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PAGES
of Music
Reviews &
Features

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DS Audio's flagship Grand Master 'optical' pick-up



FEATURE

Top 20 silver discs

We pick the demo CD/SACDs

Budget Esoterica

Thorens '008 phono pre

Auralic Aries G2.1

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Hi-Fi News, September 2019

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£2,300

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Renaissance ESL 15A

RIGHT: One of a quartet of bijou boxes from Thorens, the MM-008 phono preamp is pure Budget Esoterica – see p74



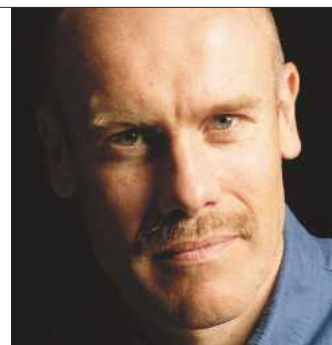
ABOVE: Described by Auralic as a 'Wireless Streaming Transporter' the Aries G2.1 can also serve as a digital music library. Full test on p56

Strange as it was to witness the Vienna Phil projecting its New Year's Day Concert into the empty Golden Hall of the Musikverein, it was also deeply reassuring to see this annual musical institution prevailing despite the challenges faced by the orchestra and conductor, Riccardo Muti. Enjoyed by 50 million people in 90 countries this traditional 'message of hope' was never more uplifting or, indeed, timely.

It was also illustrative of how we have been living our lives vicariously, ensuring that 2020 will also be remembered as the year that 'virtual' gatherings and conferencing really took off. Eventbrite – the platform we use to sell advance tickets to the Hi-Fi Show Live, more of which in a mo' –

recorded a 35x increase in the 'attendance' of virtual events.

As the worldwide vaccine programme rolls out, and our lives return to a form of normality, the traction achieved by these online activities will not entirely evaporate, just as many of us will not be returning to 'the office' as once we would. But there will also be a longing for the shared experience, whether in a sports stadium, the concert hall or live theatre. And that communal spirit will once again be reinforced by audiophile gatherings as 'real life' hi-fi shows



do what no end of YouTube videos or even hi-fi magazines and websites can offer – the sight and sound of physical gear in the room with you.

Everything from the ability to caress a perfectly-milled control, smell the air around a hot tube amp, to that sense of anticipation created as a famous

'Our spirit will once again be reinforced by audiophile gatherings'

hi-fi designer or presenter lifts a choice slab of vinyl onto the platter of a rare and exotic deck.

All this, and so much more, will be back in our grasp at The Hi-Fi Show Live 2021 hosted within the spectacular Ascot Grandstand, now the dates are set in stone [see p16]. Where else will you get to see, touch and hear DS Audio's £50k 'optical' pick-up solution that graces this month's front cover? Join us, and be part of the ultimate hi-fi experience!

PAUL MILLER GROUP EDITOR



MUSIC: Taj Mahal's electric/acoustic double LP *Giant Step* is celebrated on p84, while Steve Sutherland marks the 40th anniversary of *The Specials' More Specials*, now remastered on 180g (p82)

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



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



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



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



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



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

Audio Art

HIGH-END AUDIO CURATED INTO ARTISAN SERIES

New from UK high-end distributor Absolute Sounds is Ten, a portfolio showcasing 'extraordinary sonic creations' selected by company founder and Managing Director Ricardo Franassovici. Complementing Absolute Sounds' existing 21-brand catalogue, Ten will feature selected products from 'audio artisans' rather than each of the manufacturer's full ranges. Furthermore, only companies that have a specific focus – amplifier, loudspeaker, etc – will be chosen. The first entry in the Ten portfolio is DeVore Fidelity's Orangutan 96 (aka O/96), a two-way wide-baffle standmount priced from £13,500 depending on cabinet and finish. Praised by Absolute Sounds as 'a rarity in these modern times' by virtue of its 96dB sensitivity and partnering potential with SET valve amps, it will be joined by three other loudspeakers from the New York company, including the four-piece O/Reference system (pictured). More additions to the Ten lineup will be revealed throughout the year.

Absolute Sounds Ltd, London, 020 8971 3909;
www.absolutesounds.com



ARC's integrated

FIRST SIGHT OF NEW TUBE AMPLIFIER SERIES



The I/50 integrated amplifier is the first offering in a new 'entry-level' series from Audio Research, with the P/50 preamp and A/50 power amplifier to follow later in the year. ARC is now privately owned and managed, the 50-series marking a return to the company's roots, with a nod to the brand's 50th Anniversary. Featuring 6922 input and driver tubes and a claimed 50W output from two matched pairs of 6550 beam pentodes, the I/50 promises to be 'a robust amplifier capable of breathtaking performance'. The other cylindrical protrusions emerging from the top plate are ARC's LexieTubes, providing an indication of volume and input. Prices are anticipated to start at £5000, with phono and DAC modules offered as options.

Audio Research Corp, Minnesota, USA,
020 8971 3909; <https://audioresearch.com>;
www.absolutesounds.com

HI-FI NEWS' NUGGETS

PRISMA BOOSTED

Primare has announced new Prisma apps – for Android and Apple devices – enabled for its Prisma products via an OTA (Over The Air) firmware update. Effectively providing a new 'build' of its Prisma network player platform, the update promises increased control, speed and stability in advance of the pending Roon Ready roll-out, first for the NP5 Prisma, and shortly thereafter for all Prisma-equipped models. As of this update, all Prisma models are now AirPlay 2 enabled.
www.primare.net

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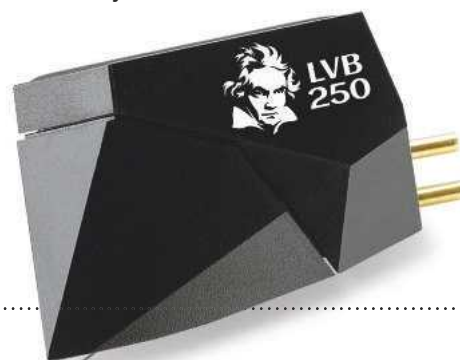
Inspired by the compact but still substantial, angled floorstanders popular in the 1970s, Elipson has announced its £1790 Heritage XLS15 design. Weighing in at 28kg, this retro-styled loudspeaker comprises a three-way mix of 25mm silk dome tweeter, 55mm coated-dome mid unit and 300mm cellulose pulp coned woofer. Stands are £199.
<https://en.elipson.com/>

Apex Ortofon

NEW FLAGSHIP FOR 2M MOVING-MAGNETS

Moving the 2M Black [HFN Mar '11] aside as its premium MM pick-up – and named to celebrate the 250th anniversary of the birth of Ludwig van Beethoven – Ortofon's 2M Black LVB 250 is on sale this month, priced £830. Inspired by the cartridge specialist's Cadenza Black MC design, it employs a Nude Shibata diamond stylus (which can also be fitted to existing 2M Bronze and 2M Black models) mounted on a boron cantilever – a combination Ortofon says delivers detailed reproduction and 'remarkable transparency, speed and responsiveness'. A new 'nano-tube' rubber suspension compound claims improved damping and greener credentials, while the body and other materials are carried over from the proven 2M Black.

Ortofon A/S, Denmark, 01235 511 166;
www.ortofon.com/hifi;
www.henleyaudio.co.uk





Borg assimilation

TWO UPNP STREAMING PREAMPS FROM STARTUP BRAND

Borg Audio has announced a pair of an analogue preamp/streaming DACs that it says 'will seduce even the most demanding of audiophiles'. Priced between €16k-€16.5k, the Dune and Warp share common functionality, bar the latter's custom spherical control [pictured above]. The players' dual-mono ESS Sabre ES9038PRO DACs will handle inputs from S/PDIF, USB and HDMI sources, while analogue connections include line and phono inputs with balanced XLR outputs. A 256-step R2R

ladder level control claims to preserve dynamics 'regardless of the listening volume'.

Both models also feature machined aluminium casework plus a full-colour AMOLED display, and promise analogue/digital recording to an internal HDD (with automatic track info/cover art retrieval). For a limited time, buyers will receive a year's free Roon subscription, plus annual Tidal Hi-Fi or Qobuz Studio Premier membership. **borg.audio GmbH, Germany, +49 17148 67687; www.borg.audio**



Crystal connection

A TRIO OF NEW CABLE RANGES FROM THE MASTERS OF SILVER

CrystalConnect, formerly Crystal Cable, has been offering silver-rich high-end cables for over 15 years [HFN Jun '12; Oct '13] and now the brand has witnessed a comprehensive revamp. Its new 'Art' series is divided into three tiers – Monet, van Gogh, and da Vinci – that include interconnects, power cords, speaker and digital cables. All employ an evolved version of its

mono-crystal silver conductors called iCS (Infinite Crystal Silver) that promises a single, continuous crystal structure. PTFE and Kapton dielectrics are used across the ranges, as are consistent geometries – the number of cores distinguishing one range from another. **CrystalConnect, The Netherlands, +31 481 374 783; www.crystal-hifi.com**



New Edition Solitaires

SE VERSION AND IMPROVED AFFORDABILITY FOR T+A 'PHONES

The Solitaire P-SE is the latest addition to T+A's fledgling headphone stable, achieved by a re-engineering of the company's flagship Solitaire P to hit a lower £3000 price point. An open-back, over-ear, planar-magnetic headphone with balanced and unbalanced connections, the P-SE replaces the P's aluminium frame and Alcantara ear pads with thermoplastic and velour components, helping to reduce manufacturing costs and mass.

Further differentiating the two Solitaire models are

the P-SE's new TPM 2500 transducers, which feature membrane and filter changes. Impedance is rated at 45ohm, and the frequency response given as 8Hz-45kHz. The headphone is hand-built at T+A's facility in Herford, Germany, and will be available this month. The company says the 'SE' suffix will be used to signify entry-level models in its other series in the future.

T+A elektroakustik GmbH, Germany, 01225 704669; www.taelektroakustik.de; www.theaudiobusiness.co.uk

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



Top 20 Demo CDs

Ken Kessler turns to his pile of permanently on-hand CDs to bring you his pick of the discs that will shine a light on your system's performance



Like asking to choose your favourite food or movie, narrowing down 15,000 CDs and SACDs to a mere 20 is torture. The brief was to cite those I use regularly for reviewing purposes and which can reveal the qualities of a component or system. That said, this is also the stack of CDs which never gets filed with the rest, sitting there ready for action.

Still, my list is missing plenty due to the 20-only limit. So, no CDs by George Formby, Buffalo Springfield, Howard Tate, Poco, Sam & Dave, Dusty Springfield, The Yardbirds, The Kinks, Detroit Emeralds, Squeeze, Hues Corporation, The Byrds, Aretha Franklin, Louis Prima, Nat 'King' Cole, Dean Martin, Rory Block, Johnny

Rivers, Rick Nelson, The Left Banke, The Youngbloods, Bonnie Raitt, Juice Newton, Sopwith Camel, The Searchers, The Beau Brummels, The Turtles and too many others that I regularly play while reviewing.

BY THE LETTER

What follows is alphabetical because I most certainly am not listing the CDs in accordance with some arbitrary value system. After all, who's to say one of these is better than the others? Julie London or The Beatles? Elton John or George Benson? Apples and oranges. What they do have in common is my love for the content as well as their potential for use as 'demo' discs. Moreover, you'll note that few are

audiophile discs *per se*, and I apologise for the rarity of some of them, but this is what forms part of my listening arsenal.

Nearly all have been chosen for musical worth as much as sonic supremacy, save for a couple of obvious discs like the Kodō title, which is my woofer worrier. Ultimately, the point is this, especially if you're listening for critical purposes rather than sheer pleasure (and I write this having once suffered listening to Rickie Lee Jones' 'Easy Money' 60 times during a *Hi-Fi Choice* session): if you must listen to something repeatedly, make sure it is music that you simply adore. And I have been known to put Kyu Sakamoto's 'Ue o Muite Arukō' on repeat and leave it for hours.

THE BAND

The Band

Capitol/Universal Japan UICY-40185
Ultimate HQ/MQA

After a swift count, I realised that I have at least ten different versions of The Band's second album, one of the greatest releases of the past 60 years. Why this version? Because despite the fact that it's only available on import from Japan it sounds simply amazing thanks to it being an Ultimate HQ pressing, which also provides an opportunity to test MQA. And wow! 'Up On Cripple Creek' and 'Across The



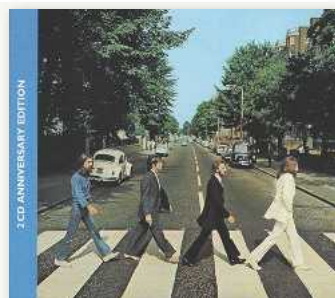
Great Divide' never emerged so gloriously from a digital source. In a few months, when I follow up this list of CDs with one of 20 demo LPs, this is one title that will feature on both – yes, it really is that wonderful!

THE BEATLES

Abbey Road 2CD Anniversary Edition

Apple 0602577915079

Not even my favourite Beatles album (that's between *Rubber Soul*, *Beatles For Sale* and *Revolver*), this anniversary remastering/re-mixing is mind-blowingly good. My favourite sing-along track is 'She Came In Through The Bathroom Window', while Ringo's drum break at the end of the album ranks right up there with the legendary Sheffield Lab 'percussionfest'. Openness, bass extension, detail, attack, voices everyone over 65



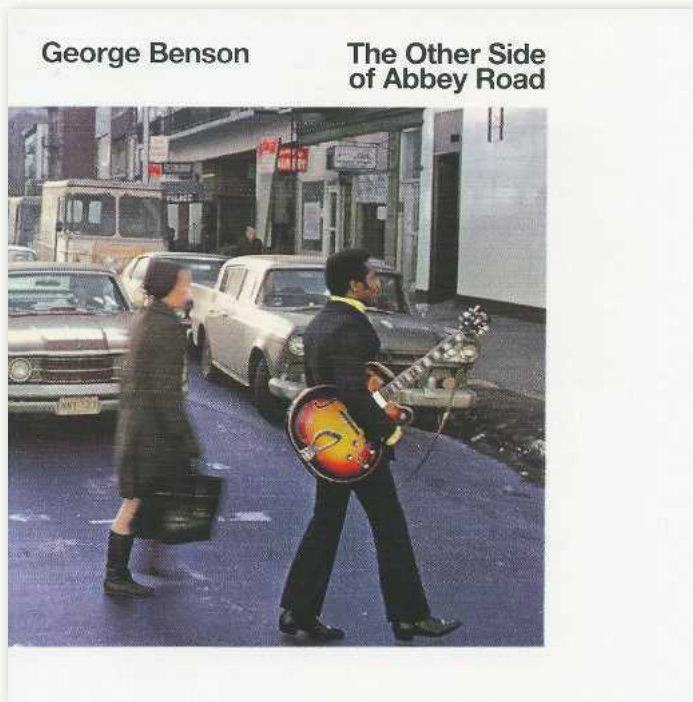
knows intimately – I could have chosen any one of their albums, but this latest incarnation of *Abbey Road* ticks all the hi-fi boxes. Even if it was their only album recorded entirely with solid-state hardware...

GEORGE BENSON

The Other Side Of Abbey Road

A&M Records 82839 3028 2

Yup, *Abbey Road* again, though I could have chosen that other interpretation of The Beatles' sign-off from 1970, recorded after but released before the dire *Let It Be*: Booker T and the MGs' *McLemore Avenue* – which was issued two months before Benson's. His is jazz-y, while theirs is funk-y, but this set also has the sonic edge, though either will do. It's typical virtuoso guitar-playing from Benson, a mix of fluidity and speed, with no shortage of hot transients with which to tickle your tweeters. Fans of the man's singing needn't forgive me for guitar playing being dominant, as he sings a little, too. For audiophiles, this is a knock-out.



THE DAVE CLARK FIVE

All The Hits!

BMGCA7408CD

If you're gonna test for mono, and maximum levels as well, Dave Clark's most recent act of benevolence in letting us intermittently buy his recordings naturally contains the song 'Glad All Over' and it's a killer. 'Thumping' is an adjective oft-applied to the sound of The Dave Clark Five and it's apt for it will challenge a system's bottom octave capability, if not with the same finesse as The Band's eponymous release [see p24].

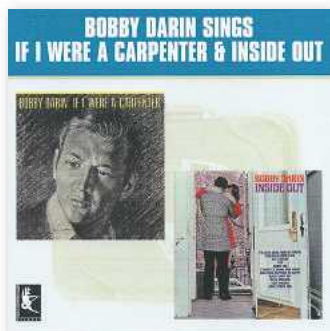


JOE COCKER

Night Calls

Parlophone/Warner 825646183975

Cocker's later releases, post the career-reviving hit, 'Up Where We Belong', were mostly taken for granted but treasures abound, as I discovered when I bought the bargain 3CD 'Triple Album Collection'. His unusual interpretations of The Beatles' 'You've Got To Hide Your Love Away' and Blind Faith's 'Can't Find My Way Home' on this 1991 release are now on my list of all-time sonic faves. This has been issued with numerous track listings, but all editions contain those two.

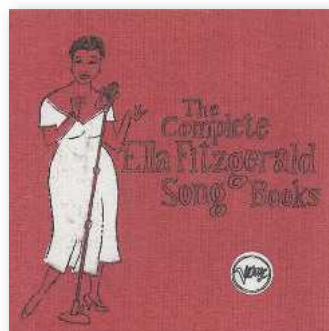


BOBBY DARIN

Sings If I Were A Carpenter & Inside Out

Diabolo DIA8 864

One of the most versatile pop singers ever, Bobby Darin debuted with rock 'n' roll in the 1950s, swiftly revealed a desire to be the next Sinatra, acted in a dozen films, covered both soundtrack and Broadway tunes and ultimately embraced hippie/folk/protest music in the mid-1960s. This pair of albums on one CD deal with that period. These didn't restore his career in his last years (he died at 37) but the music delights and the sound is delicious.

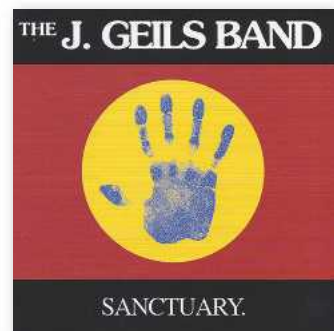


ELLA FITZGERALD

The Complete Ella Fitzgerald Songbooks

Verve 314519832-2

This is cheating because it's a set containing all eight songbooks, totalling 16 CDs. But 1) I worship Ella, 2) adore the Great American Songbook, and 3) agree that this may be the definitive interpretation. Best of all, the sound quality is simply astonishing, and I've used her take of 'Manhattan' for decades as my go-to track. A perfect collection, though I wish Ella had included 'They Didn't Believe Me' in the Jerome Kern volume.



THE J. GEILS BAND

Sanctuary

Razor & Tie 82173-2

This is the group's forgotten masterpiece. *Sanctuary* contains plenty of their R&B styling, but hard-rocking tracks like the title song, the indescribably majestic 'I Can't Believe You' and 'Take It Back' leapt from the speakers back in 1978 and it has been a must-hear ever since. The latter's showcasing of Magic Dick's peerless harmonica playing is but one highlight, while those who value head-banging levels should go straight to the powerful 'Jus' Can't Stop Me'. ☺



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Legend 40, Hi Fi News August 2020



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STAN GETZ/JOÃO GILBERTO
Getz/Gilberto

Verve 521 414-2

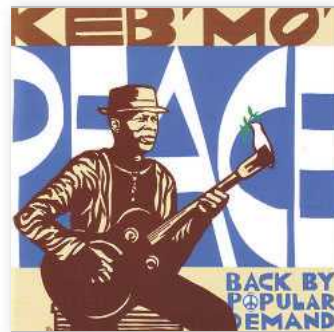
This is one of those rare jazz albums that seduced the general public, like Miles Davis' *Kind Of Blue* or Dave Brubeck's *Time Out*. Sublimely recorded and of its era – bossa nova was hot in 1963 – this album was aided by the inclusion of one very special track, the massive hit that was 'The Girl From Ipanema'. A deserved Grammy winner, the sound here is lush, natural and airy, while Astrud Gilberto's vocals rival those on 'Je T'aime... Moi Non Plus' when it comes to pure sexiness.



ELTON JOHN
Elton John

Mercury Japan UIGY15034 SHM-SACD

Elton John's eponymous album from 1970 arrived just as the whole concept of the introspective singer-songwriter was exploding. Elton didn't quite qualify for that tag, as he had Bernie Taupin as lyricist, but the vibe was the same. Sublimely produced and sounding simply breathtaking, it is best-known for 'Your Song', and contains at least three of his signature tunes. This SHM-SACD release is the best digital version I've heard, well worth the effort of acquiring it.



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

Okeh/Epic EK92687

This 2004 collection of Keb' Mo' is one of the warmest albums I have ever heard, sonically and in terms of its content. The sound is magnificent, especially the guitar- and piano-only renditions, while the songs recreate an era: 'Imagine', 'Get Together' and others of that calibre, with the opener, his version of one of my all-time favourite songs, 'For What It's Worth', setting the bar so high that you wonder if it can be sustained. Utterly magnificent.



ALBERT KING
Born Under A Bad Sign

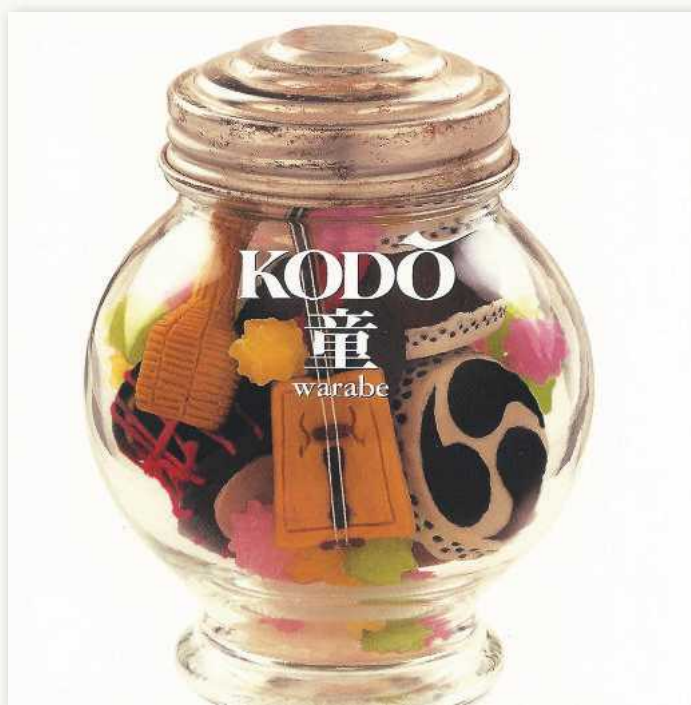
Stax Remasters 0888072343344

This remains one of those blues albums that transcends the genre. This is a favourite because of King's gruff vocals and cutting guitar leads, two contrasting textures to tax your system, while the material is superlative – not just the magnificent title track, but also his cover of Ray Noble's 'The Very Thought of You.' Along with B B King's cover of Duke Ellington [see p29], it begs the question: why didn't he, and or that matter B B, record the Great American Songbook?

KODO
Warabe

Sony SRCL 4671

OK, so this is a no-brainer woofer-wrecker, the standing joke being that drum solos exist in rock music so the rest of the band can nip out for a cigarette. That said, I will never forget the first time I heard a Kodō CD, the bass so extended and yet so taut and airy that it made bass guitar, synth bass and just about every other bottom-octave-feeder seem wussy by comparison. Perhaps one needs to be born in Japan to fully 'get it', but that could be said about any indigenous music form. I say, just sit back and get ready for the foundations to shake. And shake they will, because this is acoustic bass at its zenith.



JULIE LONDON
Julie Is Her Name Volume II

Analogue Productions CAPP 7100 SA SACD

Yes, the sound is phenomenal, but this is here for purely selfish reasons: I worship Julie London and this early release of hers is one of the finest albums of Great American Songbook classics that I can name. Ms London delivers the breathiest, slinkiest interpretations of songs heard a bazillion times. Backed only by piano and bass, it's 'in the room' when the system is up to it. Wait 'til you hear her versions of 'Goody Goody' and 'Blue Moon'. ↻

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SOPHIE MADELEINE

The Rhythm You Started

Xtra Mile Recordings Ltd XMR045CD

This 2011 release breaks my heart, because – apparently – the young Ms Madeleine has retired from music. Trust me, it's a terrible loss. I discovered her while trawling YouTube for ukulele lessons, and up popped her series of clips covering everything from The Bee Gees to The Andrews Sisters to The Chordettes. A voice so heavenly and enticing I found myself scouring Amazon for her discs. Check out her 'Mr Sandman' online, then tell me you weren't charmed into submission.

LOU RAWLS

At Last

Blue Note CDP 7 91937 2/Japanese Cat. No. CJ32-5050 SACD

Arguably the finest vocal album of all time (don't even try debating with me), this 1989 release finds Rawls, who even wowed Sinatra, backed by deities like Richard Tee, Cornell Dupree and Stanley Turrentine. He filled it with blues numbers, standards, material from Lyle Lovett and Percy Mayfield... and a take on the title track that ranks with Etta James' classic, thanks to the duet with Dianne Reeves. The sound is sublime, but it's Rawls' (and Reeves') vocals which make this my go-to demo CD. And I have never reviewed a product in the last 31 years without playing it. Go on: risk 99p and download the title track from Amazon.

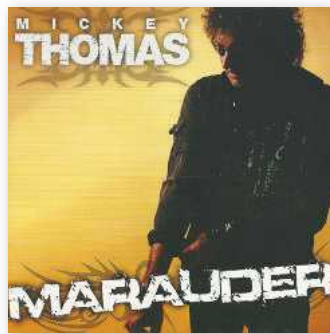


SUPERTRAMP

Breakfast In America

Mobile Fidelity UDSACD 2189

I had to include at least one audiophile-approved blockbuster, just so I could gamble that all of you have at least one of the 20 in your collections. It was this, *Hotel California* or anything by Steely Dan, but I love those too much and needed at least one selection about which I could be dispassionate. This is clinical, studio-born stuff, not something which speaks to me, but, hot damn! It dazzles, throwing all manner of sounds at you. And it's catchy too.



MICKEY THOMAS

Marauder

Gigatone GCD303

Another CD that's all about the vocals. Mickey Thomas is the peerless belter who sang the phenomenal 'Fooled Around And Fell In Love' with the Elvin Bishop Band. I can't name a rock singer who matches him for intensity. Here he covers 16 gems from The Beatles, Peter Gabriel, The Stones and – for my money – one of the best takes of Squeeze's 'Tempted' this side of Joe Cocker's version. Sound is slick, indicative of the norm in 2011, but that's not why I love it. Oh, that voice...

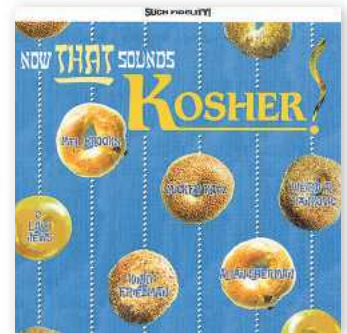


VARIOUS

All-Time Greats!

