCA-to-XLR adapters. The SG-230's output can also be configured to allow 'easy bridging of two stereo amplifiers into double power monoblocks, subwoofer driving, bi-amping or sourcing into a secondary system'. You'll also need to acquaint yourself with the SG-230's user-adjustable auto-mute system, but once set up, simply turning the rotary

source selector to the Strain Gauge input energises the cartridge – you know it's 'on' when the blue LEDs located on the front of the cartridge light up.

Although the cartridge has parallel sides to aid set-up, the long, exposed cantilever is hidden from view. Nervous types will not enjoy fitting this to arm or headshell. The instructions



LEFT: The stylus assembly (black) is firmly screwed into position between two piezoresistive strain gauge 'strips'. The preamp 'bridge' is connected across the clearly colour-coded rear pins

are super-detailed regarding VTA, etc, and cleaning the stylus (with Blu Tack) is something of a ritual, but it sounded astounding at its recommended 2.3g tracking force, without casting runes or reading the Tarot cards.

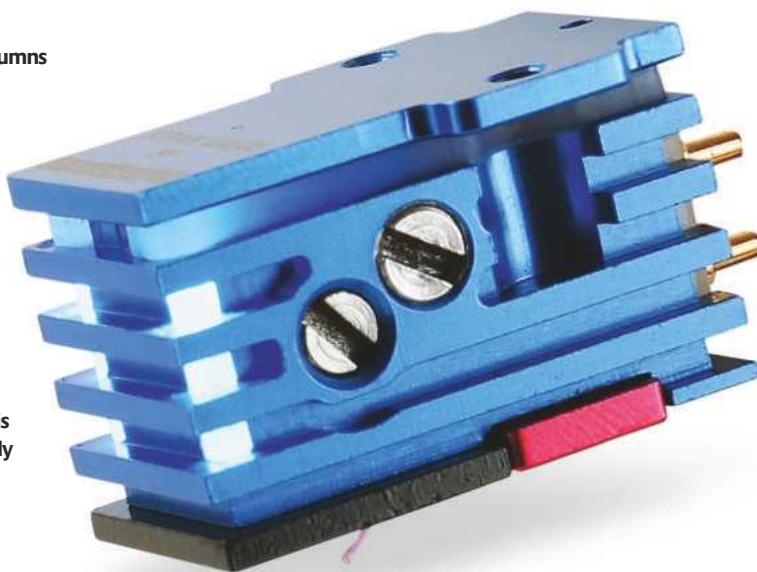
GAME CHANGER

All of you have experienced that instant revelatory moment in hi-fi because it occurred the first time you switched on your first-ever sound system. As we grow older, possibly jaded, certainly more experienced and with higher expectations, such occasions happen less frequently. The Soundsmith SG is thus 'momentous'.

From the opening notes of Jethro Tull's *Aqualung* [Mobile Fidelity MFSL 1-06 1], I realised that I was in the presence of something as game-changing as the DS Audio Grand Master [HFN Feb '21]. Despite the title track soon being relegated to the 'Cancelled' category along with Dr Seuss owing to its salacious nature, I wallowed in the sheer threat of the number.

What nailed me to the hot seat was, in particular, the flute, because I hear one in person every day. Mrs K has nothing in common with Ian Anderson, and while she doesn't do that breathy thing he employs like an instrument unto itself, I do know the sound of a real flute up close and personal. The Soundsmith SG/SG-230 extracts every windy moment, with just the right amount of whistle and rasp.

RIGHT: Two columns of blue LEDs on the front of the cartridge's alloy body confirm 'power on' for each channel. The screws on the side allow fine adjustment of azimuth and VTA. With the cantilever set so far back, cueing is performed largely by blind instinct!



As for the snarling vocals, it sent me back a half-century, when I saw the band live in the USA. Anderson's voice is as distinctive as his flutery, so this cartridge plays right into the hands of those who argue that a sound system can convey character. As this album is a concept of sorts about a disreputable soul, and menace permeates almost the entire LP, I was being primed for 'Locomotive Breath'. And I was not disappointed.

Schizophrenically, the Soundsmith SG is both a precision tool, a sonic scalpel, yet at the same time it is capable of pure

thuggery. The track 'Locomotive Breath', as the iron horse in the title warns, has to make you cower and it highlighted one of the cartridge's many, almost-peerless strengths: it has bass so solid, powerful and deep I found myself admiring the speakers for being able to handle it. Call it 'heavy', call it 'prog rock' – whatever genre claims Tull as its own, the SG/SG-230 understands the need here to convey the sense of a juggernaut about to roll over the listener.

KEY NOTES

From brutality to finesse is a chasm worth crossing if one is to learn of a component's versatility and, it must be stressed, its universality as far as musical types are concerned. As far removed from *Aqualung* as I could get was Laura Nyro's *Christmas And The Beads Of Sweat* [Pure Pleasure PPAN KC30259]. Ace musicians, including half of The Rascals, an emotive voice from a masterful singer-songwriter, A-list session players – this LP exhibits delicacy in direct proportion to Tull's fist in the face.

Remarkable is the only way I can describe the ascent of Nyro's vocal on 'Brown Earth' from frail to full, with her clarity and liquidity sounding so natural that it could have been a master tape. ↻

TAKING THE STRAIN

Up to a point, Soundsmith's Strain Gauge pick-ups have more in common with DS Audio's 'optical' cartridges [HFN Jun '17, Dec '17, Jan '19 & Feb '21] than traditional MM/MCs. But only up to a point... MM/MCs are velocity-sensitive devices that employ electromagnetic induction to convert stylus motion into an output voltage. MMs vary the magnetic field around fixed coils while MCs move coils within a fixed field – in both cases the signal voltage increases with groove excursion and, thus, increasing signal frequency. Soundsmith, by contrast, uses the stylus/cantilever movement to deform two very fine piezoresistive strips – the so-called strain gauges – held within the cartridge body. An onboard preamp/bridge [the SG-230, pictured opposite] applies a constant current through the strips and derives a voltage from the changes in their electrical resistance. The applied current also powers those six blue LEDs!

Like the DS Audio pick-ups, which recover a voltage output from minute photocells, the Strain Gauge types are sensitive to stylus displacement (amplitude) and require only a relatively subtle HF cut to realise a 'flat' response with RIAA pre-equalised LPs. Soundsmith relies on the mechanical roll-off of the 'motor' to achieve this. The SG-230 can also be used as a preamp for CD/line sources, offering a full +15.9dB gain, low 0.0008-0.002% distortion and wide 94.5dB A-wtd S/N ratio (both re. 0dBV). The response is sufficiently flat and extended (± 0.4 dB from 5Hz-100kHz) that it adds nothing to the 'ups and downs' of the pick-up itself [see Lab Report, p67]! PM



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LAB REPORT

SOUNDSMITH SG/SG-230



ABOVE: Connection to the strain gauge pick-up is made alongside the three line-level outputs (all on RCAs) – the latter may be configured for fixed, variable or balanced output with an XLR adapter. Four preamp inputs, on RCAs, are included to accommodate standard line-level sources. Note the pair of 24V DC PSU inputs

Better still was the sound of the piano, so convincing that I couldn't resist tapping out a few notes on the upright next to my desk, just to experience the timbre. This cartridge is clean and uncoloured, such that I was reminded of another in this elevated category.

ABSOLUTE SOUND

Like the DS Audio Grand Master, the SG/SG-230 has background silences to suggest a CD is playing. There are wonderfully quiet passages in Nyro's work that can be sullied by the low-level grunge of even the best MCs when heard through high-resolution systems. This Strain Gauge pick-up is hum-free, and this liberates the music in ways that affect transparency, 'air', soundstage dimensions and other elements of the sound that benefit from a low noise floor and wide dynamic contrasts.

On to the jaunty 'When I Was A Freeport And You Were The Main Drag', the brass was rich and full, the piano suitably tinkly, the soundstage stretched across the room. Best of all, the SG/SG-230 had a way of placing the instruments in a 3D array that avoided any of that 'cut-outs' effect, a seamless spread which attested to consistency, everything of a whole with no exaggeration.

It was forcing me to fire up its rivals, just to make sure that I was not attributing

LEFT: Plastic remote with wood inlay selects strain gauge pick-up 'bridge' and line inputs, with control over volume and mute



greatness to it because of the novelty value. I had already learned that it tracked like certain legendary moving-magnets best suited to test LPs. It was unflustered and unruffled by inner-groove activity. It kept making me think of the DS Audio Grand Master and the TechDAS TDC01 Ti [HFN Sep '14].

As all these cartridges were already set up and easy to access, I slipped The Turtles' *Save The Turtles* [FloEdCo MFO48002] onto the turntable and cued up 'Happy

Together'. It was like sampling a trio of vintages of the same wine, so close were all three – which is as it should be if there truly is such a thing as an 'absolute sound' as posited

by the late Harry Pearson. A sharp, bright, upbeat tune, it features crisp drumming and loads of punch. The differences were as negligible as I hoped. The Strain Gauge pick-up and the DS Grand Master were quieter than the TechDAS TDC01 Ti, which in turn was slightly warmer. The SG/SG-230 was the most open-sounding and detailed, the DS Grand Master slightly richer. I could live happily with any one of them – but would hate to have to choose. ☺

'This is a juggernaut that'll roll over the listener'

HI-FI NEWS VERDICT

A wild departure from the MM/MC norm, SoundSmith's SG joins a select group including TechDAS' TDC01 Ti, top Koetsus and others of that ilk, as well as the equally-unusual DS Audio designs. Their prices may cause alarm, but performance at this level is inarguably sublime. In the SG-plus-SG-230 we have a cartridge not just to cosset your ears but to challenge your intellect. For music lovers, it is life-enhancing.

Sound Quality: 89%

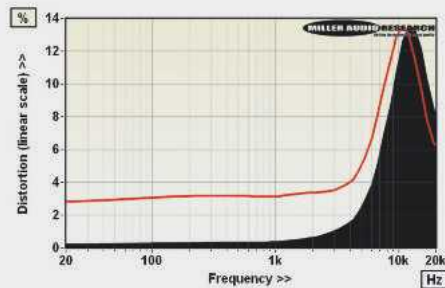


As discussed [p65] the L/R signals from SoundSmith's pick-up are derived from variations in the impedance of its internal strain gauges, so the ~500mV output refers to its partnering SG-230 bridge/preamp. The 1.2dB channel imbalance remains a function of the cartridge as does distortion – the 'equalised' lateral trace (L+R, -8dB re. 5cm/sec) comparable to that from a good quality MC, hovering between 0.35-1% from 20Hz-3kHz [black trace, Graph 2] despite proving just a little higher via the left channel. Vertical [L-R] distortion [red trace, Graph 2] is also slightly higher than typical at ~3-4% via both channels over the same 20Hz-3kHz bandwidth, this tempering peripheral rather than the centre-focused detail. THD is also influenced by tracking performance, but despite its low 10cu compliance and undamped +25dB fundamental resonance, the low moving mass of the SGS-5's ruby cantilever, line contact diamond and fine piezoresistive strips secures its hold onto grooves up to a modulation of +15dB (re. 315Hz/5cm/sec, <1% THD). The high 2.3g downforce assists...

The SGS-5/SG-230's frequency response, and its equalisation of the RIAA encode characteristic, is achieved partly by an active LF boost while relying on the natural mechanical roll-off of the pick-up to counter the ~1st-order emphasis applied to records above 2.1kHz (75µsec). Nevertheless the reinforced upper bass/lower mid, depressed presence and peaked high treble [Graph 1, below] suggests this is only partially successful. Once again, lateral (L+R) cuts [black trace] are captured more convincingly than vertical (L-R) modulations but – crucially – note the inherent 'smoothness' of the responses and freedom from HF resonances seen in all my measurements of traditional MM/MC pick-ups. PM



ABOVE: Freq. resps (-8dB re. 5cm/sec) lateral (L+R, black) vs. vertical (L-R, red). No RIAA correction >2kHz



ABOVE: Lateral (L+R, black fill) and vertical (L-R, red) tracing and generator distortion (2nd-4th harmonics) vs. frequency from 20Hz-20kHz (-8dB re. 5cm/sec)

HI-FI NEWS SPECIFICATIONS

Generator type/weight	Strain gauge / 9.8g
Recommended tracking force	21-25mN (23mN)
Sensitivity/balance (re. 5cm/sec)	495mV / 1.15dB
Compliance (vertical/lateral)	10cu / 9cu
Vertical tracking angle	26 degrees
L/R Tracking ability	60µm / 65µm
L/R Distortion (-8dB, 20Hz-20kHz)	1.25-21% / 0.35-13%
L/R Frequency resp. (20Hz-20kHz)	+0. to -dB / -0. to +dB
Stereo separation (1kHz / 20kHz)	30dB / 25dB

Yamaha A-S3200

Seven years after Yamaha moved into high-end price points with a flagship, all-analogue integrated we look at its latest offering and discover 'retro' with 21st century sound
 Review: **Andrew Everard** Lab: **Paul Miller**

Big, bold and unashamedly old-school with its silver finish – black is available as an option – polished piano black side panels and large illuminated meters, the £4999 Yamaha A-S3200 is the flagship of the brand's integrated amplifier range, which kicks off with the modest £200 A-S201.

Perhaps Yamaha isn't foremost in the minds of contemporary hi-fi buyers, with a number of brands way ahead of it in terms of customer recognition, but that's something of a shame. From the operation of the controls to the overall finish, its products are more than a match for the likes of Denon, Marantz, *et al*, while exuding a class all of their own.

That's certainly the case with this big integrated, weighing in at the better part of 25kg and with a quoted output of 100W/8ohm [see PM's Lab Report, p71]. True, at first glance there's little to set this latest model apart from the A-S3000 it replaces [HFN Nov '13], but then that's no bad thing – for the buyer looking for a high standard of performance without resorting to the multi-box pre/power convention, there's much to like here.

LIVING LARGE

In fact, Yamaha has been making amps like this for a good while, not least because big integrations are especially popular back home in Japan – their space-saving ability a boon when compared with a rack of separates. The A-S3200 also finds itself newly on-trend in the US and Europe with the arrival of similar products from a wide range of rivals, not least of which is Rotel's revived Michi brand [HFN Apr '21].

I guess part of that reflects the current downsizing/simplification trend, but that's not to say Yamaha is giving up on pre/power thinking. Indeed, this new model is part of the company's flagship 5000

RIGHT: Two-part frame features a secondary copper-plated chassis supporting a substantial PSU with custom 625VA toroid, 4x22,000µF caps and 2.7mm² wiring [centre]. MC/MM phono stage is separately screened [top right]

Series range, which also runs to the £6499 C-5000 preamp and similarly-priced M-5000 stereo power amp [HFN Aug '20], the £6999 GT-5000 turntable [HFN Oct '20] and standmount NS-5000 speakers, yours for £15,999 a pair [HFN Jun '17].

The line is certainly based on solid foundations [see boxout, p69] with Yamaha going back well over a century, and able to claim that it invented the term 'hi-fi' way back in the 1950s. This helps explain why the A-S3200 feels rock solid when you unbox and install it, and then goes on to impress with its combination of flexibility, precision and performance.

In designing this amplifier, the company has avoided the temptation to load it up with facilities such as digital inputs and multiroom capability – despite the

existence of its excellent MusicCast wireless distribution system – and has instead gone for an all-analogue design, complete with MM/MC phono stage and fully balanced working throughout.

HIGHER GROUND

The amplifier is built on a grand scale, from its hefty toroidal transformer through to high-quality speaker outputs fed by very thick internal cabling. This, incidentally, seems to be one of the major distinguishing factors between the amp and its A-S3000 predecessor, along with improved 'mechanic grounding' via upgraded feet and chassis construction.

True, the Yamaha A-S3200 isn't exactly frill-free: it has two sets of speaker outputs, with A/B/A+B switching, and both tone and





balance adjustment. These are on lozenge-shaped controls with a positive centre detent but no separate bypass switch.

The headphone output, meanwhile, has its own trim control, offering -6dB, 0dB, +6dB and +12dB gain, and there are also front panel switches for MM/MC phono selection and muting. As already noted, the switches are not only substantial but well finished, and feel both smooth and positive in operation. This extends to the silky rotation of the amp's volume control too. A slimline metal-cased remote handset is provided [p71], and this is also able to control a Yamaha CD player, such as the £4000 CD-S3000 [HFN Nov '13].

HEROIC METERS

One especially slick touch is found when you press the 'mute' button, for rather than an instant cut-off of sound, the volume just fades away. Then there's that pair of

'The synths were a firework display – magnificent!'

illuminated power meters along with a dimmer and the ability to turn them off. As PM notes in his lab report [p71], these are not pure retro decoration but are very accurate at displaying the amount of power the amp is delivering into 8ohm.

The amp has two sets of balanced and four unbalanced line inputs, plus the phono stage, and there's also a single line-out, preamp outs and direct power amp inputs. The speaker terminals, machined from brass and shaped to allow them to be tightened down well onto spades or bare wires alike, are especially impressive, and the amplifier also has the usual complement of remote options, with cabled inputs and outputs and a 12V trigger connection.

A switch to set automatic standby completes the rear panel roster, but this is only of passing use, as it waits eight hours before powering the amp down – oh well,

ABOVE: Dominated by its glorious – and uncommonly accurate – 'retro' VU meters, the A-S3200 also features a motorised volume, tone, balance, input, speaker and 'phone switching

better than an over-short period, I guess. Oh, and there's a miniature USB port to be found on the amp's back panel, but it's only there for service purposes.

MADE TO MEASURE

Emblazoned on the front of every Yamaha hi-fi product used to be the legend 'Natural Sound'. That may be missing here, but it's very much what you get from the A-S3200 – a presentation that at first seems very understated, but swiftly creates a growing realisation of 'rightness', combining ease of listening with true musical involvement.

The iron fist here is very much clad in the finest of kid gloves, as is clear as soon as music is played through the amplifier using a variety of analogue sources. Driving PM's resident B&W 800 D3 loudspeakers [HFN Oct '16] exceptionally well, the dense mix of Yes's 'Yours Is No Disgrace' [*The Yes Album*; Rhino Atlantic download] was delivered with plenty of drive and bite, but all in a very mature and measured manner. The sound communicates directly, with bass, drums and all instruments rich and warm, with impressive bass growl.

Yes, there are more revealing amps, but they can make the odd, edgy recording sound harsh and irritating. Not so the A-S3200, even with Big Audio Dynamite's 'Medicine Show' [*This Is Big Audio Dynamite*; Columbia 88697482392] at high volume levels, the presentation is focused and clear, and with every element easily heard. And yet it pounds along catchily, the A-S3200 doing that trick of keeping control without being controlling. ↗

INVENTING HI-FI

The A-S3200 may be very similar to the A-S3000 it replaces, but then that's no bad thing. After all, Yamaha has been at this hi-fi game longer than most, having coined the term back in 1954 for one of the first stereo record players, and has built an enviable reputation both for the sound of its stereo and multichannel products, and the quality of its build and finish. The company has a long history in music and audio, having been founded in 1887 building reed organs, and starting piano manufacture in 1900. These days, as well as making pianos, both acoustic and electric, under its own name and that of Bösendorfer, which it acquired in 2008, it's unique among hi-fi manufacturers in being able to equip an entire symphony orchestra from its catalogue of musical instruments. And that's before you even get to the motorcycles, outboard motors, jet-skis, snowmobiles, sports equipment, industrial robots, software and semiconductors, educational programmes in sports and music, and the largest musical instrument store in Japan, complete with concert hall and recording studios.

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INTEGRATED AMPLIFIER



ABOVE: Two pairs of balanced ins on XLRs (with switchable polarity and sensitivity) are joined by three line, one phono, tape and pre in/out RCAs plus two sets of substantial 4mm speaker cable terminals. Remote triggering is also supported

The New York Philharmonic/Boulez recording of Ravel's *La Valse*, from *Boulez Conducts Ravel* [Sony Classical SS 89121], is dramatic right from the opening low chords; the sound is lush but with so much insight into the orchestra, and faultless soundstaging. The strings sound silky, but the bass rumbles the room without calling attention to itself. And when the timpani kick in, wow, there's nothing polite or oversmoothed there as, instead, the instruments sound totally natural.

SLAM DUNK

With ELP's Ginastera-based 'Tocatta' [*Brain Salad Surgery*; Sanctuary/Universal 5308195], the A-S3200 delivers magnificent slam, with the trio so tight, and superb bass power. I've rarely heard PM's reference B&W speakers so well controlled – and we've used them on the end of some very serious amps in the past. The sense of drum skins in Carl Palmer's kit is remarkable,

and you can almost hear the oscillators working in Emerson's synths, with Palmer driving hard and the synths going off like a firework display. Magnificent stuff!

Then there's the immaculately-produced pop of Dave Stewart and Barbara Gaskin's *Up From The Dark* set [Rykodisc

LEFT: The RAS34 system remote serves all the amplifier's functions in addition to open/close, track selection, etc, for the CD-S3000 CD/SACD player



RCD 10011]. Here the A-S3200 does a fine job with the vocals and the multiple layers of instrumentation, and also proves more than capable of getting a shift on when the music switches from wistful to hard-driving. Those characteristics are also heard to good effect on Queen's 'Doing Alright', from the band's eponymous first album [Island UIGY-15011]. Here the opening is delicate and well-judged, the mid-section tight and jazzy, and then the track slams into flat-out rock. The Yamaha A-S3200 delivers all the power anyone could want, but does so with absolute refinement.

It's no surprise, then, that the New York Philharmonic/Bernstein recording of Britten's 'Sea Interludes' [from Sony Classical SS 87981] is an absolute *tour de force* for the Yamaha flagship, from the sparkling, clanging bells and beautifully rendered strings of the 'Sunday Morning' interlude to the focused chaos of the 'Storm', all drama in the strings and percussion, and a rolling, menacing undertow in the brass that tingles the spine. ☺

HI-FI NEWS VERDICT

The idea that Yamaha amps are all about smooth lushness is swiftly dispelled when the A-S3200 is heard working in anger: this is a fast, dynamic and mighty exciting amp that carries its sonic armoury with total ease. It cruises through gentle chamber, jazz or easygoing pop, but is also able to unleash massive power without missing a beat or breaking a sweat. Add in the sheer quality of the whole enterprise, and it's a bit of a star.

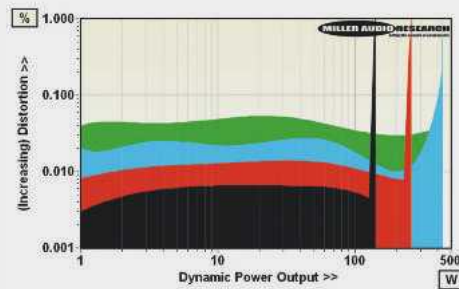
Sound Quality: 87%



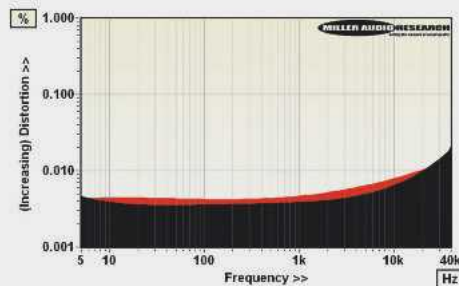
YAMAHA A-S3200

We reviewed the first of Yamaha's 'new retro' integrats over six years ago and, in common with the shared aesthetics, it's also very tricky to determine any significant performance change between the aforementioned A-S3000 [HFN Nov '13] and the latest A-S3200 we have here. Both amplifiers are rated at 100W/8ohm and both come up trumps on the bench at 2x120W and 2x195W into 8 and 4ohm. The dynamic performance of the A-S3200 is very similar too, the amplifier possessing enough headroom to deliver 140W, 260W and 447W into 8, 4 and 2ohm loads and 380W/1ohm before the electronic protection kicks in at the 19.5A current limit [Graph 1, below]. In common with Yamaha's amplifiers past and present, gain is relatively high at +43.5dB (balanced in) but this model also features a 6dB attenuator dropping this to a more useable +37.5dB.

Also like other Yamaha amps, the A-S3200 boasts an extremely wide 96dB A-wtd S/N ratio while its response is both flat and extended at -0.09dB/20kHz to -1.55dB/100kHz into 8ohm loads. Its treble does drop very slightly into tougher impedances to, for example, -0.25dB/20kHz and -0.5dB/20kHz into 2 and 1ohm, respectively, but the A-S3000 behaved similarly. The very controlled trend of distortion versus output, actually falling slightly from ~0.006% at 1-20W/8ohm to 0.0035%/100W, just prior to clipping, was also observed with the A-S3000. Versus frequency, distortion increases at HF, although 0.01%/20kHz over the top 10W of output is not high [see Graph 2, below]. Finally, how accurate are those gorgeous meters? In short, spot on – the 1W, 10W, 50W and 100W positions matching precisely the amplifier's output at 1kHz/8ohm. PM



ABOVE: Dynamic power output versus distortion into 8ohm (black trace), 4ohm (red), 2ohm (blue) and 1ohm (green) speaker loads. Max. current is 19.5A



ABOVE: Distortion versus extended 5Hz-40kHz frequency at 1W/8ohm (black) and 10W/8ohm (red)

HI-FI NEWS SPECIFICATIONS

Power output (<1% THD, 8/4ohm)	120W / 195W
Dynamic power (<1% THD, 8/4/2/1ohm)	140W / 260W / 447W / 380W
Output imp. (20Hz-20kHz/100kHz)	0.026-0.068ohm / 0.42ohm
Freq. resp. (20Hz-20kHz/100kHz)	+0.0dB to -0.09dB/-1.55dB
Input sensitivity (for 0dBW/100W)	19mV / 192mV
A-wtd S/N ratio (re. 0dBW/100W)	96.4dB / 116.3dB
Distortion (20Hz-20kHz, 10W/8ohm)	0.0045-0.011%
Power consumption (Idle/Rated o/p)	70W / 358W (1W standby)
Dimensions (WHD) / Weight	435x180x464mm / 24.7kg

Musical Fidelity M3x Vinyl

Joining the M3scd CD player/DAC and M3si amplifier, the new M3x Vinyl represents the brand's 'entry-level' MM/MC phono preamp. We lift the lid on a novel design

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

Scratching my head, I remain amazed at the plethora of affordable phono stages now on offer, as if to prophesy that the LP's return has no end in sight. Either that or it's sheer opportunism, but hey, that's all good news for hi-fi users. What these phono preamps do is ensure that LPs are accessible to a wider audience than high-end devices serve, while filling the gap between the costly stuff and those £99 USB-equipped decks which probably chew up more LPs than they actually play. Musical Fidelity's M3x Vinyl, however, begs a different sort of question.

