

# hi-fi news

& Record Review

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**Thorens TD 124 DD**  
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INVESTIGATION

**Record Store Days**  
Preview of 2021's collectable vinyl

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Pro-series headphone  
amp paints the town red



**T+A Caruso R**  
All-in-one digital 'cube'

**Rotel Michi X5**  
Mammoth integrated –  
beast with a silky sheen



• **OPINION** 12 pages of letters & comment • **VINYL RELEASE** Tim Buckley's debut album on 180g LP  
• **CLASSICAL COMPANION** Schubert's 'Trout' Quintet • **STUDIO TOURS** Rolling Stones go mobile  
• **VINTAGE REVIEW** Sharp's DX-110H disc spinner • **READERS' CLASSIFIEDS** Hi-Fi bargains galore

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# SME

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**ABOVE:** We curate the platters promised for this year's two Record Store Days, taking place on June 12 and July 17. See p24

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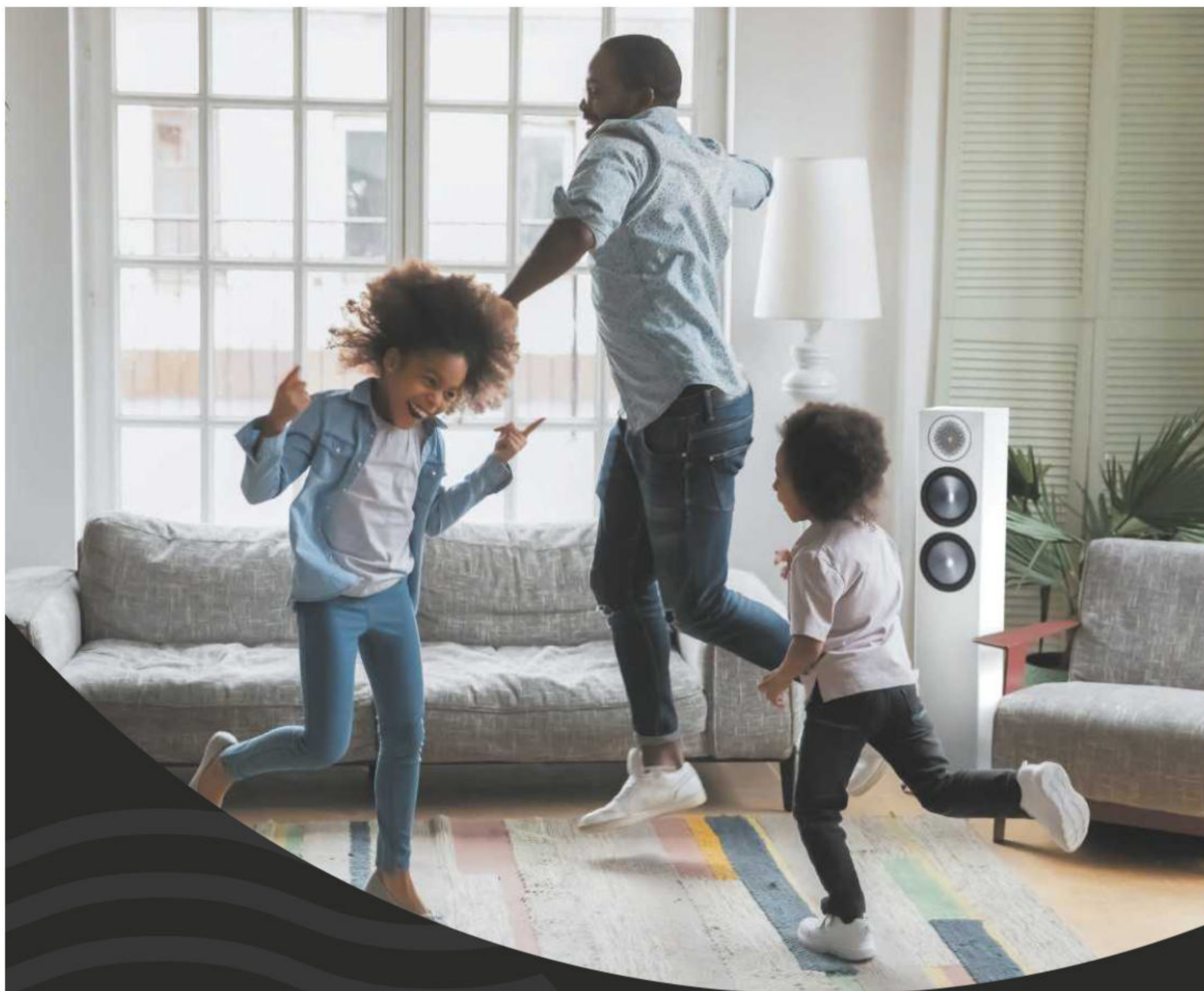
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***I35 Prisma + CD35 Prisma: HiFi News Highly Commended***



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

***I35: HiFi+ Top 100***



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

***I25 Prisma: HiFi Choice Five Stars***



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

***R35: HiFi News Outstanding Product***



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

***PRE35 Prisma + A35.2: HiFi News Highly Commended***



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

***I35: HiFi+ 2020 Editor's Choice Award***



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

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



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

***R35: HiFi+ Phono Stage of the Year 2020***



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

***I15 Prisma: AVForums, Highly Recommended***



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

***I15 Prisma: HiFi Choice Recommended***



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

***R15: EISA Phono Preamp 2020–2021***



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

***R15: AVTech Media 2020/2021 Best Phono Stage***



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

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



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

***I15 Prisma: HiFi News Highly Commended***



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

***R15: Hi-Fi Choice – Recommended, Five Stars***



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

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“

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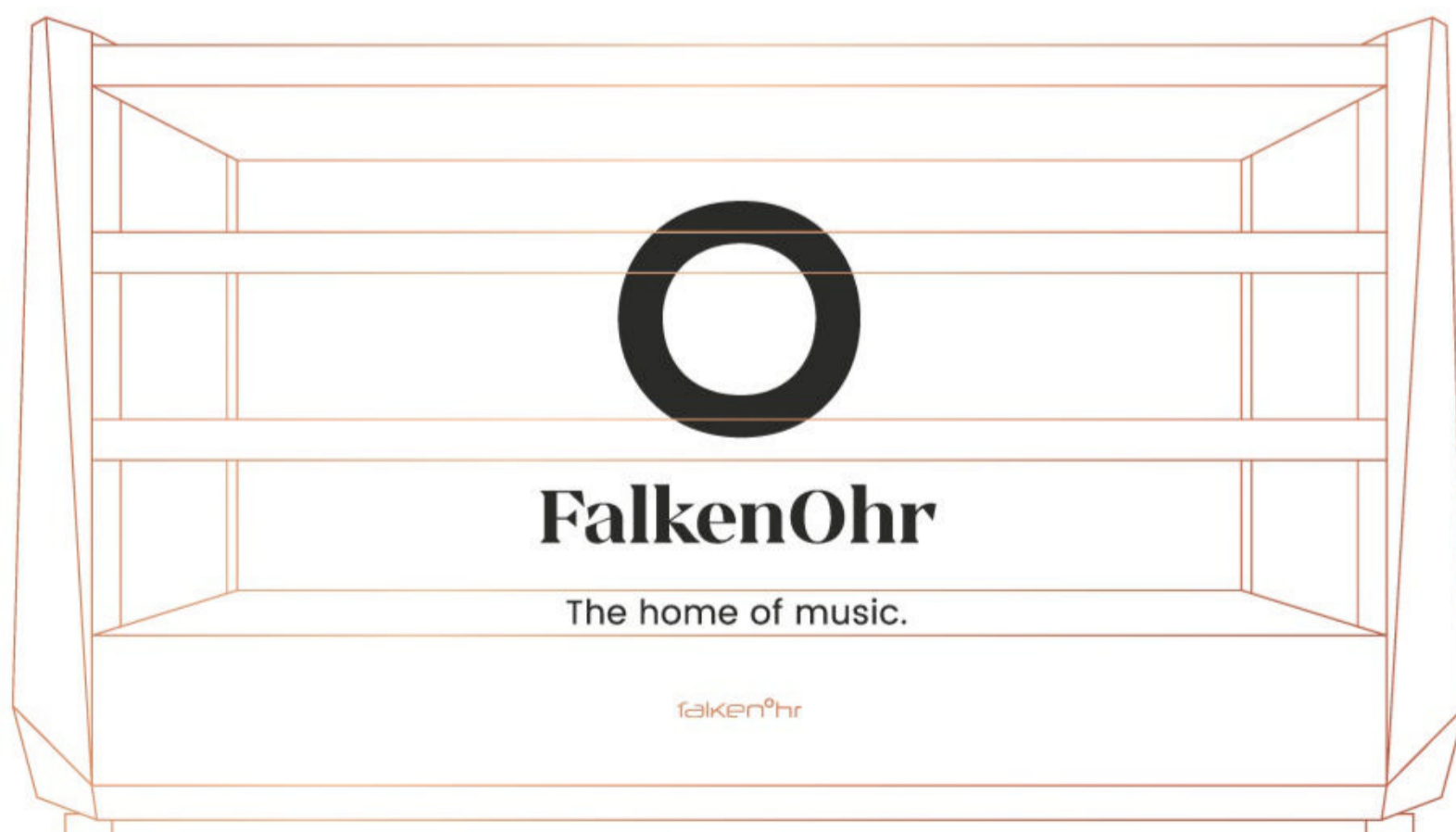
# PRIME PINNACLE

“ In practice the Prime Pinnacles are svelte enough to slip into all but the smallest rooms, so if you crave a warm and a full-bodied sound, these towers will have your system glowing. ”

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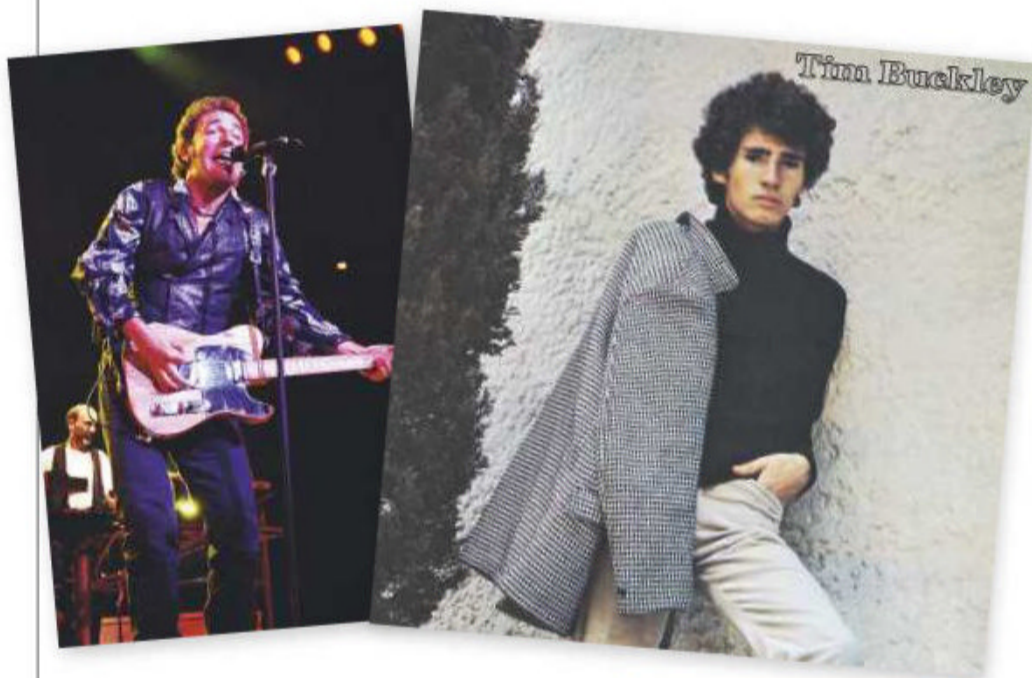
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**RIGHT:** A&K's KANN Alpha takes hi-res audio on the hoof with its all-alloy body, 4.1in touchscreen, beefed-up headphone amp and extended battery life, p72



**ABOVE:** Unmistakably 'Bryston' as the Canadian specialist offers up its flagship network-attached preamplifier. The BR-20 is featured on p64



**MUSIC:** The making of 'The Boss' – we celebrate *Born To Run* as our Vinyl Icon (p82), while Tim Buckley's eponymous debut from 1966 is re-released as a limited edition gold 180g LP (p80)

**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



New materials, and material technologies, are keenly anticipated in many quarters of our hi-fi industry. If there's a way that an unusual metal, native or alloy, can be incorporated into a cable or connector then our hobby will find a way. Same goes for novel semiconductors, power transistor substrates or tube variants. But if there's one quarter of hi-fi's commonwealth of components that's more keenly influenced by new materials then that's in the land of loudspeakers.

While birch-ply panels never entirely went out of fashion, plain vanilla MDF is no longer the go-to material for loudspeaker cabinets hosting drivers of distinction. Curved, laminated woodwork, constrained-layer damping and critical bracing are today's tools of the trade as speaker designers seek inert but practical and attractive cabinet solutions.

It's arguable that the 180lb weight of the Magico A5 floorstanders featured on our cover this month is not entirely 'practical', but the combination of slab alloy cabinet panels and an internal scaffold of square-section alloy beams is certainly effective. 'Uncompromising' is a better description of a brand that, typically, laughs uproariously in the face of resonance and tweaks the nose of non-linearity.



Magico [p38] is also keen to explore new materials, and has been employing graphene as a stiffening component in its driver cones for a number of years. However, when I first wrote about graphene, the two-dimensional carbon wonder-lattice [HFN Sep '14], I was

## 'New materials are keenly anticipated in the land of speakers'

more intrigued by its electrical properties and the high-end hi-fi potential of room temperature 'super conduction'.

Continuous graphene nanotubes could prove the perfect interconnect or speaker cable, though it's more likely we'd see a combined copper/carbon nanotube conductor offering improved flexibility, heat dissipation (current capacity) and conductivity over pure copper, silver or gold alone. So graphene has migrated to loudspeakers. But cables? We're still waiting...

**PAUL MILLER GROUP EDITOR**

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

# Rogers AB3a

## NEW ACTIVE SUB TO PARTNER LS3/5A

Extending the low-frequency performance of the classic, but seemingly evergreen, LS3/5A BBC monitor loudspeaker is not a new idea but we do have a new take on its execution courtesy of Rogers' £3500 AB3a subwoofer. This is an active successor to the company's 1990s-era passive AB1 model and is designed to partner Rogers' £2750 LS3/5A Classic [HFN Jul '19] or other 'similar small monitors'. Moreover, the AB3a performs double duty as both subwoofer system and 600x190x165mm (hwd) speaker stand with outrigger feet.

Its frequency response is rated down to 60Hz (-3dB) via two rear-firing woofers, a seemingly minor but subjectively useful extension on the 80Hz (-3dB) reach of the LS3/5A

Classic. The drivers – 125mm bextrene woofers with dual-layer damping and rubber surrounds – are the same as those used in Rogers' two-way passive loudspeaker, but have been mass loaded to stiffen the cone and lower their free air resonance. The AB3a's second-order, 12dB per octave roll-off also mirrors that of the LS3/5A.

Rear-panel controls on the 50W subwoofer's sealed cabinet include an adjustable 40Hz-240Hz crossover (Rogers recommends an 80Hz setting), a gain adjustment for both high- and low-level inputs, and a variable 0-180° phase control to match the LF output of partnering speakers and promote 'flexibility in room positioning'.

**Rogers International UK Ltd,**  
**0333 533 0135; [www.rogers-hifi.uk](http://www.rogers-hifi.uk)**



## Kind of Bluesound

### NEXT GEN WIRELESS NODE AND POWERNODE

Just arrived from multiroom audio marque Bluesound are new generations of its Node networked streamer and 'just-add-speakers' PowerNode streaming amplifier, priced £549 and £849 respectively. Updates over the previous 2i versions include new 32-bit DACs, increased processing power via quad-core 1.8GHz ARM Cortex devices, HDMI ARC connection and an expanded touch-sensitive control system on the top panel that adds preset keys and a proximity sensor. Meanwhile the PowerNode's Class D 'HybridDigital' amps, from sister brand NAD, claim an increase in power from 2x60W to 2x80W. Both models are available in black and white satin finishes and support control and hi-res file playback (inc. MQA) through Bluesound's BluOS app.

**Lenbrook Inc, Ontario, Canada,**  
**01732 459555; <http://nadelectronics.com>**

## HI-FI NEWS' NUGGETS

### CELLO CHASING

A year in the making, Bach's complete Cello Suites are now available from audiophile label Chasing The Dragon. Captured using just two tube mics, the performances in London's Temple Church and St Botolph's Church in Kent include the 3rd Suite on the cello with and without piano accompaniment. The 6th Suite is performed on a five-string cello. This five LP box set is packaged with a paperback copy of *The Cello Suites* by Eric Soblin, plus a 32-page behind-the-scenes booklet.  
[www.chasingthedragon.co.uk](http://www.chasingthedragon.co.uk)

### SILTECH LEGEND

Thirty years of research into audio cable design has culminated in the new 'Classic Legend' series from Siltech. The range encompasses interconnect, speaker, and power cables and features its new G9 silver/gold conductors that are up to 2x thicker than used in previous Siltech designs. An improved dielectric and RF/EMI shielding are also specified.  
[www.siltechcables.com](http://www.siltechcables.com)

## Atomic for 'phones

### NAIM'S HEADPHONE-OPTIMISED UNITI ATOM



Naim has unveiled a 'Headphone Edition' of its Uniti Atom all-in-one networked music system. Available now priced £2399 (the same as the standard edition), it replaces the 2x40W Class AB amplifier of the original Atom with a headphone amplifier stage the manufacturer says employs trickle-down technology from its Statement power amps. This, and a new PSU transformer design. Described as suitable for 'even the most premium of headphones', the Uniti Atom Headphone Edition features 4.4mm Pentaconn and four-pin XLR balanced headphone outputs, plus a conventional 6.35mm socket. Another addition is a balanced XLR preamp output (joining the pre-existing unbalanced RCA connection) for improved integration with high-end speaker-based set-ups.  
**Naim Audio Ltd, Salisbury, 01722 426600;**  
**[www.naimaudio.com](http://www.naimaudio.com)**

## Armour-plated JitterBug

AUDIOQUEST'S USB NOISE FILTER GETS A 'FULL METAL JACKET'

AudioQuest's JitterBug USB data and power line noise filter [HFN Oct '15] has been tailored with a new 'Full Metal Jacket' (FMJ). This includes both a shielded metal case and 'noise-stopper' carbon cover for its 'A' connection. This £50 USB 2.0 accessory mirrors the functionality of AudioQuest's earlier model – it's a purely passive device (drawing no power from the USB hub) but provides transformer-isolation and RF filtering of both the 5V USB 'VBUS' and its differential data lines. The enhancements, meanwhile, are intended to 'further reduce RF noise, jitter and packet data errors from USB

playback hardware', the hinged cover specifically for when one JitterBug FMJ is used in parallel with another (in a USB service port, for example), and its output is not required.

The JitterBug FMJ is recommended for use in-line with any USB 2.0 device, saying it's an obvious partner for the £169 DragonFly Red and £89

DragonFly Black USB DACs

[HFN Oct '16].

However, AQ says 'it's best to experiment' when using it with the £269

DragonFly Cobalt [HFN Oct '19], as the

company's flagship model includes its own noise filtering.

**AudioQuest, California, 01249 848 873; www.audioquest.com**



## Plug 'n play portable

ASTELL&KERN'S A&FUTURA SE180 WITH PLUG-IN DAC MODULES

The SE180 from Astell&Kern is the digital audio player specialist's first model to feature interchangeable DAC modules. Available now for £1399, this new addition to the brand's mid-tier A&futura range ships with an ESS ES9038PRO DAC supporting 384kHz/32-bit PCM and DSD256.

Buyers also have the option of the £319 AK4497EQ Dual DAC Module, which increases the player's maximum sampling rate to 768kHz while also supporting DSD512 files. The modules, which slot into the top of SE180's 'moon silver' aluminium chassis, have 2.5mm, 3.5mm and 4.4mm headphone outputs. Two

further modules (specifications TBC) are scheduled, one later this year, the other in the first half of 2022.

The SE180 also marks the debut of A&K's 'Teraton Alpha sound solution' technology – claimed to improve circuit efficiency while reducing PSU-related noise. There's also a revised user interface for the 5in Full HD touchscreen display that's more consistent with an Android smartphone. Onboard memory is 256GB, expandable to 1TB via a microSD card, while connections are USB-C, Bluetooth v5.0 (for use with wireless headphones) and Wi-Fi. **Astell&Kern, 01279 501111; www.astellnkern.com**

## Rotel's trio now in mkII

SERIES 14 AND 15 INTEGRATED AMPLIFIERS UPDATED

Japanese manufacturer Rotel has announced updates to three integrations from its 14 and 15 Series, endowing them with a MKII status. The new models – the A14MKII (£1195), RA-1572MKII (£1595) and RA-1592MKII (£2295) – feature 'circuit design innovations and component level changes in key circuit locations', leveraging technology first introduced in Rotel's premium Michi line

[see p60]. Upgrades include improvements to PSUs and capacitors. All three amplifiers also replace the previous AKM DACs with 384kHz/32-bit chips from Texas Instruments, adding support for MQA decoding/rendering via USB, and gaining Roon Tested certification. Finish options are black or silver.

**Rotel Co. Ltd, Japan (Rotel Europe/B&W Group), 01903 221500; www.rotel.com**



## HI-FI NEWS? JUST ASK...

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## INVESTIGATION

**RIGHT:** Over 200 independent record shops across the UK will take part in this year's two Record Store Days, with sales both in-store and online



**BELOW:** Crosby, Stills, Nash & Young's *Déjà Vu Alternates* comes in a cover that mirrors the original with an alternative image from the photo shoot (left) while Elton John's *Regimental Sgt Zippo*, recorded at Dick James Studios in Central London in the late '60s, is now released in full for the first time

# Record breakers...

Steve Sutherland brings news of the key 2021 Record Store Day 'drops'

Taking its cue from last year's multi-date drop [HFN Nov '20], 2021's Record Store is split across two Saturdays internationally – the 12th of June and the 17th of July.

Created in 2008 to encourage vinyl devotees to support their local independent record shops by releasing one-off collectables, the 2021 double date is intended

to help stores that may well be struggling to re-open following the enforced Covid lockdown.

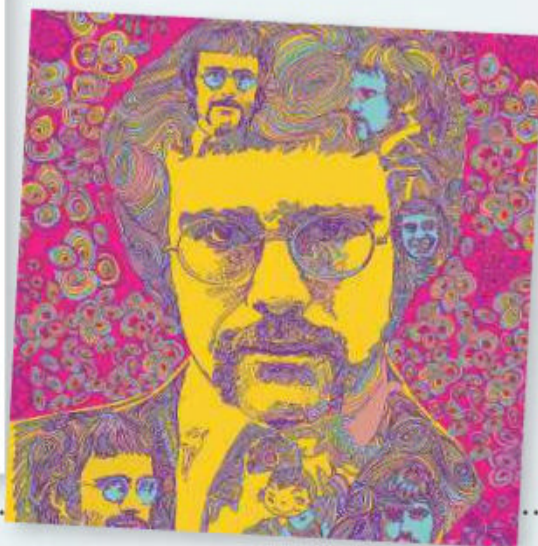
As always, there's quite a smorgasbord on offer and far too many to cover here, but among the highlights is Crosby, Stills, Nash & Young's *Déjà Vu Alternates*, released by Rhino Atlantic in the July drop. Billed as a 'recreation' of their second album, 1970's *Déjà Vu*, it features alternate versions of songs that appeared on the original album, comes on 180g black vinyl and is limited to 10,000 copies.

Meanwhile, marking the 51st anniversary of the original album, The Doors' *The Morrison Hotel Sessions* is released in the earlier drop by Rhino Atlantic as a 180g numbered double LP. Promising rare rehearsal performances, it was mixed and assembled by the group's original engineer Bruce Botnick and is limited to 16,000 copies.

### RARE GROOVE

Also in the June drop is a true rarity, Elton John's *Regimental Sgt Zippo*. This single LP, now seeing the light of day thanks to UMC, was originally slated for release in 1968, but then got shelved. Recorded between late 1967 and Spring 1968, six of the 12 songs were released on Elton's *Jewel Box*, but five are here in their finished versions for the first time and it also features a debut release for 'You'll Be Sorry To See Me Go'.

The Cure's *Wild Mood Swings* is in the July drop. Released for the first time on double picture disc by UMC, it comes in a die-cut gatefold sleeve



with a download card. Dire Straits' *Encores* is a 12in limited edition live EP from 1993 remastered and reissued on 180g transparent pink vinyl by UMC while pink vinyl is used for Freddie Mercury's 7in limited edition release of 'Love Me Like There's No Tomorrow' in the June drop. Also in June comes Def Leppard with *Live In Oxford*, a double released on UMC. Recorded in 1980, it was originally part of the band's *Early Years* box set and is making its debut on vinyl for RSD.

Talking of Queen, following the success of Queen + Adam Lambert's UK No 1 album *Live Around The World*, USM/EMI will release an RSD exclusive 12in colour EP on 180g vinyl in June featuring four tracks from the album, plus a fifth previously unreleased version of 'I Want It All' live from Summer Sonic, Tokyo, Japan, 2014.

## IN CONCERT

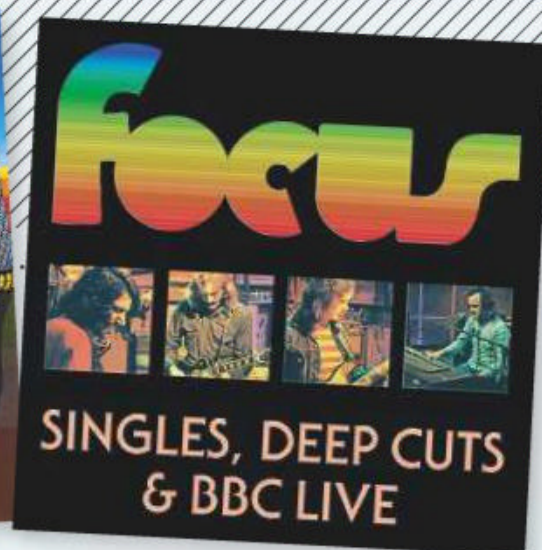
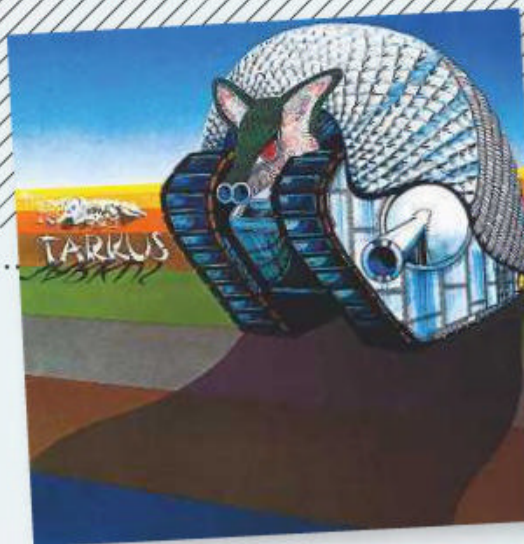
June the 12th also sees Emerson, Lake & Palmer's *Tarkus* marking its 50th anniversary with a picture disc release via BMG while Focus's *Singles, Deep Cuts & BBC Live* comes in the first drop as a Music On Vinyl numbered double LP on coloured vinyl. This offers original single versions, some deep cuts from their albums and recordings from their 1973 BBC *In Concert* performance at the London Paris Theatre.

Then there are three *Live At Knebworth* albums also out in June. Genesis, *Live At Knebworth* is the first time in over 30 years the album has ever been released on vinyl. The 12in EP is black and numbered, released through Mercury Studios, and each sale raises money for Nordoff-Robbins Music Therapy. Ditto all the details for Robert Plant, *Live At*

**RIGHT:** ELP's *Tarkus* is given the 50th anniversary treatment arriving in a die-cut card sleeve with a textured finish that features the original artwork

**TOP RIGHT:** The Netherlands-based record label Music On Vinyl is releasing *Singles, Deep Cuts & BBC Live* which curates the work of '70s Dutch prog rock band Focus

**BELOW:** The Cure's *Wild Mood Swings* (left); the Dire Straits live LP *Encores* (top); and Queen's exclusive *Live Around The World* EP. The Groundhogs' *Who Will Save The World* LP arrives as a 'Deluxe edition' (far right)



*Knebworth* though this comes on limited edition coloured vinyl as does Status Quo, *Live At Knebworth*.

The initial drop also includes The Groundhogs' *Who Will Save The World* (Deluxe edition), out via Fire. Originally released in 1972, the RSD iteration is a limited edition yellow vinyl album that comes with a comic book insert, bumper sticker and download card with a bonus download of the unreleased live recording of 'Music Is The Food Of Thought' from the group's final show at the 1972 Pocono Festival in the USA.

A proper June treat comes in the shape of The Police *Live Vol 1* double LP via UMC. Released for the first time on vinyl, it was recorded in 1979 at the Orpheum in Boston during the tour for the band's second album, *Reggatta De Blanc* and previously available on a 1995 2CD set. A month later there comes The Ramones' *Triple J Live At The Wireless* which was recorded during the bruvvers' 1980 End Of The Century Tour at the Wireless Capitol Theatre, Sydney, Australia. It contains 23 tracks and comes

via Rhino pressed on 180g vinyl and limited to 13,000 copies worldwide. The same RSD drop sees Procol Harum's 1973's *Grand Hotel* remastered and reissued through Esoteric. Limited to 1000 copies, it comes on 180g white vinyl in the original gatefold sleeve with the deluxe lyric book which accompanied the first release.

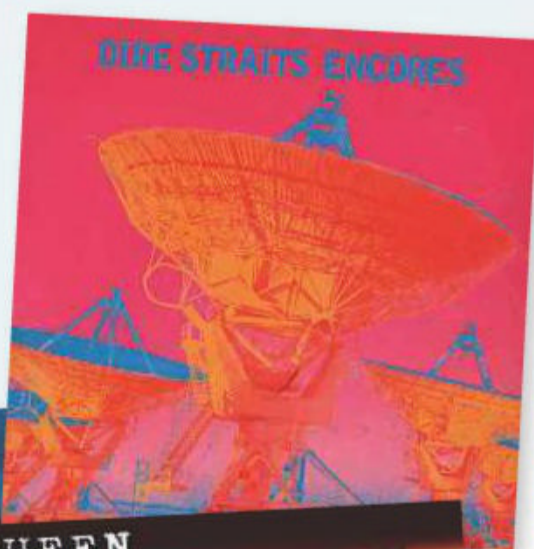
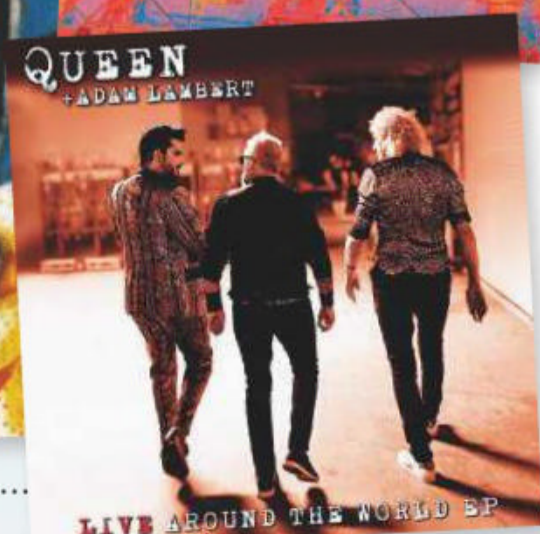
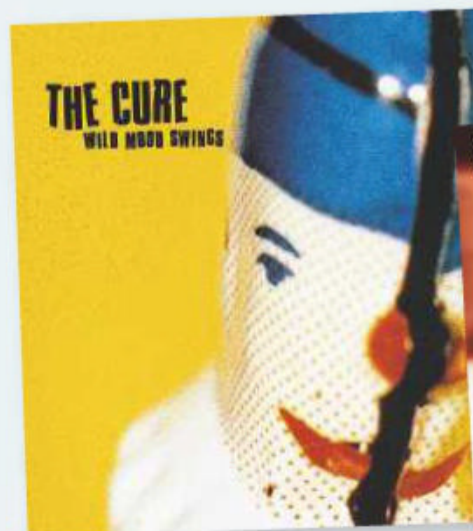
## KEEP ON TRUCKIN'

Another one for collectors in July is Jon Anderson's *Olias Of Sunhallow* via Esoteric. This is a limited edition, newly re-mastered 180g vinyl LP edition of the Yes singer's 1976 debut solo album and comes in the original gatefold sleeve with inner bag

artwork. Then there's Hawkwind's *Greasy Truckers Party* which expands on the band's 1972 *Greasy Truckers Party* contribution live from The Roundhouse, London.

The Hawks were in their *Space Ritual* era and this double LP includes the original recording of the hit single 'Silver Machine' plus, for the first time, the entire show. Bonus tracks include 'Master Of The Universe' (1972 LP mix) and 'Born To Go' (1972 LP mix). It's available ➔

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in July on the Parlophone label. Dropping a month earlier and also on the heavy side is Black Sabbath's *Master Of Reality* LP which comes on purple vinyl housed in a slim box with a poster via BMG.

As far as compilations go, you'd be hard pushed to better The Rolling Stones' *Hot Rocks* which celebrates its 50th anniversary with a remastered double album June drop on 180g yellow vinyl. Another notable comp is The Small Faces' *Complete Greatest Hits* which drops in July on red, white and blue splatter vinyl via BMG/ Immediate.

And don't overlook The Sweet's *Platinum Rare*, which is also out in July. This is a double from the Prudential Music Group showcasing a rare collection from the personal vault of Sweet lead guitarist Andy Scott. Featuring alternate takes and mixes, many of which have never seen the light of day before, it's surely Glamster heaven.

## A STAR IS BORN

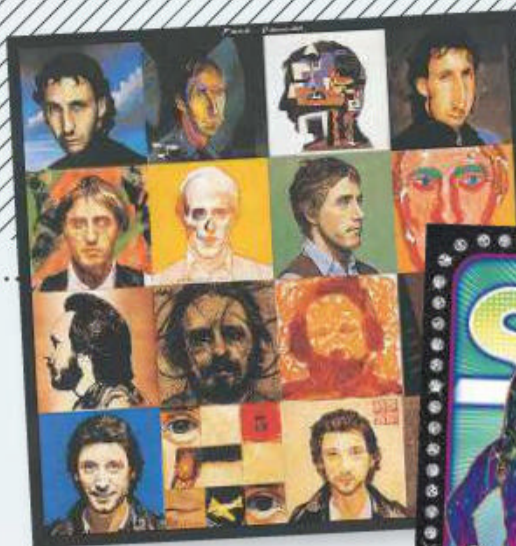
Speaking of Glam, Demon Records is releasing Marc Bolan & T Rex's *Star King* for the first time in June on 180g coloured vinyl. It compiles rare 'working' and 'master' versions of the group's favourites along with a previously unreleased track.

Meanwhile, Keith Richards has come up with his traditional RSD offering in the shape of the BMG June drop of 'Wicked As It Seems/ Gimme Shelter (Live)', a 7in red vinyl single featuring previously unreleased versions performed live by his X-Pensive Winos.

Another first drop gem is The Kinks' *Percy*, a limited edition BMG picture disc version of the 1971

**ABOVE:** The Who's *Face Dances* (above) is reissued in the June drop in a slimline 12in box with four bonus art prints of the band members. In July comes The Sweet's *Platinum Rare* (centre) as does The Kinks' *Percy*, which arrives in a textured original sleeve

**BELOW:** The Rolling Stones compilation *Hot Rocks* from 1971 now comes on 180g yellow vinyl (left) while Love's *Everybody's Gotta Live* brings outtakes from the band's 1974 studio album *Reel To Real*



9000 copies, while Captain Beefheart's *Unconditionally Guaranteed* is another July drop. Originally

released in 1974 by Virgin, it's been unavailable on vinyl for over 20 years and now returns on 180g clear vinyl with a promotional poster.

*Everybody's Gotta Live* is an LP from Arthur Lee's mighty Love via High Moon Recordings. Included in the July drop, it's a collection of outtakes from the band's 1974 studio album *Reel To Real* which first surfaced on the 2015 reissue. This special RSD release features five of the *Reel To Real* bonus tracks on vinyl for the first time, including three original Lee compositions unknown before the 2015 reissue.

And there's more psychedelia in the shape of Reel Music's July release of The Bee Gees' *Three Kisses Of Love*, a 180g yellow vinyl LP which collects together the Gibb bros' early pop platters, recorded during their years in Australia (1963-

1966) when they were signed to the Festival label. There are only 1000 numbered copies available.

Then there's the July release of Jamiroquai's 'Everybody's Going To The Moon', a limited edition 12in single on CMG dedicated to Jamiroquai co-writer Toby Smith who sadly passed away in 2017.

## STRAIGHT TALK

Finally for our roundup there's The Clash's *If Music Could Talk* which was first released as a promo in 1981 featuring interviews with all four band members. It's interspersed with music from their *Sandinista* album, which had just hit the shops.

Never officially released until now, it comes in the July drop as a double LP on 180g vinyl with the original interviews and full-length tracks. One pound from the retail price of each copy will be donated to War Child, the charity for children affected by conflict.

For the full list of RSD 2021 releases and independent record stores that are participating go to [www.recordstoreday.co.uk](http://www.recordstoreday.co.uk).

British comedy film soundtrack album. Their ninth official studio album and last on the Pye label, it's the album's first reissue on vinyl in the UK for 20 years.

## POP PLATTERS

Steely Dan have a couple of RSD releases. *Everything Must Go*, their final studio album with founding member Walter Becker, drops in June on 180g black vinyl limited to 10,000 copies via Rhino Warner.

*Two Against Nature*, originally released in 2002 after the band's 20-year hiatus, appears on vinyl for the very first time, a double again on 180g vinyl featuring an etching on the fourth side and limited to 10,000 copies.

Meanwhile, The Who's *Face Dances* celebrates its 40th anniversary in the June drop and comes courtesy of UMC as a

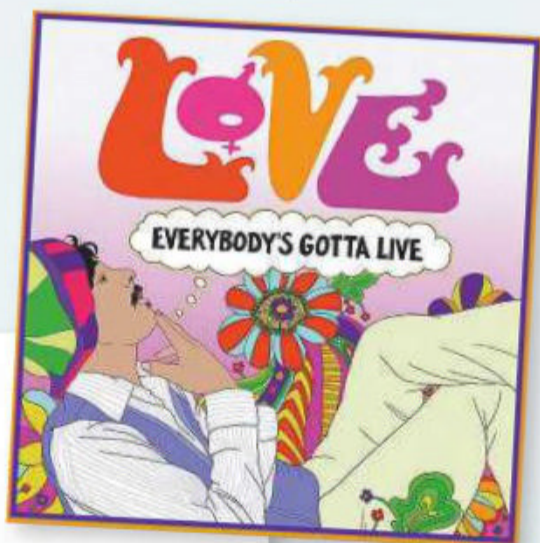
remastered orange vinyl double, the second disc comprising a side of studio outtakes and four tracks from the band's Rockpalast show in 1981, which are on vinyl for the first time.

Other RSD notables include Prince, *The Truth*,

a stripped-down bluesy album that is being released by CMG for the first time on vinyl in June. Boasting 12 tracks, it was originally released as an accompaniment to the 1998 triple album *Crystal Ball*.

Lou Reed's *Set The Twilight Reeling* comes as a double LP with an etched fourth side courtesy of Rhino Warner in July, limited to

'Another first drop gem is The Kinks' album *Percy*'



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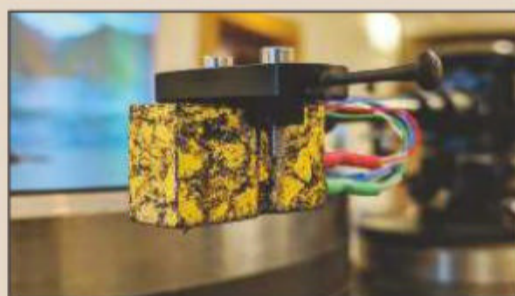
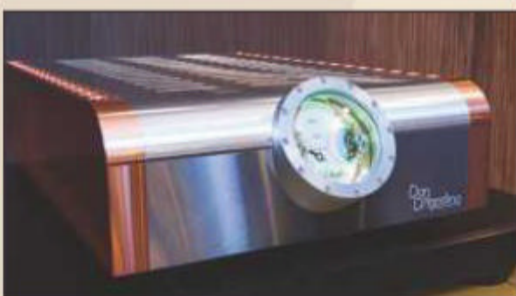
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## INVESTIGATION



# Under the covers...

Johnny Sharp on the creation of the artwork for *Roxy Music*, the band's debut album



**BELOW:** *The Hoople* from 1974 by Mott The Hoople with its stylised portrait of model Kari-Ann Muller with multiple pictures of the members of the band in her hair



If ever there was a band that arrived on the scene fully formed, it was Roxy Music. Before they were even signed to a label, they had a startling, glitter-flecked, faintly androgynous image, and a unique hybrid sound. This blended stomping glam pop with jazz-inflected avant-prog and experimental electronica, drawing influences from show tunes to war movies and torch songs while adding dashes of sensuality, camp and black humour. And it helped, of course, that they threw some highly memorable tunes in there.

It was part of a carefully created audio-visual package masterminded by frontman Bryan Ferry along with a team of keenly design-conscious associates. They knew the first full colour visual representation of the band that the public would see would be on the gatefold sleeve of their debut album. The debut they had self-financed and recorded before they were even

signed. That whole gatefold sleeve was also conceived, designed and created before Roxy had a record deal, complete with effusive sleeve notes and parent-baffling portraits of the band members. It's another reflection of this band's unshakable self-assurance: enter Roxy, exit rock 'n' roll as you once knew it.

## SHOOT TO THRILL

The cover of *Roxy Music* is a simple one – a pin-up-style photograph of model and former Bond girl Kari-Ann Muller (who would later appear on the sleeve of Mott The Hoople's 1974 album *The Hoople*) reclined on ruffled white sheets. (A bizarre rumour endured for many years that it was actually Ferry in drag.) Its apparent simplicity stood in contrast to the trends dominating rock cover art of the day. Cryptic, mysterious imagery was the popular option for many prog and hard rock bands' sleeves, custom-made for 'heads' to pore over while listening to the record, often full of obscure visual messages. Roxy instead aped an apparently long-outdated style – channelling

the pin-up glamour shoots of starlets from the '30s, '40s and '50s.

'I was inspired, of course, by Hollywood', Bryan Ferry explained in a 2013 interview, 'but we always liked to think we were making something new out of that'. He had in mind the glamour of movie sex symbols such as Rita Hayworth, the damsel in distress (possibly concealing the femme fatale within), elegantly dishevelled yet

unattainable, sensual yet mysterious.

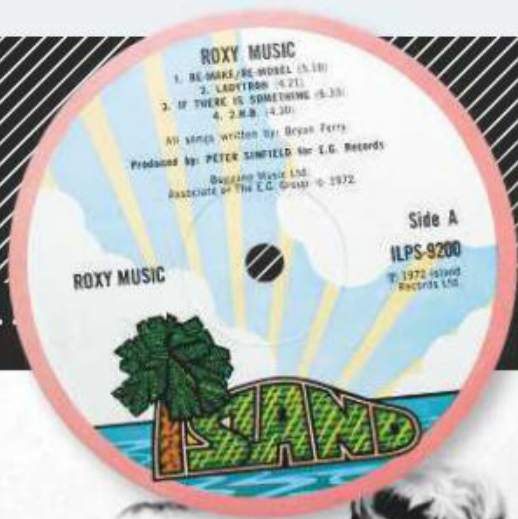
As such, they were pioneering a retro-ironic, slightly kitsch style that would eventually become commonly employed, from

boy bands dressing up as wartime crooners to Nirvana aping '60s beat pop combos in their videos.

## SWEET KARI-ANN

Fashion designer Antony Price, who worked with Ferry from the early days and had a significant hand in shaping the band's visual style, said in 2017, 'It was meant to look like a Neapolitan ice cream'. Certainly the smooth pastel blues and pinks of the clothes worn by Kari-Ann

'There was a rumour the cover showed Ferry in drag'



Muller conjured up the look almost of a human confection, conveying a message that, when combined with the complex but racy hybrid of musical styles on the record within, suggested that this was a kind of meta-pop – pop about pop, post-modern and knowingly drawing on a pick ‘n’ mix grab-bag of styles.

## POP ART MEETS ART POP

Price had introduced Ferry to a valuable web of contacts in the fashion world that would be later referred to as ‘the Notting Hill crowd’. As he explained in 2007, ‘I was a rising star behind Ossie [Clark] so I had met all of his models... and Bryan would have met all of these people through me’.

This new network was the source for an impressive team: as well as Muller, who was a friend of the singer (and was paid £20 for her trouble – the equivalent of around £250 today), *Vogue* photographer Karl Stoecker took the shots, while Price picked the model’s clothes and his friend Keith Wainwright, from the ultra-chic Smile salon, styled the hair of Muller and the group.

Ferry’s art school friend Nicholas De Ville, in collaboration with the singer, oversaw the overall look of

**TOP:** Bryan Ferry on stage in Frankfurt in 1973 (far left); the *Roxy Music* sleeve; the band pose in 1972 (l-r) Eno, Andy Mackay, Brian Ferry, Paul Thompson and Phil Manzanera; and (inset) label of the original album on Island Records [ILPS 9200]

**TOP RIGHT:** Eno in 1973, Andy Mackay and Paul Thompson, and the band in 1973 on Dutch weekly music programme *TopPop*

**RIGHT:** ‘They hate jazz...’ declares this original Reprise Records promo poster designed for the US market

the cover, ‘assembling the ideas and getting rid of the bad ones’, as he described it in 2019.

‘What I was interested in was simplicity’, De Ville explained. He felt a lot of ‘60s album covers were too complicated, and the idea he and Ferry had firmly in mind was to do the opposite. This approach extended to the inside sleeve, whose ‘deckle-edged photographs’ he also felt reflected a certain vintage look. He then added an extra touch of kitsch. ‘Andy McKay found this quilted background that was sold in



KLAUS HILTSCHER



Woolworth’s, one of those Fablon [sticky-back plastic] things. So it was a bit like that. There were bits and pieces coming from all around and they had to be assembled. But it was really, “keep it simple, keep it minimal. Don’t mess it up”.

De Ville ideally wanted the cover to have no words on it at all (‘we were interested in the power of the image, of course, because we were art students’), but realising that no record label on earth in 1972 would agree to such a move for an unknown artist’s debut album, he agreed to have the band’s name on the cover, in a suitably florid handwriting font.