Hi-Fi News/Ace Records ACE1

Older readers will have this CD, which was a freebie from *HFN* in 1994. Its inclusion is inevitable because all 22 tracks were chosen for sound quality, and it's filled with killers, the best being B B King's cover of Duke Ellington's 'Don't Get Around Much Anymore' and Isaac Hayes' 'Theme From Shaft'. I still can't believe what we were able to include in this collection: The Standells, Mel & Tim, Johnnie Taylor, The Damned, Jerry Lee Lewis, Dexter Gordon, and others...



VARIOUS

Now That Sounds Kosher

Shout Factory DK30336

Lastly is a totally self-indulgent selection, but for the most part, the sound quality is ridiculously good. This is a set of 18 parodies of hit songs but with a Yiddish twist. They date back to the 1950s, with comedians such as Mickey Katz (in mono), through Tom Lehrer, Mel Brooks, Allan Sherman, Kinky Friedman and 'Weird Al' Yankovic. If the jokes elude you, don't worry about it. The sound will knock you out, especially the party sounds on the Allan Sherman track. *L'chaim!* ☺

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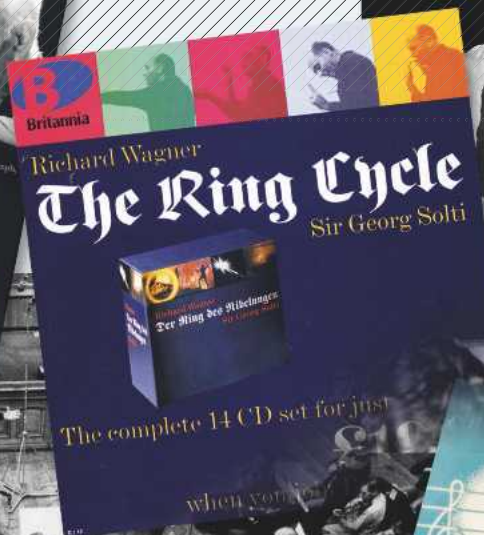
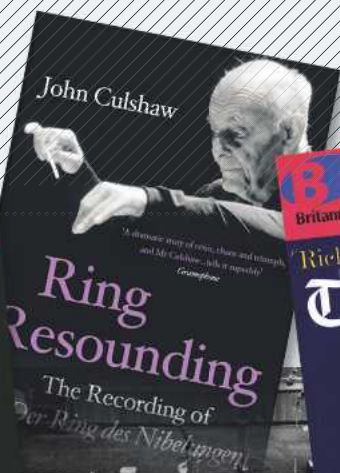
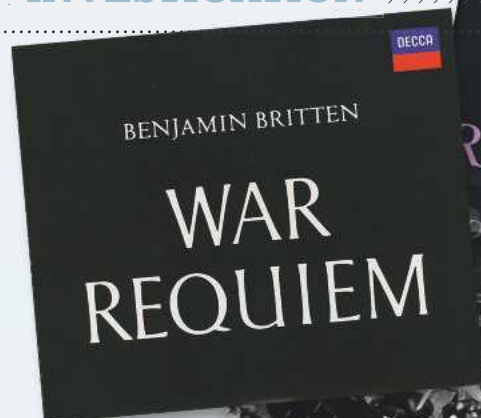
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INVESTIGATION



TOP: Clockwise (l-r) Britten's *War Requiem*; John Culshaw's *Ring Resounding* from 1972; conductor Georg Solti's *The Ring Cycle*; Sir Thomas Beecham in 1948; Spike Hughes' *Second Movement* (1952) and recording Tchaikovsky at Kingsway Hall in 1980

BELOW: *Music Ho!* – written in the 1930s by Constant Lambert – and (right) Alan Jefferson's 1979 book *Sir Thomas Beecham: A Centenary Tribute*

Recording the Classics

Barry Fox on books with insights into the personalities behind the podium

Before my local bank branch closed, someone in head office came up with a cunning plan. Shut half the counters and pipe in classical music to soothe the nerves of customers seething at the longer wait for service. Played just loud enough to

be recognisable, but too whispery to be enjoyable – like the tizzy spill from someone else's headphones – the noise just simply annoyed.

Same old same old. In his 1934 book called *Music Ho!*, Constant Lambert, then Music Director of The Royal Ballet, railed against 'the appalling popularity' of music. 'Music of a sort is now everywhere and at every time... We board buses to the strains of Beethoven and drink beer to the accompaniment of Bach.'

TONAL DEBAUCH

Coining the phrase 'canned music', Lambert reckoned 1934 was 'an age of tonal debauch'.

'I have heard a woman of some intelligence and musical training actually state that she preferred the magic tone of the oboe over the wireless to the actual sound of it in the concert hall; and I have heard a painter, who prides himself

on his modernity, state that the two-dimensional effect of broadcast music was to be preferred because the sound instead of escaping round the hall came straight at you and had "a frame".

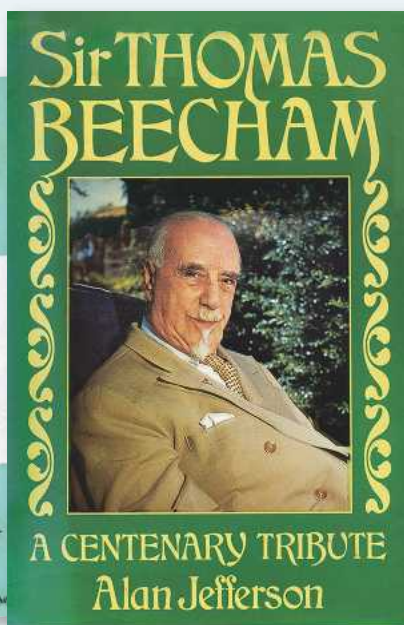
"Sir Thomas Beecham danced on a table, singing"

Sir Thomas Beecham, with the London Philharmonic, collaborated with Alan Blumlein of EMI to make a stereo test recording of

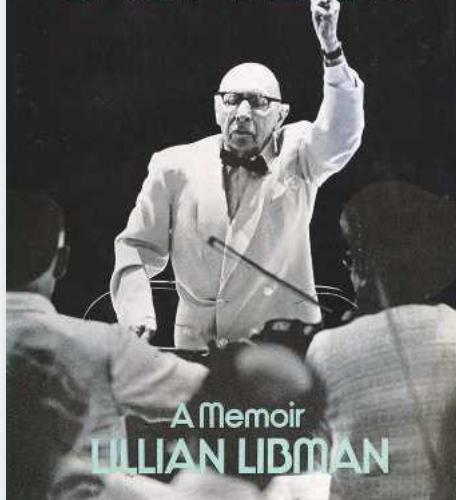
Mozart's 'Jupiter' Symphony at Abbey Road in January 1934. Then, in 1936, Beecham conducted the LPO for a concert in the IG Farben/BASF concert hall in Ludwigshaven, Germany, which was recorded with a prototype magnetic deck made by Telefunken running BASF tape.

Sir Thomas Beecham: A Centenary Tribute, written by Alan Jefferson and published in 1979, adds nothing about the Abbey Road stereo test, but fleshes out how the BASF tape recording came to be made.

'In November 1936 Beecham took his new orchestra, the London Philharmonic, on a tour of Germany,



And Music at the Close: STRAVINSKY'S LAST YEARS



giving eight concerts in eight different cities within nine days.

'The first concert took place in Berlin... It was broadcast all over the Reich and relayed to Britain... That night was the beginning of a round of hectic parties for the LPO... Sir Thomas danced on a table, sang songs and told a string of stories.'

A few days later 'Beecham was taken to a party at Rudolf Hess's imposing house... He sat himself down at the piano and proceeded to play. Afterwards Beecham admitted that he had been so bored that he could think of nothing better to do'.

ON THE MONEY

Questions abound on Stravinsky's close relationship with Robert Craft and to what extent recordings credited to Stravinsky were actually made by Craft. *Music At The Close: Stravinsky's Last Years A Personal Memoir*, 1972, by Lillian Libman, is a must-read on this because Libman worked closely with Stravinsky, from 1959 until his death in 1971, mainly as his personal manager.

Libman wrote: 'Stravinsky often referred to Robert Craft as "my ears"... [because] Robert has a "mechanically perfect" ear: that is, he is able to detect immediately even the slightest deviation from the printed score – a wrong pitch or rhythm rarely escapes his attention during rehearsal or playback.'

'This "ear" was invaluable to Stravinsky... [and] the recording company – for a practical reason: Robert saved them money...

'As far as I know, Stravinsky did not listen to playbacks... As for editing, this was a task in which he had never involved himself.'

Sir Edward Lewis ran Decca with engineer Arthur Haddy and international manager Maurice Rosengarten. In the 1950s John Culshaw was recording manager and then musical director.

His 1981 biography, *Putting The Record Straight*, is packed with straight talk and insight, for instance why recordings made in 1951 at the first Bayreuth Festival after WW2



were not released for 50 years. Culshaw wrote: 'I felt that the majesty of [Hans] Knappertsbusch's conception [of *The*

Ring] must be recorded... after a long argument, Rosengarten agreed that we could put *The Ring* on tape on the condition that no contracts to cover payment would be made until after the event...

'I prepared a master version... the Germans did not like the prospect of negotiating after the event, and so to this day (1981), close enough to 30 years later the tapes of the 1951 *Götterdämmerung* still languish on the shelves at West Hampstead.' And there they stayed for the best part of another 20 years.

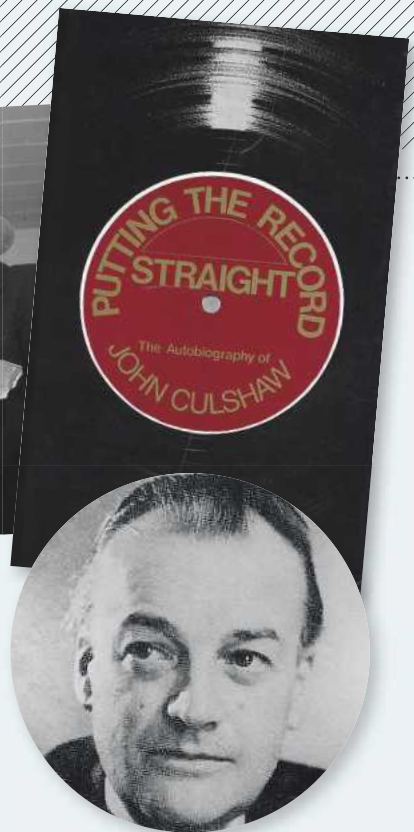
Elsewhere in the book, recalling sessions with the Polish-American pianist Artur Rubinstein at Kingsway Hall, Culshaw writes: 'Rubinstein wanted the piano to be relentlessly loud throughout, irrespective of dynamics, tone quality, or whatever

ABOVE: Lillian Libman's *Music At The Close: Stravinsky's Last Years A Personal Memoir* from 1972 is an essential read for anyone who admires Stravinsky

ABOVE RIGHT: Robert Craft (left) pictured in 1961 in Helsinki with Finnish music scholar Kai Maasalo (centre) and Igor Stravinsky (right)

TOP RIGHT: Decca producer John Culshaw's 1981 biography *Putting The Record Straight* and (below) Culshaw pictured during his years at the BBC

RIGHT: The Polish-American pianist Artur Rubinstein poses for the camera in 1937. Born in Lodz in 1887, he is now widely regarded as one of the greatest concert pianists of all time



Mozart might have written for the orchestra. "I am an old man", he whined to the engineers when I introduced him. "Please make me as loud as you can".

'On the last session Rubinstein brought along one of his children, who was obnoxious enough to comment that there wasn't enough piano. This was finally too much for the normally taciturn first engineer, Kenneth Wilkinson, who inquired coldly, "Enough for what?".'

SHORT MEASURE

Culshaw also writes about Austrian conductor Karajan. 'He was deeply interested in recording technology'

he recalls. 'If he did not know as much as he thought he knew, he still knew a great deal more than all the other conductors put together.'

'Nobody... ever questioned Karajan's right to do exactly what he wanted. He moved everywhere with a circle of sycophants... He arrived one day with a raincoat over his arm, which he promptly offered to Gordon Parry, the senior engineer, to carry for him. Gordon simply ignored the gesture... Karajan never tried that trick again.'

'The first work he wanted to record was Strauss's *Also Sprach Zarathustra* [but] there is no organ in the Sofiensaal [in Vienna]... We found one in a military chapel at Wiener



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LEFT: Herbert von Karajan pictured in *The Netherlands* in 1963. The opening from the Richard Strauss tone poem *Also Sprach Zarathustra*, performed by the Vienna Philharmonic and conducted by him, was used in Stanley Kubrick's film *2001: A Space Odyssey* but not credited to Karajan

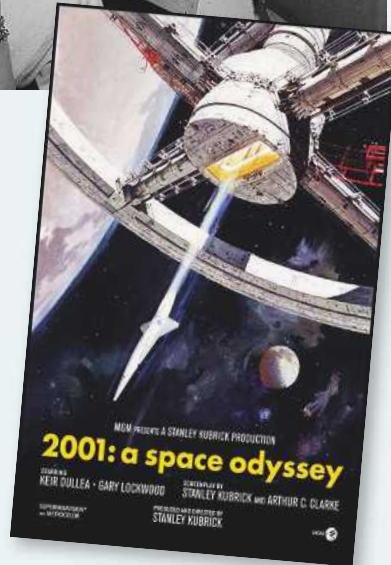
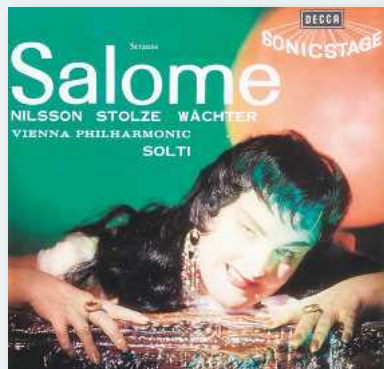
Neustadt, some distance away from the city... but the organ was too flat for our purposes. We found an organ tuner who was prepared to shorten the organ pipes to our requirements... the problem was to find an organist discreet enough not to talk about what we had done. In the end the part was played by my assistant on *Zarathustra*, Ray Minshull, who had studied the organ during his university days.'

HI-FI REVENGE

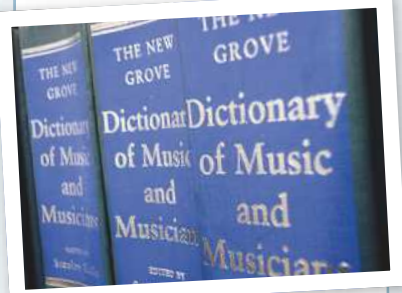
'Seven years later Stanley Kubrick chose the opening of [Karajan's] *Zarathustra* as the recurring musical element in his film, *2001: A Space Odyssey*... The ultimate irony was that Decca's condition for releasing the tape to Kubrick was that no credit should be given to Decca or Karajan on the film itself.

'It was an example of Decca's decline. Nobody in [Decca's] management had even the remotest idea of what classical producers actually did... Lewis never came near a recording studio... and neither did Rosengarten... Lewis not only lacked the slightest conception of how a modern recording was

"At Kingsway Hall one was covered with a film of grime"



BELOW RIGHT: *The New Grove Dictionary Of Music And Musicians* – one of the largest reference works on the history and theory of music. It was first published in 1878 as *A Dictionary Of Music And Musicians*



made: he had no idea at all of the skills he was employing or what people actually did. To him they put up mics, pushed coloured buttons on a machine and were probably overpaid for doing so.'

Culshaw took revenge on music and hi-fi pundits: 'With *Salome* [we suggested] that we had invented

an entirely new approach to operatic recording... We called it "SonicStage"... It was greeted as a major technical development, whereas there was not a jot of difference between *Salome* and any other opera we had recorded in Vienna for the past three years.'

GENERAL SHODDINESS

Kingsway Hall is long-gone but remembered with rosy-tinted reverence for its acoustic. Those who recorded there had other views.

'We were so used to its general shoddiness', wrote Culshaw, 'that we scarcely noticed that after several hours in the hall one was covered with a thin film of grime which rose

LEFT: One of a short series of SonicStage recordings made with the Vienna Philharmonic Orchestra and produced by John Culshaw for Decca, *Salome* featured the Swedish soprano Birgit Nilsson

PHANTOM FLAUTIST

The Internet, with its many online trading sites, makes it much easier to find quality secondhand books than in the past, though some are much harder to find than others. Top spot on the rare list must surely be a first edition copy of the 1878 *New Grove Dictionary Of Music And Musicians*.

Buried inside – on p252 to be exact – there was a run-of-the-mill entry for Dag Henrik Esrum-Hellerup, a 19th century Danish flautist, conductor and composer. The entry not only gave his family history, but listed his musical achievements and noted that he published a translation of Quantz's famous treatise on flute-playing.

But the index of international composers compiled by the Performing Rights Society, showed no entry for Esrum-Hellerup. His surname derives from a Danish village and a suburb in Copenhagen. 'His' entry – and another for Italian composer Guglielmo Baldini, (born Ferrara, c1540; died c1589) – were both phoney. Both were removed from later editions, as well as from later printings of the 1980 edition. To the best of my knowledge the culprit never owned up, or was caught.

from coke-burners in the basement. Yet despite its innate hideousness and the fact that underground trains rumbled to and fro directly beneath the hall (the sound that the trains made had to be "sucked out" of the low bass frequencies when tapes were dubbed for disc) nothing altered the fact that it had the finest recording acoustic in London.' ☺

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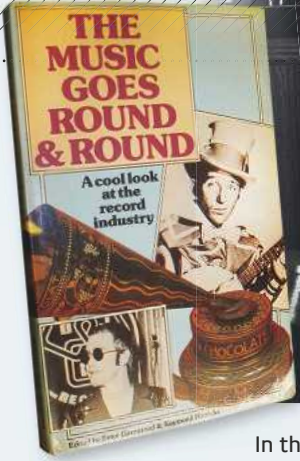
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In the early 1960s Culshaw produced Benjamin Britten's *War Requiem*, conducted by Britten himself.

'A small mountain of rehearsal tapes had been made, and I immediately imposed a security clamp on them, for there was never any intention of releasing such material to the public; but I thought that one LP of excerpts, carefully edited, might make an unexpected birthday present for Britten.'

TAPES DESTROYED

A new member of staff, John Mordler, was told to sift through 16 hours of *War Requiem* rehearsal tapes. Once edited, the discarded sections were then destroyed and the 50-minute master locked up in the safe until later in the year.

Britten was duly given his birthday LP, but Culshaw soon had second thoughts.

'I think it was a well-meant miscalculation on my part. [Britten] was not at ease and when, many months later... I asked him if he had listened to any of it he evaded the question. I never brought it up again... I thought that some day, and to someone, it will be a valuable document, in the sense that it shows his method of rehearsal and gives some indications of a composer's special insight into his own work.'

Aside from some excerpts [Decca 4757511] the full rehearsal session has not been commercially released.

The Music Goes Round And Round, 1980, by Peter Gammond and Raymond Horricks is generally lightweight but has a good chapter by EMI's Christopher Bishop. He, too, recalled working at Kingsway Hall, before recording stopped in January 1984, after EMI and Decca had said no to buying the building.

'The control room is under the stage, and completely airless... By present-day standards the mixing console was of the simplest, but to me it looked unbelievably complex. The recording machines were in the basement, even further into the bowels of the earth, and the operators talked to those in the control room by a highly temperamental talk-back system. It was particularly inclined to go wrong if a producer wanted a playback after a session.'

Bishop had firm views on editing. 'My view is that if a take of a passage lasting, say, ten minutes, has two or

three mistakes, or sections not up to the conductor's standards, there is no harm in covering those with sections from other "takes"... There is, however, another way of

editing, and that is to build up a performance bar by bar. It is utterly deplorable... the editor's skill can make an incompetent artist seem competent. There is an old story of an artist whose work had been cobbled together saying, on hearing the edited tape, "This is good. I didn't realise I'd played so well". To which the producer replied, "You didn't". ☹

"To build up a performance bar by bar is deplorable"



LEFT: *The Music Goes Round And Round* by Peter Gammond and Raymond Horricks, which was published in 1980 and (right) the control room under the stage at Kingsway Hall in London the same year, with a 3M four-track recorder in use

SIX OF THE BEST...

For those seeking further insights into the world of Classical music recording, here are six titles to get you started...

Opening Bars, Beginning An Autobiography, 1946 and *Second Movement, Continuing The Autobiography*, 1952. Two books by Spike Hughes, bass player, composer, arranger, author and broadcaster who grew tired of jazz and then wrote about opera and classical music. Hughes was a polymath much like Humphrey Lytteleton, later.

Music On Record by Fred Gaisberg, published in 1947. Gaisberg was viewed by Christopher Bishop of HMV/EMI as 'the father of us all, who in the course of his career did everything from warming the waxes to contracting the greatest artists of his day'. Along the way Gaisberg recorded tenor Enrico Caruso.

Ring Resounding, published in 1967, is John Culshaw's account of the recording of Wagner's *Der Ring des Nibelungen* in Vienna, 1958-65, conducted by Georg Solti. There is also a documentary

film available which records the massive undertaking.

The Fabulous Phonograph, by Roland Gelatt, 1977. This is the definitive history of early recording, mainly classical. A readable reference, with equal emphasis on musicians and the equipment used to record them.

The Lamberts: George, Constant And Kit, Andrew Motion, 1987. Contains some colourful insight into Constant Lambert's life and early death, with some even more colourful insight into son Kit's early handling of The Who.



ABOVE: *The Fabulous Phonograph* by Roland Gelatt from 1977 and (below) Andrew Motion's biography *The Lamberts: George, Constant And Kit*

LEFT: Press shot of British composer Benjamin Britten taken in 1968 by photographer Hans Wild

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FinkTeam KIM

More room and wallet-friendly than the flagship Borg, Fink's compact KIM packs no less 'tech'
 Review: **Andrew Everard** Lab: **Paul Miller**

No, they're not named after a Kardashian, a Rudyard Kipling novel or even Mel & pop partner. Instead, the new KIM standmount speakers from FinkTeam, selling for £8900 a pair complete with their dedicated open-frame stands, take their lead from the company's Borg speakers in having a *Star Trek* association. In this case it's somewhat less villainous, in the form of *Voyager* character Ensign Harry Kim, the ship's Operations Officer. It could all have been so different: story is, Kim was originally to be called by one of several names, including Jay Osaka.

That £8900 price tag may seem pretty punchy, putting the KIM right up there among the elite of standmount speakers, but as well as being the smallest FinkTeam speaker design to date, it's also the most affordable. It sits below the floorstanding £21,000 Borg and the 135kg-apiece WM4, the company's original design, which is – let's say – comfortably more expensive. However, though it may be smaller, standing 85.4cm tall complete with stands, the KIM still incorporates much of the technology of those massive WM4 speakers, originally designed as a showcase for the capabilities of Fink Audio-Consulting [see boxout, p41].

SUCCESS STORY

The KIM has had everything thrown at it by the Fink design team, as well as additional ideas the company has trickled down from the work it has done with other loudspeaker brands [see PM's interview, p43]. And there are quite a few marques that owe their success in the speaker field to this consultancy based in Essen, Germany. There's a (possibly apocryphal) story of founder Karl-Heinz Fink being at an awards ceremony and, as each nomination for a speaker gong was read out, muttering under his breath 'One of ours...'

With state-of-the-art speaker design and measurement tools in-house, an extensive client list, and expertise throughout the domestic and automotive markets, it's no surprise that the FinkTeam's speakers feature some innovative approaches, not to mention having a distinctive style. Both of those elements are apparent as soon as you see the speakers. Not only are they hefty, at over 25kg apiece, but the KIMs look decidedly different with their sculpted front baffle, long ribbon-esque tweeter and that stand, which looks flimsy but certainly isn't, and gives the speaker its distinctive upward tilt.

JUST FOR FUN

The KIM's genesis came from conversations with dealers and distributors – or rather it didn't, the company explaining that, in the wake of the launch of the Borg model, 'we asked our dealers and distributors and they asked for either a more expensive model or a cheaper model, but there was no clear trend. So, we did what we are good at – we made it our own way again! Just a speaker we would use ourselves, something we could have fun on, designing a speaker for us'.

In simple terms, the KIM speakers are an essentially rectangular box, two-way and rear-ported, with single-wire connections and a choice of finishes including the two-tone look seen on past FinkTeam models [and on this month's cover]. They even use an entirely standard crossover strategy, with a Linkwitz-Riley 4th-order filter operating at a low 2.2kHz between tweeter and

RIGHT: FinkTeam's AMT treble driver is made to spec. by Mundorf, crossing over to a 200mm paper-coned bass driver at 2.2kHz. The KIM's integral tubular stand combines light weight with high rigidity



THE MAN, THE BRAND

With a history of more than 30 years, Karl-Heinz Fink's Essen operation is firmly established as a go-to resource for any company wanting to develop, or improve, its speaker range. With extensive resources including advanced measurement, computer modelling and prototyping, Fink Audio-Consulting aims to reduce and enhance the development process as products are taken from concept to manufacture. It also has a major involvement in the development of speaker solutions for the automotive industry where production volumes are far higher than in domestic hi-fi.

Its facilities include both an anechoic chamber and one with adjustable reverberation; excellent listening facilities; an enclosed workshop area for working on car audio; and a highly skilled and experienced team covering every facet of audio development. At the heart of the company is Karl-Heinz Fink himself, as likely to be found exploring the performance of a vintage camera lens – one of his passions – as he is using the woodworking facilities to make or restore a new addition to his guitar collection.

woofer. Nominal impedance is given by the company as 8ohm, with a 5.9ohm minimum at 160Hz, and a sensitivity of 86dB [see PM's Lab Report, p45].

PURE FINK

So, nothing to frighten the horses there then, and they also fit their design brief to translate the engineering language begun with the original WM prototypes, which I first saw on a visit to Essen back in July 2016, into something less room-dominating than the Borg loudspeakers, let alone the huge WM4 model. More specifically, the requirement here was that 'the height of the speaker should integrate with other things in a living room, being not higher than the window sill, chairs, tables and sideboards'.

However, whether with its own models or its work for clients, the Fink organisation doesn't do 'conventional'. The cabinet construction and the methods used to tackle internal resonances reflect its extensive efforts to 'dial out' everything but the sound being delivered by the drivers – something of a Fink mantra.

The tweeter is a 110mm AMT design, with a passive delay to adjust the phase in relation to the 200mm paper-coned bass/mid driver, as was done on the Borg. The bijou woofer uses a rubber surround, the company explaining that too many compromises would have been involved in using a cloth surround. The driver is tuned via a slot-type port integrated into the rear panel – on the Borg it was a separate tube – and the crossover uses

air-cored inductors and capacitors. A mix of Mundorf components and others custom-made for FinkTeam are used, including low-inductance bifilar resistors.

Two controls are provided on the rear of the speaker to tune the sound to the room and system with which they're used, and the listener's requirements: one effects very subtle changes to the treble level, the other alters the bass damping for

better amp-matching. The cabinet is pure Fink, from the shaping of the front baffle, designed to reduce diffraction around the tweeter, to the walls of the enclosure, which are a sandwich construction featuring strategically-placed bracing and Helmholtz resonators 'to avoid standing wave modes without removing all the fun from the box'.