Once newcomers and returnees to LP, who bought integrated amps without phono stages during the past 30 years, ask the key question 'how do I play LPs through my line-level-only system?', they'll also query what they get by looking beyond the sub-£500 phono amps from Thorens, MoFi, Pro-Ject, Rega and others. At £1200, in silver or black, the M3x Vinyl thus faces a challenge, for those aforementioned entry-level phono stages are all far better than merely satisfactory.

SIZE MATTERS

So my justification for the M3x Vinyl may strike you as specious, desperate, illogical or simply stupid. My instant love for it, though based on the sound, was strengthened by its concept and presence. Equally, there are some odd omissions, but then every piece of hi-fi I've ever tried is a curate's egg to a greater or lesser degree.

There is a major conundrum facing those of you who looked first at the photos and wondered, 'Why is this phono stage housed in a 440x97x385mm (whd) box when it would fit into an enclosure the size of a paperback book?' PM's boxout [p73] covers off the technical explanation, but for me it was more about practicality. Was

RIGHT: While the capacious 'M3x' casework would accommodate a CD player or amp, here the 'wide open space' is used to separate the linear PSU with encapsulated transformer [top left] from the MM/MC RIAA eq stage [top right]

I making excuses for MF? No, it emerged that the case size has two real purposes, the first, as PM notes, being the separation of the circuitry from the power supply. The result is one quiet piece of kit.

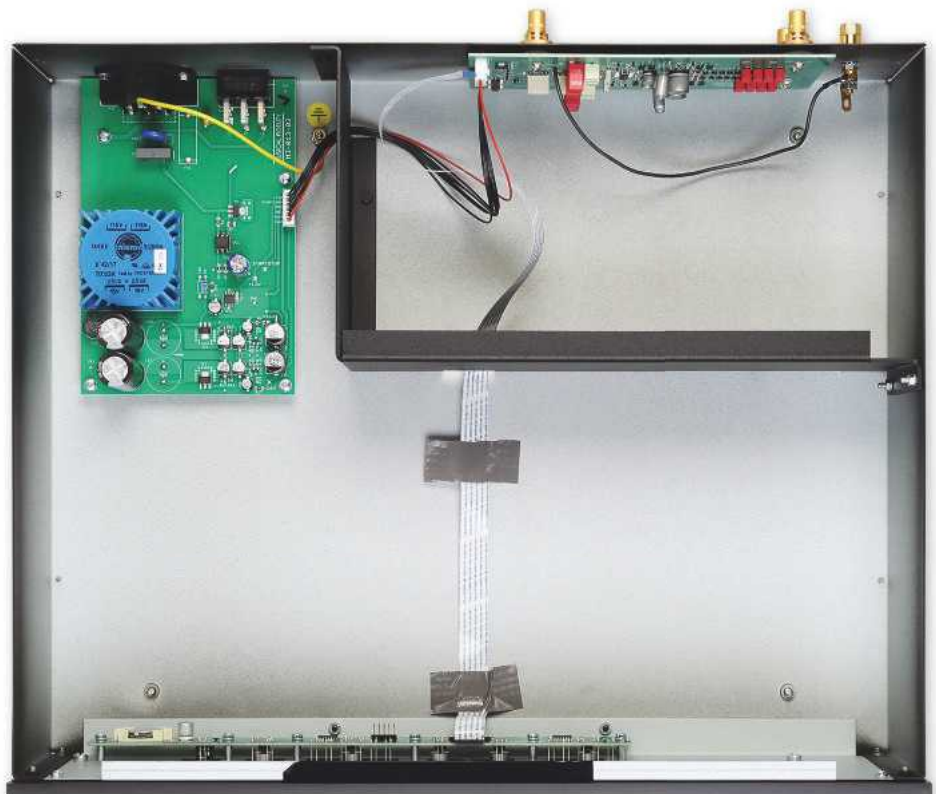
The other, real-world reason, is that tooling up for a single box to suit a range of matching models – in this case, a CD player/DAC and matching amplifier – saves costs at the manufacturing stage, while creating a uniform look for the series and providing the option to stack M3 units.

There are other factors too. At the risk of perhaps sounding daft, this outsized box 1) means you can use thick interconnects without it being pulled off the shelf (the wee Thorens, MoFi and NAD phono stages need to be held down with weights when deploying unyielding cables); 2) there's no need for toothpicks to select settings; and 3) it's large enough to place under small-footprint turntables if space is an issue.

This surfeit of internal real-estate also begs the question... why-oh-why, at £1200, did Musical Fidelity not include two separate sets of phono inputs? I'm not suggesting for a moment that many audiophiles run two decks or one with two arms, but it's a nice option to have.

FLEXIBLE BENEFITS

Then we get to the real meat of the M3x Vinyl and why it joins the £1000-£1500 shortlist: it is as flexible as the vast majority of users require, and I had no trouble 'tuning it' to two MM and four MC cartridges. The front panel – and I would find it hard to choose between black or the silver – places its six buttons with 17 accompanying blue LEDs, in a row, clustered by role. Left-to-right, they include power on/off located out on its own, then the MM and MC selectors, followed by the third group, which provides six settings





for MM capacitance loading: 50pF, 100pF, 200pF, 300pF, 350pF and 400pF.

Next are two useful buttons, the one labelled 'IEC' inserting a subsonic filter (what used to be called a 'rumble filter' but is now the most recent amendment to the RIAA curve) and which proved useful when I played some slightly warped singles. Next is the +6dB gain booster, which – whether by my choice of cartridges or the capabilities of my system – I didn't need, but I can understand its usefulness, especially for those who want to push the M3x to its limits with a low-output MC.

Lastly are the six MC settings of 25, 50, 100, 400, 800ohm and 1kohm. As broad as these may seem to some, and at the risk of inciting ire in those who spend two days setting-up their cartridges, they suited Lyra, Koetsu, Denon and EAT MCs without any issues for either gain or sound quality. This isn't my first go-round with Musical Fidelity phono stages – I still own an X-LPS

[HFN Feb '04] and the original Nu-Vista preamp [HFN Aug '98] – so the brand's traditional usability has been prioritised by the company's new owners.

LIQUID ASSETS

You've already seen my top 20 list of demo LPs [p24], and my remarks about how standard issues are just dandy if audiophile pressings are either not available or cost-prohibitive. And yet... I fell straight into the trap of using a One-Step release for my first burst through the M3x Vinyl. For whatever lockdown mood inspired me, I couldn't resist listening to Patricia Barber's jazzy, atmospheric *Café Blue* [Impex IMP6035-1], especially for its sense of an intimate space and Mariana Trench bass. In addition to providing a perfect opportunity

'It combines intimate space and Mariana Trench bass'

ABOVE: Solid alloy fascia (in matt black or silver) accommodates touch-switches for MM/MC selection, MM/MC loading, IEC subsonic filtering and a supplementary +6dB gain option

to gauge the effect of the subsonic filter, it revealed a trait I have associated with Musical Fidelity going all the way back to The Preamp [HFN Nov '82 & Jul '13]. It was as if the spirit of designer Tim de Paravicini hovered over the revived MF brand, for this phono stage has a bottom end to rival even my preferred valve designs.

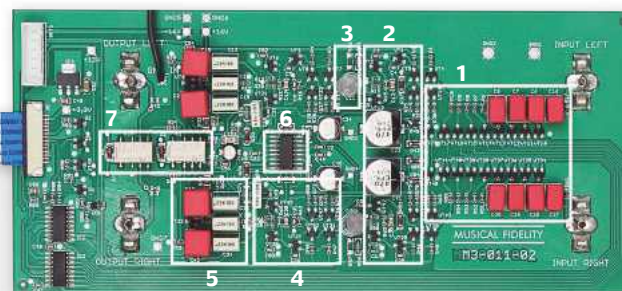
The vocals oozed presence, and the detail was mesmerising. But this LP was proving problematic because it is a perfect example of a recording (or pressing) that is so good, it makes even average systems sound spectacular. But then that's what audiophile discs are all about, right?

Since I was spinning vinyl at 45rpm, I dug out what is rapidly becoming my second-favourite Bob Dylan LP after *Nashville Skyline*: the 45rpm, 2LP edition of *Love And Theft* [Mobile Fidelity MFSL 2-489]. While the appeal of Dylan's voice is always a moot topic, the musicianship is never in question, and the key to the M3x Vinyl's prowess here was the sheer fluidity of the guitar work. The sound of this slithery

accompaniment, if there's a Venn diagram for sonic character, was more liquid than silky, and while that sounds as ludicrous and vinous as a 'chocolate midband', it's the only way I can describe it.

CENTRAL POWERS

While I was tempted to binge on my fave Dobro and pedal steel performances, this phono stage begging to be fed the Dillard's and the Burritos, I also needed to hear what it did with vinyl of a quality less than the stellar pressings of Barber and Dylan. So I went all the way to the other extreme, and the box set of The Beatles' singles [Apple 02547 26171]. This 2019 reissue, ↻



SMART STUFF

The 'open-plan' real estate of the M3x Vinyl's chassis provides considerable breathing room to screen and separate the phono stage proper from the companion power supply [see inside picture, p72]. In fact, there's so much fresh air on offer that the elegance of designer Lubor Grigorescu's RIAA network will be lost on all but the most attentive of observers. Even the fact that this PCB [inset picture] is fixed directly to the rear panel RCA phono is testament to the desire to maintain very short and controlled signal paths.

Beginning at the far right of the board (1) are the surface-mount MC input loading resistors and (red) capacitors for the MM stage, all switched by a row of chip transistors. The discrete MC headamp and first gain stage then follows (2) into the first stage of the split passive/active RIAA network. Lubor's use of polystyrene capacitors (3, left channel) is a key feature of the 'voicing' of this phono stage. The second stage (4, right channel), again fully discrete using chip transistors, includes the switchable gain for MM and MC pick-ups. This differential stage is also the active portion of the RIAA network, the correction applied via its feedback loop. The MM/MC gain and subsonic filter (5, right channel) are selected via a DG412 analogue switch (6). The phono stage output, either direct or with IEC subsonic filtering is managed via a pair of relays (7). PM

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— Formula xHD rev.2 —



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Lab: Paul Miller

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PHONO PREAMPLIFIER



ABOVE: Simplicity itself – one set of gold-plated RCA inputs for MM and MC (switched via the fascia, see p73) with RIAA eq'd outputs also on RCA phono sockets

which I didn't need but splashed out for anyway as a Fab Four devotee, contains all of their 45s, and I was reminded of what a pain in the butt singles can be, having to get up every 2m 30s to flip 'em over.

What this flow of singles revealed were two things. The first was that Musical Fidelity could have included a mono button on the M3x Vinyl, which would have enhanced its usefulness for those who listen to much-loved material from the 1950s and early 1960s. The second (I know – in contradiction to the first) was that the unit, despite the lack of said setting, creates a solid, central image, even without switching one's main preamplifier to mono or opting for a mono cartridge.

CRISP 'N' DRY

As hoped for, the singles had charm and sparkle, again attesting to a sonic heritage that goes all the way back to vintage Musical Fidelity designs. The marque has always managed to provide a crisp, if slightly dry treble without inducing any fatigue, and it was this ability, for example, that made the company's A1 integrated amp a smash hit. Still with mono, of a completely different recording regimen, I stayed in the same period but switched to the broadcast performances on the album *Live At The BBC* [Apple 3758940].

This triple LP dispensed countless moments of a revelatory nature, and one could actually detect subtle changes from programme to programme, but the tracks do not run in chronological order, so one should listen with sleeve to hand. When you get to the numbers from 1965, the bottom end enjoys more substance than the earlier tracks, which suggests – and this is a long shot – that respect for The Beatles grew exponentially after 1963 and the BBC responded with a touch more care. Given that far too many

of their performances haven't survived, I doubt it. But I digress.

A surprise standout, as it's from 1963, was 'Honey Don't' on the last side of the triple set. George's twangy guitar playing exhibited superlative clarity, the bass had more weight and the vocals retained The Fabs' youthful character – and, yes, we are talking about the most familiar voices in the history of popular music. As this is entirely a mono experience, though, I was letting down the side so I slipped another stereo title on the turntable.

SPECIAL DELIVERY

Like *Love And Theft*, The Doors' *Morrison Hotel* [anniversary box set; Rhino R2 627602] is an LP that seems to be increasing in stature. Most fans loved it a half-century ago, but it was overshadowed by the band's other works. I knew I was enjoying an especially noteworthy session from the opening of the track 'Roadhouse Blues' – again thanks to a familiar voice. Jim Morrison's singing possesses a graininess, a slight whine, and a deadpan quality, all delivered through the M3x Vinyl, even with the least expensive of the MM cartridges. With the MCs? It sang. ☺

HI-FI NEWS VERDICT

There are too many fine phono stages out there for a clear winner to emerge in any price category. What distinguishes the M3x Vinyl from the rest are a sleek package, comprehensive cartridge matching, excellent build quality and – by virtue of its size and look – a presence that will endear it to those who don't want to fiddle about with tiny DIP switches, or non-standard-sized cases. Satisfaction? Guaranteed.

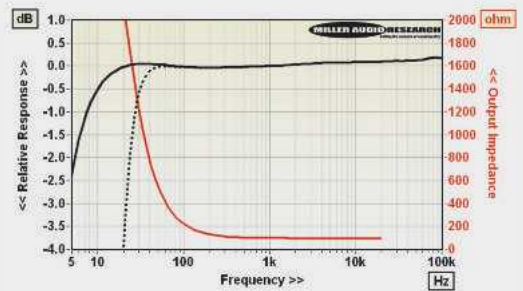
Sound Quality: 86%



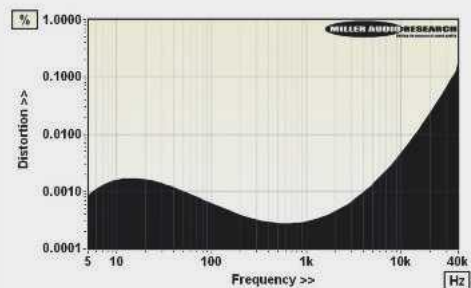
MUSICAL FIDELITY M3X VINYL

Phono stages with multiple gain and/or loading options often trade versatility for ease-of-use, using fiddly DIP switches to select between the various options. Not so here as the MM/MC inputs, the four gain options, cap (MM) and impedance (MC) loading, and IEC subsonic filter are all logic-controlled with the output relay-muted to prevent 'thumps' when switching on-the-fly. In practice, the M3x Vinyl is best suited for MM and high-to-medium output MCs, offering an especially wide 92.9dB A-wtd S/N ratio with the former and a maximum 10.8V single-ended output from either MM or MC input selections. The +6dB gain option is precise, taking the default +40.1dB MM setting to +46.0dB and the +60.0dB MC option to +65.9dB, the latter with a proportional 20dB drop in A-wtd S/N to 73.0dB.

These settings represent a range of input sensitivities of 9.89mV (MM) to 509µV (MC, +6dB) and are engineered with input overload margins of 111mV-5.7mV, respectively, or +21dB. This is equivalent to +27dB using a 'standard' 5mV 1kHz/5cm/sec MM and is sufficient to accommodate the 'hottest' +18dB groove modulation (re. 11.2µm/300Hz) that I use in our pick-up lab tests [see p67]. The active RIAA equalisation [see Graph 1] extends out from 20Hz-100kHz (±0.2dB), rolling away to -2.6dB at a subsonic warp frequency of 5Hz [or -5.0dB/20Hz and -38dB/5Hz with the IEC filter – dashed trace]. The M3x Vinyl's source impedance [red trace, Graph 1] also increases from 97ohm (1kHz) to 2.3kohm (20Hz) as a function of the default low pass filter. The RIAA-eq'd distortion [see Graph 2] is several orders of magnitude lower than required at 0.00028–0.025% (re. 0dBV), allowing the 'colour' of any pick-up to shine through! PM



ABOVE: RIAA-corrected frequency response (black) over an extended 5Hz-100kHz at 0dBV via MM, with IEC filter (dashed) and output impedance (red)



ABOVE: Distortion extended frequency (5Hz-40kHz) via MM input re. 0dBV (1Vrms) output

HI-FI NEWS SPECIFICATIONS

Input loading (MM/MC)	47kohm / 25ohm–1.2kohm
Input sensitivity (re. 0dBV)	9.89mV–509µV
Input overload (re. 1% THD)	111mV/57mV/11.5mV/5.7mV
Max. output (re. 1% THD) / Impedance	10.8V / 97ohm–2.325kohm
A-wtd S/N ratio (MM/MC, re. 0dBV)	92.9dB / 73.0dB
Frequency resp. (20Hz-20kHz/100kHz)	-0.0dB to +0.1dB / +0.17dB
Distortion (20Hz-20kHz, re. 0dBV)	0.00028–0.025%
Power consumption	5W (<1W standby)
Dimensions (WHD) / Weight	440x97x385mm / 6.4kg



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PS Audio introduces the Stellar Strata integrated & M1200 Mono Power amplifiers

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Product Launch



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BEHIND THE MUSIC WITH HI-FI NEWS & RECORD REVIEW

JS Bach *St John Passion*

A Passiontide masterpiece every generation of performers and audiences reinvents for itself... **Peter Quantrill** casts an ear back over more than half a century of recordings

In telling the life of Christ, the four Gospels of the New Testament all build towards his betrayal, his trial, his death on the cross and resurrection. The first three events are known together as Christ's Passion, from the Latin *passio*: I suffer. Church composers had treated the text with varying degrees of freedom and complexity – the season of Lent being a time for quietude and restraint in every respect of life including liturgical worship – for centuries before Bach made his first setting of the Passion, during the early months of 1724.

FINAL CURTAIN

The first performance of the *St John Passion* on Good Friday that year now seems a watershed moment – for Bach's career and for sacred music, even for the way we listen. The greater part of church music up

➔ A drawing from 1749 shows the Thomaskirche when Bach gave his last performance of the *St John Passion*



⚡ Painful affinity – Mark Padmore and Simon Rattle in Peter Sellars' staging of the *St John Passion*



PHOTO: TRISTRAM KENTON

to that point had been written as 'music to pray by'.

Previous Passiontide Gospel settings of note – those by Tomás Luis de Victoria in Rome (1585), Heinrich Schütz in Dresden (1665) and Johann Theile in Lübeck (1673) respected the established conventions of distance between the congregant and the object of contemplation – *ie*, the death of Jesus. They were in many ways like icons, exquisitely wrought though essentially flat, inviting the imagination of the individual to lend the work perspective.

Bach tore down that curtain of distance, at once and for ever, with the *St John Passion*, and more specifically with the churning *ostinato* that sets the work in motion. This chorus demands, rather than invites, our attention – and really to the art itself rather than to its theological object, as a cathartic experience in the manner of a secular tragedy. The poetic text ('Herr, unser Herrscher') looks forward to the domination of God over the realm of earth, while Bach's music paints human need and suffering with a Caravaggio-like naturalism, establishing a tension that plays out until the final

chorale's plea for release, imbued with an exquisite harmonic pain.

Despite their accumulating reverence for the past, 19th-century scholars scarcely knew what to make of the *St John*, and they left it largely alone. However, when Schumann revived the *St John* with his Düsseldorf choral society in 1851 he found it 'more daring, forceful and poetic' than the *St Matthew*.

ON THE LEVEL

The recording of Schumann's edition conducted by Hermann Max [CPO 777091-2] has more than scholarly interest, with its flowery fortepiano continuo and an oaky string bass section for recitatives. The terse and brooding nature of the *St John* found a more lasting home, however, in the early days of the 'historically informed' performance revolution.

The *Passion* is designed to operate on several interlocking levels. First among them is the Biblical narrative of Christ's arrest, trial, crucifixion and burial recited in the words of the Gospel. At arm's

'It was a watershed in the way we listen'

length from the drama, the arias transport us to a lyrical and contemplative plane which reflects on these events. This meditative perspective then widens out to include a communal level

provided by the chorales, where hymn tunes that are drawn from Bach's time crystallise the dramatic events in terms that are familiar.

A remarkable number of recordings satisfy the demands of all three levels, as well as reaching a more nebulous fourth at which the Passion becomes prayer and drama, a Christian prefiguring of Wagner's 'total work of art'. No less 'essential' than the five recordings listed below is Benjamin Britten's 1971 recording

[Decca 4438592, download only], with an all-male choir of searing impact, singing like Peter Pears's Evangelist as if they believed every word of their English text.

Several other English tenors have made the role of the Evangelist their own (in the original German). In the 1980s and '90s pre-eminent among them was Anthony Rolfe Johnson, flexible in delivery for both John Eliot Gardiner's first [DG 4193242] and Nikolaus Harnoncourt's second [Warner, 2564690117, download only] recordings, and yet as urgent and concerned as if he were relating events that happened yesterday.

Among the next generation, Mark Padmore demonstrates a special affinity – at times a painful empathy – with the role on Gardiner's second recording [Soli Deo Gloria SDG712] and Herreweghe's first [Harmonia Mundi HMX290896569]. This last is no less 'essential' in its way for

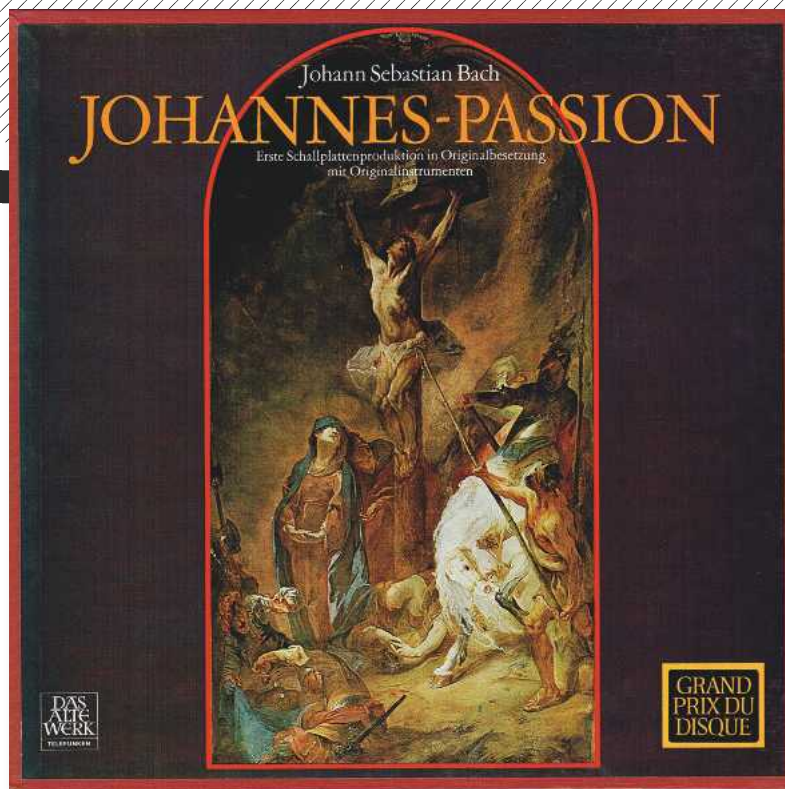


representing Bach's 1725 revision of the score, in which he inserted three new arias, tweaked the recitative and chorus underlays and – most radically – replaced the opening chorus with the choral fantasia which would become a keystone to Part One of the *St Matthew Passion*.

BAROQUE SWING

Masaaki Suzuki has also made two recordings, decades apart, both captured with notable immediacy by BIS. Many will prefer the tauter, more live-sounding second [BIS2551] with another fine English Evangelist, James Gilchrist; but I wouldn't be without the first [BISCD921/2], not least for the uniquely sweet and plangent contributions of the countertenor Yoshikazu Mera. This version also sets down Bach's final thoughts on his score, from 1749.

➔ **This first recording by Nikolaus Harnoncourt from 1965 glows with the spirit of its age**



Among recent English recordings of the *St John Passion*, the Polyphony version led by conductor Stephen Layton [Hyperion, CDA67901/2] stands out for Carolyn Sampson's soprano and Ian Bostridge's Evangelist, and, less definably, for a sense of atmosphere retained from their almost annual Good Friday performances, recorded in a studio.

Less orthodox, no less informed than Peter Schreier by his practical experience of singing the Passion, is René Jacobs [Harmonia Mundi HMC802236/37, download only], imparting a French-Baroque swing to the closing lullaby and a bright astringency to the instrumental lines. None of these recordings suffers from distracting mannerisms,

yet do they represent what Bach had in mind – and does it matter?

Special claims to authenticity are advanced by Philippe Pierlot [Mirare MIR136, download only], who returns with stylish conviction to the idea that Bach was writing for an ensemble of vocal soloists as well as instrumentalists. And also John Butt, the foremost Bach scholar-performer of our day, who presents the *St John Passion* in its original Good Friday liturgical context of chant, motets and voluntaries [Linn CKR419], albeit compromised by some dry and uningratiating solo singing.

Bach's score embraces all these approaches; no one will ever write a label for it as another entry in the 'early music' museum. ☹

⬅ **Peter Schreier, a singer-conductor with a lifetime of experience in Bach's Passions, pictured in 1976**

ESSENTIAL RECORDINGS

Wiener Sängerknaben, VCM/Harnoncourt

Warner Classics 2564696444 (two CDs)
From 1965, with Kurt Equiluz as Evangelist, still a landmark in the recovery of an 'original' sound and performing practice.

Leipzig Rad Ch, Dresden State/Schreier

Philips 4220882 (download only)
Schreier was one of the most vividly communicative Evangelists and Bachians of any generation. Late '80s digital sound complements the search for inner detail.

Taverner Consort and Players/Parrott

Virgin/Warner Classics 5620192 (two CDs)
Another landmark: the first one-voice-per-part *Passion*, a powerfully collective

enterprise, recorded to give equal weight to solo voices and instruments.

Choir of New College, Oxford/Higginbottom

Naxos 8557296-97 (two CDs)
The best of 'English Bach' and of modern male-choir versions: the boy soloists are not outshone either by James Bowman's alto or James Gilchrist's Evangelist.

Berlin Radio Ch, BPO/Rattle

BPO BPHR140031 (two DVDs & Blu-ray)
The ritual without religion of Peter Sellars' staging, full of earnest compassion, technical confidence and artful harmonies between the text and the music.