## ODD MAN OUT

The band in the portraits look intriguingly *outré*, with the glaring, glowering exception of bassist Graham Simpson, who, it appeared, hadn’t entirely bought into the whole visual concept of the band and looked mildly pi\*\*ed off to be a serious musician surrounded by

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## INVESTIGATION

### COVER STORIES

Roxy Music's covers would become as hotly anticipated as their records, and the theme of channelling vintage glamour would continue on 1973's *For Your Pleasure*, which featured French model Amanda Lear, again photographed by Karl Stoecker and styled by Nick De Ville, as 'a panther-woman getting out of a car', as Ferry described it at a Paris exhibition in 2013 [see below].

The cover of Roxy's third album, *Stranded* would be held up as an early example of 'porno chic'. Stoecker captures *Playboy* model Marilyn Coles in a soaking, semi-transparent red dress on the verge of revealing enough to have the LP taken off record store shelves for fear of corrupting the innocent.

The sleeve of 1974's *Country Life* would walk a similarly thin line, depicting two scantily clad German women (who Ferry met in a bar) supposedly caught concealing their modesty in the glare of car headlights. The aim was 'a country-house orgy atmosphere in a way that would just pass the board of censors', said photographer Eric Boman.

After *Sirens* (1975) took a less risqué approach, featuring Ferry's soon-to-be-paramour Jerry Hall covered in blue body paint crawling across rocks in Anglesey, North Wales, subsequent Roxy albums took a more sleek, stylish approach.

Yet even when a faceless individual appeared in a suit of medieval armour on the cover of 1982's *Avalon*, holding a falcon, it was still a beautiful model: Ferry's future wife Lucy Helmore.



this parade of prancing weirdos. By the time the LP was released, he had left the band, to be replaced by the marginally more on-message Rik Kenton. But appearances may have been deceptive, as Simpson's backstory was more complicated.

### LAST WORDS

The bassist, who met Ferry in their native Newcastle back in 1964, co-founded the band in 1970 with his old friend after both had moved down to London. But by the time they made their debut album his mental state was unravelling. He was suffering from depression, and on the death of his mother in April 1972, between the recording and release of the record, he told Ferry he wanted to leave the group.

'I was not compos mentis', he admitted many years later. 'I couldn't concentrate or appreciate anything they were doing at the time, but now I do. The last words Bryan said to me were, "get well and come back" – but I never did.' After drifting out of the music industry

for several decades he was tracked down by documentary makers in the early 2000s for a short film, which was when he made the above comments. He died in 2012.

At the time, another charming regular addition to the back of many an album cover were sleeve notes, and, presumably to the chagrin of the text-averse design team, Andy Mackay's old college friend Simon Puxley articulated a stream-

of-consciousness reverie pocked with references to lyrics and song titles. 'Monaural and aureate fragments sea-changed & refined to pan, span the limits of

sensation'. Well, it's as good a description of Roxy's sound as any.

### FULL MARKS

Puxley would become the band's publicist when they signed to EG management. 'I was a supply teacher at the time', he told *Mojo* magazine in 1995, 'as indeed were Andy and Bryan. They came and collected me at the school gates one morning. I had no idea what

'The covers were as hotly anticipated as their records'

**TOP:** The inside of the LP's gatefold sleeve featuring individual portraits of the band members with original bass player Graham Simpson pictured top right

**ABOVE:** The album's gatefold sleeve folded out to show Karl Stoecker's photograph of model Kari-Ann Muller in its entirety

**RIGHT:** The follow-up to *Roxy Music* was the band's 1973 album *For Your Pleasure*, which pictured French model Amanda Lear styled as 'a panther-woman exiting a car'

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**ABOVE:** Eno and Andy Mackay in 1973 (top) and the band in the 1970s in a photo from 2004's *The Collection* CD

was involved, or what I was doing.' He and Ferry became close friends, and after his death in 1999, Ferry told *The Mail On Sunday*, 'He was like the fifth Beatle; a part of Roxy Music. He was a beautiful writer'.

The album has a dedication 'To Susie', who, the official version of history has it, was a drummer who auditioned for Roxy Music early on. But it would perhaps make more sense if this was an in-joke on Ferry's behalf and he actually meant to tip his hat to his old girlfriend Susie

Cussins, the daughter of a wealthy Newcastle family, who Ferry had been close to since the mid '60s, and with whom he shared a flat when the band were starting out – one of several friends who helped the band out financially.

### ISLAND LIFE

Ultimately, the cover of *Roxy Music* didn't just do its basic marketing job, helping the band's debut album into the UK Top 10 and thenceforth onto classic status and countless millions of sales. It also helped them gain a record deal in the first place.

A&R man Tim Clark recalled, 'I gave a pretty impassioned case for signing Roxy, but [Island Records founder] Chris Blackwell gave no sign of whether or not he liked this act'. Later, though, he made it a lot clearer. 'Chris came in as David and I were looking at the artwork for the first Roxy Music sleeve – which was quite, quite brilliant, as you know. And he looked at it and said, "Yes, that's great", and then he turned around to me and asked, "Have we got them signed yet?"' 🗨️

**LEFT:** Bryan Ferry on stage in 2011 on the Australian leg of the group's 40th Anniversary tour



EVA RINALDI

## INVESTIGATION

### DE VILLE AND THE DETAILS

Nick De Ville continued to curate Roxy's covers and those of Ferry's solo LPs for the next 30 years, and he also branched out to do some pretty eye-catching work with other artists. In 1974 he was asked to design the cover for another classic LP, and the results were just as memorable. Sparks' *Kimono My House* featured two women in traditional Japanese dress [top right] striking curious poses – one with hands to her face apparently in shock, the other fanning her face and winking flirtatiously at the camera. The women were in London with a touring party of Japanese performers, and were keen not to step out of their comfort zone. 'I wanted the two geisha girls to be really doing the kind of things that geisha girls don't do', said De Ville, 'and it was incredibly hard work to get them to do that: to do animated facial expressions. They wanted to be absolutely perfect and stone-faced'.



Other notable work followed, such as the cover for The Adverts' classic early punk single 'Gary Gilmore's Eyes' (1977) with its photos of the band with their eyes covered in black strips [above right]. De Ville was among the first designers to mock the tacky tabloid practice of putting narrow strips over people's eyes, and he collaged them alongside newspaper snippets relating to Gilmore, the American convicted murderer who demanded the right to die saying he'd donate his eyes to science.

Other De Ville sleeves included the cover of New York power pop band Milk 'N Cookies' self-titled debut [below], which De Ville mocked up in a school gymnasium, with the band looking at the lens through the legs of a cheerleader pulling up her tights. Out of context, it might slightly resemble the kind of sexist nonsense '70s sleeves have become notorious for, but there's an artfulness to the shot that is its saving grace. 'It was the period of The Fonz and *Happy Days*, De Ville explained. It was a kind of teen movie thing'.



One sleeve that gave him particular satisfaction was King Crimson's 1975 live album *USA*, for which he managed a similarly clean, minimal, text-light image he'd achieved with *Roxy Music*. The image of a hand holding up a metal plate [left], partially blocking a bright sun behind it, made for one of the most arresting Crimson covers since their own (daringly text-free) debut LP.



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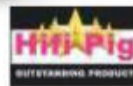


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# Magico A5

Flagship A series model from California's premier speaker brand is its most advanced 'affordable' floorstander yet  
 Review & Lab: **Paul Miller**

**F**inding positives during a time when audiophiles and civilians alike are under the cosh of 'that-which-shall-not-be-named' is important, and celebrating those rays of sunshine when we discover them, doubly so. And Magico's flagship A series floorstander is a particularly golden beam of musical light that, so the story goes, might not have been released so soon if it were not for the coercions of Covid. Oops, I mentioned it...

Back in the old world of 2019, Magico had planned a worldwide tour to showcase numerous of its new performance technologies in the very large and very expensive M9 flagship. That, of course, never happened and, instead, the 'trickle-down' of tech to its more affordable A series happened well before the main event itself. This £28k A5, the 180lb/82kg gorilla of the A range, is the result.

## A SERIES EVOLUTION

While the look and feel of the A5 is very much that of an A1 [*HFN* Jan '20] writ large, in practice the common ground diverges beyond the shared 28mm beryllium dome tweeter and use of 6061-T6 'aircraft grade' aluminium slabs for the cabinet, braced and reinforced by an internal matrix of square-section alloy tubing. Debuted in the A5, and surely the real star of the show here, is Magico's new 105mm midrange driver – the first 'pure mid' unit from the brand, working within its own sealed enclosure. It's smaller, lighter and more rigid than Magico's previous upper bass/mid units, boasting improved dispersion and a higher 350Hz-2.2kHz bandwidth.

The devil, as always, is in the detail and while there's nothing especially satanic about this diminutive 'Nano-Tec' driver, its composite of modern materials [see Welcome, p21 and boxout, p39] is still devilishly clever. Here we find a cellular alloy honeycomb core that's skinned top and bottom with a layer of carbon-fibre and graphene. The increased stiffness pushes primary breakup resonances out beyond the cone's passband [see Lab Report, p41] so there's less need for (weighty) damping

countermeasures. Magico supports and terminates the cone with a very light and compliant foam surround that's simply less restrictive than a rubber roll.

Sure enough, a more substantial rubber surround is deployed for the partnering 175mm woofers, but these are supporting a larger cone with a far longer throw. Otherwise these beefier drivers share the same cone construction as the new mid, again with titanium for the voice-coil former but with a more powerful neodymium-doped magnet instead of the pure ferrite 'engine' of the midrange.

## BLACK HOLE

I've already alluded to the A5's substantial weight, the cabinet supported on equally hefty spikes, but there's more to this brushed black anodised enclosure than its slab alloy sidewalls and internal scaffold of bracing. Rarely reported, but key to the cabinet's 'vibration management', is Magico's application of Blackhole 5 damping sheets to the inside surfaces of the alloy panels. This 25mm laminate of foam and glue is cut around the metal bracing matrix and applied to all the exposed internal surfaces.

Another upgrade due for roll-out in the M9, but issued first in the A5 are Mundorf's new 'M-Resist ultra foil' resistors, offering better power handling and thermal performance in Magico's otherwise familiar three-way 'Elliptical Symmetry' crossover. The passive components are heavy, so the crossover PCB is mounted flat on the base of the cabinet. True to form, it's a Linkwitz-Riley network offering fourth-order combined acoustical/electrical roll-offs, preserving positive phase across all drivers, while doing little to dent the high-ish rated 88dB/2.83V sensitivity. This was largely met in practice, albeit at the expense of a

**RIGHT:** The A5's sealed and heavily-braced aluminium cabinet hosts a 28mm beryllium dome tweeter, a new 105mm graphene/carbon-fibre sandwich mid unit and no fewer than three 175mm sandwiched-coned woofers, all with a continuous, dust-cap-free profile





## GRAPPLING WITH GRAPHENE

Graphene is a one atom-thick lattice of carbon, a two-dimensional structure that not only demonstrates remarkable thermal and electrical properties but also lays claim to be the toughest material on the planet. It was first isolated in 2004 by two researchers at The University of Manchester – the Nobel prize-winning Professors Andre Geim and Konstantin Novoselov – by stripping a one-atom thick layer from a graphite block.

The material takes the form of a carbon 'sheet' with groups of atoms arranged in a hexagonal 'chicken wire' pattern [see inset picture]. This lattice offers a combination of lightness and stiffness that's necessarily brought it to the attention of loudspeaker designers, including Magico, looking to reinforce the substrate of their driver cones (a pure Graphene cone is impractical). Weighing just 0.77mg/m<sup>2</sup>, a single 'sheet' would cover the area of a football pitch and still weigh less than 1g. Moreover, its Young's modulus is higher than titanium (116GPa) or beryllium (285GPa) and comparable with synthetic diamond at ~1100GPa. Without graphene, Magico's 'Nano-Tec' bass and mid cones would not possess the extended bandwidth they currently enjoy.

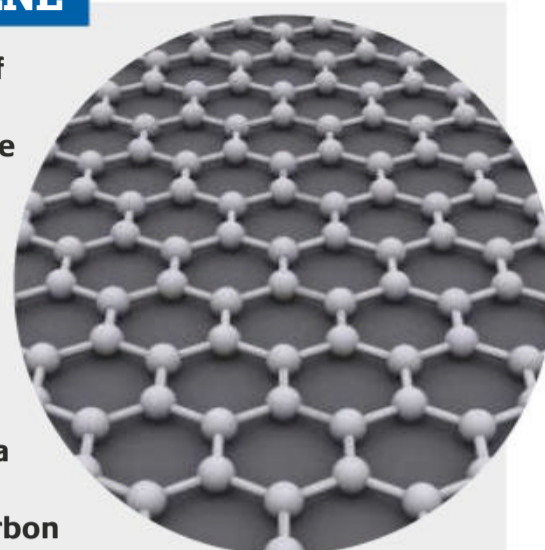


IMAGE COURTESY OF CHONGWU ZHOU AND JIA LIU

tougher-than-average nominal 4ohm load [see Lab Report, p41].



### SOLID AS A ROCK

With both the Classé Delta pre/power amps [*HFN* Jun '21] still on hand together with my default Constellation Inspiration Monos [*HFN* Oct '19] sitting alongside, I was rather spoilt for choice when time came to fire-up the A5s and hear what all that graphene, carbon-fibre and beryllium could deliver. And deliver it does, not just 'in spades' but with a breathtaking lightness of touch that finds the midrange as fast and transparent as the treble, underpinned by a bass that's not only quick but as deep as it is slick. There's not one facet of the A5's sound that's out of step with the other, its performance combining the litheness of a marathon runner with the dynamic power of a 100m sprinter.

A quick burst of improvised jazz with Nasheet Waits opening 'Untitled' [*Shift*, Blue Note 00600406671585; 96kHz/24-bit, FLAC] perfectly illustrates the A5's

'The music was simple, elegant and ravishing'

ability to deliver the punchy rhythm of a firmly-struck drum while maintaining the delicacy and air of accompanying cymbal strikes. Described as a 'dream band', the headline pairing of saxophonist/composer Logan Richardson with legend Pat Metheny does not disappoint here, especially with the atmospheric 'Locked Out Of Heaven' where that gorgeously brassy sax sound just spills into the room illuminated by flashes of percussion. The precision of the attack and poise of the decay is fabulous and just so... believable.

Neither does the A5 lose its composure as Richardson and Metheny start trading blows in the deceptively unassuming 'Slow', building in a crescendo of strings, piano and brass that would challenge the most confident of amplifier/loudspeaker

combinations. Frankly, the Constellation Inspiration/Magico duo breezed it.

### A SENSITIVE SIDE

These are big speakers, but they'll take on diddy LS3/5As when it comes to creating 'intimate'. The exquisitely close-mic'd soprano Barbara Hannigan, joined here by a marginally more distant Reinbert de Leeuw on piano, brings a hushed immediacy to Erik Satie's three-part avant-garde symphonic drama [*Socrate*; Winter & Winter 9102342, 192kHz/24-bit]

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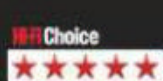
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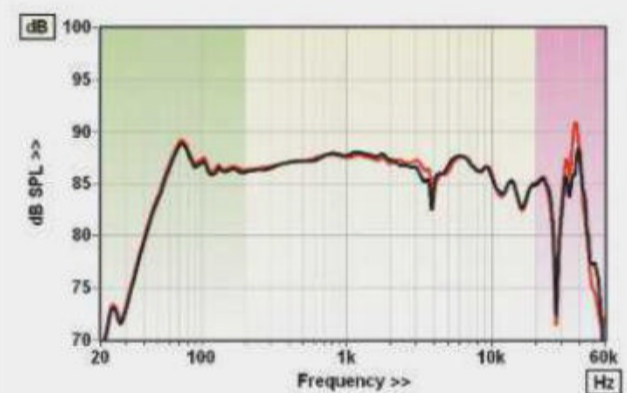


# MAGICO A5

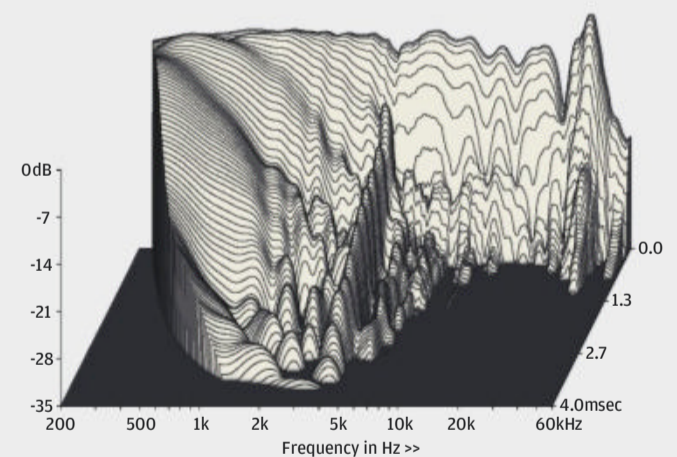
The A5 offers up a smooth but slightly convex response profile while its bass [green shaded area, Graph 1], aided by the three 175mm graphene/carbon-fibre woofers with their 48Hz-215Hz bandpass (-6dB), extends to a diffraction-corrected 41Hz (-6dB re. 200Hz). The alignment is still slightly 'peaky', however, emphasised at 73Hz but both this, and the ultimate extension, may be fine-tuned by in-room boundary reinforcement. The main response shows two notches – at 3.9kHz and 28kHz – the former possibly a diffraction cancellation at the seam between the baffle and top, or a mistermination, while the latter is a local null prior to the primary breakup of the 28mm beryllium dome at 37.9kHz.

The 3.9kHz notch is too narrow to be directly audible, and can be made to 'disappear' with coarse response smoothing! Moreover, the very low 0.06% midband THD (re. 90dB SPL) barely increases to 0.09% here, but the notch has 'ripples' caught on the CSD waterfall [see Graph 2] that, arguably, are more 'visually' than audibly exciting. It's also the cause of the  $\pm 2.7\text{dB}/\pm 2.8\text{dB}$  response errors, just as pair matching deviates by 1.1dB here but is otherwise a magnificently tight 0.3dB from 200Hz-20kHz.

Sensitivity is only a little lower than Magico's rated 88dB at 87.7dB/1kHz and 87.1dB, averaged 500Hz-8kHz, but the rated 1kW power handling will still permit very high sound levels. You will need a very capable amplifier, however, as the A5's load drops to a minimum of 2.65ohm/93Hz/-23° and has a maximum swing in phase angle of -72°/56Hz/7.8ohm. The load is sub-8ohm from 55Hz-1.7kHz (sub-4ohm from 65Hz-275Hz) and 2.4kHz upwards, dropping to sub-4ohm from 4.8kHz-45kHz. **PM**



ABOVE: Response including nearfield summed driver output [green], freefield corrected to 1m at 2.83V [yellow], ultrasonic [pink]. Left, black; right, red



**ABOVE:** Cabinet resonances are quickly suppressed. The main 'feature' is associated with the 3.9kHz notch

## HI-FI NEWS SPECIFICATIONS

<b>Sensitivity</b> (SPL/1m/2.83V – 1kHz/Mean/IEC)	87.7dB   87.1dB   84.3dB
<b>Impedance modulus: minimum &amp; maximum</b> (20Hz–20kHz)	2.65ohm @ 93Hz 21.6ohm @ 46Hz
<b>Impedance phase: minimum &amp; maximum</b> (20Hz–20kHz)	–72° @ 56Hz +29° @ 35Hz
<b>Pair matching/Resp. error</b> (200Hz–20kHz)	1.1dB/ ±2.7dB/±2.8dB
<b>LF/HF extension</b> (–6dB ref 200Hz/10kHz)	41Hz   26.9kHz/26.4kHz
<b>THD 100Hz/1kHz/10kHz</b> (for 90dB SPL/1m)	0.2%   0.06%   0.25%
<b>Dimensions</b> (HWD) / <b>Weight</b> (each)	1140x267x376mm / 82kg

**LEFT:** Magico's proprietary 'Elliptical Symmetry' crossover is connected via WBT nextgen 4mm terminals. Neither bi-wiring nor bi-amping is supported

Konzerthaus. The soundscape is truly massive, the scene set by the thundering score from *The Dark Knight* as the distant roar of tympani and bass roll out to the strain of strings, building an almost unbearable tension into what seems an improbably vast field of sound.

Switching scale entirely, the likes of 'Madagascar: Best Friends' sounds positively breezy by way of comparison but, once again, the A5s got right behind the uplifting mood of the music with high winds, piano, strings and bells combining in perfect harmony to deliver a truly joyous, happy sound. I defy you not to crack a smile...

## LISTEN TILL YOU DROP

The A5s will soar stupendously high, descend into the black depths and expand to encompass the ambience of the grandest venue – a trick they pulled off again with the monumental ‘Time’ from *Inception*, the sound swelling without a hint of compression or boundary only to reveal yet another layer of ‘performance’ as the audience breaks into unexpected applause.

I spent a full day exploring this set with Magico's A5, discovering and delighting in the finesse of musical detail that had otherwise lain hidden in the nooks and crannies of Zimmer's tour de force. Then again, perhaps it truly takes a masterpiece of engineering to realise a masterwork of composition. 🔌

## HI-FI NEWS VERDICT

A unicorn among equines, the A5 is one of a very rare breed – the ‘impossible’ moving-coil speaker that gets very close to the lightness and transparency of the best ‘statics/ribbons’ while harbouring a bass kick that eludes them all. Walk into a room with a pair of A5s on demonstration and it will take mere seconds to realise you are in the presence of something very special indeed. Yes, they are *that* compelling.

Sound Quality: 89%



FLAC]. Again, there's that sense of weightless drivers imprinting every lisp, sibilant and vocal inflection on the air, whispering in your ear while the firm tone of piano retains a stoic but undemanding presence, both participant in and voyeur to the sensuality of the piece. The music is simple, elegant, ravishing and the A5s reveal every lyrical note and breath of air without artifice. They are confident but invisible.

These speakers are capable of so much more, of course, and there's no bigger stage upon which the A5s might stretch their legs than with *The World Of Hans Zimmer – A Symphonic Celebration* [Sony Classical 190758990521; 48kHz/24-bit FLAC] recorded with the Vienna Radio Symphony Orchestra in the gloriously ambient Vienna

# Thorens TD 124 DD

An homage to the legendary TD 124 that reigned supreme from 1957-67, this latter-day derivative looks the part but trades an idler-drive for a custom direct-drive motor  
 Review: **Ken Kessler & Paul Miller** Lab: **Paul Miller**

**A**s occasionally backward-looking as hi-fi is – if no worse than cars, fashion or watches – one needs to raise the dead with care. McIntosh, for example, has dazzled enthusiasts with its continuing evolution of the revered MC275 power amp [*HFN* Nov '93 & Feb '13], updating it through six generations without losing the spirit of the original. JBL, Klipsch, Tannoy – all revisited past successes with panache. Thorens, then, had a raised bar to address because, among historic turntables, Technics recently revived the SP10 as the SL-1000R [*HFN* Jun '18] to universal acclaim. This begged a question: how should Thorens update the adored TD 124?

Thorens looked at the original, which combined belt-drive with the then-dominant idler drive, thus disarming any pro/anti camps of the day. In reincarnated form, at a sobering £7999, the TD 124 bears the suffix 'DD', to denote abandoning idler/belt drive for direct-drive. This move is either bold if you're open-minded, or shameless if you are an unreconstructed belt-drive warrior [see PM's interview with CEO Gunter Kürten on p45].

## PERFECTLY SEASONED

Here I must declare, with a mix of joy and relief, that sensible people are past caring about the ludicrous belt-drive vs. direct-drive battle of 50 years ago. And when you hear the TD 124 DD, you'll wonder what all the fuss was about back in the 1970s.

Wisely, Thorens has retained just about everything else from the original. Seasoned TD 124 fans will admire the knobs for levelling the deck on the underside edges of the chassis, the original's look but with a fresh colour scheme, the rotary speed control with null points between settings (though now without 16rpm or 78rpm), the style of the original mat but

**RIGHT:** From above with platter removed, the core of the 12-pole motor is revealed. An electronic 'brake' lever [near left] enables fast cueing from stationary. Speed adjust strobe is visible through a square window [bottom]

modernised with flatter ridges for greater support of the LP, the illuminated strobe with rotary pitch adjustment, and the braking system beloved of DJs. The new plinth is minimalist and, well, perfect, with a teensy footprint of 425x350mm (wxd).

Fitted to the TD 124 DD is a new tonearm reminiscent of the early BT12S, TP14 and TP25, with similar looks and adjustments. Because the arm is integrated and not interchangeable, Thorens was able to devise a cool, electronic cueing system, which is accompanied by an hydraulic hiss in use. Amusingly, thanks to the integrated tonearm and overall footprint, and the absence of a removable armboard, the TD 124 DD reminds me as much of the TD 135 as it does the TD 124. Tonearm adjustability is comprehensive

but straightforward, including the facility for moving the arm tube if azimuth is out, provided you study the owner's manual.

## KING OF THE RING

Of note is the clever height adjustment via a ring around the arm pillar, the upper ring locking it in place. Thorens even supplies a custom tool for turning both. A dedicated Ortofon SPU moving-coil in a captive headshell is available for £1999 [see PM's boxout, p43], while a universal headshell is also supplied

for other cartridges, along with two counterweights. The heavier weight deals with the 30g mass of the SPU, the lighter weight accommodating everything else.

Connection is simplicity itself, with a threaded four-pin connector for power-in

*'The new plinth is minimalist, with a teensy footprint'*





**LEFT:** Fitted with a classic curved tonearm and SPU 124 pick-up, the TD 124 'aesthetic' is unmistakable. The diecast top chassis has a rubber suspension, adjustable back and front, alongside the pitch wheel. Levers are for the 33.3/45rpm speed selection [left] and the electronic arm lift [right]

and RCA phono sockets for output, with the added bonus of balanced outputs for those blessed with balanced input phono stages. The outboard power supply has an on/off switch on its rear panel, but without an LED the only clue to power on is when the speed selector is chosen, which sets the platter in motion, and then illuminates the light over the strobe.

### WORTH THE WEIGHT

Aside from the usual caveats about locating the deck on a solid surface – resistance to microphony and airborne schmutz is not this turntable's forte – there

is one absolutely necessary accessory not supplied with the turntable...

I cannot name any deck that I have used which responds so audibly and immediately to the application of a record clamp or weight. I tried both, with differing but not mutually exclusive results, so I won't state a preference. Suffice it to say, 45rpm/200g LPs sounded better with a clamp, while the weight was preferred with 180g or less pressings. Then again, there were exceptions to the rule, so a Well-Dressed Audiophile will have access

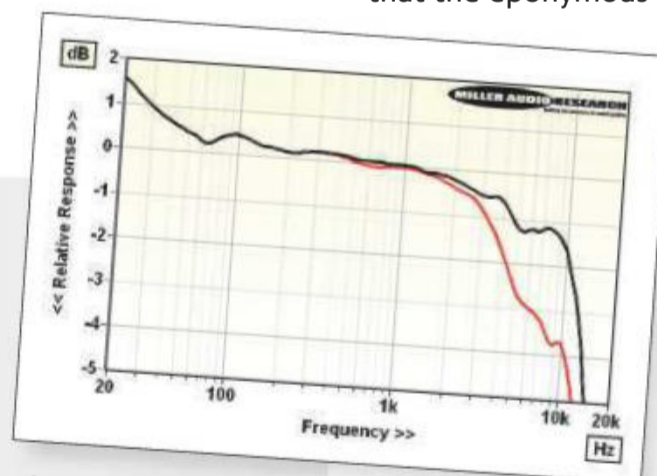
to both. I paid £14 on amazon.co.uk for a clever weight from Richer Sounds, and there are clamps for the same amount, so we are not talking about costly extras.

### BLAST FROM THE PAST

First impressions being powerful and influential, I was taken aback by my initial response to the Thorens TD 124 DD fitted with a DS Audio DS-E1 [HFN May '19]. Maybe 'terrified' is a better word. I knew that the eponymous Blood, Sweat & Tears

One-Step release [Mobile Fidelity UD1S 2-016] had punchy brass and deep bass to rival just about any LP that I own, but I was not expecting mass nor extension to rival open-reel tapes like the near-mythical *Persuasive Percussion*.

In the bottom octaves, the TD 124 DD nailed all the weight, attack and substance. Note that I was hearing it through reveal-all Wilson Sasha DAWs [HFN Mar '19], which take no prisoners. While the opening prologue barely hints at what follows, and irrespective of my adoration for Erik Satie, I skipped to 'And When I Die', immediately revelling in the snappy, upbeat opener. It starts with a plaintive harmonica, as real-sounding as it gets, followed by a one-two punch of bass guitar and snare. On top of it all, there's that richer-than-Croesus voice of David Clayton-Thomas. ↻



### THORENS SPU 124

Pictured on p45, not only is the bulbous body shape of the SPU 124 (Stereo Pick-Up) entirely reminiscent of the iconic MC launched by Ortofon in 1958, so too has the design of the 'motor' – two fine copper wire coils wound onto a (moving) square former – been retained. New materials and stylus profiles are pressed into service across Ortofon's now very extensive SPU range, but this Thorens variant looks closest in specification to the Synergy model with its higher rated 0.5mV output, achieved by the use of more powerful neodymium magnets.

Tested at a 3.0g downforce (the SPU 124's recommended value is 0.5g lower than that suggested for the SPU Synergy) it achieves 0.475mV (or 475µV, re. 1kHz/5cm/sec) with a 0.4dB channel balance and ~25dB midband separation. Tracking starts to fail at +14dB (re. 315Hz/5cm/sec), just surmounting the 65µm groove pitch – not a bad result bearing in mind the dynamic compliance is very low at ~8cu. Of greater importance, perhaps, is the fine generator symmetry producing very similar response [see inset Graph] and distortion vs. frequency trends when comparing lateral (L+R, black) and vertical (L-R, red) cuts. Ortofon has made strides in reducing the moving mass of the SPU cantilever/diamond but the response almost inevitably lacks the HF extension of 'high tech' MCs, falling by 1dB at 5kHz, -4dB/10kHz and -8dB/20kHz. PM



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**pick-up, complete with a silver tonearm and a clear dust cover. The plug-in turntable has a black tonearm and a clear dust cover. Both have the Thorens logo on the front.**

It's important for listeners to understand the value of the TD 124 turntable. It's a turntable with a background. It's a turntable that's the Ortofon SPU and it's a turntable that's an impossible to find near-CD sound. It's a turntable that discolors music. It's a turntable that discolors music.

LPs, let alone cassette tapes. It's a turntable that discolors music. It's a turntable that discolors music.

the joys of LPs, because of the total absence of background noise. They want to embrace the noise. They simply choose not to. The TD 124 Direct Drive turntable banishes that potential.

**SUPER 'SCOPE**  
But there is a caveat.

'The TD 124  
DD nails all the  
weight, attack  
and substance'

It's important to stress, especially for listeners born post-1980, the value of the TD 124 DD's sonic background. It is so blackly quiet that the Ortofon SPU almost matched the impossibly quiet DS Audio E1's near-CD silences. I do not discount the conditioning of music lovers not weaned on cassettes, who wonder about the joys of LPs, because they expect the total absence of background noise. While they want to embrace vinyl, it's likely that they simply choose not to deal with groove noise. The TD 124 DD, set up carefully, vanishes that potential obstacle.

But there is a caveat – plumbing the depths to the degree where background whoosh all-but-vanishes requires a clamp or weight. If you can stand next to the deck

flimsy, but believe me when I say the effect is uncanny – and utterly convincing.

# GUNTER KÜR TEN

**‘Yahorgn’s engineers returned about six months later with a full blueprint for the original TD 124. It was quite unexpected but we were inspired to produce something better – not a copy but a new TD 124 for the 21st century.’**

**While the chassis design was largely retained, most of the R&D was focused on the new deck's motor design. This included everything from the firmware that supports the 12-pole Hall effect sensors to the choice of self-lubricating stainless steel bearing spindle and Delrin thrust pad. 'It took about two years from that blueprint to final production for the TD 124 DD,' says Gunter.**

**Where does Thorens go from here? 'Thorens has always prided itself on offering high quality turntables at an affordable price, so we have no plans to develop an even bigger, costlier deck. The TP 124 arm will be seen in another form, however, on our up-coming range of TD 1600 turntables.' PM**

[illegible]

IT is nearly seven years since the Tierson TD-124 transcription monitor was reviewed, so it was very interesting to see what alterations the years have produced. The basic design is so good that only minor modifications have been necessary, and these are embodied in the Series II version.

The machine submitted was fitted with the Thomson TP-14 arm. This is the old RFD-425 arm, which figured in the TD 113 review of February 1953, likewise brought up to date. Again, basic design was so good that only

The TD-124 has long been recognized as the Rolls-Royce of transmission systems. It is a solidly made unit featuring 301 and 401, two has one of two special features of note. The Gearrod takes its drive from a stepped pulley on the motor via a rubber-typed idler to the output. The Thruout interengages a light (1/2") rubber belt between the motor and a separate stepped pulley which drives the idler. This stepped pulley is solid with the main frame.

THORENS TD.124/II  
MOTOR/TURNTABLE  
AND TP.14  
PICKUP ARM



and so prevents any motor vibration, whatever its direction, from reaching the turntable via the drive. The B & G machine uses a similar layout.

The other unusual feature is the instant-start facility. The visible part of the turntable is a hollow aluminium cap which can rotate normally with the heavy platter or be raised

Like the Guerdon, it uses variable-allow-current braking to give fine control of speed. Control is by a single knob as before, with three off-positions between the four speed settings. The fine control is concentric with the main speed selector.

Stereoscopic markings on the underside of the main disc-cast plantar are viewed via a mirror, through a small window in the main chassis, and illuminated by a small neon lamp. Two sets of stereoscope marks are provided, one for 50-c/s stereo and one for 60-c/s. Both operate only on the 33 $\frac{1}{3}$  and 14 $\frac{1}{2}$  speeds. For 60-c/s operation, only the major pulley needs reversing. Thus only one machine has to be made for the whole world. Needless to say, the motor connections are also adjustable for the main speed section.

The die-cast frame is fitted with four levelling screws which sit on hollow rubber dampers instead of the more usual springs. A built-in spirit level shows very clearly errors of a mere fraction of a degree. The main die-casting

comes, as before, a bolt-on wooden panel on which the pickup, etc., can be mounted—in this case the TP-14 arm. This makes pickup placement a very simple matter.

The TP-14 arm is of the gavitic balanced type, with playing weights applied by spring. It will therefore be completely unaffected by any linear disturbances and should play at any angle—on edge, even upside down if the disc were secured! Like all pickups on this, it will of course still be affected by rocking motion, especially in the plane of the arm.

The vertical bearing is a double ball race and the horizontal bearing is angled so that the pick-up is not tilted sideways when it is raised.

packing is not stirred sideways when it is raised and lowered. The counterweight is rotated to balance the arm when the spring pressure is set to zero and will cover any cartridge mass in the range 5–19 g. This weight can then be locked with an Allen key if desired. Stylus pressure is then adjusted by the calibrated potentiometer.

As before, the rear overhanging that carries the counterweight is resiliently mounted to damp the pickup at low frequencies.

the counterweight runs on a spiral thread instead of merely sliding in and out. The really new features are the provision of bias to offset the normal forward pull experienced by all offset arm pickups, and a slow lowering device. *(Continued on page 10)*

**ABOVE:** Thorens TD 124mkII, reviewed *HFN* Jul '66 by Ralph West

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## 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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# Pegaso Audio P50A

Described as the 'sister brand' of solid-state stalwarts Audio Analogue, Pegaso has just one product and it's an all-tube integrated amplifier that claims Class A, all the way...

Review: **Mark Craven** Lab: **Paul Miller**

**A**s a new arrival from Tuscany, Italy, and with just the P50A integrated amplifier in its inventory, it's possible you've not yet heard of Pegaso. On the other hand, many readers will be familiar with fellow Italian brand Audio Analogue [*HFN* Nov '20 & Feb '20], which has been in operation since the mid '90s. Both are stablemates sheltering under the umbrella of AF Group SRL (also the home of AirTech), and they share more than just a postcode. The story is that new-kid-on-the-block Pegaso is leveraging the engineering experience of the elder brand while taking a wholly valve-based approach to hardware design. Audio Analogue, meanwhile, has in recent years focused on solid-state amplification, moving away from experimenting with 'hybrid' models.

The promise from Pegaso is that whatever follows the P50A 'will always be built around valves'. This disciplined approach is reflected in the minimalist P50A which has no digital inputs or MM/MC phono connection – just a pair of balanced XLRs and four unbalanced RCA line inputs. And if you're looking for an amp to drive your loudspeakers *and* your headphones, you'll also have to look elsewhere.

## KEEPING A LID ON IT

Rated somewhat ambiguously at 2x50W [see PM's Lab Report, p51], this fully balanced amplifier claims to run entirely in Class A [see PM's boxout, p49] and uses an eight-strong combination of 6922 triodes and KT90 pentodes. The tubes are all tucked away inside the chassis, so those keen to bathe in their orange glow and let visitors know they're not part of the solid-state club could be disappointed. Yet an enclosed chassis does make this sizeable amp – 455x175x472mm (whd) – easier to install, and fitting or replacing the tubes is a simple lid-off process.

**RIGHT:** Driver/phase splitter 6922 triodes [centre] feed one pair of KT90 pentodes per channel [middle row]. The PSU transformer is fully screened [lower right] and the two output transformers are mounted at 90° [top corners]

Finish options are black or silver, and in either guise the P50A could be fairly described as industrial-looking. The front panel features silver input select buttons, a large volume control with corresponding LED ladder, winged horse logo and a slash of perforations for the rudimentary cooling of those hot-running tubes inside.

The amplifier's internal layout is described by Pegaso as being 'purposefully simple', with the microprocessor-controlled preamplifier section handling only input selection and volume control. Many of the components, we're told, are custom-made by local suppliers, and all are selected for their sonic performance and durability under temperature. Last but not least, the

amplifier comes with a compact, machined aluminium handset [see p51].

## REMOTE REINCARNATED

You can use this remote control to cycle through the P50A's six inputs, adjust the volume, and access the limited configuration settings. In practice it is functionally identical to the remote supplied with Analogue Audio's AAdac [*HFN* Nov '20], although the use of volume keys for 'navigation', denoted

by small flashing LEDs on the amp, is less fiddly here because there's less to manipulate. You can set the brightness of the input and volume LEDs (Dark Mode, Mid and Max); shift the left/right balance;

*'There's an edge to the P50A. It's an Italian stallion'*





put the amplifier into direct mode; and adjust the volume scale.

Direct mode can only be used with the amplifier's Input 3 (the first set of unbalanced RCAs), this running straight through the amp at full gain. Pegaso suggests this allows the amplifier to be used to power the front speaker pair in a home theatre installation, but in my experience AV set-ups with tube-powered fronts are few and far between.

The volume scale setting is perhaps more beneficial and there are four options on offer. The default is designed for a 'general loudspeaker' and has a curve that begins steeply before tapering off. A second, much shallower, curve option

is tailored for use with higher sensitivity loudspeakers, a third is aimed at what is described as 'mid-volume' playback while the fourth offers a straight dB scaling.

### HORSE POWER

Pegaso's declared goal with the P50A is to deliver 'a sound of great character' that's not only 'precise and dynamic' but also 'rich in nuances, light and pleasant'. Perhaps something has got lost in translation, because 'pleasant' doesn't strike me as a particularly ambitious target, and 'light' suggests something lacking in punch. Thankfully, this Class

**ABOVE:** Four volume 'laws' are offered to suit the sensitivity and loudness capability of your speakers, the output indicated by a strip of white LEDs. Substantial casework gets very hot!

A-rich amp sounds more than just pleasant, and doesn't come up short in terms of drive and dynamics. Its performance is effortlessly natural, but it's not all smoothness and silk for there's an edge to its sonic signature that ensures you won't nod off. Call it an Italian stallion.

Led Zeppelin's up-tempo 'Misty Mountain Hop' [*Led Zeppelin IV*; Atlantic 7567-82638-2], fed by the balanced outs of an Oppo UDP-205 disc player [*HFN* Jul '17], found the P50A quickly getting into the groove,

bringing heft and drive to John Bonham's thumping drum track. In fact, this amp's penchant for hard-hitting percussion was a recurring motif – Joe Satriani's 'A Phase I'm Going Through'

[*Shockwave Supernova*; 96kHz/24-bit FLAC], sounded

similarly explosive as kick and snare drums surged forward through a wall of crashing cymbals.

### SWEET DREAMS

While this forthright delivery was noteworthy, and proof if needed that a modestly-specified 'Class A' valve amp can still wake the neighbours (albeit with my reasonably sensitive B&W 705 S2 standmount loudspeakers), I was more taken aback by the P50A's presentation of instrumental timbres. Listening to Miles Davis's 'Miles Runs The Voodoo Down' [*Bitches Brew*; 44.1kHz/16-bit FLAC], was like getting a tour of a music shop.

The mix here is as wide and detailed as they come, aided by twin pianos and drum sets, and the Pegaso P50A plotted every

## HOT BOTTLES

Under the bonnet, the P50A turns out to be a moderate-gain (+34.6dB) power amp with a variable-law volume control rather than a fully-fledged preamp. Most integrated amps (pre and power amp combined) offer another 10dB or so extra gain but in practice this is quite unnecessary as +35dB is more than sufficient for a modern 2V line source. Otherwise the P50A is still a multi-stage amp with triode phase-splitter and driver stages feeding a push-pull pair of KT90 pentodes or, more correctly, 'Kinkless Tetrodes'.

These are claimed to operate in Class A which, if we are being very strict about the definition, means that the plate current is maintained in both tubes across the full positive- and negative-going audio cycle and over the full power output of the amplifier. With no audio signal present this means the tubes are dissipating this maximum bias current as heat, and the P50A does get very hot indeed – I measured over 70°C on the top plate, which is too hot to touch and means the amp needs to be sited in a well-ventilated rack!

Maximum power output may also be reduced in a Class A tube amp if the plate voltage is dialled back to ensure optimum symmetry between the negative- and positive-going tubes. Certainly I have measured greater than 25W/8ohm from a pair of KT90s [the Ming Da Dynasty Cadenza achieved 70W/8ohm under the same conditions, see *HFN* Oct '16], suggesting Pegaso is indeed walking the plate current/voltage tightrope with appropriate caution. Finally, a Class A amp's AC consumption will be high and unchanged at low and high power – in practice the P50A idles at 250W but draws a higher 280W at full output. PM





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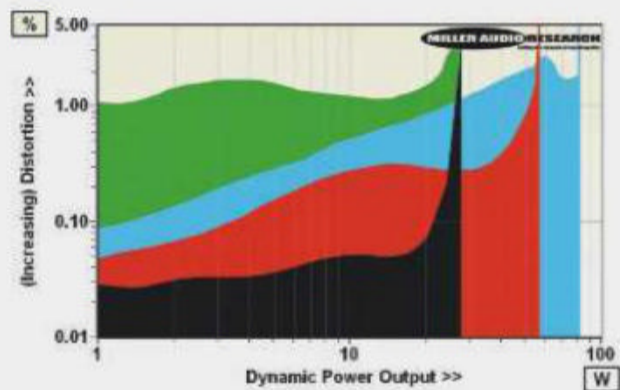


# LAB REPORT

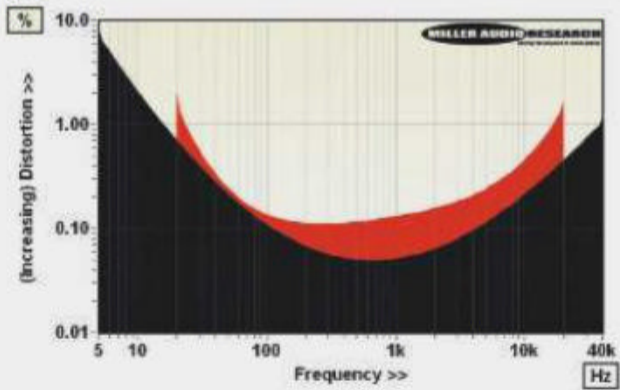
## PEGASO AUDIO P50A

Pegaso's specification for its one-and-only product is very limited. The P50A is rated at 50W without reference to load, distortion or frequency just as the single set of speaker outputs are not referenced to any particular transformer secondary. I discuss the description of 'Class A' in my boxout [p49], otherwise the achievable power output is largely determined by speaker load and the tolerable limit for distortion. Like many limited-feedback tube amps, the P50A's distortion increases progressively with output rather than slamming into the endstops with a hard clip, so while 2x25W is achievable into 8ohm between 1-3% THD it's possible to squeeze more into 4ohm – 2x27W/1%, 2x33W/2% and 2x38W/3%. There's more still under dynamic conditions at 28W, 55W and 82W into 8, 4 and 2ohm before falling back to 28W/1ohm [see Graph 1]. Distortion otherwise increases at bass frequencies (core saturation) from ~0.12% midband to 1.4%/20Hz at 10W/8ohm and at HF to 1.2%/20kHz [see Graph 2] while the A-wtd S/N ratio is about 'average' at 85dB (re. 0dBW).

The output impedance is high at 1-1.9ohm (20Hz-20kHz) but not as high as we've seen with many other recently-tested tube amps [see *HFN* Mar & Apr '21], which means the P50A's system response is less influenced by peaks and dips in the attached speaker's impedance trend. In fact, into a non-reactive 8ohm load, the response is uncommonly flat and extended to within ±0.2dB (20Hz-20kHz) and just -1.6dB/100kHz. And this trend simply gets flatter and more extended still into lower 4, 2 and 1ohm loads. There is, however, a subsonic 'bump' of +5.5dB/3Hz so the P50A is absolutely not suited to life with a vinyl-playing front-end and big, reflex-loaded loudspeakers. **PM**



ABOVE: Dynamic power output versus distortion into 8ohm (black trace), 4ohm (red), 2ohm (blue) and 1ohm (green) speaker loads. Max current is 6.4A



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

## HI-FI NEWS SPECIFICATIONS

Power output (<3% THD, 8/4ohm)	25W / 38W
Dynamic power (<3% THD, 8/4/2/1ohm)	28W / 55W / 82W / 28W
Output impedance (20Hz-20kHz)	1.02-1.93ohm
Freq. response (20Hz-20kHz/100kHz)	+0.1dB to -0.2dB / -1.6dB
Input sensitivity (for 0dBW/25W)	55mV / 275mV
A-wtd S/N ratio (re. 0dBW/25W)	84.6dB / 98.6dB
Distortion (20Hz-20kHz, 10W)	0.12-1.4%
Power consumption (Idle/Rated o/p)	250W / 280W (4W standby)
Dimensions (WHD) / Weight	455x175x472mm / 26kg



ABOVE: No 'digital' or phono here – the P50A offers just six line inputs (two balanced on XLRs) plus a single pair/single tap set of 4mm speaker outputs that seem optimised for ~4ohm loads [see Lab Report, opposite]

part with commendable precision and conveyed the physicality of each instrument, be it the throaty bass clarinet that dances into the soundstage from far right, or the twangy tone of the electric guitar set nearer the centre. Davis's trumpet solo burst into life with an almost startling leading edge.