CHEST THUMP

Before even considering the KIM speakers, you have to challenge some preconceptions: if you're thinking 'small speakers, ⇨

'The KIMs shine with Jarre's effects-laden track'





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LOUDSPEAKER



ABOVE: Renderings from the side, front and exploded baffle reveal the lightly braced Helmholtz cavities employed to both control resonances and modify the port output at the cabinet rear

small sound, not much bass', you're on the wrong track. I'll admit that I expected some allowances would be needed for the diminutive KIMs on their slender stands. That was, until heard on the end of PM's Melco/dCS Vivaldi One/Constellation Inspiration Mono reference system [*HFN* Jun '17/Feb '18/Oct '19], where they proceeded to do a very good job of thumping my chest and rumbling the sofa, while at the same time casting a coherent 'free of the speakers' sonic picture.

CRYSTAL CLEAR

This whole 'soundstaging above the speakers' thing is a clever trick, and a little bit amazing when first you hear it – the Neat Iota Xplorer speakers [*HFN* Jul '18] I use in my own set-up do it exceptionally well – but it takes very little acclimatisation to get used to that being just what the KIMs can deliver, and simply relax into the music. Well, when you've stopped revelling in the almost startling clarity, that is.

These are remarkably open and well-integrated speakers, as is clear with one of my well-worn test-tracks, Lake Street Dive's stripped-back take on The Jackson Five's 'I Want You Back' [*Fun Machine* EP; Signature Sounds Bandcamp download]. Each of the elements – percussion, bass and trumpet, and especially Rachael Price's powerful, plaintive vocal – is crystal clear, and set in a credible and intimate soundstage.

The same is true with more substantial musical forces, as in the 'Lacrimosa' from Mozart's *Requiem* [LSO/Colin Davis; LSO Live LSO0627], with the hushed tones of

the opening delicate and detailed, and then the orchestral/choral crescendos delivered with real power and slam, plus that sofa-troubling bass. The extended, tight low-end also makes startlingly dramatic the Newcastle City Hall organ opening ELP's 'The Three Fates' from the band's eponymous debut album [BMG download; 192kHz/24-bit], while in the fugue section the speed and control of the speakers ensures Carl Palmer's percussion really sparkles, with Keith Emerson's Yamaha grand soaring through the mix.

Via some speakers this work can sound brash and decidedly 'vintage', but there's none of that here. Instead, the speed and even-handed balance of the KIMs brings it up fresh, and just as the haze of nostalgia would have you thinking it sounded – but probably didn't – when you first spun it on LP several decades ago. All too often, revisiting the favourites of your youth can be a disappointment, but that's really not case with this music via the KIMs.

SNAPPY FUNK

Of course, with a rough or muddy mix there's little the speakers can do to clean things up, but even with the less than perfectly clean sound of The Stones' live *Sweet Summer Sun* [Promotone 0060253750266], the KIMs get on with their best impression of a big PA system – impressive enough given their size – and give 'Gimme Shelter' bags of energy.

Just as dense, but rather more finely recorded, is the bold reading of Rodgers & Hammerstein's 'Carousel Waltz', played ↻

KARL-HEINZ FINK

Following the *HFN* Lab test program [see p45], editor PM reviewed the results with FinkTeam's chief engineer, Karl-Heinz. The KIM speaker features a number of user adjustments, including control over bass damping and treble. 'The treble control is not a "taste knob"', says Karl-Heinz. 'It operates over the entire passband of the driver and is very subtle. We change a resistor in the tweeter network and while we can measure this directly, and hear it, we don't see it on acoustical tests.'

The 'Damping Control' is certainly 'measurable' and audible. 'We add steps of 0.25ohm in series with the resistance of the inductor in the bass network – it's all about tuning to the output impedance of the attached amplifier. The idea is based on work we did during our development of the Concept 500 for Q Acoustics.

'We'd designed a very low THD driver, but the inductors in the crossover contributed more distortion at moderate power levels. We moved to air-cored inductors, tweaked the driver BL by increasing the magnet size and tuned the final in-box LF alignment by adjusting the value of this series resistance.'

The KIM's control of cabinet resonances is no less studied. 'I am not against damping but I prefer speakers with less. We use tuned Helmholtz resonators to get rid of most standing waves without recourse to heavy damping which can kill the bottom end. We use a similar technique to mitigate pipe resonances in the port tube without touching the 37Hz of the air mass that we want to keep.' PM



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“The Sound when using the two-box STATEMENT is certainly impressive.”
Andrew Everard and Paul Miller, **HiFi News**



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LOUDSPEAKER



LEFT: The slot/port and short line is integrated into the rear of the cabinet, delivering a very clean output tuned to 37Hz. The 4th-order/2.2kHz crossover is not split, so the KIM's single 4mm terminals do not support bi-wiring/amping

handclaps brightly resolved. Asked to do more than a credible soundstage, the KIMs shine with an effects-laden track such as Jean-Michel Jarre's 'Souvenir Of China' [from *Jarre In China*; Warner Music 504676 1-662]. Those ping-pong balls and myriad camera shutters ricochet from loudspeaker to loudspeaker, but even more impressive is the sheer depth and impact these modestly-sized enclosures bring to the bass and percussion here, which is truly striking, and will be sure to get that sofa moving again.

MONO MASTER

At the opposite extreme, the *Applewood Road* album [Gearbox Records GB1531], bringing together the voices of Emily Barker, Amer Rubarth and Amy Speace, placing them with minimal instrumental backing around a single mic and recording them in mono, proves a test of any speakers' dispersion and pair-matching. It's a test the KIMs pass with flying colours, creating a solid central image and keeping it stable to the point where the unusual set-up slips from the mind and the focus is on the music. And when the music is as good as this, that's a very enjoyable experience indeed. ☺

with real vigour by the John Wilson Orchestra [EMI Classics 50999 3 19301 2 3]. Here the KIMs let rip with their punchy bass while handling instrumental timbres with finesse, from skittering strings and woodwind to rasping brass. And best of all, they let the music swing, evoking the spinning ride of the title.

Yes, they will eventually harden up if you let your exuberance run away with you and crank the level too far. But you're going to be at seriously neighbour-rattling levels before you get even a hint of that.

Switch to the snappy funk of Bowie's 'Golden Years', from the 2016 remaster of *Station To Station* [Rhino; 192kHz/24-bit] and the track, which can sometimes seem to be swallowing the vocal via other speakers, sounds crisp, forthright and above all downright danceable on the KIMs, even Bowie's echoing

HI-FI NEWS VERDICT

Mixing as they do slightly old-fashioned 'big standmount' proportions with innovative design, and angled up on slender but rigid frames, the KIMs have a decidedly unusual look, and it'd be easy to spend the same money on bigger floorstanders. Yet their weighty and refined sound has a precision and conviction that's hard to overlook, creating almost magically focused and extended sonic images that draw you in.

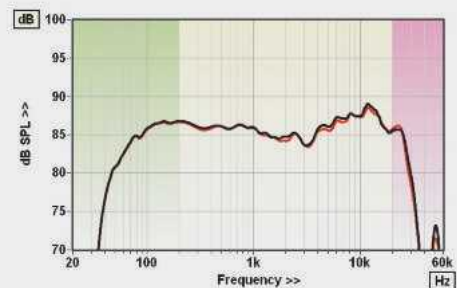
Sound Quality: 88%



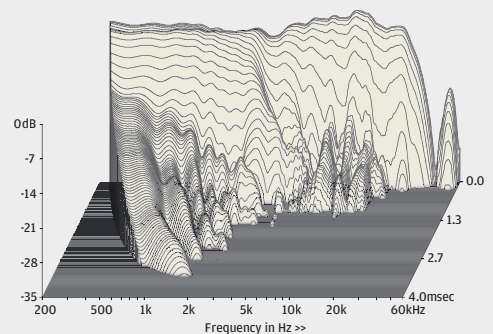
FINKTEAM KIM

While it's not uncommon for planar-type tweeters to suffer high distortion and complex resonances, FinkTeam's pleated AMT driver (operating above 2.2kHz in the KIM) is exceptionally 'clean' – the CSD waterfall showing only minor modes at 10-20kHz [Graph 2, below] while distortion is typically <0.5% from 3-20kHz (re. 90dB SPL/1m). The forward response [Graph 1] is free of any significant narrowband peaks or dips, showing a smooth uplift in treble (+3dB/10kHz re. 1kHz) following a mild -2dB 'BBC trough' between 1-4kHz, after which the extreme HF rolls swiftly away to -6dB/29kHz [pink shaded area, Graph 1]. Incidentally, there was absolutely no measurable difference in the KIM's forward HF response in either the '+1' or '-1' High settings [see Interview boxout, p43].

Otherwise, pair matching was excellent at 0.6dB while the mild $\pm 2.6\text{dB} \pm 2.7\text{dB}$ response errors account for the very similar 86.0dB/1kHz and 85.6dB (500Hz-8kHz) sensitivities – bang on Fink's own 86dB specification. The KIM's amplifier loading is also largely as advertised – a 5.8ohm/165Hz minimum increasing to >8ohm from 415Hz-60kHz where there's a very mild (maximum) +20° phase angle. The highest angles occur at LF, but at high impedance: -60°/75Hz and +46°/18Hz, both at 17ohm. The impedance drops very slightly to 5.6ohm and 5.4ohm/165Hz with the 'damping' control at 2 and 3, respectively. Its low frequency loading/37Hz port tuning is expertly judged – the 200mm bass/mid unit offering a smooth, gently uptilted sub-2kHz response and a very fine diffraction-corrected LF extension of 46Hz [-6dB/200Hz; green shaded area, Graph 1]. PM



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



ABOVE: Resonances are quickly suppressed with low-level modes remaining at 1-2kHz and 10-20kHz

HI-FI NEWS SPECIFICATIONS

Sensitivity (SPL/1m/2.83V – 1kHz/Mean/IEC)	86.0dB / 85.6dB / 83.9dB
Impedance modulus: minimum & maximum (20Hz–20kHz)	5.8ohm @ 165Hz 42ohm @ 60Hz
Impedance phase: minimum & maximum (20Hz–20kHz)	-60° @ 75Hz +46° @ 18Hz
Pair matching/Resp. error (200Hz–20kHz)	0.6dB / $\pm 2.6\text{dB} \pm 2.7\text{dB}$
LF/HF extension (-6dB ref 200Hz/10kHz)	46Hz / 28.7kHz/28.9kHz
THD 100Hz/1kHz/10kHz (for 90dB SPL/1m)	0.3% / 0.08% / 0.5%
Dimensions (HWD, w. stand) / Weight (each)	854x300x412mm / 25kg

DS Audio Grand Master

Following its groundbreaking Master 1 optical cartridge, DS Audio introduces the Grand Master, and a two-box energiser/equaliser, to up the ante even further
 Review: **Ken Kessler & Paul Miller** Lab: **Paul Miller**

In every field, not just 'hypercars' and luxury wristwatches, there's an extreme, cost-no-object pinnacle. From chefs' knives to sunglasses to fishing reels, there are items which push engineering and price limits, a phenomenon we are used to in high-end audio. Thus, with shaking hands (not a desirable state with this item), I installed the DS Audio Grand Master cartridge, at £11,995 surely the most expensive pick-up I have ever reviewed, if not the most expensive on the planet.

That's not all: DS Audio cartridges, with their 'optical' engine, require their own dedicated energisers and specific equalisation – you certainly don't feed these into a conventional phono stage [see PM's boxout, p47]. To accompany the Grand Master, there is a brand-new two-box unit selling for a heart-stopping £38,000, though PM and I were just as shocked by the weight – a full 25.1kg for the equaliser and 29.8kg for the power supply, each occupying a space of 452x152x486mm (whd). Looking at the Grand Master's energiser/power supply, you'd think you were seeing a pair of over-engineered monoblock power amps. The finish, of course, is superlative.

PHOTO BOOST

Before we get to the specifics, please note two important aspects of this new flagship product. The first is that every DS Audio cartridge can work into any of the company's energisers. The second is that there is a trade-in programme so one can upgrade from, say, a Master 1 [HFN Dec '17] to the Grand Master. That said, I may be the only person alive, outside of DS Audio, silly enough to try the entry-level DS-E1 cartridge [HFN May '19] into the Grand Master energiser, and the Grand Master cartridge into the DS-E1 energiser. But the findings were fascinating, and we'll get to those shortly.

Back to the Grand Master itself. DS Audio calls it 'the third generation of optical cartridges', reaching this plateau in

just seven years. Older readers will recall optical cartridges from a half-century ago, eg, Toshiba's effort, which were limited by the technology of the day, but DS Audio has clearly benefited from all manner of LED-related developments.

To advance beyond the still-amazing Master 1, DS Audio graced the Grand Master with independent LEDs and photo-detectors for the left and right channels. This provides a claimed 75% boost to the cartridge's output voltage, from 40mV to 70mV, also benefiting the S/N and stereo separation. Indeed, most impressive of the sonic benefits here, once past the astounding bass, is the lack of crosstalk [see PM's Lab Report, p51].

DS Audio also fitted a smaller 'shading' plate made from 99.9%-pure beryllium, halving its weight from 1.56mg to 0.74mg. The company points out that 'This is less than 1/10th of the mass of a typical core-and-coil system found in a traditional MC cartridge'.



ABOVE: Threaded holes in the Grand Master's alloy body allow it to be bolted tight, but the shallow profile requires care in adjusting rear arm height. The sapphire and boron cantilevers used in other DS models are replaced by a diamond rod in this flagship

Though not the first to use this as the cantilever material, DS Audio has opted for diamond, chosen for rigidity, fitted with a micro-ridge stylus. The original, and still with the shortest diamond cantilever is Dynavector's Karat 17D3 [HFN Jul '12], though this remains a 'conventional' MC...

'I was simply getting too emotional to be critical'

Meanwhile, DS Audio's new cartridge body is fashioned from 'Ultra Duralumin' to maximise rigidity, and the internal wiring is 1.6x thicker than that used in previous models, to reduce its impedance.

Unfortunately, the one change I would love to have seen has not been addressed: the body height remains abnormally low, and it proves difficult to fit this to tonearms with tapered barrels that widen at the pivot, potentially falling foul an LP's edges if lowered to their minimum height. In such cases a 2-3mm spacer fitted between the top of the cartridge and underside of the headshell will effect a solution, though this comes at the expense of added mass.

THE EQUALISER

Now let's take a look at the bulk of the cost in this £50k package: the two-chassis equaliser and power supply unit. Connection is slightly more complex than simply feeding the tonearm leads into the back. For openers, there are three heavy umbilical cables, two sets generously supplied in both 500mm and 900mm lengths to aid in siting the two chassis. The two 7-pin cables connect power to the L/R equaliser channels, while the central, 5-pin cable feeds the LED power supply unit.

There's a choice of three single-ended RCA and three balanced XLR outputs, differing by their low frequency cut-off points – a flexibility it shares with the Master 1 energiser. The appropriate filter is selected according to one's speakers and system needs [again, see PM's Lab Report, p51]. As I auditioned this through



both Falcon Acoustics' LS3/5As [HFN Dec '18] and Wilson Sasha DAW loudspeakers [HFN Mar '19] I had ample opportunity to try the various options available and can confirm they will markedly affect behaviour in the bottom octaves.

CUSTOM MADE

Along with moving to two boxes for the PSU and equaliser, DS Audio has now utilised custom-made film capacitors and non-inductive resistors. Inside the PSU enclosure can be found three transformers, one for each of the left and right equalisers and the third for the LED supply. Overkill perhaps, but the Grand

Master design also includes a claimed 2.34 farads of electrolytic capacitance within the equaliser and 2.97 farads within the power supply. Once more, the main gains over the smaller equalisers were audible down below, so this package really does cater for bass obsessives.

Switch-on is via a push button on the power supply. Both chassis have soft white power-on lights, which match the light on the cartridge itself. The lights stay on for some time after power is switched off, attesting to the reserves within.

ABOVE: Machined, bead-blasted and anodised casework hosts the over-sized PSU [bottom] and energiser/equaliser [top]. They are more substantial than many a high-end power amp

As mentioned, I tried assorted DS Audio cartridges with their non-matching equalisers (non-matching in price, that is). All the gains and losses were audible when making such swaps, so you should purchase the best equaliser you can afford.

LET THERE BE LIGHT

The shocker was trying the DS-E1 cartridge – the company's least expensive model at £1010 – into the Grand Master (GM) energiser, rather than when playing the GM →

LIGHT THERAPY

While the Grand Master shares the same LED/photocell concept as all DS Audio's proprietary pick-ups, the core internals of this flagship are both further miniaturised and separated into a dual-mono construction. The white LED at the front of the pick-up is purely decorative. Inside, however, not one but two narrow-beam infra-red (850µm) LEDs are positioned between the stylus tip and cantilever fulcrum, their output deflected by an extremely fine beryllium plate that's fixed to the rear of the diamond cantilever. The plate modulates the IR light falling onto two photodiodes, each generating an electrical current that directly mirrors either the left or right channel signal. Moreover, as the moving mass of the stylus/cantilever/plate has been reduced in this model, the Grand Master's



high frequency sensitivity (its response) is further extended just as the dual-mono LED/photocells have reduced any residual crosstalk [see Lab Report, p51].

But what of the equaliser? A traditional RIAA phono preamp is designed to accommodate the velocity-sensitive output of standard MM/MCs where the signal voltage increases with groove excursion and, thus, increasing signal frequency. By contrast, DS Audio's photoelectric conversion is sensitive only to the *amplitude* of the movement of the stylus and requires only a relatively subtle HF boost to realise a 'flat' response with all RIAA pre-eq'd LPs. Incidentally, the ~70mV output of the photocells is carried by the L+/R+ cartridge pins while the 12V DC input to the IR LEDs (and white LED) enters via the L-/R- pins. PM

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CARTRIDGE

cartridge through the DS-E1 energiser, which is also 'entry level' at £1410. I learned from the swaps that 1) the DS-E1 – cartridge and energiser – is even better value than I first realised, and 2) that the GM's virtues were not masked by the DS-E1 energiser, even if it is far less refined than the GM energiser at 27x the price. Hence, I would posit that the cartridges contribute more to the overall result than the energisers, so the best way to approach DS cartridges if one wishes to upgrade is to focus on the cartridges first, and then the energisers.

Of course, the listening was done in balanced, all-Grand Master mode, and what knocked me out was the bottom end on the remastered John Lennon set, *Gimme Some Truth* [Universal 2435 00198]. Aware that these were completely remixed, I listened to them a few times on my reference system, rather than recall the originals.

ULTRA VIVID

That aside, the first impression was of an extended, unconfined bass, with 'Cold Turkey' – menacing in any form – acquiring more mass, more substance. It was a repeat of my earlier experience with the Master 1. There's a whole layer of *schmutz* removed from the bottom. 'Clean bass'? Is it even a thing, compared to 'clean treble'? Whatever standard one applies to



ABOVE: Supply unit includes three AC mains transformers/three banks of electrolytics for the IR LED PSU [centre] and Eq PSUs [top/bottom]



ABOVE: Gold-anodised plates inside the GM equaliser connect the six huge electrolytics feeding each side of the fully discrete, fully balanced filter and output stage [far right]

the lowest octaves, this cartridge delivers weight to support all that comes above, which is a glorious, open, fast sound.

'Open' is the crucial adjective, because this cartridge is so clean, so transparent that listening *into* the music is as easily accomplished as with ½-track reel-to-reel tapes from the 1950s. To hear even the jaunty 'Oh Yoko' – an ode to the woman responsible for more pretentious, insufferable noise than anyone I can name – as an irresistible jingle was as disconcerting as what followed. Let's not mince words: any old Beatles fan like me knows Lennon's voice. And yet these familiar vocals, via the Grand Master, were more real, more vivid – the intimacy afforded 'Oh My Love' had Lennon delivered to my room with such conviction that I was getting too emotional to be critical.

BLUES WORKOUT

As the next track was his hateful 'How Do You Sleep', grounds enough to think less of Lennon, I was relieved to turn to something scrappy, an album one could hardly call 'audiophile', even if I was listening to the new, superlative edition from the Speakers Corner label.

The Paul Butterfield Band's *East-West* [Elektra/Speakers Corner EKS-7315] is an oddity: Chicago blues segueing into 'raga' ☺

TETSUAKI AOYAGI

Over the last four years DS Audio's President, Tetsuaki Aoyagi, has been making a list – an Excel spreadsheet to be precise – detailing all the minor revisions that might add up to a major advantage in the evolution of the brand's 'optical' pick-up.

'To improve the S/N ratio we needed to obtain a higher output from the cartridge', says Tetsuaki, 'so we decided to use independent left and right LEDs and photocells. The position of these two LEDs could now be optimised to achieve a more substantial output from the cells'.

Tetsuaki also sought to reduce the mass of the moving parts while improving stiffness with a diamond cantilever. 'In addition, the size of the light-shielding plate was reduced, so the left and right sounds were less likely to mix and the separation of high frequencies would be greatly improved.

'Sound quality was significantly affected by the use of solid beryllium for the shading plate. This pure beryllium material is very expensive [and very difficult to work with], but switching away from aluminium made such a change to the sound that everyone could tell the difference – it was a surprise to me!'

Tetsuaki's list extended to every material in the pick-up. 'This is not often mentioned, but by using stainless steel for the parts that hold the cantilever, the fulcrum is fully stabilised and the freshness of the sound is improved. But if the cartridge body is made entirely of stainless steel, the sound is too hard, so we used it only for internal support and alloy for the shell'. PM



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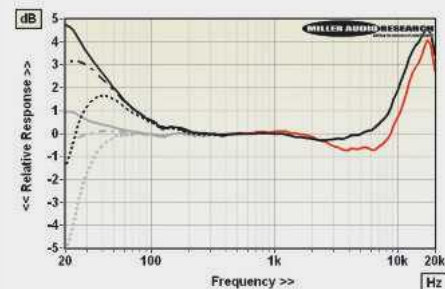
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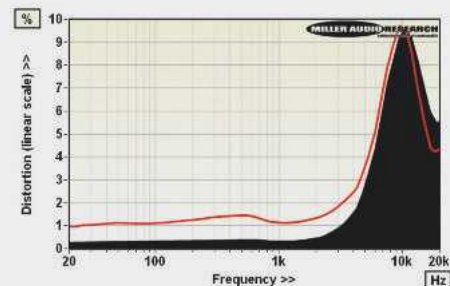
DS AUDIO GRAND MASTER

There are clear parallels between the performance of the Grand Master flagship, its predecessor the Master 1 [HFN Dec '17], the DS-002 [HFN Jun '17] and DS-W2 [HFN Jan '19] – see boxout, p47 – but the stiffer diamond cantilever, reduced moving mass and dual-mono LEDs/photocells within the GM clearly benefit its performance. The 2V output (1kHz/5cm/sec) is a function of the equaliser as are the six tailored ‘bass contours’, three rolling off from a notional 50Hz and three from a lower 30Hz. Output A gives the strongest bass in both 30Hz/50Hz settings [black/grey traces, Graph 1], the former’s +4.3dB/20Hz boost similar to the default response of earlier DS pick-ups. Output B/50Hz [dashed grey trace] gives the flattest bass with Output C/50Hz (–5.6dB/20Hz) proving the ‘safest’ with big, reflex-loaded speakers.

However, it’s the boosted and extended HF response of +3.4dB/20kHz that marks out the GM as the most advanced DS Audio pick-up to date – its extended bandwidth also reflected in the 9% THD peak being pushed out from ~7kHz to 10kHz here [see Graph 2, below]. The dual photocells increase midband stereo separation by ~5dB to 34dB while the diamond stylus/cantilever combination offers a more accurate 22° VTA. Compliance is ‘stiffer’ at 11cu but bodyweight slightly lower at 7.7g so the GM is arguably more compatible with mid/heavy effective mass arms. Finally, while downforce is increased to 2.1g, the GM gains little in tracking security, clearing the 75µm groove pitch (65µm on the left channel), but not making it to 80µm. PM



ABOVE: Frequency response (–8dB re. 5cm/sec) lateral (L+R, black, Output A/30Hz; dashed, o/p B; dotted, o/p C; grey, o/p A/50Hz; dashed, o/p B; dotted, o/p C) versus vertical (L–R, red, Output A/30Hz)



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

HI-FI NEWS SPECIFICATIONS

Generator type/weight	Photo-optical / 7.7g
Recommended tracking force	2.0-2.2mN (2.1mN)
Sensitivity/balance (re. 5cm/sec)	2050mV / 0.30dB (from Eq unit)
Compliance (vertical/lateral)	11cu / 15cu
Vertical tracking angle	22 degrees
L/R Tracking ability	65µm / 80µm
L/R Distortion (–8dB, 20Hz-20kHz)	0.60–8.8% / 0.33–9.2%
L/R Frequency resp. (20Hz-20kHz)	+4.0 to –0.5dB / +4.5 to –0.4dB
Stereo separation (1kHz / 20kHz)	34dB / 25dB



ABOVE: Rear view of the PSU [bottom] and equaliser [top]. The pick-up’s internal LEDs are powered via the R– and L– pins while the output is returned via R+ and L+, all via the ‘Input’ RCAs. Three eq’d line outs, on RCAs and balanced XLRs, offer three bass roll-offs from two different – 30Hz and 50Hz – turnover freqs. [see Graph 1, opposite]

rock’. Even so, I sat through the album’s title-track closer, normally something I eschew because it’s 13 minutes of hippie excess.

On the other hand, it starred the guitars of Mike Bloomfield and Elvin Bishop, as well as Butterfield’s harp, so this provided a workout for the Grand Master cartridge above its bass capabilities and irrespective of the spatial concerns.

MASTER AT WORK

It’s hard to describe the fluidity and attack of Bloomfield, whose legend is slipping out of the public consciousness simply due to the passing of time. If you know the work of the also-departed Stevie Ray Vaughn, you have a handle on this sort of prowess. For the Grand Master, the transients were conveyed with absolute precision, no decay issues, no marring of

either the clarity or the screech, as required. As the solos are identified in order, one gets to compare the funkier Bishop with the more aggressive Bloomfield, and the guitarists among you will even be able to identify the guitars, if not the string manufacturers. This cartridge therefore comes across as both a tool for assessment as well as a means for musical fulfilment.

Another new remastering of note is The Doors’ anniversary reissue, *Morrison Hotel* [Rhino/Electra R2 627602]. ‘Roadhouse Blues’, kicked off what many critics felt was their best album to date, raw raunch that wouldn’t have embarrassed Butterfield and Co. This, too, was a showcase for a familiar voice, Morrison’s nasally sneer not quite as acidic as Lennon’s but conveyed with such authority that I was forced to dig out their eponymous debut [Elektra EKS-74407] and listen to it in its entirety, transfixed by the Grand Master’s, well, *mastery*. Yes, it’s that kind of cartridge. ☺

HI-FI NEWS VERDICT

DS Audio cartridges are so ghostly quiet compared to MCs that there could be culture shock when first hearing one. I’ll never forsake Deccas or Koetsus, but the Grand Master is so truly supreme in resolution, transparency, spatial recreation, neutrality and any other parameter I can name that it’s impossible for me not say what I usually try to avoid: ‘This may be the best cartridge I’ve ever heard.’

Sound Quality: 90%



ABOVE: The DS GM’s pins are clearly marked and separated. Just visible is the diamond cantilever, tie-wire suspension and microridge stylus [see also p47]

Audia Flight FLS 9

Eagerly anticipated, Audia Flight's 'starter' FLS series integrated accommodates a suite of optional modules. Could this be the high-end hub you've been waiting for?