Vinyl Release

BEHIND THE MUSIC WITH HI-FI NEWS & RECORD REVIEW

Neil Young *After The Gold Rush*

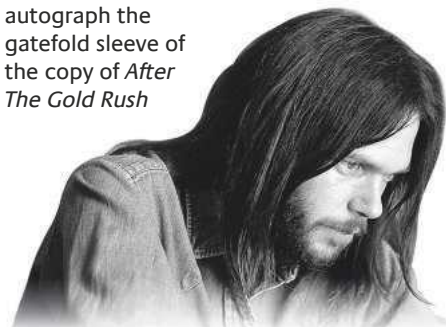
Clutching his personally signed sleeve of this 1970 album, **Steve Sutherland** nonetheless welcomes the 180g vinyl reissue – it's a work of real genius, he says

I don't wanna talk about that. I just don't know what to say. I respect the fact he's a guy who did what he did and, y'know, he did what he *had* to do and I don't wanna get any... I prefer to not be involved at all. I certainly don't wanna take advantage of talking about something like that for the interest of somebody else I've never met, and selling myself in a paper in the process. I'd rather you just left it out – it's just distasteful to me.'

IMPOSSIBLY COOL

What Neil Young doesn't want to talk about is Kurt Cobain, who, just over a year earlier, had quoted his lyric, 'it's better to burn out than to fade away' from 'Hey Hey, My My (Into The Black)', in his suicide note.

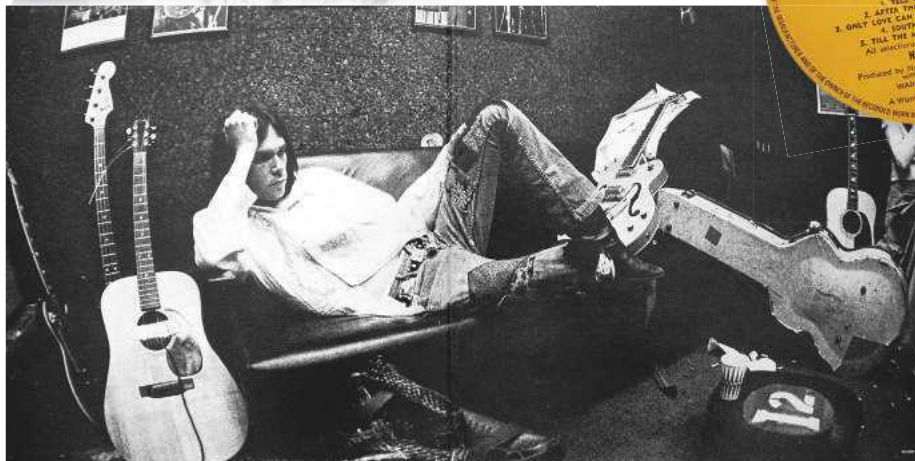
What Young *will* do, though, is autograph the gatefold sleeve of the copy of *After The Gold Rush*



that I've brought along – a cover that, in my opinion, is the greatest in all of rock history. The front shows Young walking along a street. His image is solarised and out of focus while an old lady passes in the opposite direction in the background in perfect focus. Moving on to the centrefold, this features Young sprawled out backstage, or in some rehearsal room, managing to look simultaneously completely out of it and yet king of the world. In other words, impossibly cool.

Then there's the rear of the sleeve, a picture of the back of Young's jeans, a collection of sewn-on patches holding together worn denim – shabby chic if you will, and an image that visually sums up the odd patchwork of the album residing therein.

After The Gold Rush is Young's third solo LP after the break-up of Buffalo Springfield. His first, *Neil Young*, a baroque beauty, had been largely ignored on its release in 1968. His second, *Everybody Knows This Is Nowhere*, is a collaboration with Crazy



Neil Young pictured in a Warner Bros press shot from the 1970s (top), sprawled out in a photo on the inside gatefold sleeve, and (inset) label of the original LP

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...



Horse, an album that sets the template for decades of highly-praised, much-imitated and never-bettered bar band romping.

SNAPSHOT OF TIME

Which brings us to 1970 and *Gold Rush* where Young finds himself spoiled for choice. He begins sessions with Crazy

Horse, but his guitar jam-buddy Danny Whitten's off the mark, scuppered by a heroin addiction that will kill him after Young has to fire him in a couple of years. So he ropes in Nils Lofgren, ex- of Grin, then Crosby, Stills & Nash, who have

recently hauled him into their supergroup for the multi-million seller, *Déjà Vu*.

Not surprisingly under these circumstances, *Gold Rush* turns out to be a collection of songs rather than an album *per se*. It's a snapshot, I guess, of where

Young finds himself at this point in his life: part folkie, part rocker, part singer-songwriter, part romantic, part depressive, part protester, and a recently diagnosed epileptic to boot.

A diary entry of a point in time, *After The Gold Rush* sets the pattern for all subsequent Young releases which tend to reflect their author endlessly changing as the mood and his perspectives take him. Recording begins in Hollywood's Sunset Sounds but soon relocates, with producer Davis Briggs at the controls, to a makeshift studio thrown together inside Young's home in Topanga Canyon.

Thematically, the record's all over the place. The title track is a sci-fi piano ballad inspired by the screenplay of an un-made movie about the apocalypse coming to California that actor Dean Stockwell had written and for which Young was hopeful of doing the soundtrack. It certainly has an ambitious cinematic sweep, starting out in the Middle Ages with archers splitting

'He seemed to love Lynyrd Skynyrd's song riposte'





➔ Priced £27.50, the 180g LP vinyl reissue of *After The Gold Rush* on WB/Rhino is available online at www.amazon.co.uk

trees, bedding down in a contemporary war-torn burned-out basement, and winding up sometime in the near future with a spaceship arriving to rescue survivors from our ravaged planet.

When Dolly Parton, who wants to cover it, calls Young up decades later to ask him what it's all about, he says: 'Hell, I don't know – I just wrote it. It just depends on what I was taking at the time. I guess every verse has something different I'd taken'.

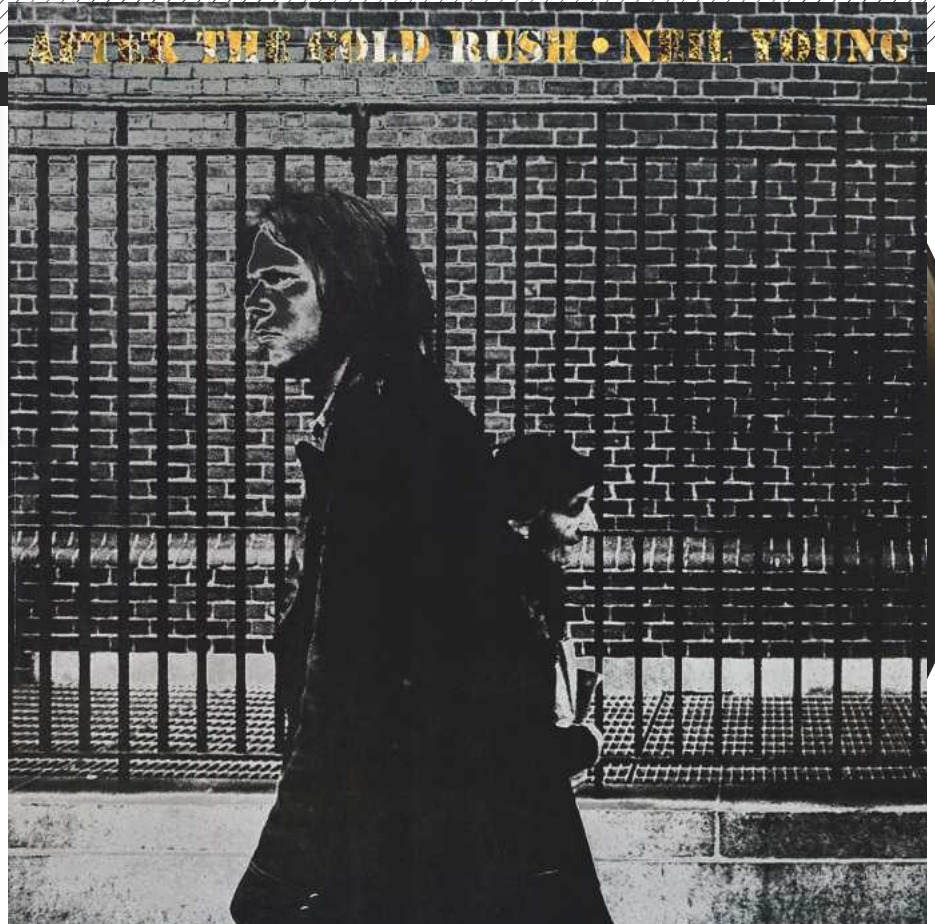
Still, it's obviously an environmentalist anthem of sorts, the line, 'Look at Mother Nature on the run in the 1970s' being updated over the following years in live performance to 'in the 21st century'.

TRUE GREATS

The soppiest tracks on the album – the ones that lead to his next, multi-million selling *Harvest* and from which he will rapidly flee 'back to the ditch' – are led by 'Only Love Can Break Your Heart', written for Graham Nash after Joni Mitchell dumps him, and which gets a very groovy dancy update from Saint Etienne in 1990. Then there's Don Gibson's 1957 weepie 'Oh Lonesome Me', the uncharacteristically straight 'I Believe In You' and the lullaby-ish 'Birds'.

'Cripple Creek Ferry' is an unfathomable throwaway fragment, but 'Don't Let It Bring You Down' and 'Tell Me Why' are true greats. They inhabit that haunting private territory of unsettling, seemingly incomprehensible dreamlike imagery that feeds from the same fevered imagination as previous brain-bogglers such as 'Cowgirl In The Sand' and 'The Last Trip To Tulsa'.

Most famous of all, though, is 'Southern Man', the album's fierce, hard-rockin' condemnation of the racism still prevalent in the former Confederate states of America. Full of screaming, with bull-whips cracking and demands for reparation, it is followed on *Harvest* by the equally acerbic 'Alabama', the pair duly targeted in one of the most famous 'reply' songs ever written,



Lynyrd Skynyrd's 'Sweet Home Alabama' which seeks to bring Mr Young down a peg or two from his lofty, finger-pointing perch. 'Old Neil', apparently, loved the riposte, acknowledged the rebuke and donned a Skynyrd t-shirt in tribute.

RIDING HIGH

On its release, *After The Gold Rush* was afforded a lukewarm reception from the critics who were underwhelmed by the

record's surfeit of self-pity. But time has been mighty kind and these days it regularly crops up pretty high in those lists of Greatest Albums Of All Time ('a masterpiece, plain and simple', 'a classic of the singer-songwriter tradition', *et al.*)

In the 51 years since 1970, Young has put out some 39 studio albums, four soundtracks, eight live LPs and an on-going phalanx of releases from his archives. Not all are works of genius, of course, but a good many – *On The Beach*, *Tonight's The Night*, *Rust Never Sleeps*, *Zuma* – certainly are. *Gold Rush* is one of them. ☺

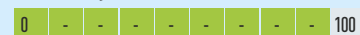


➔ Young performs on stage in June 2009 at the Trent FM Arena in Nottingham

RE-RELEASE VERDICT

With production by David Briggs, Kendall Pacios and Neil Young himself, the 11-track album *After The Gold Rush* came out in the States and UK on the Reprise label in September 1970, in a gatefold sleeve [RS 6383]. At £99, there's the 50th anniversary Warner/Reprise box set with a bonus 7in single, with an alternative 'Wanderin'', to accompany the Chris Bellman remastered LP. But this 180g WB/Rhino reissue with laminated sleeve [517936] is far less expensive. **HFN**

Sound Quality: 85%





Black Sabbath *Black Sabbath*

When four unsuccessful musicians joined forces in Birmingham in 1968, little did they know that by the end of the following year they would have transformed themselves from blues-rock hopefuls to a group who helped change the face of rock music forever

Words: **Mike Barnes**



Few bands have realigned their whole modus operandi around a single song. But for Black Sabbath, the title track from their self-titled 1970 debut album represented a stylistic shift that changed the group irrevocably and would be the single most important step in formulating what would become known as heavy metal.

THE DEVIL STEPS IN

The four members of the group had grown up in the Aston area of Birmingham and all had come from humble backgrounds. Vocalist John 'Ozzy' Osbourne had done a string of manual and factory jobs, including working in an abattoir, and had also spent six weeks in prison.

Iommi, who knew Osbourne from school, fared worse, losing the tips of two fingers in an accident in a sheet metal factory at 17. But with the aid of a couple of homemade plastic thimbles melted down from a Fairy Liquid bottle and inspired by Django Reinhardt's ability with the two usable fingers of his fretting hand, he continued playing guitar.

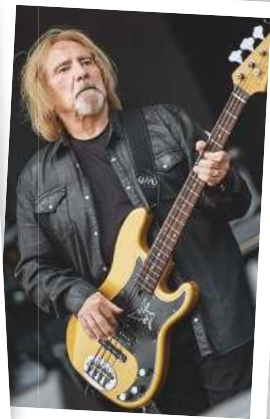
After spending time in a number of unsuccessful Birmingham bands, they joined forces in 1968 with drummer Bill Ward and Terence 'Geezer' Butler, a guitarist who had switched to bass, as the Polka Tulk Blues Band and then Earth. The group, who were all Beatles fans, started off by playing blues



↑ The band in 1970 (l-r) Geezer Butler, Tony Iommi, Bill Ward, Ozzy Osbourne; and (below) Vertigo label with its 'swirl' design

↗ Iommi, Butler and Osbourne all pictured in 2019

↓ Original band lineup with Osbourne (left) in 1973



covers to which they added original material, with aspirations to be like Jimi Hendrix, and Cream.

Then they came up with a song that changed everything. It was based on a slow, tolling riff using the dissonant, unsettling combination of three notes based around a flattened fifth, the 'Devil's triad'. Iommi had been influenced by the ominous three-note top line in Gustav Holst's 'Mars', from his *Planets* Suite, as well as by horror-film soundtracks.

"We knew instantly that "Black Sabbath" was very different to what was around at the time', Iommi told *Rolling Stone*.

Butler played an octave down and in unison with Iommi, which gave the song a monstrous weight, like a golem dragging itself out of a swamp. The song had no chorus but a section that sped up

to a juddering conclusion. Butler had been a practising Catholic before 'seeing the other side of it', which included painting his flat black and decorating it with inverted crosses.

MESMERIC EFFECT

'There wasn't a lot to do in Aston at that time – two channels on TV that finished around 10pm, no money

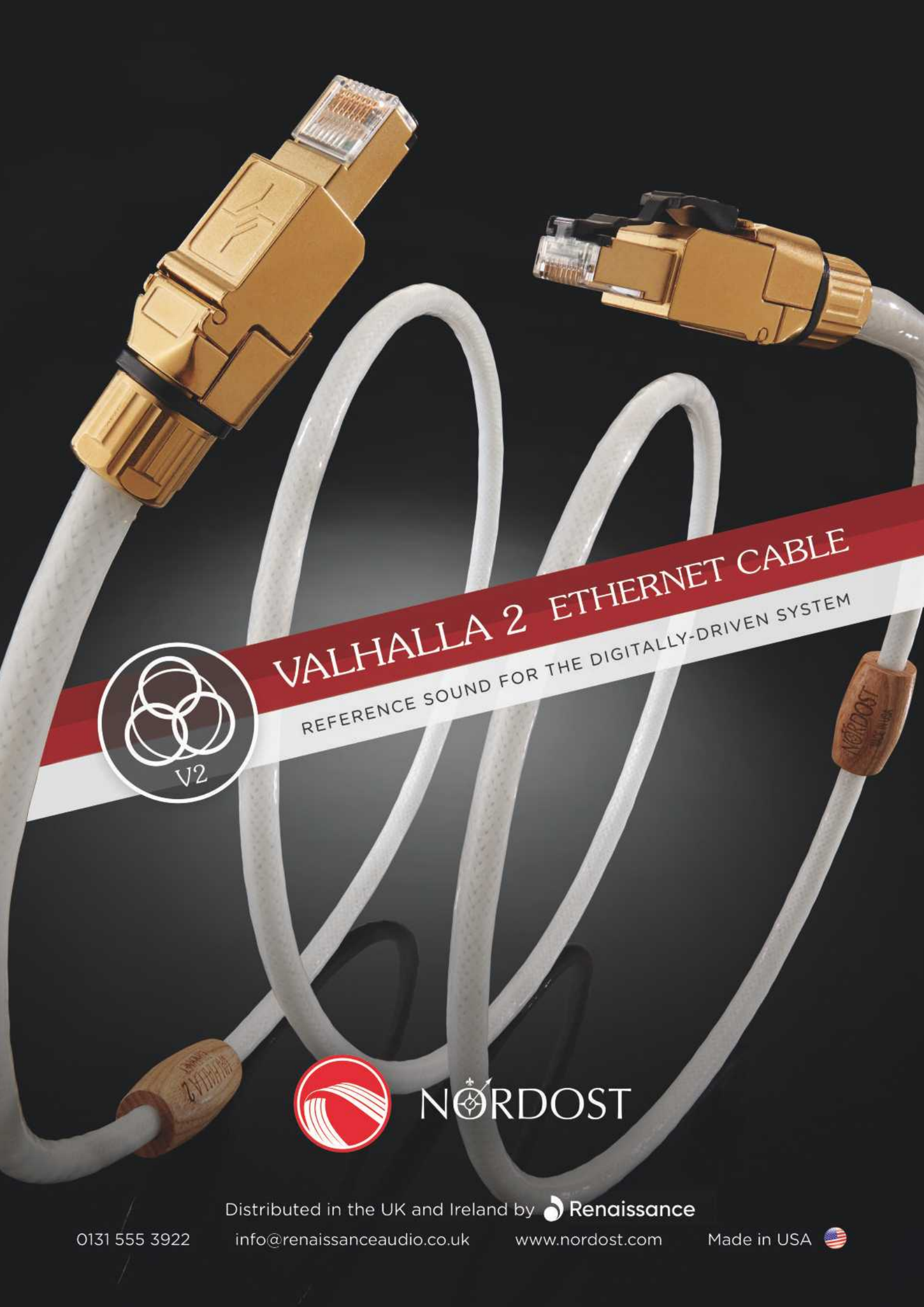
to go out much – so I used to read a lot, especially occult and horror stories', Butler later explained. His lyrics tell of a terrifying experience when he woke one night to see a black figure

manifested in his bedroom, and at the end of each verse Osbourne howls, 'Oh God, please help me'.

The band were excited about this track, which Butler titled 'Black Sabbath' after a 1963 horror film, and they noted the mesmeric effect it had on audiences, which would never have heard anything quite like it before. That said, Osbourne's recollection of them playing it at ↻

'At concerts some of the girls "ran out screaming"'






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VINYL ICONS

PRODUCTION NOTES

When Black Sabbath recorded their debut album at Regent Sounds in London in Nov '69, they were still essentially an unknown proposition. A young producer Roger Bain, who had worked on some of their demo sessions, was drafted in. The engineer was Roger Allom who had worked on Genesis's debut *From Genesis To Revelation*. In 2020 he said the band were 'outspoken and a bit wild', but 'well prepared, and very tight'.

They needed to be. Due to their limited budget, two 12-hour sessions had been booked and the second day was largely given over to mixing and editing, so they approached the recording just like they were playing a live set, with minimal overdubs.

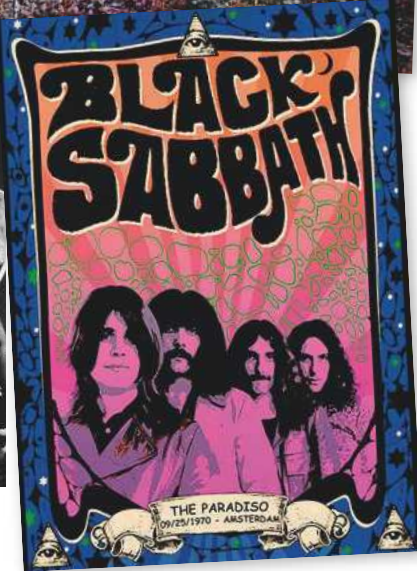
At the time, Allom had never heard anything like Sabbath's music and recalls that they played at excruciating levels. Butler's bass was so loud that they received complaints



from a studio upstairs, and so he had to direct-inject into the mixing desk.

One of the pick-ups on Iommi's Fender Stratocaster stopped working so he ended up using a back-up, a customised Gibson SG, which then became his signature guitar. He thought he'd messed up his solo on 'Warning' and pleaded to do it again although the first take was the one used. Osbourne overdubbed his vocals after the instrumental tracks had been laid down and was hoarse by the end of the 11-minute song.

The band left mixing to Allom and Bain. They added the rain and church bell without telling the band. But they approved, and Iommi was pleased that Bain had run two guitar solos together on 'Sleeping Village'. They initially thought that Bain had done little but press 'record', but later acknowledged that he'd captured their considerable power and energy in its raw state.



concerts is that some of the girls 'ran out screaming'.

Bands like Deep Purple were getting heavier at the end of the '60s and Led Zeppelin had appeared in 1968, but no group had been so intent on stripping away all the fancy stuff to achieve such a boiled-down brutality. The group soon dropped the rather anonymous and confusing appellation Earth and played their first concert as Black Sabbath in Aug '69.

They then secured a deal with Vertigo, the hip subsidiary of Philips Records – although this only happened after the group's manager Jim Simpson managed to persuade his publishing company, Tony Hall Enterprises, to put up the money for the recording of the album.

MOODY BLUES

Iommi decided to dedicate himself to producing more 'creepy' compositions and 'N.I.B.' was a malevolent but animated riff-based accompaniment to Butler's lyrics. These were romantic, after a fashion, telling a rather tongue-in-cheek tale of Lucifer falling in love with a woman. Meanwhile, 'Behind The Wall Of Sleep' was inspired by a short story by American Gothic horror writer H P Lovecraft.

But there are still audible blues influences on Black Sabbath, like the syncopated 'The Wizard' –

inspired by Tolkien's *Lord Of The Rings* – on which Osbourne blows some harmonica. And Simpson had persuaded the reluctant band to record 'Evil Woman (Don't Play Your Games With Me)' by the American

rock band Crow, which was released as a single in Jan '70 and later recorded by Ike & Tina Turner.

Bill Ward was a hard-hitting but stylish drummer and Butler a dextrous bass

player who had been influenced by Dizzy Gillespie in his early teens, and the single's B-side 'Wicked World' was deemed by Iommi to be 'a bit jazzy'. He added, 'But when we'd done "Black Sabbath", that was then where we were coming from. ☺

↩ Grainy fold-out gatefold artwork was created using infrared photography

↩ Poster for a 1970 gig at the Paradiso in Amsterdam

↩ 1972 photo of the band (l-r) Iommi, Osbourne, Ward and Butler

↩ The album was produced in Oct 1969 at the Regent Sounds Studio situated in Denmark St, London WC2

↓ Police officers walk side by side with Osbourne as he leaves Borders in central Philadelphia after signing copies of his book, *I Am Ozzy*, on the 27th of January 2010

'The bass was so loud they received complaints'



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Alternate Format Discography



➔ Iommi, Osbourne and Butler in a publicity shot from 2015

That's where we wanted to be'. And lyrically they were still overlapping with the blues, albeit in the uncanny realm of 'Haunted House blues' by Bessie Smith, and Robert Johnson's 'Me And The Devil Blues' and 'Hell Hound On My Trail'.

The sleeve of *Black Sabbath* featured an astonishing photograph of a black-clad female (model Louisa Livingstone) holding a barely visible black cat, standing among stark trees in a blighted landscape by a mysterious-looking building. The image was actually taken in the environs of Mapledurham Water Mill in Oxfordshire, but the image was shot on infrared film and developed so as to appear grainy, giving her an unearthly, spectral look.

RATHER CORNY

The band loved the cover but were less enamoured of the inverted cross that framed the sleeve notes on the inner gatefold. And the fact that it was released on Friday the 13th of February felt rather corny. This prompted Ozzy Osbourne to defensively pre-empt music journalist Steve Turner's line of questioning with, 'You're going to ask about black magic – it's rubbish'.

Their rather overcooked image and the pared down – dumbed-down to some – heaviness of the music attracted some critical opprobrium. Even the fact that they were from Birmingham was picked up by American journalist Lester Bangs who described them as an inferior version of Cream and 'unskilled labourers hyped as a rockin' ritual celebration of the Satanic mass or some such claptrap'.

Whatever the critics thought made little difference, and the album reached No 8 in the UK charts and No 23 in the US. They got even heavier on subsequent albums when Butler and Iommi discovered the joys of drop-tuning. But Butler could never have envisaged that half a century after their debut they would be lauded as one of the most influential bands of all time. ☺



ORIGINAL LP

Black Sabbath was released in the UK on Vertigo in 1970 in a gatefold sleeve with the sleeve notes and credits within an inverted cross on the inner gatefold and the 'swirl' design on the label. The first pressings had a textured sleeve [VO 6, 847 903 VTY]. In the US *Black Sabbath* was released on Warner Bros-Seven Arts in just a single sleeve with the credits in a panel on the rear cover. On later pressings the label was Warner Bros [WS 1871].

The US version also has extra titles. The intro to 'Behind The Wall Of Sleep' is listed as a separate track, 'Wasp'; Butler's 40-second bass introduction to 'N.I.B.' is titled 'Bassically'; and all four tracks are on the same band on the LP. The acoustic guitar introduction to 'Sleeping Village' is 'A Bit Of Finger' and these two tracks were put on the same band as 'Warning', making it 14 minutes. 'Evil Woman...' was left off the US version and the B-side of its UK and European single release 'Wicked World' was included instead.

The 1973 UK pressings of the Vertigo LP featured the Roger Dean spaceship label logo. The album was reissued on the shortlived WWA Records in the UK in 1973 [WWA 006] and on a 1976 pressing on NEMS [NEL 6002] where a label misprint had 'Sleeping Village' as 'Slopping Village' (sadly, this doesn't seem to have boosted its value).

TAPE VERSIONS

The first UK cassettes were released in 1970 on Vertigo



with cream shells and dark green labels with a detail of the model Louisa Livingstone

on the cover [7 138 048]. The US had a slightly 'zoomed out' cover image and the US LP tracklisting. The cassettes were black with black labels [Warner Bros M5 1871].

Black Sabbath was released on 4-track cartridge in the US in 1970 [Warner Bros-Seven Arts 4WA-1871] and on 8-track [Warner Bros M8 1871]. In the UK an 8-track cartridge came out on WWA Records in 1973 [WWTC 006].

A ¼ in 4-track stereo tape on 7in cine reel-to-reel was also released by Warner Bros in the US in 1970, which had purple and also light green labels [WST 1871B].