Like a kid in a sweet shop, I chose some more wonderfully recorded jazz. The staccato instrumental 'I'm Not So Sure' by the Roy Hargrove Quintet [*Earfood*; EmArcy 0602517641815] reminded me just how enjoyable a straightforward, and, dare I say it, old-fashioned, listening experience can be: CD player, stereo integrated amp and nothing else to worry about.

### SAX APPEAL

It was this track that really showed off everything the P50A could do. It began with a rich, low-octave piano riff, joined by rapid-fire, clear-sounding syncopated percussion and textured double-bass. Enter Hargrove's trumpet, which ducked and dived with a glorious lip-buzzing timbre, before the reedier rasps of Justin Robinson's alto saxophone challenged from across the room. By the time this five-minute track came to its conclusion, I discovered

I was playing air saxophone. There's a first time for everything, apparently.

The P50A isn't just good for 1970s rock, and trumpet

virtuosos, however. It seemed equally happy with the modern, computerised sound washes of Orbital's 'Out There Somewhere (Part 2)' [*In Sides*; Internal 828 763-2], or the summery laid-back shuffle of Wilco's 'I'm The Man Who Loves You' [*Yankee Hotel Foxtrot*; 96kHz/24-bit FLAC], revelling in the latter's warm, fuzzy guitar part.

But I'm certain that if I was to own a P50A, I'd often find myself seeking out the best recorded music I had, because it deserves it. Aretha Franklin's vocal on 'Respect' [*I Never Loved A Man The Way I Love You*; 44.1kHz/16-bit FLAC] sounded as uplifting as ever, but the thin nature of the recording (I know, I'm a philistine) came to the fore.

I'll end on that bass. Perhaps it's a case of recency bias, but with suitable tracks I don't think I've ever heard my B&Ws so competent, so fluid and so musical in the low range, outside of Pass Labs' more expensive INT-25 [*HFN* Dec '20], another Class A amp, but solid-state. It turned the unfussy three-note bass line of Chris Rea's 'Daytona' [*The Road To Hell*; Tidal Master] into something to luxuriate in, while at the other end of the audio band, the delicate percussion rang through with spine-tingling clarity. ⏻

## HI-FI NEWS VERDICT

It's big, it's heavy and won't do your green credentials any good, but Pegaso's P50A is a superb debut from the spin-off Italian brand. This hot, feature-stripped amplifier delivers the analogue-only thrills that tube-lovers demand with a confident grasp of tone and texture, while punching out rhythms with panache. It'll be interesting to see what the company's valve-focused philosophy serves up as a sequel.

Sound Quality: 82%



LEFT: Pegaso's heavyweight alloy remote offers control over (motorised) volume, mute, input selection and configuration

# T+A Caruso R

Having nailed the whole ‘one box system with built-in speakers’ category, T+A now shifts tack to a ‘just add speakers’ unit. It’s on-trend, and with substance to match the style  
 Review: **James Parker** Lab: **Paul Miller**

**A**re we downsizing, simplifying, or just looking for more from less? Whatever the reasons, it seems the one-box system, to which one only needs add some speakers, is in the ascendant [see boxout, p53]. There’s no denying a movement is growing, with everything from ‘more integrated’ amps complete with onboard streaming through to complete systems such as the NAD M10/M33 [HFN Jun ’19 & Aug ’20], Naim’s Uniti range [HFN Mar ’11 & Nov ’17] – which was in the vanguard of this trend back in 2009 – and the recently-announced Cambridge Audio Evo models [News, HFN Jun ’21].

German brand T+A could be forgiven for sitting back and watching all this happening with some amusement. After all, it launched its first Caruso model, complete with onboard speakers, back in 2008, with the even more compact Cala lineup of streaming receivers arriving more recently.

For the £3000 Caruso R it has dropped the built-in drive units, and instead offers a choice of two external speaker systems. The £1300 R10 standmounts and £2500 S10 floorstanders are clearly styled to match the Caruso R, but this little one-box system, more compact in dimensions than the original ‘complete’ Caruso, also opens up the possibility of choosing one’s own loudspeakers. And as PM’s Lab Report reveals [see p55], the Caruso R’s Class D amplification is more than capable of driving a wide range of third-party boxes.

## WIDER PLATFORM

However, there’s more to this ‘R’ model than just stripping out the built-in speakers and replacing their grilles with gloss panels, made from black-lacquered aluminium. At its heart is an all-new streaming platform, developed in-house by the team in Herford, northern Germany, where the Caruso R is

designed and engineered. This opens up a wider range of streaming music sources, now including Amazon Music HD and Spotify Connect as well as Tidal, Deezer and Qobuz, making this latest Caruso even more comprehensively equipped.

It may occupy the same 29cm-square footprint, and have the same user-selectable ‘mood lighting’ from the base panel, illuminating the space beneath the unit, but it’s 6cm shorter than the near-cube original. The 7in display panel has been adapted to offer a landscape format, and this – along with the silver aluminium panels top and bottom – gives the Caruso R a more low-slung look than the original, slightly boxy model. The system still uses T+A’s Navigator operating system, although this has been

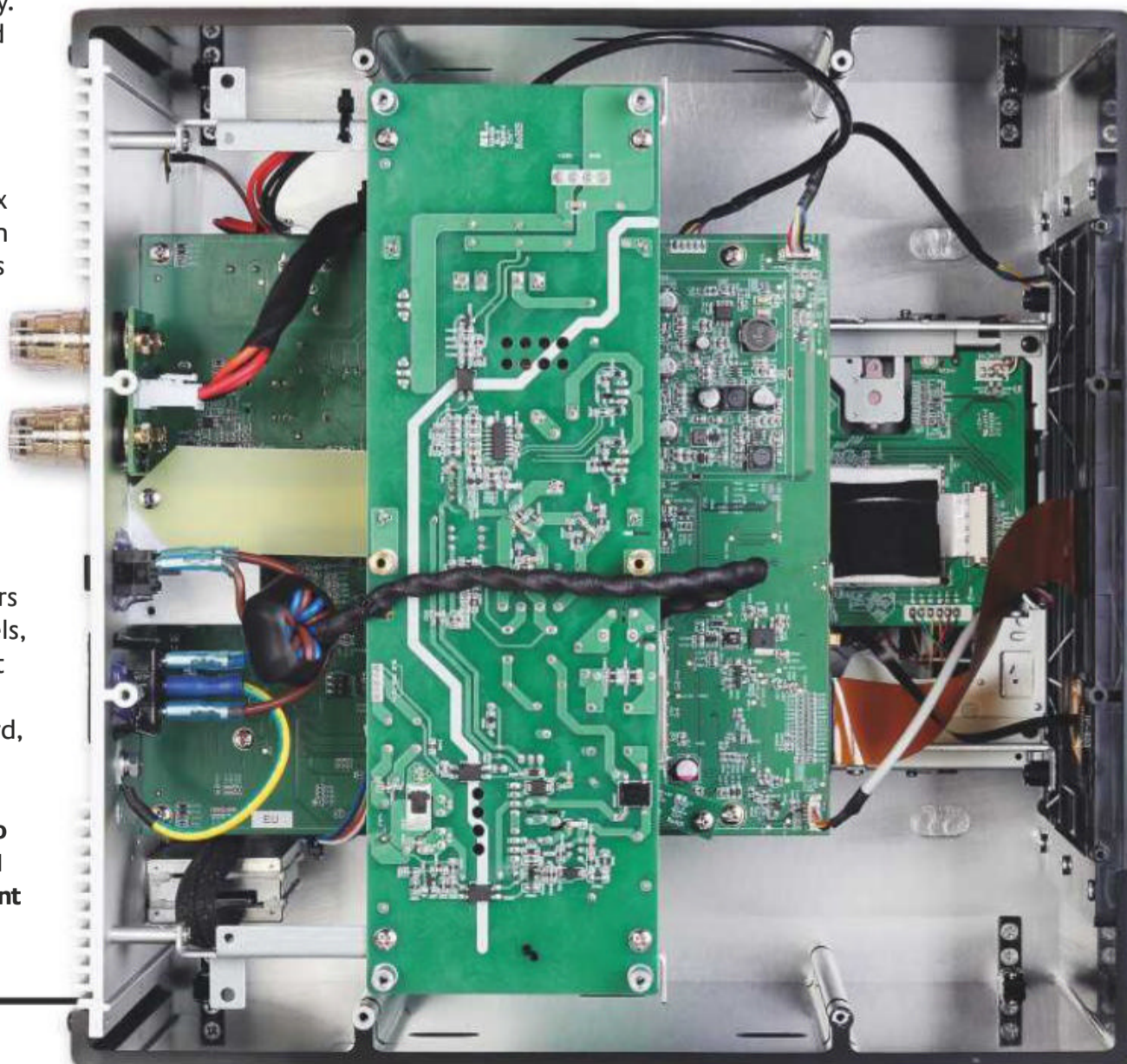
heavily modified to take account of the new facilities on offer here.

## WELL SORTED

It accommodates network and online streaming via both wired Ethernet and Wi-Fi, including Internet radio, includes a CD drive, onboard FM and DAB/DAB+ tuners, and both Bluetooth and AirPlay 2 capability. Consequently, the Caruso R comes with no fewer than three rear-panel antennae. There are little rubber stub types for Wi-Fi and Bluetooth, plus an extending telescopic radio aerial.

Wireless streaming is capped at 192kHz/24-bit (though downsampled internally to 48kHz) and the Caruso R also includes both an Ethernet port and a second ‘uplink’

*‘Its balance flatters a wide range of speakers’*



**RIGHT:** Looking from ‘underneath’ the Caruso R shows the switchmode PSU [topmost] and TI Class D amp modules [left, middle PCB] adjacent to a Libre Wi-Fi module and Cirrus Logic SRC [centre]. CD drive mech is below [far right]



**LEFT:** Dominated by its 7in HD touchscreen, with slot-loading CD drive above, the Caruso R's NavigatorOS can be driven by finger-tip control over the glass, or via remote control [see p55]. Mood lighting floods out beneath the chassis!

T+A engineers to make products with a sound that's both musically fulfilling and exceptionally easy to enjoy. It's a balance flattering to a wide range of speakers, and what the Caruso R lacks in the finer nuances of detail and soundstage focus, it more than makes up in a sense of weight and authority. This is allied to decent dynamic ability, meaning that while the sound is never less than rich, it also has decent punch and drive, whether with big orchestral forces or mainstream rock.

True, you probably wouldn't choose this little system if you existed on a diet of rap or metal, as its bass can become a bit overwhelmed with the really low, slamming stuff, sounding just a bit slow and one-note under duress, but then such listeners are arguably not the target market for a system of this kind. You can adjust tone and balance in the menu system, while a 'contour' control is there to adjust the clarity and warmth, but the effects are relatively minimal – and the system really doesn't need more bass or warmth!

## MAJOR SCALE

Due to the way the Caruso R operates, all its inputs and onboard sources deliver a

fairly uniform sound quality – well, they do all go through the same digital processing and Class D amplifier – which is either a limitation or a consistency, depending on how you look at it. Within the context of what is clearly a lifestyle-oriented system, and likely to be bought almost as much on its looks as its performance, that's no bad thing, especially given that the presentation is never less than entirely entertaining.

The lush, smooth sound is well-suited to the Anne-Sofie Mutter/John Williams collaboration *Across The Stars* [DG 4797553]. Yes, a bit more bite to the solo violin wouldn't go amiss, but this set of familiar movie themes is hardly the most cutting-edge of projects, and the generous

socket, to which other network devices could be connected. Other inputs extend to single optical and coaxial digital ins, plus a USB-A for music storage devices, plus two line-ins (which are digitised for processing within the system), while there are outputs for a single pair of loudspeakers, a set of analogue outs, a subwoofer feed and a headphone socket. In fact, the only quibble with the connections here is the placement of the USB-A and headphone sockets. These would be so much more convenient – but perhaps less tidy – if located on the front of the unit rather than on the rear.

A conventional remote handset is provided with the Caruso R [see p55], in addition to the front-panel touchscreen, but to get the most from the system you'll really need the company's Caruso app, especially if you're going to make extensive use of the streaming facilities.

In typical T+A style this is clear, logical, and well sorted, greatly enhancing the user-experience. As the final plank of its lifestyle appeal, the system also has a trio of microphones mounted in its top-plate to

support Alexa voice-commands, although these can be muted should one be wary about who might be listening!

## RICH MIX

Used with a variety of speakers, from a tiny and very inexpensive pair of Roth Oli RA1 bookshelf boxes, which were a surprisingly good visual match, right up to my substantial-sounding Neat Iota Xplorer floorstanders [HFN Jul '18], the Caruso R proved both an entirely enjoyable listen, and an extremely safe one.

The sound here is more on the rich and slightly soft side, rather than the last word in space and openness, but that wouldn't be the first time I'd made such an observation about a product from this stable, going all the way up to its heavyweight amplification separates.

Indeed, it seems to be a conscious decision on the part of the



## THE MUSIC CENTRE

For many of us, our first exposure to halfway decent sound was via a 'music centre': the spiritual descendant of those radiograms of the post-war decades, combining turntable, record player, amplifier and speakers. By the 1970s these huge tabletop units, complete with piano-key cassette recorder controls, record changer (which dictated that size) and all-covering acrylic lid, were everywhere. Some had names still familiar today, but many British brands are now long gone.

The advent of the CD changed all that as 'mini-systems' took over – small enough to slot onto a shelf, either as all-in-ones or miniature hi-fi separates. Denon's D-70 was influential, being advertised in 1992 as 'Hi-Fi with a notable difference' – a compact receiver, CD player and cassette deck, all separate but controlled by a single remote handset. Now, with the rise of streaming, the music centre is reinventing itself, from completely integrated units to 'just add speakers' designs such as the Caruso R. And the radiogram? Nostalgia has passed it by, as even the most diehard vintage collectors remain focused on separates.



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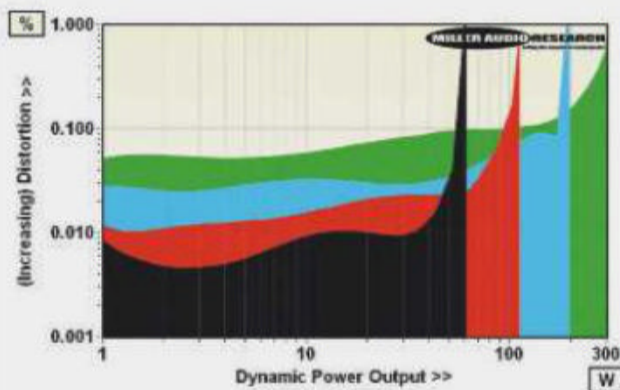
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# LAB REPORT

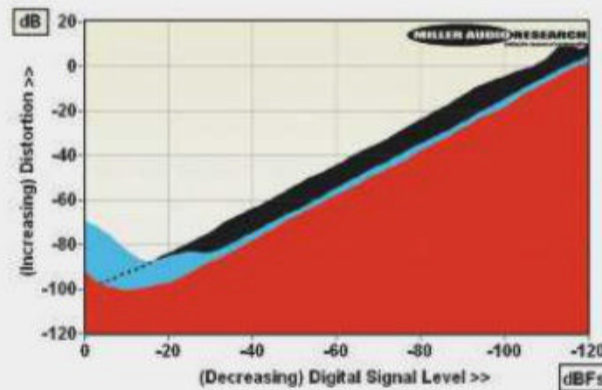
## T+A CARUSO R

Every source that finds its way into the Caruso R is either digitised via a 48kHz ADC (analogue inputs), downsampled to 48kHz (LPCM via S/PDIF, network or USB) or upsampled to 48kHz (44.1kHz CD). The response is therefore limited to -0.2dB/22kHz and -1.35dB/23kHz before dropping to -21dB/24.3kHz as T+A's choice of minimum phase digital filter – offering a modest 44dB stopband rejection – bites. The Class D amplifiers demonstrate their own load sensitivity and so the response of the main output is further modified by speaker impedance, peaking at +0.8dB/20kHz into 8ohm, a 'flat' 0.0dB/20kHz/4ohm before the treble is progressively rolled off into lower impedances at -1.7dB/20kHz/2ohm and -4.7dB/20kHz/1ohm. The impact of the amplifier's inductive output filter is also reflected in its source impedance – increasing from 0.07ohm through bass and midrange to 0.2ohm/10kHz and 0.65ohm/20kHz.

Once again, distortion, particularly at high frequencies, is dominated by the Class D output stage. Via the DAC/preamp, distortion falls to as low as 0.0012-0.0025% (20Hz-20kHz) over the top 30dB of its dynamic range [see Graph 2] but this increases to 0.0065-1.09% at 10W/8ohm. Noise, too, is low via the DAC/preamp, yielding an A-wtd S/N ratio of 105.1dB even though the value of 80.5dB (re. 0dBW) via the Class D amp is, relatively speaking, below average. Power output is necessarily tightly regulated by the switchmode PSU and Class D output, reaching a hard clip at 2x50W/8ohm and 2x100W/4ohm under continuous conditions and 61W, 112W, 200W to 300W into 8, 4, 2 and 1ohm loads under dynamic conditions at <1% THD [see Graph 1, below]. So the Caruso R is compact but very punchy! PM



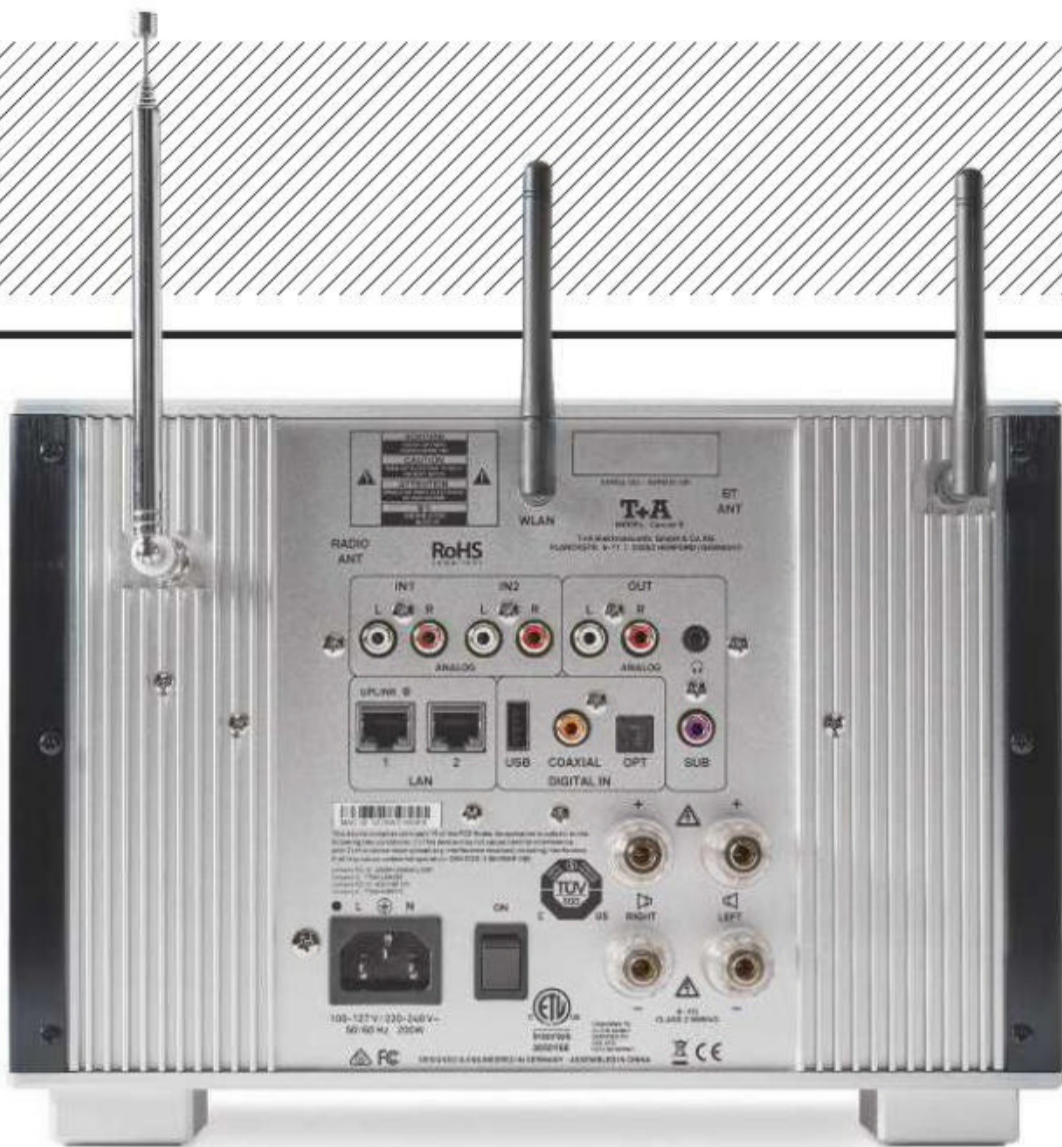
ABOVE: Dynamic power output versus distortion into 8ohm (black trace), 4ohm (red), 2ohm (blue) and 1ohm (green) speaker loads. Max. current is 17.3A



ABOVE: Distortion versus digital signal level at 1kHz (USB, red; CD, black) and 20kHz (CD, blue)

## HI-FI NEWS SPECIFICATIONS

Continuous power (<1% THD, 8/4ohm)	50W / 100W
Dynamic power (<1% THD, 8/4/2/1ohm)	61W / 112W / 200W / 300W
Frequency response (20Hz-20kHz)	+0.0 to +0.78dB (Amplifier)
Frequency response (20Hz-20kHz)	+0.06 to -0.02dB (DAC/preamp)
Digital jitter (CD / USB)	195psec / 1850psec
A-wtd S/N ratio (DAC/Amp)	105.1dB (0dBfs) / 80.5dB (0dBW)
Distortion (20Hz-20kHz; DAC/Amp)	0.002-0.046% / 0.0065-1.09%
Power consumption	17W / 115W (16W idle)
Dimensions (WHD) / Weight	210x290x290mm / 7.5kg



ABOVE: Antennas serve FM and DAB radio, Bluetooth and Wi-Fi while connections are provided for line in (x2), Ethernet (x2), USB-A (external HDD), coaxial and optical. Outputs include headphone (2.5mm), pre and sub (RCA) plus a pair of 4mm speaker cable terminals – these are 'floating' so the -ve/black must never be grounded

balance of the Caruso R driving the Neat floorstanders makes the most of the soloist's generous tone and the scale of the orchestra.

### TALKING RADIO

The same goes for Toto's 2002 'covers' album *Through The Looking Glass* [CMC 5421442], where the easy-going sound is perfectly suited to the faint air of 'why did they bother?' hanging around the literal takes on familiar tracks on this set. Maybe this is a compilation built for yacht-rock, but it clearly brings out the high quality of the engineering on offer here. I'll also note in passing

that the Caruso R's radio section offered a good account of itself with a two-part biography of Chris Barber as part of Radio 2's May Bank Holiday 'Celebrates Jazz' season.

The system also did a good job of playing Yello's *Yell40Years*

retrospective collection [Polydor 0602435738178]. Granted, this music can sound more room-shaking in the hands of a big system than it did here, but the sheer quality of the production on these tracks was readily apparent, and the balance was never dull or lacking in impact.

The old 'yes, but a system of separates for the same money...' argument hangs heavy over the Caruso R in sheer sonic terms, but the ease with which the system can be enjoyed, even when playing through a little pair of inexpensive speakers, shouldn't be overlooked, and it certainly has the ability to deliver when some more challenging partners are on offer. ⏻

## HI-FI NEWS VERDICT

The Caruso R may have no shortage of competition, but there's much to like about the sound on offer from this slick-looking little unit. Its appeal is boosted by the flexibility and ease with which it can be set up and used, whether via touchscreen, app or Alexa commands. More than merely good enough for its intended market, the Caruso R's smooth and very generous balance will surely win it fans.

Sound Quality: 82%



LEFT: The legends on T+A's slim alloy Caruso remote are not entirely intuitive but include input selection, volume and menu navigation

# Paradigm Founder 100F

Top passive floorstander in Paradigm's new Founder series is keenly, but not ambitiously priced. A high-end bargain?  
 Review: **Mark Craven** Lab: **Paul Miller**

**M**y first, AV-focused, experiences of Paradigm were misleading. In times gone by the UK distribution of this 40-year-old Canadian company favoured a curious mix of its entry-level, compact loudspeakers and its far-from-entry-level subwoofers (including the 106kg Signature SUB 2, whose hexagonal cabinet featured six 10in woofers and a claimed 4.5kW of amplification). More recently, however, first with the Persona B standmount [*HFN* Oct '20] and now with its £5400 Founder 100F floorstander, I've discovered its grown-up side. And I like it a lot.

Paradigm's new loudspeaker does remind me of the heavyweight subwoofer that (almost literally) blew me away over a decade ago, because it too uses an unconventional enclosure where right-angles are in short supply. It's also fairly big – not in height (just 106cm) but in depth (40.9cm) and front-baffle width (32.8cm). Viewed side-on, it appears to lean toward you, the result of an angled rear.

## GLITTERING PRIZE

Compared to the shapely, curved cabinets of the Persona Series, it's less classically attractive, but excellent overall build quality and a quartet of pleasing finish options – Walnut and Black Walnut wood veneers, and Midnight Cherry or Piano Black high gloss – work in its favour. And then there's a performance that's hard to relate to its asking price. If you were attracted to Paradigm's flagship Persona models, but baulked at the cost that comes with their beryllium drivers, then the Founder range is a brilliant consolation prize. But I'm getting ahead of myself...

Named after the return to the Paradigm fold of company founder Scott Bagby [see boxout, p57], the Founder Series, which launched this Spring, comprises six loudspeakers. Two of them (the coaxial-driver 90C centre channel and 70LCR) are

destined for home theatre installations, leaving four choices for stereophiles – the Founder 40B standmount (£2400), the entry-level 80F floorstander (£3800), the 100F and the 120H (£8600).

The 120H is a hybrid design mixing passive midrange and treble units with three active bass drivers, plus a side-order of room-tuning via the ARC EQ system from Paradigm's stablemate brand Anthem. It therefore apes the approach of the range-topping £34k Persona 9H [*HFN* Dec '19].

## LENS FLAIR

This loudspeaker borrows elements from Paradigm's other models, most obviously the Perforated Phase Alignment (PPA) 'lens' that aims to better control dispersion of the speaker's midrange and tweeter. Yet Paradigm stresses that the Founder Series is a ground-up design – not just a more affordable reimagining of the Personas – and cites the new FEA-optimised cabinets and drive units as evidence.

Starting with the latter, the 100F debuts the AL-MAC (aluminium/magnesium/ceramic) tweeter, a 25mm dome sitting within a large, shallow waveguide. Below this on the gently tapered front baffle, and isolated via a 2nd-order 2.1kHz crossover, is a 152mm AL-MAG (aluminium/magnesium) midrange driver. There are then three 'CARBON-X Unibody' 177mm bass drivers. As the name suggests, these are one-piece designs, *sans* dust-cap, made from 'mineral-infused' carbon fibre and bonded to Paradigm's 'Active Ridge Technology' surround.

Paradigm says the faceted design of the 100F's 20mm-thick MDF cabinet,

**RIGHT:** Offered in Walnut/Black Walnut veneers and Midnight Cherry/Piano Black high gloss finishes, the faceted enclosure hosts three 177mm mineral-loaded carbon-coned woofers, a 152mm alloy midrange and 25mm alloy/ceramic dome tweeter



## RETURN TO FOUNDER

Paradigm was founded in Toronto, Canada in 1982 by Scott Bagby and Jerry VanderMarel, debuting the Model 7 and Model 9 loudspeakers at the Toronto Audio Show that year. And it's the return of Bagby to the company that's the impetus for this new Founder Series.

Previously, in 2005, he sold his majority stake in Paradigm Electronics (also, since 1998, the owner of Canadian hardware brand Anthem Electronics), to a US private equity company Shoreview Industries. Shortly after, Bagby and Shoreview acquired MartinLogan, leading to the formation of PML Sound International. Bagby stepped down in 2009 and – in his words – went into 'semi-retirement' while still acting as a part-time advisor to the loudspeaker company he'd set up three decades earlier. Yet he told *HFN* he never lost the 'bug' for audio engineering, and when Shoreview later expressed an interest in divesting, he worked with son John (now Paradigm MD) to acquire a 100% stake in the three-brand company in May '19. The Founder Series is the result of 'wishing to make a strong statement' about the return of the brand to its original owner.

plus reinforced internal bracing and 25mm top and bottom plates, helps reduce internal standing waves and structural resonance.

### SHOCK THERAPY

More attention to unwanted vibrations comes via a new iteration of the company's Shock-Mount technology, which applies to both the elastomer suspension of the bass and midrange drivers, and the speakers' outrigger feet – these arrive turned inwards and need to be reconfigured during set-up. Individual adjustment to compensate for uneven surfaces can be achieved from above, which saves playing Jenga with this 32.7kg tower.

Low-frequencies are reinforced via a downward-firing reflex port, so fluffy deep-pile carpets may not suit the 100F, outriggers and spikes notwithstanding. The rear panel is clean apart from the two sets of 4mm binding posts.

The 100F claims a 90dB sensitivity, although Paradigm's 'compatible with 8ohms' impedance suggestion is rather optimistic [see PM's Lab Report, p59]. I partnered them with some robust Arcam Class G amplifiers, and followed

the suggested placement guidelines of a minimum 20cm rear-wall clearance and even more to the sides. Once you factor in the cabinet depth of the 100F itself, you

have a set-up that's not likely to disappear into the average room.

### ON THE NAIL

If I was compiling a wish-list for a mid-priced loudspeaker, Paradigm's 100F would pretty much nail every category. Big and bold? Check. Open and detailed? Check. Rich in bass and crisp in treble? Again: check. It's a consummate all-rounder, with just a hint of warmth that invites you to listen for extended periods.

Guns n' Roses' 'Locomotive (Complicity)' [*Use Your Illusion II*; Geffen 24420], is an eight-minute funk-rock epic of soaring guitar solos, propulsive basslines and multi-tracked vocals. With it, the 100F proved

its mettle, delivering weighty, hard-hit drums, highs that sparkled, and a captivating midrange presence. The chorus lays on vocalist Axl Rose simultaneously across three octaves, and this 1990s production trick

was beautifully exposed, each element easy to discern. In fact, the whole concoction sounded tight – a trait I will assume is in part down to good pair matching [again, see PM's Lab Report] and the company's rock-solid cabinet design.

More than satisfied that the 100F could rock out – by way of a diversion through The Who's 'Won't Get Fooled Again' [*The Ultimate Collection*; Polydor 065 234-2], where Roger Daltrey's iconic scream made me jump – I turned to something a little trickier, in the shape of Kate Bush's multi-instrumental 'Babooshka' [*Never For Ever*; Rhino Records]. Bush's idiosyncratic soprano voice can sound strident in the wrong hands, but while it revealed a tilt

'Big and bold?  
Check. Open  
and detailed?  
Check'





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**LEFT:** Alloy outriggers with rubber feet also accommodate spikes and help stabilise the tall, tapered cabinet. Dual 4mm binding posts are linked to the three-way crossover, split at 2.1kHz between mid and treble for bi-amping or bi-wiring (bass drivers operate <500Hz)

or vocal emphasis, while conveying the track's quieter aspects with delicacy. Space between instruments was beguiling, as was the blend of softness and aggression.

### FAST 'N' LOUD

The more time I spent with the 100F, the more I realised there was no flavour of music with which it really struggled. Fed the ethereal, electronic textures of Jean-Michel Jarre and Hans Zimmer's 'Electrees' collaboration [*Electronica 2: The Heart of Noise*; Sony Music] it was all smoothness and light, with a purity to its midband that encouraged a game of 'how loud can these go?'. The answer was 'plenty loud enough' for my circa 4x5m space, with no subjective trace of them losing their composure before I lost my nerve.

The track 'Exit' was faster, synthesisers acquiring a nastier edge and the 100F locking in step with the pounding techno rhythms. At the opposite side of the spectrum, my enjoyment of The Royal Festival Orchestra's rendition of Vivaldi's 'Four Seasons – Winter' [Stradivari Classics; Tidal] was dependent on the 100F's presentation of the strings. I won't insult your intelligence by saying they sounded like 'the real thing', but this lilting, layered piece came across with wonderful timbral detail. 🎧

towards brightness here, it was free of overt edginess and emerged from a soundstage of exemplary depth. Plump, warm tones of fretless bass sat behind heavy, resonant piano and the image was centrally focused, occasionally expanding far left and right of the speakers.

With sufficient solid-state grunt behind them, the 100Fs proffered a forceful low-end when needed, such as the juicy rhythm section in Daft Punk's 'Get Lucky' [*Random Access Memories*; 88.2kHz/24-bit FLAC], but was also ready to pounce into action with more dextrous material.

The production of Muddy Waters' 'My Home Is In The Delta' [*Folk Singer*, Geffen; 96kHz/24-bit FLAC] is deceptively dynamic, and this lively loudspeaker dug into each snare hit, aggressively-picked steel guitar note

### HI-FI NEWS VERDICT

It says a lot about the performance of Paradigm's new three-way floorstander that my only gripe is the faceted enclosure style, and that's just my personal taste. Find the necessary space and amplifier power for the 100F and you'll be rewarded with a detailed, inviting soundstage and a voicing that works across a wide range of material. With its Founder Series, Paradigm has surely found a winner.

Sound Quality: 88%

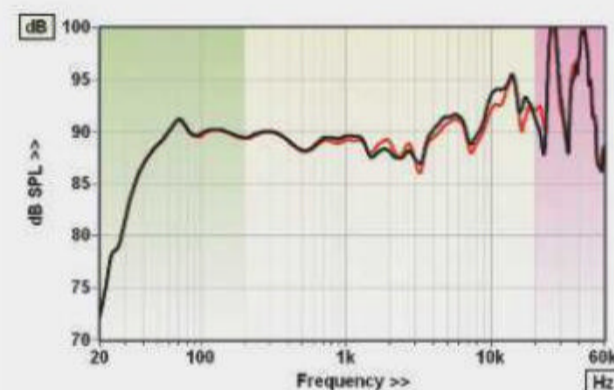


## LAB REPORT

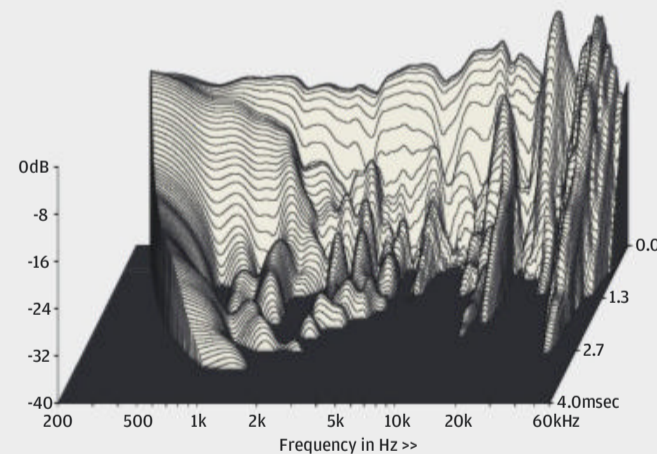
### PARADIGM FOUNDER 100F

Very nearly meeting its rated high 90dB sensitivity, Paradigm's 100F clocked-up a full 89.6dB/1m/2.83V at 1kHz and a slightly lower – but far from *low* – 89.1dB averaged 500Hz-8kHz. As anticipated, this high sensitivity has been achieved, in part, through a current-hungry nominal 4ohm load where the impedance falls below 8ohm from 68Hz-1.4kHz and as low as 3.2ohm at 119Hz. The biggest swings in phase angle occur through low bass frequencies at -46°/73Hz to +18°/53Hz, -57°/26Hz and +55°/19Hz where the impedance falls to 3.9ohm/38Hz (the helmholtz frequency of the downward-firing port). In practice the output of all three 177mm 'Carbon-X' bass drivers is consistent (56-290Hz re. -6dB) and free of obvious resonance, falling away below 70Hz [green shaded area, Graph 1] where the LF output is augmented by the port to achieve an impressive diffraction-corrected bass extension of 33Hz (-6dB re. 200Hz).

Of course, high sensitivity also brings the opportunity for lower distortion at the 90dB SPL test level, the 100F achieving a low ~0.25% through bass and mid frequencies. The response, measured on the tweeter axis, is very smooth up to 4kHz (±1.7dB) with a lift through the presence and treble thereafter as the 25mm treble dome gets into its stride and the uniformity slackens off to ±4.5dB. Production QC is of a high order, so pair matching is a fine 0.9dB from 200Hz-10kHz (increasing to 2.3dB up to 20kHz). Above 20kHz [pink shaded area, Graph 1] there are two resonances, at 26.9kHz and 43kHz, presumably associated with the 'AI-MAC' tweeter. Lower-level modes at ~4kHz are most likely linked to the 'AI-MAG' mid driver [Waterfall, Graph 2]. PM



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



ABOVE: Cabinet modes are suppressed but note mild driver modes at 3-5kHz and HF dome breakup >20kHz

### HI-FI NEWS SPECIFICATIONS

Sensitivity (SPL/1m/2.83V – 1kHz/Mean/IEC)	89.6dB / 89.1dB / 87.9dB
Impedance modulus: minimum & maximum (20Hz–20kHz)	3.2ohm @ 119Hz 32.3ohm @ 22Hz
Impedance phase: minimum & maximum (20Hz–20kHz)	-57° @ 26Hz +55° @ 19Hz
Pair matching/Resp. error (200Hz–20kHz)	2.3dB/ ±4.3dB/±4.7dB
LF/HF extension (-6dB ref 200Hz/10kHz)	33Hz / 54.1kHz/63.8kHz
THD 100Hz/1kHz/10kHz (for 90dB SPL/1m)	0.25% / 0.25% / 0.55%
Dimensions (HWD) / Weight (each)	1065x328x409mm / 33kg

# Rotel Michi X5

Top integrated in Rotel's flagship Michi series leverages much of the P5 preamp and S5 power amp technology to realise a taller, heavier amp that aims to upstage the X3  
 Review: **Andrew Everard** Lab: **Paul Miller**

**E**xpect the unexpected: it will be the first lesson in the book if I ever get round to writing *Hi-Fi Reviewing For Dummies*. You see, just because something seems like something else, it doesn't follow that it is... Too many times I've stumbled across a speaker sitting in the middle of a range, and apparently using the same recipe of drive-units, that turns out to be a complete outlier – for good or bad – in the way it plays music. The same happens with amplifiers, too. So, just because one model seems little more than a bigger version of another, don't expect it to have the same kind of balance of qualities, only 'more so'.

Take, for example, the Michi X5 we have here. It's the £6300 'big brother' of Rotel's £2000-more-affordable X3 model [*HFN* Apr '21], and outwardly seems to be the same amplifier literally writ large. It occupies the same 485x452mm footprint, but is 45mm more imposing, at 195mm tall, while the weight is up a hefty 14.9kg, from the substantial 28.9kg of the lesser model to a full 43.8kg. In every respect, this is a big and impressive-looking integrated amplifier, even by the standards set by the imposing but svelte X3.

## POWER ON TAP

In return for all this you get some added facilities, which we'll come to shortly, and even more impressive power output specifications: the X3 claims 200W/8ohm and 350W/4ohm and the X5 promises 350W/8ohm, rising to a whopping 600W/4ohm, all comfortably exceeded in practice [see PM's Lab Report, p63]. The X5 has an additional unbalanced analogue line-in, bringing the total to four, plus one set of balanced inputs. The extra input is labelled 'Aux 2' though, as before, all inputs can be relabelled for the front panel display via the extensive menu system. There's also

MC phono capability as well as the MM included on the junior amp.

Again, this switching is carried out deep in the menus, along with the ability to skip unused inputs when scrolling through them, to decide whether or not tone controls will be applied to a specific input, and set a fixed level for a particular input. In the old days we would have said this was useful when using the amplifier with the front left/right pre outs of an AV receiver or processor to integrate it into a surround system. These days it's just as relevant if the amp is paired with a component that has its own volume control, such as a smartphone or tablet used to stream music. Yes, the Michi X5 may be aimed high, as that price-tag suggests, but

it's also designed with all the flexibility required of modern audio systems.

## FULL MOODY

So, along with a raft of digital inputs, including USB-B for computer connection plus three optical and three coaxial, there's also a little slab-shaped antenna on the rear panel [see p63] offering Bluetooth wireless connectivity, with AAC and aptX compatibility.

In fact, the only disappointment – for some – will be the thwarted promise of its USB-A and Ethernet ports. These update the X5's firmware, the USB-A also offering 5V power for external devices and the Ethernet control of the amp over a network, but neither supports music playback.

*'The ambience includes the hushed bustle in the nave'*



**RIGHT:** Dual-mono PSU with two screened transformers and slit-foil reservoir caps [centre], support left/right bipolar power amps [far left/right]. Phono stage, line pre and AK4495-based DAC stages are on three stacked PCBs [top]



An external IR receiver is also supported, should you wish to hide away all the amp's black gloss loveliness, while 12V trigger ports can switch external devices, and there's also an RS232 port for more custom-installation control.

As on the X3 the two sets of speaker terminals are paralleled and designed to bi-wire a single pair of suitable speakers. A pair of pre-outs are provided should you wish to add an external amplifier for bi-amping your speakers, and there are two mono subwoofer outputs, plus a headphone socket on the front panel.

Also retained from the X3 is that simple fascia, with little more than source and volume controls, and a big, ultra-clear display complete with fripperies

– all defeatable – such as VU meters and spectrum analyser readouts. Should you want to go for the full moody black look, the display can be dimmed or turned off from the excellent remote common to all Michi integrateds and the P5 preamp [*HFN* May '20]. It's a solid little device [see p63], and a masterpiece of clarity – you can even temporarily adjust tone and balance without leaving your listening seat.

### **DARK STAR**

As the X3 had proved so impressive, I'll admit to approaching the X5 with both anticipation and some trepidation. PM lays out the key differences [see boxout, below] but the nagging thought remained in my mind that the X3 may be so good that any

**ABOVE:** Despite its physical bulk, the X5's glossy black fascia remains both clean and elegant-looking with source and volume selectors flanking a bold, configurable display

notional gains offered by the X5 might be merely incremental, rather than revelatory.

In the event, not only did the X5 show itself to be different, it proved unlike the X3 to a surprising degree. The big, bold, and yet sprightly and wide-open sound of the 'lower-powered' amp was replaced by a softer, slightly darker presentation here. Furthermore, while the bigger Michi X5 undoubtedly has a superb ability to go loud while maintaining full control of the speakers, and with typically startling dynamic ability, both on the micro and macro scales, its sound didn't move this listener as did that of the X3. This is a highly impressive amplifier, without doubt, but a spine-tingler? Not quite...

Playing the Jerry Junkin/Dallas Winds recording of the march from Steven Spielberg's *1941* [*At The Movies*; Reference Recordings RR-142], an exuberant piece of scoring by John Williams, with massive dynamics across and within the track, the X5 displays that darker, 'of a piece' sound, with diminished instrumental detail and texture and greater emphasis on the scale of the massed forces as the track builds.

### **PLAYING BALL**

With more Williams, in the form of the very 'hot' recording of David Helbock's solo piano on the 'Duel Of The Fates' [*Playing John Williams*; ACT 9764-2], the X5, driving B&W 800 D3 loudspeakers [*HFN* Oct '16], manages to sound rather distant with this close-up production. The presentation is certainly fast and hard-hitting, but at the same time lacking some ambience.

A recording like Till Brönner's *The Good Life* [Masterworks 88875187202] is, my listening notes say, 'slap bang in the middle of the X5's aspirational ballpark', going on to mention 'the muted trumpet all breathy' ➞

## **THE X FACTOR**

Is the X5 simply a 'bigger X3'? The X5's extra bulk comes from its chunkier chassis, dual PSU transformers and mammoth 22,000µF slit-foil reservoir caps. It hosts the same six pairs of Sanken bipolar output devices per channel as the X3 but, with the enhanced PSU, supports a higher rated 2x350W/8ohm vs. 'just' 2x200W/8ohm for the X3. In reality, while the X5 bests the X3 into 8/4ohm loads at 2x450W vs. 2x255W and 2x775W vs. 2x425W, respectively, it proves *less* tolerant of low impedances. Despite its extra heatsinking, thermal protection limits the X5 to 1150W/2ohm and 590W/1ohm (24.3A) where, under dynamic conditions, the X3 powers on to deliver 1080W/2ohm and 1775W/1ohm (42.1A). So the Michi X3 still has more grunt than any integrated in this class.

This, of course, is not the end of the story because there are other differences in the technical 'fingerprints' of the X3 and X5 that inform their very individual sound qualities. For example, the X5's gain is twice that (+6dB) of the X3 and while midrange distortion is slightly higher (0.005% vs. 0.003% at 10W/8ohm), it is more consistent (flatter) with frequency than via the X3 where THD increases to 0.014%/10kHz (vs. 0.005%/10kHz via the X5). The X5's response, however, is markedly less flat than the X3's, the former sloping downwards from 4kHz-20kHz by -0.8dB while the X3 reaches out to -0.15dB/20kHz. This subtle tilt in response alone feeds into Andrew's description of the X5 sounding 'darker'.