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

A'synergy of sophisticated original circuit design and Italian style'. That's the promise of Audia Flight, the company established in 1996 by Massimiliano Marzi and Andrea Nardini. Arguably a 'boutique brand' by virtue of a product line focused almost entirely on amplifiers, the lone standout is a CD player in its entry-level 'FL Three S' range [*HFN* Sep '07]. We are testing its newest addition here: the FLS 9 stereo integrated which pledges to showcase the brand's audiophile philosophy at a price more manageable – beginning at £5950 – than that of its other high-end creations.

Available in either silver or black anodised finishes, the FLS 9 joins Audia Flight's earlier and more expensive FLS 10 [*HFN* Dec '17] integrated amp in a series the company says 'represents all we have learned over our 20 plus years'. To wit: it borrows circuit ideas from the reference Strumento range, while channelling elements from the company's Classic series, which is now only represented by its FL Phono preamplifier.

Meanwhile, power is rated at 150W/8ohm (290W/4ohm), and up to 500W into 'impedance critical' 2ohm loads [see PM's Lab Report, p55]. So the FLS 9 is not as monstrous as Audia Flight's 500W/8ohm Strumento N°8 monoblock amp, but neither is it that much skinnier than the 200W/8ohm (and £2000 costlier) FLS 10.

FOLLOWING TRADITION

The core design of the FLS 9 follows the transimpedance/current feedback approach – described in our Strumento N°4 [*HFN* May '19] and FLS 10 reviews – that debuted in its 1997 Flight 100 model. For more on the internal design, see PM's Modular Magic boxout, p53. In the meantime, while its amplifiers have become smarter-looking, its insistence

that current feedback brings benefits in transient response and load management compared to voltage feedback designs hasn't waned. The FLS 9, therefore, is very much a chip off the old block.

All Audia Flight's products are hand-built in its Civitavecchia facility, situated 70km north-west of Rome, and the FLS 9 certainly exudes the air of being lovingly put together. It has a stately look that separates it from market rivals which play around with two-tone finishes and 'look-at-me' aesthetics. The fine-brushed aluminium chassis features an engraved logo on its top plate, while the front fascia places a blue OLED display above a curved edge, and control buttons and volume dial below. Hefty at 25.5kg, and with a width (450mm) that goes beyond the standard 'full-size', it looks and feels ready for business.

This amplifier also offers an element of future proofing and customisation. In its

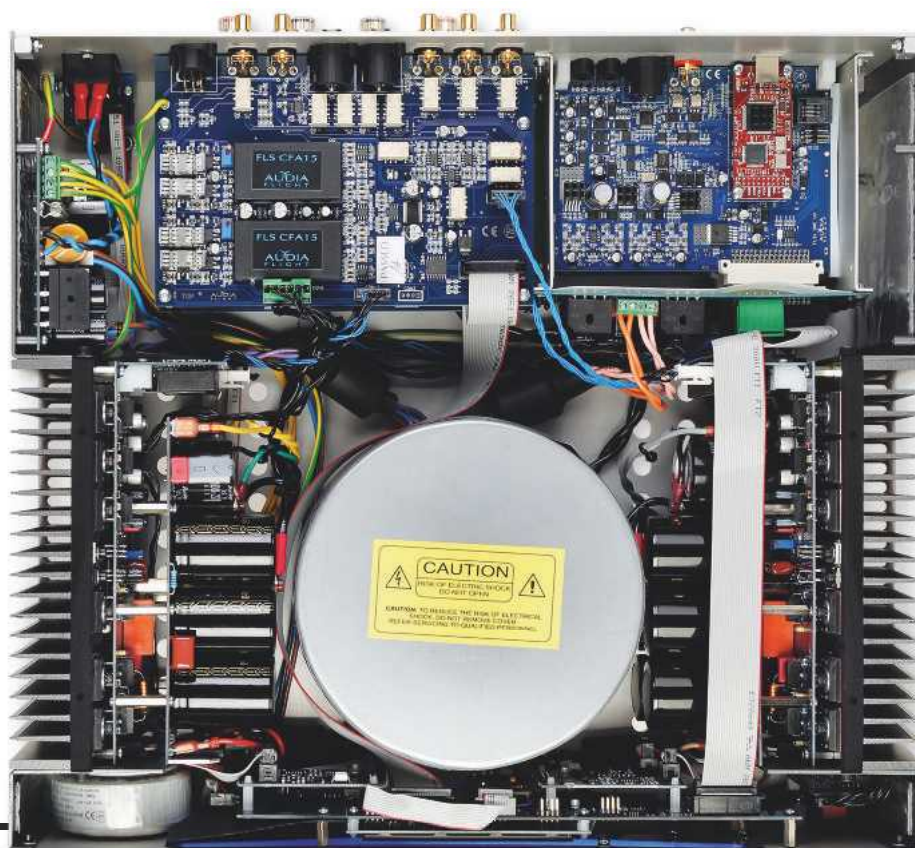
basic form the FLS 9 is as an all-analogue integrated, with three unbalanced RCA and two balanced XLR inputs, plus balanced/unbalanced pre outs and an unbalanced tape output. Yet adjacent to its connection bank are two slots for optional cards.

ON THE BOARDS

Audia Flight's current roster comprises an MM/MC phono board, an additional two-line input card and a DAC board, with a network streaming module in the pipeline which is said to arrive this summer. Our review sample was fitted with both the £1100 phono stage and £1850 DAC modules [see inside picture, below], the former including separate, fixed-gain MM/MC inputs with comprehensive impedance settings on DIP switches.

The optional digital module includes asynchronous USB (supporting 768kHz/32-bit and DSD 128) and AES/EBU, two

RIGHT: Newly released, Audia Flight's fully configurable MM/MC phono board and Xilinx-based USB/AKM DAC board are fitted into the module bay [top right, DAC PCB visible, MM/MC underneath] adjacent to preamp stage [top left]





Toslink optical and one coaxial S/PDIF to 192kHz, so the end result is an integrated that comes close to covering all bases.

The amplifier's relatively uncluttered front panel belies the flexibility and complexity within. Via the OLED display and volume control (which does double-duty as a navigator of its nested menus), user options include input renaming, setting a 'soft' mute level, home theatre bypass mode, adjustable gain settings for each input, PCM digital filters, and more. A button labelled 'SPK' mutes the amp's speaker output for headphone listening, and you also have the option of listening through both a headphone and speakers simultaneously if you wish.

Operationally, the FLS 9 is a mixture of pleasure and, it has to be said, pain. The supplied milled aluminium remote [pictured, p55] feels luxurious in the hand, and its controls largely copy those on the amp's front panel. Yet whichever method you opt for, adjusting settings

is a somewhat fiddly, time-consuming business, particularly input renaming. And then there's the volume control itself which, while operating over a user-friendly range of -90dB to +10dB in ± 0.5 dB steps, lacks hysteresis and seemingly spins for an eternity. The process is marginally faster when using the remote control, but still doesn't favour those who like to respond

quickly to demands of 'turn it up (or down)!'. On a more positive note, the FLS 9's mute function is rather cool in the way it operates. Hit the button and the onscreen display rapidly descends from your listening level to zero, the music fading away. Unmute it and it fades back in.

'The FLS 9 had me reaching for the "S" section of my thesaurus'

listening level to zero, the music fading away. Unmute it and it fades back in.

DIVINE RIGHT

Sumptuous. Sonorous. Smooth. For some reason the FLS 9 had me reaching for the 'S' section of my thesaurus. Essentially this amp sounds

ABOVE: The fine-brushed aluminium fascia is complemented by a blue OLED display set above a curved edge, with the control buttons, volume knob and headphone socket below

'just right' – warm but not cloying, well-resolved but not clinical, powerful but not boisterous. Listening via both line-level and digital inputs was entirely unfatiguing, the latter doing justice to the 'Velvet Sound' tag of the amp's AKM-based DAC module.

The Mance Lipscomb track 'Texas Blues', recorded in 1969 for his eponymous *Vol 5* album [Arhoolie; 44.1kHz/16-bit FLAC], is as stripped-down as the blues gets – tenor voice, acoustic guitar and nothing else. The FLS 9 took control of these two elements, presenting Lipscomb's slurry vocals with a light touch, and conveying the mixture of twang and tock from his 'dead-thumb' picking technique. Yet it also created

space between them, and an appropriate sense of depth and intimacy.

'Every Breath You Take' [*The Police (Singles)*; A&M Records EVECD1]

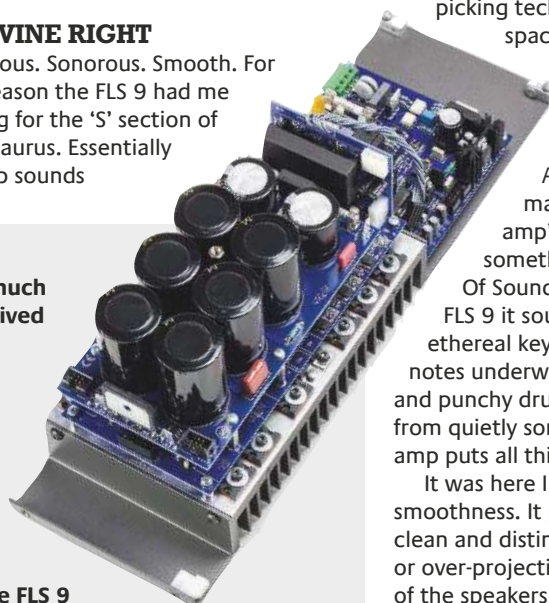
made more demands on the amp's power delivery. There's something of a Phil Spector 'Wall Of Sound' vibe here, and via the FLS 9 it sounded dreamy, a medley of ethereal keyboards and muted guitar notes underwritten by buoyant basslines and punchy drums. Sting's vocals range from quietly sombre to anguished, and this amp puts all this emotion centre-stage.

It was here I noticed the FLS 9's inherent smoothness. It put everything before me, clean and distinct, without over-emphasis or over-projection. Even the smaller of the speakers used – B&W's 705 S2 standmounts – aren't shy or retiring, but this amp seemed to rein them in a little, creating a wonderful sense of balance.

A runout of AC/DC's 'Live Wire' [*High Voltage*; EMI 494 6712] proved to be a real eye-opener, as the FLS 9 made this ➔

MODULAR MAGIC

Audia Flight's latest integrated amplifier shares much of its 'front-end' with the FLS 1 preamp (itself derived from the flagship Strumento N°1 mk2 preamp), including the stepwise volume control that operates over a full 100dB range. As our inside shot illustrates [p52], the FLS 9 is almost modular in design, with the power amp 'cards' (see inset picture) essentially one half of the balanced/bridged output stage we saw in the Strumento N°4 power amp [*HFN* May '19]. Instead of six pairs of bipolar transistors handling both the positive and negative-going sides of that amp, the FLS 9 has six pairs of very capable MJL1302A/3281A bipolars from ON Semiconductor forming each complementary channel. Power output is considerable [see Lab Report, p55] and also very load tolerant thanks to the stiffly-regulated PSU comprising a screened 1kW toroidal transformer and 6x10,000 μ F reservoir capacitors per side. PM





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AUDIA FLIGHT FLS 9



ABOVE: Our sample was equipped with the new MM/MC phono [lower left] and digital modules, the latter with USB-B, AES, two optical and one coax input [upper left]. Default line ins include three on RCAs, two balanced on XLRs with a tape out and pre outs on XLR/RCAs. Single, switched 4mm speaker outlets are fitted

rough-and-ready hard rock classic sound positively operatic in its construction. This amp delineated the band's playing like nothing else I've heard, unearthing layers to the instrumentation and letting individual vocal parts recede or push forward. It's not what I would typically call a 'detailed' delivery, as there's a lack of the brightness that perhaps better serves a sense of information overload and gives a crystalline edge to treble, but its sense of space and soundstaging is remarkable. The track's main riff is handled by two guitars, stage left and right. I felt I could pick out each minuscule difference, not just in notes but in tone.

SHARP SHOOTER

Would I prefer a little more bite and edginess to the presentation of this 1970s rocker? Perhaps, but if it involved a trade-off with the FLS 9's organisational prowess I wouldn't be interested. If the FLS 9 is best-of-breed in terms of an ability to lay out a track's composition, neither is it a slouch when it comes to delivering scale and bass heft. The dense, synthetic textures of Jean-Michel Jarre and Air's 'Close Your Eyes' [Electronica 1: The Time Machine; 48kHz/24-bit FLAC] sounded rich and

resonant, extending deep to leave my room feeling energised – and this was with two-way standmounts. And the imaging was a delight, the track fizzing with pin-pointed details across a wide stage.

LEFT: Audia Flight's alloy-bodied remote offers input, volume (with swift up/down travel), balance and access to the config menu (via 'Set')



The amplifier plays loud – once you've coaxed its volume control to where you need it – without sounding in any way like it's losing its composure. I could feel its power in the gloriously riotous second half of Queen's 'Bohemian Rhapsody' [A Night At The Opera; Parlophone CDPCSD 130], where those multi-tracked vocal harmonies seemed tailor-made for this insightful slab of aluminium, and in the surging melodies of Wagner's 'Ride Of The Valkyries' [Der Ring des Nibelungen – Symphonic Excerpts; Tidal Master].

In fact, this latter piece, from a Paris Opera recital under the wand of conductor Philippe Jordan, told me nearly everything I needed to know about the FLS 9: its command of timbral textures, its depth of image, its ability to transition from tick-over to full-throttle, to the delicate way it handles the ebb and flow of music.

I say 'nearly everything' as the Wagner piece lacks – unsurprisingly – hard-hitting electronic beats and furious sub-bass. Luckily I keep Aphrodite's 'King Of The Beats' [44.1kHz/16-bit Tidal download] on hand for such occasions. The FLS 9 made the track sound deliciously sharp and rhythmic, and maintained that sense of fun even when the level was dialled way down low.

HI-FI NEWS VERDICT

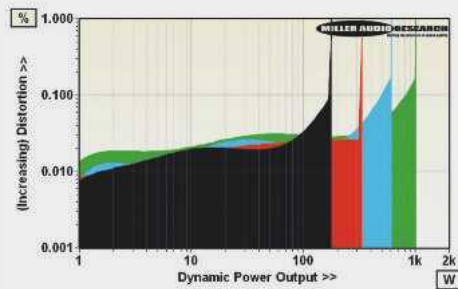
Audia Flight's gorgeous-looking FLS 9 comes out of leftfield – its volume control best described as 'esoteric' and its user experience being not entirely foolproof. Fortunately, it's right on the money in performance terms. Those seeking an integrated offering imperious imaging, majestic musicality and a smooth, sensuous sound – not to mention a streaming upgrade path on the horizon – should book a flight...

Sound Quality: 86%

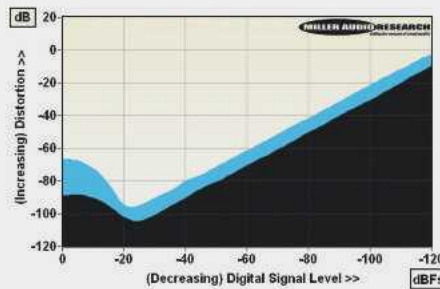


If your preferred loudspeakers are either insensitive or present a challenging load then Audia Flight's FLS 9 integrated should be on your shortlist. Rated at 150W and 290W into 8/4ohm, respectively, it succeeds in delivering 2x160W and 2x280W at <1% THD with sufficient headroom in that huge PSU to support 180W, 338W, 615W and 1.015kW (31.9A) into 8, 4, 2 and 1ohm loads under dynamic conditions [see Graph 1, below]. Overall gain is a moderate +34.4dB, some 10dB lower than most amps but far more practical for use with today's 2V+ line level sources. The A-wtd S/N ratio is slightly below average at 83dB, albeit from an innocuous white noise than any hum from that large toroidal transformer. Output impedance is low, and damping high, at 0.019ohm (20Hz-5kHz) while the response reaches out to ±0.1dB from 5Hz-20kHz (and -1dB/100kHz). Finally, distortion is low at 0.0075-0.027% (re. 0dBW, 20Hz-20kHz) increasing gently with level to 0.017-0.075% (re. 10W/8ohm).

Measured via the balanced preamp output (-8.0dB volume setting = 3.1V; 0.0dB volume = 7.9V), the new digital card only had one of its digital filter options enabled, despite selections '0' to '6' seemingly on offer. The default filter is a steep linear phase type that has long pre/post echoes but trades this for a superb 135dB stopband rejection and flat response that reaches out to -0.45dB/20kHz, -2.0dB/45kHz and -6.1dB/90kHz with 48kHz, 96kHz and 192kHz digital files. Jitter is low at just 48psec, the A-wtd S/N acceptable at 105dB and low-level resolution good to ±0.5dB over a 100dB dynamic range. While distortion is a moderate 0.01-0.05% at max/0dBfs output (20Hz-20kHz), it falls as low as 0.00025-0.0025% at -25dBfs [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 31.9A



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)	160W / 280W
Dynamic power (<1% THD, 8/4/2/1ohm)	180W / 338W / 615W / 1015W
Output imp. (20Hz-20kHz, Pre/Amp)	10ohm / 0.019-0.043ohm
Freq. resp. (20Hz-20kHz/100kHz)	+0.00 to -0.11/-1.0dB
Digital jitter (USB / S/PDIF)	48psec / 25psec
A-wtd S/N ratio (DAC/Amp)	104.8dB (0dBfs) / 83.1dB (0dBW)
Distortion (DAC, 0dBfs/Amp, 0dBW)	0.011-0.060% / 0.0075-0.027%
Power consumption (idle/rated o/p)	111W / 505W (3W standby)
Dimensions (WHD, each unit)	450x150x440mm / 26kg

Auralic Aries G2.1

Now housed in a 'chassis within a chassis', featuring an updated USB interface and slicker Lightning OS, Auralic's G2.1 series kicks off with the Aries streaming transport
 Review: **Andrew Everard** Lab: **Paul Miller**

At first glance, Chinese company Auralic's range looks baffling, such is the choice of similar-looking units – and it's becoming more so with the arrival of new 'second generation' G2 models, confusingly distinguished by the addition of a '.1' suffix on its product designations. In the new lineup there's the Vega G2.1 streaming DAC, at £5999, the Sirius G2.1 upsampling processor at the same price, the £7999 Leo GX.1 master reference clock, and the product we have here, the £4199 Aries G2.1, described as a 'Wireless Streaming Transporter'.

The Aries G2.1 is for those who already have a high-quality DAC in their system but want to add extensive network audio capability. This is an all-digital device, with outputs on USB, coax, optical and AES/EBU, plus an HDMI port hosting a proprietary Lightning-Link (not to be confused with Apple's Lightning connector) which offers a clock-synchronised audio connection as well as system control, direct to the company's other units.

EVERYTHING ON TAP

As well as its network capability, it can also play content stored on USB drives. It's also possible to play, or rip from, an external USB CD drive with optional internal 2.5in HDD or SSD stores installed inside the Aries G2.1 by way of creating an integral library. Networking is achieved via Gigabit Ethernet and tri-band Wi-Fi, with two antennae being provided for the latter. My time with the Aries G2.1 suggests there's no sound quality difference between wired and Wi-Fi connections, but if you have a fairly busy wireless environment in your home then I'd opt for the wired Ethernet for hi-res audio.

Neither is there any shortage of format compatibility here. The Aries G2.1 will handle the lot from 384kHz/32-bit to DSD512, although of course these upper

limits are only available when connecting to a suitable DAC via the USB port or the Lightning-Link into an Auralic DAC. The limitations of the SPDIF outputs mean they can't handle these higher-rate formats, though it is possible to output DSD64 converted to PCM in the DoP format, and the unit will also downsample higher rate PCM if the DAC is limited to, say, 192kHz.

It's worth noting here that, unlike some similar products whose 'enhanced' digital output, courtesy of onboard digital signal processing, is only available on a specific connection – such as Grimm Audio's MU1 [*HFN* Dec '20] – the Aries G2.1's onboard processing feeds all its output options.

Compatibility with MQA is claimed, with the caveat that 'Auralic streaming devices are capable of decoding MQA files using Auralic's proprietary resampling and de-blurring method. This technology is not an MQA-created or MQA-licensed process. Auralic has no official relationship with

MQA and its allies'. Er, right – so it does it, but not officially, and if you're minded to read more on the background to all of this, click through to us.auralic.com/pages/auralic-vs-drm for a fuller explanation of the company's beef with MQA.

GOOD TO GO

There's no such qualification on the Aries G2.1's Roon-ready certification. Auralic is front and centre on the Roon Labs partners list, so all you need is a Roon Core on your computer or a standalone device, and you're good to go. Neither does this unit shirk on the streaming front, for in addition to its ability to play music from a shared folder or UPnP/DLNA server on the home network, it can also handle Tidal, Highresaudio and Qobuz Sublime+ streaming services, plus Internet radio, AirPlay, Bluetooth and Songcast.

The company's latest version of its Lightning OS is just part of the



RIGHT: One linear PSU [top right] feeds an Intel Tri-Band Wi-Fi/BT module [lower right], XMOS USB solution [lower middle], Cirrus CS8406 digital transmitter and clocks on the 'Tesla' PCB. Second PSU feeds display and storage [top centre]



enhancements involved in the creation of this '.1' design – at the heart of this new model is the latest generation of the company's hardware platform, Tesla G2, which offers twice the processing power of, and is 50% faster than, the original version.

In addition to this, the new model uses a double-layer enclosure, with an inner layer of copper within the aluminium outer, and a high-mass base on multi-spring isolation feet [see pic, p59]. Also new for the '.1' is greater power for the USB HDD connection, in order to allow it to work with more storage devices, an enhanced USB DAC compatibility plus improved galvanic isolation to keep noise at bay. The latter is comprehensively applied on the unit's mainboard where the clock, digital transmission and main processor sections are all isolated.

All this has been achieved for a relatively minimal price increase over the G2 model – the Aries G2.1 is £300 more expensive.

'Like stumbling into a killer pub gig on a Saturday night'

What's more, existing owners of Auralic equipment wanting to match their older components can take advantage of the company's offer to build the new model into its old-style casework if required.

The Aries G2.1 retains other elements of the G2, notably the use of 'dual Femto' clocks ostensibly to reduce jitter – one of which is dedicated to the AES/EBU, coaxial and optical outputs, the other to the USB controller. Meanwhile, dual 'Purer-Power' linear power supplies are employed, one for the processor, display and storage, and the other for the unit's clocks and USB output.

🎵 SURE-FOOTED

The Aries G2.1 was pressed into service with a variety of DACs, using all of its various digital outputs, and while minimal differences were heard with the digital filtering options, as ever the effect of these was subtle enough to be a matter

ABOVE: The 4in TFT display reveals the library of albums/songs available or in play (inc. cover art) in addition to allowing the user to navigate the comprehensive system/set-up menu

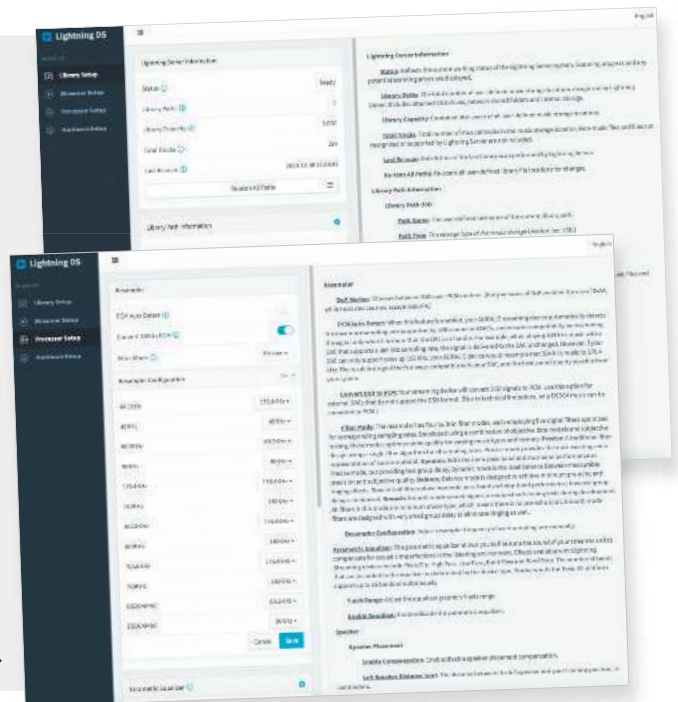
of personal preference rather than the cause for any kind of 'use this one for the best sound' imperative. Indeed, one might find that different settings are favoured for each digital 'source', not to mention for specific recordings, but that way madness lies. I'd suggest some limited initial experimentation is worthwhile to determine the setting best suited to personal taste and the system with which the Aries G2.1 is being used, and then the filter settings can be ignored.

For the majority of my listening, I settled on what might look like a slightly unbalanced system, but one which proved excellent in the role, with the Aries G2.1 feeding an iFi Audio NEO iDSD DAC/headphone amp/preamp [scheduled for *HFN* Mar '21] into my usual Naim/PMC amplification and speakers. The sound played to the strengths of all the ➔

LIGHTNING DS

You can 'drive' the Aries G2.1 using third-party OpenHome apps on a tablet, phone or computer, Auralic citing Bubble UPnP, Kazoo and Lumin by way of example. However, this route means missing out on one of the smartest parts of the whole Auralic eco-system – its Lightning DS app, which runs on iOS devices and controls the player both elegantly and effectively. Lightning DS goes further than simply operating the Aries G2.1 for it also allows the user to control the myriad digital 'sources' the unit can deliver and gives detailed access to its various set-up and configuration options.

For example, there are the four digital filters [see PM's Lab Report, p59], plus the ability to set different upsampling regimes, and that's on top of one of the slickest day-to-day user interfaces in the business. The app also integrates the Aries G2.1 into a multiroom Auralic system, and allows access to the user's 'Auralic account'. As well as handling warranty registration, the account lets the company provide offers, as well as giving access to as-yet-undisclosed 'forthcoming features'. On the other hand, if you're a committed Android user, that third-party compatibility is invaluable in selecting albums and tracks via the Aries G2.1. In this case, changes to set-up and configuration are achieved via a browser interface using a tablet or PC [see illustrations, inset right].



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PHYSICS NOT VOODOO



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AURALIC ARIES G2.1



ABOVE: Digital only – the Aries G2.1 offers wired/wireless network control/streaming ins plus access to more music via internal and an external (HDD) USB drives. DSD512/384kHz outs are on USB-A, I²S (via HDMI) and DSD64/192kHz on Toslink, coax and AES

components involved, for while there wasn't quite the drive, focus and taut, extended bass of my usual Naim ND555/555PS DR front-end [HFN Apr '19], it got close. What was beyond doubt was that switching between a computer feeding a DAC and the same converter with the Aries G2.1 in harness revealed that this dedicated 'transporter' was removing a layer or two of haze from the sound, and delivering more sure-footed, weightier bass.

PURE INSTINCT

Furthermore, this isn't one of those players demanding you only ever listen to the finest of audiophile-approved recordings. Indeed, playing the raucous, riotous *Light My Byre* by Peat & Diesel [Wee Studio, n/a cat no], the Auralic Aries G2.1 delivers all the snarl of vocalist Callum 'Boydie' Macleod, and the character of his 'turned to the max' guitar. Likewise, the unusual combination of drums and accordion have even drive, pace and fine character, even in the dense sound.