CD VERSIONS

The first CD release in the UK and Europe came in 1986 on Castle Communications [NELCD 6002] and in the US on Creative Sounds [6006] with the running order matching that of the US LP. The first remaster was done in 1996 by Ray Staff at Whitfield Street Recording Studios in London and was released on Essential in the UK in a jewel case with a 12-page booklet with photos, artwork, lyrics and notes. The single B-side 'Wicked World' was added to the running order [ESM CD 301; GAS 0000301ESM].

In 2008 a Japanese gatefold sleeve SHM-CD appeared. This was shipped in a facsimile mini-gatefold sleeve, which included a fold-out insert in both Japanese and English [Strange Days/Vertigo, POCE-9107 VO 6, 847 903 VTY].

Most recently, single CD releases were made in the USA, with original tracklisting and the inclusion of B-side 'Wicked World', in a Digipak in 2016 [Rhino/Warner Bros RR2 1871]. These were repackaged in 2019 on Warner Bros with an expanded booklet [RR2 1871/08 1227946746].

DELUXE CD EDITION

A deluxe European CD edition of *Black Sabbath* was released in 2009, remastered by Andy Pearce at Masterpiece Masters. CD1 features the original UK LP running order, CD2 (pictured below left) starts with 'Wicked World' and includes eight studio outtakes from the Regent Sounds sessions [Sanctuary/Universal/Vertigo, 2700817]. It came in an eight-panel Digipak in a plastic slipcase with a 20-page booklet. In the US the deluxe edition based on the UK remastering was released in 2016 with the same bonus tracks but with the original US tracklisting [Warner Brothers/Rhino R2 552928].



AUDIOPHILE VINYL

In 1997 Castle Communications put out a limited edition 160g LP together with a 7in single of 'Wicked World' and 'Evil Woman...' for the UK market. This hit the shops in a gatefold sleeve with a four-page insert carrying photos, liner notes, lyrics, and credits.

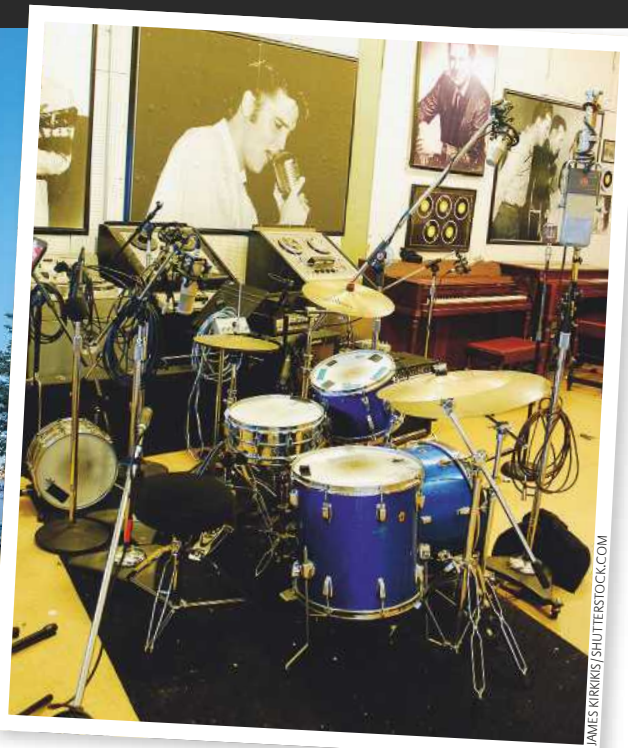
In 2001 that label released a 180g LP [CMHLP116] while in Italy in 2003 the Earmark label, a joint venture between Sanctuary and Get Back, released a picture disc [41004P] with the UK tracklisting, with the addition of 'Evil Woman'. A black vinyl 180g LP was released simultaneously [41004].

In 2016 Rhino/Warner Bros released a 180g double LP in Canada and the United States, with the same tracks as the 2016 US deluxe CD [552928, 1871]. Finally, in 2020 Sanctuary/BMG released a 50th anniversary 180g LP with the Vertigo swirl logo [BMGRM053LP] as pictured below.



Inside the Studio

BEHIND THE MUSIC WITH HI-FI NEWS & RECORD REVIEW



Sun Studios Memphis

Elvis Presley, Johnny Cash, Jerry Lee Lewis... **Steve Sutherland** tells the tale of a studio housed in an old auto glass repair shop that is now called the birthplace of rock 'n' roll

Surely the most charming argument in the whole of cinema history is the one between the two impossibly stylish Japanese teenagers in the opening segment of Jim Jarmusch's 1989 indie triptych *Mystery Train*. The lovers are on a pilgrimage from their home town Yokohama to Memphis. Youki Kudoh's Mitsuko is obsessed with Elvis Presley and insists they visit Graceland as soon as their train arrives.

Masatoshi Nagase's chain-smoking Jun disagrees, claiming Carl Perkins was the real king of rockabilly, and is inclined to join a tour of Sun Studio before taking a peek around Elvis' abode. Presley v Perkins. Sun v Graceland. Quite the dilemma. By hook or by crook, they wind up at Sun first and do the very same tour you're about embark on.

Sun Studio is situated at 706 Union Avenue, founded by Sam

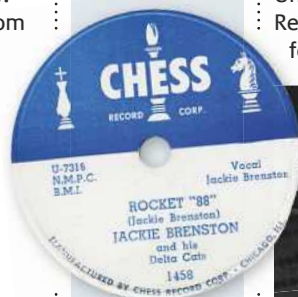
External view of Sun Studios and part of today's tour

Phillips, a 27-year-old native of Alabama who'd DJ-ed some and recently worked as an engineer for the local radio station, WREC.

HEY PRESTO

Under the initial title of the Memphis Recording Service, the studio Phillips founded was situated in an old

automobile glass repair shop with a tin ceiling and a layout that he renovated to comprise a front office, a 20x35ft live area and a tiny control room equipped with a portable, five-input Presto mixing console, a few 'coke-bottle' Altec mics, a handful of Shure 55 and RCA-77 D broadcast mics, and amateur Crestwood and



The single 'Rocket 88' and (right) Sam Phillips in the studio



KEY RECORDING TIMELINE



1952

The Sun records label is launched with 'Flat Tire' by Johnny London. The B-side is called 'Drivin' Slow'



1954

Elvis releases 'That's Alright' with 'Blue Moon Of Kentucky' as the B-side. It's a smash hit in the region



1956

Johnny Cash scores his first major hit with 'I Walk The Line' which remains in the US charts for over 43 weeks



Bell tape recorders. The tin roof was torn out and replaced with acoustic tiles, but the sound was still so erratic that Phillips would pace the room one inch at a time, clapping to try to figure out the exact reverb and echo of every single spot in his studio.

He opened his doors on the 3rd of February 1950 and not too long after the tape recorders were supplanted by a portable Presto PT900 machine. However, Phillips was still suspicious of the quality and durability of tape, and recorded most of his earliest commercial stuff to 16in acetate discs, cutting them at 78rpm with a Presto 6N lathe that was hooked up to a Presto turntable.

TOUGH GOING

Phillips' aim, he explained later, was this: 'I opened... with the intention of recording singers and musicians from Memphis and the locality who I felt had something that people should be able to hear. I'm talking about blues – both the country style and the rhythm style – and also about gospel or spiritual music and about white country music.'

'I always felt that the people who played this type of music had not been given the opportunity to reach an audience. I feel strongly that a lot of the blues was a real true story. Unadulterated life as it was.'

Business was tough going at first. Phillips would record conventions, weddings, choirs, even funerals. He also held an open door policy, allowing anybody to walk in and, for a small fee, record their own disc. His slogan was, 'We Record Anything, Anywhere, Anytime'.

Local musicians began to arrive and Phillips had a brief stint trying his hand at running an eponymous record label but that didn't pan out so he soldiered on for the meantime recording artists and then having the results distributed by labels such as RPM, Modern and Chess.

One of these early sessions is now reckoned by many to be the first true rock 'n' roll record ever made. The story goes that a band was en route to the studio from Clarksdale, Mississippi, when the guitarist's (a

↑ Johnny Cash poses for his first Sun promo shot after signing with the label in 1955

➔ A visitor to the studios stands in front of display case exhibits telling the story of Sun and its stars with photographs, records and clothing

➔ Original poster from 1951 shows sax player and vocalist Jackie Brenston with Ike Turner at the piano

➔ Elvis' first single 'That's All Right', which he recorded in July 1954 at Sun Studios

➔ Promo shot of Elvis taken around the time that Sam Phillips sold the singer's contract on to RCA after releasing five Presley singles



chap called Kizart) amp fell off the roof of the band's car, ruining the speaker cone. When they arrived in Memphis, Phillips stuffed wads of newspaper into the cone and over-amplified the distorted sound making Kizart's fuzzy guitar riff the centrepiece of a rhythm track that also featured Ike Turner on piano. Then he had the sax player, Jackie Brenston deliver the vocal. Boom... 'Rocket 88', credited to Jackie Brenston & His Delta Cats who were really Ike Turner & His Kings Of Rhythm.

The record went straight to No 1 on the R&B chart when released on Chess in June 1951 and its success encouraged Phillips to take another swing at running his own label so, in 1952, he launched Sun Recordings to release the unique sounds he was cooking up in his studio.

Upgrading his equipment, the Presto was replaced by an RCA 76D

radio console while a pair of Ampex 350 tape machines helped create the famous Sun sound by bouncing the signal from a console model to the rackmounted version with a split-second delay between the two. This is what produced the famous snapback effect, which was Sun's most closely guarded secret.

During the label's first year, Phillips recorded the likes of B B King, Rufus Thomas (whose 'Bear Cat' got to No 3 on the R&B charts) and Howlin' Wolf, driving over 60,000 miles to promote his artists with radio stations and distributors.

SHOWED PROMISE

Then, in August 1953, a high school graduate by the name of Elvis Aaron

Presley wandered in to record a two-sided acetate disc of 'My Happiness' and 'That's When Your Heartaches Begin' as a present for his mother. For quite



1987

Sun opens its doors once more and welcomes U2 who record tracks for their live/studio LP *Rattle And Hum*



2010

John Mellencamp stands on the spot where Elvis sang into the mic to record his *No Better Than This*



2015

Singer/songwriter Elle King releases *Love Stuff* with the track 'Last Damn Night' recorded at Sun

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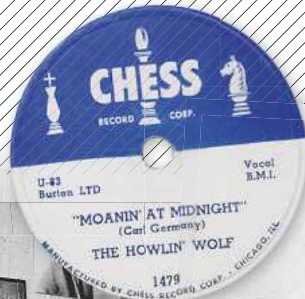
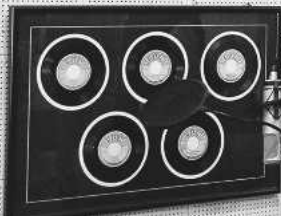
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a while now, Phillips had been on the lookout for someone who could bring the sound of the black musicians on whom Sun focused to a broader white audience. Presley, he thought, showed promise.

BOXING CLEVER

Inviting the teenager back to the studio on the 5th of July, Phillips assembled a couple of locals – guitarist Scotty Moore and Bassist Bill Black – to play backup. Not much was forthcoming until Presley launched into a 1949 blues number, ‘That’s All Right’. ‘All of a sudden, Elvis just started singing this song, jumping around and acting the fool’, recalled Moore, ‘and then Bill picked up his bass, and he started acting the fool, too, and I started playing with them. Sam, who I think had the door to the control booth open... he stuck his head out and said, “What are you doing?”. We said, “We don’t know”. “Well, back up”, he said, “try to find a place to start, and do it again”’.

Phillips taped the session and three days later, popular Memphis DJ Dewey Phillips (no relation) played ‘That’s All Right’ on his *Red, Hot And Blue* show, the phones lit up, the DJ played the disc again, then again, then again... Over the next few days Phillips (Sam, that is) had the trio record the bluegrass classic ‘Blue Moon Of Kentucky’ as a B-side, with the snapback effect. We needn’t dwell on what happened next...

Suffice to say that Phillips recorded and released four more Presley singles over the 18 months that followed, before selling the singer’s contract on to RCA for \$35,000 in November 1955.

With Sun now the go-to studio for aspiring young superstars, a month after Presley left, Carl Perkins dropped on by and laid down his ‘Blue Suede Shoes’ with Phillips fixing cardboard boxes over the amps and turning them round to face the walls, miking them from behind to achieve its unique sound.

On the 2nd of April, 1956 it was Johnny Cash’s turn, his first big hit, ‘I Walk The Line’ duly recorded at Sun with Phillips. The label’s other immortal rock ‘n’ roll great Jerry Lee Lewis actually pitched up to the studio while Phillips was out on vacation in Florida.

As Phillips told it: ‘In late 1956, I took possibly the

first vacation that I’d ever had in my life... Jerry Lee Lewis had been trying to see me, and while I was away he and his father had apparently sold eggs to buy gasoline to come up here to Memphis from Ferriday, Louisiana. You might think, “Man, was anybody that poor in the ‘50s?”



↖ Photos of Jerry Lee Lewis (left) and (right) the Million Dollar Quartet now hang on the wall in the live room

↗ Howlin’ Wolf pictured in 1964 and his single ‘Moanin At Midnight’, released in 1951

↓ B B King pictured in 2004. Early tracks cut at Sun included ‘Mistreated Woman’ and ‘B B Blues’

‘Well, they were. Anyway, he had missed me, but Jack Clement – who I had hired by that time to take a little bit of the load off me on auditions and so on – recorded a demo of him doing ‘Crazy Arms’. When I got back, I said, “That’s what I’m looking for! Where is that cat? Get ahold of him and get him in here!”.’

Back came JLL and pretty soon ‘Great Balls Of Fire’ and ‘Whole Lot Of Shakin’ Going On’ were driving kids all round the world crazy!

On December the 4th 1956 Presley and Cash dropped in to witness a Perkins session with Lewis on piano – a jam session ensued which went down in history as the million dollar quartet.

NEW VENTURES

But five years on, in February 1961 Phillips opened a new, much more state-of-the-art studio a few blocks away, at 639 Madison Avenue, abandoning the small Union Avenue studio he felt he’d outgrown. He opened another in Nashville too, but by then the magic was going. On July the 1st 1969, he sold the Sun Records catalogue to a Shelby Singleton of Mercury Records and largely retired from the business.

And that’s how it stayed until 1987, when the original Sun Studio was reopened as both a recording venue and tourist attraction by a gentleman called Gary Hardy.

Look away now if you’ve not seen the movie *Mystery Train* (you really should!). Mitsuko and Jun do the Sun Studios tour, put up for the night at the Arcade Hotel, a run-down flophouse where Screamin’ Jay Hawkins is the night clerk, then take a train out in the morning. They never do make it to Graceland. ☹



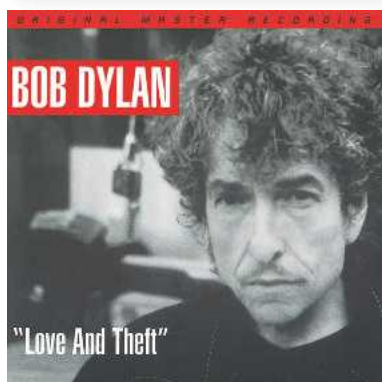
PATRICIA BARBER

Café Blue

Impex IMP6035-1 (two 45rpm One-Step LPs)

Stop moaning. Yes, this has been 'audiophile'd' as often as *Breakfast In America* or *The Allmans' Live At Fillmore East*, but the reasons are clear: the music and the sound warrant it. This time, however, Barber's master work has been given One-Step treatment and it's now a must-have purchase. The pressings are superb, the sound is visceral and real, and you'll swoon over the cloth slipcase and high-quality sleeve. While I defer to Ella, Julie or Doris for jazz and standards, I'm warming to Barber because it's easy to hear why this 27-year-old set, half-originals and half-covers, continues to seduce. Her 'Ode To Billy Joe' will give you the chills. Impex has raised the bar but do not delay as it's limited to 5000 copies. *KK*

Sound Quality: 95%



BOB DYLAN

Love And Theft

Mobile Fidelity MFSL 2-489 (two 45rpm LPs)

If you already own MoFi's superb SACD and don't care about having multiple formats of the same album (see *Café Blue*, above), let me convince you otherwise: the bottom end on this pressing is something to behold. This isn't the place to debate late-period Dylan, but *Love And Theft*, 20-years-old this month, wasn't just one of his better post-1975 works. For some, it's up there with *Blood On The Tracks*. It's engaging, hugely listenable and one of the best-sounding Dylan albums since his early, classic 1960s Columbia recordings. Standout tracks include 'Mississippi' and 'Summer Days', but my favourite has to be 'Water (For Charley Patton)' for its rootsiness. *KK*

Sound Quality: 90%



THE J. GEILS BAND

The J. Geils Band

Speakers Corner/Atlantic SD8275 (180g vinyl)

One of my Top 10 LPs and one of the five greatest debuts I can name, it was gonna get a great rating: only *Café Blue* kept it from being my Album Choice. Key players in the second wave of R&B-based rock, from 1970, this Boston band featured Geils' stunning guitar work, the peerless harmonica of Magic Dick, and Peter Wolf as frontman – arguably the best showman rock has produced (sorry, Mick). A mix of originals and covers of blues and R&B gems, it blasts from your system with irresistible power: you gotta hear the harp solo in 'Pack Fair And Square'. If you love Chicago blues, Paul Butterfield and Charlie Musselwhite, say, 'Thank you, Speakers Corner!'. *KK*

Sound Quality: 90%



ORIGINAL SOUNDTRACK

Party Girl

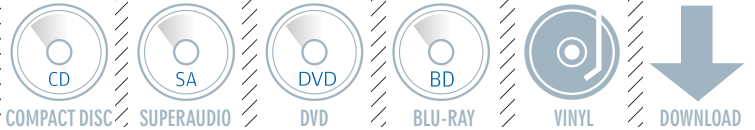
Modern Harmonic/Sundazed MH-8227 (mono; orange vinyl)

A first, as I don't recall reviewing an X-rated LP, which would only apply to hard-core rap lyrics or 'blue' comedians, but this certainly qualifies: it's the score to a long-lost 1969 adult movie (not to be confused with four other 'clean' films with the same title). Its relevance, though, is enhanced by the success of the recent hit TV series, *The Deuce*, which chronicled the genre and the era. The sleeve and insert will offend puritans, as will the dialogue, but the mono sound from the rediscovered master tapes is terrific and the music is straight Blaxploitation funk, including a cover of James Brown's 'I Got The Feelin''. One for soundtrack collectors. *KK*

Sound Quality: 85%



AUDIOPHILE: DIGITAL



GRATEFUL DEAD

American Beauty

Warner/Rhino 603497848515 (three discs)

Yet more Dead. Uniform with the 50th anniversary set for 1970's *Workingman's Dead*, this was released a mere five months after its predecessor. The Dead's consecutive pair of roots music albums remain the most accessible and listenable efforts in a wildly prolific career; both still sound fresh and ear-friendly. The two bonus discs give you 23 tracks from a live gig in February 1971; they always gave your money's worth in concert. Oddly, only a few of the *American Beauty* songs appear in the live CDs despite it taking place just a couple of months after the album's release. As this gave us 'Truckin'', that's enough to ensure forever its status as a classic. *KK*

Sound Quality: 85%



RUN-DMC

Raising Hell

Mobile Fidelity UDSACD2169 (stereo hybrid SACD)

Hip-hop albums rarely get full-blown audiophile treatment (which in these woke times might cause a raised eyebrow), so MoFi deserves kudos for offering a superb transfer of one of the genre's milestone releases. This Rick Rubin-produced masterpiece added enough hard rock to the recipe to make Run-DMC's music more mainstream and accessible, and it paid off with platinum sales. Issued in 1986, much of its crossover value came from a clever cover of Aerosmith's 'Walk This Way', a massive hit featuring two of that band's members. This SACD will tax your woofers with powerful bass attack and extension; scratch transients are super crisp. *KK*

Sound Quality: 90%



VARIOUS ARTISTS

Casablanca

Vocalion CDLK4639 (multichannel/stereo hybrid SACD)

Nice theme for a compilation: the subtitle of this album is 'Classic Film Scores For Humphrey Bogart', naturally kicking off with the title track. Originally released in 1974 as one of RCA's *Classic Film Scores* series of 14 albums (and many of the regular CDs were reissued with Dolby Surround), it contains performances by Charles Gerhardt and the National Philharmonic Orchestra of a *Casablanca* medley, followed by the scores to *Passage To Marseille*, *The Treasure Of The Sierra Madre*, *The Big Sleep*, *The Caine Mutiny* and seven others, most composed by Max Steiner, plus a bonus track not connected to Bogie: *Peyton Place* of all things. A feast for soundtrack fans. *KK*

Sound Quality: 90%



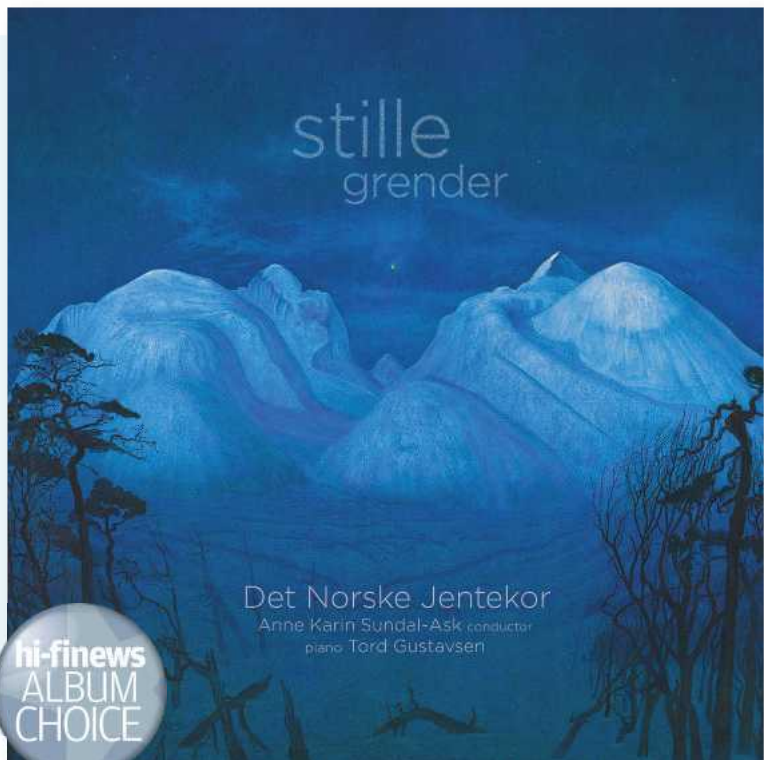
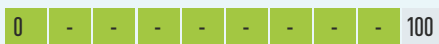
NORWEGIAN GIRLS CHOIR

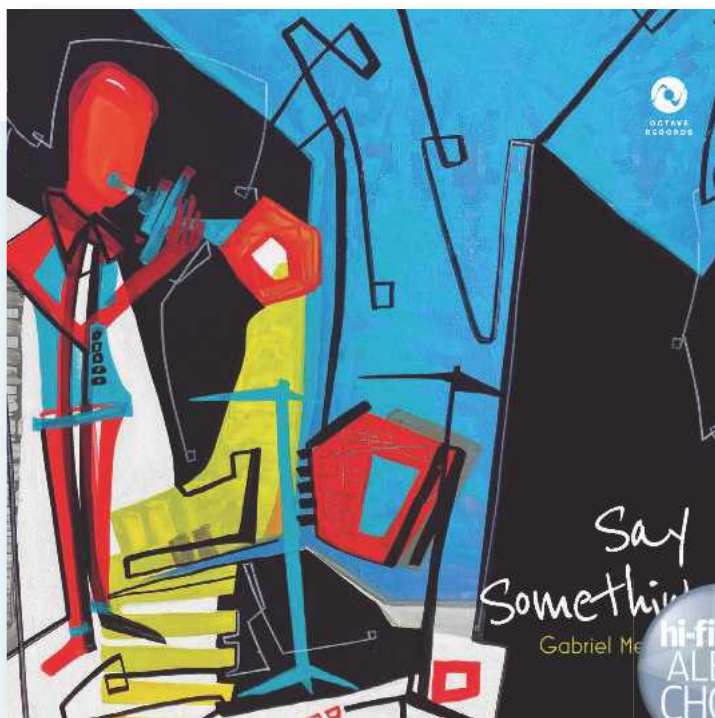
Stille Grender

2L 2L-164-SABD (SACD + Blu-ray)

Another two-disc affair giving the inquisitive audiophile the means to try myriad formats, this eerie, alluring set features the Norwegian Girls Choir and pianist Tord Gustavsen with a mix of secular songs and Christmas carols, which run the gamut of moods. Depending on your affinity for choral music, this is more a demo disc than a sit-down-and-savour affair, but then I'm not Norwegian. It's worth finding because the SACD provides 5.1 and stereo DSD, PCM and MQA-encoded CD, while the Pure Audio Blu-ray offers 2.0 LPCM and 5.1 DTS-HD MA in 192kHz/24-bit, 7.1.4 Auro-3D 96kHz, 7.1.4 Dolby Atmos 48kHz and 'mShuttle: MQA+FLAC+MP3'. You'll need to play this a half-dozen times to compare the lot. *KK*

Sound Quality: 90%





GABRIEL MERVINE

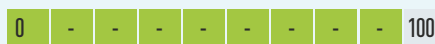
Say Somethin' (DSD64; 44.1-192kHz/24-bit, FLAC)

www.psaudio.com/products; Octave Records n/a cat no.