There's further 'darkening' in the digital domain for while both the X3 and X5 use an AKM AK4495SEQ DAC, the former uses a steep roll-off minimum phase digital filter, the latter a slow roll-off minimum phase filter with much reduced ringing but poorer stopband rejection (just 5.3dB vs. 69dB). The X3/X5 post-DAC analogue stages are different but the responses are heavily influenced by the digital filters, so a 44.1kHz file rolls away to -4.9dB/20kHz through the X5 but remains flat to ±0.05dB/20kHz via the X3. PM



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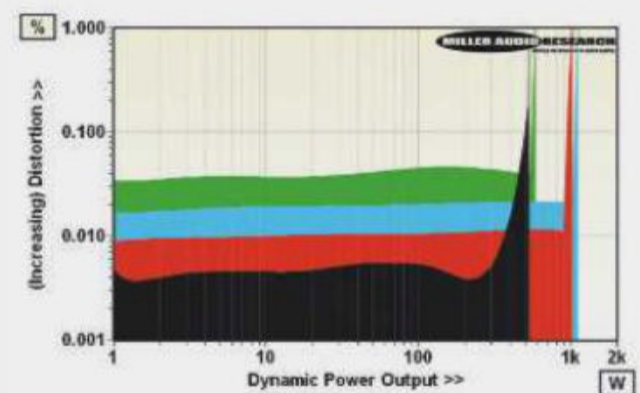
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# LAB REPORT

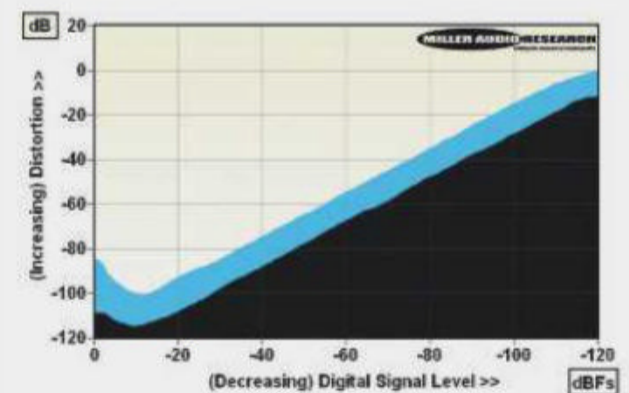
## ROTEL MICHI X5

I compare the performance of the X5 with the X3 in our boxout [p61] so I'll keep this report focused on the X5 as a solo product. Rated at 350W and 600W into 8/4ohm, respectively, it succeeds in delivering 2x450W/8ohm and 2x775W/4ohm at <1% THD with sufficient headroom to support 530W, 1.02kW and 1.15kW into 8, 4 and 2ohm loads under dynamic conditions, but limited to 590W/1ohm [see Graph 1, below]. Gain is a moderate +31.3dB (more 'useable' than the 40dB+ of many integratseds) but the A-wtd S/N ratio is below the industry average at 80dB (re. 0dBW). Distortion is low and steady with output at 1kHz from 0.004%/1W to 0.0045%/10W, 0.005%/100W and 0.006% at the rated 2x350W/8ohm (drawing 1.15kW from the wall at this point). THD is impressively unperturbed with frequency too, holding to 0.004-0.005% from 20Hz-10kHz across 1W-100W/8ohm. Output impedance is a low 0.014-0.075ohm (20Hz-20kHz) and the response tailored through presence and treble to -0.8dB/20kHz.

Measured via the pre outs at 2V, the digital inputs are all subject to a minimum phase digital filter that trades reduced time domain distortion for a poor ~5dB stopband rejection and tailored HF response. The latter drops to -4.9dB/20kHz (or -3.3dB/20kHz with 48kHz files), with -5.9dB/45kHz and -6.9dB/90kHz realised with 96kHz and 192kHz digital files. Jitter is a little higher than average at 550-600psec and the A-wtd S/N slightly lower than expected at 104dB but low-level resolution remains true to a tight ±0.15dB over a 100dB dynamic range. Distortion is a low 0.0009-0.0085% with peak level (0dBFs) digital inputs (20Hz-20kHz), falling to a minimum of 0.0002-0.0009% at -10dBFs [see Graph 2, below]. PM



ABOVE: Dynamic power output versus distortion into 8ohm (black trace), 4ohm (red), 2ohm (blue) and 1ohm (green) speaker loads. Max. current is 24.3A



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

## HI-FI NEWS SPECIFICATIONS

Continuous power (<1% THD, 8/4ohm)	450W / 775W
Dynamic power (<1% THD, 8/4/2/1ohm)	530W / 1020W / 1150W / 590W
Output imp. (20Hz-20kHz, Pre/Amp)	435ohm / 0.014-0.075ohm
Freq. response (20Hz-20kHz/100kHz)	-0.15dB to -0.75dB/-1.75dB
Digital jitter (USB / S/PDIF)	550psec / 600psec
A-wtd S/N ratio (DAC/Amp)	104.1dB (0dBFs) / 80.4dB (0dBW)
Distortion (DAC, 0dBFs/Amp, 10W)	0.0009-0.009% / 0.004-0.007%
Power consumption (Idle/rated o/p)	105W / 1.15kW (1W standby)
Dimensions (WHD) / Weight	485x195x452mm / 43.8kg



ABOVE: The X5 offers MM/MC phono, one balanced (XLR) and four RCA line ins; sub and pre outs; three optical, three coaxial and one USB-B digital ins; trigger, RS232 and network control ports plus two sets of substantial 4mm speaker cable binding posts

and gorgeous centre stage, with the simple bass/drums/piano backing ranged behind it. Drums patter and swish back there, and the bass has fine definition and resonance'. Those same notes sum up that this album is 'hardly demanding, but it sounds magnificent here'.

### BIG ON BITE

For all that, the X5 seems rather more programme-dependent than the X3, even if it's hard to pinpoint exactly why. With the Jared Sacks recording of the Oyster Duo's *Stolen Pearls* recital [Channel Classics CCS 43121] there's the odd effect of Nicky Schwartz's double-bass dominating the piano of his wife, Anna Fedorova. I've commented in other reviews on what I call the 'playing in an underpass' effect, and for all the weight and resonance of the double-bass here, the two sound like they're playing some way away with the surrounding acoustic tending to swallow them up.

Of course, sometimes this slight lack of ambience can help – or at least change – the sound of a recording. For example, John Challenger's beautiful *Salisbury Meditation* recital [AJM001, 96kHz/24-bit] is curated from 270 hours of live recordings made while the newly-restored organ was played in Salisbury Cathedral during the on-site Covid-19 vaccinations – the ambience of the instrument including the hushed bustle going on down in the

cathedral's nave. Via the X5 there's still a fine sense of the instrument in the lofty space, but that rustle of atmosphere is somewhat diminished, which is a good thing for focus on the playing, but it may rob the recordings of a little of their magic.

The rendition of The Waterboys' 'This Is The Sea' on Tom Jones's *Surrounded By Time* [EMI EMCD 202116] shows much of the dichotomy of the sound here, for the track still sounds big and bold even if the octogenarian singer should be delivered with more deep-chested power. The track has good dynamics, and a decent swagger, but it needs more guts, and only really focuses when the mix drops down to the more restrained final section.

Other distinctive voices were also rendered differently: Iggy Pop's guest vocal on 'Why Can't We Live Together?', from Dr Lonnie Smith's *Breathe* album [Blue Note 3546174] is understated, agreed, but here it's arguably a little too, well, submerged. By contrast, Smith's Hammond is rendered magnificently, and with so much detail that you can almost hear the tonewheel 'biting' with the magnets to switch on each note – that element of the track, at least, is spellbinding. ⚡

## HI-FI NEWS VERDICT

While impressive enough in its own right, the Michi X5 lacks a little of the sparkle and surprise of its junior stablemate, the X3. And that, in essence, is this amplifier's headache: fine though the X5 is, the Michi X3 delivers a magical performance for a healthy £2000 less, offers almost all the bigger amp's flexibility and is also less space-hungry. That makes the more affordable model in Rotel's Michi range its star buy.

Sound Quality: 84%



LEFT: Rotel's slim Michi remote offers access and control over the X5's input selection, volume and on-screen menu system

# Bryston BR-20

This flagship, fully balanced preamplifier comes with Bryston's BDA-3-inspired DAC plus updated BDP streaming platform and full network control. It's busier than it looks!

Review: **Mark Craven** Lab: **Paul Miller**

**T**here's so much functionality under the bonnet of Bryston's BR-20 that you might wonder where to start. I would suggest the manual – this £7500 networked USB DAC/preamplifier isn't, it must be said, the most instantly intuitive of system hubs I've ever auditioned. But the effort is worth it though, because what the BR-20 can do, and how it does it, is quite special.

Announced in October 2020, and taking the initials of Bryston president Brian Russell, who passed away in September of that year, the BR-20 becomes the third two-channel preamp in the manufacturer's current lineup. Yet it's a markedly different beast to the £4600 BP-173 and venerable £6995 BP-26 [*HFN* May '07], as both of those are, out-of-the-box, all-analogue models, with the option of adding 192kHz/24-bit or 96kHz/24-bit DAC boards, respectively. The lower sampling rate of the BP-26's DAC is indicative of its longevity...

## DIGITAL HUB

The BR-20 retains the modular approach of its predecessors, but integrates a 384kHz/24-bit DAC as standard, effectively offering all the functionality of the standalone £3600 BDA-3 model. And unlike its siblings, this new unit also features Bryston's networked streaming platform, as seen on the £3900 BDP-3 player. This is controlled by a web-accessed user-interface that works best on a laptop or tablet, but supports smartphone access too [see boxout, p65]. The end result is a single box with a do-it-all vibe, particularly when you factor in the BR-20's built-in 'Low Z' headphone amp with its front-mounted 6.35mm output, and rear-mounted 12V trigger and RS232 connections.

No one would buy a BR-20 and not make use of its DAC talents, and there's plenty of flexibility here, with inputs

comprising double sets of AES/EBU, coax and Toslink optical, and a single USB-B. For analogue sources, there are balanced XLR and unbalanced RCA inputs.

Outputs are balanced only, on two sets of XLRs, so you'll need an adapter if you want to pair the BR-20 with an RCA-equipped power amp. Not got a balanced amplifier? Unsurprisingly, Bryston's Cubed range has powerful mono and stereo options [*HFN* Jun '16].

More digital functionality can be added with one of the aforementioned optional extras. Bryston's £1200 HDMI board combines four inputs with one output, and caters to source switching in a wider home entertainment system, in addition to DSD direct from SACD (joining the BR-20's DSD256-capable USB DAC). There's also a £950 MM phono stage option, replacing the first of the BR-20's RCA line inputs. You can also choose between a black or silver face plate for the chassis, in standard (432mm) or oversized (482mm) versions.

Although the DAC and streaming inputs are this model's headline features, Bryston claims the BR-20's analogue preamp stage is 'a result of years of R&D'. Circuit refinements give Bryston the confidence to claim 'staggeringly low' distortion [see PM's Lab Report, p67], the fully balanced signal path, 'tightly matched' components and compact circuit footprint promising a low-noise, high-purity performance.

## PROSUMER PRODUCTS

For a company that makes some very solid power amplifiers, the relatively lightweight 5.5kg BR-20 comes as something of a surprise. However, the partnering BR-4 remote [see p67], is a reminder that Bryston still does 'chunky' very well.

Visually, the BR-20 is far removed from the slick, colour display-toting machines of companies such as Bluesound and Cambridge Audio, or the sleek, minimalist slabs of brands like Primare. Its long row of source select buttons, status LEDs for



**RIGHT:** Powered by a substantial linear supply [bottom left], the BR-20 includes a network solution [green], XMOS USB [top centre] and stack of 'analogue' PCBs hosting 2xAK4490EQ DACs plus balanced line ins/pre outs [top right]



PCM and DSD sampling rate, illuminated motorised volume control and text-based LCD display are a nod to Bryston's no-nonsense pro-market leanings.

Thankfully, both the LEDs and display can be dimmed entirely – a push on the volume control accesses a service menu tree, where you can also rename and hide inputs. Speaking of volume control, this adjusts in  $\pm 0.5\text{dB}$  steps from a gain of  $+10\text{dB}$  to  $-30\text{dB}$ , and  $1\text{dB}$  intervals down to  $-50\text{dB}$ . As you get to its lowest positions, the steps become larger – the final jump is from  $-63\text{dB}$  to  $-80\text{dB}$ .

### A DEEP DIVE

At some point, deep into my listening, I had the urge to watch James Cameron's underwater sci-fi movie *The Abyss*. Why?

'It was a shut-your-eyes-and-listen performance'

Because the soundstage crafted by the BR-20 has depth in spades. Its imaging is holographic, and when you couple that with its exquisite detail reproduction, you get a component that (cliché alert) breathes new life into familiar recordings.

I found it remarkably revealing, and able to turn music tracks I'd previously considered run-of-the-mill into works of art.

An early example of this was Lynyrd Skynyrd's southern-fried cover of Elvis Presley's 'Heartbreak Hotel'

[*Endangered Species*; Capricorn Records, 44.1kHz/16-bit FLAC]. The BR-20 opened-up this fun, loose, three-minute acoustic jam, laying out each element for me to survey and savour, from the ultra-fast picking on an acoustic guitar to big-bottomed bass. The reverberant vocal track sounded

**ABOVE:** As simple as it is comprehensive with rows of contoured buttons servicing the myriad digital and analogue inputs. Remote, network control is the icing on the cake [see below]

wonderfully huge, and the whole thing was carried along by a swinging rhythm.

But it was the dimensionality of the soundstage that got me. The BR-20 placed singer Johnny Van Sant forward of the drums, but still shy of the triple guitar parts, which reached out to my seat. There are occasional piano licks thrown in here too, and the BR-20 had no trouble finding space for them. It was a shut-your-eyes-and-listen performance.

### SOARING HIGHS

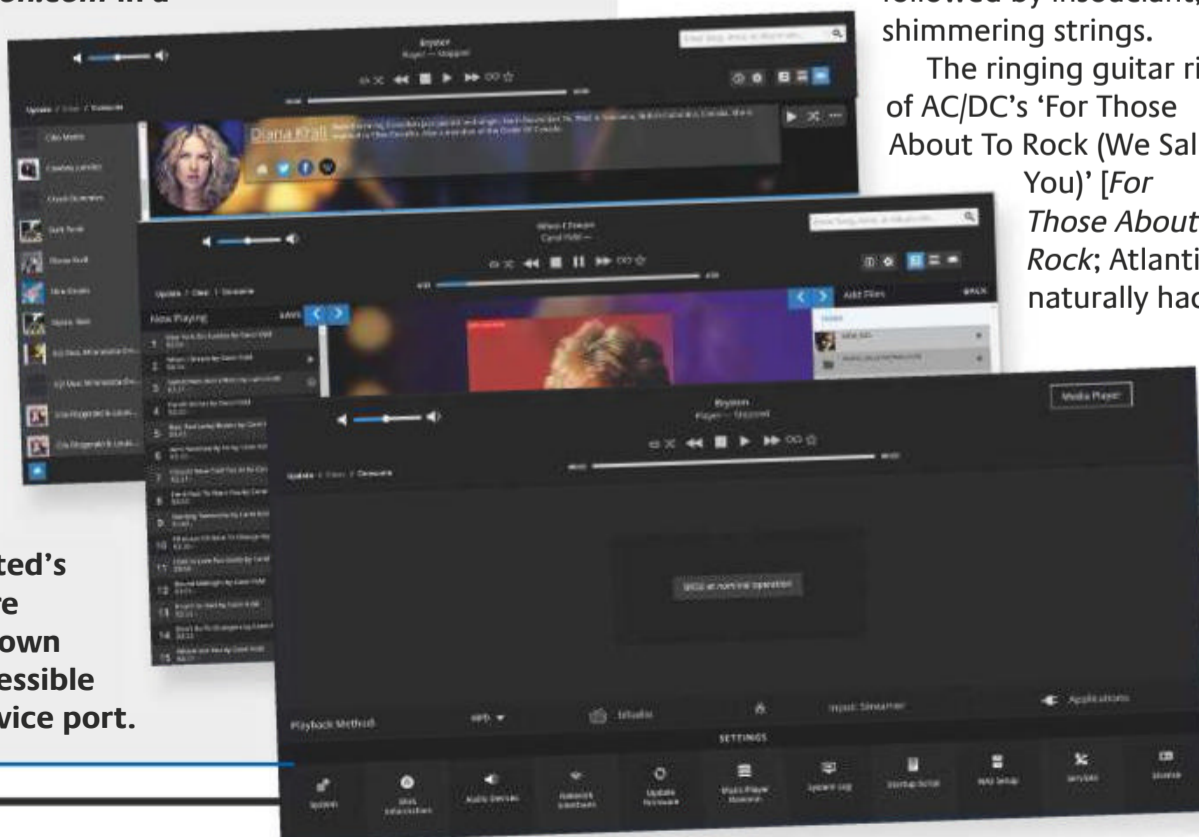
Sticking with CD, James Horner's 'Apollo 13 (Main Theme)' [*Apollo 13 Original Motion Picture Soundtrack*; Geffen/Universal] showed the Lynyrd Skynyrd ditty wasn't a one-off. The BR-20 again presented a deep soundstage, but here it was a massive orchestra of strings, brass and military-style drums. These are harder timbres and textures to pull off, but it did so with an excellent grasp of detail and dynamics. Long-held solitary bugle notes carried an attacking leading edge and gentle decay, followed by insouciant, shimmering strings.

The ringing guitar riffs of AC/DC's 'For Those About To Rock (We Salute You)' [*For Those About To Rock*; Atlantic], naturally had

## MOOSE ON THE LOOSE

Taking care of the BR-20's networked music playback is the 'Manic Moose' platform also found on other Bryston models. It's based on locally stored open-source MPD (Music Player Daemon) software, tailored towards Bryston's hardware and file playback capabilities. Getting started is straightforward – just connect the BR-20 via its 'Streaming' Ethernet port to your router (or wirelessly with a USB Wi-Fi adapter), open [my.bryston.com](http://my.bryston.com) in a browser on a connected device, and the software automatically finds the preamp's IP address. You're then presented with an interface that provides access to files stored on your network (once shares are established), connected USB drives, and from Qobuz and Tidal subscription services.

Album artwork is supported, and the media player has flexibility around creating and editing playlists. In my experience it worked fine and was responsive, but lacked the simplicity and visual appeal of app-based solutions (such as Bluesound's BluOS or Sound United's HEOS). It can also be used to run firmware updates and switch inputs – a stripped-down version with this functionality is also accessible via the preamp's secondary Ethernet service port.



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BRYSTON BR-20



**ABOVE:** Four line ins (two on RCA, two balanced on XLRs) are joined by two pairs of balanced preamp outs. Digital ins include wired Ethernet, USB-B, USB-A (up to four external drives), two optical, two coaxial, two AES and I<sup>2</sup>S/ARC on four HDMI sockets. Control is offered via Ethernet, USB-B, RS232 and 12V triggers

less panache to them, but laid to bed any fears that this preamp would turn up its nose at such distorted fare. It found the inflections of Angus Young's playing and the gravelly growl of Brian Johnson's vocals. When the solo hits, the track becomes quite cacophonous, but this preamp kept it all in check.

PARTNER WITH POWER

It's possible that the BR-20's articulate and descriptive disposition might be a little too insightful for some tastes, as it can encourage you to focus on musical details rather than, perhaps, the music itself. Careful consideration of partnering equipment is warranted, as it should be at this price. I ran it through a 300W Bryston 4B<sup>3</sup> power amp [HFN Jun '16] and my regular B&W 705 S2 standmounts – this set-up yielded remarkable results, but I can imagine less capable amplification and/or brighter speakers emphasising the BR-20's mid and high detail.

Its transparent nature doesn't come at the detriment of bass response, but anyone hoping for a velvety-rich, warm low end will typically realise a performance

that's more about detail and focus. This was apparent with the metallic, digital throbs and forceful beats of The

Prodigy's dance track 'Poison' [Music For The Jilted Generation; XL Recordings XLCD 267]. Norah Jones' 'Cold Cold Heart' [Come Away With Me; Parlophone, 192kHz/24-bit] also showcased delicate and airy highs – particularly the vocal and upper register piano – but complemented them with a double-bass that avoided any bloom or coloration, sounding deep without being overrun by the percussion.

FLYING FLOYD

So – faithful tone, expressive mid, low-end poise and laser-focused detail – what's not to like? A runout of Pink Floyd's 'Wish You Were Here' [eponymous; EMI, 96kHz/24-bit FLAC] encapsulated this performance, beginning with a quietly skilful presentation of the AM radio-style intro, and then throwing a spotlight on David Gilmour's now-legendary acoustic guitar melody, doing full justice to his repertoire of tight vibrato, pitch-perfect string bends and finger slides.

As you'll probably know, the track continues to grow in stature, and the way it flowed through this digital diva was a total pleasure. I wish you'd been here to hear it... 🎵



**LEFT:** BR-20 remote offers control over volume, balance, input selection and absolute phase in addition to the transport functions of the BCD-3 player

HI-FI NEWS VERDICT

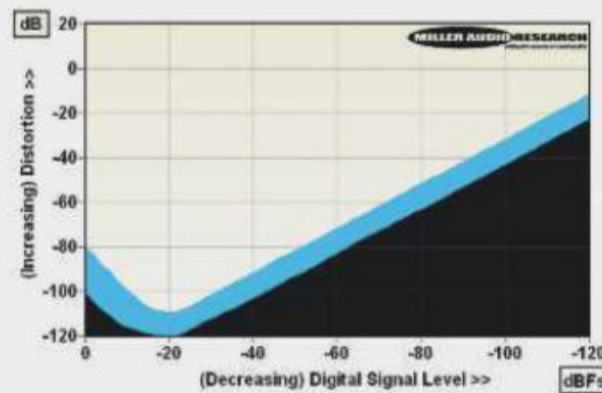
DAC, network streamer and preamplifier combined, Bryston's BR-20 certainly gives you a lot for its ticket price. In an ideal world there'd be a bit more refinement to both its physical appearance and control platform, but it's an astonishing performer able to dig deep into the detail and nuance of tracks across all genres and sampling rates. Lace up to a potent balanced power amp and enjoy the show!

Sound Quality: 87%

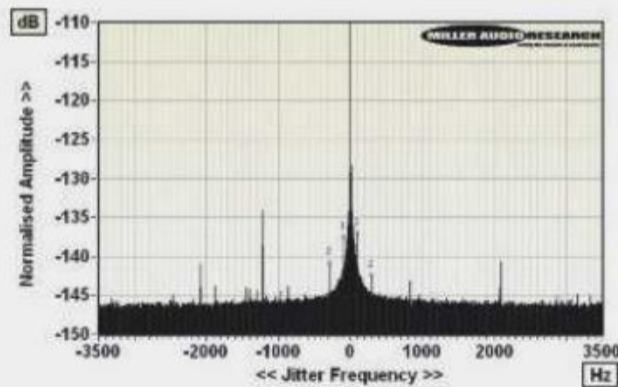


'Precision' is the watchword for this preamplifier, defining both its engineering and technical performance. The digitally-governed volume control, for example, precisely indicates the gain of the BR-20. So, '+12.0dB' represents a gain of 12dB, '0.0dB' is unity gain and '-30.0dB' is a gain of -29.5dB (an error of just ±0.5dB over the top 42dB of its range and ±1dB over a 72dB range). Maximum (balanced) output is 13.5V from a 70ohm source impedance and distortion is lowest at 2-6V through the midrange at ~0.00004%, and only slightly 'higher' at 0.00009-0.0002% for 0dBV (20Hz-20kHz). The S/N is a wide 100dB (A-wtd, re. 0dBV) while the analogue in/out frequency response is flat to within ±0.01dB from 20Hz-20kHz and extends from 3Hz-100kHz at -0.3dB. Importantly, and in contrast with many amps/preamps, the volume circuit is correctly buffered and so the HF response does not change with volume position.

Used as a DAC/preamp, the BR-20 clips at volume '+10.5dB' for a full scale 0dBFS input, realising a 12.4V output at '+10.0dB'. Distortion is ~0.0011% at this full scale and only slightly lower at ~0.0009% if the volume is reduced to '+6.0dB' or '+0.0dB'. Over the top 30dB of its (digital) dynamic range, however, distortion falls to as low as 0.00005% through the midrange and 0.00015% at 20kHz [see Graph 1, below]. The A-wtd S/N is fabulously wide at 118.4dB, linearity good to ±0.2dB over a 110dB range and channel separation all but 'absolute' at 145dB! Jitter rejection is also nearly absolute at <5psec [see Graph 2] while Bryston's choice of minimum phase/fast roll-off digital filter for the AK4490 DACs defines the 69dB stopband rejection and response of -0.2dB/20kHz, -3.5dB/45kHz and -10.2dB/90kHz with 48kHz, 96kHz and 192kHz media, respectively. PM



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



**ABOVE:** High resolution jitter spectrum via USB input with 48kHz/24-bit data

HI-FI NEWS SPECIFICATIONS

Maximum output / Impedance	13.5V / 70-77ohm (balanced)
Input sensitivity (re. 0dBV)	250mV (balanced)
Freq. resp. (20Hz-20kHz/100kHz)	+0.0 to -0.01dB/-0.26dB (pre)
Freq. resp. (20Hz-20k/45k/90kHz)	+0.0 to -0.2dB/-3.5dB/-10dB (DAC)
Digital jitter (USB at 48kHz/96kHz)	<5psec / <5psec
A-wtd S/N ratio (re. 0dBV/0dBFS)	99.6dB (Analogue) / 118.5dB (Dig)
Distortion (20Hz-20kHz; 0dBV/0dBFS)	0.00009-0.0002%/0.0011-0.012%
Power consumption	22W (2W standby)
Dimensions (WHD) / Weight	430x116x330mm / 5.5kg

# SPL Phonitor xe

With deep roots in 'professional audio' and a novel discrete op-amp module as a key driving force, SPL is looking to bring a splash of colour to our audiophile universe

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

**W**ell, it makes a change from the usual choice of silver or black... Yes, you can have the German-made SPL Phonitor xe USB DAC/headphone amp, which starts from £1899 depending on specification, in either of those colours if you want, but it's also available in the bright red anodised finish you see here. Not that it needs colour to catch the eye for the unusual battery of features makes it either intriguing or something of a head-scratcher: what do all those knobs and switches do? And then there's the pair of illuminated, retro-looking VU meters – this is clearly not your common or garden DAC/headphone amp.

Supplied fitted with the optional DAC768 module, which adds £600 to the basic price, the Phonitor xe is unmistakably a piece of studio equipment, which is hardly surprising given its manufacturer's roots [see boxout, p69]. The SPL catalogue is comprehensive, including recording and mastering devices through to plug-ins and four variants of the Phonitor concept.

The latter range kicks-off with the £399 all-analogue Phonitor One, which the company describes as 'concisely featured', through to a pair of headphone-only amps including the flagship xe. Top of the pile is the Phonitor X, promoted as a 'ProFi Preamplifier Monitor Controller', which adds pre outs to the headphone amp to feed active loudspeakers.

## BUILT TO LAST

Then there's the Director MkII, a £3199 DAC/preamp, not to mention a £2299 stereo power amp, the Performer s800, rated at 285W/4ohm and bridgeable to 450W, and a decidedly hefty monoblock, the Performer m1000, boasting 750W/4ohm and 1000W/2ohm. It's yours for £3799, making it clear that SPL's pricing is more aimed at the studio

buyer than the stratosphere of enthusiast hi-fi. And yes, you can even have that 25kg mono amp in red, black or silver, and with a range of matching/contrasting decorative inlays attached to the fascia using neodymium magnets. Just because something's built as no-nonsense studio hardware doesn't mean it can't be fun, too.

Made, like all of SPL's products, in North Rhine-Westphalia, near the Dutch border, the Phonitor xe carries that studio heritage through the quality of its design and build. Its panelwork is thick and solid feeling, and the controls have that 'machined from solid' feel – which is good, as they are!

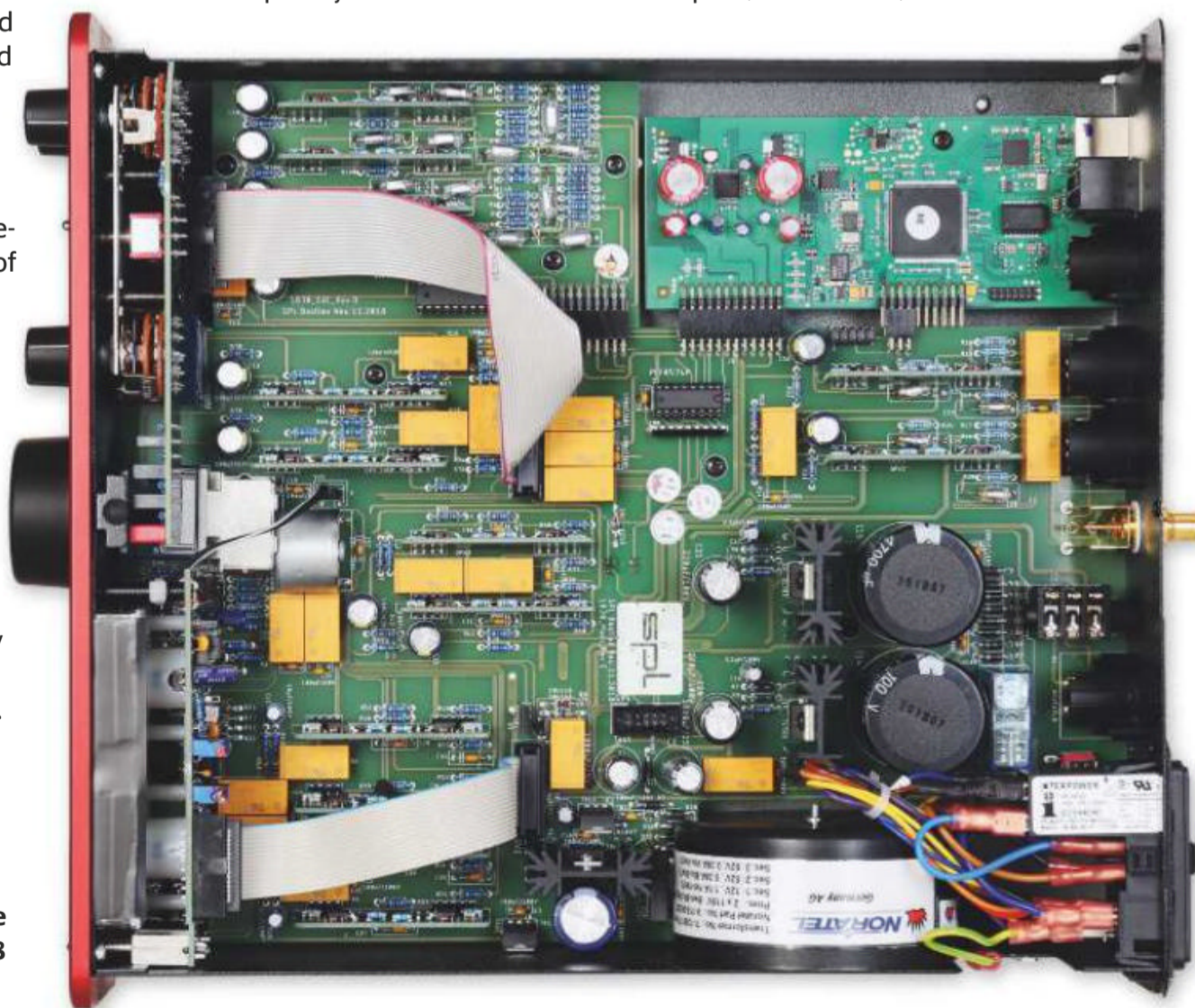
Everything here seems built to last, withstanding the kind of abuse and use to which studio equipment is subjected, and so should shrug off a relatively pampered life in a home hi-fi system. Mind you, with that background comes the kind of complexity demanded in a

pro environment: most of us, however hi-fi-savvy, would struggle to set up and use a multichannel mixing desk to its full capabilities, and so it seems with the Phonitor xe. Far from just taking an input at one end and driving a pair of headphones at the other, this colourful box offers the prospect of much tinkering and fiddling.

## MISSION CONTROL

Of course, that assumes you can get your head around what all those controls actually do: after all, chances are you'll never have encountered anything like them before. Best then, perhaps, that we cover the conventional stuff first.

The Phonitor xe has inputs for both analogue and digital sources, the former on a choice of unbalanced RCAs and balanced XLRs, the latter on USB-B, coaxial and AES/EBU and Toslink optical. Headphone outputs, meanwhile, are on standard



**RIGHT:** Fourteen 'VOLTaiR' op-amp modules are edge-on in the crossfeed/angle matrix [top left], line input [mid right] and headphone amp [bottom left]. Spartan DSP-based DAC768 module [top right] uses the AKM 4490EQ DAC



6.35mm and balanced 4-pin XLR sockets, with both these connections duplicated on the amp's front and rear panels. A little 'F/R' slider switch between the front sockets directs the output fore or aft.

As is usual these days, the digital section – here based around AKM's 'Velvet Sound' AK4490EQ DAC – can handle content at up to 192kHz/24-bit via the conventional optical and electrical inputs, while the USB-B 'computer audio' input extends this up to 768kHz/32-bit and DSD256/11.2MHz. SPL offers driver downloads from its website for those using the Windows operating system, while Mac OS and iOS devices require no external driver. However, you will need the Apple camera adapter should you want to feed the Phonitor xe from your iPhone or iPad.

Input selection is via a simple rotary control, while a large volume knob, milled from aluminium, controls an Alps RK27 'Big Blue' potentiometer with a feel SPL

describes as 'spoon in the honey'. If that's not mellifluous enough for you, you can control the volume using any infra-red handset, the unit learning the remote's commands rather than vice versa.

Taking my cue from SPL's video tutorial – it's simple, by the way, using the 'IR Volume PGM' button on the rear panel to set the unit into learning mode – I used a £20 Apple Remote for the task. Of course, unless you're planning on using a headphone on the end of a mile of cable, the hands-on approach will still do nicely. Now for the more complex-looking stuff, starting with the 'uniquely finely resolved laterality control', found beside a mono/stereo switch for the output.



#### GRAND SCALE

This 'laterality' control is actually just a fine balance control and there's also a variable crossfeed adjustment to bleed some of each channel's output to the other

'There's the prospect of much tinkering and fiddling'

**ABOVE:** The red fascia option is a riot! Angle, crossfeed and Laterality (balance) matrix may be defeated, leaving input select and volume plus balanced and single-ended headphone sockets. Illuminated VU meters are accurately calibrated

channel, countering some of that 'left and right' headphone effect. Slightly trickier is the 'angle' control, which uses similar techniques to create the effect of virtual speakers positioned at various angles to the listener, from 22° to a fairly wide 55°.

It's an intriguing effect, and one whose subjective palatability varies with your choice of recordings. Rather like those DACs that offer myriad digital filters, the good news here is that you can either play with all this stuff, or leave it bypassed.

Indeed, even when playing orchestral recordings such as the LSO/Pappano set of Vaughan Williams's Symphonies 4&6 [LSO0867; DSD256], which was delivered with superb scale and power, yet also bags of internal detail, adjustment of the 'angle' control was more intriguing than convincing. To my ears it allowed a gradual progression from soundstage width and dimension to a tighter focus, but without any conviction as to which setting actually sounded 'right'.

#### HIGH VOLTAGE

With more intimate recordings, such the Oyster Duo's *Stolen Pearls* [Channel Classics CCS 43121; DXD], the 'zoom' effect of this control was more comical than satisfying. More useful here was a little increase of crossfeed, dependent on the 'phones used, to create a more speaker-like impression of an 'out of the head' sonic image.

More likely to be set and then left are the two DIP switches built into the underside of the chassis which are marked 1 and 2. Switch 1 increases the gain of the headphone amp, while switch 2 increases the gain (sensitivity) of the analogue line

### PROFESSIONAL FIDELITY

SPL's initials stand not for 'sound pressure level' but 'Sound Performance Laboratory'. The company was founded in 1983 by Hermann Gier and Wolfgang Neumann, the latter with his own recording studio in the late '70s, as well as designing and building technology for recording. Faced with declining fees for studio rental, he sold up his share to concentrate on manufacturing, bringing in bass player and sound engineer Gier to help market the products after Neumann had built him a bass preamp. In fact, their first project together was a mixing desk for a relative of Gier's, who worked in a hospital. It was commissioned for the recording of operations for training videos...

Since then, SPL has specialised in 'audio gear for multimedia, film, music, hi-fi and broadcasting'. And for a company with roots firmly in pro audio, where many would have you believe that accuracy is all, SPL's approach is refreshing. Yes, it says it's all about innovation through advances in technology and design, but 'Experimenting and listening is more important to us than designing by the book'. One of Neumann's real passions is filtering, and the way it can be implemented – as you may have guessed from the facilities on offer in the Phonitor xe.

# MUSICAL FIDELITY



INTRODUCING THE:

## M8 xi

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

**Dont Settle for anything less than perfect Musical Fidelity.**



## DAC/HEADPHONE PREAMP



**ABOVE:** Single-ended (RCA) and balanced (XLR) line ins join digital inputs on XLR (AES), coax, optical and USB-B. Balanced and single-ended 6.35mm headphone outs are switched in place of duplicate sockets on the front fascia [see p69]

input. I'd suggest these are best left in their 'off' position unless you have a line source with a truly feeble output. Moreover, the Phonitor xe has a prodigious output capability, particularly with high impedance headphones [see PM's Lab Report, opposite], in no small part due to its proprietary VOLTAiR op-amps that operate at a very high voltage.

With this extra headroom on tap, those DIP switch boosters really won't be needed. I found the Phonitor xe more than capable of driving cleanly well beyond the pain level even with these switches 'off'.

### POUNDING OUT

Mind you, with that much voltage output and the low source impedance, you could, with the right adapter cable, use the headphone output of the Phonitor xe to directly drive a power amp or active speakers to full clipping.

By now you may well have formed an impression that this is a very superior headphone amp, capable of handling anything you might throw at it, and you wouldn't be wrong. Whether revealing the fine detail in a recording or pounding out the likes of The KLF's *The White Room* [KLF Communications JAMS CD006] at very serious levels, the Phonitor xe proved a captivating and musical companion, with none of that sense of an over-analytical sound often ascribed to studio equipment.

Whether used with headphones aimed at professional users – Focal Spirit Pro [HFN Dec '15], the new Austrian Audio Hi-X55 – or more 'civilian' models such as the B&W P9 Signature [HFN Mar '17] or Philips Fidelio X3, the sound was always intimate and convincing, with fine space and presence. This

was evidenced by trumpeter Till Brönner's *The Good Life* album [Masterworks 88875187202], with which the Phonitor xe did a fine job in delivering both the presence of the instruments and every breath of the performance. The same qualities of detail being handled to enhance the music, rather than distract from it, were also obvious from a play of Paul Weller's *Fat Pop (Vol 1)* [Polydor 3556643], where the dense mixes were open for inspection without ever detracting from the quality of the performance and recording.

There's no denying that SPL's Phonitor xe has much to offer as a high-quality DAC/headphone amplifier, whether fed via its digital inputs or the analogue XLRs, even though I can't help but think the addition of a line/preamp analogue output to access that high-quality digital stage would make it a more comprehensive device. And it's really down to personal preference how handy those sound-shaping controls will be, or whether the 'fiddle factor' might just prove a distraction. ⚡

### HI-FI NEWS VERDICT

It's hard not to be impressed by the Phonitor xe despite the lack of XLR/RCA line outputs that might have also allowed it to function as a fully-fledged DAC/preamp. With its unashamedly 'pro' specification, and striking red finish, this purist headphone solution is built like a tank – the controls feel like they'll carry on working forever and it'll drive a wide range of headphones to ridiculous levels with real ease.

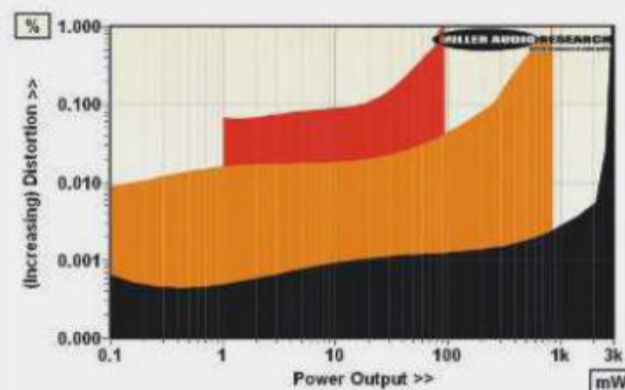
Sound Quality: 86%

0 - - - - - 100

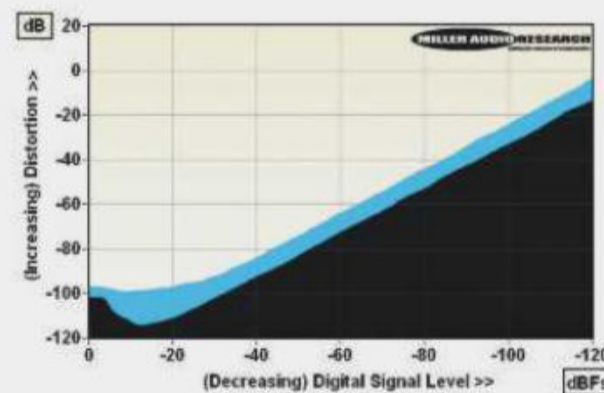
## SPL PHONITOR XE

Key to the Phonitor's analogue performance are the proprietary 'VOLTAiR' discrete op-amps that feature in all its crossfeed/angle/laterality and main headphone preamp circuits. Running off high  $\pm 60V$  rails, the VOLTAiR-based headphone amp offers a 44.5V single-ended output, sufficient to develop an unprecedented 2.95W into 600ohm [black trace, Graph 1]! This voltage falls across lower impedances where maximum output is 865mW/32ohm (or 847mW/32ohm in the Low gain setting) with THD climbing from 0.015%/1mW to 0.018%/10mW, 0.043%/100mW, 0.4%/500mW and 0.7%/800mW/32ohm [orange trace, Graph 1]. There's sufficient current available to support 93mW into a very low impedance 8ohm insert earphone, for example [red trace, Graph 1] but note how distortion continues to increase with reducing headphone load. The effect is particularly marked at high frequencies as THD increases from just 0.0005%/20kHz unloaded (the VOLTAiR amps offer a vanishingly low 0.00005% THD at 1V/1kHz, unloaded) to 0.25%/20kHz into 32ohm.

The response extends from 1Hz-90kHz ( $-1dB$ ) and gain is  $+0.5dB$  (Low) to  $+12.5dB$  (High) with  $\pm 3.4dB$  laterality (balance) either side. Residual noise is extremely low at  $10\mu V$  (perfect for very sensitive 'phones) and the A-wtd S/N usefully wide at 99dB (re. 0dBV). Tested in the high gain setting, the USB DAC/headphone pathway yields a maximum 18.7V output (re. 1kHz/0dBfs) while the choice of fast roll-off/minimum phase filter in the AKM4490 DAC defines the digital/analogue response of  $-0.4dB/20kHz$ ,  $-2.7dB/45kHz$  and  $-9.2dB/90kHz$  with 48/96/192kHz files. THD reaches a minimum of 0.0002-0.002% over the top 20dB of its dynamic range [see Graph 2], the A-wtd S/N is a wide 111dB and jitter moderate at 500-560psec (48kHz-192kHz/24-bit). PM



**ABOVE:** Power output vs. THD into 600ohm (black), 32ohm (orange) and low 8ohm (red) headphone loads



**ABOVE:** Distortion (unloaded) vs. 48kHz/24-bit digital level over 120dBfs range (1kHz, black; 20kHz, cyan)

### HI-FI NEWS SPECIFICATIONS

Maximum output (<1% THD into 47kohm)	44.5V (single-ended)
Maximum power output (<1% THD)	865mW/32ohm (93mW/8ohm)
Output Impedance (20Hz-20kHz)	1.00-1.14ohm
A-wtd S/N ratio (re. 10mW/0dBV)	99.1dB / 110.9dB
Distortion (20Hz-20kHz, re. 10mW/0dBV)	0.013-0.25%/0.0012-0.0016%
Frequency resp. (20Hz-20kHz/100kHz)	+0.0dB to -0.06dB/-1.35dB
Digital jitter (48kHz / 96kHz)	500psec / 560psec
Power consumption	19W
Dimensions (WHD) / Weight	278x100x330mm / 4.9kg

# Astell&Kern KANN Alpha

The third portable player in A&K's 'alloy brick' KANN series boasts extended battery life, a higher powered headphone amplifier and compatibility with Bluetooth 5.0

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

With modern smartphones able to offer high-resolution audio playback, the market for dedicated portable audio players is now fairly niche. One of the biggest fish in this relatively small pond is Astell&Kern, which offers an extensive range of models priced between £625 and £3400. These are divided into four lines – KANN, A&norma, A&futura and A&ultima – with the £1099 KANN Alpha being the latest addition to the KANN series and slotting in between the existing KANN and KANN Cube players on price.

These ranges are not hierarchical and the KANN series overlaps with the A&norma and A&futura models. This is because the KANN players have a different design brief which shapes both their appearance and specification. Astell&Kern views the KANN models as portable headphone amplifiers, able to partner with the headphones its more conventionally shaped models might struggle with. This means that the KANN players are somewhat more portly than similarly-priced models in its other ranges.

## GAIN, SET AND MATCH

This extra capacity means more space for amplification with a view to meeting a 'drive anything, anywhere' mission brief. Astell&Kern claims the KANN Alpha can deliver 6Vrms via its single-ended output and 12Vrms via balanced [see PM's Lab Report, p75] which should be sufficient to give the user pretty much a free choice when it comes to partnering headphones.

In order to make using the KANN Alpha more practical with relatively sensitive partnering equipment, there are three selectable gain settings. The lowest of these drops peak output to 2Vrms and 4Vrms respectively, and the intermediate one to 4Vrms and 8Vrms. This should avoid the undesirable 'hair trigger' effect of using sensitive headphones with relatively

powerful amplification. All three gain settings can be switched to a fixed line out if the KANN Alpha is being used with a device having its own volume control.

Decoding is taken care of via a pair of ESS ES9068AS DACs with support for PCM up to 384kHz and DSD to 11.2MHz. This is the same duo that forms one side of the recently-tested A&futura SE200 player [HFN Feb '21] but here there is no additional DAC option from AKM, or indeed anyone else. This means a reduced number of outputs on the chassis, but only to three from the four of the SE200, rather than the expected two.

This is because the KANN Alpha is the first Astell&Kern player to feature a 4.4mm Pentacon connection in addition to the company's preferred balanced option of a 2.5mm four-pole socket and 3.5mm single-ended connection. Charging and data transfer is via a single USB-C socket, which also supports OTG functionality. Meanwhile, battery life is said to be around 14.5 hours depending on pattern of use, and this feels achievable in practice.

The other new fitment doesn't involve cables at all. Astell&Kern has been including Bluetooth on its players for

some time but the KANN Alpha is the first to feature Bluetooth 5.0. When it comes to sound quality, there is no difference over the preceding versions because performance is still determined largely by the extended codecs that are supported.

## SIZE MATTERS

Where Bluetooth 5.0 comes into its own is the significant improvement in efficiency it affords, which means compatible devices should enjoy longer batter life. Thanks

to aptX HD and LDAC support, the KANN Alpha should also be able to send a 44.1kHz/16-bit file to suitable partnering equipment without significant compression.

Nevertheless, not everything about the

player feels quite so well thought through. Internal memory is fixed at 64GB, which frankly feels somewhat parsimonious. This can be expanded via a microSD card, with cards up to 1TB supported, but these, of course, will need to be budgeted for in addition to the player itself.

I also found the size of the KANN Alpha's screen problematic [see boxout, p73] while the control interface threw up its own issues. At its heart, the interface used by all

*'It has a mix of scale, realism and sweetness that's effortless'*



**RIGHT:** Powered by a Quad-Core CPU, and supporting Bluetooth 5.0 with Qualcomm aptX HD processing, the KANN Alpha hosts a pair of ES9068AS DACs with three custom digital filters

Astell&Kern products is a modified Android platform, but rather than allow apps to be installed via Google Play, they must be loaded via APK and transferred over USB – a process that was not always seamless under test. Meanwhile, the embedded Tidal app ceased functioning during review due to a login problem, although Astell&Kern says this is a temporary issue and would be fixed, around our publication date, via a firmware update for the player.