The whole effect on tracks such as 'Pirates Of The Hebrides' and 'Kishorn Commandos' is one of stumbling into a killer gig in a pub on a Saturday night and not quite believing what you're hearing.



ABOVE: Hidden under the top-plate and screening the digital electronics within is a luxurious, branded copper enclosure

Pull back to the simplicity of cellist Joachim Eijlander's recent *Dark Fire* set [TRPTK TTK0056; DXD], and the immediate impression is of resolute focus on the instrument, enhanced by an entirely natural sense of space around it. While the lower strings resonate dramatically, the higher registers have a singing purity that's thrillingly lyrical.

That same sense of focus is also much in evidence with James Blake's *Covers* EP [Republic/Polydor, n/a cat no], with its simple combination of powerful voice and piano in a rich resonant acoustic. The immediacy here delivers on the promise of Blake's cover of Frank Ocean's 'Godspeed', and the multitracked vocals of 'When We're Older' sound magnificent, as does the stripped-back reading of 'The First Time Ever I Saw Your Face'. Lovely stuff.

As, too, is the way everything from streamed Tidal tracks to big orchestral works sound. The Jacob Kellermann/LPO recording of Rodrigo's *Concierto de Aranjuez* [BIS BIS2485; 96kHz/24-bit] brings familiar music up fresh, and the tightly controlled yet expansive sound the Aries G2.1 allows a DAC to deliver makes this a captivating listen, with a fine balance between the solo guitar and the sprightly orchestra under Christian Karlsen. ⬇️

HI-FI NEWS VERDICT

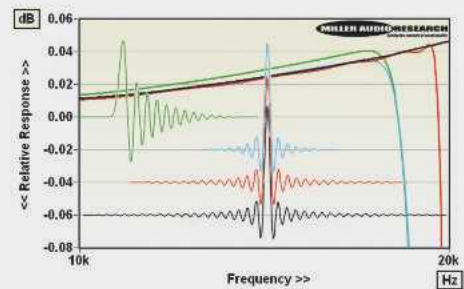
It's always difficult to assign a score to products such as this, when how it sounds is as much a function of the partnering DAC. In this case, it's clear that the Aries G2.1 fulfils its task of letting DACs give of their best and this – plus its wide-ranging format/service compatibility and slick Lightning DS app control – make it worthy of very close consideration for use in any serious network-based audio system.

Sound Quality: 87%

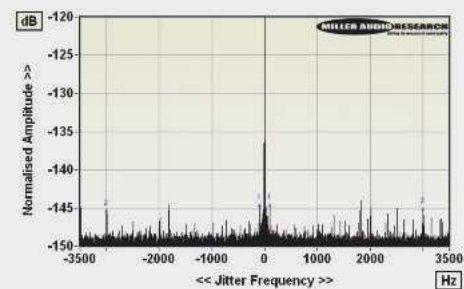


Auralic's Aries G2.1 is not only a network-attached music storage device but, like the recent Grimm Audio MU1 [HFN Dec '20], Innuos Statement [HFN Jan '20], Melco N10 [HFN Jun '19] and Roon Nucleus+ [HFN May '18] it also includes proprietary signal conditioning. In this case the 'conditioning' – upsampling and/or downsampling to 2x or 4x the base 44.1kHz/48kHz sample rates to a maximum of 192kHz – is offered over a choice of four digital filter types. 'Precise' is a very long-tap, linear phase FIR filter that offers the flattest responses (+0.05dB/20kHz) and most complete stopband rejection (up to 133dB) at the expense of extended pre/post 'echoes' in the time domain [see black traces, Graph 1 below]. Another linear phase filter, with fewer taps, is called 'Dynamic' and offers a similar 133dB stopband rejection and flat response, with minor ±0.002dB ripples, and reduced pre/post echoes [red traces, Graph 1]. The 'Balance' filter option trades a still acceptable 70dB stopband rejection for a slightly earlier in-band roll-off (±0.0dB/18kHz to -2.2dB/20kHz) and much reduced ringing and group delay in the time domain [blue traces, Graph 1]. The only minimum phase filter, 'Smooth', has no acausal echoes (no pre-ripples, but significant post-event ripples) combined with a 67dB stopband rejection and almost identical HF roll-off to the 'Balance' option [green traces, Graph 2].

Jitter, tested with three AES/USB DACs, is unaffected by the digital filter and is essentially defined by the choice of hardware. Similarly, the dCS Vivaldi One [HFN Feb '18], Mola Mola Tambaqui [HFN Nov '19] and Mytek Brooklyn [HFN Aug '17] showed no significant difference in either distortion or A-wtd S/N via either USB, S/PDIF or AES streams – remaining at 0.00005-0.00007% (0dBfs to -30dBfs) and 118.5dB, respectively, for the Tambaqui. Jitter remained <10psec via all digital interconnects via the Mytek and Tambaqui DACs [see Graph 2, below]. PM



ABOVE: Treble (zoomed, 10kHz-20kHz) and impulse responses for the Tambaqui DAC via Aries G2.1 (Precise, black; Dynamic, red; Balance, blue; Smooth, green)



ABOVE: 48kHz/24-bit jitter spectra from Mola Mola Tambaqui DAC fed from Auralic Aries G2.1 streamer (via balanced AES connection, black; via USB, red)

HI-FI NEWS SPECIFICATIONS

Digital inputs	Wired/wireless Ethernet; USB-A
Digital outputs	USB 2.0; Toslink; Coax; AES; I ² S (HDMI)
Digital jitter (dCS Vivaldi One)	45psec (AES) / 55psec (USB)
Digital jitter (Mola Tambaqui)	8psec (AES) / 7psec (USB)
Digital jitter (Mytek Brooklyn)	6psec (AES) / 7psec (USB)
Power consumption	9W
Dimensions (WHD) / Weight	340x96x320mm / 9.3kg

Astell&Kern A&futura SE200

Touted as the 'world's first multi-DAC DAP', Astell&Kern's premium portable takes tweaking-on-the-move to a new pace. We run to keep up with the features on offer
 Review: **James Parker** Lab: **Paul Miller**

Once upon a time there was just Astell&Kern, the company building its reputation on superior digital audio players (or DAPs) aimed at those for whom playing music from their phone just wasn't enough. In an era when the multifunctional pocket device is designed to take over every task you could imagine, from browser, emailer, camera, music player and – well – phone, the idea of carrying a dedicated audio device around may seem like something of an anachronism. 'An MP3 player, grandad?'

However, the Korean company with the strange name – we're told Astell means 'stars' in Latin (well, almost) and Kern means 'centre' in German – has built itself a strong market, with machines running all the way up to £4000 or so. Along the way the lineup has diversified into a complete audio system, the AK500 series, and a nifty desktop DAC/amp, the ACRO L1000, with its matching ACRO S1000 speakers – not to mention a range of headphones to use with its players.

CUTE BUT COMPLEX

Portables now span four series – Kann, A&norma, A&futura and A&ultima – with the £1799 SE200 a new addition to the midrange A&futura lineup. It sits above the £1699 SE100 and, as we'll discover, is an intriguing exercise in the kind of product-differentiation the company uses to market so many models into different niches.

For those not in the know, Astell&Kern is an offshoot of the well-known iRiver company, which was one of the pioneers of the MP3 player market, founded in 1999 by a group of former Samsung employees. iRiver launched the AK100 player at CES 2013, to an uncertain reaction from reviewers comparing it to the iPod, and in October of that year the Astell&Kern brand was established as a separate entity. Since then, a veritable blizzard of models has

RIGHT: Powered by an Octa-Core CPU, the SE200 also boasts user-selectable DACs from ESS and AKM, each with custom digital filters, and each equipped with tailored headphone amps

followed, offering metal casework from stainless steel to copper to a striking bright red. But in each case the formula has been the same: a device with quality build and a precision feel, promising sound quality far beyond the 'multifunction portable' norm.

All of which brings us to the A&futura SE200, a portable with an avowed single purpose – high-quality music playback – but pretty complex in execution, packing a lot into its iPhone-sized package. For all that compactness, it feels solid and substantial – at 274g it's almost 50g heftier than my iPhone 12 Pro Max – and its casework, complete with a high gloss ceramic plate on the front and top of the aluminium housing, feels luxurious.

A product such as this may seem simple, given that all you need is a means of playing music, either from internal storage or a slot-in memory card, a DAC, and an amp to drive headphones or feed an external amplifier, along with a battery to power it. But the designers have really gone to town here.

Not only can the SE200 be used both as conventional player and a USB-connected DAC for an external device, but it can also stream music from online services such as Qobuz and Tidal, and also offers Bluetooth

connectivity with aptX HD. Nothing new there yet? OK, well it can also drive both conventional headphones and balanced designs, via two 3.5mm sockets and a pair of 2.5mm four-pole outputs, respectively, and claims up to 3V output unbalanced, or 6V balanced [see PM's Lab Report, p63].

DACS OF ALL TRADES

All of which is impressive enough, although there are rivals offering the same sort of capability – but it's the way the SE200

does what it does that sets it apart. You see, this is 'the world's first Multi DAC DAP', for not only does it have a pair of ESS ES9068AS DACs, running in 'dual-DAC' configuration, but there's also an AKM AK4499EQ, which sits at

the top of its manufacturer's range. This is the very same AKM DAC that you'll find in Astell&Kern's flagship SP2000 player.

True, the company has produced players with more than one DAC in the past – its AK120, launched right back at the beginning of Astell&Kern, used a pair of them – but this is the first model to offer the user the choice between not only DAC types, but DAC brands. Moreover, each DAC comes with its own choice of digital

'Astell&Kern's designers have really gone to town here'



filters, and dedicated amp paths to the balanced and unbalanced outputs. Battery life varies according to the DAC in use, so for a 150-minute charge, the AKM option will give you about ten hours' playing time (CD-res files and with EQ and the 5in touch display off), while the ESS path will give you around four hours longer.

SOUND TUNING

Why the choice of DACs? The engineers might, in an unguarded moment, admit the reason is 'because we could', but the official explanation is the choice 'exhibits the philosophy of the A&futura line to pursue fundamentally different sound than found in typical DAPs'. Development and 'sound tuning' time was necessarily doubled too.

All of which might suggest that the SE200 is an exceptionally complex player to use, which is true if you choose to make it so. You can go deep into the multilayered menu system, make life as difficult as you want, and spend more of your time fiddling with settings than listening. But it's perhaps best to have an initial play, settle on the configuration you like, and then just get on with enjoying your music [see boxout, below].

The SE200 will play files at up to 384kHz/32-bit and DSD256, the volume control illumination changing colour according to the prevailing sample rate. It will do this from its internal memory, from a microSD card of up to 1TB, or via the USB DAC link using the player's USB-C input, for which a Windows driver can be downloaded from the company's website. Mac OSX users don't need a driver, but

will need to download Android transfer software to load music onto the player. But you don't need to worry about firmware updates, of which there have been at least three since the player was



LEFT: 5in (720x1280) touchscreen has two programmable colourways (blue and gold) and is set into a laser-cut alloy case with high-gloss ceramic cover. Knurled volume knob is illuminated according to sample rate

launched last year, for these are done over the air using the SE200's Wi-Fi link.

RISE AND SHINE

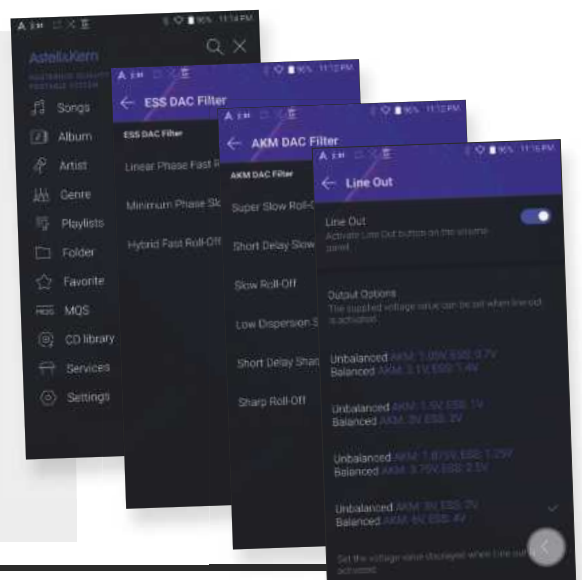
Whichever 'source' you choose for your music, the sound is very good indeed, whether used with balanced or unbalanced headphones, or even connected straight into a main system. If you can avoid the temptation of all those deep menu options, the SE200 is an extraordinarily accomplished portable, whether out and about playing driving rock through lightweight headphones such as the B&W P5s, or at home with something soothing on Focal Clears [HFN Mar '18], or the original Oppo PM-1 headphones [HFN Jul '14] running in balanced mode.

Playing the 96kHz/24-bit release of Paul McCartney's *McCartney III* [Capitol/MPL 00602435136578], the combination of punch and detail in what is a well-weighted yet wide-open sound is highly attractive right from the opening 'Long Tailed Winter Bird'. Here the player controls the headphones with clean power in reserve, while with the dense sound of Nick Lowe and Los Straitjackets' *Live At The Haw River Ballroom* [Yep Roc, n/a cat no; 48kHz/24-bit] it delivers good insight into the live performances while retaining all their vitality. And the player really shines when fed top-notch recordings, as is clear with

DRIVING LESSONS

The SE200 'experience' is rather like slipping behind the wheel of one of those cars with a huge touchscreen and few physical controls: you know there's a way to make the wipers spring into life when it rains, but it's deep down in a menu somewhere... Fortunately, the SE200's top level app menu is clear enough, making it easy to fire-up the player and get it moving, so to speak, but delve deeper and you may wonder whether you're discovering more or going down rabbit holes [see screenshots, right].

For example, while the Android platform supports aftermarket streaming apps, the manual warns they may not work fully or correctly. Otherwise, you can use the player to stream music from local network storage, from streaming services and its own storage, or even download music from your library to the player. You can also plug Astell&Kern's £399 AK CD-Ripper to the SE200's USB-C port and copy discs straight to the player. But burrow further into the menu's archives where the DAC and filter selections reside and you'll find the manual keeps its own counsel. Advice here is limited to 'this sets up the DAC filter provided by a DAC manufacturer'.



Chassis noise reduction with HRS Nimbus and Vortex Systems



Designed to be placed in direct contact under a components chassis

(1) HRS Nimbus

Available in three different heights

Precision manufactured from billet machined aircraft aluminium and proprietary HRS polymers, a very specific amount of mass, stiffness, and damping from these products eliminates chassis resonance problems and transforms residual chassis energy to heat. Nimbus is an affordable way to a new level of musical performance.

(2) HRS Vortex

Available in fixed and adjustable heights

The patented HRS Vortex is designed specifically to obtain maximum performance from audio components designed with a stiffer (heavier) chassis construction. The custom material interface used within the Vortex steel outer case is optimized to push the limits of resolution and dynamics without brightness, fatigue or high-frequency noise.



DIGITAL AUDIO PLAYER



ABOVE: Underside of the SE200 hosts a USB-C port for computer connection/charging and a microSD slot for external cards up to 1TB. The top surface carries dual 3.5mm and balanced 2.5mm sockets for headphone/line outputs

the delicacy of Pieter van Loenen and Tobias Borsboom's recent set *The Silence Between* [TRPTK, TTK0058; DSD128].

Here the sound truly lives up to the label's claim of 'Extreme Definition Recordings'. The sheer resolution of both the violin and piano is spectacular, as is the way the SE200 player enables a good pair of headphones to envelop the listener in the soundscape, placing this and other performances in a highly realistic acoustic.

EXPLOSIVE POWER

That immediacy and power of the player – both in resolving the music and pumping it into the ears – is heard to fine effect with Nils Frahm's *Tripping With...* [Erased Tapes ERATP136CD; 96kHz/24-bit], where the relentless pulse of the electronica, offset by passages of quiet textures ('All Melody'), wraps up the listener in an almost mesmeric soundscape.

Even driving the demanding Oppo PM-1s, the A&Futura SE200's combination of weight and space more or less makes the headphones melt away, leaving remarkably effective sonic pictures. This album sounds stunning, and this player, partnered with good headphones, delivers all that quality.

There's even all the power and speed required to make a very fine fist of large-scale orchestral works. Of late I've been revisiting Bernstein's Beethoven symphony cycle with the Vienna Philharmonic

[DG 0289 479 7715 5], and the way the SE200 handles everything from the stately progress and explosive power of the second movement of the 7th to the soaring complexity of the 9th is exceptionally impressive. Even with headphones that sound big and rich, such as the B&W P9 Signature [HFN Mar '17], the player manages to deliver weight and substance without losing its lightness of touch, and the sound remains spacious and detailed, with that real 'listen in' quality.

Yes, this is unashamedly a luxurious piece of personal audio, and Astell&Kern will even sell you a leather case to protect your pricey asset for an additional £99, but it's by no means the most expensive in its manufacturer's range. For those wanting a high-quality player better suited to the rough and tumble of everyday use there are certainly more affordable alternatives. But rather like that old saw about not buying a Rolex when a Swatch will tell the time better for a fraction of the price, those wanting a player like the SE200 won't care a jot. ☺

HI-FI NEWS VERDICT

This is probably the digital audio player for which the term 'over-engineered' was meant, but for all the design and tech overkill here, the SE200 remains an exceptional DAP both in quality of build and sonic performance. Ignore the temptations of those deep and complex menus: just let it do its stuff, and it'll work very well with a wide range of headphones, and even double as a DAC between your computer and your system.

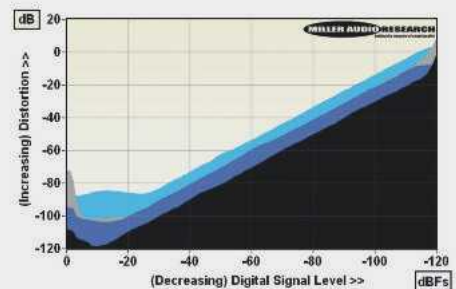
Sound Quality: 85%



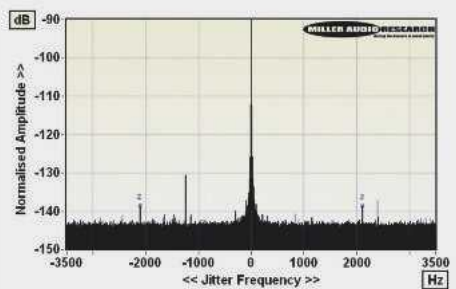
ASTELL&KERN A&FUTURA SE200

While Astell&Kern details the choice between AK4499EQ and the pair of ES9068AS DACs within its SE200 player – with a further choice of six and three digital filters, respectively – and each with its own customised headphone amplifier, I could find only a limited published specification of performance. So here are the numbers, independently tested... In practice it's the AKM DAC/headphone output that delivers the higher maximum line-level of 3.13V and the higher, though still modest, 60mW/32ohm power output via its single-ended connection (many full-sized headphone amps deliver in excess of 500mW/32ohm). As the SE200 clips at volume settings above '136' with a peak level (0dBfs) digital input, the dial should be used between 137-150 with caution, not least for fear of potentially harmful in-ear SPLs.

Otherwise the performance of this 'hi-res' player is superb – it offers a tremendous 112dB A-wtd S/N ratio and very low levels of correlated jitter, never exceeding ~5psec with any sample rate up to 192kHz. There is evidence of low-rate, uncorrelated jitter visible in the broadening of the test signal [see Graph 2] but the impact of this in headphone listening is unclear. More importantly, the output impedance is a very low sub-1ohm from 20Hz-20kHz, ensuring that the overall SE200/headphone system response is not influenced by low and variable in-ear/on-ear loads. With its default linear phase filter(s), the response of the SE200 is a very flat ±0.03dB (20Hz-20kHz), dipping to just -0.6dB/45kHz with 96kHz media. Distortion is also vanishingly low at 0.0001-0.001% (re. 0dBV, 20Hz-20kHz), increasing only over the top 25dB of its dynamic range under load (0.0008-0.005% at 10mW/32ohm) [see Graph 1, below]. PM



ABOVE: THD vs. digital signal level at 1kHz (black, unloaded; grey, into 32ohm) and 20kHz (blue, unloaded; cyan, into 32ohm where 0dBfs = 58mW)



ABOVE: High res. jitter spectrum with 48kHz/24-bit data. Note some slight broadening (v. low-rate noise)

HI-FI NEWS SPECIFICATIONS

Maximum output (<1% THD into 47kohm)	3130mV (single-ended)
Maximum power output (<1% THD)	60mW / 32ohm (single-ended)
Output Impedance (20Hz-20kHz)	875-990mohm (single-ended)
A-wtd S/N ratio (re. 10mW/0dBfs)	99.0dB / 112.1dB
Distortion (20Hz-20kHz, re. 10mW/0dBV)	0.0008-0.005/0.0001-0.0011%
Frequency resp. (20Hz-20kHz/45kHz)	+0.00dB to +0.03dB/-0.55dB
Digital jitter (48kHz / 96kHz)	<5psec / <5psec
Power consumption	Battery powered
Dimensions (WHD) / Weight	77x132x158mm / 274g

Line Magnetic LM-34IA

Very big in the Far East since 2005, Line Magnetic offers a comprehensive range of tube-based disc players, DACs, phono stages and amps. Here's the entry-level integrated
Review: Adam Smith Lab: Paul Miller

We may now live in an age of digital and streaming, but the number and sheer variety of valve amplifiers on offer seems to be on the increase. Perhaps more remarkable are those designs that unashamedly hark back to a previous era, attempting to keep it alive by the use of modern technological twists. One of the main proponents of this philosophy is Chinese company Line Magnetic, the £1699 LM-34IA integrated reviewed here being just one of a wide range of its amps inspired by famous designs of the past.

Line Magnetic was founded in 2005 by brothers Zheng Cai and Zheng Xi, who are both enthusiastic audiophiles. Zheng Cai was chief engineer at a major Chinese radio company for over ten years, during which time he pursued audio electronics as a hobby. He and his brother began researching valve amplifier design and, in particular, transformer development. It was also during this time that Zheng Cai discovered a passion for those classic products from Western Electric.

MANUAL FOCUS

The upshot was the formation of their own brand that, today, makes not only amplifiers but also eye-catching high-efficiency horn speakers that would appear to draw inspiration from Western Electric designs. But modern technology is not forgotten and Line Magnetic also manufactures its own CD players and DACs, all with a thermionic twist, naturally.

With the exception of the LM-mini84IA headphone amp, the LM-34IA is the baby in a lineup of integrated designs available in Europe which, according to UK importer VAL HiFi, have been developed especially for this market. The series tops out with the £9999 LM-845 Premium, and all models in the range look both sleek and modern.

RIGHT: Transformers [top] and ceramic tube bases [mid/bottom] are hard-wired, by hand, point-to-point. Note single-rail/single-capacitor PSU [top] and finer wires to and from the four pots that set the bias current [far left/right]

As the name suggests, the LM-34IA is based around EL34 valves and comes fitted with two matched pairs as standard. However, it is possible to replace these directly with KT88, KT66, KT70, KT90, KT100 or 6550s, then move the two-position tube selector switch on the unit's top plate accordingly. Output is said to be 2x40W [see PM's Lab Report, p67].

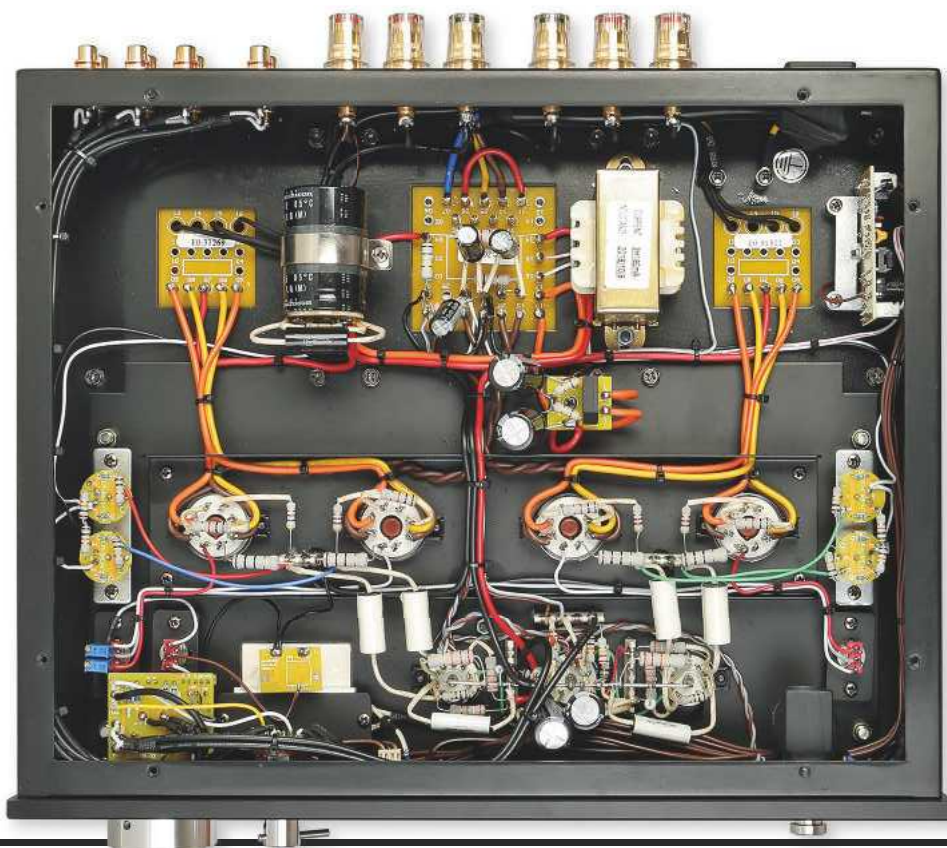
Intriguingly, the LM-34IA uses manual biasing of its output valves, which utilises a single moving-coil ammeter on the top plate. Bias is adjusted in conjunction with selector switches and screwdriver-turned trimpots for each valve. This is an uncommon topology these days, as automated biasing circuits become more advanced. Yet it does have the theoretical advantage of extending valve life if used regularly to ensure the ageing tubes are operating at their optimum condition.

In its preamp section the LM-34IA makes use of 12AU7 (ECC82) and 12AX7 (ECC83) small signal valves and, again, the company's website and the product datasheet detail suitable equivalents should the urge to experiment seize you.

DOUBLE TAP

The LM-34IA offers three line level inputs and a preamp/direct input that bypasses the volume control straight to the power amplifier. Output connections are provided for both 4ohm and 8ohm loudspeakers via pleasingly sturdy binding posts [but see PM's boxout, p65]. In fact, the amp's general fit and finish is excellent and a robust protective valve cover is provided to keep out inquisitive hands or paws.

The amplifier's front panel houses the power switch and associated LED, along with the input selector and a lovely





machined volume knob. Inset into this dial is an additional LED that shows the amplifier's status, flashing to show the unit is muted as it warms up before glowing steadily when it is ready for use. This LED also returns to flashing status if the LM-341A is muted using the remote control.

As for the handset – the LM-02 – this is supplied as standard [see pic, p67]. It may only cover the basics of volume adjustment and output muting, but it is a chunky metal item and feels good in the hand. The only downside is the motor gearing which is set to move the volume knob at what I thought was an excruciatingly slow pace.

For auditioning, I initially wired the LM-341A up to my regular PMC Twenty5.24

speakers [HFN May '17] and fed it with a Naim CD5XS CD player and Flatcap XS PSU.