This latest release from Octave Records – a PS Audio project – sees jazz trumpeter Mervine joined by an exceptional backing trio comprising pianist Tom Amend, Seth Lewis on bass and drummer Alejandro Castaño to create a recording of remarkable vitality and intimacy. It was recorded live with no overdubs to 32-track DSD, using equipment including vintage microphones, mixed using a vintage Euphonix deck and then taken back into DSD for mastering. It's about as close as you're ever going to get to

the effect of having the musicians live in front of your sofa, with fabulous presence and glorious instrumental timbres. It's all lovingly annotated in the accompanying booklet and, while the music itself holds no great surprises, being very much straight-down-the-line small-ensemble jazz, there's no denying the musicianship in evidence here and the care with which it has been recorded. *AE*

Sound Quality: 90%



**MIRIJAM CONTZEN, WDR SO/
REINHARD GOEBEL**

Violin Concertos by Clement (48kHz/24-bit, FLAC)

www.hi-resaudio.com; Sony Classical 19075929632

Reinhard Goebel founded Musica Antiqua Köln in 1973 and their Bach performances were the antitheses of those by, say, Karl Münchinger at Stuttgart. Currently he is directing a series for Sony, 'Beethoven's World', and this release gives us the first two of Franz Clement's six violin concertos – 1805/6. In the latter year he gave the Vienna premiere of Beethoven's Violin Concerto, written expressly for him. (He continued to perform it after Beethoven had fallen out with him and changed the original dedication.) Goebel hints at Beethoven fingerprints in No 1 [studio], which I thought anticipated Mendelssohn, whereas the finale of No 2 [live] is akin to that in Haydn's last 'London' Symphony. Both works are well worth lending an ear to, and the very good violinist receives a 'concert hall' balance. *CB*

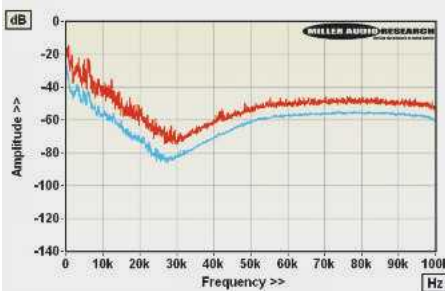
Sound Quality: 85%



OUR PROMISE

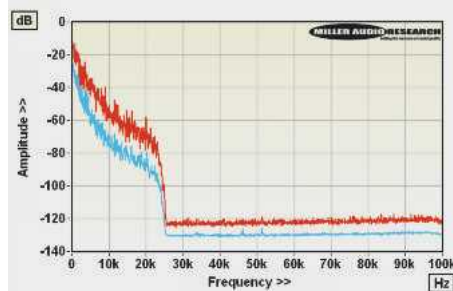
Following our Investigation feature [HFN Jun '11] where we examined the claimed quality of 'high-res' downloads, *Hi-Fi News & Record Review* continues to measure the true sample rate and bit-depth of HD music downloads. The Graphs show peak [red] and RMS [blue] spectra. These unique reviews will be 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



Reviewed here as the native DSD64 file from Animal Lane's Sonoma 1-bit system in Colorado, in practice the final bandwidth and (limited) dynamic range is determined by the 'vintage' analogue console, peaking at -1.4dBfs [trk 4]. *PM*

LAB REPORT



While the ~24kHz bandwidth is limited by the file's 48kHz sample rate, engineers Enrique Foedtke and Arnd Coppers have made good use of the available dynamic range, the two *Adagio* sequences not peaking above -6dBfs. *PM*



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MINNEAPOLIS SO/OSMO VÄNSKÄ

Mahler: Symphony No 10 (96kHz/24-bit, FLAC)

www.hiresaudio.com; BIS BIS2396

By 1960 it had become apparent that Mahler's sketches for his unfinished Tenth Symphony were virtually a short score for a full five-movement work, partially fully scored, and when the English musicologist Deryck Cooke looked at them, along with Berthold Goldschmidt, he felt able to prepare what he called 'a performing edition' of Mahler's (often anguished) music. This was heard at the Proms in 1964 then amended working with Colin and David Matthews (p.1976); the Cooke version recorded here is the further slightly revised 1989 edition. Vänskä hooks you in with a very quiet start and if you want an extremely well played version (violins antiphonally placed) try this. Perhaps Scherzo 1 is a little fast, but the finale – with some of Mahler's most beautiful music and those stark opening drum beats – sets the seal on Robert Suff's production. *CB*

Sound Quality: 85%



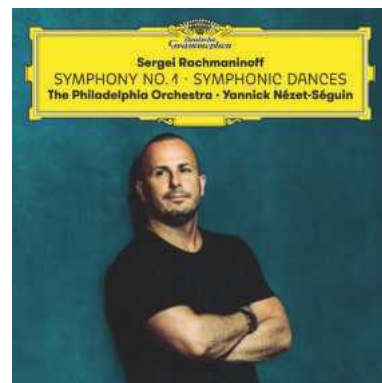
SUBHEIM

Polis (48kHz/24-bit, FLAC)*

www.denovali.com; Denovali DEN344

Entitled ΠΟΛΙΣ in Greek, pronounced 'polis' and translated as 'city', this album is definitely one for diehard fans of ambient electronica. There are pieces here, not songs, all effects and swirls of synths and rhythms, and they tend to flow into each other to create a kind of sonic soundscape, mainly brooding and occasionally ominous. What vocals there are remain abstract or the odd passage of spoken word before the looping synths take over once more. We're told this set 'doesn't so much evoke the rapid cadences of life in a modern metropolis as it does the unspoken tension between longing to escape and being trapped in some kind of concrete stasis – living together with millions of souls in an expansive emptiness', so it's all very high-concept. But it's also quite low-tech, with extensive use of analogue synthesisers. It's unusual, but still rather addictive. *AE*

Sound Quality: 80%



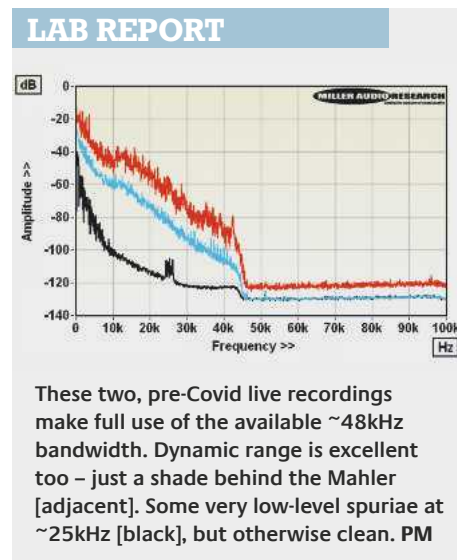
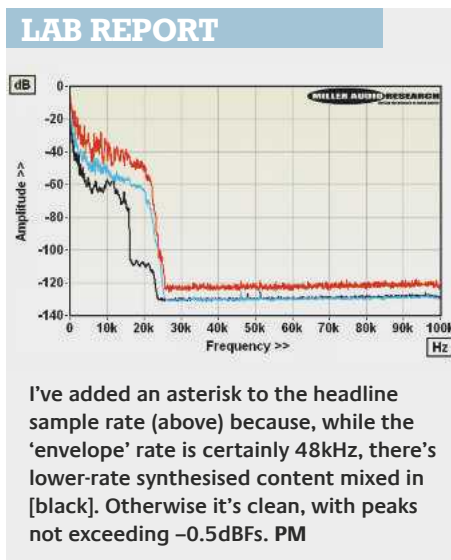
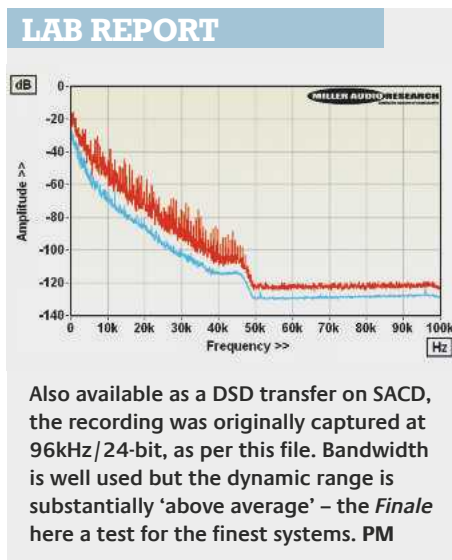
PHILADELPHIA ORCHESTRA/ YANNICK NEZET-SEGUIN

Rachmaninoff: Symphony No 1; Symphonic Dances (96kHz/24-bit, FLAC)

www.hiresaudio.com; DG 483 9839

The disastrous premiere of Rachmaninoff's Symphony No 1 spiralled him into depression, and although he planned to revise his early score, it became lost. In 1944 the parts were used to recreate the full score and Eugene Ormandy gave the US premiere at Philadelphia in 1948 – and made an exciting recording of it. The three *Symphonic Dances* were dedicated to Ormandy (1940) and again he made a definitive recording, naturally paced and with the alto saxophone balanced as if a vocal soloist. Sax and piano are more recessed here. This issue has had some rave reviews, and yes the 'Philadelphia sound' is alive and well. But I thought Nézet-Séguin was too indulgent in the second *Dance* and missing tension in the finale of the Symphony and slow *Larghetto*. *CB*

Sound Quality: 75%



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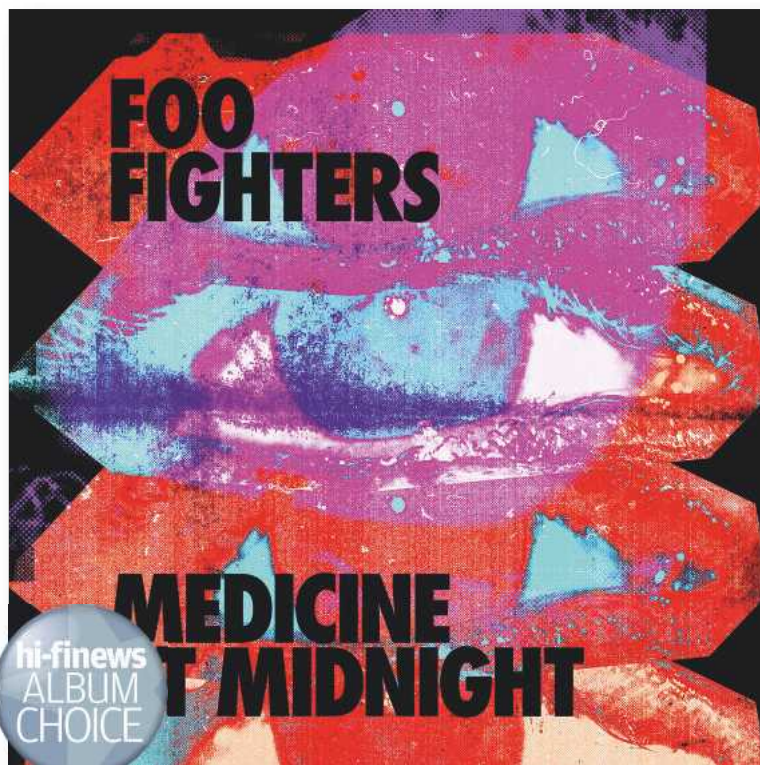
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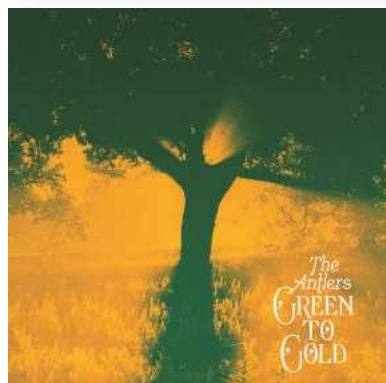
FOO FIGHTERS

Medicine At Midnight

Roswell/Columbia 19439788362; LP: 19439788361

Medicine At Midnight may not become the best album released in 2021, but it will surely be one of the most immediate and invigorating. 'Making A Fire' opens, riding out on a funky groove with swaggering guitar chords, and female backing singers elegantly framing Dave Grohl's exultant lead vocals. Greg Kurstin's punchy production adds to the intensity. Foo Fighters' tenth album finds the six-piece sounding unfeasibly fresh. They are also happy to wear their influences on their sleeves: the title track nods back with a smile to David Bowie's 'Lets Dance', bluesy guitar solo and all, and 'No Son Of Mine' borrows the riff from Motörhead's 'Ace Of Spades'. It's packed with strong tunes and at 37m, there's no filler. *MB*

Sound Quality: 90%



THE ANTLERS

Green To Gold

Transgressive TRANS516CD; LP: TRANS516XX

The Antlers' frontman Peter Silberman is known for his unsentimental exploration of inner states in song, but in recent times he has had to contend with the practical difficulties of both auditory and vocal problems. On the group's first release in over six years his sweet voice is fully restored and glides above shifting mosaics of gently brushed drums, tremolo'd guitar, rippling keyboards and the occasional flourish of strings – intoning pithy lines like 'By loving you imperfectly for just one second, I free you from me', on 'Just One Sec'. Bookended by two instrumentals, the album is unruffled, full of gently unfurling melodies and exudes a positive glow. *MB*

Sound Quality: 80%



LOST HORIZONS

In Quiet Moments

Bella Union BELLA1111CD; LP: BELLA1111V

Multi-instrumentalist Simon Raymonde (ex-Cocteau Twins) and drummer Richie Thomas recorded 16 atmospheric instrumental tracks, some with strings, and invited guest vocalists to write and record lyrics along the lines of 'death and rebirth'. 'Every Beat That Passed', sung by Kavi Kwai, is in the Cocteau's mould, but this collection works so well because the singers have scope to make the songs their own, with particularly inspired performances by Ren Harvieu and John Grant. Soul singer Ural Thomas (now 82) is backed by sparse piano on the exquisite 'In Quiet Moments' and Porridge Radio's Dana Margolin delivers the edgy 'One For Regret'. *MB*

Sound Quality: 90%



MOGWAI

As The Love Continues

Rock Action ROCKACT140CD; LP: ROCKACT140LP

For the last 25 years Mogwai have made instrumental music that plays with space and the slow build. On 'Midnight Flit' the rhythms are typically mid-paced and a gradual upwelling of guitar, keyboards, and strings, arranged by Atticus Ross, peaks at a huge sound. Another guest, saxophonist Colin Stetson, adds to the heft of 'Pat Stains'. Mogwai are constantly reinventing this style, with submerged voices and spindly fuzz guitar hooks on 'Supposedly, We Were Nightmares', and the only song proper, 'Ritchie Sacramento', revs up into an overdriven chorus that evokes My Bloody Valentine. 'It's What I Want To Do, Mum' closes the album with epic grandeur. *MB*

Sound Quality: 85%





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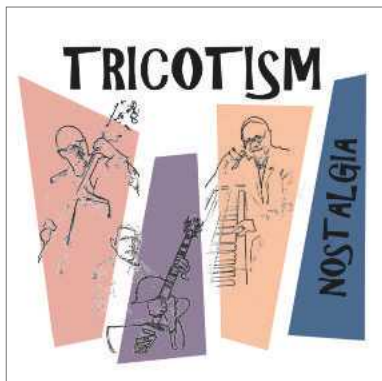
GARY BARTZ, ALI SHAHEED MUHAMMAD & ADRIAN YOUNGE

Gary Bartz JID006

Jazz Is Dead JID006 (also LP)

Earlier collaborations of hip-hop DJ/producer Muhammad and R&B producer/composer Youngge include the *Luke Cage* movie soundtrack and *The Midnight Hour* album, mixing '80s soul in a contemporary production. Last year, working with LA producer Andrew Lojero and choosing a provocative title (they weren't the first to use it), the duo launched a series of recordings with older-generation artists whose work they'd sampled. Successive albums have featured Roy Ayers, Marcos Valle, Azymuth and Doug Carn, and now it's the turn of revered saxophonist Gary Bartz, still sounding great despite his 80 years. *SH*

Sound Quality: 80%



TRICOTISM

Nostalgia

Nervy Nigel Records NERVYCD 002

Taking inspiration here from the great Oscar Peterson/Ray Brown/Joe Pass trio of the 1970s are British virtuoso pianist Craig Milverton, guitar wizard Nigel Price and hard-working bassist Sandy Suchodolski. The group name comes from an Oscar Pettiford tune which they covered on their first album, *Fingerbustin'*, in 2013. And this second album's title doesn't signify a genre but refers to another old bebop theme, written over the chords of 'Out Of Nowhere' by trumpeter Fats Navarro and played here with aplomb. There are also a couple of Peterson tunes along with some songbook favourites and though the sonics are rather cramped, a good time was had by all. *SH*

Sound Quality: 75%



YOKO MIWA TRIO

Songs Of Joy

Ubuntu Music UBU0057

Originally from Kobe, Japan, Miwa has been based in Boston since 1997, having auditioned at Berklee 'for a lark'. Today she's a professor there, with a string of albums and awards to her credit. Saturated with the influence of Ahmad Jamal, this one blends her own pieces with others that are dear to her, including Billy Preston's 'Song Of Joy'. Richie Havens' 'Freedom' makes a thunderous opener, but then come her dancing, Latin-tinged 'The Rainbirds' and a fine uptempo re-work of Duke Jordan's 'No Problem'. Bassist Will Slater and drummer Scott Goulding are unobtrusive but at times bring a foot-tapping, organ-trio-like groove to Miwa's warm, engaging music. *SH*

Sound Quality: 85%



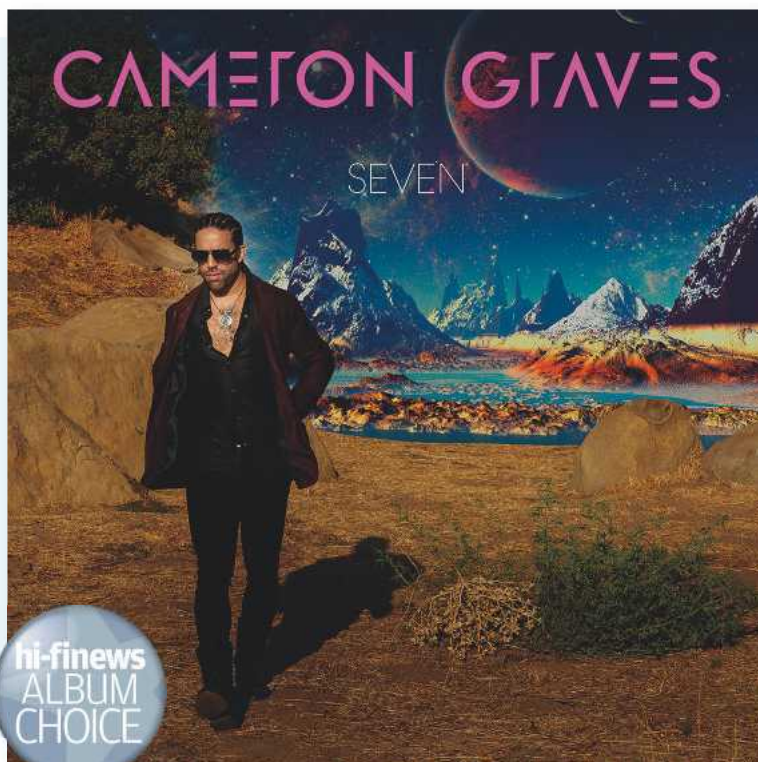
CAMERON GRAVES

Seven

Artistry Music ART7066; LP: ART7066LP

Graves came to prominence as keyboardist on Kamasi Washington's 2015 breakthrough, *The Epic*, and followed up with his own 2017 debut, *Planetary Prince*. He's since formed a new quartet with drummer Mike Mitchell, a bandmate when touring with Stanley Clarke, Berklee-graduate bassist Max Geri, who'd joined him on his own tours, and innovative rock guitarist Colin Cook, to play what he aptly calls 'thrash jazz'. With jaw-dropping speed, precision and attack, Graves turns his acoustic piano into a metal/rock instrument, while his compositions reflect the title and his penchant for complex time signatures. Apart from one gentle, wistful piano solo called 'Fairy Tales', the pressure never drops. *SH*

Sound Quality: 85%



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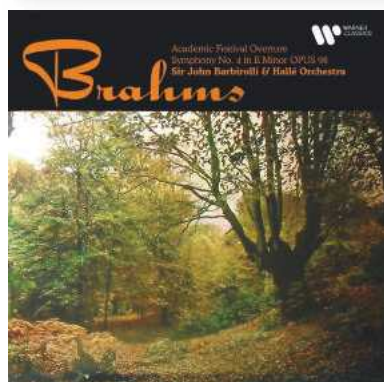
**DANIEL LOZAKOVICH, MUNICH PO/
VALERY GERGIEV**

Beethoven: Violin Concerto

DG 483 8946 (downloads to 96kHz/24-bit resolution)

Much is made in the booklet note by the soloist that these are live recordings, Gastein Hall Munich, Dec '19, so it's a pity there's total silence between tracks. The last is the *Adagio* from Bach's Sonata BWV1001, beautifully played although with some breathing sounds from Lozakovich. We hear the Kreisler cadenzas in the Concerto: a warmly 'traditional' performance and all the better for that. We may not think of Gergiev as a Beethoven conductor but here he brings out some pertinent detailing (eg, the bassoon writing) and he shows acknowledged empathy with his young soloist. 'We have such a great chemistry', says Lozakovich – who is just 20 this month. *CB*

Sound Quality: 90%



HALLÉ ORCH/SIR JOHN BARBIROLI
Brahms: Symphony No 4; Academic Festival Ovt

Warner Classic 9029507797 (downloads to 192kHz/24-bit res)

Warner is producing downloads from its inherited Barbirolli catalogue: less costly than manufacturing a reissue CD and aimed at the younger-generation (?) 'high-res' enthusiast. These were Pye stereo recordings made in September 1960, shortly before Barbirolli's return to HMV, which have a spark missing from his later VPO Brahms encounters. This is one of Warner's better remasterings from the big box set, although tonally you cannot 'rejuvenate' an old recording, and the sound is dated, even if the stereo soundstage is amply detailed. But this is no barrier to admiring these two completely fulfilling interpretations. *CB*

Sound Quality: 85%



KRISTIAN BEZUIDENHOUT

Mozart: Sonatas, Variations and shorter works

Harmonia Mundi HMX290400715 (nine discs; downloads to 96kHz/24-bit resolution)

The fruits of Air Studios sessions spanning seven years, this recompiled set has each disc programmed with a keyboard sonata, a set of variations and selected shorter works – many of these virtually unknown to most of us. In this near-complete survey, Bezuidenhout has only left out the juvenalia. He is playing fortepianos after Anton Walter 1802 and 1805 originals, and he describes his musical approach – 'unlearning' the techniques better suited to modern pianos – in a foreword to exhaustive annotations. Always focused, the playing ranges from brilliance to pathos – I'd not go back to Steinway Mozart now. *CB*

Sound Quality: 90%



TONHALLE ORCH ZURICH/PAAVO JÄRVI
Tchaikovsky: Symphony No 5, Francesca da Rimini

Alpha ALPHA659 (downloads to 96kHz/24-bit resolution)

Seemingly ubiquitous, Paavo Järvi was chosen to become the Tonhalle Orchestra's chief conductor in 2017; this is their first coupling in a projected Tchaikovsky cycle – two Symphonies still to record, with the pandemic disrupting session planning. *Francesca*, says Järvi, makes a good coupling here, with both works to do with 'fate' (those gloomy motifs and all that lower-strings writing!). It's a restrained performance. If you want to hear clearly every micro-detail in the textures of the Symphony Järvi gives you that, but for me the conducting somehow gets in the way of the music, notwithstanding excellent orchestral playing and some fine solos. *CB*

Sound Quality: 80%





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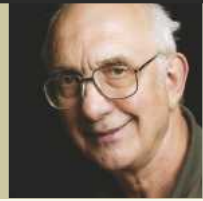
ICON AUDIO STEREO 40 MKIV

Reviewed: August 2019 issue

As its name suggests the Icon Audio 40MkIV is capable of producing 40 Watts of power from its KT88 valves – although pushed hard we managed 50 Watts. There's also three feedback settings (high, low and zero) and the ability to run it in ultralinear or triode mode, as well as fixed bias. So there's wide room for experiment here, including the rare zero feedback option. It means users can find the set-up that suits them best.

And what a sound it is! Used with our Martin Logan electrostatics it was both vividly dynamic and spacious. The output transformers give clean powerful bass – a world away from the occasional softness of some other valve amplifiers. With its huge soundstage and thunderous dynamics the Icon Audio is a long way away from valve amplifiers of yore. Truly a modern classic.





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

Tripping over

Barry Fox harks back to the days of press jaunts and factory visits, and wonders how hi-fi trade shows will suitably distance visitors once they open their doors again. He offers one safe solution

We took it all for granted. Press launches and conferences, trade shows and trips to factories to see robot-like humans and robot machines churning out another one just like the last one.

There were also visits to corporate HQs – my first was to BASF in Ludwigshafen where there were serious plans to build a nuclear power plant alongside the tape factory near the city centre. We flew on a cargo plane with no heating or toilet.

Tech journalists have been doing all this since the hi-fi boom time of the 1970s, and video excitement of the '80s, when Max Grundig ranted against anything Japanese and insisted on calling Grundig radios 'Beat Boys', 'Beach Boys', 'Yacht Boys' and 'Micro Boys', the latter advertised by footballer Kevin Keegan.

Sometimes it was worth the effort, because we learned something new. Sometimes it was all a total waste of time. But one never knows, does one?

ONLINE INFLUENCING

Now, of course, all that has changed. With shows, trips and live launches currently cancelled, manufacturers have been experimenting with online events.

As a rule of thumb, the bigger the company, the worse its online offering.

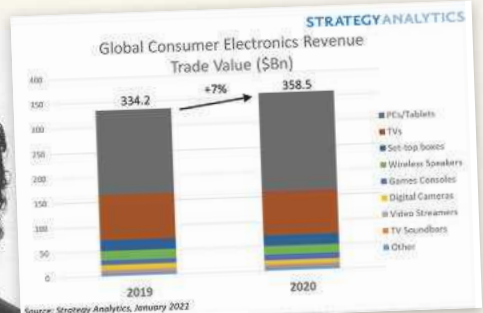
So whereas Bowers & Wilkins/Rotel, Linn and the Technics enclave inside Panasonic have staged online events that have been useful, those from the likes of Philips, Sony and the Chinese giants such as Huawei have been disappointing – little more than extended TV commercials, with pre-recorded sales-speak, near zero technical information, no Q&A, and parroted offers of 'more information' which seldom comes.

The ignoble art of Internet influencing (always saying something nice to avoid upsetting manufacturers) has flourished.

'The bigger the company, the worse its offering'



ABOVE: Footballer Kevin Keegan holds up a Grundig Micro Boy 400 in this ad from 1981 (left) and graphic from Strategy Analytics comparing year-on-year consumer electronics sales revenues



For just one, neat example take a quick look at this one on YouTube. Unless you are a coffee nerd, skip the first 13 minutes and cut to the cheery review rating, 'not the worst thing'. It's at <https://youtu.be/cVOVtPKRbNw>.

So where do we go from here? There are hopeful signs that lockdown listening has made people more aware of sound quality. Research by industry analyst Strategy Analytics shows that consumer electronics sales revenues for 2020 were 7% up over 2019; but TV sales were down by 2% and wireless speakers and smart speakers, which are generally poor-fi, down by 3%. Trying to explain to

a loudspeaker what you want it to do is often a lot more hassle than pressing a few buttons.

Berlin IFA plans a live show this autumn, and doubtless Las Vegas will want to get guests back to CES and the roulette wheels in January 2022.