Finally, there is the matter of the KANN Alpha's size. It is actually smaller than the KANN Cube and, at 68x117mm, the frontal area isn't terribly large either. The depth of 25mm is more of an issue though. My clothes feature fairly large pockets but this player is still a challenging device to carry around. I do like the styling, though, which is less ornate than some of the company's more expensive models and all the better for it. The build quality is also extremely good, with the metalwork being finished to a very high standard and the volume control and small selection of hard buttons also feeling very solid.

## OUT OF THE GATE

Whatever my reservations about some aspects of the KANN Alpha's features and functions, its sound was a different matter. Beyond its basic ability to go loud, the player leverages its power to deliver a muscular and potent presentation that feels effortlessly dynamic. With Peter Gabriel's third eponymous solo studio album [Charisma PGLP3X; 96kHz/24-bit WAV], the KANN Alpha succeeded in handling the gated drumming on 'No Self Control' without any sense of congestion.

Each drum strike had a weight and presence that captured the attention without overpowering the upper registers or upsetting the overall tonal balance. No matter how quickly the scale of a piece of music changed, the KANN Alpha always seemed to have its measure.

**LEFT:** The 4.1in (720x1280px) touchscreen is set into a laser-cut alloy case with high-gloss ceramic cover. Knurled volume knob is illuminated according to sample rate and LPCM/DSD file type. Internal storage of 64GB is included

Within this responsive and expansive presentation, the player also demonstrated a commendable balance between tonal accuracy and sweetness. A FLAC rip of Depeche Mode's *Violator* [Mute CD Stumm 64] demonstrated this to excellent effect as the slightly glossy production was handled unobtrusively to ensure 'Waiting For The Night' sounded appropriately intimate and rich. Dave Gahan's vocals are the centre of attention here, but this wasn't achieved at the expense of the supporting instrumentation. In particular, the pared-back synths behind him enjoyed an effortless presence.

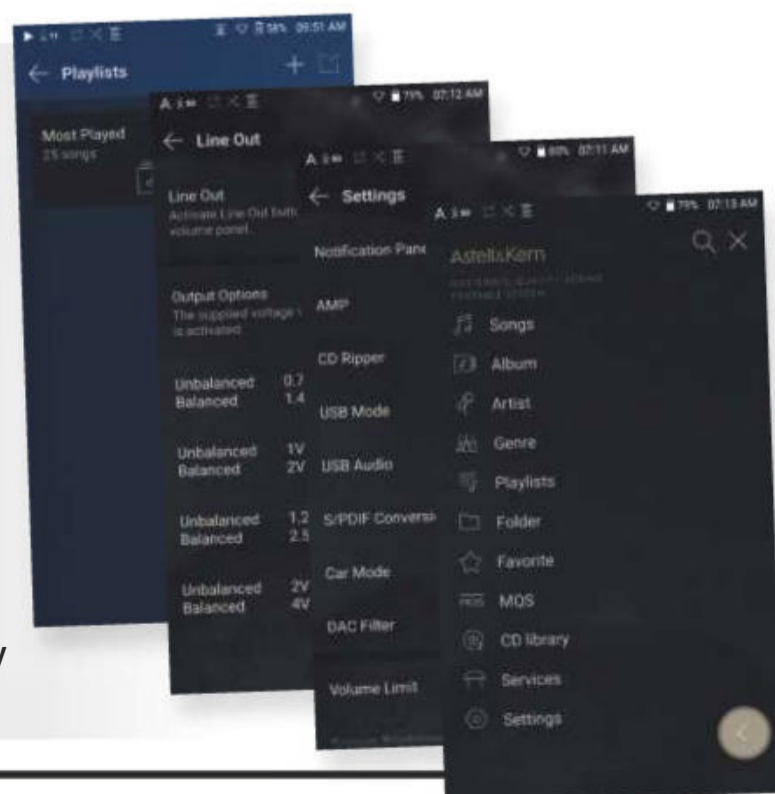
## DROP POINT

In keeping with a number of Astell&Kern products I've reviewed in recent years, the KANN Alpha consistently benefits from the use of its balanced headphone connection. Sennheiser's IE900 in-ear headphones were used for a chunk of the listening and, as these come supplied with 2.5mm, 3.5mm and 4.4mm detachable cables, this allowed for fairly simple testing across the player's three outputs. I wouldn't be so bold as to make any performance call between the 2.5mm and 4.4mm options, but the latter certainly inspires more confidence as a connection

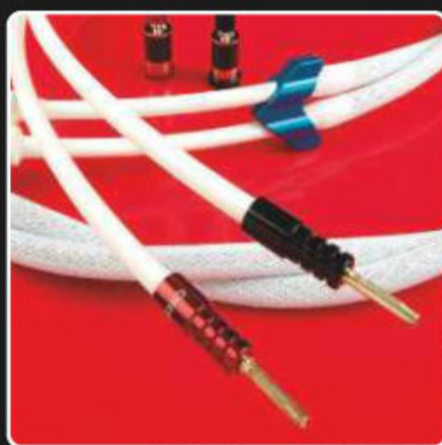
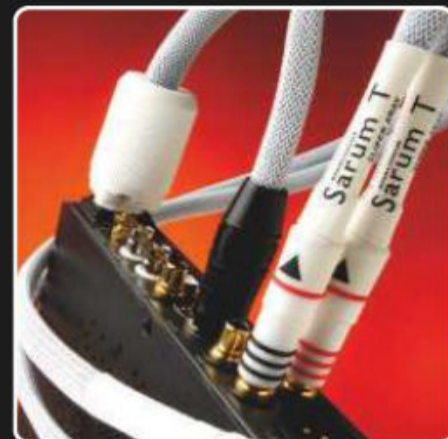
## ALPHA CLASS

The KANN Alpha shares its software with the rest of the Astell&Kern family, processing being handled by a Quad-Core CPU that appears to be both fast and stable in use. Options for customising the player's performance are extensive, with filter and EQ adjustments available for wired playback as well as the ability to specify a preferred Bluetooth codec and how information is displayed on the screen. There are some nice touches too. Switch between the gain settings and the volume automatically cuts to prevent damage to your hearing – not to mention your headphones.

On the downside, the business of installing apps via APK [Android Application Package] can be fiddly. If you have music tagged and edited on an SD card though, the browsing experience is a relatively good one. The biggest problem with the interface, however, is not the software but the screen. The KANN Alpha has a significantly smaller screen than the last Astell&Kern player we tested (the A&futura SE200) and using the on-screen keyboard can be frustrating. Some users may gravitate to using a third-party app on a smartphone if the experience is preferable.



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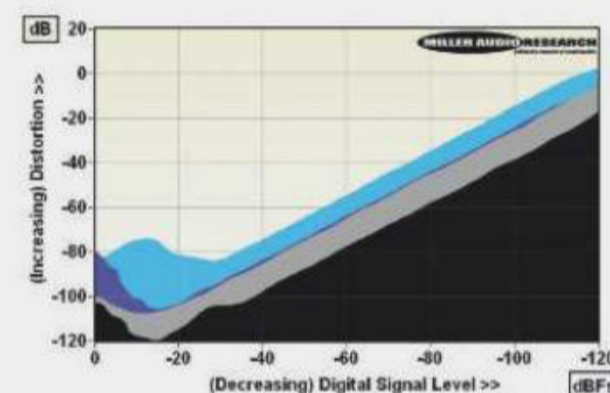
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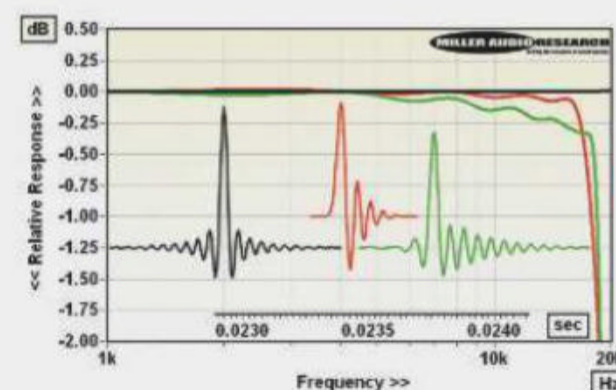
## ASTELL&KERN KANN ALPHA

As we discovered when testing the A&Futura SE200 [HFN Feb '21], there are gaps in Astell&Kern's published specification. For example, the quoted 'Low', 'Mid' and 'High' unbalanced AMP settings of 2V, 4V and 6V are met at 2.14V, 4.22V and 6.25V but these values are achieved into a high 47kohm load ('unloaded' in the context of a headphone). In practice the KANN Alpha clips at 35mW/32ohm (or 1.06V) in the 'Low' mode and 85mW/32ohm (or 1.65V) in either the 'Mid' or 'High' modes. These correspond to volume settings of '138' and '127' with a peak level (0dBfs) digital input, so the dial should be used between 139-150 (Low) and 128-150 (Mid or High) with caution, not least for fear of generating potentially harmful in-ear SPLs. For the very lowest impedance 'phones the Alpha offers 22mW/8ohm at 1% THD.

The ES9068AS DACs are new to this A&K model and power a fabulous performance that includes a very wide 117dB A-wtd S/N ratio, low levels of correlated jitter (typically ~50psec with all sample rates up to 192kHz) and vanishingly low distortion that falls to 0.0002-0.0005% (re. 0dBV, 20Hz-20kHz), increasing only over the top 25dB of its dynamic range under load (0.001-0.008% at 10mW/32ohm) [see Graph 1, below]. Importantly, the output impedance is a very low sub-1ohm from 20Hz-20kHz, ensuring that the KANN Alpha/headphone system response is not influenced by low and variable in-ear/on-ear loads. With its default linear phase filter, the response is a ruler flat  $\pm 0.01$ dB (20Hz-20kHz), dipping to just -0.6dB/45kHz with 96kHz media. The minimum phase filter cuts above 18kHz to reach -5.0dB/20kHz and the hybrid filter is steeper still at -12dB/20kHz [see Graph 2, below]. PM



ABOVE: THD vs. digital signal level at 1kHz (black, unloaded; grey, into 32ohm) and 20kHz (blue, unloaded; cyan, into 32ohm where 0dBfs = 85mW)



ABOVE: Impulse and HF responses for Linear/Fast (black), Minimum/Slow (red) and Hybrid (green) filters

## HI-FI NEWS SPECIFICATIONS

Maximum output (<1% THD into 47kohm)	6250mV (single-ended)
Maximum power output (<1% THD)	85mW/32ohm (single-ended)
Output Impedance (20Hz-20kHz)	730-1140mohm (single-ended)
A-wtd S/N ratio (re. 10mW/0dBfs)	105.5dB / 117.0dB
Distortion (20Hz-20kHz, re. 10mW/0dBV)	0.001-0.008/0.0002-0.0005%
Frequency resp. (20Hz-20kHz/45kHz)	+0.00dB to +0.0dB/-0.45dB
Digital jitter (48kHz / 96kHz)	55psec / 50psec
Battery	5600mAh/3.8V Li-Polymer
Dimensions (WHD) / Weight	68.3x117x25 / 316g

**RIGHT:** Underside of the Alpha hosts a USB-C port for computer connection/charging and a microSD slot for external cards up to 1TB. Top surface carries a 3.5mm/optical output plus balanced 4.4mm and 2.5mm sockets for headphone/line out



to use day to day. However, both sounded more spacious and three-dimensional than via the 3.5mm socket.

The sensitive IE900 showed the benefits of the player's lower gain modes too. It's perfectly possible to use these headphones in the higher gain setting, but switching to the lowest mode brings an appreciable drop to the perceived noise at idle.

### SIMPLY JOYOUS

With an SACD rip of Dead Can Dance's *Toward The Within* [4AD SAD 2712], in this case as 88.2kHz PCM, the lower gain setting resulted in the opening of 'Rakim' rising imperiously from total silence where, with the higher gain modes, there was a slight but perceivable level of background hiss. Beyond the technical attributes, the combination of KANN Alpha and IE900 is simply joyous. When Lisa Gerrard's spine-tingling performance begins, she is utterly captivating in her presence and immediacy.

None of these qualities are lost using the Kann Alpha via its line out. Using a 4.4mm-to-XLR interconnect and running the KANN Alpha into a Chord Electronics CPM2800 MkII integrated amp showed it to be a capable source in its own right.

A saving grace of the Astell&Kern software is the Connect option that allows the players to access external UPnP libraries and be controlled as renderers via third-party apps such as MConnect. This permits control at a distance and simpler access to both Tidal and Qobuz.

Used in this fashion, the gorgeous *Blue Heron Suite* [Rounder Records 1166101275] by Sarah Jarosz plays to the KANN Alpha's effortless mix of scale, realism and sweetness. For simplicity of control alone, I'd hesitate to recommend using the

Astell&Kern player permanently in this fashion but its performance will certainly keep similarly-priced full-sized rivals on their toes.

Finally, that new Bluetooth implementation is a good one too. You might question its utility on a device where so much effort has gone into the wired output, but the performance via a pair of Bowers & Wilkins PI7 True Wireless earphones wasn't simply 'good for wireless', but proved to be a genuinely enjoyable listen in its own right.

Listening to the same Jarosz piece used with the line outs, the slow-building 'Interlude 1' saw the KANN Alpha ensure that the PI7 was sent a stable and high quality signal with which to work its magic, ensuring the partnered acoustic and electric guitars had a relationship with one another that was easy to define. While the presentation was not as spacious as via the line outs, it never felt congested or compressed. ⏻

## HI-FI NEWS VERDICT

Being a portable player that isn't that portable, the KANN Alpha is truly a niche product. Additionally, some aspects of the control interface and app support are a little complex to use. Viewed as a compact, mobile headphone amplifier though, the excellent sonic performance, impressive connectivity and superb build quality will make it a very compelling choice for many headphone users.

Sound Quality: 83%



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# Classical Companion

BEHIND THE MUSIC WITH HI-FI NEWS & RECORD REVIEW

## Schubert *'Trout' Quintet*

Music among friends, written by a young genius at one of the happiest times in his troubled life... **Peter Quantrill** explores the history on disc of a feel-good masterpiece

Growing up in a one-room apartment in an overcrowded district northwest of the Ring, pupil then assistant to his schoolteacher father, Schubert was Viennese born and bred, a city boy with even more reason than Beethoven to seek pleasure and solace in the surrounding countryside. Lacking time or resources for more refined pursuits, Schubert in his early 20s relaxed principally by drinking (coffee and alcohol, both to excess), smoking (likewise) and walking.

### SONG WITHOUT WORDS

In the early summer of 1819, Schubert and his friend the singer Johann Michael Vogl left Vienna for a trip to Upper Austria. They visited the Benedictine monastery of Kremsmünster and then walked on to Vogl's birthplace, the town of Steyr, where they found lodging at the home of an acquaintance, Sylvester Paumgartner. It was Paumgartner, an amateur cellist, who suggested to Schubert that he compose a quintet, and especially some variations on his song *Die*

→ A young Franz Peter Schubert as portrayed in a painting by Josef Abel, which was completed in 1814



*Forelle* ('The Trout', from 1817) which had become a favourite among the composer's circle of friends. Schubert set to work in haste, to judge from formal aspects of the finished Quintet such as the slow movement – 60 bars of music heard twice, the second time simply transposed and tailed with the briefest of codas – and the repeat-heavy outer movements.

There are few notable precedents for the 'Trout' Quintet. The piano quartets of Mozart treat the ensemble in concerto-like fashion with the keyboard placed first among equals. A more direct model was a quintet written by Johann Nepomuk Hummel in 1802 (published in 1822 as Op.87 but widely circulated in manuscript copies) in which the double-bass takes the place of the second violin in the standard string quartet foundation.

This serves to reflect the compass of the piano in the string writing and to cast a spell of rustic good humour. Bearing a closer musical resemblance to the 'Trout' is Hummel's D minor Septet Op.74 which he then arranged in 1816 for the same quintet disposition with

double-bass. So much for influences: the 'Trout' Quintet in turn became the blueprint for instrumental pieces inspired by the music and mood of a song, which in Schubert's case culminated in the 'Death and the Maiden' String Quartet of 1824.

The Second Violin Sonata of Brahms and Second Symphony of Mahler are two further examples of much larger pieces growing out of a five-minute song. Placed fourth in the sequence of five movements, the 'Trout' theme and variations which give the Quintet its name also set the mood of carefree contentment which is scarcely absent for more than a minute or two.

### SWIMMING UPSTREAM

Musicians and listeners alike tend to bask in such contentment, and only confirmed curmudgeons are likely to come away from a performance picking at the bones of the 'Trout' Quintet. The work's discography is long and distinguished, inspiring loyalty to this pianist or that felicitous lineup. There are few

recorded 'Trouts' which have either gone off with age or should never have been dished up in the first place, though the latest DG version [4797570] does not

'This DG "Trout" doesn't invite second helpings'

invite second helpings. This is an object example of celebrity-casting gone wrong, with Anne-Sophie Mutter, Daniil Trifonov and their colleagues stabbing at accents and rarely allowing a phrase or episode to settle, recasting the piece in the mould of late-style masterpieces such as the String Quintet.

Cultivating a grand Brahmsian manner at the other extreme, two great Russian pianists of the postwar era on beautifully open

← The upper Austrian town of Steyr, birthplace of the 'Trout' Quintet



LP repressings: Emil Gilels with the Amadeus Quartet [DG, 4798119] and Sviatoslav Richter with the Borodin Quartet [EMI/Warner, 9029587186]. The close DG engineering captures fingerboard noise as if from a front-row seat, but also exposes the Amadeus making heavy weather of the quicker fourth-movement variations. Richter and the Borodins, on the other hand, never quite escape the echo of a Soviet-era empty-hall acoustic.

Moving closer to the work's spiritual home, a less self-consciously polished performing tradition for the 'Trout' Quintet begins with Artur Schnabel and the Pro Arte Quartet in 1935 [Warner, 9029563376]. Timeless highlights include the Scherzo's stamping gait, the sighing portamento and string vibrato in the Andante and Variation movements.

All these elements are apparently natural and effortless, and emulated by Rudolf Serkin (pupil of Schnabel's contemporary Fritz Busch) in his



→ **Painting of a Schubertiade by the Austrian symbolist painter Klimt: an apt illustration for a 'Trout' Quintet of wine-fuelled bonhomie**

← **Jörg Demus – musicologist, 'ballet master of ten fingers' and Schubertian supreme, who died in 2019**

two accounts on disc, of which the second [CBS/Sony, 5128722, download only] was unrivalled in the work's stereo discography for its simplicity and modesty of expression until Serkin's son Peter made another pair of recordings.

Easily found on a variety of streaming services but only on CD as part of Peter Serkin's complete RCA albums [RCA/Sony, 19439713872], both these versions take their place as the culmination of an émigré-German school in which the pianist leads by the example of restraint rather than bravura.

Alfred Brendel and the Cleveland Quartet might have continued the tradition, but their over-emphatic Philips version [4767283] cedes to Brendel's digital-era remake



[see Essential Recordings below]. The 'Trout' came from Vienna, and there it has always swum most happily, from the early '50s stereo of Paul Badura-Skoda and the Barylli Quartet [Westminster/DG, 4798195, download only] through to Elisabeth Leonskaja and the Alban Berg Quartett [EMI/Warner, 5176442] in high-impact digital sound. Among the Vienna Octet's many lineups and recordings over half a century, the Decca version from 1957 with pianist Clifford Curzon [4674172, download only] still reigns supreme.

#### PERIOD PIECES

Gently lifted rhythms, golden-mean tempi, slender upper-string tone and a more active role for the double-bass mark out Viennese

performances from their rivals, but the best period-instrument recordings share these qualities. Steven Lubin's fortepiano is resonant across the registers but nicely placed behind the strings, and coupled with *Die Forelle* itself [L'Oiseau-Lyre/Decca, 4338482, download only] sung by John Mark Ainsley.

The veteran Max von Egmond also does the honours on a little-heralded version by the Dutch-English period musicians of the Atlantis Ensemble [Musica Omnia, MO0212, download only] which deserves a place on anyone's shelf for the unusually democratic balance and superbly characterful lower-string playing. They take all the repeats Schubert wrote and bring a smile to every bar. 🎵

## ESSENTIAL RECORDINGS

### Schubert Ensemble of London

Hyperion CDH55427

Making the Hummel connection explicit in warm, closely balanced accounts of both piano quintets.

### Adès, Arditti Quartet, Long

EMI/Warner 5576642 (download only)

The left-field choice: a springy, leaping 'Trout' coupled with Adès's own Quintet, a labyrinth of retro-Classical games.

### Demus, Irnberger, Ortner, Litschauer, Bürgschwendtner

Gramola GRAM98919

The late, great Viennese pianist Jörg Demus on an authentic Hammerflügel from 1835,

in joyful company with native musicians. Gently distant engineering captures the essence of music-making among friends.

### Brendel, Zehetmair, Zimmermann, Duven, Riegelbauer

Philips 4460012

A library choice for piano versions on CD: lovingly detailed, equably balanced but conceived on a Romantically grand scale.

### Perlman, Zukerman, du Pré, Mehta, Barenboim

Christopher Nupen Films A13CND (DVD)

Unforgettably free-spirited, the 'celebrity' recording to outshine them all, for body language as much as music-making.

# Vinyl Release

BEHIND THE MUSIC WITH HI-FI NEWS & RECORD REVIEW

## Tim Buckley *Tim Buckley*

This month's 180g album reissue takes **Steve Sutherland** back to the '70s when, after a Knebworth concert, he'd become a Buckley fan and was passing the message on

Who else had a halcyon summer? Mine was in 1974. I'd just left school and was waiting to go to Uni. A few mates clubbed together and bought an old banger and we were off – three months of hi-jinx down to Cornwall and back bookended by a couple of legendary gigs: The Grateful Dead at Alexandra Palace in September; and the first Knebworth Festival, the Bucolic Frolic, in July. For a bunch of lads raised in Wilts in total awe of West Coast Rock, these were not mere gigs, they were pilgrimages, the Knebworth lineup akin to finding the holy grail.

Headliners were The Allman Brothers, over here on the back of their lovely post-tragic-Duane album *Brothers And Sisters*. Support came from The Doobie Brothers featuring sometime Steely Dan guitar hero, the handsomely moustachioed Jeff 'Skunk' Baxter. Then there was John McLaughlin and his Mahavishnu Orchestra, somewhat up his own astral arse, Van Morrison in

surprisingly crowd-pleasing form, and The Sensational Alex Harvey Band, a bunch of glamrock hooligans who gatecrashed the party with their thug theatrical Vambo Rools. Unobtrusively footing the bill was a soulful troubadour called Tim Buckley on a rare visit here from his native California.

### SOARING VOCALS

Buckley was one of those 'for those in the know' artists, not by any means universally famous, nowhere near a household name, but a sacred talent for the few of us who'd joined and stuck with him on his singular journey from fresh-faced folkie to simmering ladies' man, via several excursions into outer space. For anyone not yet turned on to his amazing LPs, we disciples would initiate newbies with such wonders as the acoustic *tour de force* 'I Never Asked To Be Your

### 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...



Mountain' from *Goodbye And Hello*, the dreamy 'Strange Feelin'' from *Happy Sad*, or the brooding 'I Had A Talk With My Woman' from *Lorca*. Once smitten, we'd reveal the true gems: 'Song To The Siren', his most famous song, from the experimental once-in-a-lifetime *Starsailor*, and his swooning version of Fred Neil's 'Dolphins Off Sefronia'. His catalogue was wayward and varied, always a quest for new means of expression, the nearest match to his soaring, swooping vocals – one second falsetto, the next a deep tenor rumble – was Miles Davis at his wonderful wildest, *On The Corner* or *Bitches Brew*.

Nowadays it's for his far-out, voice-as-an-instrument avant-garde stuff that Buckley is most revered, but the way this all began was somewhat more sedate. *Tim*

*Buckley*, the singer's self-titled debut album, was recorded and released in 1966 by Elektra, home to both The Doors and Love, and pretty much the coolest label in the world back then.

### BIG GUNS ROLL OUT

Buckley was signed to Elektra courtesy of Herb Cohen who was managing Frank Zappa And The Mothers Of Invention at the time. Here's how it came about: Buckley was singer in a group called The Bohemians, with bass player Jim Fielder, high-school pal and drummer Larry Beckett and guitarist Brian Hartzler. The gang would drive up from Orange County to the Sunset Strip in Hollywood to chat up girls and hang out with all the hippies, and on one such occasion they caught The Mothers playing at a club called The Trip.

The Mothers' drummer (and self-proclaimed 'Indian of the group') Jimmy Carl Black had worked alongside Fielder in an Anaheim music store, so the two bands hung out and Black introduced The Bohemians to Cohen, who immediately took a shine to Buckley and negotiated a solo deal for him with Elektra.

The subsequent album was recorded at LA's Sunset Sound, and it's a measure



Tim Buckley plays at the Fillmore East in 1968 (above), label of the original LP on Elektra (inset), and (far right) the singer on the sleeve of his 1969 LP *Happy Sad*



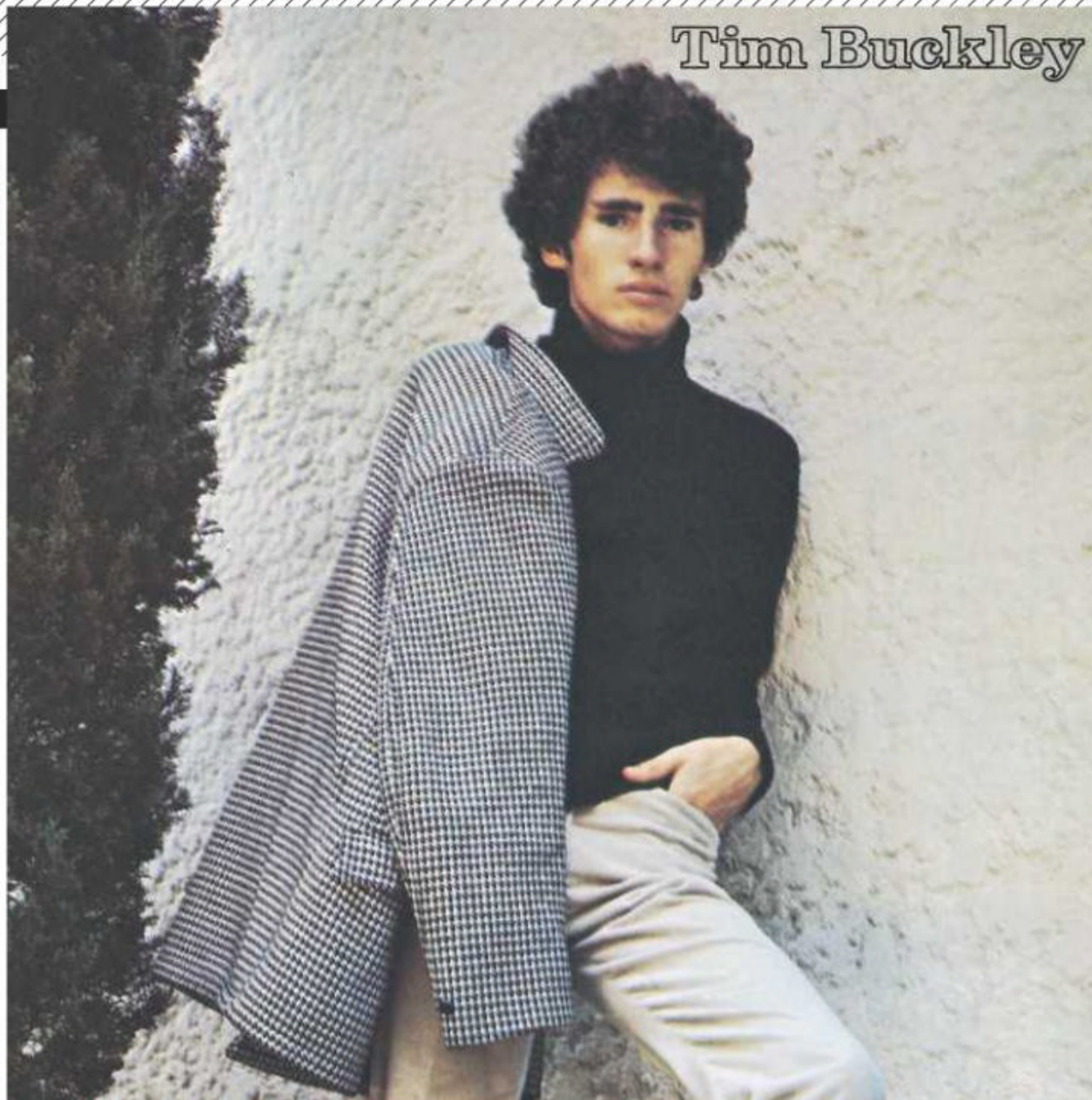
➔ Priced £22.95, Tim Buckley's self-titled debut album is available to order online at [www.revivedvinylrecords.co.uk](http://www.revivedvinylrecords.co.uk)

of Elektra's high hopes for the 19-year-old prodigy that it rolled out its big guns for the sessions. Label owner Jac Holzman produced the session, alongside in-house producer Paul Rothchild and ace engineer Bruce Botnick who'd already done legendary work with the aforementioned Doors and Love. String arrangements were by Jack Nitzsche, famed for his association with Phil Spector, Neil Young and The Rolling Stones. Van Dyke Parks, fresh from working with Brian Wilson and The Beach Boys on the doomed *Smile* sessions, was hired to add keyboards.

Fielder remained with his Bohemian pal to play bass while Lee Underwood joined the crew on lead guitar and stuck around with Buckley thereafter. Billy Mundi of The Mothers was borrowed to play drums for *Tim Buckley*.

This is a singer-songwriter album first and foremost, Buckley just starting to unfurl his vocal wings. It's a little mannered, truth be told, and some of the songs (eight of the 12 were co-written with Larry Beckett back in high school) are lyrically somewhat gauche with maidens playing on the flute of early morn, that kind of thing. Nonetheless, there's an endearingly melancholy, romantic vibe to the album that hints at the deeper, more sensual stuff to come. Highlights are

'Buckley was just starting to unfurl his vocal wings'



'Wings' which features strings reminiscent of the ones Robert Kirby embroidered onto Nick Drake's 'Five Leave Left'. 'Aren't You That Girl' is blissed-out and pleasingly

Byrds-y; 'Grief In My Soul' is the first hint of a Gospel influence, with Buckley sounding not unlike Mickey Dolenz of The Monkees – which is perhaps weird because a few years later, Buckley guested on the Pre-Fab Four's TV show.

'Song Slowly Song' is a meditative piece that reveals Buckley's impulse to lob all the rules out the window and groove.

#### MACHO FUNK

'Song Of The Magician' and 'I Can't See You' are pretty good too, fragile and reminiscent of Jefferson Airplane when Marty Balin was still boss, while 'Understand Your Man' is a sweaty blueprint for the swaggering macho funk to come. The oompahing 'Strange Street Affair Under Blue', though, is a clumsy misstep, and Buckley sounds like nothing so much as an embarrassed choirboy on the poppy 'It Happens Every Time'.

*Tim Buckley* didn't exactly set the world on fire upon its release but these days, with the benefit of hindsight and knowledge of the riches to come, the album is largely lauded as the launchpad to Buckley's

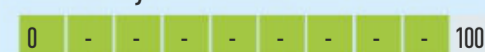
jazzier, more stellar adventures. 'Haunting, poetic pieces suffused with both youthful romanticism and melancholy philosophical musings...' – this is the sort of stuff that gets written today.

Back in '74 at Knebworth, Buckley performed a stunning seven-song set mostly drawn from his *Greetings From LA* and *Sefronia* albums, along with some snazzy improvisation. Then he returned home and recorded a brilliant, soulful LP called *Look At The Fool*, the title track and 'Tijuana Moon' like nothing else ever recorded before or since. 🎵

#### RE-RELEASE VERDICT

This 12-track debut album came out here and in most other territories on the Elektra label in 1966 [EKS 74004], but Music On Vinyl has just reissued it on gold vinyl in 180g pressings, as a numbered, limited edition [MOVLP676] with only 1000 copies available. Aged just 28 when he died from a drugs overdose, Buckley later ventured from this folk-oriented beginning into jazz, soul, psychedelia and the avant-garde, eventually going on to complete eight more studio albums. *HFN*

Sound Quality: 90%





# Springsteen *Born To Run*

It took over a year to create and when 'The Boss' first heard it, he threw the reference disc into a hotel pool. But the album went on to sell six million copies in the US and reach No 3 in the *Billboard* 200 chart, catapulting the singer from cult act to global star

Words: **Mike Barnes**

In May 1974 rock critic Jon Landau's review of a Bruce Springsteen concert was published in Boston's *The Real Paper*. It included what became one of the most famous lines by a journalist in rock music history, 'I saw rock and roll future and its name is Bruce Springsteen'.

And if that seems a bit oddly phrased, in the full quote, Landau differentiated 'rock 'n' roll future' from his own 'rock 'n' roll past', as he felt the mid '70s had become a stale time musically and Springsteen's synthesis of rock 'n' roll, soul, folk, blues and jazz was a fresh combination, and a signpost to the future.

### UNWANTED HYPE

This line became slightly but significantly misquoted as 'rock 'n' roll's future', implying that Landau actually saw Springsteen as the saviour of rock. And this was widely displayed the following year on posters and advertisements heralding Springsteen's new album *Born To Run*. It was further misquoted to make Springsteen 'the future of rock 'n' roll', a phrase that has since slipped into common parlance. Springsteen was annoyed, feeling that it would be seen as cheap hype, but it accompanied his ascension from respected cult act to massive global star.

Rewinding, Springsteen had been signed to Columbia records in 1972 and his debut album *Greetings From Asbury Park, NJ* came out in January 1973. He swiftly followed this in May with *The Wild, The Innocent And The E Street Shuffle*, which attracted critical plaudits but gained poor sales. The executives who had signed him had moved on and Springsteen felt that he had suffered from a lack of promotion, and suspected that his days with the company might be numbered. Now he *really* had to deliver.

Springsteen hails from New Jersey on the east coast of America, which in the mid 1970s was both geographically and musically separated from the laid-back, post-hippie



Side 1 of the original LP on the US orange Columbia label

On stage at Shea Stadium on October the 4th 2003

Bruce and The E Street Band in 1977 with sax player Clarence Clemons seen far left

Poster hails Springsteen as the future of rock 'n' roll

Promo shot of 'The Boss' issued in 1995



and 'Stagflation', which denotes a combination of high inflation and high unemployment. And while some were still living the

American Dream, Springsteen sang about (and to) those who were more involved in making that Dream work for others – those who, if they could find work, were trapped in dead-end jobs with few prospects.

### CREATING A BUZZ

In late 1974, producer Mike Appel had given a rough cut of the title track to some selected FM radio stations in an effort to create a buzz, but the response was so great that people were soon going to record stores trying to buy a single that didn't exist. He had

not bargained on the recording taking so long, and the track was only officially released as a single in August 1975 along with the album.

'Born To Run' sounds big on every level. The song is about two lovers – the protagonist refers to his partner as 'Wendy', which brings the listener emotionally closer to the action – and says to her, 'This town rips' ➔

culture on the west coast, typified by bands such as Fleetwood Mac, The Doobie Brothers and the cowboy escapism of The Eagles.

But Springsteen was the polar opposite of laid-back. Coming from a working-class background, he had always seemed to have his finger on the pulse of the street – although in his early lyrics his observations were filtered through the sort of hipster-speak Bob Dylan had explored in the mid '60s, which might not have meant a great deal in literal terms but always sounded pretty cool.

For *Born To Run*, he retained the poetry but sharpened its focus to reflect what was going on around him in America. He has noted that these songs were all written after the Vietnam War which he felt had irrevocably changed America, with the fall-out including industrial decline

'There was a rush to buy a single that didn't exist'



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## VINYL ICONS

### PRODUCTION NOTES

The making of *Born To Run* was a particularly lengthy process, with rehearsals beginning in Jan '74 at 914 Studios, Blauvelt, New York. Recording sessions began in earnest in May, though Springsteen has said that in his desire to make his magnum opus he got into 'an unhealthy amount of obsessive compulsiveness about the process'. Both Springsteen and manager-producer Mike Appel were frustrated by the studio facilities, and issues such as the movement of the piano pedal being audible in the mix.

To add to these problems, keyboard player David Sancious and drummer Ernest 'Boom' Carter left the band during the sessions and so Springsteen recruited Roy Bittan on keyboards and drummer Max Weinberg as full-time band members.

In a review of Springsteen's previous album Jon Landau criticised the production as being too thin, and opined that Springsteen needed help to achieve the sounds that were in his head. He suggested, after 14 months work on the album, they should switch studios to the more expensive but better equipped Record Plant in Manhattan. Appel



was initially unhappy about his involvement, but Landau, who had some production knowledge, sat in on sessions from April and his input earned him a credit as co-producer.

Most of the album was recorded in these later sessions. Springsteen worked closely with saxophonist Clemons on 'Jungleland', but Mr C's wonderful solo on the track took 16 hours of work and the editing down of eight or nine takes. The album was completed in July 1975, although some final mixing took place when the band had gone out on tour.

the bones from your back/It's a death trap, it's a suicide rap/ We gotta get out while we're young...'. The track comes

across like an update of *Romeo And Juliet* except that these star-crossed lovers might conceivably enjoy a happy ending provided they can escape. It also feels like *West Side Story* meets Woody Guthrie meets producer Phil Spector's 'Wall Of Sound'.

In 2005 Springsteen explained to *Rolling Stone* that the song is underpinned by 'a sense of dread and uncertainty about the future'. But the feeling we're left with is hope, permeating every bar. Before writing the album he had been obsessively listening to Roy Orbison and, although their vocal styles were quite different, they were both imbued with a strong sense of yearning.

### NEVER CLUTTERED

Musically speaking it packs a lot into four-and-a-half minutes. Although marked out with broad brushstrokes it is full of fine detail, with glorious rising choruses and a complex instrumental mid-section. Springsteen plays twangy guitar motifs directly inspired by Duane Eddy, Pete Townsend-like power chords and multiple overdubbed rhythm guitar parts. The song's momentum is bolstered by Clarence Clemons's urgent sax, with

piano, organ and strings adding to its heft – there's even a rather anomalous glockenspiel. And as with all the tracks on the album, these forces are deftly arranged – it never sounds stodgy or cluttered.

'Thunder Road' has an exultant melody and suggests the possibilities of a 'new day'. As Springsteen sings to his girlfriend 'Well the night's busting open/ These two lanes will take us anywhere'. Again, there is hope, as long as they act without delay. 'Tenth

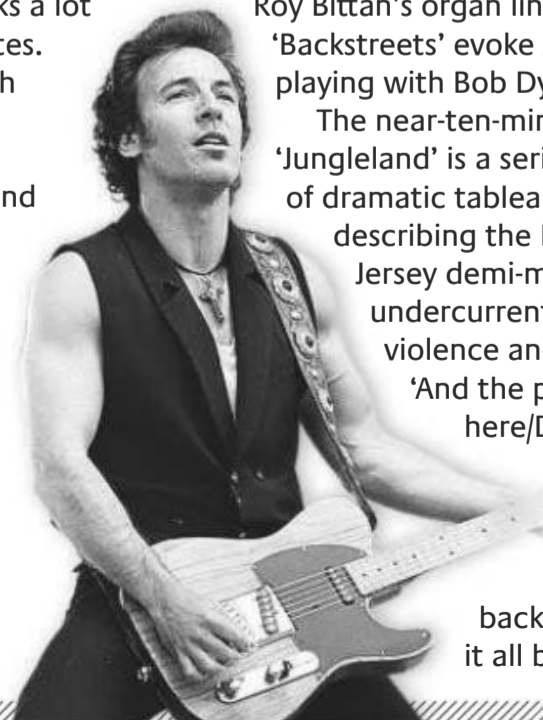
Avenue Freeze Out', the second single taken from the album, is a punchy R&B tune. Springsteen and Steve Van Zandt's snazzy brass arrangement, played by Clemons together with top session saxophonists Randy and Michael Brecker, and David Sanborn, took Stax soul as its template while

Roy Bittan's organ lines on 'Backstreets' evoke Al Kooper's playing with Bob Dylan.

The near-ten-minute 'Jungleland' is a series of dramatic tableaux

describing the New Jersey demi-monde with undercurrents both of violence and inertia:

'And the poets down here/Don't write nothing at all/ They just stand back and let it all be', sings



Colour promo photo of Springsteen distributed in 1992

The singer on stage in Washington DC in 1994

Original poster for the now legendary 1975 show that took place at The Hammersmith Odeon in London, later released as a live album

Sax player Clarence Clemons as pictured on the sleeve of his 1989 solo album *A Night With Mr C*

The Boss on stage in East Berlin on July the 19th, 1988, where he played for four hours to 4000 East German fans



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# Alternate Format Discography



➔ **The Boss caught on camera by his younger sister, Pamela**

Springsteen. Again it's a cautionary tale, because as a result they 'wind up wounded, not even dead'.

Springsteen has reassessed the album reckoning it held up well, because 'it was just structured and built like a tank. It was indestructible – and that came from an enormous amount of time that we put in'.

But although it took over a year of recording sessions, once it was finished Springsteen had a crisis of confidence – if this didn't work out, he felt he had nothing more to give – and when he heard the master of the album he threw the reference disc into a hotel pool. But he needn't have worried.

## BLUEPRINT TO FOLLOW

The dramatic widescreen sound of *Born To Run* fed into the rock operatic visions of Jim Steinmann's more fantastical *Bat Out Of Hell*. But it also formed an early blueprint of what became known as Heartland Rock, with its mix of Americana, rock 'n' roll and social commentary.

Its influence can be heard on John Cougar Mellencamp's hit single 'Jack And Diane' and even touched on hard rock acts like Bon Jovi, whose 'Livin' On A Prayer' chronicled the struggles of working-class couple Tommy and Gina. Modern proponents of that style include The Hold Steady with their gritty, densely-worded urban narratives.

Springsteen's ambition was huge: 'I wanted to make the greatest rock record that I'd ever heard', he said. 'And I wanted it to grab you by your throat and insist that you pay attention, not to just the music, but... to feeling alive.' Many would say Bruce Springsteen, aka 'The Boss', achieved just that. ☺



## ORIGINAL LP

*Born To Run* came out in a gatefold cover in 1975 with the lyrics on the inside. In the US it appeared with an error on the rear sleeve crediting 'John' Landau, which was corrected with a sticker on some copies and reprinted on the second pressing. The US LP had the orange Columbia labels [PC 33795], while in the UK the orange and yellow CBS labels were used [69170; 33795]. The Japanese LP had a gatefold sleeve and a photo insert with Japanese titles, text and lyrics. It came with an olive green obi strip.

The holy grail for collectors is a 'script cover' blank label promo issued by Columbia in 1975 [no cat no]. The cover was the same as the finished album, but with a handwritten title. It included a typed lyric sheet with 'Meeting Across The River' still listed under its original working title of 'The Heist'. About 200 were made in advance of standard promos. One sold in 2020 for over £4000.



## TAPE EDITIONS

In the UK, *Born To Run* was released on 8-track cartridge with a blue label incorporating the black and white album cover artwork on a white shell [CBS 42-69170]. In the US it came in a white case with a square cut-out window to reveal the full LP cover photo of Springsteen and Clemons on the cartridge [Columbia PCA 33795]. The programmes differ between the two releases. The 1975 American cassette cover release placed the full LP cover

shot over a white lower panel [Columbia JCT 33795]. The cassettes had textured white shells with a smooth panel on which the tracklisting was printed. In the UK the photo was placed within a blue border [see below left] while the cassettes themselves were black with red labels [CBS 40-69170].

A MiniDisc was released in Europe in 1992 on Columbia [MD 80959] with the cover photo on the front of the disc itself and tracklisting printed on the reverse. The US version was virtually identical [Columbia, CM 33795].

## FIRST CD RELEASE

The first CD of *Born To Run* was released in 1982 in Japan on CBS/Sony [35DP 21]. The early CDs for the 1983 European release, which came with an eight-page booklet with lyrics and credits [CDCBS 80959], and for the US release in 1984 [CBS CK 33795], were made in Japan.

In 1993 a gold CD remastered by American engineer Bob Ludwig was released in a long-box format in the US [Columbia Legacy, Master Sound series CK 52859]. It came out as a limited edition standard format CD in the US in 1994 [CK 64406] and also in Europe [480416 2].

## SPECIAL EDITIONS

The 30th anniversary edition of *Born To Run* [see pic top right] was released in 2005 with a CD – again remastered by Ludwig – and two DVDs. One featured a full concert of Bruce Springsteen And The

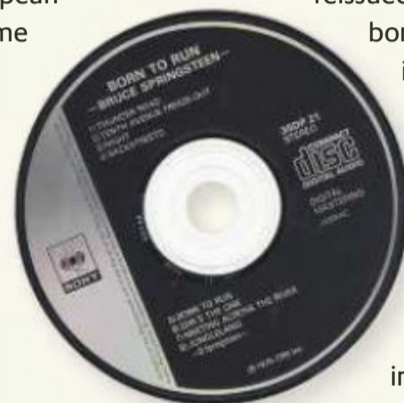
E-Street Band at Hammersmith Odeon, London, in 1975 mixed in stereo and 5.1 Surround Sound and a second with a 90m documentary *Wings For Wheels: The Making Of Born To Run* and an excerpt from a concert at The Ahmanson Theater, LA in 1973. This came with a 48-page booklet of rare and unseen photographs [Europe: Columbia 82876755892; US: 82796 94175 2].

*Born To Run* has never been reissued with outtakes as bonus tracks, although in 1998 'Linda Let Me Be The One' and 'So Young And In Love' came out on the *Four HDCD Tracks* set, originally released in long-box format on Columbia in Europe [492605 2] and the US [CXK 69475].

The album, again remastered by Bob Ludwig and transferred from the original tapes using the Plangent Processes tape playback system, was released in 2014 [see pic below] as part of the 8CD set *Bruce Springsteen: The Album Collection Vol 1 1973-1984* [US, UK and Europe: Columbia 888750141420S1].

## AUDIOPHILE VINYL

A 180g vinyl LP was released in the US in 1999 in the Columbia Classic Records series; some pressings were on 200g, which was indicated by a sticker [PC 33795]. The most recent 180g LP was released in the US in 2005 [Columbia JC 33795].



# Inside the Studio

BEHIND THE MUSIC WITH HI-FI NEWS & RECORD REVIEW



BRANDON WALLIS



BRANDON WALLIS

## Rolling Stones Mobile

In 1968 the band's road manager proposed putting a control room in a van, so creating the world's first independent mobile recording studio. **Steve Sutherland** hitches a ride...

**W**e all came out to Montreux/On the Lake Geneva shoreline/To make records with a mobile/We didn't have much time/We ended up at the Grand Hotel/It was empty cold and bare/But with the Rolling truck Stones thing just outside/Making our music there...