HOLLYWOOD HIGH

In this system the amplifier revealed a few pleasing tricks up its sleeve, including that delicious upper midband and treble insight that EL34s often do so well. This is my power tube of choice and the LM-341A reminded me instantly why I'm a fan. Vocals of all types were reproduced beautifully and had an accomplished sense

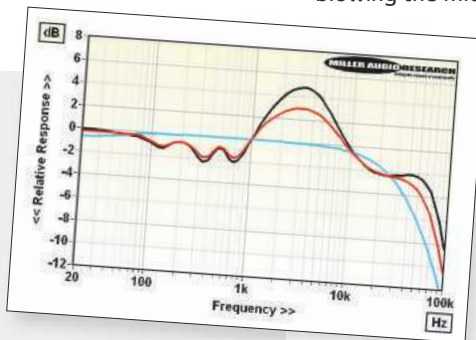
of clarity and space around them. I found myself purring with delight at Lyn Stanley's performance on 'Bye Bye Blackbird' from her recent *Live At Studio A* set [AT Music ATM3109], at times feeling

'The emotion in her voice brought a lump to my throat'

THE CHAMELEON

The LM-341A offers separate '8ohm' and '4ohm' transformer taps to step-down the high voltage/high impedance output of the EL34 tubes to better match the lower impedance and higher current demand of the attached loudspeaker. In reality, precious few speakers offer a fixed 4, 6 or 8ohm impedance – instead, the load swings up and down with frequency as the various reactive components of crossover and drivers kick-in.

As the LM-341A's output impedance is still very high indeed [see Lab Report, p67] its response is modulated by changes in speaker load, lifting with rising speaker impedance and falling with decreasing speaker impedance. While our reference B&W 800 D3 loudspeakers [HFN Oct '16] might not be the LM-341A's likeliest partner, they still perfectly illustrate how its response will shift and change with the impedance trend of your choice of loudspeaker. The inset Graph shows the native, unloaded response of the LM-341A [cyan trace] versus its response driving the 800 D3s via its 8ohm tap [black trace] and 4ohm tap [red trace]. Note how the inductive upswing in the 800 D3s impedance produces a big 'lift' to the midrange/presence band, and every female vocalist... PM




ABOVE: By default, the amp is equipped with two EL34s output tubes per channel and 12AX7/12AU7 triodes. The top plate controls cater for tube type and manual bias adjustment, with input selection and volume on the front

as if had been transported to the heart of Hollywood and was in Capitol's Recording Studio A with her.

Equally, while the LM-341A's top end proved creamily smooth it was still usefully detailed. Its overall balance certainly tended towards a slight softness in my set-up, but fine detail was still rendered intact. For example, softly tapped or brushed cymbals were well reproduced and had a lifelike nature to them.

So far, so good, yet further listening revealed the LM-341A was rather over-

blowing the midrange, so tracks more complex than acoustic 'audiophile' numbers could sound a tad strident. Similarly, while cymbals typically remained clear, they were often positioned a long way back in the soundstage. But I was arguably more disappointed by the LM-341A's bass which, while hooked up to my PMC Twenty5.24 loudspeakers, could sound bloated with heavy mixes.

The solo upright bass on the Lyn Stanley track certainly had fine depth and there was no shortage of detail to the upper notes. But the further down the scale Chuck Berghofer went on his bass, the more the notes blurred. With more complex material, the amplifier grew unhappy still. The track 'Magic' from 

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.

Don't Settle for anything less than perfect Musical Fidelity.



LAB REPORT

LINE MAGNETIC LM-341A



ABOVE: Very straightforward – just three line and a direct (power amp) input on RCAs with 4mm speaker cable outlets wired via 8ohm and 4ohm transformer taps

Kylie Minogue's new *Disco* set on CD [BMG 538633982] blundered along in a cheery enough manner, but lacked cohesion overall. Given how the amp's response will vary between speakers [again, see PM's boxout, p65], a change was ordered.

First up was the Duevel Bella Luna Diamante [see p68], still resident in my listening room, yet this design was an equally unhappy bedfellow. Consequently I decided to connect the LM-341A up to an old favourite in the form of Usher's S-520. Asked to drive a pair of small and simple two-ways the LM-341A finally found its stride and started to come together.

PLAYING BIG

The upright bass on the Lyn Stanley track now sounded more consistent across its frequency range, even if there was a tendency towards 'fruitiness' at the very low end. But this actually worked well with the diminutive Usher standmounts, endowing them with a good sense of weight. Equally, Kylie regained her crown as the 'Princess Of Pop', bounding along with enthusiasm.

Still, more complex material is not really the LM-341A's forte. With tracks comprising multiple layers of instruments, the LM-341A could struggle on occasions to keep all the aspects clear. In the process, it would slightly lose sight of the overall musical message, subtle percussion effects wandering

off into the background at times to become a little lost. However, with this in mind, it was not difficult to pick the right material to suit the LM-341A's comfort zone, and here it performed admirably.

If the amp has a core strength, then this lies in the magnificent sense of space and image depth it can deliver. Even when playing source material where complex interplays or layers were less certain, the soundstage never shrank or began to collapse. I cannot recall the last time I heard the Usher S-520 loudspeakers sound so 'big'.

Ultimately, it was with simple, well-recorded acoustic material that the LM-341A rewarded most handsomely. The emotion in Cara Dillon's voice on 'There Were Roses' from her *Sweet Liberty* CD [Rough Trade RTRADE CD123] was enough to bring a lump to the throat, while the accompanying piano sounded just as a piano should.

This is not an easy instrument to get right, and I've heard many a more expensive amp make a poorer fist of it. The LM-341A showed another of its core strengths here, revealing the colour and 'soul' of solo instruments with real passion. ☺

HI-FI NEWS VERDICT

Provided you are content to tweak output stage bias manually and have loudspeakers that are a sympathetic match, the Line Magnetic LM-341A has a lot to recommend it. It's well made and showcases the strengths of EL34 output valves well. Rock fans might want to look elsewhere, but this amplifier can conjure up a wonderful sense of scale and atmosphere that suits jazz and simpler classical music to a tee.

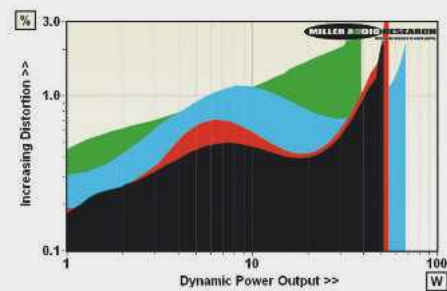
Sound Quality: 75%



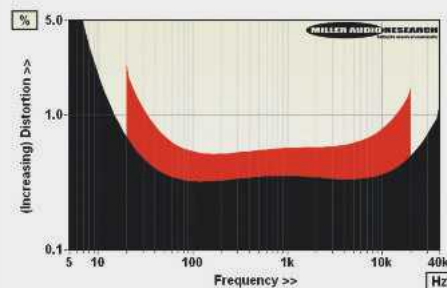
LEFT: By way of added extra, the LM-341A includes motorised, remote-controlled volume and mute

Well-built and keenly-priced, this entry-model to Line Magnetic's comprehensive tube range does get rather warm – the AC mains transformer (centre) readily reaches 55°C – so adequate ventilation is vital. Its specification is rather sparse, although the claim for 2x40W output is broadly met in practice with 2x43W/8ohm and 2x38W/4ohm being achieved via the 8ohm and 4ohm taps, respectively, at <1% THD. This is well within the compass of two EL34s operating in push-pull and there's even a hint of headroom under dynamic conditions, albeit with distortion relaxed to 2%, allowing the LM-341A to deliver 49W/8ohm via the 8ohm tap and, via the 4ohm tap, 50W, 66W and 33W into 4, 2 and 1ohm loads [see Graph 1, below]. Overall gain is set at a sensible +39.5dB, residual hum and noise is acceptable at –66dBV (0.5mV) and the A-wtd S/N ratio is just a few dB below 'average' at 82.8dB (re. OdBW).

As expected, distortion climbs with output level and at low bass frequencies through core saturation in the EI-style output transformers – from 0.35%/1kHz to 0.75%/20Hz at 1W/8ohm [black trace, Graph 2] and from 0.55%/1kHz to 2.3%/20Hz at 10W/8ohm [red trace]. These figures are not excessive, suggesting some compensation at work, and neither are these primarily 2nd/3rd harmonics the root cause of any colour attributable to the LM-341A's sound. Instead it is excessive output impedance – a full 6.05-4.90ohm from 20Hz-20kHz, dropping to 1.79ohm/100kHz via the 8ohm tap (and a damping factor just shy of unity) – that serves up a deal of uncertainty in the 'sound' of this amplifier when partnered with a random choice of loudspeaker [see boxout, p65]. PM



ABOVE: Dynamic power output versus distortion into 8ohm (black trace), 4ohm (red), 2ohm (blue) and 1ohm (green) speaker loads. Max. current is 5.7A



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

HI-FI NEWS SPECIFICATIONS

Power output (<1% THD, 8/4ohm)	43W / 38W
Dynamic power (<2% THD, 8/4/2/1ohm)	49W / 50W / 66W / 33W
Output imp. (20Hz-20kHz/100kHz)	6.05-4.90ohm / 1.79ohm
Freq. response (20Hz-20kHz/100kHz)	-0.1dB to -0.85dB/-9.6dB
Input sensitivity (for 0dBW/40W)	30mV / 200mV
A-wtd S/N ratio (re. 0dBW/40W)	82.8dB / 98.8dB
Distortion (20Hz-20kHz, 1W/10W)	0.14-0.7% / 0.51-2.3% (8ohm)
Power consumption (Idle/Rated o/p)	150W / 232W
Dimensions (WHD) / Weight	377x190x345mm / 20kg

Duevel Bella Luna Diamante

Omnidirectional and horn-loaded to boost sensitivity, are these really the 'beautiful moon' of floorstanders?
 Review: Adam Smith Lab: Paul Miller

When it comes to makers of true omnidirectional speakers, it seems that those with the highest profile currently hail from Germany. MBL's Radialstrahlers and the German Physiks models occupy the upper echelons of the market, while at the more affordable end it's the Duevel name that springs to mind most readily. Based in Osnabruck, the latter company is the brainchild of Markus and Annette Duevel, who founded the business in 1988.

The £9995 Bella Luna Diamante is the central model in a seven-strong lineup of loudspeakers, but it's notable for three reasons. Firstly, it's a bona fide TV star! Those who remember British actor Hugh Laurie's portrayal of Dr Gregory House in the US TV series *House* may recall that the character was a piano-playing jazz fan. His loudspeaker of choice? None other than the Bella Luna Diamante. Secondly, this model

marks a transition within the Duevel range being the most affordable version to use a horn-loaded tweeter. Markus Duevel actually began his career in loudspeaker engineering specialising in the simulation and development of horn-loaded designs, so this is a key feature of the top models.

PLEATS 'N' PORTS

Finally, it is the latest incarnation of the original Bella Luna, which was only the second speaker offered by Duevel, following the Jupiter. The first Diamante version came a year later in 1998 and ran alongside the standard Bella Luna model until 2005, when the latter was dropped. This is the fourth iteration of the Diamante and it was introduced in 2018. Changes see the addition of a new bass driver with neodymium magnets in its motor system, plus cabinet and crossover tweaks.

Said bass driver is a nominal 220mm unit comprising a treated paper cone with what Duevel calls an 'M-roll' surround. Effectively, the surround has two rolls and is somewhere between a conventional single-roll surround and pleated type. The driver is reflex-loaded by four ports – one at each cabinet corner. This space also contains the crossover circuit, which is designed to minimise phase errors between the drivers – a key Duevel design feature.

FLARE PLAY

The downward-firing tweeter comprises a 44mm titanium cone whose output is 'squeezed' between the lower and upper surfaces of two sandwiched saucers that form the body of a circumferential horn [see PM's boxout, p69]. This is the key to spotting the horn-loaded models in the Duevel range. Those having two saucers are

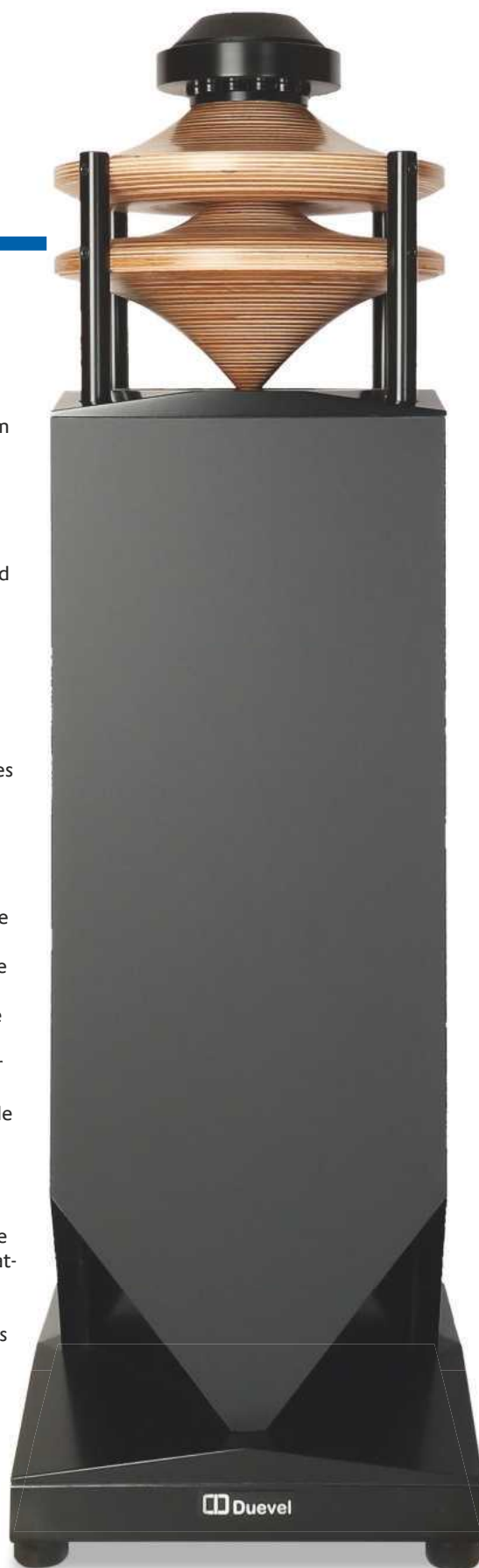
horn-loaded, those with one – or other type of – diffuser use a dome tweeter.

The rear of the tweeter that is visible on the top of the loudspeaker looks conventional enough, but it is a cover disguising a motor system that utilises a dozen 20mm-diameter neodymium magnets arranged in a circle. The voice coil former is made from Nomex, a heat-resistant fibre, and in the centre is a phase plug of patented design.

Given that the Bella Luna Diamantes radiate in all directions, the concept of the speakers having a front and rear face is largely moot. However,

RIGHT: A compression-loaded 44mm Ti-coned treble driver radiates across 360° from beneath the top saucer while a 220mm bass/mid unit fires upwards towards the lower conical reflector

'The bass was big, relaxed and at times almost sinuous'

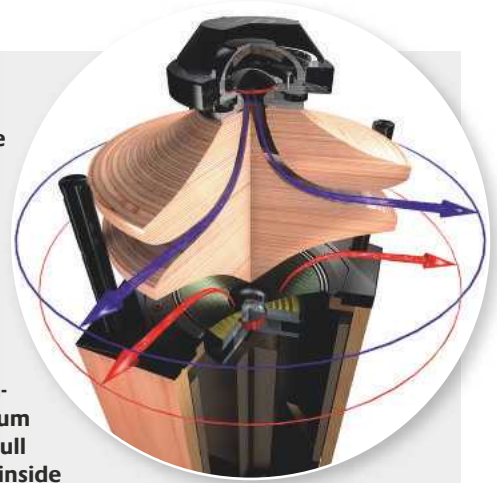


SAUCER-SHAPED SOUND

Highly respected voices within the audiophile community, including the late Siegfried Linkwitz [*HFN* Mar '16], have long argued in favour of loudspeakers that exhibit continuity between their on- and off-axis responses, ensuring the spectral content of both the direct sound and early reflections have a similar spectral 'weighting'. The omnidirectional speaker is perhaps the purest example of this ideal, although engineering a box that radiates a full-bandwidth hemisphere of equal-intensity sound is not especially practical. B&O's recent BeoLab 90 [*HFN* Dec '16] gets close in 'omni mode' with its DSP-corrected, actively-driven array of seven tweeters, seven midrange and four woofers, albeit at some cost.

A purely passive design like the Bella Luna Diamante must attempt a compromise by working with, rather than forlornly against, what is achievable. True omnidirection radiation is possible at low bass frequencies where the very long wavelengths (100Hz = 3.43m) diffract around the tall, narrow cabinet, but at higher mid and treble frequencies the wavelengths get progressively smaller (1kHz = 0.34m; 10kHz = 3.43cm) and the output more focused – so-called 'beaming' – along the driver's forward axis.

Modern tweeters typically incorporate short flares, phase plugs or perforated plates to widen and unify directivity at these higher frequencies, but Duevel goes a stage further by using a compression-loaded 44mm titanium unit that delivers a full 360° output via the inside surfaces of its two 'flying saucer' reflectors [purple arrow, inset illustration]. The underside of the lower reflector distributes the output of the upward-firing 220mm doped-pulp bass/mid driver [red arrow]. In both cases Duevel is trading excellent horizontal dispersion for a uniformity that is compromised by the off-axis performance of the drivers – hence the very erratic forward response measured in our lab tests [see p71]. **PM**



there is a small stack of 'absorption discs' on the upper surface of the lower reflector. These line up with the connection wires to the upper driver and are opposite the front nameplate, so mark the rear of the cabinet.

Fit and finish is very good indeed and the speakers are available in an extensive range of colours. Not only are there black, white and graphite options, but different wood finishes including zebrawood, oak and a striking Macassar. In addition, the CNC-milled saucers can be fashioned from various woods or black or clear acrylic, with more options made to order.

CLEAN SWEEP

When it came to the listening, I connected the Bella Luna Diamantes to my regular system of Naim Supernait amp and CD5 XS CD player with Flatcap XS PSU and, after some experimentation, positioned them around two feet from the rear walls and 18in from the side walls of my room. Here the speakers filled my lounge with a truly commodious soundstage.

The Bella Luna Diamantes, just like the company's smaller Venus loudspeaker [*HFN* Mar '20], offer an extraordinarily stable and consistent stereo 'image' almost regardless of how you slide across the sofa. However, they are necessarily more sensitive in the vertical plane than Duevel's smaller models with dome tweeters, so I preferred to sit with my ears level with the mouth of the horn if the treble was not to become too diffuse or the 'holographic' soundstage begin to constrict.


Get the height right, though, and the Bella Luna Diamantes perform an uncanny disappearing act. True, their omnidirectional nature means they do not image with rifle-bolt precision, as can some conventional designs. But once you have attuned your brain to the different way in which they present music, it really doesn't matter. In barely ten minutes, I found myself captivated by what I was hearing.

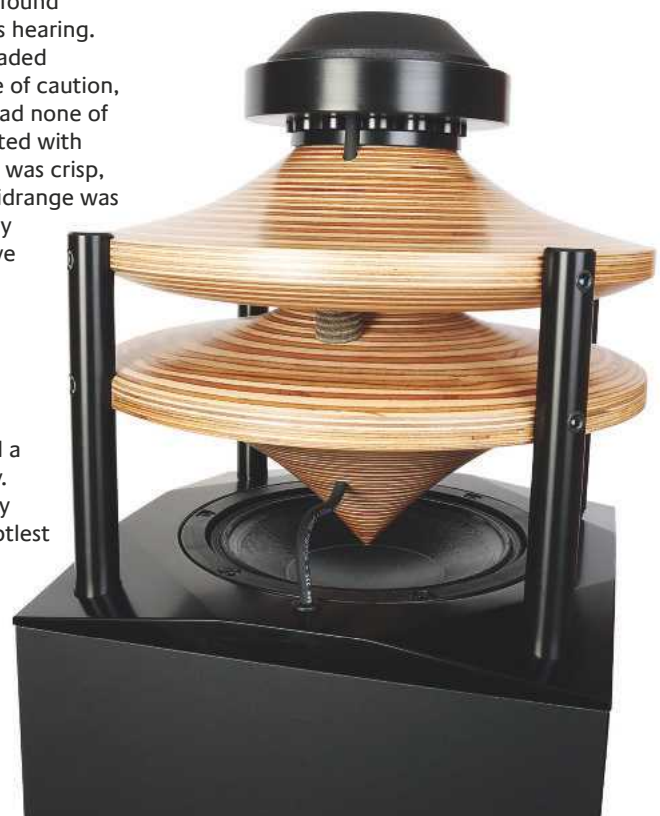
Typically, I approach horn-loaded loudspeakers with some degree of caution, but the Bella Luna Diamantes had none of the downsides that I've associated with such designs in the past. Treble was crisp, clean and detailed while the midrange was open and insightful, without any of the 'cuppy' distortion that I've heard from some 'big horns'.

In fact, the upper midrange and treble performance proved as atmospheric and detailed as many a top-flight 'directional' floorstander. Cymbals strikes were clean and snappy and had a pleasing softness to their decay. Even more enticing was the way these speakers revealed the subtlety of background effects. These are the incidental sounds that

RIGHT: Close-up view of the treble 'horn' and reflecting saucers also reveals how the connection from the two-way crossover reaches the top-mounted titanium cone tweeter

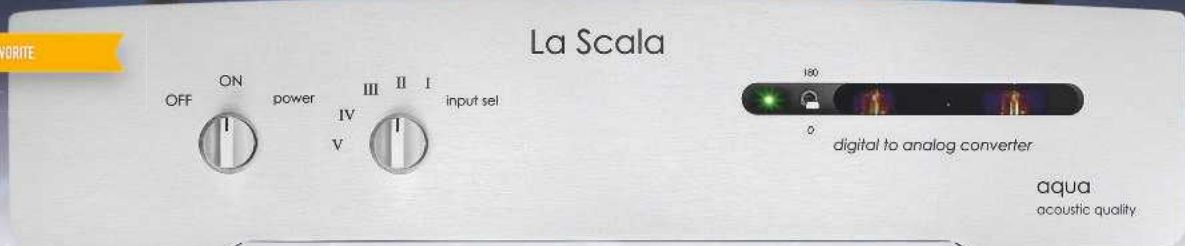
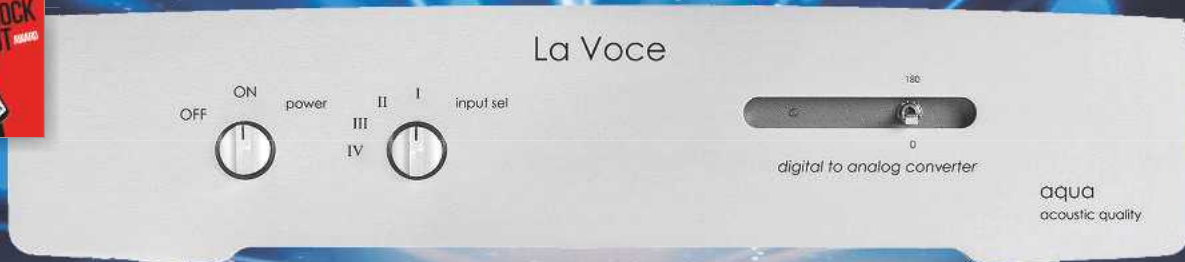
might otherwise lurk at the back of the soundstage but, heard through the Bella Luna Diamantes, were positioned clearly front and centre, if appropriately quieter than the main action.

Midband detailing was commendable too, while the speakers also pulled vocal performances to the fore. While not quite 



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DUEVEL BELLA LUNA DIAMANTE

LEFT: Cabinet is internally cross-braced to form four vertical, tuned lines that vent out of ports at the base. Single set of 4mm binding posts do not support bi-wiring/amping. Note that the 'red' and 'black' terminals are swapped

I suspect the midband resonance that is visible in the loudspeaker's waterfall plot [see PM's Lab Report, opposite] could be the cause of the stridency heard with the two artists mentioned.

GRAND SLAM

So, an insightful midrange nonetheless, and delicious treble too, but would the bass end of the Bella Luna Diamantes be as good? The answer is a resounding yes. The smaller Venus models punched well above their weight at the low-end and their bigger brothers continue this tradition in spades. They have a big, relaxed and, at times, almost sinuous low-end, yet are endowed with bags of detail, warmth and slam.

With 'Somewhere, Somebody' from Jennifer Warnes' *The Hunter* [Private Music 261974], the bass line was deep and lustrous, with the vocal 'pop' into the microphone present on the second verse just audible in the background – usually this is in subwoofer-only territory.

In fact, no matter what sort of low-end challenge I fed the Bella Luna Diamantes, they handled it with consummate ease. What's more, their superb bass response melded with the upper frequency ranges to generate a seamless performance on every occasion. 🎵

HI-FI NEWS VERDICT

The Duevel Bella Luna Diamantes show what careful design and considered updates can do for a loudspeaker's performance. Like the smaller Venus, their all-around presentation takes a little acclimatisation, but the enveloping soundscape is quite addictive. Add impressive bass, a fine horn tweeter and relative ease of positioning, and you have a design that is rewarding and entertaining companion.

Sound Quality: 85%



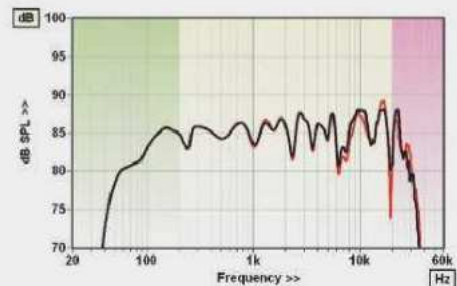
as brightly spotlighted as I've heard through the best conventional designs, singers still stood clear of the cabinet and their finest vocal inflections captured with gusto.

As a result, perhaps, there was a tendency towards stridency with one or two female vocalists. Norah Jones was arguably a little too enthusiastic on 'Feelin' The Same Way' from her album *Come Away With Me* [Parlophone 7243 5 38609 2 9] just as Sarah McLachlan sounded somewhat more forward throughout 'Angel' [*Fumbling Towards Ecstasy*; Arista 07822-18970-2].

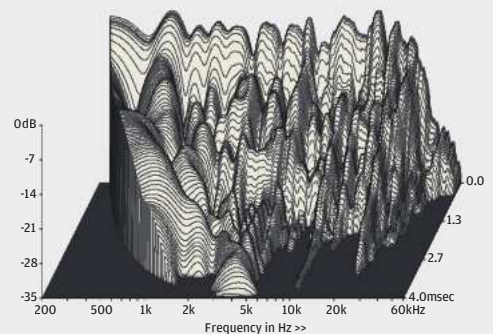
Yet when I fed the speakers one of my regular messy torture tracks – in this case The Corrs' 'Only When I Sleep' [*Talk On Corners*; Atlantic Recordings 7567-83051-2] – the Bella Luna Diamantes sailed through the song with clarity and a surprising level of sophistication.