But many attendees would be flying in and vaccination passports look likely to become a standard requirement for travel. Show-goers often hail from countries where there have been relatively few vaccinations. America itself is so vast that it's hard to imagine everyone being jabbed by the end of this year, and yet giant shows rely on big

numbers and crowds. It's currently not clear how they will be able to socially distance but small, specialist hi-fi shows already control the number of guests at demos. Genuine enthusiasts will surely pay a premium in order to listen.

A NEW BREED

There's another likely side-effect to all of this. Over recent years older journalists who specialise in dinosaur stuff like 'real' hi-fi and boring old data rates, have been sidelined in favour of zippy young gadget gurus and 'influencers' who have no clue what goes on under the bonnet, and no interest either. Phones and tablets and games consoles, with rotten sound quality, have become the money spinner.

But you know what? It will be the old dinosaurs who will have been vaccinated. Which means they will be the ones able to travel, meet and mix together.

The pandemic could also be to the advantage of dealers with showrooms who are able to run controlled and socially distanced demos. But there will have to be a way of stopping selfish Joe Punters from using a showroom demo as the free precursor to online purchase.

Manufacturers will need to control who can sell. Perhaps the showrooms can charge customers a fair rate for a demo and then deduct that from any purchase price. What do the manufacturers and trade bodies think? ↓



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

Terminal insanity

Barry Willis remembers his time working at a 1980s US computer franchise, when every manufacturer had its own solution to connection and no two items could be readily matched up

In the early 1980s, during the first big wave of personal computers, I took a detour from the audio industry and began working as a technician at a ComputerLand franchise. Along with five other geeks, I assembled PCs and repaired ailing ones, made service calls, and tried to learn as much as possible about every technology that was then emerging.

ComputerLand carried products from Apple, Microsoft, IBM, Wang, Osborne, Ashton-Tate, and other companies long forgotten. Texas Instruments even made a brief stab at going full retail, with its own take on IBM's XT series desktop computers. A fully maxed-out XT, with 40MB hard drive, two floppy disk drives, and a small green-screen CRT monitor, was about US\$2500 in 1980s currency.

BRAND LOYALTIES

It was an era when everyone was scrambling to grab a chunk of a market with almost unlimited potential. Part of the scramble was an emphasis on proprietary technologies and accessories, marketing programmes that we might today call 'brand-building' efforts. The most carefully guarded information in our workshop was a notebook with hand-scrawled 'pin-outs' – instructions about how to make up cables enabling computer brand X to work with printer Z.

There was no such thing as universal compatibility like today's USB or HDMI interconnects because each manufacturer had its own standard. We had to solder connectors at each end of each cable for customers who wanted to mix-and-match their IT components.

The assumption behind proprietary standards was that a manufacturer would land a new customer who would then fit out an office (or offices) using products of only one brand, and that such a customer would become a brand loyalist for life.

RIGHT: Analogue interconnects and speaker cables with popular terminations.

(L-R) Atlas Equator [HFN Jul '20] with XLRs, Mavros Ultra [HFN Mar '16] with RCAs and AQ's William Tell Zero speaker cable [HFN Dec '20] with 4mm bananas



We know that this isn't the way most consumers actually behave, with the exception of Apple loyalists who may grumble about the cost of the company's otherwise unavailable adapters and dongles, but who then doggedly stick with their chosen brand.

Apple, of course, is like a technological religion in an arena otherwise ruled by practicality and value – a religion that should be familiar to anyone who knows the audio high-end. We've all been tormented by audio devices that require special connectors or cables or adapters that if misplaced are damn near impossible to replace.

Some years ago, in a charitable effort to sell a pair of exotic self-powered monitors for a local music school, I nearly ran into a brick wall trying to find a set of interconnects. The long-lost originals had a rare variety of connector made in small batches for a short while in Switzerland. Retro-fitting the speakers with something more common would have diminished their value, but finding a pair of original ones was simply an exercise in frustration.

I was reminded of this recently by a friend who for years was an international exec for a UK audio company. Still well-

connected, he had intervened for an acquaintance needing a special cable between processor and amp. A global hunt eventually unearthed one, which was surprisingly cheap but required nine months of sleuthing before it was found.

Imagine the anxiety of the owner of the equipment, who wanted only to enjoy whatever sonic benefits might lie in wait with his unusable gear. Imagine too how much easier his quest might have been if he'd simply been able to go to an online outlet or local electronics store and grab what he needed without fuss.

EXCLUSIVITY AT A COST

Proprietary technology supposedly adds cachet and exclusivity to a brand's perceived value, but in reality it can just as easily limit the brand's potential reach and create headaches for consumers.

My advocacy for universal standards and across-the-spectrum compatibility can really go further with digitally-connected gear. 'Autoconfiguration' should be the guiding principle of all modern electronics. Every device should be compatible with every other device, and each when inserted in a system should be able to self-identify and recognise everything else in the system, without further intervention from us. In 2021, is that too much to ask? ☺

'There was no such thing as universal compatibility'

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Andrew Everard Reviewer/writer

Andrew Everard has reviewed consumer electronics for over 30 years and is still effortlessly enthusiastic about new developments, discovering new kit – and music

Behind the recording

A newly-published guide to recording classical music may not have us all reaching for the Decca tree microphone, but it could make more informed listeners of us all, says **Andrew Everard**

Have you always harboured a secret urge to record a symphony orchestra? Or a chamber ensemble? Or perhaps ‘just’ a solo piano? No, me neither, but I do have an unhealthy fascination with the way musicians interact with the environment in which they are performing, and how both a recording captures that acoustic, and a hi-fi system proceeds to reproduce it.

This may all stem from my childhood, where I sang in choirs both in parish churches and in much larger spaces, including Westminster Abbey. It sensitised me to the sound of an acoustic space, from that moment of silence when the rustling and coughing stops just before the music starts, through to that glorious but fleeting second or two as the last note decays into space, just hanging in the air until it is gone.

SOAKING UP SOUND

One of my great fortunes has also been to attend recording sessions, for example sitting in the makeshift control room in the Muziekgebouw Eindhoven with producer Jared Sacks as he captured performances by pianist Anna Fedorova, or alternating between an empty Snape Maltings and another improvised equipment-room, where Tony Faulkner was monitoring his recordings on a pair of Quad Electrostatics. That was more than 20 years ago, but I can remember almost every detail of those visits.

Has all this turned me into an audio transpotter? Maybe so, but I’m really not interested in those odd noises captured inadvertently: the squeak of a chair or the slightest accidental clip of the baton on the conductor’s music-stand. Instead, what I’m all about is the presentation of a musical performance in what I like to

think is at least a credible acoustic – even though it may not be entirely accurate.

Mind you, there’s a dilemma: should it be an absolute ‘you are there’ experience, or one as it would be given optimal circumstances? After all, few of us will ever experience a performance from the perfect sweet spot in a venue, and there’s also the fact that a space will always sound very different empty of all but performers and microphones.

I always remember one choirmaster telling the very young me – and about 100 other choristers – that while we thought we were singing our hearts out, we would have to remember to push a bit harder for the event itself. ‘People are sound-sponges’, he said, and indeed it was notable how even a huge pile of 13th-century Gothic stonework changed in sound when filled with a large number of people, even though they were dwarfed by the space.

All of that came back to mind when I came across the recently published *Classical Recording: A Practical Guide*

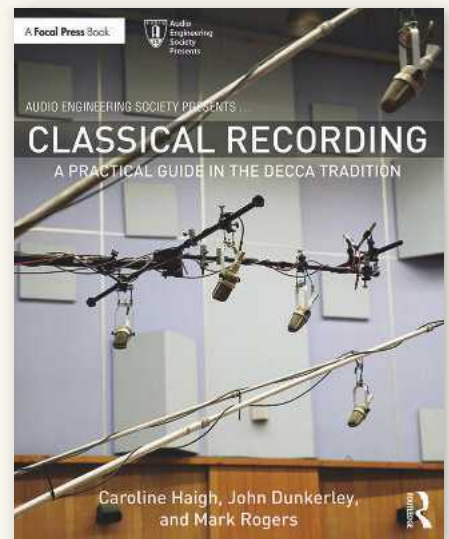
In The Decca Tradition by Caroline Haigh, John Dunkerley and Mark Rogers [Focal Press], which is a hefty but very readable tome designed as a complete guide. And I have to say the book, behind which are decades of experience with both

Decca and EMI, had me from the intro, where it says the following.

‘To pursue only the accurate spatial reproduction of a concert as experienced from the “best seat in the house” is to miss opportunities to make the listener sit up and listen. A recording is best regarded as a different medium from a live performance, and why should the recorded experience not aim to be better than sitting in the concert hall, eyes shut?’

‘At a concert, we have many visual cues which affect our perception of the

“People are sponges”, our choirmaster warned us’



ABOVE: *Classical Recording... is published by Focal Press and priced £44.35 at Amazon*

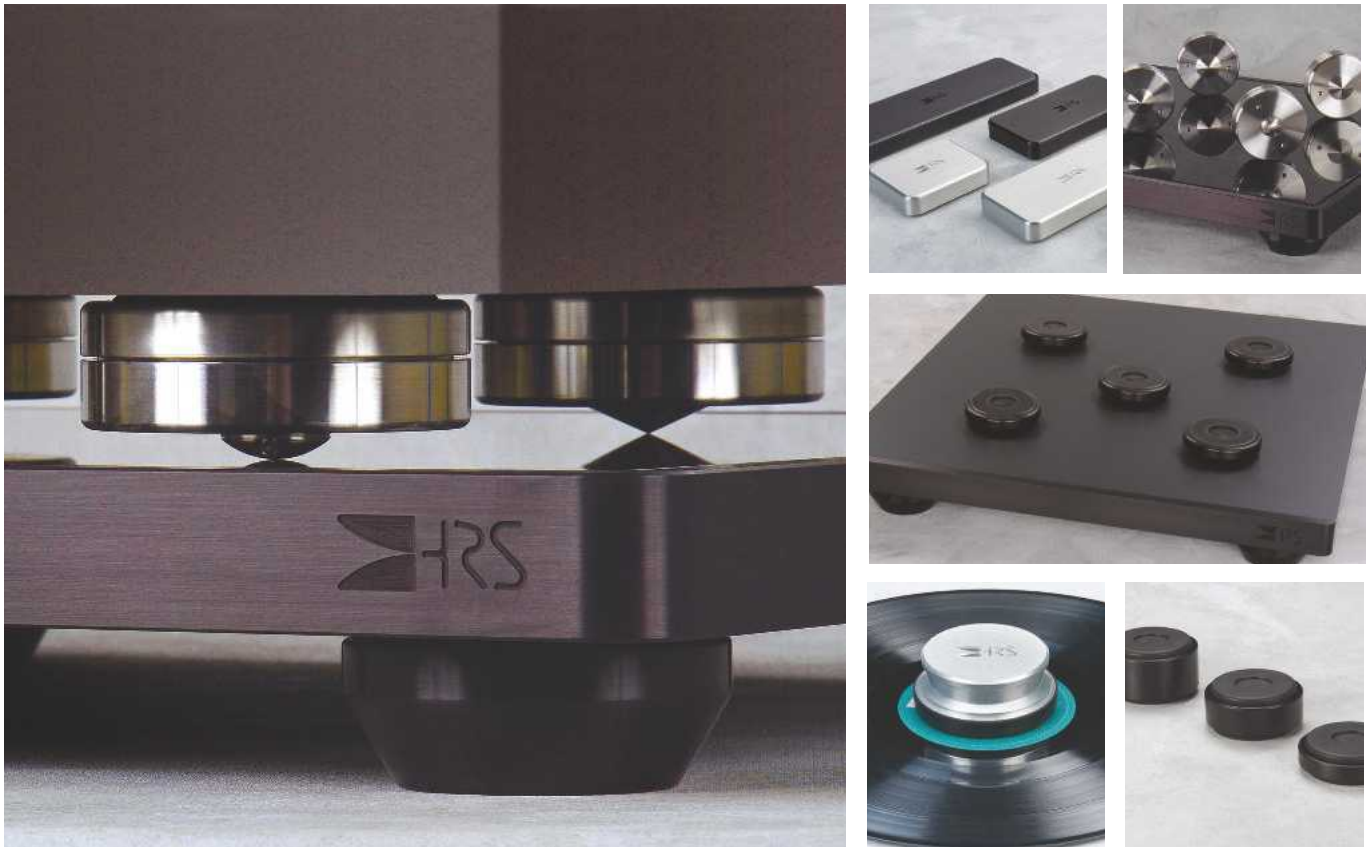
music – we can see who is playing, where they are sitting, we can see the soloists, how big the hall is. All these things serve to engage us in the experience.’

ALTERED PERCEPTION

‘When we shut our eyes, these visual cues are no longer available and our perception of the sound is altered. If we want to make a recording that draws the listener in, we have to find ways to recreate these cues in audio form and reactivate the energising sense of engagement that we experience live.’

As I said, I have no intention of going out and recording music for myself, but the deeper I read into the book, the more insight I gained into the techniques and tricks of making a good recording of everything from a guitar to a full orchestra and beyond – right down to the effect of an open piano lid, for example! And the more my appreciation grew of the work involved in delivering the sound we hear on the home hi-fi system. It’s one well worth adding to your bookshelf. 🎧

Harmonic Resolution Systems – chassis noise control



LEFT: Vortex. RIGHT – CLOCKWISE FROM TOP LEFT: DPX Damping Plates; Vortex; Helix; Nimbus Assemblies; ADH record Weight.

The new HRS HELIX is a development of the Vortex, specifically designed for components with stiffer and heavy metal chassis. Each HELIX has an adjustable screw to allow height adjustment. A shallow profile means it has low visibility in use. Sold in sets of 3 but up to 5 can be used for larger chassis for optimal results.

HRS are the market leaders in achieving the lowest noise floor from any audio component. Developed from many years' experience in the aerospace industry, their isolation products are the reference standard for broadband noise reduction in audio and video signal reproduction.

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The Nimbus Assemblies, the Vortex, and the new Helix eliminate bottom panel resonances; the Damping Plates work to control top panel resonances. When used as a complete system, the sound upgrade is much more than the sum of the parts.



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

Humming along...

Ever been plagued by transformer hum from your amp when listening to music? This month **Jim Lesurf** suggests ways of sorting the problem and recalls Armstrong's 'midnight oil' quest

Even slight levels of mains transformer hum or buzz can be irritating when you try to listen to music. It can also be a problem for designers because there are so many variables that can affect it. An item of audio equipment might not produce any noticeable hum in one situation, but could be really annoying in another. This depends on many factors: the size and shape of your listening room; where the speakers are placed and your listening position; what the equipment is resting upon; and – last but not least – the quality of your mains power supply, and the type of transformer.

NIGHTLY HOMEWORK

Ideally, equipment would use mains transformers that minimise mechanical vibrations. Unfortunately, this can be difficult because makers will often have to buy them in, and transformers may vary from one batch to the next.

I can vouch for this from frustrating personal experience decades ago, when obtaining 'quiet' transformers from UK manufacturers to fit into Armstrong 600 units was sometimes a challenge – to the extent that company directors would take home each night a batch of mains transformers and a wooden 'sounding



ABOVE: Typical toroidal mains transformers as used in many audio power supplies today

RIGHT: Unlike a simple mains filter the PS Audio Power Plant 3 [HFN Jun '14] is an active device that generates a 50Hz/60Hz mains waveform afresh



board'. Then they'd spend their evening enjoying trying each transformer in turn on the board to identify the ones that hummed, so they could be rejected.

Unfortunately, even this level of 'cherry picking' is no guarantee of satisfaction when it comes to the end-user. This is because the sound of transformer hum varies with the quality of the mains power in a given home. In general, well-made toroidal transformers should produce less hum or buzz than the older laminated types. But they are also more sensitive to any unwanted DC on the mains.

In theory there should be no DC on your mains supply, but real life seems not always to have read the book on that! The older EI transformers tend to be less fussy about DC, but may buzz more when given a mains waveform that isn't a clean 50Hz sinewave, or if the equipment draws large peak currents during each mains cycle.

The good news comes in two parts: first, modern manufacturers can do a much better job of making transformers than was possible decades ago. Second, more kit now uses switch-mode supplies. These may also vibrate and emit noise, but it tends to be up in the ultrasonic region where we can't hear it, and is less likely to escape from the case of an audio unit.

In addition, we can now choose to buy mains 'regeneration' devices, such as those in the PS Audio range, that can

deliver purified 50Hz mains power. Or devices like 'DC Blockers' to prevent any DC reaching an offending transformer.

Alternatively, damping feet, tables, pads of damping materials, etc, may be the way forward. Even the low-tech approach of plonking a heavy object on top of the equipment may help – although you'd then need to ensure it doesn't cause overheating!

TRIAL AND ERROR

Each approach has the potential to deal with some of the ways hum or buzz can show up, so they are worth investigating if you do have a problem. Alas, in other situations a particular approach may be targeting the wrong cause, and so will fail to remedy the situation. Hence this area

remains one where trial and error may be unavoidable, and success isn't certain.

Experimenting and then coming to a final decision can also be made harder by the fact that the quality of the mains may vary as time passes. This makes it confusing as to what has, or

has not, actually helped. As can moving your head while comparing outcomes.

For some people this may seem like a 'non-problem' and that anyone who tries possible remedies is drinking snake oil. Maybe they are, in some cases. However, for others the problem may be a low-level but irritating distraction, which could well be fixable after experimentation. ☺

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switch-mode
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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

Polished to perfection

Steve Harris traces the history of pick-up technology, with its few false starts and departures from the norm, and remembers the designer who founded the Koetsu brand in the 1970s

In the last week of 2020, there came, via an online newsletter, a new and beautifully-produced Koetsu cartridge catalogue from distributor Absolute Sounds – though maybe it's not too difficult to design an enticing brochure when the products you're photographing are like perfect pieces of jewellery.

Most companies' literature sets out to emphasise technical innovation and to explain why the products being featured are 'new and improved'. By contrast, looking at the Koetsu catalogue, it's striking how little has changed.

FORCING THE PACE

Back when stereo was booming at the end of the 1960s, with the whole Western world eagerly turning from its old mono record player to the room-filling sound of two speakers, the newly prosperous hi-fi industry thought it was time to take the next step, and sell everybody four speakers instead of two.

Quadraphonics failed, partly because of what we'd now call a format war between three competing, mutually incompatible systems, but mainly as it didn't offer a notably better way of enjoying recorded music.

Four-channel systems began to appear in 1972, but by 1975 it was clear they weren't catching on. After this, many years passed before the industry could re-introduce the idea

of multi-channel sound in the guise of home cinema. But in the meantime, there was a positive legacy for the stereo LP. One of the three quadraphonic systems was CD-4 (or Compatible Discrete 4), developed by JVC in partnership with RCA, in which four channels were cleverly encoded in a single record groove by using a sum-and-difference technique.

Instead of the usual left and right channels, the two walls of the groove

RIGHT: The late Yoshiaki Sugano who founded Koetsu in the mid '70s, naming the company in honour of the Japanese artist Honami Koetsu. Sugano pioneered the use of high purity metals and exotic cartridge bodies



would carry signals that summed the front and rear channels, left-front plus left-back and right-front plus right-back.

Additionally, to create the discrete channels, the difference signals (LF-LB and RF-RB) were modulated on a carrier frequency of 30kHz, so the cartridge had to read frequencies up to 45kHz.

In Japan, this forced the development of better tonearms and cartridges and new stylus shapes. Thus by the mid 1970s, a new generation of moving-coil pick-ups was beginning to offer something exciting for two-channel listeners.

In the UK, Linn created an all-time classic combo with its LP12 turntable complemented by the Grace G707 Quadmaster tonearm, and Supex SD900 Super cartridge,

which came with the much-vaunted Vital stylus. Later, of course, Linn would go on to develop its own first cartridge design with Supex's help, naming the Linn Asak after the owner of Supex, Mr Asakura.

By 1980, Yoshiaki Sugano had come up with his first Koetsu moving-coil cartridge, the MC1, and he soon followed up with the enduring Rosewood model. Sugano had recently retired from a senior position at Toyota, but he'd long been

a passionate audiophile and was also a lifelong student of traditional Japanese sword-craft, and the ancient art of the sword polisher. He'd had an involvement with development at Supex, although this has perhaps been overstated. While there's an obvious heritage, it was as if Sugano took the quest for perfection in craftsmanship to a new level.

INHERITED ARTISTRY

When Sugano passed away in 2002, his son Fumihiko was more than well-equipped to maintain the tradition, having learned the skills and secrets of cartridge building from his father.

Writing about the Koetsu Jade Platinum in that same year [*HFN* Sep '02], I made what then seemed an appropriate reference to 'the closing years of the analogue era'. Of course, that closure was never completed, and phono cartridge development has accelerated again.

For the well-heeled audiophile there are now pick-ups employing strain gauge and even optical principles (an idea crudely mooted by the Philco Beam-of-Light player back in 1941). But alongside these amazing devices still sits the classic Japanese-style moving-coil, tremendously refined nowadays, but essentially as it was in the 1970s and '80s. If it ain't broke, don't fix it. Just keep polishing! ☺

'The Asak was named after Supex owner Mr Asakura'

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Sound Off!

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MY HUMBLE PI HI-FI OFFICE SYSTEM FOR LOCKDOWN LISTENING

I read Mr Kessler's piece in the March 2021 issue with interest. I am lucky enough to have worked right through lockdown but it became clear that doing so from the dining table downstairs or a pasting-table upstairs was not a long-term solution. A dedicated office space was needed, with access to music. I didn't want to use headphones (I wear them all day for work) and so assembled a system with a small footprint but of decent enough sound quality to ensure that I do not pine too much for my main hi-fi system.

I have a Raspberry Pi with the Volumio music player connected to a USB hard drive that holds a backup of the music from my main streamer. This feeds a Topping DX3 Pro amp in DAC mode that sends music to Audioengine A2+ active speakers. Both the Raspberry Pi and DX3 Pro have mains treatment to minimise the noise coming from the laptop.

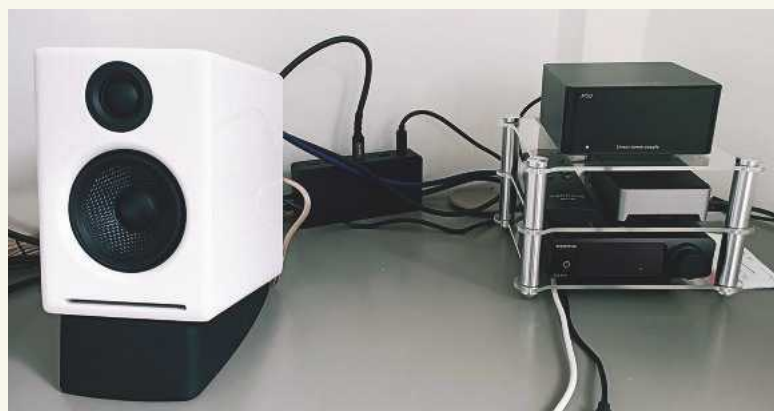
This gives me a very small footprint on the desk, the flexibility to update the hard drive with new music and more than acceptable sound quality considering my ears

are just a few inches away from the speakers when I'm working. The whole assembly cost little in relative terms and I have also taken great pleasure in building a new system from scratch.

My main set-up is the result of years of assembly and tweaking, but starting afresh has enabled me to consider modern music reproduction from the ground up and explore options I didn't even know existed. We all take comfort from the small things in life at the moment, and this is one that has helped me through the last year.

P J Counter, via email

Ken Kessler replies: This beats my desktop for space-saving. At present, I am using the Quad Vena II Play amp [*HFN* May '20] and Quad S1 speakers, with a US-spec Samsung BD-H5100 Blu-ray player only 1.25in tall and with a footprint smaller than the Vena II Play, so it sits on top. This covers CDs, SACDs, wireless, etc, as well as headphones via Bluetooth or 1/4in socket and there's a phono input but I've yet to put a turntable on my desk. The cheat though is *under* the desk: a TEAC X3 open-reel deck!



ABOVE: Reader P J Counter's office system of Audioengine A2+ speakers, with Topping DX3 Pro amp below a Topping RC-15A remote and P50 PSU on the rack

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Big bit of Heaven

HIGH QUALITY RADIO STREAMS FROM BBC AND PARADISE

It was in the Jan '21 Sound Off pages that reader Chris Humphries asked where he could find the highest quality Internet radio streams to listen to via his Marantz NA6006 music streamer with HEOS/TuneIn, TV with Sky Q, and HP laptop.

I just wanted to pass on the information to fellow readers that the BBC is still currently offering 320kb/s streams on both iPlayer and BBC Sounds 'listen now'. The Radio Paradise FLAC streams [see <https://radioparadise.com/listen/options>] are also working for me.

Ian Haynes, via email

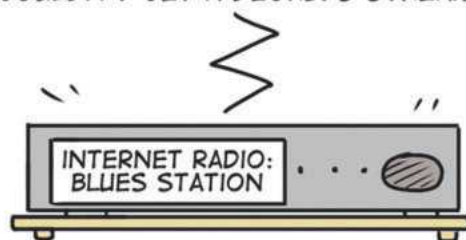
Andrew Everard replies: Yes, the streams are still available as you say, Ian, but the situation is somewhat clouded for users of third-party players. At the time of writing, which is early March, users of some devices are hearing an hourly message telling them that they will no longer be able to access streams from March the 21st, and there's a bit of scrabbling about to find which stream carriers will or won't be affected.

We've become used to this over time, and while the BBC's advice is always to listen via the Sounds app, those of us with expensive streaming hardware would rather not have to resort to Bluetoothing or Chromecasting from our smartphone. These things usually resolve themselves - let's hope so.

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"WOKE UP THIS MORNING,
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COULDN'T GET A 320KB/S STREAM."



Whitworth

Peak practice

IN PRAISE OF CD PLAYERS WITH K2 INTERFACE

I'd like to share my experience of a rare vintage CD player, the JVC XL-Z1010. If you're seeking absolute neutrality you'd better look elsewhere, but this machine sounds like nothing else that has come onto the market. It excels at conveying the music, vocals and the timbres of instruments. I would describe it as sounding 'analogue' in the best sense of the word, delivering plenty of detail and fine dynamics. Its presentation is close to that of Technics' SL-P1200 from 1986 [HFN Aug '13], but with a deeper soundstage.

I have to add that I bought this player on eBay and it works as if brand new. The drawer, the buttons... the quality is everywhere. On the negative side, I have no remote and finding a replacement is a challenge while the error system is primitive, so it's best to play discs whose condition is near perfect.