Not too many studios can boast they've been name-checked in a song, let alone a stone-cold classic. But then, as you've doubtless guessed by the name, the Rolling Stones Mobile is no ordinary studio. Effectively a van set up for recording, in Dec '71 it was parked up next to the Montreaux Casino which, the next day, was to be the venue where Deep Purple would begin recording their sixth LP, *Machine Head*.

'We decided to record the album onstage, using the natural acoustics of the surroundings', the band's bassist Roger Glover recalls. 'In other

Views of the inside of the restored Rolling Stones Mobile, which is now in use at The National Music Centre in Calgary, Canada

Deep Purple (l-r) Ritchie Blackmore (guitar), Ian Paice (drums), Roger Glover (bass), Ian Gillan (vocals) and Jon Lord (keyboards)

words, make a studio album under live conditions, almost like a live album without the audience.'

### RATTAN LUCK

Right now, though, Frank Zappa and his Mothers Of Invention are playing a show in the casino's theatre – the final gig before the casino complex

closes down for its annual winter renovations and the Purps pile in to record there. The Mothers' Don Preston is about to start a synthesiser solo on 'King Kong' when some fool in the audience fires a flare gun into the rattan-covered ceiling and instantaneously the venue is ablaze. The audience flee



### KEY RECORDING TIMELINE



**1971**

The Rolling Stones use the Mobile to record much of *Sticky Fingers* at Stargroves in Hampshire in 1971



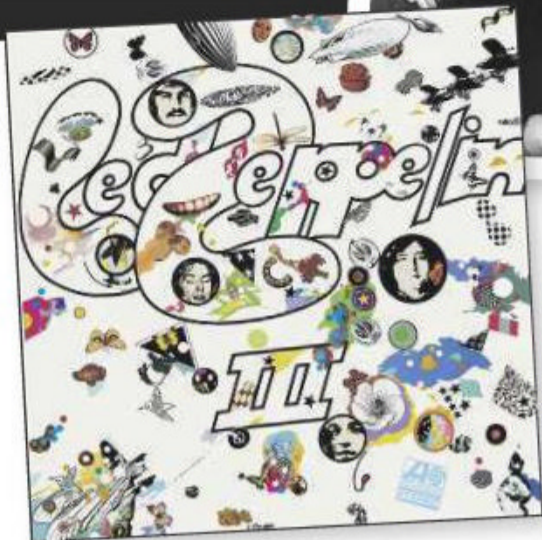
**1971**

The Who kick off sessions for the LP *Who's Next* with 'Won't Get Fooled Again' recorded using the Mobile



**1973**

Fleetwood Mac hire the Mobile to record *Mystery To Me* at Benifold, their communal house in Hampshire

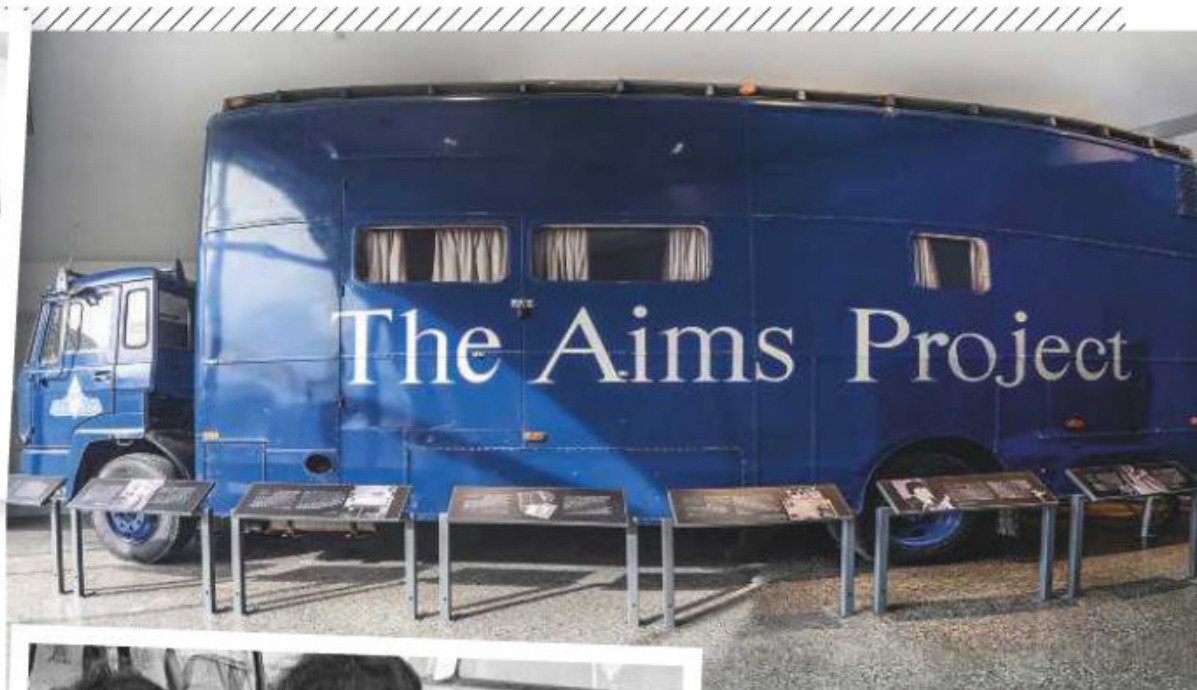


↑ Led Zep in 1969 (l-r): John Paul Jones, Robert Plant, John Bonham and Jimmy Page and (left) the album *Led Zep III*, which was recorded using the Mobile in 1970

↗ External view of the Mobile today at The National Music Centre in Calgary, Canada. It is parked next to the King Eddy stage from where it can record directly

↗ Frank Zappa (centre rear) And The Mothers Of Invention pictured in 1968

→ The Rolling Stones pose with copies of their 1971 album *Sticky Fingers* and (inset) label of *Exile On Main St* from 1972. Both albums were recorded using the band's Mobile



Nice, and had the basement converted into a makeshift studio connected up to the Mobile outside. The ensuing sessions made up the meat of the legendary double album *Exile On Main Street*. The Mobile then made its way back to the UK while the Stones skipped off to the States, scared off by

to safety but the fire destroys the entire casino complex, along with all The Mothers' equipment. The Mobile is quickly shifted and the members of Deep Purple gaze out of their nearby hotel windows at the smoke drifting across Lake Geneva.

Left with the Mobile but no place to record, the band rent the Grand Hotel de Territet where they proceed to lay down most of the tracks on the Mobile for what will become their most commercially successful album and their most famous song – the whole escapade encapsulated in the mighty metal anthem, 'Smoke On The Water'. Y'know, the one that starts: 'Dah dah dah dah dah dah...'

## ONE FOR THE ROAD

The original concept for The Rolling Stones' Mobile Studio had first come about three years earlier, in 1968, when Mick Jagger and co decided they needed a new environment in which to record. Tired of the traditional limitations of a regular studio – nine-to-five, old geezers in lab coats worrying about the needle straying into the red, not to mention the expense – the Stones decided to use Jagger's posh new Hampshire country house, Stargroves, as a base to try recording new music.

All the equipment was lugged to the house, and then sometime-Stone, boogie woogie pianist and road manager Ian Stewart came up with the idea of putting a control room into a van. This way the band could go wherever they wanted to record whenever they wanted.

Stewart consulted with a few mates who were top engineers and producers, including Stones sidekick

Glyn Johns [*HFN* Nov '18], and then Helios Electronics was entrusted with setting it up and kitting it out.

## IN A PICKLE

The Stones recorded much of 1971's *Sticky Fingers* at Stargroves using the Mobile and when they found themselves in a pickle with the taxman, they scarpered to France taking the Mobile with them. While newly-wed Jagger settled in Paris with his wife Bianca, Keith Richards rented Nellcote, a ramshackle villa at Villefranche-sur-Mer near

drug-sniffing gendarmerie.

The Mobile had originally been intended for the band's use only, but back home it quickly proved a lucrative attraction to others seeking to capture live recordings or similar freedom from trad studios. 'It was the only independent mobile recording unit around', Keith

Richards wrote in his autobiography, *Life*.

'We didn't realise when we put it together how rare it was – soon we were renting it out' ↻



1979

Simple Minds score a Top 30 hit with *Life In A Day*, describing the Mobile studio as a 'huge freezing truck'



1983

Mick McKenna uses the Mobile unit to record *Alchemy: Dire Straits Live* at London's Hammersmith Odeon



1990

Iron Maiden hit No 2 in the UK with *No Prayer For The Dying*, recorded with the Mobile in an Essex barn

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to the BBC and ITV because they only had one apiece. It was another one of those beautiful, graceful, fortuitous things that happened to the Stones.'

Early co-opters were Led Zeppelin who relished the liberty the Mobile afforded when seeking out that special, relaxed recording vibe. Zep's location of choice was Headley Grange, a Grade II former workhouse in Hampshire. Using the Mobile, produced by Zep guitarist Jimmy Page and engineered by Andy Johns and Terry Manning, *Led Zeppelin III* was largely recorded there in May and June 1971 after Page and his co-writing buddy Robert Plant had sketched out the songs in a cottage in Wales.

## ROAD AND TRACK

The set-up worked well and when it came to their next LP, the untitled one with runes and 'Stairway To Heaven' that we all know as *Led Zeppelin IV*, they repeated the process. For *Houses Of The Holy* which followed in 1973, operations moved to Stargroves, with engineer Eddie Kramer manning the Mobile.

Other famous notches in the Mobile's belt include early sessions for The Who's *Who's Next*, and the Bob Marley & The Wailers *Live!* LP that captured the band in July 1975 at their effervescent best over two nights at London's Lyceum Theatre.

As usage increased and recording techniques advanced, the Mobile updated consistently. Originally it supported a maximum of 20 inputs and had an eight-track recording format but live work soon necessitated an upgrade to 16-track. During The Stones' 1973 tour of Europe Mick McKenna joined as engineer, working with Ian Stewart, upgrading again to 24-tracks and adding 12 new inputs.

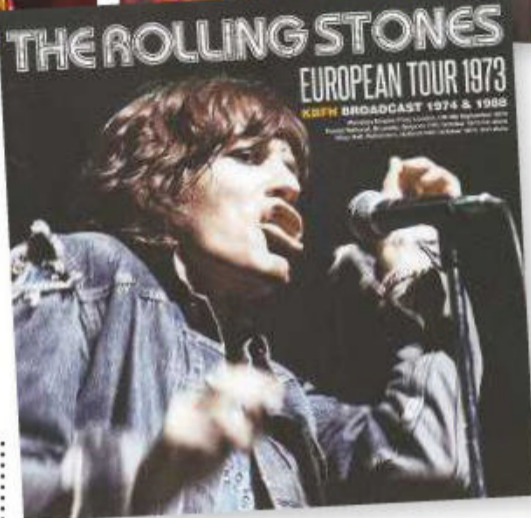
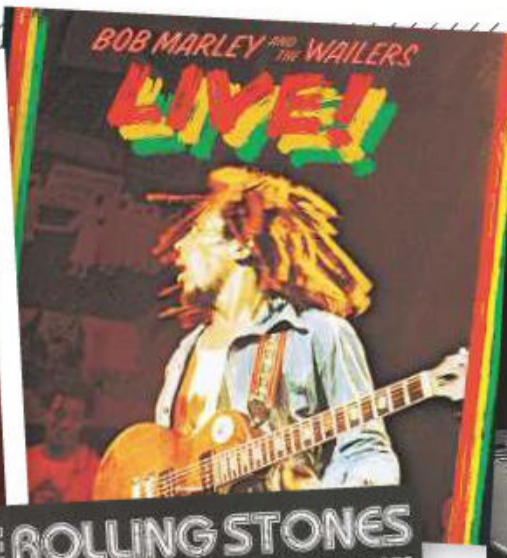
According to McKenna: 'There are several things about running a mobile that are different to being in the studio. Firstly, you've got to get the equipment talked into being willing to travel... For instance,

where you've got a mixer with lots of rigid PC boards tied to the frame – possibly an in-line mixer – you've got to be very careful that you don't get structural twists in the desk that will put everything completely out of line. You've got to make sure that everything is tied down very well.

'We have all our microphones and cables, that sort of thing, in flight cases so that when you get to a gig you can just take everything out of the truck very easily and make it a very efficient situation. If you're setting up a session, you just take the mics and the stands into the studio, place them round the musicians and that's that.'

'In our situation you've got much more setting up to do. You come up with a mode of working that suits everyone and you haven't got to make vast changes to work at one particular gig. It's a straightforward [method] that will cover everything. Then you get into a routine...'

"Twists in the desk will put everything out of line"



Willie Nelson (top left) in 2009, Bob Marley & The Wailers *Live!* album from 1975 (top) and The Stones' 1973 European tour (above left), which saw the Mobile's console upgraded to 24 tracks from 16

The Helios console inside the restored Mobile (top) and inside the Mobile in the early 1970s showing a 3M 16-track recorder

Patti Smith on stage in New York in 2007



A synchronising computer was added in 1982, enabling audio and video tapes to be run in perfect time, which allowed the Mobile to record a show and then provide finished audio ready for transmission: something that appealed to artists who wanted to film as well as record their gigs. Clients included Miles Davis, Willie Nelson and The Chieftains.

In 1987, Stones bassist Bill Wyman created the Ambition Invention Motivation Success project (AIMS) which allowed young bands all around the UK a chance to work out of the Mobile studio and produce top-quality demos.

## TREASURED EXHIBIT

In 1996 the Mobile was sold through auction at Bonham's to the US company Loho Studios in New York City where it was used to record live performances at venues such as CBGB's, including gigs by Patti Smith, and The Ramones.

Today the Mobile's a treasured exhibit at The National Music Centre in Calgary, Alberta, Canada. Jesse Moffatt, the Centre's manager of Collections and Artifact Care, is well happy to have it. 'The creation of the RSM set a precedent for musicians to work outside the studio, and the idea that music could be recorded anywhere, at any time, without limitations, took hold', he says. 'The RSM had a considerable impact on the development of music technology, and mobile recording in particular... Arguably, some of the most important rock 'n' roll records of all time were made using this piece of technology.' Hey feller, steady with the 'arguably'! 🎵





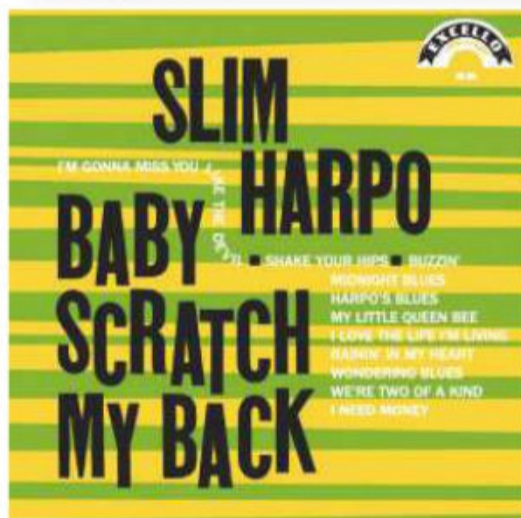
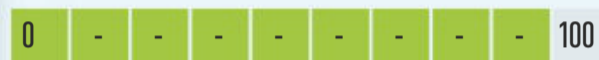
### DELANEY & BONNIE & FRIENDS WITH ERIC CLAPTON

On Tour

Speakers Corner/ATCO SD33-326 (180g vinyl)

It baffles me that this outfit should be relegated to footnote status rather than being celebrated for being influential. This 1970 release includes classics like 'Only You Know And I Know', while their entire output deserves recognition for its role in the birth of the roots music genre. Their friends signify the couple's power: in addition to working with Duane and Gregg Allman, George Harrison, Leon Russell and King Curtis, the pals on this album included Bobby Whitlock, Dave Mason and Rita Coolidge, while Eric Clapton earns cover mention. Despite the British buddies, this reissue is pure Americana, mixing southern rock, gospel and early rock 'n' roll. **KK**

Sound Quality: 90%



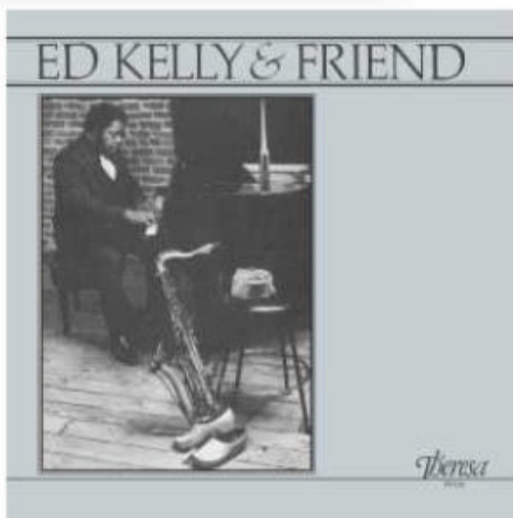
### SLIM HARPO

Baby Scratch My Back

Sundazed/Excello/Americana Anthropology LP-ANTHRO-104 (mono)

Blues singer Harpo, though less well-known than Muddy Waters or BB King, influenced a vast number of musicians, including many in the early 1960s British Invasion – especially The Rolling Stones, The Kinks, Them and The Yardbirds. This 1966 release follows his rediscovery during the Blues Revival (post-Mayall, Korner, etc) – one presumes those groups heard of him via his numerous singles or appearances on compilations. Cut by Kevin Gray, pressed at RTI, this LP is a knock-out in its original mono, filled with harmonica-driven, swampy, sexy, sinister blues including 'Rainin' In My Heart', 'Shake Your Hips' and the wicked title track. Aficionados will rejoice. **KK**

Sound Quality: 85%



### ED KELLY & FRIEND

Ed Kelly & Friend

Pure Pleasure/Theresa Records TR106

Unlike Delaney & Bonnie, (see above) who could name their friends on their album covers, jazz pianist Ed Kelly couldn't cite his on this 1978 release because it was saxophonist Pharoah Sanders, who was then under contract to another label. Though clues in the photo tell any jazz buff who the anonymous player was, it has since been reissued on CD as *Ed Kelly & Pharoah Sanders*, with bonus tracks. This is sleeved as the original, with the LP's seven cuts. It's a gorgeous set, characteristic of the crossover (read: 'easy on the ears') jazz of the period, in the vein of David Sanborn, George Benson, etc. High point is a lush version of Sam Cooke's 'You Send Me'. **KK**

Sound Quality: 85%



### JULIAN TAYLOR BAND

Desert Star

Aporia Records APO-074-LP (two discs)

While billed as neo-soul, this Canadian's music is so eclectic as to be unclassifiable. Instead, it recalls Lenny Kravitz, Prince and others who ignore arbitrary constraints. This 2016 set – which I admit escaped me before – is being re-promoted because it's yielded a single, and is worth a listen if you like a *mélange* of influences. It's a 21st century take on the musical diversity of the late 1960s rock scene, and those with varied tastes can have fun identifying which musicians inspired Taylor. Aside from his penchant for recycling titles – 'Set Me Free', 'Fever', 'In My Life', etc, aren't the songs you'd expect – it's an engaging set. Also on CD [Aporia APO-074-CD]. **KK**

Sound Quality: 85%



## AUDIOPHILE: DIGITAL



COMPACT DISC



SUPRAUDIO



DVD



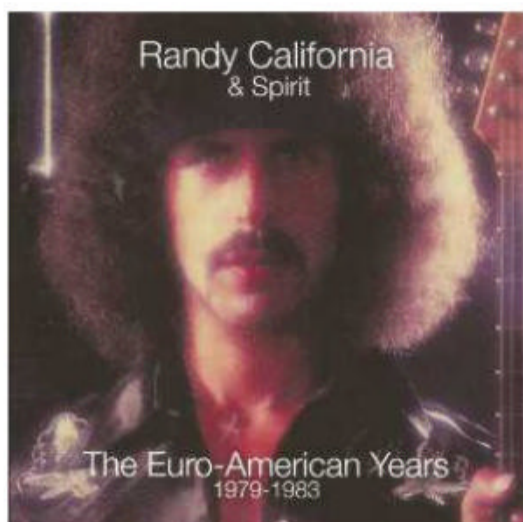
BLU-RAY



VINYL



DOWNLOAD



### RANDY CALIFORNIA & SPIRIT

The Euro-American Years 1979-1983

Esoteric Recordings ECLEC62734 (six discs)

Fans of this supreme West Coast 1960s rock force will note this dates from the time past the glory days of the original lineup. It is, however, still worthy, while rightly placing California's name above Spirit's, as the late wizard guitarist is responsible for the bulk of the content. The original compiler expanded, revised and remastered the 4CD box set from 2006 – noteworthy are the added concert discs, including Spirit in 1981, and California at the Reading and Glastonbury Festivals in 1982. Featured are loads of Spirit classics – yes, 'I Got A Line On You' – and great cover versions (a California specialty), with plenty of sublime guitar work throughout. *KK*

Sound Quality: 85%



### THE EVERLY BROTHERS

The Cadence Recordings

Edsel EDSL0056 (three discs; mono/stereo)

Another easy step in assembling a complete Everly Brothers library, this wonderful package contains 'everything they recorded for the Cadence label' covering 1957-1960 – which means the first chapter of the duo that set the bar for harmony, after a false start with Columbia. Two albums occupy CDs 1 and 2, while the third gathers singles and rarities. And what a collection it is: 'Bye Bye Love', 'Wake Up Little Susie', 'All I Have To Do Is Dream', covers of early rock 'n' roll, country and folk material, and much more. This really is a no-brainer buy if you want to hear the brothers who inspired everyone from The Beatles to The Beach Boys to Simon & Garfunkel. *KK*

Sound Quality: 80%



### KURSAAL FLYERS

Little Does She Know

RPM RPMBX 551 (four discs)

Containing their total output – three studio albums, one live, the 1988 reunion and bonus cuts – this is why some of us hate punk: the Kursaals were part of the joyous pub rock movement of the early 1970s, which punk effectively killed off. Listening to this in one sitting to chart their evolution, you'll hear how the band started out sounding exactly like The Flying Burrito Brothers, before injecting pop, rock and even swing. The musicianship is deliciously ironic, a British interpretation of US country rock, bliss from start to finish. Even the straight covers – 'Route 66' and 'Friday On My Mind' – are knock-outs. Now, where are my Brinsley Schwarz albums? *KK*

Sound Quality: 85%



### THE KINKS

Lola Versus Powerman And The Moneygoround Part 1

BMG CAT434BOX (three discs + two 7in singles)

**Not, for me, as brilliant an album as the band's previous release, 1969's *Arthur (Or The Decline And Fall Of The British Empire)*, but this is still amazing, as it gave us 'Lola' – undeniably one of the band's most beloved songs. There are ample reasons to consider this (if with hindsight) a seminal release, and not just because it addresses trans issues: its observations about the music biz resonate even in the streaming era. This 50th Anniversary Deluxe Box Set features a remastered version of the original stereo release, while extras include alternate takes, other mixes, demos, live tracks and more, augmented by memorabilia and a 60-page hardback book. 'Apeman', 'Rats', the lauded title track... another Kinks gem. *KK***

Sound Quality: 90%



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### JUILLIARD STRING QUARTET

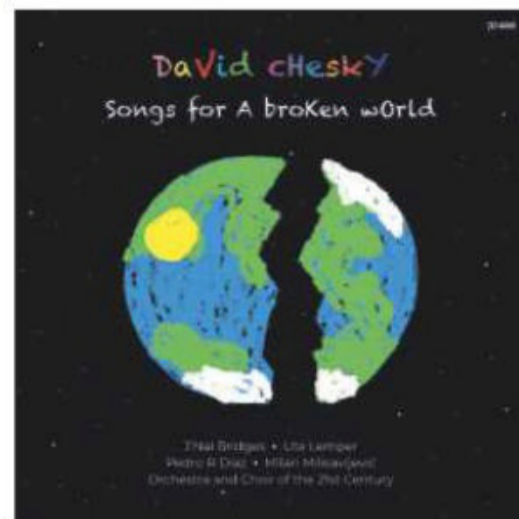
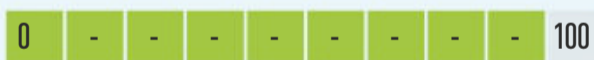
String Quartets by Bartók (No 3), Beethoven (Op.59:2) and Dvorak (Op.96, 'American') (96kHz/24-bit, FLAC)

[www.hiresaudio.com](http://www.hiresaudio.com); Sony Classical G010004516958U

**Founded in 1946, the Juilliard Quartet has had various changes of personnel: these recordings are the first to feature lead-violinist Areta Zhulla, who joined in 2018. Her companions are Ronald Copes (vln), Roger Tapping (vla) – ex-Takács Qt and from the UK – and Astrid Schween (vlc). You can see videos of them playing the complete Bartók and recording the Beethoven finale, on their website's home page. We had admirable mono and stereo**

**Bartók cycles with earlier lineups but the Juillards' Beethoven was mostly considered 'transatlantic' and hard-bitten. It's a different picture now, with a closer-knit production sound too. There's raptness in the Beethoven *Adagio*, brio in the 'thème russe' scherzo and finale. Acerbity and 'night sounds' in the Bartók [trk 6] give way to the affable Dvořák Qt – in all a really enjoyable programme. *CB***

Sound Quality: 90%



### DAVID CHESKY

Songs For A Broken World (48kHz/24-bit, WAV)

[www.hdtracks.com](http://www.hdtracks.com); Chesky Records JD466

Dave's worried, and he wants to unburden. More specifically, this is 'a sincere statement of worries the composer feels necessary to share with the world, in which all of us live and die. Its monumental form allows us to reflect on many tragic events (such as the latest disaster of COVID-19). By entering our lives, it unavoidably demands us to define our beliefs'. Take that on board before hearing the opening ten-minute-plus 'Remembrance For The Victims Of The Vietnam War' and concluding 'Sacred Child Of Aleppo'. It's surprising that this is actually an uplifting series of meditative pieces, combining choir and orchestra with soloists including mezzo J'Nai Bridges and – in a purely speaking role, naming the White Rose resistance members, some of whom were executed by the Nazis in 1943 – Ute Lemper. It's all rather bleak, but there's no denying the recording sounds fabulous. *AE*

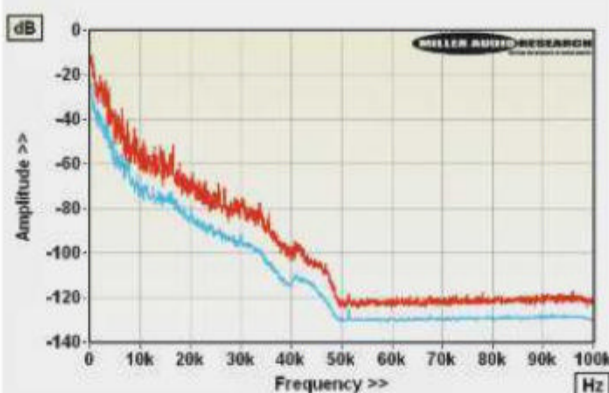
Sound Quality: 90%



### OUR PROMISE

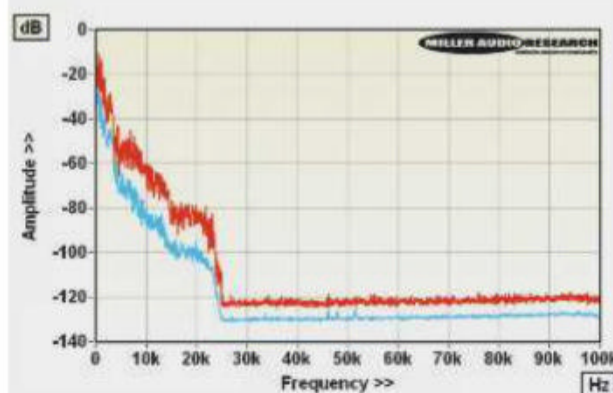
Following our Investigation feature [*HFN* Jun '11] where we examined the claimed quality of 'high-res' downloads, *Hi-Fi News & Record Review* continues to measure the true sample rate and bit-depth of HD music downloads. The Graphs show peak [red] and RMS [blue] spectra. These unique reviews will be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

### LAB REPORT



With no booklet available, I can at least confirm this is a genuine 96kHz file, free of spurious. The higher strings stretch out to an impressive 38kHz and dynamic range is excellent, only nudging 0dBFs in the Bartók No 3 [trk 5, see Graph]. *PM*

### LAB REPORT



Available as a downsampled CD or as a native 48kHz file, tested here, the ~22kHz bandwidth is just sufficient to capture the vocal range of the mezzo soprano. Otherwise peaks never exceed -0.3dBFs and dynamic range is very good. *PM*



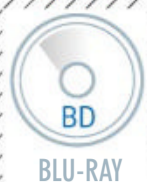
COMPACT DISC



SUPRAUDIO



DVD



BLU-RAY



VINYL



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## AARON PILSAN

JS Bach: The Well-Tempered Clavier (Book 1)  
(48kHz/24-bit, FLAC)

[www.hiresaudio.com](http://www.hiresaudio.com); Alpha ALPHA669

Aaron Pilsan is a 26-year-old Austrian pianist. A young pupil first at the Salzburg Mozarteum he moved to Hanover and is still studying there with Lars Vogt. In the booklet interview he says how much Bach's keyboard works have fascinated him, and he has performed the *Well Tempered* on harpsichord and clavichord – here it's a 1982 Hamburg Steinway D specially tuned to Pilsan's needs for colour and warmth. Indeed, he seems to provide a distinctive 'colour' for each prelude/fugue, major or minor key. He describes the final fugue (B minor) as having 'Schoenbergian complexity' but rather impedes progress through expressive slowings – his mentor Schiff's simpler approach works best. And while the counterpoint playing is exemplary, some would prefer a more distanced approach than Pilsan's. *CB*

Sound Quality: 80%



## WARREN VACHÉ

First Time Out (DSD64/128/256/512; DXD/24-bit)

[www.nativedsd.com](http://www.nativedsd.com); 2XHD 2XHDJA1190

The album's title is self-explanatory – well sort of, as five of the tracks here are from trumpeter Vaché's 1976 debut recording sessions, accompanied and co-produced by guitarist Bucky Pizzarelli. The remaining four cuts come from a later session – some 16 years later – but again with Pizzarelli providing the gentle, considered backing. And gentle and considered just about sums up the whole sound of this set, another of those 2xHD restoration and remastering jobs from the original analogue tapes to the company's DXD system, and thence on to various DSD formats. Featuring standards from composers such as Irving Berlin, Billy Strayhorn and Rodgers & Hart, this is as undemanding a set of tunes as anyone could want. The musicianship is there in spades, and though it never really takes flight, it remains a pleasant enough way to spend half an hour. *AE*

Sound Quality: 80%



## MANSUR

Minotaurus (48kHz/24-bit, FLAC)

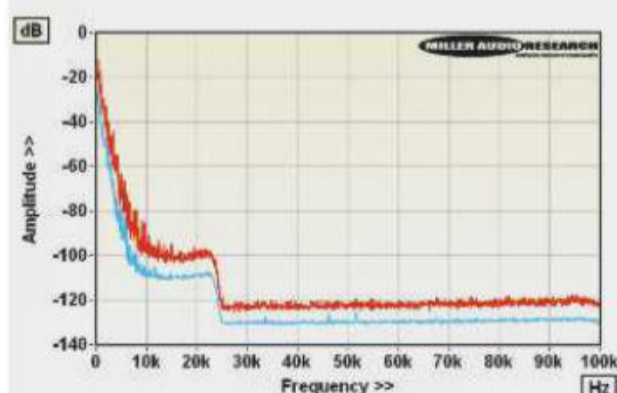
[www.denoali.com](http://www.denoali.com); Denovali DEN360

Albums don't get much more high-concept than this – a live, improvised set described as 'a musical homage to the mythos of the Minotaur. The minotaur as a mirror of self-reflection and the fear of confronting one's inner ugliness'. Cheery stuff then, and the result of a co-operation between Mansur founder Jason Köhnen on bass and electronics, oud-player – oudist? – Dimitry El Demerdashi and vocalist Martina Horváth. They create a sound that's big on atmosphere, menace and mysticism, so it's not the first thing you might select to greet a bright sunny weekend morning. The recording 'takes you on a sonic journey through subterranean labyrinths, evoking spirits from past echoes of Minoan', and conjures up mysterious soundscapes, with distinct Eastern influences. It's all a bit samey taken in one sitting – instead of light and shade, there's just lots of the latter. *AE*

Sound Quality: 80%

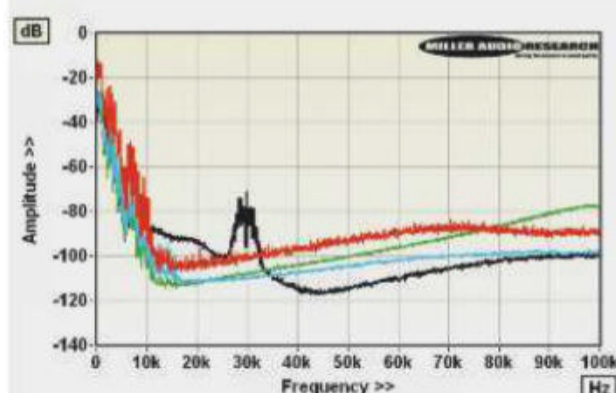


## LAB REPORT



Whether originally recorded at 48kHz or 96/192kHz and then downsampled, this 48kHz file still has sufficient bandwidth to capture the Steinway's ~17kHz harmonic range. Few tracks exceed -1dBfs and dynamic range is good. *PM*

## LAB REPORT



From tape to DXD via a 'custom 2xHD ADC', the sample rate is excessive for the ~15kHz range of trumpet and guitar [red, peak/blue, RMS]. DSD128 version [green] has higher noise and note IMD around 30kHz tape bias in 1976 trks [black]. *PM*

## LAB REPORT



By way of indication that the 'analogue' bass, oud and vocals have all passed through some measure of 'electronica', all six tracks peak at exactly -0.21dBfs! Otherwise it is what it is – thoroughly synthesised but clear of aliasing. *PM*



website: [www.jordanacoustics.co.uk](http://www.jordanacoustics.co.uk)

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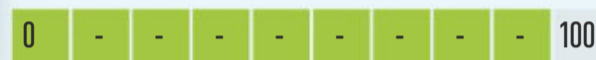
### THE CHILLS

Scatterbrain

Fire FIRECD581; LP: FIRELP581

The Chills' career has been fraught with such difficulty since they formed in Dunedin, New Zealand, in 1980 – including geographical isolation, endless personnel upheavals and mainstay Martin Phillipps' struggle with ill health and addiction – that it feels nigh-on heroic that he is still making music of such freshness and quality. *Scatterbrain* is up with his best work and carries on the familiar Chills traits of buoyant melodies, lean ensemble playing of a subtle complexity together with an atmosphere of haunted strangeness. Phillipps is an imaginative lyricist and writes on topics as diverse as the allure of ancient stones, alien travellers, the pleasures of domesticity, and his own mortality on the chilling 'Destiny'. **MB**

Sound Quality: 90%



### GOJIRA

Fortitude

Roadrunner 0075678645372; LP: 0075678644511

On the single 'Born For One Thing' the French metal band show off their trademark combination of brutal power and melody as juddering unison bass and guitar chords build up to a soaring chorus. Mixed by Andy Wallace – who has worked with Nirvana and Rage Against The Machine – *Fortitude* finds Gojira twisting through some complex structures with electronics and spacey keyboards adding texture. And while still formidably heavy, it's their most accessible offering. Gojira are a principled bunch and bark out environmental warnings in a way that you wouldn't want to argue with, on 'Amazonia', and explore ancient cultural roots on the ritualistic 'The Chant'. **MB**

Sound Quality: 90%



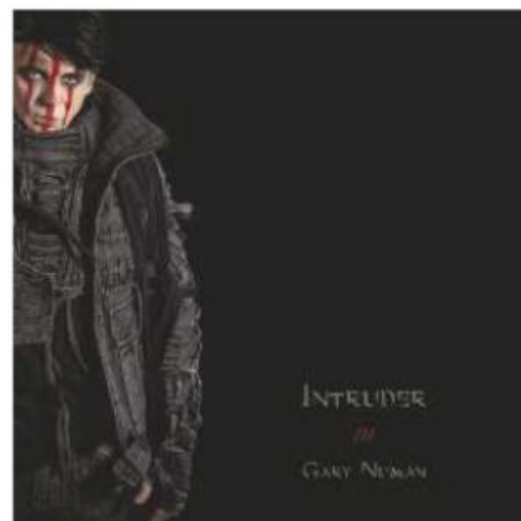
### MORCHEEBA

Blackest Blue

Fly Agaric FLYG9.2; LP: FLYG9.1

In the bewildering world of 21st century musical taxonomy Morcheeba are classified as 'downtempo', which feels a rather perfunctory description for their genre-warping music. Fidgety drum-beats land somewhere between triphop and funk, and they make great use of space, with punchy synthetic horns, drifting electronics, and distant synth lines. Guitarist Ross Godfrey plays wah-wah rhythm, spooky slide, gentle arpeggios and the occasional searing solo, but the star of the show is Skye Edwards. Her phrasing sounds so smooth and effortless and on the standout track, 'Say It's Over', she sings a gorgeous duet with guest vocalist Brad Barr. **MB**

Sound Quality: 80%



### GARY NUMAN

Intruder

BMG 4050538658682; LP: 4050538658743

On some of his recent releases, Gary Numan strove for an industrial-strength heaviness. *Intruder* contains more contrast, with luminous piano on 'Black Sun' and his daughter Persia providing backing vocals. But with its blocky keyboard chords, synth clarion calls, eastern flavoured melodies, and panoramic production, it still sounds epic – rather like Led Zeppelin's 'Kashmir' on steroids. Numan's adenoidal whine used to signify coldness and distance back in the '70s and '80s, but here he sounds angered and anguished, singing of an impending apocalypse caused by our 'total disregard' for the planet – although he allies this approach to some cracking tunes. **MB**

Sound Quality: 85%



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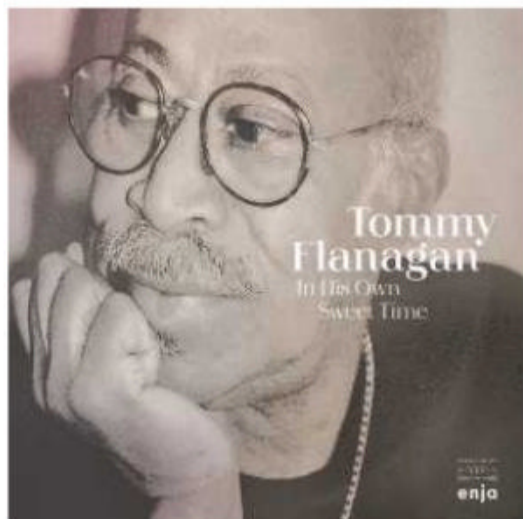
BLU-RAY



VINYL



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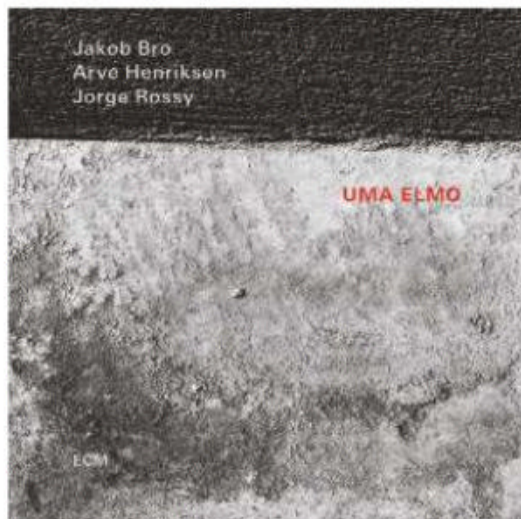
### TOMMY FLANAGAN

*In His Own Sweet Time*

Enja Records ENJ-9687 2

This solo recital couldn't have been released in the performer's lifetime. Flanagan, who died in 2001, was one of the great pianists, contributing to epochal recordings of Rollins, Coltrane and Wes Montgomery before starting a long partnership with Ella Fitzgerald. Yet he never saw himself as a soloist. This 1994 performance, for a small audience in Germany, was given reluctantly – and he certainly didn't want it recorded. But of course, he played beautifully, starting with two tunes by Tadd Dameron, going off-course a little with a vapidly polite blues but then weaving harmonic and melodic spells on songbook standards and on Rollins's 'Valse Hot'. Gorgeous. *SH*

Sound Quality: 85%



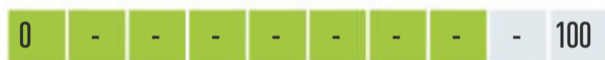
### JAKOB BRO

*Uma Elmo*

ECM 352 8227 (CD and LP)

The Norwegian guitarist's fifth ECM album nearly didn't happen because of lockdown restrictions but, last September, ECM's Manfred Eicher brought the musicians together at the Swiss Radio studio in Lugano. This was Jaakob Bro's first meeting with trumpeter Arve Henriksen, although they'd talked about a collaboration for some time. With his distinctive, fluffy and (especially on piccolo trumpet) flute-like sound, Henriksen takes the lead on Bro's pieces, including his tribute to another trumpeter, the late great Tomasz Stanko. And in the spacious Lugano acoustic, Rossy's spare but perfectly-timed crashes complete an airily immersive experience. *SH*

Sound Quality: 80%



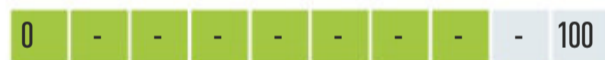
### LOGAN RICHARDSON

*Afrofuturism*

Whirlwind Recordings WR4772; 2LPs: WR4772LP

After 2016's *Shift* with Pat Metheny and Jason Moran, the Missouri-born saxophonist turned back to his own band for *Blues People*, and his current lineup still includes drummer Ryan Lee and rock guitarist Igor Osypov. Cellist Ezgi Karakus offers an acoustic interlude in 'Black Wallstreet', an elegy on the appalling Tulsa race riot of 1921; but mostly, synths are dominant. Dense soundscapes with many far-back instruments almost makes you think you're accidentally playing another album at the same time, and you have to wait until the final bonus track to hear a bit of improvising over changes. But in spite of everything, Richardson's still the real deal. *SH*

Sound Quality: 75%



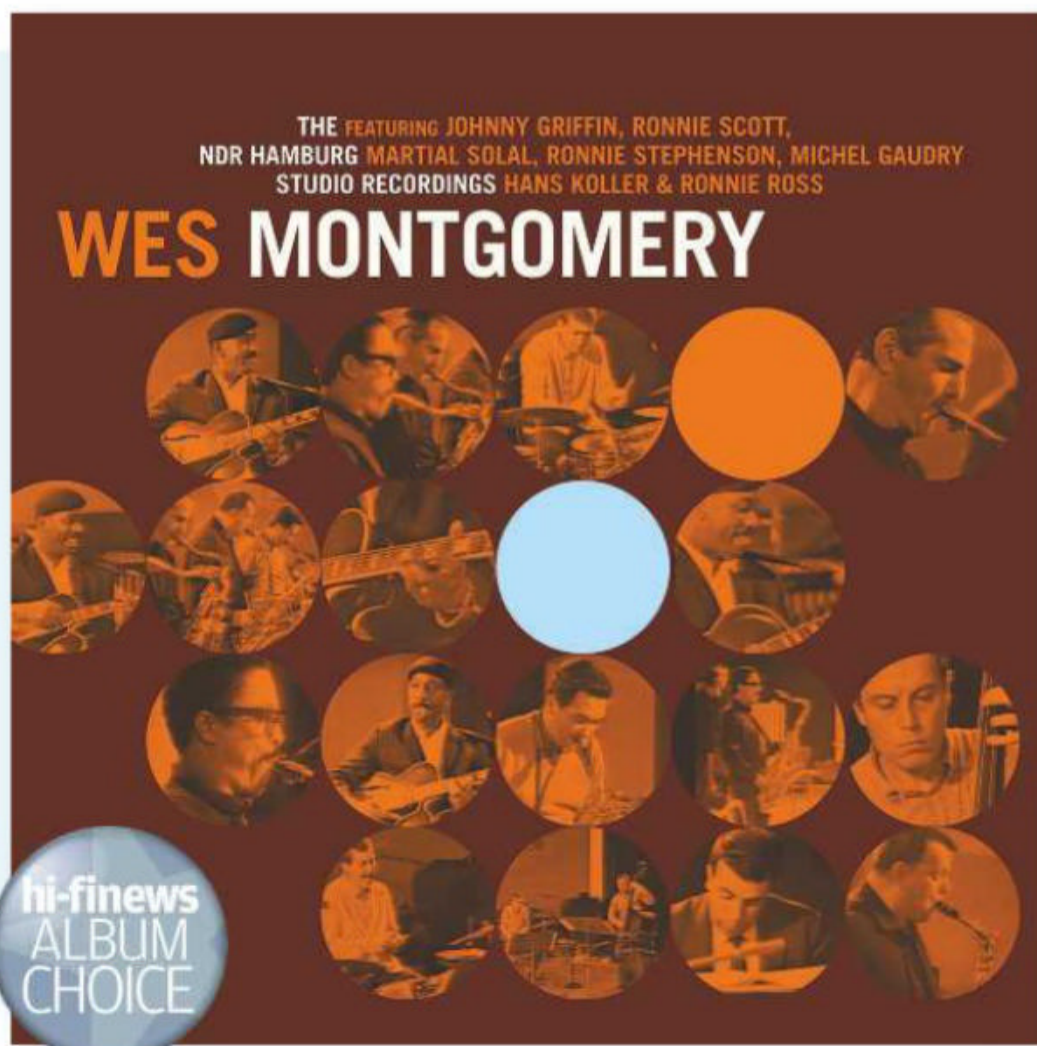
### WES MONTGOMERY

*The NDR Hamburg Studio Recordings*

Jazzline Classics D77078 (CD + bonus Blu-ray); 2LPs + bonus Blu-ray: D78078

In 1965, the great guitarist brought his quartet to Europe, also playing as guest star with local musicians. He fronted Ronnie Scott's rhythm section in London and in Paris met up again with Johnny Griffin, who'd moved there since appearing on Wes's 1962 album *Full House*. In Hamburg, he completed an amazing four-saxophone octet with Griffin, Scott, German altoist Hans Koller and British baritone master Ronnie Ross – too often remembered only for his 'Walk On The Wild Side' solo. Here, interspersed (oddly) with three quartet tracks, are seven exciting numbers from this all-star group. The sound isn't wonderful, but it's great to hear them. Even better, thanks to the 30m Blu-ray bonus disc, to see them in action. *SH*

Sound Quality: 70%



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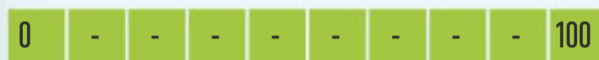
### BEHZOD ABDURAIMOV

Chopin: 24 Preludes Op.28; Debussy: Children's Corner Suite; Mussorgsky: Pictures at an Exhibition

Alpha Classics ALPHA653 (downloads to 96kHz/24-bit resolution)

The young Uzbek pianist's *Rachmaninov at Lucerne* on Sony was our 2020 Yearbook High-Res album choice. This is his first solo programme now he's signed to Alpha – the Chopin and Mussorgsky, at least, essentials in any pianophile's library. I've not heard a more consistently interesting *Pictures*: you can almost hear the words with the 'two Jews', and the finale is marvellously built with an extremely wide dynamic range. 'Tuileries', 'Limoges' and 'Unhatched chicks' are dazzling. The Chopin *Preludes* show so many touches of individuality (as they should) with beautifully soft playing in the tranquil numbers. And Debussy's 'Snowflakes' really dance! **CB**

Sound Quality: 95%



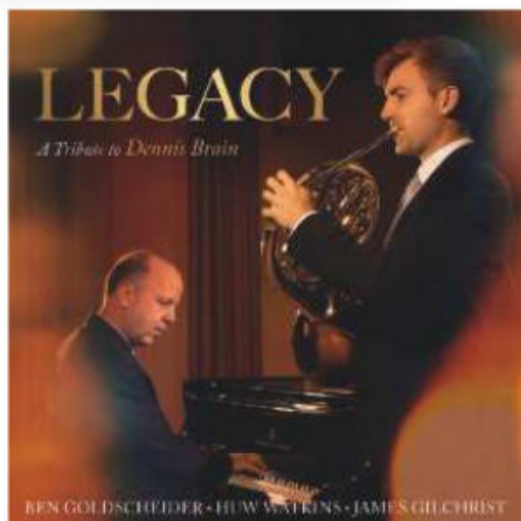
### FAUST, QUEYRAS, MELNIKOV, FREIBURG BAROQUE/HERÁS-CASADO

Beethoven: Triple Concerto; Piano Trio Op.36

Harmonia Mundi HMM902419 (downloads to 96kHz/24-bit res)

Op.36 – isn't that Beethoven's Symphony No 2? Indeed it is, but transcribed for piano trio by Ferdinand Ries (the booklet essayist argues, albeit 'signed off' by the composer), and performed here on period instruments – as is the Concerto. (This is not the first such: we had a 1972 DHM LP with Badura-Skoda, *et al.*) Melnikov plays an 1815 fortepiano, and in the Trio one modelled after an Anton Walter instrument. It's a relaxed, intimate account, the three soloists musically balanced so that, for once, it doesn't sound like 'Beethoven's Cello Concerto'. Still, it's the Op.36 as a trio that makes this disc more worth having. **CB**

Sound Quality: 85%



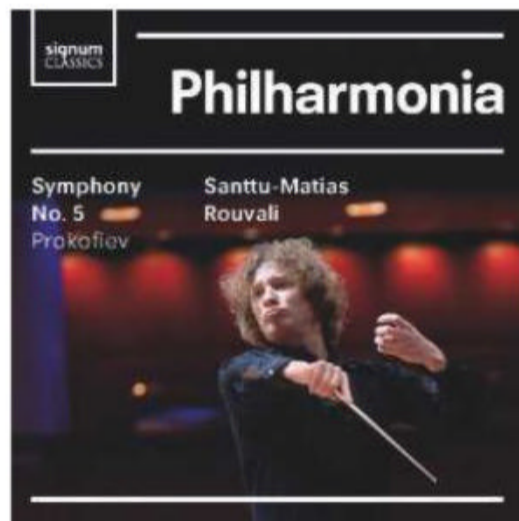
### BEN GOLDSCHIEDER, HUW WATKINS

Legacy – A Tribute To Dennis Brain

Three Worlds Records TWR0009 (downloads to 96kHz/24-bit res)

It's the centenary year of the great horn player Dennis Brain, killed in a night-time car crash – he was then only 36. This compilation has a track by composer/pianist Huw Watkins, *Lament*; Poulenc's *Élégie*; Britten's *Canticle III* (premiered in 1955 with Brain and so obviously tailored to Peter Pears' vocal style but ably sung here by James Gilchrist) and three transcribed *Sonnets* by Roxanna Panufnik. There are also unaccompanied pieces by Maxwell Davis, *Fanfare Salute*; and Malcolm Arnold, *Fantasy* (typically quirky and warm). Finalist in the 2016 BBC Young Musician Competition, aged 18, Goldscheider plays compellingly under the scrutiny of a close recording. **CB**

Sound Quality: 90%



### PHILHARMONIA ORCHESTRA/ SANTTU-MATIAS ROUVALI

Prokofiev: Symphony No 5

Signum Classics SIGCD669 (downloads to 96kHz/24-bit resolution)

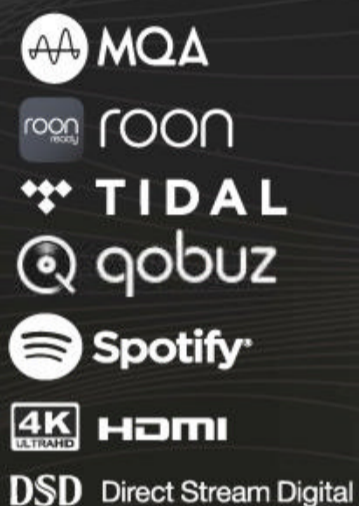
This is from the Royal Festival Hall, Feb '20, just before concerts ceased (but there's no applause). In January you could see his Gothenburg performance at GSOpay, and he'd been conducting it in Munich too. The Philharmonia playing is fine, tempi are well judged and transitions smooth (*eg*, in the scherzo slow middle section's accelerando back to the main tempo). Brass and winds sound well but the upper strings are disappointing in comparison with the Philharmonia/Rouvali *Swan Lake* recording [*HFN* Jan '21] – denser scoring here of course. In all, not so searching as Jansons/Leningrad PO on Chandos. **CB**

Sound Quality: 80%





The impression of sound with eyes and ears



MAY2021

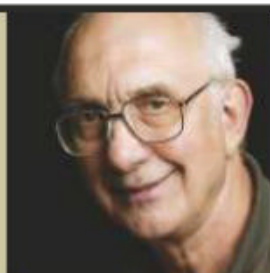
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## Barry Fox Technology journalist

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

# Full-fibre diet

**Barry Fox** explains the pros and cons of super broadband tariffs, but says you should ask yourself 'what do I really need' before signing up for high data speeds if music is your major passion

There's little point in begging yourself to buy a new top-end streamer if your broadband is iffy. So rejoice that you will very likely soon – if not already – be suffering the misery of new road works. It's all part of the government's promise to give us FTTP, Full Fibre to Premises, with new, looser rules from Ofcom, the quango that controls telecoms. The aim of the project is a 'full fibre future for the whole of the UK' and 'closure of the country's 100-year-old copper network'.