The 360° (horizontal) radiation pattern of the BL Diamante necessarily reduces its measured sensitivity when compared to a speaker employing the same two drivers with a more focused, directional output. However, while Duevel's 91dB rating is a tad optimistic – our figure of 85.1dB (averaged 500Hz-8kHz) being a full 6dB lower – the speaker's energetic reverberation field may well create a subjectively 'louder' sound. Amp loading is fairly tough, especially through the bass and between 90-300Hz where the lowest impedance (3.4ohm/270Hz) meets high negative phase angles (-65°/97Hz). The load is sub-8ohm from 105Hz-5.5kHz, and the nominal is 4ohm rather than 6ohm.

Measured on the tweeter 'axis' between upper and lower reflectors, the speaker proved not only to be phase inverting, but possessed of an inherently flat forward response trend [Graph 1], albeit pitted with narrowband peaks and cancellation notches at 235Hz, 1kHz, 3.6kHz and 6-7.8kHz. These are also reflected in resonant modes captured on the very busy CSD waterfall [Graph 2]. The sharpest notch at 19.3kHz was more acute in one of our pair [red trace, Graph 1], accounting for the ±7.7dB response error and high 6.3dB matching error (but tightening to a respectable 1.3dB from 200Hz-10kHz). The dip at 235Hz was also detected on the nearfield analysis and on both impedance/phase spectra, suggesting a cabinet mode. Duevel's 220mm woofer works out of four shaped vents in the foot of the cabinet which, despite their complex profile, are clearly tuned to 48Hz – within a few Hz of the diffraction-corrected -6dB bass extension of the entire system at 51Hz (re. 200Hz). PM



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



ABOVE: Untidy bass/mid driver resonances appear through the midband with a cabinet mode at 235Hz

HI-FI NEWS SPECIFICATIONS

Sensitivity (SPL/1m/2.83V – 1kHz/Mean/IEC)	83.5dB / 85.1dB / 83.0dB
Impedance modulus: minimum & maximum (20Hz–20kHz)	3.4ohm @ 270Hz 34ohm @ 27Hz
Impedance phase: minimum & maximum (20Hz–20kHz)	-65° @ 97Hz +32° @ 24Hz
Pair matching/Resp. error (200Hz–20kHz)	6.3dB / ±4.0dB/±7.7dB
LF/HF extension (-6dB ref 200Hz/10kHz)	51Hz / 25.5kHz/30.1kHz
THD 100Hz/1kHz/10kHz (for 90dB SPL/1m)	0.6% / 0.5% / 0.4%
Dimensions (HWD) / Weight (each)	1050x325x325mm / 30kg



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In-akustik Reference LS-204 XL Micro Air



One of nine speaker cables in one of five separate ranges, this 'Micro Air' design from In-akustik's Reference series represents a sweet spot. Review & Lab: **Paul Miller**

Once Germany's best-kept cable secret, the In-akustik brand – part of the family-run Braun Group – is nothing if not comprehensive in its offering. Every type of power, analogue, digital and AV cable is included, across multiple ranges, alongside custom-install accessories that extend to ambient LED lighting solutions.

In-akustik's copper is smelted and refined in Germany, the highest quality OFC batches being selected for its flagship 'Reference' range of audio cables, including the LS-204 XL Micro Air we have here. The 'XL' version of this cable features six multicore conductors, grouped as signal and return pairs, that are wound around a polyethylene fibre core. Each conductor comprises multiple, lacquer-coated copper strands, arranged in four concentric layers, and jacketed in a polyethylene sleeve [see pic, below].

In-akustik set out to design a low inductance cable and in the LS-204 XL it has undoubtedly succeeded – the mere 0.23µH/m imposed here being



ABOVE: Fitted with a choice of rhodium-plated plugs, the LS-204 XL Micro Air combines physical flexibility with a design that supports long runs

achieved with a helical geometry that also keeps parallel capacitance down to an acceptable 110pF/m. Furthermore, the substantial 7.86mm² (3x2.62mm² per signal/return leg) cross-section of those multi-stranded copper cores keeps the loop resistance down to a fabulously low 4.8mohm/m. Cold-welded to your choice of 'Easy plug', spade or, as here, 4mm BFA-version banana connectors the power loss is just 0.0052dB/m. These cables are tailor-made for long, >5m runs where your amplifier is placed at one end of the room and your speakers at the other!

FEEL THE AIR

To test the idea, I used a 7m set of LS-204 XL Micro Air cables (£1350-1450) and, as heavy-gauge cables typically get the best of amps offering a low output impedance, I auditioned them with Devialet Expert 800, as well as Constellation Inspiration Monos

LEFT: Air is a superior dielectric and In-akustik puts it to good use by spacing its multiple conductors around an 'air rich' fibre core

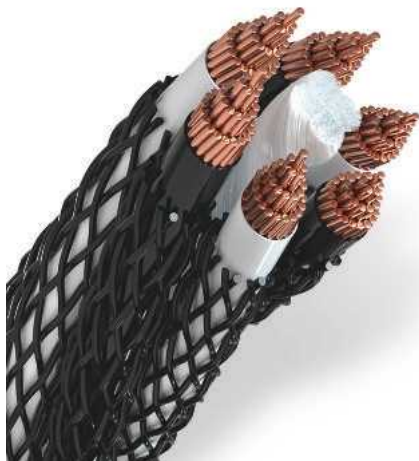
[HFN Oct '19], with our in-house B&W 800 D3s [HFN Oct '16]. These cables are 'straight down the line' performers, not tone filters, as illustrated by testing material like Sam Smith's *The Thrill Of It All* [Capitol Records 5785574; 48kHz/24-bit]. No less 'thrilling' with the LS-204 XLs in tow, the choral accompaniment on the opener 'Too Good At Goodbyes' burst forth just behind a very close-miked Smith. His voice retained the right amount of 'edge' while the percussion had equal snap, the ensemble maintaining a balance on the civilised side of fierce – a tough ask with these plaintive, slightly sibilant vocals.

The percussive intro to Paul Simon's *In The Blue Light* [Legacy Recordings 19075841442; 96kHz/24-bit] sounded fresher – thankfully – as this 'reimagined' collection of his lesser-known album tracks was revealed in meticulous detail here. The vibrant take on 'Pigs, Sheep And Wolves' enjoyed a good sense of attack, of expectation and excitement too, all the while avoiding sounding too demanding or, heaven forbid, harsh. This cable is a good choice for big, neutral-sounding systems. ⬇

HI-FI NEWS VERDICT

An evolution of In-akustik's 'Air Helix' geometry, the 'Micro Air' construction of its LS-204 XL cable retains the low resistance and inductance of the German brand's costlier cables but with the advantage of lower capacitance, promising a more consistent behaviour with a wider range of amplifiers. There's a lot of hand-made cable here for the money, making it a reliable bet for that first 'big upgrade'.

Sound Quality: 80%



Thorens MM-008

Who better than a legendary turntable maker to offer a go-to, affordable, universal phono stage? The Thorens MM-008 looks set to shake up the entry-level sector

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

If anyone still doubts the extent of the LP renaissance, beyond the use of turntables as a trope for cool ads aimed at hipsters, the plethora of affordable gear coming from purist brands known for high-end price points should convince them otherwise. Forget those £69, all-plastic 'record players' sold online to snare newbies: when a company such as Thorens brings out a phono stage like this £220 MM-008, it indicates that renewed LP usage is not the sole province of seasoned audiophiles. Or, indeed, wealthy ones.

Thorens has, in fact, produced a quartet of starter phono stages, including the MM-008 ADC, which is the same as the unit reviewed here but equipped with an on-board ADC, and USB output, for digitising one's LPs. And if MCs aren't a concern, the company also offers a pair of fixed value MM-only units, the MM-002 and the MM-002 Flex, the latter having been specifically designed to fit under a turntable.

FULLY LOADED

With or without an ADC and USB output, an MM-008 is the obvious choice if upgrading and the freedom to use either type of cartridge is important. Moreover, instead of DIP switches or front panel selectors, or other solutions that would increase the cost of the unit, Thorens accommodates different MCs via a set of three pairs of plug-in adapters. This reminded me of Gryphon's earliest phono stage, which used this method of setting the load values.

Thorens supplies the MM-008 with plug-in values of 10ohm, 100ohm and 1kohm. With this trio of loads and a standard 47kohm MM input, pretty much every mainstream cartridge is covered. This isn't the place to wax about how precise settings need to be, which I would hope is an issue only for the level of hi-fi user who is way past newcomer status. Even

though I am a reviewer and an obsessive in many ways, I admit to being cavalier about this, finding variances of up to $\pm 10\%$ often inaudible. Having opened this can of worms it is worth emphasising that even editor PM thinks these are acceptably 'universal' values. He also pointed out that, as these are basically phono plugs fitted with resistors, it would be easy enough to fashion ones with other values. Still, I doubt anyone will be using the MM-008 with one of the super-expensive, super-exotic MCs which ask for loads of, say, 1ohm.

With an ear to completeness, though, I did test this not just with sub-£100 MM cartridges and under-a-grand MCs, but with a £10k MC more likely to find its way through a phono amp of similar status. To my delight, it proved more indicative of this device's competence than the results

with like-priced cartridges as it revealed the compromises – and they were small.

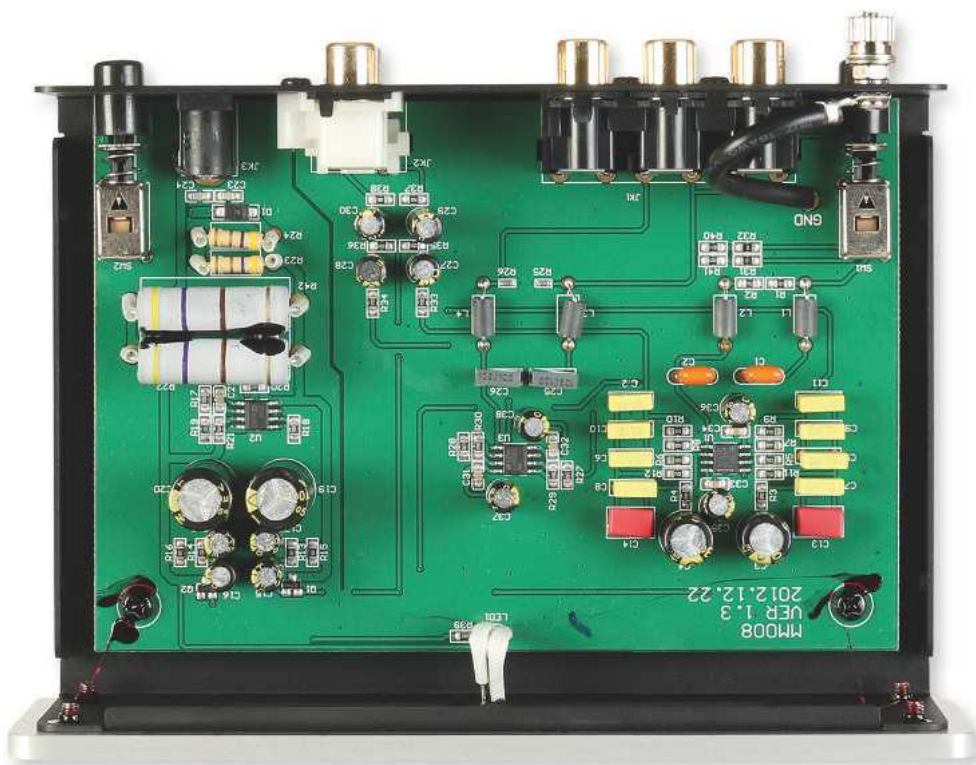
POUND FOR POUND

It was that observation which was enough to metaphorically smack me over the head with the Law of Diminishing Returns, something which is of crucial importance when shopping at this cost level. One must never forget (especially reviewers) that music lovers constrained by a budget must weigh how each and every pound

is spent. This deceptively simple-looking box wastes not a penny, and while its looks will strike many as prosaic, I maintain that it is impossible to fault any device where functionality is the primary criterion.

With costs a constraint, the MM-008 is powered by an external wall-wart which also allows the phono stage itself to be

'Not cheap 'n' cheerful: this is pure beer-budget bliss'



RIGHT: Inside the MM-008 a low-noise LME 49723 op-amp MC headamp [centre] offers an additional +20dB gain ahead of a classic NE5532 op-amp based RIAA stage [far right]. Note mini ferrite RF blockers on MM/MC inputs



LEFT: A very simple, but adequately screened, alloy case and wrap-around bonnet illuminated only by a single blue power on LED

housed in a bijou 150x50x117mm (whd) enclosure, including the phono sockets and earthing tag. You need to add another 25mm depth for the loading plugs.

On the front panel, such as it is, in addition to basic font texts and the Thorens logo, is a centrally-located LED that glows blue when the unit is on. Around the back are the aforementioned earthing post, push buttons for MM/MC input selection and power on/off, the input for the power from the wall-wart, and four pairs of RCA phono sockets [see p77]. From the back, on the right are the left-and-right line outputs, while the remaining sockets accommodate MM and MC cartridges, with the remaining pair for the MC loading plugs.

While obviously having to address newcomers to vinyl, and thus supplied with an owner's manual that leaves no questions unanswered, the MM-008's connections and operation are intuitive in hi-fi terms. Veteran audiophiles will therefore deduce the setting-up without even needing to glance at it. Having said that, I got no sound out of the amp when I first switched

it on with an MC cartridge. Doh – I forgot to choose MC at the back.

LICENSED TO THRILL

Leaving out that momentary display of stupidity, from opening the box to hearing music took just four minutes. I started with the EAT B-Sharp turntable [HFN Jul '20] with the Jo N°5 cartridge [HFN Dec '18], before trying a brace of Ortofons on a basic Pro-Ject deck, and the aforementioned £10k+ model. The bulk of the listening was undertaken with the Jo N°5. And the opener was a real shock: I wasn't expecting the level of slam and punchiness afforded by the Thorens MM-008, as extracted from the John Lennon box set, *Gimme Some Truth* [Universal 02435 00198].

While this contains remastered, and therefore new-to-me sounds, I did first play the original LPs, so I would be hearing what the phono stage was doing. 'Cold Turkey' possessed the drive and hostility I'm sure an ex-junkie would want to express. This was one of his most aggressive numbers, and the MM-008 was not shy about it.

While I suspected that something was slightly compromised, I couldn't put my finger on it until I listened to the less-cluttered, elegiac 'Grow Old With Me'. This gorgeous song ripped out people's hearts when it was played in the wake of Lennon's murder, and hearing it during the week of the 40th anniversary of this heinous deed may have affected my assessment of the playback, but I held back the tears. An ode to spending a long life with a loved one, it now suffers too much from painful irony, but I had to get all objective.

What was apparent was a reduction in absolute transparency, *vis-à-vis* dearer stages, so there were audible gains moving up the ladder to the £499 MoFi UltraPhono [HFN Mar '20], Pro-Ject's £550 Tube Box DS2 [HFN Jul '20] and EAT's £1298 E-Glo Petit [HFN Feb '19]. Thorens' MM-008 wasn't exactly muddy, but a diminution and slight haze were noted, though no more drastic than, say, cable variations. But I must reiterate that the difference between £220 and £499 is far greater to a budget-conscious individual than one able to consider items costing five-figures.

Unaffected was the glorious soundstage, which filled the listening area, wider than it was deep, but no less satisfying for that. The openness may have been affected by the slight haze, but it was still easy to 'listen into' the sound, and to locate each specific element in its own space.

FREE FLOW

Before leaving Lennon, I played one of the precious few tracks from his solo career which bears comparison with his work in The Beatles. '(Just Like) Starting Over' enjoyed a blissful jauntiness which almost made me forget his hypocritical 'Working Class Hero' or the bitter 'How Do You Sleep?'. The pace-rhythm-whatever crowd will delight in its near-reggae syncopation, and it flowed unhindered through the Thorens MM-008. This phono stage, by the way, handles bass with aplomb. ☺

ELECTRONICS TOO

Although principally regarded as a maker of turntables and fitted tonearms, Thorens has a long history with electronics other than the rather predictable choice of producing phono stages. Prior to its best-known era, the post-war years as a premier turntable maker, Thorens produced early gramophones and radios. Some might be surprised to learn that it even manufactured valve amplifiers in the 1960s, and later on, CD players and both solid-state and hybrid amps.

From the early '60s, the rare AZ25 was an all-tube integrated amp with five inputs and front panel polarity inversion. Inside were 12 valves, including eight ECC83s, and power output was likely to be around 25W. As late as the 1990s, Thorens offered a series of other integrated amplifiers, including the half-width TTA 2000, rated at 2x35W and up to 20W in Class A.

Digital separates included the TCD 2000 CD player/transport and matching TDA 2000 DAC. Part of the Consequence range – we'd guess that in the mid '90s, Thorens wasn't about to depend on turntable sales – the top-loading TCD 2000 featured a Philips mech, smoked lid, gloss black finish and gold details. The TDA 2000 DAC was housed in the same half-width enclosure, handled up to 48kHz and had three digital inputs – two coaxial and one Toslink. But my dream from Thorens' past? The impressive TEM3200 200W hybrid monoblock of 2006.



hi-fi news
HIGHLY
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X2 TURNTABLE

The X2 is fine-tuned to focus on audio excellence. It has all the features needed for convenient day-to-day use, but no superfluous add-ons that start to negatively impact the sonic character. The end result is a highly engaging, musical turntable that delivers deep, detailed lows, crisp high frequencies and an engaging well-presented midrange. Thanks to Pro-Ject's advanced manufacturing experience, while delivering great sound the X2 is also a beautiful piece of engineering that can stand proud as the focal point in any home environment.

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Includes pre-installed Ortofon 2M Silver



Electronically regulated precision drive motor with sub-platter system.



33/45/78 RPM speed compatible



High quality resonance-free acrylic platter

PHONO PREAMPLIFIER



ABOVE: The MM-008 will accommodate separate MM and MC pick-ups via switched, RCA inputs. MC loading is achieved via supplied phono plugs containing 10, 100ohm and 1kohm resistors while the 24V wall-wart PSU invites user-driven upgrades

As I found out to great surprise, when, by sheer coincidence, *McCartney III* [Capitol 02453 13659] arrived during the listening sessions. It turned out to be as terrific a release as the advance word promised. The opener, 'Long Tailed Winter Bird', with its slithery guitar work, could have come from any number of virtuoso axe wizards, but this was Macca showing that he is far more than a bassist. This album, with only a few guest spots, is Paul playing everything.

FUNKY FOUNDATION

It was, however, 'Find My Way' which made the entire LP a winner in my book. This sounded like a Beatles number circa *Rubber Soul*, and it possesses some seriously deep and rich bottom-end moments. The extension and control, just shy of what I expect of the be-tubed Pro-Ject or EAT phono stages, were convincing enough to survive playback through Wilson Sasha DAW loudspeakers [HFN Mar '19].

Here we come to a paradox common to HFN's Budget Esoterica series – affordable gear which performs far better than perhaps it should. If ownership and use of the MM-008 was confined to entry-level systems then it's likely to be heard primarily through two-way bookshelf or standmount speakers of limited 'woofrage'. Played, then, through the Falcon Acoustics LS3/5A [HFN Dec '18], it was no less apparent that the MM-008 can deliver a sense of weight even through systems of restricted bass extension.

Away from my Beatlefest, I listened to the more raucous blues tracks on The Butterfield Blues

Band's *East-West* [Speakers Corner/Elektra EKS-73 15], especially for the speed and attack of Mike Bloomfield's and Elvin Bishop's guitar playing. The MM-008 was more than capable of communicating both the sizzle and the liquidity, while that bottom end provided a rich and funky foundation, immediately noted on the opener, 'Walkin' Blues'. So the Thorens MM-008 isn't to be regarded as 'cheap 'n' cheerful': it's more 'beer-budget bliss'.

In a sector crowded with superlative phono stages from NAD, Pro-Ject, MoFi and far too many others to list, shoppers in the budget arena are spoiled for choice. Any phono amplifiers from familiar manufacturers will more than gratify, but the Thorens MM-008 has one quality that, for some, will make it a stand-out in this hotly-contested category: a pedigree going back more than 130 years. Arguably an abstract virtue, but it's something to which you cannot put a price. ☺

HI-FI NEWS VERDICT

Products that bring a smile to our faces should be celebrated, and as hi-fi purchases go beyond performance and value, pride of ownership cannot be discounted. Here the Thorens logo on the MM-008 speaks volumes, even to those born 25 years after the TD 160 was discontinued. The magic is that its sound never reveals for a second that this little gem costs less than a case of decent chianti. And it's almost as yummy.

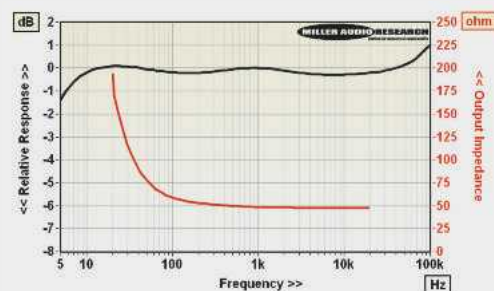
Sound Quality: 85%



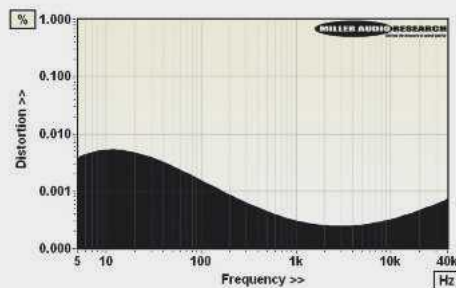
THORENS MM-008

This little box may be based entirely around integrated op-amp gain stages but these little chips are well chosen – an LME49723 featuring very high slew-rate/low noise/low distortion for the MC headamp combined with a tried-and-tested NE5532 dual-channel op-amp for the active portion of Thorens' part-passive/part-active eq stage. The dual-channel NE5532 was especially popular back in the late '80s/early '90s when the Signetics variant of this op-amp was core to the 'sound' of Rotel separates... In this instance it contributes to the generous 79dB A-wtd S/N ratio achieved via the MM input (re 5mV in/1V out), the latter offering a one-size-fits-all +39.8dB gain arguably best suited to higher-output pick-ups. There's often a caveat here though, for while high output MMs will optimise the MM-008's noise performance, too high and the wildest groove excursions may breach the preamp's 68mV input overload margin.

In practice, for a 1mV/cm/sec pick-up (5mV at 5cm/sec) this represents a good +22.7dB headroom at 1kHz – perfectly adequate for the highest output Ortofon MMs, for example. The +59.9dB gain offered for MCs, in combination with its 66dB A-wtd S/N and 6.8mV overload margin renders the MM-008 most suitable for middle-ground (500µV) pick-ups – just as a 'universal' phono preamp should. The RIAA eq shows the very mild upper bass/mid treble 'droop' seen with other low-cost solutions [Graph 1, below] while its capacitor-coupled output causes an increase in source impedance from ~50ohm midband to ~200ohm/20Hz [red trace, Graph 1]. Distortion is impressively low, falling to as little as 0.00025% through midband/presence frequencies and only increasing to 0.004% in the bass [see Graph 2] – all well within Thorens' <0.013% specification! PM



ABOVE: RIAA-corrected freq. resp. from 5Hz-100kHz at 0dBV via MM (black) vs. output impedance (red)



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

HI-FI NEWS SPECIFICATIONS

Input loading (MM/MC)	47kohm / 10, 100ohm, 1kohm
Input sensitivity (re. 0dBV, MM/MC)	10.3mV / 1.02mV
Input overload (re. 1% THD, MM/MC)	68mV / 6.8mV
Max. output (re. 1% THD) / Impedance	6.5V / 46-207ohm
A-wtd S/N ratio (re. 0dBV, MM/MC)	79.2dB / 66.5dB
Frequency resp. (20Hz-20kHz/100kHz)	+0.1dB to -0.3dB / +1.0dB
Distortion (20Hz-20kHz, re. 0dBV)	0.00025-0.0038% (MM)
Power consumption	4W
Dimensions (WHD) / Weight	150x50x117mm / 0.5kg



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Classical Companion

BEHIND THE MUSIC WITH HI-FI NEWS & RECORD REVIEW

Looking back *And second thoughts...*

As **Christopher Breunig** prepares to take a short sabbatical on a series begun in 2014 (continuing under new management) he adds a comment or two on some favourites

When I began collecting, EMI's producer Walter Legge was reviving Otto Klemperer's recording career after his fallout with Vox, and we had Beethoven's *Leonora* Overtures and Symphonies Nos 3, 5 and 7 (the 'Eroica' my very first LP).

In 1959 Klemperer [Classical Companion, *HFN* Apr '15] was appointed principal conductor of the Philharmonia – already being developed by Legge in conjunction with Herbert von Karajan (they had made immediate postwar 78s in Vienna even before the occupying authorities permitted concert performances with him).

Anything these two conductors recorded we eagerly bought, although by 1959 Karajan had switched to DG – R Strauss's *Ein Heldenleben* his debut LP: reissued on vinyl in 2017 [479 7219] and still one of my favourites [*HFN* Jul '19].

→ The first 'Eroica' with Klemperer and the Philharmonia: the author's very first LP

← Otto Klemperer, Michelangeli, Herbert von Karajan, Rudolf Serkin and Bernard Haitink (clockwise from top left)



Karajan [*HFN* Dec '14] had made a piecemeal set of the nine Beethoven Symphonies with Legge (Nos 8 and 9 belatedly found as stereo tapes) but moving to Berlin his first stereo cycle, produced in the sympathetic acoustics of its Jesus-Christus Kirche, was his first big project for Deutsche Grammophon. And it's certainly the cycle I most often turn to: strong in the 'Eroica', Nos 5 and 9, even if the 1953 Philharmonia 'Pastoral' remained Karajan's best version.

This set is detailed in the concluding boxout here: just eight recordings of pieces of music I'd always want to hand (one for personal reasons described later) or specific interpretations which left an indelible impression – like the Furtwängler [*HFN* May '15] Schubert 'Great C major', which the Chilean pianist Claudio Arrau [*HFN* Feb '15] said was one of the greatest he had ever heard.

A colourful orchestral piece which I certainly would never have heard programmed by the CBSO in its more provincial pre-Fremaux/Rattle days (that was the orchestra I heard 'live' as a student) is the Suite No 2 from Ravel's ballet *Daphnis et Chloé*.

Of course, there was the marvellous BPO/Karajan LP with Debussy's *La Mer* [DG] and the early Cantelli, now on Warner Classics [*HFN* Nov '20].

But the one that sticks in my mind, not least for the wonderful principal flautist in the Deutsches SO, is Robin Ticciati's Linn version listed in the boxout opposite, although I am torn between this and the intriguing and utterly different Celibidache/Munich PO account [own label 9305211274].

SPACED OUT

Celibidache [*HFN* Oct '15] also did a spacious and epic Sibelius Symphony No 5, with the Swedish RSO in 1971 [DG; out of print]. I'd have a hard time if pinned down to vote for a single version but I'd probably opt – contrary to my Classical Companion conclusion on this work [*HFN* Feb '16] – for the 1959 NYPO/Bernstein on Sony or the Karajan CD reissue set, with Nos 4, 6 and 7, *Tapiola* and 'The Swan of Tuonela'. Bernstein had some telling observations on the

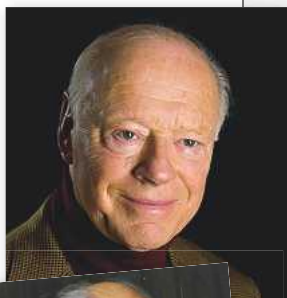
final spaced chords in No 5, which you can see (online) in his marked score archived by the New York Philharmonic.