This player's sound could have something to do with the K2 interface which it was claimed eliminated jitter. The JVC XL-Z1050 used the interface too, but this machine employed a 1-bit converter and its sound is not as gorgeous as the XL-Z1010's with its 18-bit DAC. Still, the XL-Z1050 is still worth considering if you're successful in tracking one down.

Remi Balestie, via email

Paul Miller replies: You have a rare player, Remi, as the XL-Z1010 was JVC's last 'high-end' Digifine CD player to use 'multi-bit' DACs – pairs of 16-bit Burr-Brown PCM56Ps to be precise, configured here to offer a notional 18-bit resolution. The player that followed was the XL-Z1011 – often overlooked by natter



ABOVE: PM's review of the JVC XL-Z1011 CD player in the Nov '91 issue of HFC

on the Interweb about the slicker-looking XL-Z1050. Back in the day, I lab tested and reviewed the XL-Z1011 [1991, see above] and the XL-Z1050 in 1993 – like it was yesterday! They were all great players – the '1010 offering some extra punch compared with the smoother, more 'luxurious' sound of the '1011 and '1050.

In practice the 'Z1011 was visually and functionally identical to your 'Z1010, also sharing the K2 interface that optically-isolated and reclocked the data between the signal processing ICs and the DAC proper. Except here the DAC – the JCE4302A – was a first-generation example of JVC's proprietary take on the 'bitstream' revolution.

Dubbed PEM or Pulse Edge Modulation it was a differential version of the PLM bitstream technology promoted by Sony and the MASH/PWM DACs developed by Panasonic/Technics. It combined 32x oversampling with truncation to ~3.9-bits and 'correction' with 4th-order noise-shaping.



ABOVE: Remi's cherished JVC XL-Z1010 CD player, which was launched in 1989

JITTERBUG

USB Filter



Can a £39 insect make all your CD files sound better than Hi-Res?

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.

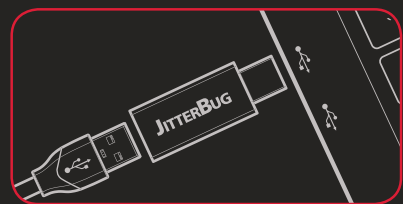
Noise is the problem. Real noise—the kind you can't hear directly. Most often, the word "noise" is used to describe tape hiss or a scratch on a record, but these sounds aren't noise; they are properly reproduced sounds that we wish weren't there.

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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Thrilled to the core

PRAISE FOR FERRITE FILTERS, BUT FIRST A WORD FROM THE WISE...

Thanks for a great magazine, which I have been reading without a break since the mid '70s. I still look forward to each new issue. With all due respect to the excellent Jim Lesurf, could I highlight a couple of small errors in the caption below the picture of the consumer unit that was used to illustrate his Feb '21 Opinion column? In my near 50 years as an electrician (now retired) I fitted very many similar units and would like to point out that the 'M' in MCB stands for 'miniature' rather than 'micro'.

A further point is that the old style push-in rewirable fuse carriers found in consumer units were not called mains plugs. In my trade a mains plug was the term used for the 13A square-pin plug-top fitted to almost all appliance leads and the earlier round-pin mains plugs.

I do hope I don't sound too pedantic, but I'm aware *HFN* that prides itself on accuracy. Apologies to Jim Lesurf, whose page is always one of my favourites, especially his articles on Armstrong, the company I trained with and whose tuner, tuner/amps and chassis I sold many of back in the day. Keep up the good work.

Anthony Weatherill-Hunt, via email

After quite a few years of absence, I cannot express my enjoyment on reacquainting myself with *HFN* and the wonderful February edition with its in-depth analysis of equipment, album reviews and Opinion pieces. Jim Lesurf recommended using ferrite blocks in his Opinion piece, which inspired me to explore ferrite rings as a way to prevent magnetic 'bleeding' resulting in electronic noise.

Having applied these inexpensive cores, I was astonished at the sonic difference they made to the sound of my system of DK Designs amp, Hyperion 938 speakers and Esoteric X-05 CD/SACD player. There is now an extra layer of treble to be heard, instruments have a greater depth and sense of reality, they're better isolated on the soundstage and the stereo imagery has improved focus. The noise floor is lower too. In short, a big heads up to Mr Lesurf!

Coral Ash, via email



ABOVE: A Miniature Circuit Breaker on a UK domestic electrical consumer unit

Jim Lesurf replies: I'm pleased that the filters helped as it is often difficult to diagnose these issues. Sometimes what we hear is affected by low levels of background noise that isn't really noticeable in itself. But it can change what we then perceive when listening to music.

In other cases, background noise that is otherwise audible can vanish once we hear music – mysteries of the way our brains process audio, and how this varies with the situation and one person to another. The perception of hum seems to be a classic example of this variable.

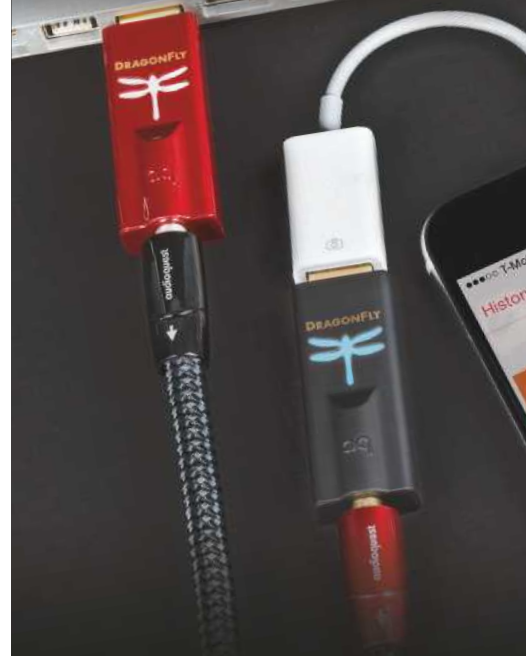
For existing cables and particularly mains cables I tend to use the clip-on type of ferrite filter, although 'clip around' perhaps describes these better as they're easy to use. But the plain rings/tubes are good for individual wires or small diameter cables if you can get them over the plugs and onto the actual cable.

In practice, choosing filters is a matter of experimentation and convenience. They also come with different types of ferrite, and the best choice depends on the nature of the problem. So, like most people 'into' electronics, I tend to have various shapes and sizes in compartmented holders and then pick the one that seems right for a given cable/job. Various companies, such as CPC/Farnell [www.cpc.farnell.com] sell the ferrite rings at modest prices via the web.

As to Mr Weatherill-Hunt's points, I bow to his experience. However, you can find both 'micro' and 'miniature' used to describe this type of consumer circuit breaker with 'microbreaker' sometimes used for short by some MCB vendors. But from now on, 'miniature' it shall be!

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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!

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Amp overhaul is a real blast...

VINTAGE ADVENTURES IN LOCKDOWN AS READER BRINGS SPEAKERS AND FRENCH TWIN MONOBLOCK BACK TO LIFE

Like other readers, I decided to set myself a project as a way of battling through lockdown. In July 2020, I began messing about with an old amplifier I'd acquired and an even older pair of Castle Trent standmount speakers. After refurbishing the speakers' crossovers and modifying the amp, I settled down to enjoy my music. All went well until my listening was brought to an abrupt halt when the amp suddenly switched to full power, nearly sending the dear old Trents flying through the patio doors.

After this I thought I'd be better spend my time working on an amp with some sort of pedigree. Surfing the net, I came across a good old-fashioned hi-fi shop and enquired as to whether they had a good quality power amp with some kind of fault. To my utter surprise I received a very friendly response. Yes, we have an Atoll AM100 with one channel dead. 'Mmmm', I thought, 'Atoll, who the hell is Atoll?'. After hunting around the net again, I discovered that Atoll is a French company, based in Normandy, and that the AM100 was a twin-monoblock design boasting huge toroidal AC mains transformers. That sounded more like it.

A few days later the amp arrived. Out came the anti-bacterial alcohol wipes, followed by my multimeter which revealed its MOSFETs to be dead due to a short-circuit. Tracing back along



ABOVE: One of the two Castle Trent speakers after Simon had refurbished their crossovers



ABOVE: Simon's AM100 power amp from French company Atoll (www.atoll-electronique.com)

the PCB showed various resistors had become very hot at some time, that the quiescent current adjustment pot had burned out, and that some biasing resistors had gone to meet their maker. So I decided when buying replacement components to upgrade them.

I then emailed Atoll asking if it would supply me with a circuit diagram. I don't blame them at all, but the answer was 'Non!'. 'But I like your amplifier, I said...' Eventually an Atoll engineer very kindly provided me with some current settings and tips. Out came the soldering iron and, after carefully prising out the main PCB, I set to work. In fact I laboured all day, thoroughly enjoying myself and able to forget the pandemic for a while.

Finally the time came to solder the main PCB back into place. I then set the quiescent current pots half way in the hope the current would be somewhere near to what was required. It was time for a cup of tea to calm myself.

Cup of tea on the side undrunk, I fitted a mains lead and switched the amp on. Even after spending many years on the road as an engineer I still have a fear of something going bang. So, with heart beating fast and both ears covered – in the most professional manner – I hid underneath my kitchen table.

Finally, peering over the table, I could see that the LED light on the amp was glowing. Time passed and still no bang, so I switched it off. At this point I thought, I could do with a fairly hefty pair of 8ohm resistors to load the amp. Now, when my dear old pop died he left behind a couple of little tool chests and

opening the first drawer I came across two metal-clad resistors. Shoving my glasses on, I could read 8.2ohm. Good grief! 'Thanks dad', I said out loud and connected them across each speaker terminal. I switched the amplifier on once more and all seemed fine.

Impatient to hear some music, I wired the amp up to my system and played the first CD to hand. 'This sounds OK', I said to myself before deciding to tweak some settings as the heatsinks were becoming hot. The notes from Atoll had suggested turning the bias potentiometer fully clockwise (minimum current) before changing settings, so I did so. This time I had my head in the amp when 'Bang!'. 'What the...' All my work, undone in a nanosecond. I won't repeat my language at that instant. I'd overlooked the rotation direction of my new pots for quiescent current. Three hours later, red-faced, I had finally replaced all the components I had sent into orbit. And this time? Success! God bless you all at *Hi-Fi News*.

Simon Cox, via email

Paul Miller replies: Sounds to us like you might have found a safer distraction to get you through lockdown, Simon, but you've clearly had some fun. And all this with the added complication of a brand that's hardly local. You are not the only reader who has derived much satisfaction from breathing new life back into a defunct component, although your experience proves it's not for the inexperienced or faint-hearted. At least your monthly dose of *Hi-Fi News* has always been on hand to calm your nerves!

A breath of fresh AIR

READER'S INSIGHTS INTO BUILDING A STUDIO AFTER HIS PRE-OPENING TOUR

I was good to read the piece on Air Studios in Hampstead [HFN Mar '21]. Some years ago I had the opportunity to visit the complex as it was being constructed. The project manager took me around and my jaw dropped when he told me just how many layers of gypsum plasterboard were used for the vaulted ceiling in the main hall. This was required in order to minimise aircraft noise.

I recall that Studio One was actually a building within a building, constructed in a steel frame set upon synthetic rubber dampers. The space between the steelwork and external walls varied, but I remember that in places the acoustic insulation mineral wool was around a metre thick. The secondary glazing was shaped like Norman windows – massive sheets of glass with acoustic seals, the idea of an Italian acoustic consultant.

The socket outlets installed upstairs on partitions, meanwhile, were never set back-to-back but were staggered, to reduce the transmission of sound. Few electricians seem to appreciate this issue when installing socket outlets in buildings.

The acoustics of the main hall were fabulous, but I understand very different to those of Abbey Road. On one side of the building, externally, was a special projecting socket. I was told there were plans to fit out a big lorry as a recording studio and that this could travel anywhere in Europe to make digital recordings for the new CD system. The lorry could then return to the studio and plug into this socket via a cable to download all those digital 'bits'. They said they hoped to have a mastered CD available in just a few hours, ready for duplication for clients. If that lorry still exists it should go into a museum.

I also remember being in the main control room of the main studio just before it was fully fitted, with cut-out baffles for the monitoring speakers. When I opened one of the studio doors, my left arm nearly came out of the shoulder socket! The inertia of the heavy door to the studio lobby was massive, but it opened smoothly once it got going. The door was a thick hardwood veneer with, I was



ABOVE: The main hall at AIR with its vaulted ceiling and motorised canopy

informed, a solid concrete core. My arm is still recovering from the shock!

Ronald Koorm, via email

Steve Harris replies: It must indeed have been fascinating to see the new facility under construction. Ironically, in 2015, AIR came under threat when a developer planned deep and extensive excavations in an adjoining property which, despite the state-of-the-art isolation provided by the 'building within a building', would have made the studios unusable for six months and likely put AIR out of business.

But a 'Save AIR Studios' campaign was launched and fortunately, in the autumn of 2017, AIR could announce that its neighbour's development plan had been dropped. Among its many enthusiastic clients is audiophile vinyl (and open-reel) specialist label Chasing The Dragon.



ABOVE: Joe Sanders recording the Chasing The Dragon album *A Day In The Life* in 2019

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HFN2021

Aurex SB-A10 amplifier

As Lexus is to Toyota, so was Aurex to general CE brand Toshiba. We reappraise the SB-A10 – compact but full-featured, was this miniature hi-fi at its very best?

Review: **Tim Jarman** Lab: **Paul Miller**

In previous vintage reviews we have featured the Technics SL-10 turntable [HFN Apr '19] with its footprint the size of an LP sleeve, Sony's D-88 CD player [HFN Jul '16] that was so small the disc stuck out of its side, and Technics' SB-F1 speakers [HFN May '17], which individually could be held easily in the palm of one's hand. So how about a complete integrated amp about the same size as the concise edition of the *Oxford English Dictionary*? Meet the Aurex SB-A10 from 1981.

A sub-brand created by Toshiba in order to bring its premium products to market – just as National Panasonic did with Technics, and Toyota with its 'Lexus' range in the car market – Aurex set the pace for a new breed of tiny hi-fi with the launch of its Micro System 15 in 1979 [HFN Apr '16].

ALL SYSTEMS GO

At around £1000 for the pre and power amplifiers, tuner and cassette deck it wasn't cheap, but it outperformed rivals from Technics' Concise Components series and the Aiwa '22' system, as well as much full-sized equipment. To broaden the appeal of the micro components range Aurex soon supplemented the expensive '15' system with the '10' at £399 and



ABOVE: Despite the SB-A10's compact dimensions room was still found for a mic input and level control, but this feature would have had niche appeal

then the '12' (£499). The SB-A10 was the amplifier used in the '10' system, one obvious simplification being that it was an integrated rather than a pre/power amp.

The '10' system also included a simpler cassette deck (PC-D10) with mechanical keys rather than logic controls and a more basic tuner (ST-T10L). The external appearance of this unit was all but

identical to the ST-T15L's in the '15' series, assuming that this was chosen over the more expensive digitally-tuned ST-F15. The '12' system, meanwhile, looked more like the '15', especially once the PC-D12 cassette deck was launched (early System 12s came with the PC-D10). However, all the components underwent heavy cost reduction in order to halve the selling price. This was the key difference between the '10' and '12' systems, the '10' being a simpler and smaller alternative to the '15', while the '12' was simply a cheaper one.

NO PLAYTHING

The SB-A10 was an impressive piece of work. Building the whole amplifier into the space previously occupied by the SY-C15 preamp alone was not an easy proposition, even though the circuits used were not as elaborate and, at 2x20W/8ohm [see PM's Lab Report, p127], the output was half that of the SC-M15 power amp. The SB-A10 was also much cheaper than just the SY-C15 on its own, costing £145 compared to £220. From this one might have assumed that the



LEFT: All the SB-A10's controls are made of machined aluminium, even though it was the most affordable amplifier in the company's range of micro components



new integrated was little more than a toy, something that looked like the real thing but lacked many of its finer qualities.

This was not the case, even though, as with the rest of the Aurex micro components range, there was nothing particularly clever or novel about the design of the SB-A10. Instead, conventional electronic engineering best practice had been applied in a careful and considered manner, the smallness of the unit a result of the high-density packaging of all the parts.

Inside you will find no switchmode PSU and no clever heatsinks. Rather, you discover a conventional Class AB amplifier powered by as large a toroidal mains transformer as would fit into the cabinet (not quite, as it actually sticks out through a hole in the bottom!).

During the late 1970s other Japanese manufacturers had evolved a topology for low-cost hi-fi amplifiers with a simplified circuit based around hybrid chip modules.

In this arrangement all the gain required for line level inputs (tuner, tape, etc) was generated within the hybrid chip itself.

ON THE BLOCK

When it came to tone controls, these were implemented by placing the adjustments in the amplifier's negative feedback loop so no additional circuitry was required.

The only other active components necessary were in the obligatory phono stage and to provide loudspeaker protection (if fitted).

This economical format would have been easy to squeeze

within the dimensions of the Aurex micro components, but Toshiba's engineers chose the template used for units higher up the price scale, which performed better. This meant a discrete fully complementary OCL output stage preceded by a separate low-level gain block where the treble and bass controls acted. Meanwhile, the MM

'Toshiba chose the technology from higher up its price scale'

ABOVE: It may be small but it's fully equipped, with every function needed present. Fascia is a match for the other micro component models

phono stage was independent of the main signal path and was built around a pair of specially designed Toshiba ICs. Headroom was maintained by running them from a split supply of $\pm 18V$, the highest voltage the chips would reliably tolerate.

Other 'big amplifier' features included electronic loudspeaker protection with a relay to isolate the output if anything went wrong, a properly implemented tape loop and a $\frac{1}{4}$ in headphone jack, correctly attenuated of course. One curious addition was a microphone mixing input (mono) on the amp's front panel, which is of no real value to the typical audiophile.

The SB-A10 may have been keenly priced but it doesn't feel cheaply made, even compared to the luxurious SY-C15. ➔

BELOW: Brochure shows the '10' series source components, along with pictures of the transformer and early surface-mount resistors



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Yes, the sides, back and base are of resin instead of alloy but the one-piece top and fascia have the same shot-peened metal finish as the components in the '15' range. And all the knobs and switches are machined aluminium, not plastic.

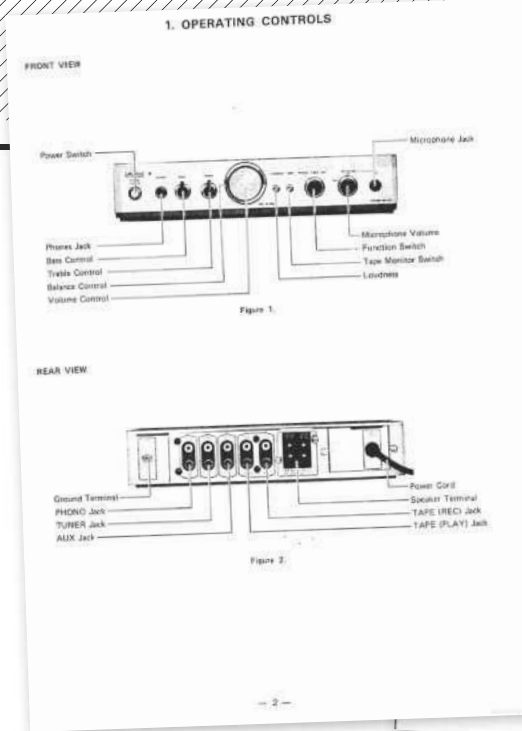
The rear panel sees the input sockets (not gold-plated this time) vertically aligned with those of the source components, making set-up of the full system simple. The spring-clip speaker terminals are less impressive than the sturdy binding posts on the SC-M15 power amplifier, but given the space constraints they can be considered perfectly adequate.

Of course, all the signal levels are standard so the SB-A10 can be combined with peripheral components of almost any origin, aside from the fact that the turntable input is suitable for MM cartridges only. There is even an auxiliary input for a CD player, correctly arranged so that high-level signals cannot overload it.

In use the SB-A10 functions like any other quality amplifier. The controls are small but never a nuisance, its balance control works properly and its phono stage is free from obvious coloration. And while it's physically small it doesn't *sound* small.

TIM LISTENS

Whether 20W per channel is sufficient for serious listening depends as much on musical taste, room size and loudspeaker choice as it does on amp design. That said, the SB-A10 hangs together reasonably well



at high volumes. Using a CD player with a standard 2V output connected to the auxiliary input on the SB-A10, the usable headroom seems to run out with the pointer of the volume knob at 12 o'clock. The rest of the range is best viewed as surplus gain for quiet LP pressings, etc.

Perhaps unsurprisingly, it sounds like it is the power supply that is first to give once the limit is reached, with the bass taking on an odd hollow quality as a prelude to rapidly increasing distortion. Up until this point the SB-A10 neatly sidesteps the 'small amplifier' sound that one often observes in low-powered equipment, heard

ABOVE: The service manual shows details of the internal assemblies, but exemplary reliability meant that they were seldom seen in practice

as turgid dynamics and a lack of any real extension at either tonal extreme. Also, being fabricated from discrete components it avoids the excessively conservative sound that hybrid chip amplifiers of this era can display. DC loudspeaker coupling gives the SB-A10 a fast, tightly focused sound.

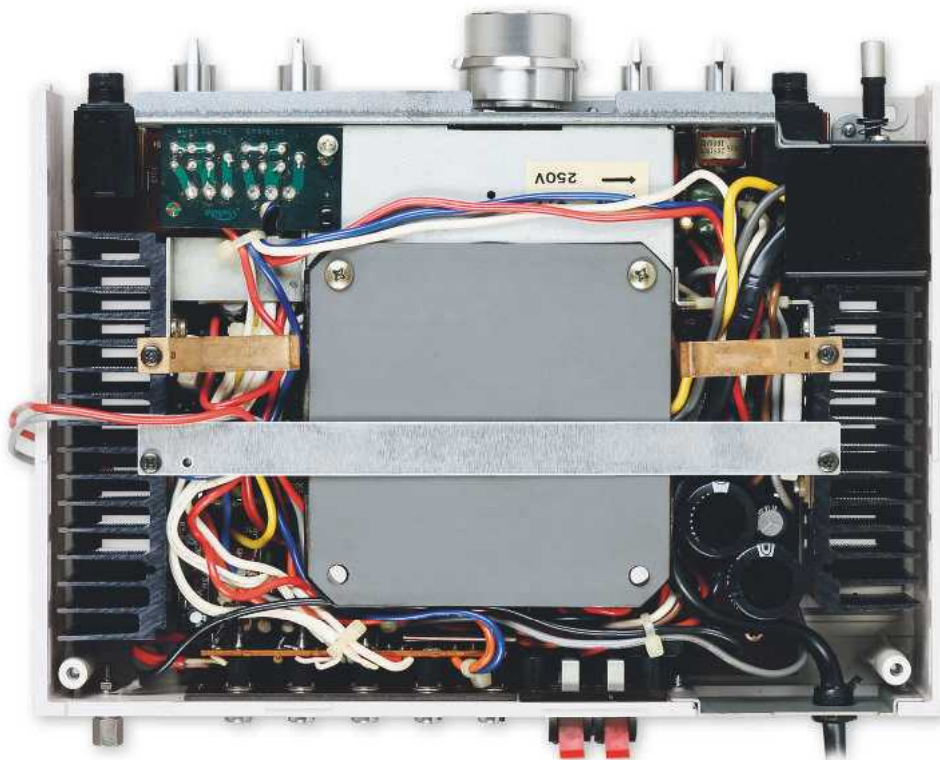
Used with efficient speakers – I chose the Technics SB-7000s [*HFN* Jan '21] – the tiny SB-A10 played 'Possible Worlds' by The Shamen [One Little Indian TPLP72CDE] with enough gusto to turn my listening room into an imaginary 1990s rave in an abandoned warehouse. The sound had all the scale, drive and power this illusion demands. More tracks of a similar genre followed, but even after several hours of flat-out use the amplifier was no more than slightly warm to the touch.

SERIOUS SOUNDS

Hearing Mari Fujiwara play Haydn's Concerto in D [Denon DC-8121] was also a revelation. Her violoncello possessed a beautiful, chesty character and total smoothness, proving the SB-A10 to be a serious amplifier for serious listeners. Exceptional clarity and a complete absence of self-generated noise was also noted, as was the transparency of the presentation.

Usually I like to balance such praise with at least a small criticism, but this proved to be a difficult unit to fault. Yes, absolute bass extension and overall refinement ⇨

LEFT: Densely packed internals are a corollary of being so small. The transformer can be seen in the middle of the casing while the power amplifier heatsinks run down each side





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— KLANGBILDER (Vienna)

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— AUDIO 10 (USA)

"For me Origin Live in the analogue sector is the discovery of the year! ..."

— IMAGE HI FI (Germany)



AUREX (TOSHIBA) SB-A10 *(Vintage)*



ABOVE: Simple connections at the rear. All the input sockets were vertically aligned with those of the source components and joined with visual lines, so that setting up the system was simplicity itself, even for those who were new to hi-fi

possibly failed to reach the elevated standard set by the SY-C15/SC-M15 pre/power combination, but this is hardly a surprise given that the SB-A10 cost around a quarter of its price when new. Viewed in isolation, this design more than holds its own.

With a less forgiving loudspeaker load the story may be a different one given the SB-A10's limited power supply capacity. There are some punishingly power-hungry miniature and sub-miniature speakers out there that may seem a natural match if space is limited. But remember that these may not integrate with the amp so well. Having said that, it gave good results with the B&O Beovox C30 and Technics SB-F1 designs I tried. 'Proper' hi-fi loudspeakers don't come much more compact than either of these!

Even if the SB-A10 were not as miniaturised as it is, it would still rank as a fine amplifier, inasmuch as one would have had to spend a lot more to bring a worthwhile improvement. Although not quite perfect, it certainly outperforms a long list of shrunken rivals, including the Sony TA-P7 and JVC A-E5.

Aurex did not have a major presence on the UK scene for very long, but during the micro components era its star burned brightly, thanks in no doubt to the Japanese technical thoroughness and flair for miniaturisation that lay behind it. It's a small wonder.

BUYING SECONDHAND

The SB-A10 is super reliable, which is just as well as the densely packed circuitry inside is not easy to work on. Even routine tasks like adjusting the output stage bias current are made difficult by the mass of wiring

and layers of components that get in the way. The preset resistors which make the adjustment are tiny too, and an extra small insulated screwdriver is needed to turn them.

HOLE-HEARTED

Potential trouble spots include poor soldering and the PCB, which is prone to warping as it has a big hole in the middle of it for the mains transformer to pass through.