### TARIFF TRICKERY

Setting aside my stuck record schtick – why dig roads when 5G wireless should deliver the same goodies without spade work – the road misery should be short-term. The long term gain is that, by spending billions on tearing up roads, it is hoped the new all-fibre providers will force the current Big Two suppliers, BT Openreach (which carries Talk Talk, EE, Plusnet, Voda and Uncle Tom Cobley, as well as BT) and Virgin (which just carries Virgin), into upping their game.

But someone has to pay. The diggers aren't doing it because they love Brahms, Basie and Bing. So think carefully and read the small print before locking into any FTTP subscription. The tariffs often seem designed to confuse. Both BT and Virgin currently offer mainly a fibre feed to the street, and then connection by copper

phone wires or coax cables into homes. The phone wire technology used is DSL (Digital Subscriber Line) which is a bit like DAB radio in that high frequencies and high data rates are squeezed into a low bandwidth 'pipe' by spreading them wide and thin in multiple bands.

The downside is that it works only over a few kilometres of copper – far less if you are unlucky enough to have old, aluminium phone wires. V [Very high frequency] DSL delivers higher data speeds but over shorter runs and at higher price. DSL is asymmetric, which means the banding carries more data down into our homes than up and out of them. Fibre direct into the home is symmetrical, with similar up and down rates, and faster. But it costs more.

The question to ask, before you sign any of the Very Special Offers that the new services will be desperate to sell, is 'what do I actually need?'.

### DOWN TO EARTH

One answer to this question is better service, of course, from a company with real live humans to phone when your broadband goes down, for instance after a flimsy street junction box has been forced open by a drug dealer for use as a dope stash. Water and electricity don't mix well, so when rain gets into an open cabinet, and soaks the copper connectors, data bits go to earth rather to the customer.

The very high data speeds, satisfying symmetry and low latency promised from fibre will be good news for hard-core gamers. But I doubt this description fits the average *HFN* reader. Gigabit speeds will also be great for big houses with big families, where a lot of people are indulging in different high-speed services at the same time, eg, streaming 4k (soon to be 8k) video, and downloading and



**ABOVE:** London-based G Network is laying down 100% fibre cables across the capital

uploading movies. But this is not the case for small homes and flats, occupied by music lovers playing stereo.

In the US, telecoms giant AT&T is getting people hot under the collar by arguing that for many 50Mbps down and 10Mbps up, or perhaps 100 down and 20 up is all they need. It has a point.

G Networks, the company that has been digging up North London recently says: 'The ability to own and control

our network allows us to maintain our network without any third party costs'. Time will tell.

GN also says 'Full Fibre connections [FTTP] offer a more stable and reliable service than 5G. For example, a 5G signal can be interrupted by external

factors'. Again, time will tell.

But GN is reportedly spending £1bn on the big dig so will need to hard-sell to recoup costs. So expect a war of competitive offers. Be sure to check how far into the fixed length contract the introductory price deal lasts. Do you really need the higher data speeds you will be paying for? Before signing perhaps try calling the company's tech helpline and see how easy it is to get through! ☎

'Expect a war of competitive offers from companies'



**ABOVE:** Would you want your broadband coming through here on a wet day?



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There is a difference in the quality of sound from the physical format compared to the same music played from a music file. The major difference is one of resolving the details that give the aural clues to the 3-dimensional depth of sound stage, the air and space around instruments and vocalists, and the correct timbre and texture. These are especially important aspects of 2-channel stereo replay and one that make it the more convincing recreation of the concert experience, not just merely a "hi-fi" reproduction.

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- 6 Hegel Mohican, £3900



## 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

# The magic of imaging

Take a bow Mr Sax. **Barry Willis** describes how he had a epiphany that led to his conversion to audiophilia – although it was the aspects of soundstage detail and not decibel levels that appealed

**W**hen do ordinary music lovers transition to become audiophiles? For many, the epiphany probably involves imaging, the rendering of apparently three-dimensional effects from a single pair of loudspeakers.

From childhood, I was fascinated by sound and sound-producing equipment, but was well into so-called adulthood before my audiophile baptism. The breakthrough was a recording of a jazz combo, and the moment when I clearly heard a sax player stand up from his chair and step forward to take his solo.

He came into the room, distinct from the band mates arrayed behind him. I don't remember much about the playback system, other than that it was a high-quality rig in a nice room, all of it decent two-channel analogue equipment without any fancy processing.

### TRUE STANDOUTS

It was a 'That's amazing!' moment. I may have heard imaging effects before, but this was the first time I became consciously aware that spatial dimensionality could be extracted from recordings, and that some pieces of gear – especially loudspeakers – could render this effect better than others. After that sax-solo epiphany, imaging ability became the foremost quality that I sought in audio equipment: a singer standing clear of the orchestra, as if in a virtual spotlight; guitarists who moved from barstool to microphone and back again; the interplay of two violinists; the separation of voices in choral works.

Not for me the mile-wide drum kit or the grand piano bigger than the stage at Kennedy Center. Big bombastic systems and bone-crushing sound pressure levels are always impressive, but the delicacy needed to generate 3D images in empty

**RIGHT: The very first pair of commercially-produced Wilson WATT loudspeakers, serial Nos 001 and 002. They were originally sold to Bruce Brisson of MIT Cables**



air is paramount for me. Among the first loudspeakers I heard that could do this were the Wilson WATTs, whose soundstage remained stable even if you walked around the room – the opposite of most speakers at that time, with limited imaging abilities that required listeners to remain motionless.

The head-in-a-vice syndrome that audiophiles willingly endure has always been a barrier for ordinary music fans who might otherwise venture into the hobby. My preferences, of course, don't apply to other people. Thus, when asked for loudspeaker recommendations from friends, I don't mention imaging. It's something

that most folks don't know about, and probably wouldn't care if they did.

There are many good loudspeakers at all price points, and free advice from me is usually defined by budgetary considerations and space limitations. I've lost track of how many speakers have passed through my hands, not to mention how many more I have encountered in the course of work, but among the true standouts are a pair from PSB's Image

line, the workhorses of my simple system. Originally costing \$1100/pair back in 2009, these remarkable floorstanders came from a fellow who had replaced them with something new. His wife wanted them out of the house.

I scooped them up at \$200. The cost/benefit ratio is among the most favourable of any audio gear I have ever bought: superb bottom end, good mid-bass, excellent midrange and treble, and respectable dynamics. But it's their imaging ability, as the line's name implies, that really puts them over the top. Loudly or softly, they place instruments and voices in a palpable soundstage that both fills the room and draws me in.

### MYSTERY PLAY

Most amazing is that during films I hear sound effects behind and beside me, even though the system is two-channel only, while during sports events I can hear crowd noises behind me. Reflections from the back wall? Maybe, but then they did this before, in a room so large that the back wall wasn't a factor.

I can only speculate about how they achieve this. But the PSBs are destined to remain in the permanent collection, as the delightful mystery continues. 🎧

'I can hear sound effects behind and beside me'

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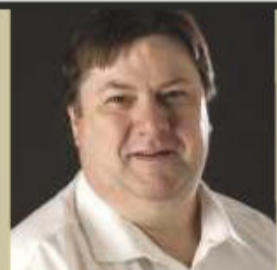
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## Andrew Everard Reviewer/writer

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

# A switch in time

Click, swipe, tap, and there's the music – it's no wonder **Andrew Everard** is sold on the simplicity of network audio. But when things go wrong, finding the solution isn't always easy...

Switching my listening to a largely network-based set-up is probably the best thing I ever did. I'm freed from all those complications of microscopic cartridge alignment and wondering whether just the tiniest tweak of VTA would bring it all together. I've got used to enjoying the way Roon enables me near-instant access to my entire music collection, whether here at my desk or in front of the main system in the listening room, or on the speakers in the kitchen.

No, I'm not one of those multiroom fanatics, delighting in the ability of having the whole house pulsating throughout to the clink of glasses and the froth of witty conversation. It's just that it's handy, in the midst of an interesting radio programme, to be able to wander off and make a coffee without missing anything.

### PRUDENT SAVES

And I've done all the sensible things I could imagine to make the most of the set-up, as I have reported in the past: the main music server connects to the 'big system' player via a fibre-optic link, to keep any electrical noise on the network at bay; and the music store is backed up to a second server 'just in case'. True, it's not quite a case of 'all the eggs in one five-hard-drive basket' – I

still have all the discs I have ripped to the server stashed away, and those I have bought and downloaded stored as zipped files elsewhere. But having spent many a long weekend ripping content, I'm really not minded to do it all over again, thank you. After all, the last time a server went down and I had to restore from my backup, that took days, not hours.

All that done, it all works ever so well, except... well, the trouble is, when something goes wrong, it's not always easy to work out what's amiss, let alone putting it right. So, there I was feeling a

bit smug after a colleague had emailed me and said his Roon set-up had lost sight of all the network shares from which it gets its music, and he'd spent a good while re-establishing everything.

'There's four hours of my life I won't ever get back', he said. I replied that I'd just finished firmware updates on my servers (which takes a while as there are five of them, and it's always something of a 'hold your breath and hope' process) and that all seemed well, and we agreed it was just one of those inexplicable things. You know, as the saying goes, 'it happens'.

It does – the very next day I was away working when the ominous message came from home: 'There's just been a power-cut'. Turns out it was only for a few minutes and I was told that everything seemed to be OK, which was a relief, as the surge of two Naim power supplies re-energising at once can sometimes trip a circuit-breaker, thereby taking out power to the whole system.

So, I came home expecting the worst: no network, no fibre feed to my desk, all that stuff. But strangely, all seemed fine. After restarting the computers, everything

was working – even Roon came straight back with Radio 3, which is what I'd been listening to before I went out. Phew!

Except... Where was all my music? My main music server had gone invisible, and no amount of rebooting it would bring it back. Couldn't see it in Roon, no sign of it on the network. OK, so only a slightly heart-stopping moment. Then I painstakingly pointed Roon at the backup server shares, and checked on the files I'd uploaded to the main server the previous morning, which should have replicated to the backup server overnight, but hadn't

'I began to have a feeling of being very exposed'



**ABOVE:** Naim's ND 555 network-attached DAC with PSU, as used by the author [*HFN* Apr '19]

as the main server wasn't working. They got recycled, to the backup.

By now I was dreading that lengthy wait while I re-initialised my main music source, set it all up again and copied everything from the backup. Not just because it was going to take forever: with only one set of files in existence, a feeling of being very exposed crept in. What happens if the backup server goes down before the copying back to the primary is fully completed?

### LESSONS LEARNED

Having got through the panic bit and implementing the backup – and, thank goodness, with music playing again – it was time for the methodical fault-finding bit. The server seemed to be booting perfectly well, and was quite literally making all the right noises, so – aha! It turns out this time it wasn't any of the usual suspects, but a network switch *apparently* working fine, but not doing its stuff. I swapped in a spare, feeling pleased I'm something of a hoarder of electronics, waited for it to boot and – at least as we write – we're back in business.

The lesson here is that the more you understand, the better your streaming system will perform. And the better you'll be equipped to keep it all working, even when nothing seems to be wrong. ⚡



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## Jim Lesurf Science Journalist

Jim Lesurf has spent a lifetime in audio, both as an engineer at UK hi-fi company Armstrong and reader in Physics and Electronics at St Andrew's University

# Unknown unknowns...

Keeping up to scratch with jazz info, **Jim Lesurf** wishes his monthly mags hadn't disappeared from his local newsagent. And he wonders exactly what, if anything, is eluding him nowadays

**A**round 30 years ago I was delighted to see a new magazine appear in our local newsagent's. It was called *Jazz On CD* and, while most of the music I tend to enjoy is classical, I also like a lot of early jazz. Roughly speaking, for me this can be characterised as material from before the mid 1960s. For information about new recordings of classical music I was able regularly to read more than one monthly magazine. But I hadn't found one that reviewed a lot of the jazz titles that were being released on CD as well as LP.

### OUT OF PRINT

Another bonus was that the new magazine not only gave me reviews, but each month it came with a cover-mounted disc. This, of course, meant that I could discover new artists and performances I'd otherwise have missed. Sadly, after a few years the title ceased publication, leaving me largely in the dark again about new issues of early jazz.

Fast forward, and a couple of years ago I noticed in the same shop another magazine that covered jazz and started buying it. No cover CD this time, and most of the content was about live performances and the jazz scene – gigs and bands, etc. But it published a fair number of CD reviews including early jazz. So once again I could find the information needed to buy titles I fancied. However that magazine too decided to cease printing a monthly issue, only this time it went 'web only'.

Given the trend for people to go for 'e-books' and digital subscriptions, etc, it seems that sales of paper-and-ink copies for that niche title weren't justifying the costs involved in producing them. In principle, electronic access seems fine because the content can be the same. But to me, alas, it isn't *quite* the same.

**RIGHT: Jazz On CD cover-mounted discs *Treasurehouse*, *Sampler No. 16* and *In And Out*. Fats Waller – one of the author's favourite artists – is pictured at the piano in 1938**



Yes, a digital subscription has many advantages for readers, there being no piles of paper magazines to store. Others appreciate not having to take the time to make a repeated purchase every month and enjoy having the next issue of their favourite title appear promptly on their electronic device of choice.

### A REFERENCE LIBRARY

Nevertheless, personally I find it easier to read well printed ink on paper than I do a 'page' displayed on a screen. I also like to keep copies of magazines to re-read as a reference and use them to build a collection of information.

And there is another advantage in having a regular monthly magazine arrive too. It helps avoid

a problem that has often impeded my discovering more jazz that I like. The problem of the unknown unknowns...

Buying a magazine prompts me to read it. The actual arrival is a reminder that new information is available. I will then read the reviews *and* get the news. But if no magazine comes, I won't know what I've missed – unless I attempt trying to search for what I don't even know exists... It's all too easy to miss out.

One consequence is that I've not bought as many jazz recordings as I otherwise would have. And then as time passes, I might discover I've missed gems that are no longer available to buy as physical discs, just downloads.

The web, of course, is in many ways a great approach to making information available. It is very flexible and fast. Given that I've written hundreds of web-pages myself, I'm not going to complain about the web as a way to disseminate or find information. But the problem then is knowing what to search for, and to keep remembering to do so, when you don't keep a simple track of what new information may have appeared.

### KEEPING CHECK

Has there been a new reissue, say, of recordings by Fats Waller, of whom I'm a big fan, or some other musician that provides music I'd love? How to check for all the many artists – sometimes ones whose names I don't yet know – perhaps with original recordings which may have laid hidden in a vault for decades but are now briefly available again?

A magazine with a set of reviews can tell me things which I didn't previously know. So, old-fashioned or not, I still love ink-and-paper and the regular arrival of a magazine to help me make discoveries. ⚡

'I find it easier to read well printed ink on paper'

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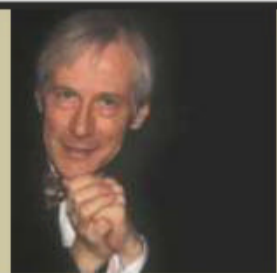
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## Christopher Breunig Music Journalist

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

# Good, bad and the ugly

**Christopher Breunig** looks at some of the more memorable – if only for the wrong reasons – classical LP sleeves we have had, and cover sleeve designs that have come from film and TV

Our feature series on LP sleeve art [see p30] reminded me of former contributor Andrew Keener digging out some awful classical sleeves for a *Gramophone* exposé. One that escaped his notice was World Record Club's extraordinary lapse in taste when reissuing Carlo Maria Giulini's Philharmonia Tchaikovsky *Pathétique*, reproduced here. (It fared better as a CD in Warner's Gemini series.)

The artwork for classical LP covers was the subject of a 2009 hardback authored by Horst Scherg, and now in paperback at Amazon.uk [*Classique: Cover Art For Classical Music*]. But for those of us collecting vinyl over the years we have our own favourites – and shockers.

### LOGO RHYTHMS

In the pre-stereo era, HMV covers merely comprised a straw-texture background with the company's famous 'Nipper and gramophone horn' logo above an oval centre with titling in black. Below, a sepia box had 'His Master's Voice' and format details. Deutsche Grammophon covers – sometimes stitched with an inner pocket for the disc – presented a wide yellow titling band with cream on either side and the tulip logo, which dates back to 1949. The striking yellow cartouche we still see today.

Decca covers for mono LPs (these were unglazed) were more adventurous with full colour graphics. They featured mostly abstract patterns although mountain-top 'castles' for Bruckner of course, and for the classic Ansermet *Petrouchka* the pathetic puppet with his arms outstretched high.

EMI was not slow to exploit Karajan's good looks: his first (Philharmonia) recording of Beethoven's 'Pastoral' Symphony had his portrait inset and *Herbert von Karajan* in a font twice the size used for the composer's name.

**RIGHT:** Columbia's sombre Sibelius cover; and (clockwise) Marc Chagall for Doráti's classic Mercury *Firebird*; David Anstey's Mahler 3 cover – rejected when Solti saw it; WRC's Tchaikovsky Sixth reissue (!); one of several Karajan EMI sleeves that provoked comment; Ken Russell's *Monitor* silhouette for Barbirolli's *Enigma Variations* EMI remake



'Richter was told they were all off for a photo-shoot'

Two or three Karajan EMI sleeves have prompted comment: most notably for his second Strauss *Ein Heldenleben* recording, where the militaristic buttoned leather jacket evoked, for some, his wartime affiliations. When he recorded the Beethoven Triple Concerto with the three great Russian soloists in September 1969, it was the Ukraine-born pianist Sviatoslav Richter – wanting time for an extra take – who was told no, they were all off to a photo-shoot for the cover...

Much later when he redid the Vivaldi 'Four Seasons', this time with Anne-Sophie Mutter and the VPO strings, we saw her sitting amongst trees, while on the reverse, Karajan is standing with the same draped red sweater [see above]. 'Little Red Riding Hood and the Wolf', some thought – or even an implied seduction. When he sat for Antony Armstrong Jones the resulting portrait looked deathly, I

thought, but it appeared on a Wagner excerpts LP, if not elsewhere.

### FORBIDDING FINN

Maybe not the most handsome of our species, Jean Sibelius appeared in a grim Columbia sleeve profile for Ormandy's mono coupling of Symphonies Nos 4 and 5 [see above]. I read somewhere the company had doubts about selling any copies yet it turned out to be one of the conductor's best LPs. Actually, RCA's LSO/Monteux No 2 had a far more off-putting portrait (see it at discogs.com).

Mozart's Piano Concerto K467 gained a seemingly unshakeable nickname, 'Elvira Madigan', when Geza Anda's 1964 recording was used for the soundtrack of that Swedish film – DG promptly redesigning the sleeve to show starring actress Pia Degermark.

And such was the popularity of Ken Russell's BBC *Monitor* series that EMI licensed a still for a best-selling Elgar LP, retained as the current Warner Classics LP/CD artwork. ☺



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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

# Fifty-fifty chance

In spite of the lockdown, one Israeli jazz musician was able to at least fulfil one held ambition. **Steve Harris** tells the story of a night in Gothenburg and how a birthday album was made there

It was a disaster for musicians everywhere, of course. But for Avishai Cohen, the Israeli bassist and composer who has built an international following far beyond his original jazz audience, the suppression of live performance in 2020 was especially hard. For this was Avishai's 50th birthday year, and he had been looking forward to a once-in-a-lifetime world tour, including many orchestral shows.

'We'd planned 50 shows across 50 countries', says Avishai's manager of more than 15 years, Ray Jefford. 'Only one show per country. In January 2020, we had 46 bookings, including about ten orchestra shows. We were just looking for four more – it was a case of making choices and deciding on routing. But it all collapsed.'

### DREAM REALISED

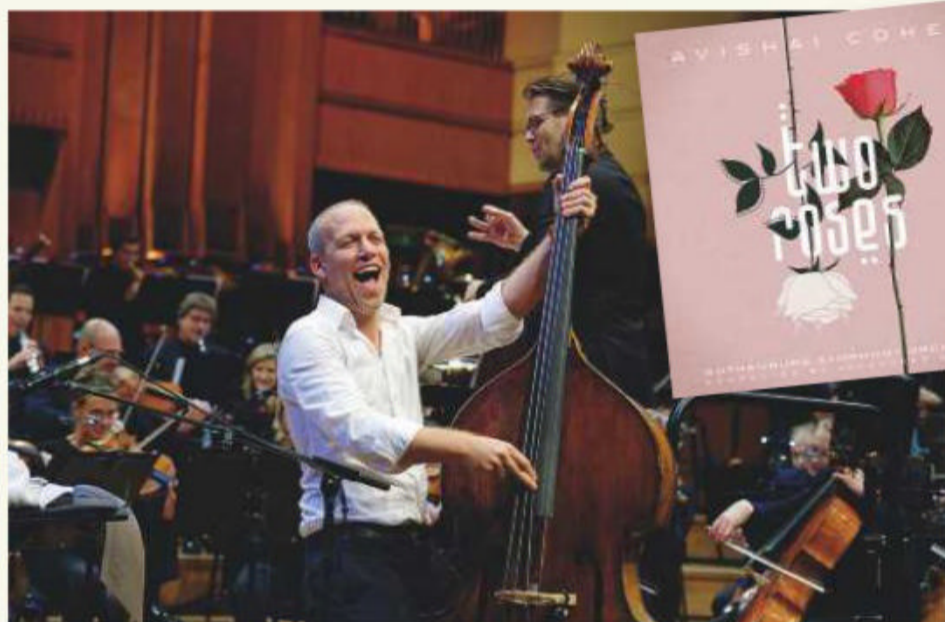
Fortunately, though, Avishai's concert with the Gothenburg Symphony Orchestra did take place in January as scheduled, before the lockdown. This meant that he was still able to realise his dream of recording an orchestral album. Out now, it's called *Two Roses* [Naïve/Believe M7369]. There's also a 2LP option, eg, from Five Rise Records in the UK.

As Ray Jefford explains, even ten years ago it was clear that Avishai's music, often described as 'cinematic', would lend itself to an orchestral presentation.

'So we always had it in the back of our mind, and Avishai thought, well, how do I do that? It took a few years for us to find a way through. We found an arranger who wanted to work with Avishai's music. And that allowed us to start creating a live [orchestral] show, and then for the past five-plus years, to tour that live show.'

'But during this period, we always wanted to record it. Eventually, after speaking to them for two or three years

**RIGHT: Bassist Avishai Cohen performing with the Gothenburg Symphony Orchestra and Alexander Hanson early last year in what should have been one of 50 tour concerts to mark his 50th-birthday and (inset) the *Two Roses* CD cover**



about the idea of it, I managed to get Gothenburg on board, and with the help of Lars Nilsson [recording engineer and Nilento studio owner] also in Gothenburg, and with the conductor Alexander Hanson, we built a situation where we felt we could go for it.

'In a nutshell, we did two days of rehearsal, then did the live show in front of an audience, then we stayed in the Concert Hall without the audience and recorded the album.'

The live show itself had been recorded and filmed for a live video and a TV documentary. But for the album recording, Lars Nilsson built a large drum booth in the Hall, placing

it behind the conductor. All the musicians were playing together, exactly as in the concert, but he had separation for the drum sound. Some of the vocals were recorded in Israel and added later, but essentially it's a live album.

Later in 2020, Avishai did manage to do some touring with his trio.

Says Ray Jefford, 'We were very fortunate, because we only work for one artist – as a team of five people around Avishai, a publicist, sound engineer,

me, and other production staff that we employ. We're not spreading our commitment and our energy thinly.

'We were able to react to situations in a way that meant we were still able to tour in September, October and November, would you believe, with the will and the strength of some of the promoters around the world.'

'We were able to put together the masses of documents, invites, letters, government papers, for Avishai and his group to travel from Germany to the Czech Republic... to Italy, wherever, to make these tours happen.'

'So unlike most artists we were able to do a certain element of touring right up until the doors were *really* locked. And we were happy and lucky enough to have promoters that were ready to develop such an opportunity.'

### CLIMB EVERY MOUNTAIN

As I write this, Ray Jefford is planning the first live concerts of 2021 for Israel and is optimistic about what lies ahead.

'These are mountain people we deal with, not the valley people', he says. 'We go with mountain people, you know? The people that really climb mountains, regardless of the weather and the conditions that we're all living in.' ⚡

"We stayed in the Hall and recorded with no audience"

## YOUR VIEWS

# Sound Off!

Correspondents express their own opinions, not those of *Hi-Fi News*. We reserve the right to edit letters for publication. Correspondents using e-mail are asked to give their full postal address (which won't be published). Letters seeking advice will be answered in print on our Sound Off pages, but due to time constraints we regret we're unable to answer questions on buying items of hi-fi or any other hi-fi queries by telephone, post or via e-mail.

## DOUBLE DEALING DON'T BUY ONLINE AFTER VISITING A RETAILER

I have just read Barry Fox's Opinion column 'Tripping over' [*HFN* May '21] and in particular the paragraph headlined 'A New Breed'. Oh how right he is. I should point out that I am also a dinosaur and, like Barry, believe I have standards and ethics. I have always used the same local hi-fi retailer and believe we have built up an excellent relationship inasmuch as they know my system and likes and I have complete confidence in the advice they give me. This is due to their knowledge and the fact that I am a loyal, returning customer.

Two years ago I attended a hi-fi show with the aim of upgrading my front home-cinema speakers. After the show I contacted Simon, the manager of the shop, who arranged for both sets of speakers I was interested in to be set up in his demo room for us to audition side by side. Demo over, I ordered the ones we had decided upon there and then. I would no more entertain the idea of making excuses and going off to see if I could find them at a better price on the Internet. He had provided a service and I was able to make the right choice because of it.

Move forward to the beginning of this year and I decided to upgrade my turntable. Due to the pandemic my initial query was done by email, which was picked up by Richard, the manager of the sister store. Long chats, emails and everything in between and I now have a superb new record deck, valve phono stage and stereo amplifier, linked into my AV amp for when we are watching films.

Not only that, but everything was brought to my house and installed completely free of charge. This is on top of the occasions when I have called in



**ABOVE:** Buy cheap, buy twice – or use the expertise of your local hi-fi dealer

about changing a lead or some other piece of kit and have been told 'here, take it home and try it out. If you like it then buy it'. Would the big Internet companies do that? No, of course not.

I actually read an online review of my local store by a 'Selfish Joe' who gave it a glowing report but recommended using it for demos before going online to buy. He shamelessly included his picture, so hopefully no more free demos for him. Using the knowledge and time of a dedicated specialist, knowing full well you are going to purchase online is, in my opinion, at best a damn cheek.

*David Tatum, via email*

Barry Fox replies: Always nice to be agreed with, David. My next personal concern is that China moves on from making hi-fi for established brands and starts marketing its own models. This is what's happening with smartphones. And it's well-nigh impossible to get any answers to even slightly technical questions, as I've recently discovered when querying a phone camera's claimed performance in poor light and for telephoto shots. So what happens when – as sure as night follows day – a Chinese giant claims golden-ear audio quality from its own brand of hi-fi, and a British reviewer questions componentry or circuit design?

Send in your views to:  
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## The joy of text

THE MYSTERY OF DISAPPEARING CD TEXT SOLVED

Why is it that hardly any of the current CD players display CD text? Even the most expensive SACD player in the Marantz catalogue, the SA-10, will only display SACD text and not CD text. I've only found Lyngdorf and T&A units that currently offer CD-text display. Why is this, when it used to be pretty much a standard feature? I miss it!

*Simon Oakley, via email*

Paul Miller replies: CD Text is an addition to the Red Book standard, offering basic album, track and artist names, but its compliance is not mandatory and many of the CD/DVD-ROM based transport/decoder solutions used in today's players overlook this facility. Specialist CD transport suppliers – StreamUnlimited's 'BlueTiger Connected Optical Drive Platform' being a great example – do support CD Text. You'll find this transport in players from Pro-Ject, among others.



**ABOVE:** The Marantz SA-10 SACD player [*HFN* Mar '17]

## WhitWorld

OUR HI-FI WORLD THROUGH THE EYES OF WHITWORTH



"I ASKED IF IT WOULD DISPLAY TEXT AND THIS IS ALL I COULD GET."

## Passion plea

CONFUSION OVER COPY OF BACH ON TELDEC

I was interested in Peter Quantrill's survey of recordings of Bach's *St John Passion* in the May 2021 issue. He mentions and recommended the version by VCM and Harnoncourt, with Kurt Equiluz as the Evangelist in a recording from 1965. This is just a little confusing as I also have a recording from 1967 with Kurt Equiluz as Evangelist but Nikolas Harnoncourt playing the viola da gamba! The recording is on Teldec's Das Alte Werk label [SKH 19], but conducted by Hans Gillesberger. Is this the same recording, or were two made within a couple of years?

*John Winterbottom, via email*

Peter Quantrill replies: John Winterbottom and I are talking about the same recording, made in Vienna (my sources say) over between the 5th and the 23rd of April 1965. The attribution has long been in dispute. Early reviewers and listeners claimed that pasting 'Harnoncourt' on the spine of the LP set was unfair when the session photos inside showed Gillesberger (HG) in the conductor's position and, as John says, Harnoncourt (NH) at the gamba. The rubric in my



**ABOVE:** Reader John's copy of Bach's *St John Passion* on Teldec's Das Alte Werk

copy of the set's 1975 reissue lists HG as conductor of the choirs (he was artistic director of the Wiener Sängerknaben at the time) and NH as conductor of the orchestra (which he had founded in 1953). Underneath, however, is the credit of 'Gesamtleitung' (overall direction) to NH.

The singer in the role of Christus, Max von Egmond, apparently said that HG conducted the movements involving the chorus and left the rest to NH directing from the cello. Given the presence of Gustav Leonhardt at the harpsichord, the business of who took charge for which given movement remains unclear, but Harnoncourt was surely the guiding spirit.

## The missing tape size

WEARITE DECKS AND 'OVERSIZED' SPOOLS – DID THIS READER DREAM IT?

As a young chap in the 1960s I used to collect and pore over hi-fi leaflets. Among them would have been brochures from Ferrograph that featured reel-to-reel recorders using the 'Wearite' deck. This deck was also used by Vortexion, which I strongly fancied, but couldn't afford. One feature of these decks was that they accommodated what was then a large tape reel size of 8¼in. This was a fair bit bigger than the then standard 7in. We had not yet been introduced to the large NAB spools.

Because of Ken Kessler's interest in pre-recorded tapes, I searched to see if any had been recorded on this 8¼in spool, but couldn't find any. In fact, I could find no mention of this size at all. I know I have had them in my possession many years ago but can now find no trace. Even the

vintage images of Ferrograph never show this large spool. Did I dream it?

*Nick Willans, via email*

Ken Kessler replies: No, you didn't dream it, and there were plenty of other sizes. I have no experience of the horizontal-use-only, one-sided 'pancake' studio reels, which seem to include 12in, 16in, or more, but I have seen 3in, 5in, 7in, 10in and the 8¼in mentioned. It seems that commercial pre-recorded tapes came only on 5in (mainly UK), 7in and 10in spools. Smaller reels were required for ultra-portable machines, with the tiniest needed for 'spy'-type recorders. One explanation I have heard for the odd size you discovered is that some recordists might have used cine-film reels as take-up spools. All the vintage pre-recorded tapes I have acquired from the US (and one from Japan) are 7in.

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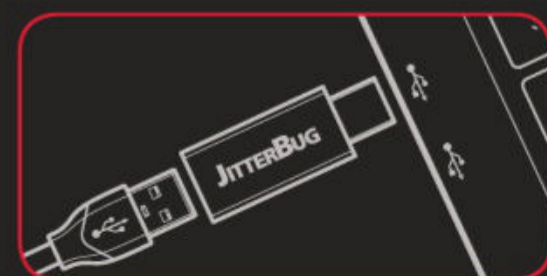
**Noise** is the problem. Real noise—the kind you can't hear directly. Most often, the word "noise" is used to describe tape hiss or a scratch on a record, but these sounds aren't noise; they are properly reproduced sounds that we wish weren't there.

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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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# Nakamichi deck renewed

ADVICE ON BRINGING A CHERISHED NAK 600 RECORDER BACK TO WORKING ORDER

Tim Jarman's piece on repairing vintage hi-fi [*HFN* Jan '21] had me reflecting on what is now available with respect to accessories, parts and calibration tools. In particular my question relates to finding and purchasing the different accessories needed to bring a cassette player back to its original specification. What are his various recommendations when it comes to accessing these spare parts (B&W took ownership of one manufacturer many years ago now, but the support for that brand is now long gone)?

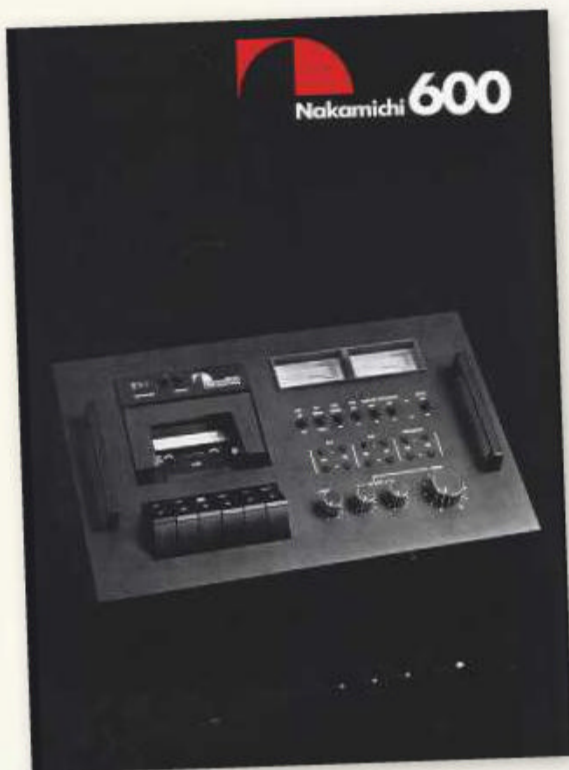
I'm sure many readers will recall the Nakamichi decks of the late '60s and early '70s, but my interest lies in the company's 600 cassette player. I bought a secondhand 600 many years ago and was very fortunate to be able to bring it back up to specification using what were the remaining few, new replacement parts available at that time. For example, I was able to locate a new record/playback head.

I was also able to buy calibration tapes for head alignment, speed adjustment, *etc*, and I managed to get the left channel playback response very close to 20kHz at -20dBV with ferric tape. Do I have those tapes somewhere in the house? Hmm...

Does Tim have any thoughts on where to purchase replacement OEM-equivalent, re-manufactured record/replay heads, pinch rollers, record-replay switches? After being in long-term storage in my loft, I reckon my Nakamichi 600 is all ready to go again, apart from a broken record/replay switch. Switch cleaner works great, but not for degraded plastic in such components! Vintage 'new' may be available, of course, but the original materials used are likely to have degraded to a point where they may fail very quickly.

*David Armour-Chelu, via email*

Tim Jarman replies: With cassette decks it's best to stick to models having wear-resistant ferrite or Sendust heads (Sony F&F or S&F, JVC SenAlloy, Akai GX, Toshiba AS, *etc*). This unfortunately excludes the Nakamichi 600 which has a soft, short-lived permalloy head made worse by the hump in the middle – most



**ABOVE:** Nakamichi's 600 was a 'console' type cassette deck, first released in 1975

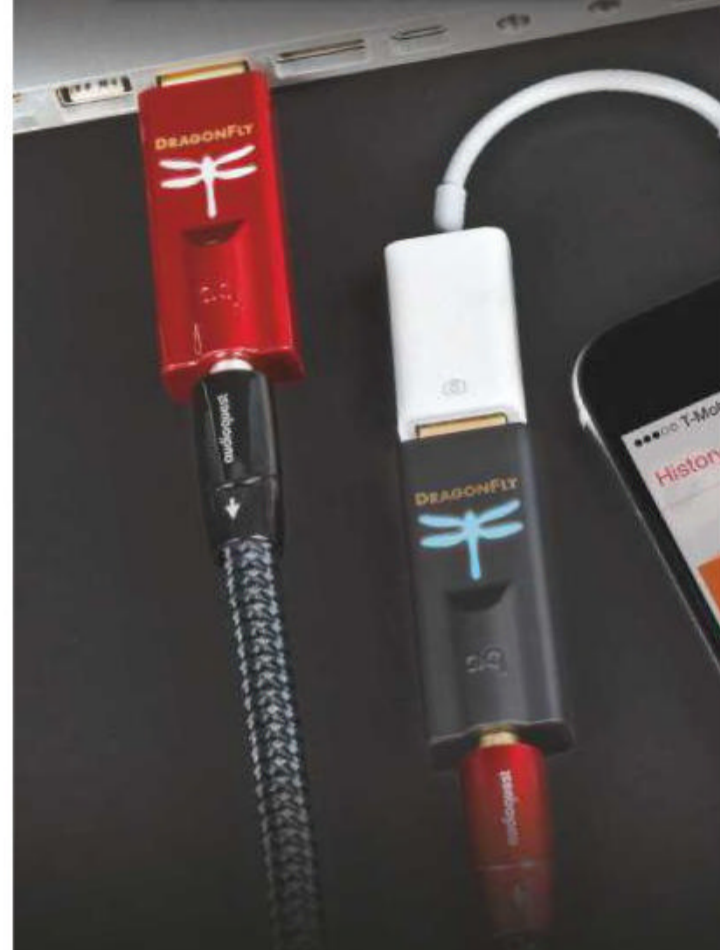
are worn by out now. Substitution is difficult unless you are able to calculate the new component values required in the record EQ circuit and deal with the mounting issues. I've never had to replace a record/replay switch in anything, as careful cleaning (though disassembly is sometimes required) has always done the trick. The only part I've ever seen broken is the little hook on the end and, again, fusing in a loop of tinned copper wire normally fixes that.

I've not seen re-manufactured cassette deck parts of any quality, but luckily the world is still full of tatty donor machines so it's possible to repair almost anything using this source of parts. Yes, pinch rollers are still obtainable, but I prefer to re-face the original in a lathe if the rubber is still in good condition underneath. Where the spindle is a non-standard size (Philips, *etc*) I re-drill the bracket and fit a conventional one if a new roller is needed.

Beware of attempting to extend the recording top-end response too far if this involves lowering the bias excessively. The measurements may be flattering, but under real world conditions distortion will be high and tape-to-head contact problems will be audible with anything other than brand new tapes. Establishing an equal response at 1kHz and 10kHz (-20dB VU) normally results in a good compromise setting.

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# Swede sounds of success

ANALOGUE FAVES AND DIGITAL UPGRADES AS SWEDISH READER RELATES HIS HI-FI JOURNEY

It was around 1965 that my interest in music really began, with groups from England such as The Beatles, Stones, Kinks and Small Faces the driving force, followed by those making up the British Blues revolution. Hi-fi became a passion for me in the 1970s, my first 'real' stereo being a Ferguson receiver with a BSR turntable and Wharfedale loudspeakers. The real wake-up call came around 1980 when I heard a pair of Spendor BC1 loudspeakers being driven by Luxman amplifiers fed by a Thorens 160 turntable with SME 3009 arm and Ortofon MC20 cartridge. This was a real ear-opener. I can still clearly recall the fantastic piano sound this system was able to create.

A loan from the bank enabled me to buy a pair of BC1s, along with a Kenwood (Trio) amplifier and a Thorens 160, though not with an MC20 as this was beyond my budget. Instead, I chose an AKG P8ES pick-up, which was also good. Changes to the set-up over the years that followed could fill a book, but suffice to say that the real big step-up came in 2005. At that time I lived and worked in Montreal Canada where I first encountered products from VTL.

I started to look into tubes and did many comparisons between brands, but it soon became clear that VTL was the one for me. I will confess to being prejudiced against tube amplifiers, believing they all sounded woolly. And,

yes, some did. But not the models from VTL. To my ears they had a presentation not dissimilar to that of a Krell amplifier only with greater soundstaging ability while being more sympathetic to the kind of music I enjoyed.

Currently I think my journey is over as far as the major components making up my system are concerned. There are always refinements one can make, such as experimenting with your listening position, the location of your speakers, changing tubes (the power tubes are less critical to my experience), cartridges and so forth. But I feel I have finally achieved the sound I have been looking for. Having said that, there are many developments in the digital arena, so I might experiment here in future.