The amp was also one of the first hi-fi products to use surface-mounted resistors (now common) and these can crack or even become detached from the circuit

board if the latter bends too much.

Some parts of the amplifier are protected by fusible resistors that can randomly fail or change value, and a check on these should be part of any overhaul. Finally, as with the other Aurex micro components, the shot-peened finish is difficult to clean if it becomes dirty or marked, so try to buy an example free of blemishes if you can. ☺

'It had all the scale, power and drive that was required'

HI-FI NEWS VERDICT

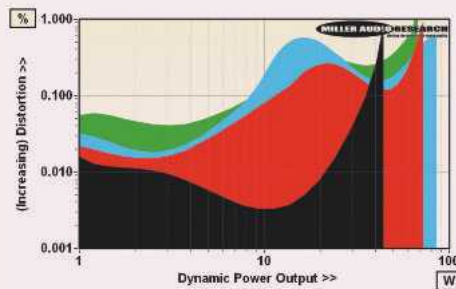
As the micro systems of this era begin to pique the interest of collectors, the SB-A10 may be one of the last undiscovered gems. Superb both in concept and execution and with a highly focused and transparent sound, its only weakness is that perhaps its physically small size might cause some not to take it seriously. Those who think this will be in for a big surprise if they take the trouble to hear it.

Sound Quality: 85%

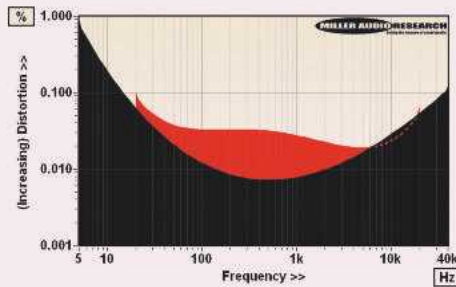


Compact though it is, the SB-A10 from Toshiba's 'luxury brand' Aurex puts in a very punchy performance, and all this hailing from an era before the development of hi-fi-quality Class D amplification. Class AB all the way, Aurex rates the SB-A10 at 2x20W/8ohm which it very generously exceeds at 2x30W/8ohm and 2x40W/4ohm. The linear PSU has headroom to sustain 45W, 68W, 88W and 65W into 8, 4, 2 and 1ohm loads, respectively, under dynamic conditions although the amplifier is most linear into the higher 8ohm loading [black trace, Graph 1 below]. So, distortion increases markedly into lower loads (0.009%/10W/8ohm versus 0.09%/10W/4ohm – all at 1kHz) but there's also an uplift in THD at very low frequencies, despite this being a direct-coupled output stage. At just 1W/8ohm, distortion increases from a low 0.008%/1kHz to 0.06%/20Hz and 0.9% at a subsonic 5Hz [see black trace, Graph 2] while offering better control at HF where THD increases marginally to 0.055%/20kHz/1W.

It's tempting to correlate this distortion with the bass/treble tone circuits as these remain in the signal path and, even at the centre/detent position, also play a role in adapting the SB-A10's frequency response. Here there's a steady shelving down below 1kHz to -0.9dB/100Hz before rolling away more rapidly through the bass to -1.4dB/50Hz and -2.2dB/20Hz (and -5.6dB/5Hz). There's also a mild +0.2dB presence band boost followed by a 'sweetened' treble of -0.4dB/20kHz out to -9.0dB at an ultrasonic 100kHz. Noise, meanwhile, is higher than average but this is a white noise that draws the A-wtd S/N down to 81dB (re. 0dBW) rather than hum – in practice the transformer is very well shielded and residual noise is <1mV. 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 8.1A



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)	30W / 40W
Dynamic power (<1% THD, 8/4/2/1ohm)	45W / 68W / 88W / 65W
Output imp. (20Hz-20kHz/100kHz)	0.153-0.166ohm / 0.64ohm
Freq. resp. (20Hz-20kHz/100kHz, 0dBW)	+2.2dB to +0.18dB/-9.0dB
Input sensitivity (for 0dBW/20W)	35mV / 163mV
A-wtd S/N ratio (re. 0dBW/20W)	80.8dB / 93.8dB
Distortion (20Hz-20kHz, 10W/8ohm)	0.0185-0.105%
Power consumption (Idle/rated output)	9W / 90W
Dimensions (WHD) / Weight	257x54x208mm / 3kg

Wilson Audio System V

Wilson Audio's Tiny Tot and matching Puppy subwoofer reach maturity with the new System V versions. **Martin Colloms** and **Ken Kessler** listen

During the preliminaries for this review I suffered a major blow at around 3am one morning [writes Martin Colloms]. I was woken up by a thundering roar from the listening room that sounded like a door being smashed down by men with sledgehammers and which wrote off a number of drivers in the speakers.

It seems that some kind of power transient set off a chain of events in my amplifier system, leading to the partial destruction of the System V. Fortunately replacements were not too far away and there proved to be an unexpected bonus from Wilson Audio following the damage report. More on this later, but first the background to the System V.

TECHNOLOGY USED

Although it may look identical to the WATT 3/Puppy 2, the System V is packed with changes that speak of a fundamental redesign. Taking the Puppy subwoofer



first, the base, top and driver baffle have been reinforced by heavy laminated phenolic panels, derived from the Grand SLAMM X-1. The two Dynaudio 210mm bass drivers used per Puppy remain but the interior acoustics have been altered and a new tuning duct appears at the rear. The Puppy's bandwidth is nominally 30Hz to 150Hz, the upper rolloff defined by a first-order crossover.

Meanwhile, the WATT's distinctive pyramidal shape neatly adorns the

ABOVE: The Wilson WATT 5/Puppy 5, aka the System V cost £16,175 on launch

top of the Puppy, and surprisingly the loudspeaker as a whole looks less box-like than you might expect.

A TALE OF TAILS

As before, this superlative mirror gloss cabinet is built in Corian, a synthetic marble, cross braced and critically damped with seismic lead blocks. The System V is a single-input

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speaker, the amplifier signal entering the terminal panel of the Puppy and the upper range output to the WATT emerging at a second pair of terminals. A Wilson Audio umbilical cable, playfully called the Puppy Tail, links the Puppy to the WATT.

Despite the use of second-order 12dB per octave crossovers throughout the new System V, there is a degree of overlap between the Puppy and the WATT in the bass frequency range. Support is given by its own bass-reflex tuning loaded by a short 30mm-diameter interchangeable alloy duct.

SOUND QUALITY

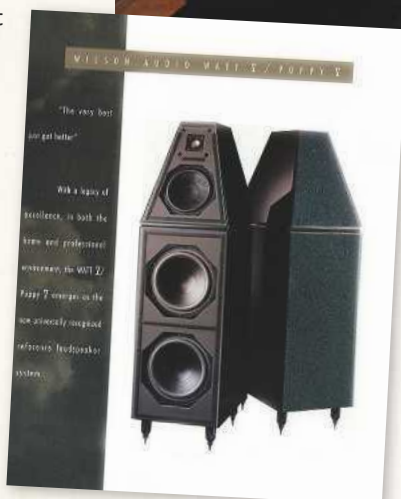
Amplifiers used for the listening included the Audio Research VT150, the Conrad-Johnson Premier 8A, plus the Krell KAS-2. The WATT V was generally rather tolerant

of electronics and could make very pleasant sounds with the better integrated amplifiers used, and even with designs as inexpensive as the Exposure 20 [Ken Kessler reports worthwhile results with some single-ended triode amps – see his contribution, p133].

Signal sources ranged from the Wadia 16 CD player to the Audio Synthesis DAX decoder with a Krell MD10-T/Studio player combo. Analogue music was generated by a van den Hul Grasshopper IV GLA feeding an equalisation-matched Conrad-Johnson PV12 all-triode preamp. The carrier was a Linn LP12 Lingo /Naim Aro on Mana Phase Four tables.

On first hearing, the System V was a disturbing experience. As a long-standing WATT/Puppy owner, I was quite unprepared for the scale and depth of the changes to this speaker. New mid and treble units have radically altered the sound, and mainly for the better.

Its predecessor could be a stern taskmaster, with a tendency to hardness. Inner colorations could result in problems with system matching and room acoustics. If the very considerable virtues of the WATT 3/Puppy 2 were to be fully appreciated, great care was needed in overall system alignment. By comparison, the System V is tonally



ABOVE: The late Dave Wilson poses for the camera on the Wilson Audio stand at CES in 2003 surrounded by WATTs (top) and (above) 'The very best just got better' – original ad extols the pedigree of the WATT 5/Puppy 5

rich, creamy and fairly distant. It has rather more bass now, extending fully into the lower octave. It also has a substantially smoother mid as well as a sweeter, more even treble.

Bass differences were so substantial that the new speaker would not work properly in the room position vacated by the old one. It sounded both boomy and thickened in the upper bass. The System V seemed to be better suited to larger rooms where its full bass could breathe easily. Such was its smoothness and richness that the WATT V could make solid state sound like a good valve, digital sound more like analogue.

The bass extension of the new Puppy was solid to 27Hz (35Hz in my previous listening room which had unusual gain in this range) while it will play twice as loud (yes, 10dB!) for a similar subjective distortion limit.

The System V's bass was strong, deep and tuneful, with very good slam, this bringing a fine sense of scale to the sound. Through the midrange there was an absence of nasality, glare or hardness, though the presentation was a touch full. It sounded a touch distant, an aspect

of its perspective that was very well suited to classical recordings.

The WATT V's treble represented a substantial improvement over that of the WATT 3 iteration. The sound was both open and clear, almost of Wilson X-1 standard, with very good sibilance control and a virtually grainless extension to the edge of audibility. The usual metal dome 'signature' was almost inaudible in this new Focal-sourced design.

NO MEAN FEAT

Now we come to the unexpected bonus I mentioned at the beginning, as a result of the replacements from Wilson Audio following the damage. The company recommended a simple running change, namely the addition of a 15ohm damping resistor placed

across the output of the Puppy crossover feed to the bass units, an easy retrofit. In my room, this was fortunate, since it opened out the balance of the System V, allowing greater freedom

in placement while providing a firm solution to the unexpected perceived richness of character.

Products which are upgraded during assessment are every reviewer's nightmare. Fortunately for the System V, the upgrade changed the sound and proved to be a substantial improvement. ☺

'A damping resistor across the output was the solution'

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FROM THE VAULT

That unease I'd felt about the richer, heavier sound of the V – which, I must say, is uncharacteristic of Wilson Audio – had now been dispelled. The upper bass was now dry, the excess, lower mid warmth wholly controlled and more bass extension was now apparent. The character of the speakers was crisp, fast and open, and this encouraged a more normal placement for the speaker in the listening room.

In general the treble was similarly sparkling, transparent and highly detailed. The midrange was crisp and clean, while cone colorations were very well controlled and there was no hint of plastic cone 'cry' or 'plummy' softness to be heard.

Great advances had also been made when it came to the bass. More tuneful and more articulate, the Puppy V does breathe better than before and subjectively adds a half octave of low frequency extension. Moreover, that bass could be driven hard without limiting. The Stanley Clarke instrumental 'East River Drive' (from his 1993 album of the same name) at an indicated 250W is certainly no mean feat. The Puppy 3, in contrast, would begin to choke on just such an input.

BUILDING BRIDGES

After that eventful start, the new System V settled down at last and was seen to perform very well. It remains a fact that it is not an easy load, and some thought has to be given to the choice of a high-current amplifier of sufficient quality.

RIGHT: Starting life as a small nearfield monitor, Wilson's WATT became a full-scale high-end system with the addition of the Puppy subwoofer. Although the WATT 5/Puppy 5 may look identical to the WATT 3/Puppy 2, both speakers were radically revised to create the System V

BELOW: Original pages from the January 1995 issue of *HFN* which saw Martin Colloms and Ken Kessler assess the WATT 5/Puppy 5 from Wilson Audio – heralded on the magazine's cover as 'The Grown Up Baby Speaker'

Make no mistake. The Wilson Audio System V is no miniature Grand SLAMM, but it does go some way towards bridging the gap

between ordinary mortals and this vastly expensive reference speaker. Like the SLAMM it has unusually high transparency, very good transient definition and can reach back into the source material. Like the SLAMM it is also highly revealing of the quality of all elements in the listening chain including the specific tightness of

even a single binding post! When compared with the company's WATT 3/Puppy 2, I considered the System V to be both sweeter and

'It can reveal the specific tightness of a binding post!'

richer-sounding, a little slower but also kinder to sources.

Its dynamic range is significantly greater than its predecessor too and high level compression is also significantly reduced.

Technically and objectively the bass is improved, in extension, in slam and in definition. The soundstage was wide, deep, and very well focused and revealed wholly natural perspectives and recorded acoustics.

RARE FIND

Undoubtedly the System V is a work of reference in its class and provided that care is taken to drive and site it well, then a very good performance is achievable. Loudspeakers of this quality are rare finds. Strongly recommended, the continuing joy is that the System V manages to achieve what it does in such a compact elegant package.

And taken alone the WATT V should not be neglected. It is a higher power, wider ranging system than the WATT 3, and also offers a much kinder load. Certainly well worth considering in its own right, it could also represent a first step towards acquiring a full System V. ➔



MUSICAL FIDELITY



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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.

Don't Settle for anything less than perfect Musical Fidelity.



FROM THE VAULT

WATT'S IN IT FOR ME?

The Wilson WATT V/Puppy V is one seductive speaker system [writes Ken Kessler]. These ugly little spuds – all-too reminiscent of Darth Vader's rubbish bin – pop images into the room like the holographic chess set in *Star Wars*... only the images are life-sized, not miniature. I'm sitting here looking into the soundstage, behind and to the right of the hot seat.

Which I'd identify as Audible Upgrade Gain No 1: the WATT V/Puppy V does not preclude listening with friends, as did its predecessor. And my system has now been on for seven hours straight and I have no desire to turn it off yet. So that's Upgrade Gain No 2: the WATT V/Puppy V has no upper-edge sizzle to induce listener fatigue.

In short, Wilson has done it again. The latest WATT/Puppy edition is the speaker's biggest evolutionary jump so far, and it's one that's going to cause major rethinks throughout the industry. But first, let's backtrack so you can put it into context.

GENERATION GAME

Instead of non-concurrent numbers like 'WATT 3/Puppy 2' which always sounded like the scores in a football game, the latest revision jumps a generation, equalising the numbers. (We've adopted the roman 'V' for this review instead of the Arabic '5' since this is now Wilson's preferred style.)

The WATT 1 then became the WATT 2 by virtue of fine-tuning, the move to WATT 3 being more substantial: new tweeters and the need for a revised crossover. The Puppy 1 moved to 3 classification with the change of the Puppy Tail and a redesign of the bottom of the enclosure. But both WATT and Puppy have been altered substantially for 'V' status, and the bulk of it is retrofittable.

The only thing the WATT V shares with the WATT 3 is the enclosure. The 3's glass-fibre inverted dome Focal tweeters have been replaced with the faster, cleaner, tighter titanium version, made to Wilson spec.

While the Puppy V retains the Puppy 2's Dynaudio woofers, the cabinet's top, bass and baffle have been replaced with an ultra-high-density composite material. Additionally, the entire airflow path is different, the crossover has been changed, the port is larger and it sports both the WBT binding posts and new adjustable spiked feet called Puppy Paws. (Who thinks up these names?)

If the System V has been positioned optimally – with a fair bit of toe-in in my listening room, for example – anything

'The Bangles?
I wanted to
frolic amongst
them naked'



ABOVE: Dave Wilson at work in his garage on the early WATT (Wilson Audio Tiny Tot) loudspeaker

you feed into it will be transmitted with minimal degradation to your ears. I've never heard such vivid exposure of amp and cable differences as I've heard these past weeks. And yet I've not managed to turn the sound into a nightmare... even with sub-£200 amps. In every case where the power was limited to 100W/channel, though, you could hear mild compression, so I won't hesitate to tell you to feed the System V with as much wattage as you are able to muster.

I sat down for the most enjoyable listening sessions I can recall. I had never experienced anything like that which lay between me and the V. It was virtual reality audiospace, a perfectly formed soundstage filled with tactile sonic images that I wanted to touch, to walk around, and – in the case of The Bangles – frolic amongst

naked. But this superdetailed, truly three-dimensional presentation was only part of the experience. I was dazzled by the layering in the *Cabaret* soundtrack, Power Of Seven's 'Mockingbird', some Janis Ian, a Dave Wilson classical demo track on CD-R – hey, I even heard layering on Yardbirds CDs!

PERFECT COUPLE

A key aspect of the System V was bass so coherent, consistent, clean and controlled that I was forced to reassess recordings I had written off as boomy. And then there's the WATT V. Speedier, tighter, cleaner, with greater precision than the WATT 3 – and that's a speaker which takes some beating.

I've now found the perfect reviewer's loudspeaker, because it works with all types of amplifiers and it tells you everything. I adore the WATT V/Puppy V. Hear it, enjoy it, even if only for a brief time in a shop. I swear it will increase your passion for music. ☺



Also in *HFN* this month in 1995

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Show reports from Ken Kessler.

DELTA FORCE

Arcam goes for a change of technology in the D250/BB50. Paul Miller investigates further.

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NVA VERSUS ORELLE

Peter J Comeau hears a pair of advanced integrated amps – the NVA and Orelle SA-100.

A ROSE BETWEEN TWO THORENS

Decks to make vinyl blossom as Chris Beeching tests the Thorens TD166 Mk VI and TD280.

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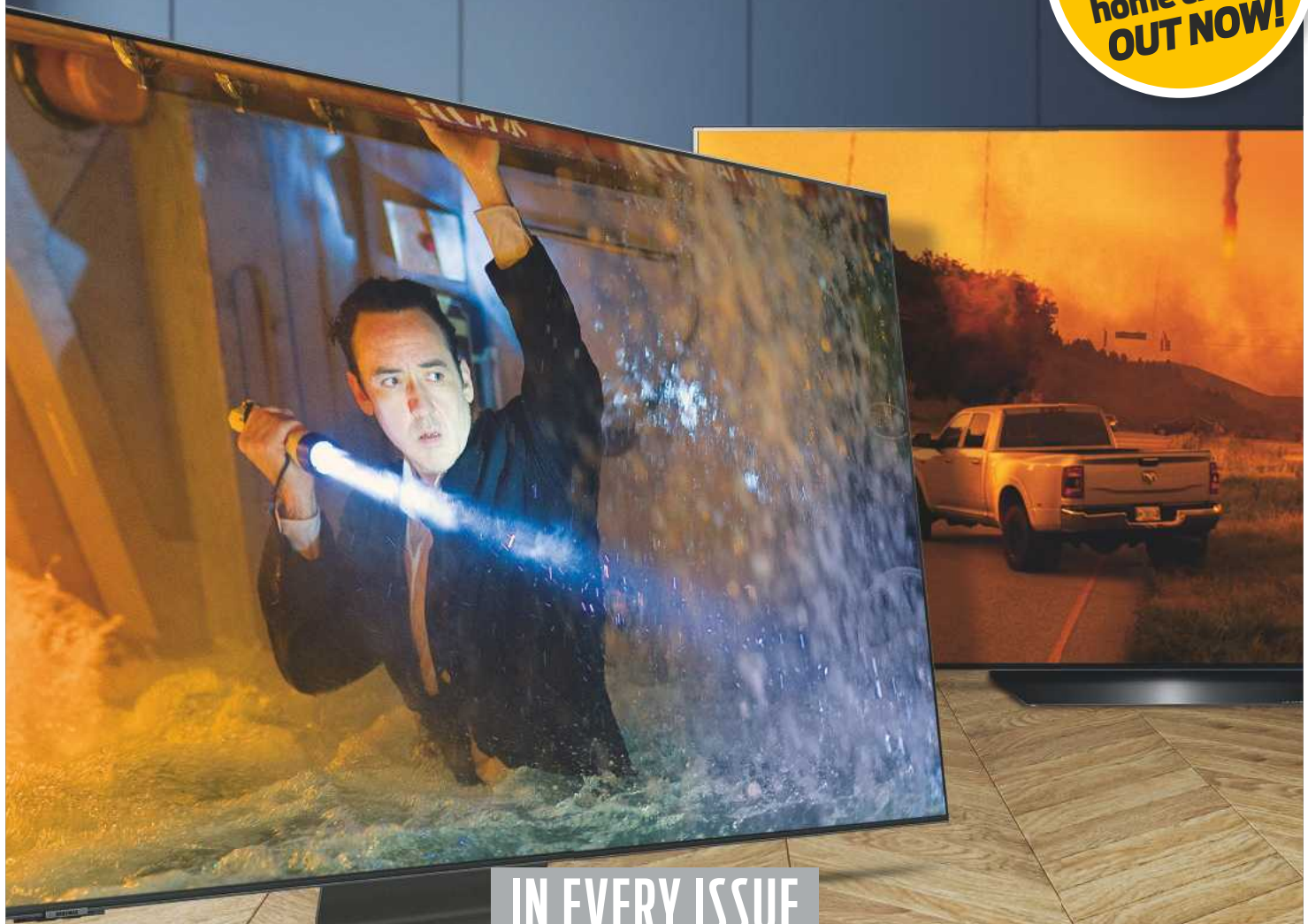
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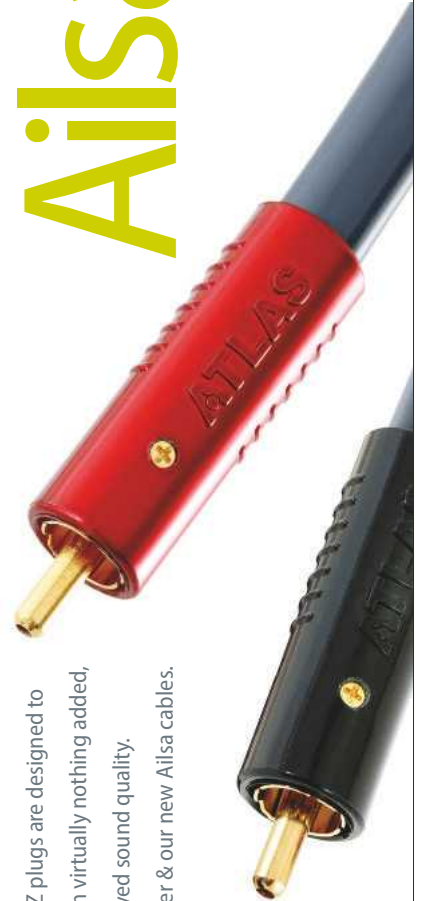
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KEN KESSLER TELLS IT LIKE IT IS...

Pre-owned software in good condition can tell you something about the user, says **Ken Kessler**



Two recent events have driven me to consider hi-fi 'housekeeping'. I suppose I am as remiss as most in leaving my system untouched for months at a time – but socket contact, for instance, has rarely proved an issue. If phono sockets are, indeed, 'self-cleaning' just by inserting, removing and re-inserting plugs, then the constant change of components due to reviewing needs means that my sockets must be squeaky-clean.

DUSTING THERAPY

It was the recent return of a preamp for updating which revealed a layer of *shmutz* on the now-exposed shelf that I hadn't expected. Having to disconnect the sources that occupied its eight inputs led me to rip out everything, and treat the room – carpet, floor tiles, etc – to a proper deep cleaning. And this proved to be almost therapeutic.

As for the other event which put me into full housekeeping mode, this was the acquisition of a dozen used soundtrack LPs and 200 open-reel tapes. The former were easily addressed with the wonderful Clearaudio Double Matrix record cleaning machine. As for the latter, having been told by more than one aficionado that 'old tapes eat heads', I invested in an open-reel deck that I was prepared to sacrifice in pursuit of my ends.

Just so you'll know, my regime consists of first fitting new leader tape – more anon –

followed by a fast-forwarding of the tape, then spooling back onto its original reel in real time. Only then do I play it for listening on one of my good decks.

What both formats taught me was not that 'good audiophile behaviour' was necessarily widespread way back when, but that the more expensive or 'grown-up' the disc or tape, the more likely it was to have been handled properly. It's simply a logical conclusion, for when hi-fi emerged in the early 1950s it was hugely expensive, and was the province of adults of means. When the teen market arrived in the mid 1950s, the medium was 45s, and usually listened to via cheap record players.

Not so LPs or tapes. Anyone buying these would have taken care with stylus or tape head, and with handling, cleaning and storage. It is the only explanation I can come up with for the generally unscratched, nay excellent condition of the LPs: that they were not owned by kids playing them at parties.

Same for the tapes... until we get to the rock era. When the artists' names are Sinatra, Bernstein, Streisand, Fitzgerald, Mathis, Karajan, and the like, you can bet the owners were probably adults with 'proper' hi-fi systems. Otherwise, how do you explain a rejection rate of less than one in every 35 tapes, ie, ones that proved unplayable? As for the LPs, my findings with used vinyl is that it's usually

much worse, because records are easier to damage than tapes.

I'm not about to bore you with how I came to that conclusion, only to say that both vinyl users and tape enthusiasts could be incredible sloppy, inattentive, lazy or simply destructive. The two sets of sins differ wildly, though, and I bring this up for a reason I will get to in due course.

Scratches, dirt and dust, fingerprints, torn or missing inner sleeves, warps thanks to proximity to heat: I'll wager all of you know the litany of Crimes Against Vinyl. And that's not counting normal wear from an LP simply being played often (and not, I hasten to add, with a worn stylus as the culprit). I must, however, recount the words of Alastair Robertson-Aikman, founder of SME, who once reminded me – and this is over 20 years ago – that I wouldn't live long enough to hear my record library once more in its entirety... let alone play any LP enough times to cause audible wear.

TAPES IN A TWIST

Entirely different from LP troubles are tape ailments, save for the shared woes caused by heat or moisture. Despite the higher cost, which you'd think would command respect, those few ruined tapes I bought suffered with stretches, multiple splices, dropouts, mildew, opening tracks missing their first few minutes (thanks to not fitting leader tape), and tapes twisted when spooling so the oxide (recorded) surface was on the outside, away from the heads!

Oddly, I haven't had a single tape inadvertently erased, or suffering print-through, but one or two had portions recorded over – with drive! Including a Beatles tape that would otherwise have been worth over £1000. Ouch. As for the condition of the boxes... don't ask.

Why this contemplation? I was contacted recently by an author I didn't know, about a non-audio-related matter, who asked what I wrote about. When I answered 'hi-fi', he said, 'Now there's an antiquated term I haven't heard in years'. Which got me thinking: has anyone shown newcomers to vinyl – hipsters, Ed Sheeran or Ariana Grande fans, media types – how to handle a long-playing record? I fear not. ☹

'In the mid 1950s the teen market went for 45s'

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