In fact I spent a lot of time during the pandemic trying to lift the performance of my digital components. I was using a laptop running JRiver as source with this connected to an Aesthetix Romulus CD transport/DAC, upgraded to Signature status. The key was to replace the laptop with a dedicated network music player. I wanted something with a 'hi-fi' look, so was drawn to the Lumin U1. My dealer had one delivered to my home for audition and at the same time I installed a network and bought a Synology NAS with twin 4TB WD Red internal hard drives in a RAID configuration. I was amazed at the improvement.



**ABOVE:** The Simon Yorke SD7 'Signature' turntable with Ortofon Windfeld cartridge



**ABOVE:** Lumin U1 Mini network music player (see [www.sounddesigndistribution.co.uk](http://www.sounddesigndistribution.co.uk))

As for analogue, I use both Ortofon Windfeld [HFN Jan '08] and Koetsu Rosewood Standard cartridges. They are very different, but equally good. The Windfeld sounds very firm, dynamic and transparent. The Rosewood Standard also sounds correct, but a little warmer in the midrange and bass.

For the Koetsu pick-up I use my VTL TP-6.5 phono stage with Cifte/Mazda NOS 12AU7 tubes from 1962. They sound incredible to me. With the Windfeld I use an Ortofon ST80-SE MC Transformer in between. I also have a Simon Yorke SD7 'Signature' turntable. To me, this deck is far more than a superb music-maker. It's a piece of art that will follow me to the bitter end. I simply love it and am proud to own a Simon Yorke 'piece'.

*Robert Petersson, Sweden*



**ABOVE:** Reader Robert relaxes in his 3.8m-wide listening room with his favourite magazine and VTL electronics including a TL-6.5 preamp, TP-6.5 phono stage and MB-450 Series III monoblocks

Paul Miller replies: Robert's experiences with VTL (Vacuum Tube Logic) amplifiers mirror my own as I had the pleasure of meeting founder David Manley in the mid '80s and reviewing his UK-built power amps. I used a pair of VTL monos with Magneplanar speakers for about a year and remember their fabulously musical performance very fondly to this day. As you say, Robert, they did not betray a hint of the archetypal 'woolly valve sound' that was more common 40 years ago than, thankfully, it is today!

# Manual dexterity?

WHY THE LACK OF A PRINTED MANUAL UNDERMINES THE HI-FI BUYER'S EXPERIENCE

After years of economically acquiring hi-fi equipment, I've reached that stage in life where I'm heading towards the 'high-end'. Lately I've spent quite a lot on a streamer, DAC, power amplifier and other bits and pieces and, after 50 years of upgrades, to my ears I now have a really good-sounding system. However, as an evolving bigger spender, I've become aware that some manufacturers appear to have a greater appreciation of their customers' expectations than others.

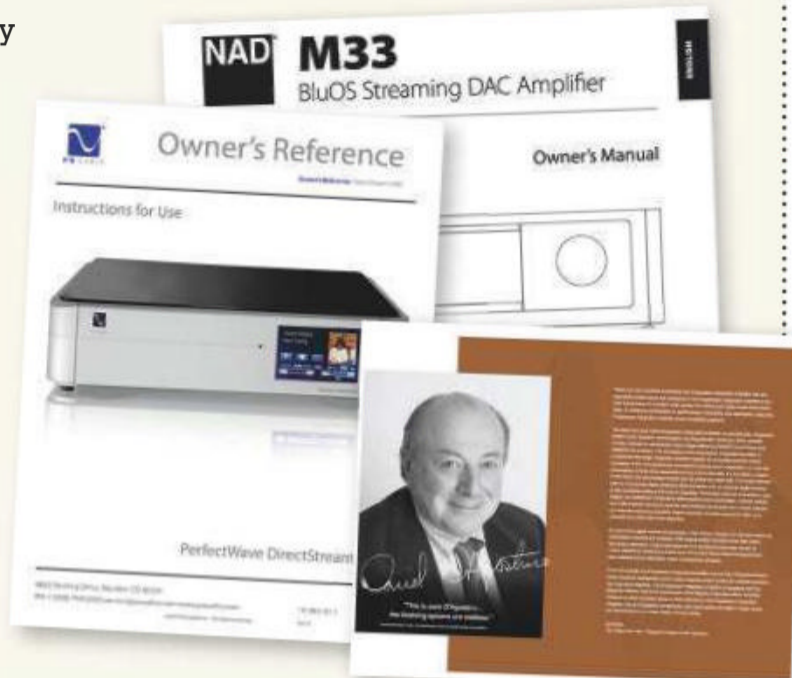
When I receive a new product, I excitedly set it up as common sense guides me. Hopefully with music in my ears, it's then that I sit down with the owner's manual to read what I actually should have been doing. At the same time, I'm hopefully learning more about my new purchase and discovering how I might improve my system further through optimum set-up and possible future purchases.

Yet two out of the four products I've bought lately came with only a cursory single page of greeting or no manual whatsoever. Having spent a lot of money on these components, I found this disappointing. I felt the manufacturers concerned didn't care whether I was able to get their product working optimally or not. It didn't feel like a high-end buying experience, more like cash and carry!

Isn't being the owner of high-end equipment at least partly about a manufacturer building a fruitful ongoing relationship with the buyer? After all, unless I'm mistaken, shouldn't selling be a continual process rather than the result of a transient one-off brief encounter? Thank you for a wonderful magazine that I have been reading regularly since back in the 1970s.

*Andy K Chapman, via email*

Andrew Everard replies: You won't get any argument from me on that one, Andy. Too often it seems these days



**ABOVE: Building the brand – pages from three informative high-end user manuals**

that manuals exist only on a website (if you're lucky as a downloadable PDF, although even that's not great), or even worse, not at all. And don't even get me started on the skimpiness of the Quick Start Guide! A recent review for these pages took me several days longer than it needed to, simply because the set-up process was a matter of extensive trial and error, not aided much by a four-side Quick Start Guide, and a promise from the manufacturer that a full manual would be available as soon as it had been translated. This came too late for the deadline for me to submit the review.

And this isn't just a self-serving reviewer's howl: as you note, even when a product has been on the market for some time there can be no sign of a comprehensive manual, and Internet forum members are pretty forthright in their criticism of this trend.

The thing is, a reference manual for a product is not just a way to ensure a buyer gets the most from their new purchase. It can potentially also cut down the number of calls a company may receive from baffled users. It also provides an opportunity for designers and engineers to feed back to consumers tips and solutions to maximise the performance of components, making the manual a useful part of the entire product package, not just dead weight adding to manufacturer's shipping costs. Oh well, back to the iPad now – I've another fiendishly complex review sample to set up...



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HFN2021

# Sharp DX-411H CD player

This second-generation 16-bit machine hit the sweet spot for many when it came to sheer value for money, but does it make a bargain vintage buy? It's time to find out...

Review: **Tim Jarman** Lab: **Paul Miller**

**H**as the 'perfect' CD player ever existed? While one model may boast the best transport, another the best DAC and yet another the most perfectly resolved ergonomics, so far I've yet to find all of these elements present in one machine. Sharp's DX-411H CD player, seen here, is a leader in none of these categories, but it's certainly a contender for having the best advertising campaign in the history of the format. In print and on TV, 'Less Bucks More Fizz' said it all, especially when backed by the faces of one of the top pop bands of the era.

In truth, Bucks Fizz were already past their peak in 1986 when the DX-411H was launched, and the Eurovision-winning quartet would soon be largely forgotten. Not so Compact Disc, which continued to grow in strength over the coming years and remains a highly valued source today.

## SHARP SIGHTED

At this point I should confess to having something of a soft spot for Bucks Fizz. The music cognoscenti may sneer, but to me their work is emblematic of a time when life in general, and music in particular, was less about being self-consciously serious and more about just having fun.

More to the point, I also have great admiration for Sharp, the company's



record of innovation and development being comparable with the very best. The first mobile 'phone with a built-in colour camera I ever saw was from Sharp. And this at a time when Apple was producing quirky computers with operating systems that had niche appeal. And when Sony, the Japanese leader in TV technology, made its first LCD sets, it selected colour display panels manufactured by Sharp.

In its promotional material of the mid 1970s the company envisioned an imaginary city, 'Sharptown', composed of

**ABOVE:** The DX-411H's fascia was 360mm wide yet the guts of the player measured 330mm in width as it was based on the midi-sized DX-110H

all its facilities gathered together in one place. The area occupied was claimed to have been approximately 682 square miles. As well as making pioneering contributions in fields as diverse as electronic calculators and microwave ovens, Sharp also briefly ran a specialist hi-fi sub-brand – Optonica. While I doubt you'll ever hear a barstool audiophile waxing lyrical about any of Optonica's products, the mighty SM-4646 integrated amplifier is firmly on my hi-fi bucket-list as a component I'd like to have a good long listen to one day.

## KEY MODEL

Like all the Japanese majors, Sharp had a fully engineered CD player ready for sale for the 1983 season. Despite looking similar to the Hitachi DA-1000 [HFN Sep '16] and the Fisher (Sanyo) AD 800 [HFN Apr '13], Sharp's debut DX-3 was developed and produced almost completely in-house; the Sony DAC chip [shared with the CDP-101,

**LEFT:** Unlike some early players, the DX-411H's controls are simple and logical. The orange LCD track readout on the fascia makes use of a technology Sharp was pivotal in developing





HFN Jan '12] was one of the few key parts which had to be bought in.

The DX-500 which followed looked more conventional but still contained an odd mixture of Sony CDP-101 and Marantz CD-73 [HFN Mar '19] styling cues. This was Sharp's main model for 1984. Like many early players, both of these Sharp machines were big, heavy and complex. They weren't that profitable to produce and were made mainly to secure market share.

The 1986 range, of which the DX-411H was a part, was a more mature, more commercially viable and better engineered set of products, designed in line with what the rest of the industry was doing at the time. The key model was the DX-110H, this being the player featured in the press and TV ads. It had a fascia width of 330mm, the standard midi-system size. The DX-411H was essentially the same player but fitted with a 360mm-wide

fascia, the extra width inside being made up by an empty channel section screwed to the side of the chassis [as with the Sony CDP-5F and CDP-C5M, HFN Feb '21]. Also, the headphone socket had been removed.

### PRIME MOVER

While no CD player was cheap in 1986, at a little over £200 the DX-411H would have been classed as a budget machine. For your money you got a single 16-bit DAC (Sharp's own), time-shared between the channels. A three-beam sled-mounted optical unit made by Sharp itself formed the heart of the mechanism, while a

brace of Yamaha LSI chips could be found in the decoding section of the circuit and in the 2x oversampling digital filter – at the time an unexpected bonus in a machine of this type. A dedicated chip from Sanyo contained much of the servo system and it was no surprise to find an LCD numerical

'Yamaha LSI chips were a bonus in such a machine'

**ABOVE:** The neat execution of the styling is clear in this view. Although formed mostly from moulded plastics, the quality of fit and finish of the front of the player is of a good standard

readout on the front panel as Sharp was a prime mover in this particular technology.

Basic though it may have been, machines such as the DX-411H offered incredible value for money to hi-fi buyers in the mid '80s looking to embrace digital. Lest we forget, the difference in sound quality between the cheapest and the most expensive CD players of the period was relatively minor when compared to that of turntables or cassette decks at similarly opposite ends of the price spectrum.

### CHARM OFFENSIVE

Furthermore, even a simple machine such as the DX-411H could offer levels of background noise, speed stability and channel separation no turntable or cassette deck could ever hope to achieve, regardless of their price. It was no

wonder, then, that these machines sold in such large quantities.

The big Japanese firms of the 1980s seemed to know how to



**LEFT:** Original 'Less Bucks More Fizz' ad showing the company's DX-110H [far left] and 'Sharptown', an imaginary city combining all the company's facilities covering a claimed 682 square miles

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Reviewed: August 2019 issue

**A**s 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.



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**RIGHT:** Sanyo's LA9100 [centre, left] is the key analogue servo controller for the CD mech [top right], supplemented by Yamaha's YM3531 digital servo and demodulator [top, under cables]. Yamaha's YM2201F provides 2x oversampling [top left], feeding Sharp's time-shared 16-bit DAC [underneath the PCB]

endow even their most affordable products with a feeling of quality and attention to detail that the more specialist side of the industry was never quite able to replicate. So it is with the DX-411H, which despite having a plastic fascia and plastic buttons still demonstrates a fine standard of finish.

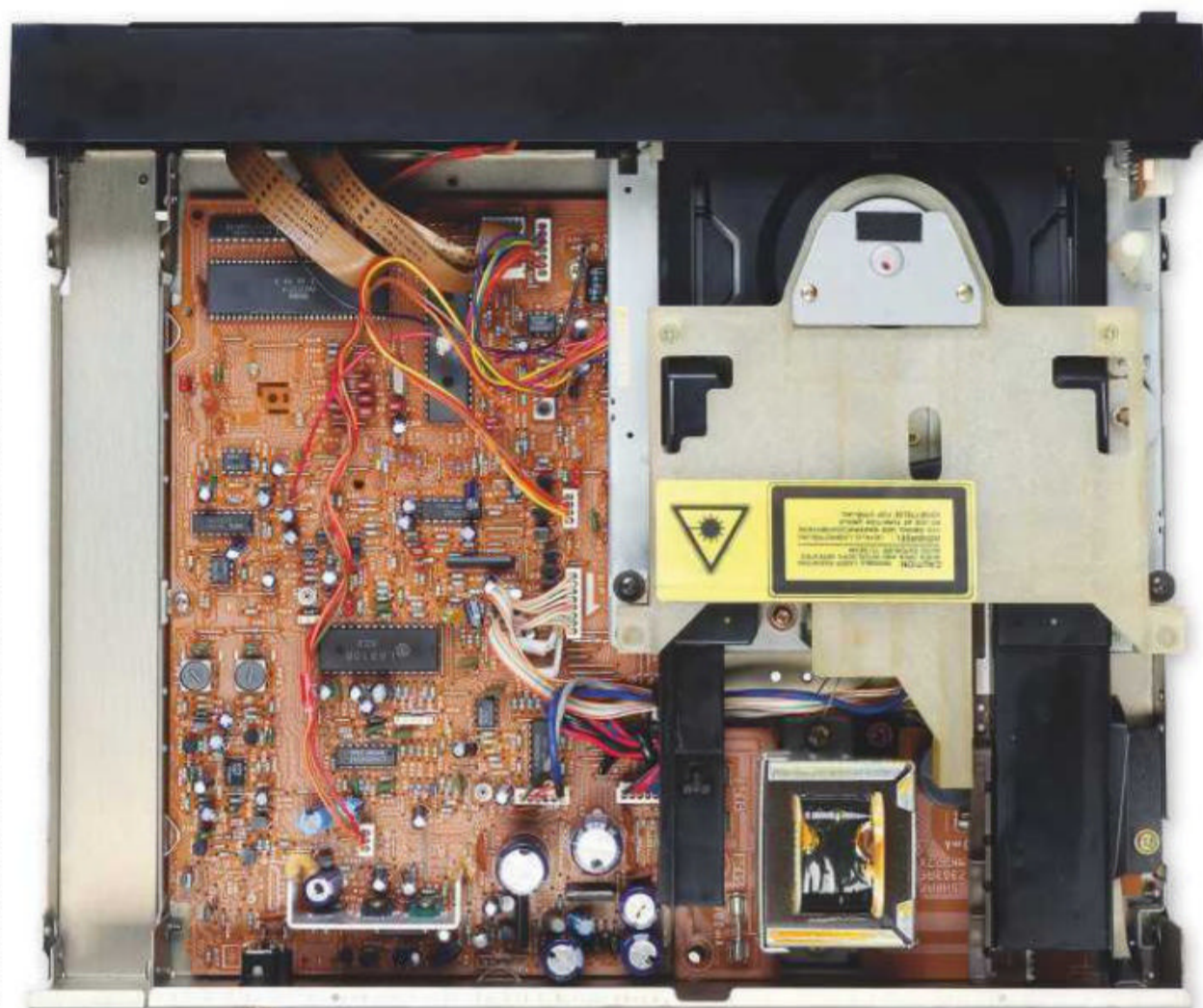
The styling is dated in an obviously '80s sort of way, but it remains something an antique dealer might well describe as 'a charming period piece'. Some of the buttons are needlessly small (there is plenty of room in which to have made them bigger) but the important ones are not only well placed but simple to operate.

## CALLING TIME

Meanwhile, two Sharp acronyms adorn the player's keys – APMS and APSS – and their meanings are spelt out in brackets under the disc drawer. They are 'Automatic Programmable Music Selector' (ie, track programming) and 'Auto Program Search System' (ie, skip forward/backwards). The latter facility could also be found on the company's cassette decks.

The way in which the display works reminds one that this is an early/basic machine. When a disc is loaded into the player the number of tracks available is shown just briefly, but not the disc's total running time. The indication then returns to just displaying track 1 and zero time, waiting for play to be selected.

A track number cannot be chosen before the disc's TOC (Table Of Contents) is read either, so you can't drop a disc in the drawer, choose which piece you want to hear, press play and walk away like you



can with the newer machines. However, such quirks are minor compared to those of some period rivals (eg, from Philips).

The use of a single time-shared DAC inevitably introduces a phase error between the two channels, increasing with signal frequency. The effect is ameliorated in the case of the DX-411H by Yamaha's digital filter [a type shared with the Aiwa DX-1500 and B&O Beogram CD50 machines, *HFN* May '15]. The oversampling not only halves the interchannel phase error to ~45° at 20kHz but also pushes digital alias distortions out to beyond 88.2kHz, simplifying the design of the analogue filter that follows [see PM's Lab Report, p127]. It's a technical compromise, for sure, but the DX-411H is still capable of making highly enjoyable music.

## TIM LISTENS

Given that it was recommended as a test disc in the original Sharp service manual, I began my audition with a digital recording of Ravel's *Boléro* conducted by Daniel Barenboim [Deutsche Grammophon 400 061-2].

**LEFT:** An earlier player, the DX-500, which was Sharp's main offering in its 1984 catalogue. Note the complex drawer-mounted transport, similar to that of the Philips CD303/Marantz CD-73

Here the DX-411H revealed its true nature, which was certainly different to what I was expecting. Given the time this player was launched, you'd probably imagine it to have a hard, forthright and glassy sound. Yet fortunately it doesn't. Rather,

it's really rather civilised in its presentation and, if anything, a little soft in the midband. Make no mistake, the treble is still pin sharp and extremely quick, but it does not dominate or overwhelm the rest of the sound as can be the case

with some early Japanese players.

Indeed, the familiar parts of the *Boléro* were an exhilarating listen on the DX-411H, the player delivering a sense of immediacy some supposedly more sophisticated designs can miss. Yes, when the orchestra was playing low-toned sounds it seemed that the impression of focus was lost, but any snap of percussion soon restored the illusion of a live performance taking place.

What's more, the absence of glare allowed the Ravel piece to be played at concert levels without listener fatigue. There are some players which are too wearing or strident to be enjoyable at high volume levels, but the DX-411H isn't one of them. Imaging was fair given the limitations discussed above, but a larger soundstage would have been nice. As it was, the sound was largely confined to the area between the loudspeakers, which

'Parts of the *Boléro* were exhilarating to listen to'





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## VINTAGE HI-FI



**ABOVE:** Rear view shows the extended chassis for the wide cabinet versions of this player, with the join concealed by a black strip around the single-ended (RCA) outputs

gave it a two-dimensional quality and there was a definite sense of restricted front-to-back depth.

This lack of ambience proved to be less of a problem with simpler material. Katie Melua's 'Mockingbird Song' from her 2003 debut album *Call Off The Search* [Dramatico DRAMCD0002] demonstrated a convincing vocal centre presence and a big, chewy bass line. Again, less-than-perfect focus was evident around the drums and guitar, but the usual issues people complain about when it comes to the sound of early CD players (cold/sterile/hard, etc) are neatly sidestepped by the way the DX-411H has been voiced. In fact to my ears it sounded a little like a good open-reel tape recording made at 3¾ips, minus the tape hiss and with perfect speed stability, of course.

At this stage, only one question remained. What would Bucks Fizz actually sound like on the machine they put their faces to? Original CDs of the band from the period are rare to find, so a later 'Best Of' compilation [Camden 74321 446722] was pressed into service.

My favourite track 'London Town' sounded OK on the DX-411H, but I think a brighter, more energetic-sounding player might be more appropriate for this type of material. Unlike the Ravel piece, I never really became involved when listening to this recording. So we have an enigma then: a CD player advertised by a pop group which in practice is better suited to classical music.

### BUYING SECONDHAND

This whole series of Sharp CD players was well made using high quality components so reliability on the whole has been very good. This is offset by the difficulty of obtaining

spare parts. The best source of type-specific replacement items (optical blocks, motors, LSI chips, etc) is a scruffy non-worker, and these presently command nominal money.

### TOUGH COOKIE

Regular maintenance tasks such as cleaning the objective lens and replacing the loading belt (use a suitably sized o-ring if you can't get a proper belt small enough) are easy, and mechanically these models are unusually tough. Some versions with

a green display use an electroluminescent panel backlight, and these can fade with age to the point where the digits become hard to read. Those where the numbers are orange

use LEDs and don't suffer from this.

One potential trouble spot is the DAC chip, which is surface mounted on the print side of the PCB and clamped down with screws to aid heat dissipation. This arrangement can cause the soldering of the pins to crack, resulting in an intermittent loss of sound. Careful resoldering effects a cure in many cases. ⚡

### HI-FI NEWS VERDICT

The fact that there are still plenty of these Sharp players to be found on the secondhand market is a testament to the care taken over their construction. It was not state-of-the-art but its technology and civilised presentation made it worth the price of entry when launched. It still offers a good listen today, and is a fine place to start if you are interested in early CD and want a piece of the action at minimal cost.

Sound Quality: 75%

0 - - - - - 100

'Convincing vocals joined a big, chewy bass line'

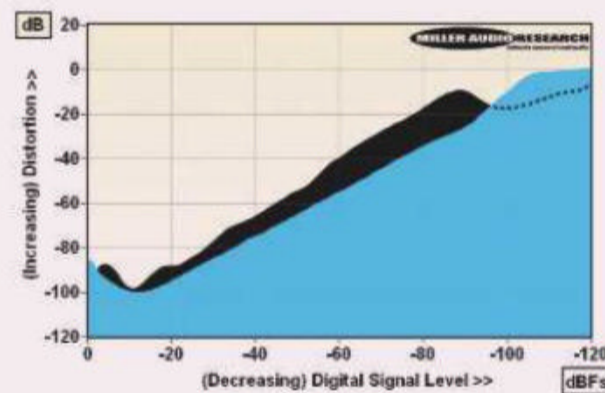
## LAB REPORT

### SHARP DX-411H (Vintage)

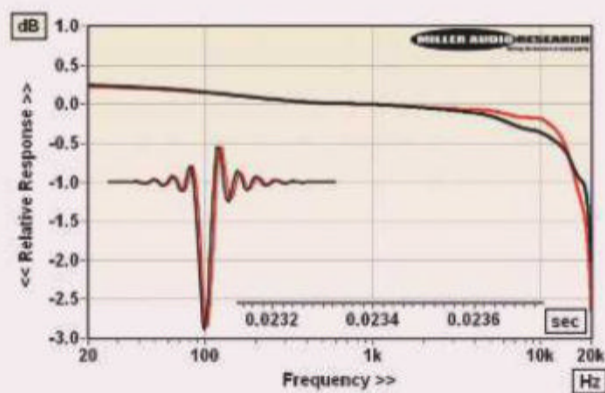
Second generation it may be, but this early 16-bit CD player still faced strong competition from Philips' first-generation CD100 [HFN Oct '11], CD303 [HFN Nov '13] and CD104 [HFN Apr '14]. Their 14-bit/4x technology offered the potential of lower distortion, a wider S/N and superior low-level resolution (+1.5dB over a 90-100dB dynamic range) – and all without the phase shift incurred by time-shared DAC. In practice, Sharp's own 16-bit DAC used here delivers better all-round results than we saw with B&O's CD50 [HFN May '15]. Both the Sharp and B&O players are otherwise built around a very similar (Aiwa-sourced) digital platform that includes Yamaha's YM2201F 2x oversampling filter.

The impulse response [inset, Graph 2] shows the pre-ringing associated with this basic FIR 2x oversampled digital filter which offers a limited 22dB stopband rejection while also inverting absolute phase. It does reduce the interchannel phase-shift of a single time-shared DAC and while the frequency response [Graph 1] shows the same +0.25dB/20Hz bass lift we saw in the CD50, the DX-411H's custom analogue stage delivers a gently declining mid/treble trend that rolls away to -0.4dB/10kHz and -2.8dB/20kHz. In-band response ripples are also much reduced over those seen in earlier-generation players.

The DX-411H's 2.03V output level is standard and even if the ~3kohm impedance is really too high at least the 101dB A-wtd S/N ratio is acceptable, as is the -1.9dB error in resolution at -90dBfs and fairly consistent ~0.0025% THD from 20Hz-20kHz. At lower digital levels, the effect of Sharp's analogue filter reduces distortion harmonics at high frequencies [blue trace, Graph 2]. Jitter is a little high at ~1100psec – mainly data-induced and with ±100Hz switching noise from the PSU rectifier. PM



**ABOVE:** Distortion versus 16-bit CD digital signal level over a 120dB range (black, 1kHz; cyan, 20kHz)



**ABOVE:** Freq. resp. [top] and impulse response [below]. Pre/post-echoes reveal early 2x FIR digital filter

### HI-FI NEWS SPECIFICATIONS

Maximum output level / Impedance	2.03Vrms / 3.13-2.48kohm
A-wtd S/N ratio	101.0dB
Distortion (1kHz, 0dBfs/-30dBfs)	0.0022% / 0.0063%
Distortion & Noise (20kHz, 0dBfs/-30dBfs)	0.0029% / 0.0015%
Frequency response (20Hz-20kHz)	+0.25 to -2.8dB
Digital jitter	1100psec
Resolution @ -90dB/-100dB	-1.9dB / +3.5dB
Power consumption	10W
Dimensions (WHD) / Weight	364x78x305mm / 4kg

# Mission 776/777 combo

As the company continues to develop its expertise in the electronics field, **Martin Colloms** takes stock of a strikingly-styled pre/power amp

**W**hile first established and based in the UK, Mission also now has a design facility and manufacturing plant in Canada. It's here that its latest amplifiers were developed by Henry Azima, the brother of Farad Azima who founded Mission Electronics some years ago.

In view of the design and engineering content of the 776/777, they are fairly competitively priced at around £900 the pair, though to succeed in that market their performance will need to be excellent. Arguably the most distinctive feature of the amps is the heavy 'macho' look of the massive front panel casting.

This is founded on the Mission logo itself, with the central letters extended inwards in the form of a thick barred heatsink, ending in a block section. This casting is used for both power and preamps,



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although in the latter it serves no useful purpose and, in fact, severely restricts the potential number of control facilities. On the other hand it does serve to complement the power unit visually.

## MISSION 777

The power amp uses a DC-coupled circuit employing just 14dB of negative feedback. Nevertheless, its wide bandwidth design means its HF -3dB point appears at a claimed 1.2MHz, while the intrinsic distortion level is virtually independent of frequency or signal complexity over the audio bandwidth. High regulation toroidal power transformers (200VA for 3.5%) are used, one for each channel, feeding selected high current structurally stable reservoir capacitors, bypassed by large polyester components.

Built as two modules, the power output boards are bolted to the central block of the massive frame casting, and no switches, contacts or relays are present in the signal path. One control is provided, namely a rear panel switch marked 'normal' and 'soft' clip. In the latter mode the distortion characteristics are modified at the threshold of clipping through to overload so that higher

**ABOVE:** The Mission 776 preamp (top) and 777 power amplifier were launched in 1982 and replaced the 771/772

quantities of less unpleasant low-order harmonics are produced at the expense of the rattling harmonics typical of normal clean clipping.

Other details of its laboratory specification include suitability for 4 and 8ohm loading and a high damping factor of 60, maintained from DC to 40kHz, plus a 20A peak programme current capability and a figure of less than 0.2% total harmonic distortion, DC to 40kHz, with less than 0.05% quoted for intermodulation distortions.

## SOUND QUALITY

The following loudspeakers were used for auditioning: KEF 105/4, Spendor BC1, Quad ESL63 and Celestion SL6. As for preamps, these included Meridian's 101, a Quad 44, Tandberg 3002, Sony TAE-88, an Electrocompaniet, and, of course, the Mission 776. Sources were mainly disc, using a Linn Asak/Ittok mounted on a Thorens TD125II deck, with additional material from copy master tapes (Revox B77).

It came as a mild shock to discover just how good this power amplifier was and also how big a

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margin there was between it and other established good quality models. The first impression was that of an exceptional feeling of precision and solidity to the stereo image, and the sounds comprising it. The bass was well extended with impressive power and weight, and yet it also seemed taut and highly controlled.

The middle register was unusually transparent, resolving strong depth planes in the image and keeping these stable at both high and low volumes. A feeling of greater immediacy, almost of treble lift, was also noted, although the treble itself was impressive both for its clarity and its directional ability, as well as its liveliness and natural sounding quality.

The subjective power delivery was also impressive, the unit appearing to have better dynamics and more power than its 100W per channel rating would imply. We felt that it could provide enough for all but the least sensitive loudspeakers used in circumstances where high sound levels were also required. However, there was also felt to be a hint of increasing hardness in the upper mid at full power, adding a little extra crispness and 'bite'.

## LAB RESULTS

On steady-state measurements the 777 demonstrated an exceptional power bandwidth, with barely any diminution at 20Hz and 20kHz relative to 2kHz. Typical maximum power, both channels or singly driven, was 135W into 8ohm or 21.2dB (re. 1W/8ohm) while at 4ohm the continuous power fell by 0.5dB (to about 230W) into 4ohm.

It proved capable of driving the severe 8ohm+2μF reactive load to 20.4dBW for less than 0.5% distortion; such a small 0.8dB diminution into this cruel load is commendable. On peak drive the 8ohm figure improved little, verifying the high degree of power supply regulation, while into 4ohm the output gain was similarly small.

Steady-state harmonic distortion was somewhat proportional to load or current drawn. For example, at 10W the 16ohm distortion at 20kHz was 0.05%, rising to 0.08%/8ohm, 0.1%/4ohm and a modest 0.15% on

the cruel 8ohm+2μF reactive load. Overall the harmonic distortion results were 0.1% or less at any frequency from 10Hz up to 40kHz over the upper power range, and the content was predominantly 2nd and 3rd harmonic with negligible levels of higher order components.

## DRIVEN HARD

At full power, 8ohm, the two-tone 19/20kHz intermodulation measured -73dB for the difference tone (the sum level was similar) improving to -81dB (0.009%) at 0dBW, all fine results. The 777 was, however, not so happy with noise

intermodulation: at the clipping threshold the 1kHz 1/3 octave intermodulation was -40dB, similar on both 8ohm and 8ohm+2μF loads. At +10dB input, close

to the continuous RMS equivalent clipping point, a typical -33dB (2.2%) was recorded, this is not unusual, and when the noise input was reduced so that the peak levels were 10dB below the clip point, the difference intermodulation improved to better than -77dB for both the 8ohm+2μF and 8ohm only loads.

The result at peak levels suggests some dynamic asymmetry on this taxing high-frequency signal, and perhaps this is associated with the mild extra 'bite' noted

'The preamp's power supply consists of a large battery'

**BELOW:** Original ad from Mission Electronics that appeared in the Mar '82 issue of HFN. The company was founded in Cambridge in 1977 by Farad Azima who later established the Cyrus brand

on the listening tests close to full power. Driven hard at 100Hz, the square wave response was textbook, showing no supply interaction and a flat top, confirming the response down to DC. The 1kHz square wave response was no different, and with the 8ohm+2μF load at 1kHz, there is the usual 40% or so overshoot and quickly damped ringing, the latter estimated at a high 70kHz.

This output stage 'speed' explains why the rise in response at 20kHz with 2μF loading was so small at the 0dBW level, namely 0.1dB. Something was discovered here – a response lift at a 13dBW equivalent level with 8ohm+2μF, 20kHz, which measured 0.33dB. This suggests that the effective bandwidth and high-frequency phase response possess some variation with power level.

Signal/noise ratios were fine at 80dB relative to 0dBW, unweighted, and were 85dB excluding hum. The noise corresponded to 170μV (ex. hum) while the input sensitivity for 20dBW or 100W was nominally 1V. Channel separation was not quite as good as expected at high frequencies in view of the double mono construction, but it was fine at 63dB, 20kHz, improving to better than 100dB at low frequencies.

## CONCLUSION 777

Notwithstanding a minor reservation concerning the upper frequency range sound quality, in all other



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## FROM THE VAULT

respects the 777 delivered an exemplary performance. It bears close comparison with some of the finest and most costly designs I have ever tested and is capable of considerable power delivery into a wide range of loadings. The 777 wins a place as a reference design and will undoubtedly represent good value for money.

### MISSION 776

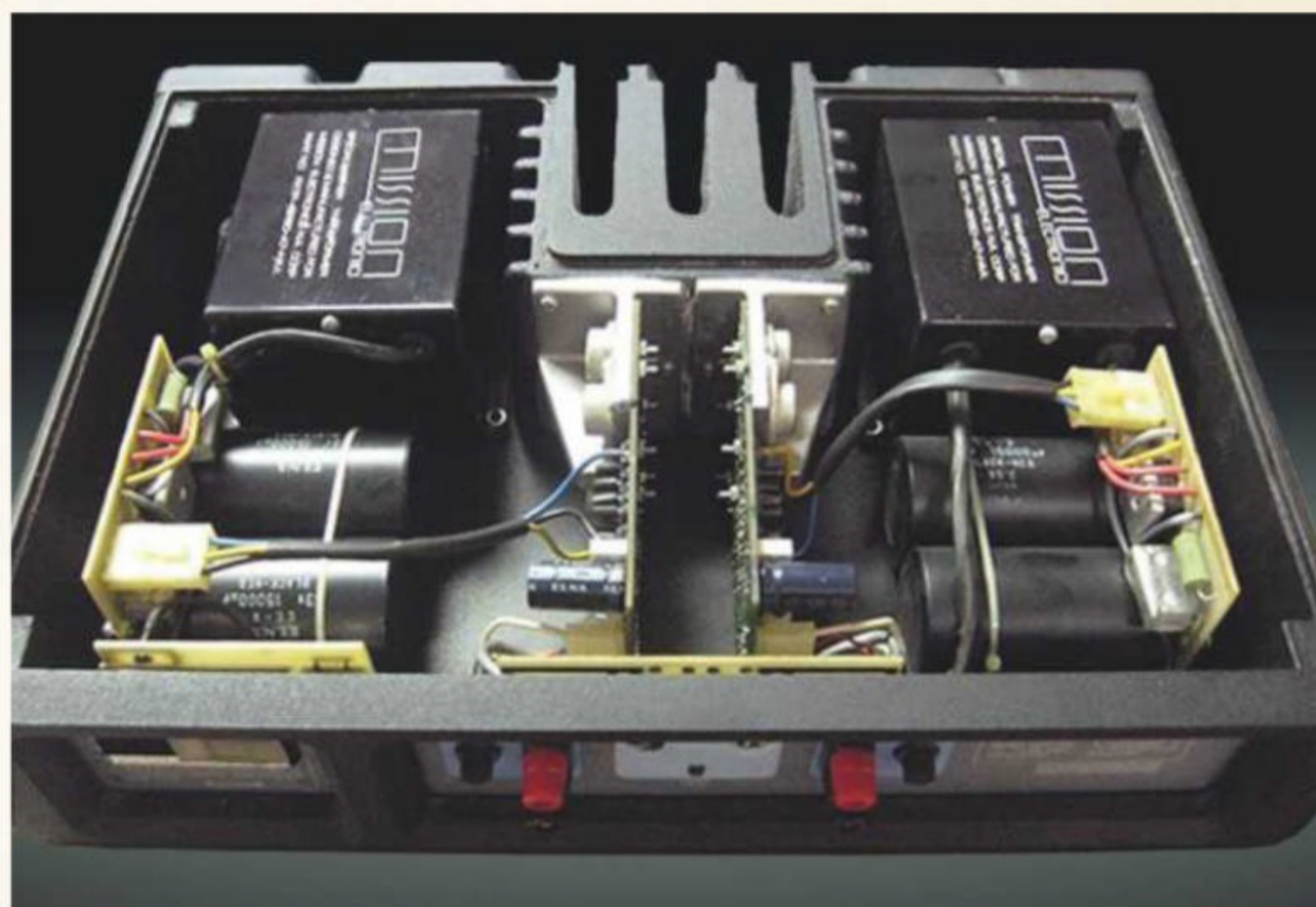
Housed in the same generous casing as the power amp, the 776 preamp consists physically more of power supply than of amplifier. Only the lefthand portion roughly delineated by the two rotary control knobs is occupied by the real circuitry, each channel allotted a single small printed circuit card populated with components of superlative quality.

At present, the unit only has facilities for MM cartridges but an MC version of the preamp card is underway. In the meantime, the unit was used with step-up devices. The controls comprise 'mono', tape monitor, balance and input selection, the latter allowing selection from tuner, tape auxiliary, and pick-up sources. It also has two on/off buttons. The lefthand of the pair switches the preamp electronics but is interlocked with the righthand one, which controls the mains supply.

This brings us to the power supply, which consists of a large 25V sealed lead/acid accumulator. During use the mains supply is disengaged, but when the 'mains/charge' button is pressed the preamp switches off and recharges the internal battery, ready for an average of 25 hours' use thereafter. It may be left on trickle charge indefinitely.

The objective was to make the preamp hum-free in normal use, yet incorporate a high quality, low noise, low impedance power supply. The battery is further decoupled by capacitors – one massive 10,000µF followed by 2200µF per channel, the latter themselves decoupled by 4.7µF polyester capacitors.

The design is conservative in some respects, eg, the single-rail supply, the preamp consisting of just two stages, namely a 34dB gain phono amplifier/equaliser (plus the



**ABOVE:** Inside shot of the 777 power amplifier showing the dual mono layout with power output boards bolted to the central block of the massive frame casting

selector/volume control) and a 20dB line amp. This follows the volume control using just three transistors in a low feedback configuration, the third transistor operating as an active load or constant current source for the second transistor of the feedback pair. The output is AC-coupled via a 4.7µF capacitor,

this fed from a low output impedance of 250ohm, capable of driving long cables.

Meanwhile, the volume control is of the stepped variety and has a sensible range of ratios. The balance control is also stepped, covering a few dB and appearing in the feedback loop of the output stage, whereby possible spurious effects are reduced by negative feedback. The phono equaliser uses a differential input pair with the

RIAA equalisation network fed to the second input transistor base.

The output section of the equaliser has an active load as the in the case of the output amplifier, and this section is again AC-coupled, both in and out. These coupling capacitors are themselves bypassed with smaller value different type components to, as Mission puts it, 'reduce the sonic signature of the individual components'.

The input has some radio interference suppression in the form of a small high-frequency network, and a subsonic filter is present, operating at a low enough frequency not to upset the RIAA equalisation. The input values suggest a -3dB point at 10Hz, which is a worthwhile compromise.

### SOUND QUALITY

Having previously checked out the 777 with a range of preamps and made detailed and favourable comparisons with other reputable models, it was with some relief to find that the 776 preamp proved to be fully worthy of the 777.

Only by using the finest quality source signals can the potential of better equipment be recognised, and substitution of inferior step-up devices or cartridges, will also impair system quality. It was also interesting to note that some of the benefits of the 776 were still apparent using records of less

**'The 776 wins a place as a reference preamplifier'**



**LEFT:** 'Strictly for the purist...' Original Mission brochure carries 'lid-off' shots of both the 776 and 777 amps in their 'extravagant sculpted solid aluminium casing'



## FROM THE VAULT

than first rate quality – the 776's high clarity, general feeling of precision and detail plus good treble transparency were still worthwhile with a noticeable reduction in the aggravating effects of hiss, some surface noise and record 'ticks'.

When compared with other good quality preamps, the 776 proved to be very neutral, with a treble register noticeably free of the odd effects encountered with other designs. For example, a hazy or slightly fizzy overlay, this even tending to exaggerated vocal sibilance with the poorest examples.

The stereo depth, was exceptionally good on the 776, particularly in the midband, and it clearly illustrated the false modulation of depth by signal dynamic changes apparent with another high-technology preamplifier. The performance in the bass did not seem to compromise the high standard of the 777, and we must hope that the MC version of the preamp can match or perhaps even improve on the MM standard.

### LAB REPORT

Assuming all else to be correct, the most important single parameter affecting preamp sound is the accuracy of the RIAA equalisation. The Mission 776 did have pretty accurate equalisation, and the specified 30Hz to 15kHz range was followed within  $\pm 0.1$  dB.

Looking at the shelving effects the overall response showed a mild +0.1 to 0.17dB shelf lift in the treble, in my view not significant in the case of sequential rather than rapid A/B listening. The equalisation remained effective to beyond 100kHz, helping to keep ultrasonic rubbish from the pick-up cartridge out of the following stages.

Subsonic roll-off was controlled such that the response was barely 0.6dB down at 20Hz falling to -3dB, 10Hz. Via auxiliary the response was -0.2dB at 20Hz and -0.4dB/20kHz, falling to -6dB/120kHz.

An anomaly was noted on the volume control at very low settings, when high-level inputs were used. The high frequencies became excessively lifted on the last few settings to zero: for example, at '3

notches or clicks' the 20kHz point was 4dB too high, but by '5 notches' everything was fine again. Some breakthrough was also noticed from the auxiliary input to the pick-up.

Pick-up impedance (MM) was specified at 260pF in parallel with 47kohms which, when taking into account the typical capacitance of 100pF, leads to a minimum total capacitance of 360pF.

As a result of the battery power supply, hum was absent, and the unweighted pick-up S/N ratio was

70dB, including low frequency noise, or 78dB, 400Hz-20kHz (-79dB both 'A' and CCIR weighted). The lab results showed minor failings as regards high-frequency channel

isolation, input crosstalk and very low volume frequency response, but otherwise the Mission 776 preamp was beyond reproach.

### CONCLUSION 776

When it comes to sound quality this is undoubtedly one of the best preamps I have tested over the past few years, and despite the limited facilities I repeatedly returned to it for a definitive view of the sound reproduction available.

Its sonic performance exceeds that of a number of more costly designs, and in partnership with the 777 I can only reiterate their exceptional sonic quality. I have no hesitation in recommending this design, and look forward to reporting on the MC boards. ⚡

'The stereo depth on the 776 was exceptional'



**BELOW:** Original pages from the Mar 1982 issue of *HFN* in which Martin Colloms conducted the first UK review of the Mission 776/777 pre/power duo



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## LAST WORD

# OFF THE LEASH!

KEN KESSLER TELLS IT LIKE IT IS...

**Ken Kessler** looks back 37 years to a memorable meeting with one of the States' great influencers

First, Ken Ishiwata, then Tim de Paravicini: neither left us because of the pandemic, so let me suggest a wild theory instead – that the audio gods are in a bad mood, because we are in the midst of losing some of the most influential individuals high-end audio has encountered during the past 50 years.

Sadly, to that pair we must add an individual whom history ought to regard as the single most effective influencer high-end audio in the US has known.

Sure, writers like Harry Pearson and J Gordon Holt had greater reach, their names appended to their work and who enjoyed concomitant celebrity status, but even they would have admitted that David Fletcher, co-founder of Sumiko and SOTA, was the true game-changer. He passed away in February, at the age of 81.

### MEETING THE MAN

In the late 1960s, with no Internet to provide instant access to other territories, the chasms between the USA, Japan, Europe and the UK were bridged by specialist magazines – and few of us could read, for example, France's *La Nouvelle Revue Du Son*, let alone Japan's *Stereo Sound*. Along with Jean Hiraga in France, Fletcher was instrumental in exposing audiophiles in the West to trends in Japan, especially moving-coil cartridges. In the MCs' wake came horn speakers, single-ended triodes and other

technologies we take for granted today. In the December 1984 issue of *Hi-Fi News*, I wrote of a meeting I had with Fletcher during my reported tour of the USA. The following edited passages from that piece are now my homage to him.

### OFF THE RECORD

'I was in the company of Joe Abrams and Dave Fletcher of Sumiko, the Talisman, Tweek, and The Arm people. Over lunch, I

figured it was time I gave the Walkman Pro a workout that included more than mere playback, so I recorded our conversation. I'd been warned Dave Fletcher knows all the sordid, scurrilous bits that make the hi-fi industry so enjoyable, and he didn't

disappoint. Unfortunately, playback of the tape a day or so later revealed that it contained little I could relate through these pages, but I did glean these gems.

'Dave Fletcher is the man who told Ivor Tiefenbrun of Linn about single speaker demonstrations. This, of course, comes from DF, not IT – I mention it because Dave said it with such a straight face.

'Dave Fletcher reintroduced moving-coil cartridges to the West by being the first to sell Supex pick-ups outside Japan.

'Dave Fletcher does the best impersonations of audio celebrities in the world. His only serious rival is Ian Anderson of [retailer] Billy Vee Sound Systems.

'Dave showed that half of what we hear is wrong'

'When the conversation turned to hi-fi, though, I found out that Dave – who worked on the SOTA, designed The Arm and the various Talisman cartridges, and a few other mighty items – is as serious as the next man. He's got this clown prince air about him, and I think Joe helps keep him from, say, savaging recalcitrant journalists, but he also has a pair of the finest ears in the industry.

### GOLDEN EARS

'Joe and Dave had the same idea as their friends at SOTA, and the next day they took me to an American lunatic-fringe dealer, the kind of shop that stocks Audio Research D-250s, SP10s, and Oracle Premieres. I made two promises to myself before this trip: one was to eat local food whenever possible; the other was to hear as much hi-fi as I could that I'd never find at home.

'dB Audio let me hear the Spica loudspeakers, a \$400 American challenge to our SL6/Proac Tablette calibre minispeakers, and they set up the big and expensive Vandersteens, a current hot fave among US audiophiles. The rest of the system contained familiar pieces, like the Oracle Delphi, Audio Research electronics, and the Eminent Technology arm with Talisman p-u.

'It was here that Dave Fletcher demonstrated those golden ears of his. We were listening quite merrily, when Dave shook his head and said, "The absolute polarity is wrong". Joe and Peter said that he did this all the time, and invariably would point it out every time a different LP was put on the turntable. Both leads were reversed, and lo and behold, the image tightened up and the overall perspective improved. The implications were horrendous, and Dave proceeded to prove that half of everything we hear is wrong.

'This topic emerged again when I visited Counterpoint a few days later, and I dug up J Peter Moncrieff's work on the subject. The topic has been discussed in the UK as well – I remember *HFN*'s John Atkinson and Ivor Humphreys trotting around hi-fi shows demonstrating the effect after their features on the subject appeared in our magazine some four years ago – but nothing impressed me as much as Dave's little demonstrations.' So thanks Dave for opening our ears. 🎧

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