Apropos of Sibelius: in the autumn Warner

Classics issued a large box set of all Sir John Barbirolli's former Pye/EMI recordings [9029538608; 109CDs] and Jim Lesurf wrote enthusiastically about it in his Opinion [*HFN* Oct '20].

Given the outlay and the amount of historic and lighter material I wasn't tempted, but I did re-explore his Sibelius Symphonies: Sir John's last big EMI project with the Hallé, as Warner also offers these as individual high-resolution downloads (192kHz and 96kHz/24-bit). But like the Elgar recording [*HFN* Oct '20],

'It's certainly the Beethoven cycle I most often turn to'



PHOTOS: MILEIN COSMAY/LAUTERWASSER/DG/ROGER HAUTERT/CBS/ASKONAS HOLT

I can't say I was impressed, far preferring to listen to the late '60s LPs (turnovers in No 1, 2 and 5 notwithstanding). To my mind, the digital mastering seemed to draw attention to artefacts of balance or channel separation.

But although criticised for an expansiveness that had crept in over the years, these readings certainly showed what a deep understanding Barbirolli had of the musical architecture and expressiveness.

Another big box, £200+, was announced by DG at the end of last year: an 80CD set of pianist Wilhelm Kempff's recordings [483 9075] taking in his Deccas and with Polydor shellac versions of all but nine Beethoven piano sonatas. These are presumably those also transferred by APR (where I found the surface noise levels a little too high compared with the deleted Dante/Lys remasterings).

As I wrote in *Classical Companion* [*HFN* Dec '15], it's the mono complete cycle which better



PHOTO: BR KLASSIK

captures this artist's 'witty, and imaginatively involving' playing than the stereo remakes, which had a somewhat thin and distant balance. These, however, have been reissued as 96kHz/24-bit downloads and you can find them at highresaudio.com.

BRITTEN AT SEA

I'm sure we all have records we play as reminders of some earlier event in our lives. If you asked what music by Benjamin Britten I liked to hear, I would without hesitation say the 'Four Sea Interludes' from *Peter Grimes* – and in the deleted LP version by Sir Colin Davis [*HFN* Sep '17] on a Philips 'Sequenza' LP [6527 112]. There's also a fine high-res Sony reissue of Bernstein's New York Philharmonic version, with a superb final 'Passacaglia' [G0100037201313; 192kHz/24-bit].

➔ 'Yellow label' records by Wilhelm Kempff, Wilhelm Furtwängler and Herbert von Karajan – Beethoven, Schubert and Sibelius (details below)



But in my 'Eight Of The Best' boxout (now wherever could I have got that number from?) I've put the *War Requiem*, in part because it takes me back to a small Manchester hotel room where I listened to the Coventry premiere on a marvellous B&O FM portable I then had (I was sitting my RIBA finals the next day). I also gave a later Hereford Three Choirs Festival performance a writeup in our local paper – my first and almost last effort at live review!

The current Decca CD set (you can pay twice as much for a 96kHz/24-bit download; 4143832) includes a conversation between Britten and

producer John Culshaw, issued apparently without consultation, and Britten briding when told.

With Mariss Jansons [*HFN* Feb '20] we learned of his death after I'd sent the copy in, but were able to include corrections, and although not much has appeared since (I will review the Bruckner Symphony reissues next month) there is certainly more to see of him conducting, and rehearsing, on the Internet.

Finally: everyone praised the Previn/RCA Walton Symphony No 1 [*HFN* Sep '14] though I had a soft spot for Sargent's [Warner reissue]. But Sir Colin Davis's tops either! ☺

➔ Mariss Jansons in his last rehearsal with the Bavarian RSO, given in Vienna on 27th October 2019

ESSENTIAL RECORDINGS - CHRISTOPHER'S EIGHT OF THE BEST

Britten: *War Requiem*

Decca 4757511 (two discs)
The composer's 1963 Kingsway Hall recording, remastered and with studio outtakes.

Schubert: *Symphony No 9*

DG 477 9387 (mono; 44.1kHz/16-bit download)
Furtwängler's 1952 studio recording with the Berlin Philharmonic; also on a Naxos CD.

Beethoven: *The Piano Sonatas*

DG 4479662 (eight discs; mono)
Wilhelm Kempff's first *complete* cycle of the 32 Sonatas – preferred to the stereo remakes.

Ravel: *Daphnis and Chloe – Suite No 2*

Linn CKD610
Robin Ticciati and the Deutsches Symphonie-Orchester Berlin, coupled with Duparc.

Sibelius: *Symphony No 5*

DG 457 7482 (two discs)
Karajan's best Sibelius recordings with the BPO came on the DG, rather than EMI, label.

Beethoven: *The Symphonies*

DG 479 3442 (six discs + Blu-ray audio)
The Karajan/BPO cycle from 1961-2 – much reissued and also on 180g vinyl [483 7875].

Elgar: *Symphony No 1*

Barbirolli Society SJB1017 (two discs)
Manchester Free Trade Hall recording made for Pye in Dec 1956 [see main text].

Walton: *Symphony No 1*

LSO Live LSO0681 (SACD)
In 2006 Sir Colin Davis and the LSO brought a special gravitas to this early work.

Vinyl Release

BEHIND THE MUSIC WITH HI-FI NEWS & RECORD REVIEW

The Specials *More Specials*

As the Coventry group prepare their second LP things are already starting to fall apart... **Steve Sutherland** listens to the half-speed-remastered 40th anniversary reissue

Here they are, Britain's most successful and influential breakthrough band, revered by the critics, adored by the fans, unashamedly copied by start-up bands... But Jerry Dammers, the geezer in charge, wants to mess with the magic and do something quite worryingly different.

Now everyone knows that second albums are tricky blighters for several reasons. Y'know, you've had your whole life to create and inspire the first one, then the second one comes along and you're out of ideas. Plus, your audience wants the impossible: the same yet different/ better...

MENTAL BREAKDOWN

None of these, however, seem to be the driving force behind the wilful change of direction being foisted upon the band by their svengali. The way they see it, there's some sort of mental breakdown behind it

all, some lack of faith. It's as if the lunatic has taken over the asylum.

The Specials' eponymous debut album, released in 1979, has appropriated the ska music Prince Buster and the like had imported from Jamaica in the 1960s and updated it with a punk attitude and lyrics that concerned themselves with the inner city wasteland that their native Coventry was becoming in the late '70s. This thrilling multi-racial recipe was instantly and enthusiastically adopted by the UK's disenfranchised and frustrated youth. A year on, though, things are falling apart. A hectic touring schedule has taken its toll on the group and there's heavy pressure from Chrysalis Records, the major label which is financing Dammers's 2 Tone label, for a follow-up album.

'Horace joins a cult and then gives them all his money'

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...



So they all troop into Coventry's Horizon Studios with multiple ambitions and agendas. Guitarist Roddy Byers is keen to introduce a more rockabilly edge to their sound, partly in tune with bands like the Stray Cats who are gaining current chart traction. Drummer John Bradbury is leaning in a Northern soul direction, and

is suggesting mixing ska, soul and reggae, warning 'they've got a great thing going, why mess it up?'. Dammers, though, is adamant his group move on. Elvis Costello had produced the debut LP in a deliberately rough

and ready manner to capture their energetic live appeal, but now he's in control, working alongside co-producer Dave Jordan and it's his vision that wins out. 'We've got to start all over again', he declares. 'Ska was just a launching point. I don't want us to end up like Bad Manners.'

CHEESY CHA-CHA

Where he takes them is uncharted territory, untested and, to most of the group, incomprehensible. His philosophy, as he explains it to the others, is that basically you should listen to any music with an open mind, no matter whether you initially think the music is good or bad, and you will would grow to like it over repeated plays.

His ambition, he says, is to destroy people's preconceived ideas of good and bad music to the point where listeners would hear a record and won't even know if they like it or not. 'I went out of my way to listen to anything that had been regarded as rubbish in the rock world: Muzak; exotica. Trying to consign rock music to the dustbin of history...'

To this end, Dammers starts to employ the studio as an instrument in itself, writing on the spot, overdubbing furiously and endlessly fine tuning. The first album had been recorded pretty much live. This one is piecemeal, one instrument at a time, a completely different vibe. The



➔ The Specials in the early '80s with Jerry Dammers (far left) and Terry Hall (centre), Side 1 of the LP on the 2 Tone label (top right) and 'Ghost Town' single from 1981

2
TONE



MORE SPECIALS

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➔ Priced £27.99, the 45rpm 180g 2LP reissue of *More Specials* is available to order online at www.roughtrade.com

group begins to seethe and fight among themselves, sick of Dammers' dominion over their future, unhappy with the way his newly-bought Yamaha home organ, with its Latin-American cha-cha cheesy rhythms, are dictating the overall tone, and scared that this 'Muzak-lounge jazz experiment' would do in their careers.

It's really no surprise that *More Specials*, finally mixed at Wessex Studios in London, turns out to be something of a patchwork. But it's a brilliant patchwork in places which will lead them to their absolute peak. It begins with 'Enjoy Yourself (It's Later Than You Think)', an often-covered music hall knees-up written in 1949.

'Man At C&A' is singer Terry Hall's first writing credit, a rather cynical take on life in the shadow of the mushroom cloud. Roddy Byers' 'Hey Little Rich Girl' is a sorry tale of a lass who moves to the big city with dreams of stardom and ends up an adult model. Madness's Lee Thompson provides the jaunty sax.

Guitarist/singer Lynval Golding contributes 'Do Nothing', another dour social prognosis set to an upbeat, easy listening backing. 'Pearl's Cafe' is by Dammers and follows the same pattern, being a tawdry tale with a spicy backing. 'Stereotypes/Stereotypes Pt 2' is Dammers' again, lyrically spiteful, segueing Spaghetti

➔ The Specials play live on stage in 2013 at the Vic Theatre in Chicago



Western soundtrack into dub, while 'International Jet Set' is an equally bleak exotic cocktail, detailing a passenger's nervous breakdown on a plane that crashes. Another, way more downbeat, version of 'Enjoy Yourself' featuring The Go-Go's completes the piece.

TOUR TROUBLES

More Specials comes out wrapped in a deliberately slightly out-of-focus colour photograph of the band. Dammers idea here is to make it reminiscent of old Jamaican album sleeves. It gets to No 5 in the charts. The critics are generally kind.

Despite their problems, the group take *The More Specials Tour* around the UK in autumn 1980. Audience violence disrupts gigs in Newcastle, Leeds and Cambridge where Hall and Dammers try to stop fans battling with security guards. The pair are arrested, charged with incitement to riot and then fined £400.

Reluctantly, the group announce that they will stop touring. 'You're in this amazing, fantastic group making this wonderful music and you can't play it any more because people are hitting

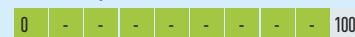
each other', says bass player Horace Panter who joins a therapy cult, Exegesis, which creates even more friction in the band. 'Adding to the fun, Horace joins some nutty cult and starts giving them all his money', says Dammers. 'It was just a nightmare.'

Again, in spite of everything, they convene in the studio to record a follow-up single to the album. The song is called 'Ghost Town', and is one of the greatest No 1s in UK chart history. It's as if all the experimentation during the recording of *More Specials* was leading up to this magnificent triumph. ☺

RE-RELEASE VERDICT

Jerry Dammers had founded his 2 Tone Records label in 1979 with backing by Chrysalis. The Specials' 13-song second album, *More Specials* was released on the label the following year [CHR TT 5003] and for its 40th anniversary has been half-speed remastered by Miles Showall at Abbey Road Studios. It comes as a two-disc 45rpm box set package [50605 16095698] including the 7in 'Ghost Town' single (which is also half-speed remastered), with LP pressings on 180g black vinyl. **HFN**

Sound Quality: 90%





Taj Mahal *Giant Step*

Released as a double album on the Columbia label back in 1969, one LP electric with a supporting trio the other acoustic and solo, it only belatedly received recognition for being such a groundbreaking work. Is it time to re-evaluate our views on the blues?

Words: **Johnny Black**



Exactly why Henry Saint Clair Fredericks, better known as Taj Mahal, has never been hoisted shoulder high as the quintessential bluesman to emerge from the 1960s remains a mystery that may be never be explained. But we'll have a go.

Early in the 20th century, blues was largely a rural acoustic music. It didn't emerge into the popular mainstream until the mid-1960s, by which time it had evolved into an urban electric form.

Pioneered by giants of the genre such as T-Bone Walker and Muddy Waters, this urban electric blues resonated in the UK with white kids like Eric Clapton, Keith Richards and Jimmy Page, and it was they who in bands like Cream, The Rolling Stones and Led Zeppelin exported their interpretations of the blues into a growing global music market.

NO-ONE'S LISTENING

Along the way, they eclipsed the music's black originators, and the diverse, distinctive styles of pre-'60s blues disappeared under a tsunami of interminably extended guitar solos, thunderingly dull rhythm sections and mumbled vocals. Even in the US, '60s blues reached the ears of mass white audiences via white aggregations such as The Butterfield Blues Band, Canned Heat or The Dirty Blues Band.

Curiously though, something different emerged in LA, out of the ashes of a none-too-successful blues-rock combo that went by the name of The Rising Sons. Two founders of that band, Ry Cooder and Taj Mahal, went on to create unique evolutions of the blues which made Cooder world-famous but, inexplicably, left Taj Mahal still standing in the shadows.

His first two solo albums, *Taj Mahal and The Natch'l Blues* (both 1968) revealed him to be among the most eclectic bluesmen of the era. But the mass market didn't want eclectic – it wanted the conformity of urban electric blues. Rather than bow to public demand, Mahal went further out with his massively ambitious double set, *Giant*

Side 1 of the first album making up the double release, *Giant Step*

Taj Mahal on stage in 2019 at the Luther Burbank Center for the Arts in Santa Rosa

Live in March 2012 at Colorado Springs

Rising Sons in 1966 (l-r) Taj Mahal, Jesse Lee Kincaid, Gary Marker, Ry Cooder and Kevin Kelley

Taj Mahal on stage at JazzFest, in Wien, Austria in 2007



Step/De Ole Folks At Home. With this stunning 1969 release, Mahal explored the stylistic breadth and variety which powered the beating heart of the blues. Unfortunately, the world simply wasn't listening...

Mahal was well aware that double albums had become a very marketable prospect, but he had reservations. 'A lot of people are putting out double albums. But the double albums basically sound like it

was a good piece of taffy that you start out with and then you kind of stretched it a little farther than it needed to be. It was pretty much the same thing from one end to the other.'

To escape that he decided to create two entirely different albums and release them as a 2LP set. The first album, *Giant Step*, he conceived as, 'the songs after you take them

and polish them up and give them a little R 'n' B, give them some blues, a little modern country'. The second album, *De Ole Folks At Home*, was to be 'the raw songs and what they sound like in their raw form'.

DELICIOUSLY MELLOW

For *Giant Step* he worked with the same band he had on his first two albums (guitarist Jesse Ed Davis, bassist Gary Gilmore and drummer Chuck Blackwell). He also retained

the same producer, David Rubinson, a former Columbia staffer who had worked with Santana, Moby Grape, Herbie Hancock, *et al*.

Their relationship was a happy one.

'He did the business, and I did the music. That was what I wanted. I knew what songs I wanted to record.' And, speaking of the band, he has said, 'By the third record, the *Giant Step* record, we really got more sophisticated. That was one of the things that I saw happen as the evolution of the music.'

From the opening seconds, it's obvious *Giant Step* is not going to be just another blues-by-the-numbers

'The tracks continuously upset your expectations'



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PRODUCTION NOTES

By the time the Taj Mahal band and producer David Rubinson settled into the Columbia Studio, at 6121 Sunset Boulevard in Hollywood, in June 1969, they had become a well-oiled machine. It was their third album together, and everyone knew exactly how to get the best out of themselves and the environment.

At the time, however, Rubinson was no longer a Columbia staffer, and was working instead for The Fillmore Corporation, a company he'd started earlier that year in partnership with music promoter Bill Graham. Mahal was front and centre throughout the album but his well-respected guitarist, the Native American Jesse Ed Davis, was also a vibrant contributory factor.

On *Giant Step*, Davis employed his white Telecaster guitar through a tweed-fronted Fender Bassman amp with JBL speakers, although he occasionally used a Vibro Champ amp in the studio. He was one of the first guitarists to experiment with a Leslie amp and speaker unit, which had originally been designed for use with Hammond organs.



The Leslie unit modified the source sound, giving it a distinctive, swirling, pulsating tremolo. 'He used it a little bit on *Natch'l Blues* and a little more on *Giant Step*', explained Taj, 'but he was not one for a lot of effects. He created most of them between his hands – like the volume knob with his little finger. He picked with a flatpick and two fingers'.

Davis would go on to become one of the most in-demand session players of the '70s, working with Jackson Brown, Eric Clapton, Leon Russell, Rod Stewart and countless others, as well as releasing a pair of acclaimed solo albums.



album. The first track, 'Ain't Gwine Whistle Dixie Anymo'', consists of Taj whistling a rambling melody while the band improvises a jangly, laid-back instrumental. This is unexpectedly followed by a deliciously mellow reading of 'Take A Giant Step', better-known in a Byrdsy commercial pop version by The Monkees.

KICKING INTO HIGH GEAR

But in 1966, before The Monkees had got their hands on it, Mahal had recorded an uptempo rock version with The Rising Sons, and now he set out to re-interpret it yet again. 'The idea was to slow it down and let the words come out,' he explained, adding, 'I just go for what I feel, and am not afraid to stick my neck out'.

A dyed-in-the-wool bluesman singing a manufactured Brill Building pseudo-psychedelic pop confection? This was bordering on heresy, and tantamount to commercial suicide, but Mahal was never driven by commercial considerations.

The nine tracks on *Giant Step* proceed by continuously upsetting expectations. Taj's treatment of 'Good Morning Little Schoolgirl' is so positively bouncy that it almost banishes the legitimate concerns about its decidedly dubious lyric.

His speedy assault on the country classic 'Six Days On The Road' kicks it into a higher gear than it has ever had before or since. Perhaps the biggest treat on the album, though,

is 'Further On Down The Road (You Will Accompany Me)', which sounds maybe like a long lost country-gospel classic, but is actually a new composition which is credited to the whole band. There's really only

one track on which Mahal makes serious concessions to the expectations of 1969's prevailing blues consumers. It happens during the final track, 'Bacon Fat', when he shouts out 'Mr Davis!' and steps aside allowing Jesse Ed Davis to shine and sparkle on an extended solo.

'Jesse Davis shines and sparkles on an extended solo'

Speaking of the album in 1971, Mahal observed that 'They recorded it just as it was, no second takes, and no over-dubbing.

I don't believe in overdubbing, gimme the straight music or don't gimme no music at all. I mean it's very easy to let the machine dominate the whole thing. I don't let them do that, and all of a sudden I've got an audience. They want to hear me the way I play.'

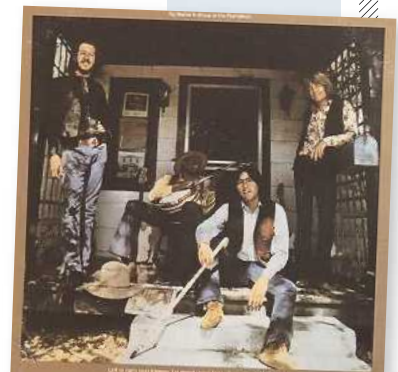
Nothing resembling the range of material on *Giant Step* existed on any so-called blues albums in 1969, and that was the problem. The blues audience, whether black or white, was innately conservative and *Giant Step* was anything but. For the second LP in the set, Mahal

De Ole Folks At Home image used on the rear of the album sleeve

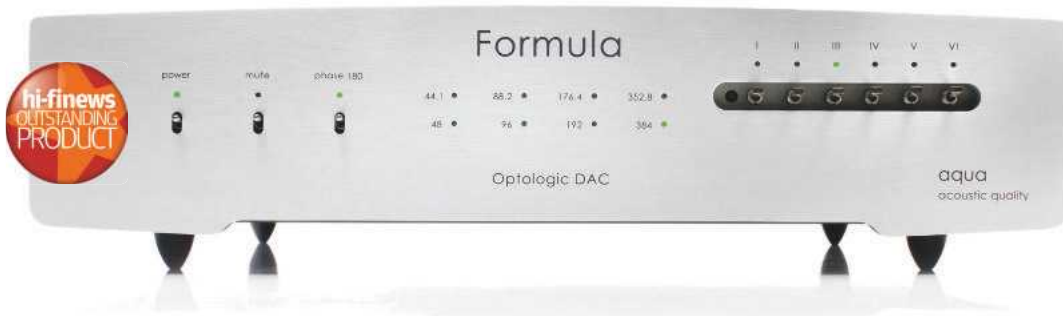
Taj Mahal caught on camera in 1971

Jesse Ed Davis, who sadly died when aged just 43, on the sleeve of his 1973 LP *Keep Me Comin'*

The group as pictured inside the LP sleeve at 'the Plantation' (l-r) Gary Gilmore, Taj Mahal, Jesse Edwin Davies and Chuck Blackwell



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- Unison Research
- Verity Audio
- Wharfedale
- Wyred 4 Sound
- X-ODOS

Alternate Format Discography

Given that this has always been an under-performing and under-appreciated album, it's no surprise that there are only 41 known iterations listed, of which 19 appeared within two years of its appearance while the release dates of a further 14 are not known.



ORIGINAL VINYL LP (1969)

Columbia was still solidly behind Taj Mahal, so the album appeared in the US in an impressive gatefold sleeve [Columbia GP18] designed by Virginia Team, the respected art director whose career ran from the '60s until her retirement in the early 2000s.

Each album boasted its own 'front cover', and the gatefold inside featured hand lettering of the titles and other details by Jesse Ed Davis, along with a portrait of the band relaxing on the back porch of a funky shack called the 'Plantation'.

Giant Step is still regarded as a decent slab of vinyl, soundwise, but *De Ole Folks* has been criticised for sounding muddy, which I don't hear at all. To my ears it sounds rich, natural and very present. In 2016 Music On Vinyl issued a 180g vinyl recut [MOVLP1442].



REEL-TO-REEL (1969)

Giant Step/De Ole Folks At Home were released as individual solo albums in the US on a 7in reel-to-reel tape, playing at 3¾ips offering '4-Track Stereo'. Catalogue numbers are Columbia HC 1217 and HC1224 – though I have to confess, I've never heard either of them.

UK VINYL (1969)

The British release of this double set also appeared in 1969 but on the Direction

imprint [8-66226], which was a briefly-lived CBS subsidiary [pictured above]. Initiated in 1967, the label shut down in 1970 after putting out albums by The Chambers Brothers, Elmer Gantry's Velvet Opera, Peaches And Herb, Inez And Charlie Foxx and others.

360 DEGREE SOUND

Further proof that Columbia tried hard to push this album, the '360 Degree Sound' concept was claimed to create a surround sound effect 'as if one were sitting in the first row centre at an actual performance' [Columbia GP 18]. I recall hearing some recordings using this technique and being decidedly unimpressed by them.

FIRST CD (1988)

The first time the album appeared on CD was in the UK on Edsel Records [ED CD 264], now one of the longest established of reissue labels.

JAPANESE CD (2017)

After 1969, alternative versions of *Giant Step* are thin on the ground. So I've opted to point anyone seeking a digital version which takes advantage of all the technological progress that has occurred since the original 1969 releases on vinyl towards the low-priced Japanese CD release [SICP-5350] from 2017. Fortunately, I'm still more than happy with my 1998 Direction label CD reissue [491692 2].



Playing live in 2005 at the Liri Blues Festival in Italy (left) and (right) on The Pyramid stage at The Glastonbury Festival the same year

recorded the entire thing by himself. 'One afternoon, I went in and had the engineer roll the tape,' he later revealed. '*Giant Step* was electric and arranged – *Ole Folks* was raw.'

CHICKENS CLUCKING

Again, Mahal set out his stall from the opening seconds, with a raspy *a cappella* solo rendering of an old Leadbelly railroad worksong, 'Linin' Track', embellished by nothing more than a hint of echo and the occasional handclap.

He then launches into 'Country Blues No 1', an improvised solo on his Mississippi National Steel guitar, with every resonance beautifully captured by engineer Chris Hinshaw.

According to Taj himself, 'Country Blues No 1' 'Comes from a combination of gospel and blues and slide on a 12-string. It just is a certain sound that I always absolutely loved that people would sing. I'd hear women singing it when they would do the dishes and stuff like that. Music came at me from so many different levels, both on and off the records and live.'

Further delights on *De Ole Folks* include another, often hilarious, *a cappella* number, 'A Little Soulful Tune', and there's his sparkling banjo-accompanied version of the Mississippi John Hurt standard 'Candy Man', his chicken impersonations on 'Cluck Old Hen', his banjo re-take of the old fiddle tune 'Colored Aristocracy', and a brace of better-known tunes,

'Stagger Lee' and 'Fishin' Blues', on which Mahal makes it clear that he can be just as compelling on his own as he is with his band.

Delightfully eclectic and endlessly inventive, *De Ole Folks* was nevertheless a fish out of water. Speaking to the *NME* years later, Mahal pointed out that, 'It came at a time when the white youth musician was taking credit for using the blues. I watched everyone stealing blues licks from the old guys and never even sayin' where they're comin' from'.

Released in the latter part of 1969, the album received a massive thumbs down from *Rolling Stone* magazine. *Melody Maker* was slightly more kind, but reckoned it was 'likely to appeal only to Taj Mahal's greatest admirers'.

The years have hardly improved the status of *Giant Step/De Ole Folks At Home*. It did, however, provide Taj Mahal with his first entry into the *Billboard* Top 100 albums chart, peaking at No 85 in October 1969. What's more, it remained in print in the Columbia catalogue for two decades.

Typically, Mahal has remained philosophical about the album's achievements, telling journalist John Garrat of *Pop Matters*: 'It's only been later on that people started talking about how groundbreaking it was. It wasn't. I just had an idea and I did it. I wasn't trying to shake nobody up.' ☺

"I saw them steal blues licks and say nothing"

Inside the Studio

BEHIND THE MUSIC WITH HI-FI NEWS & RECORD REVIEW



MIKE POSTONS

Sawmills Studio

Used by Oasis, Muse and a raft of acclaimed indie artists along the way, this studio set in a secluded creek boasts a unique creative atmosphere. **Steve Sutherland** explains why

Leaving the main stream, they passed into what seemed at first sight like a little land-locked lake. Green turf sloped down to either edge, brown snaky tree-roots gleamed below the surface, while ahead of them the silvery shoulder and foamy tumble of a weir, arm-in-arm with a restless dripping mill-wheel filled the air with a soothing murmur of sound... It was so very beautiful that the Mole could only hold up both forepaws and gasp, "O my! O my! O my!".

In case you were wondering, Ratty and Mole were on their way to Sawmills. Well, sort of... When Kenneth Grahame was writing *The Wind In The Willows* back in 1907, he was staying in Fowey in Cornwall. He'd taken an excursion up the river with

➔ The Live Room at Sawmills, next door to The Control Room

➔ Stone Roses' single 'Fools Gold' and the band in the mid '90s

some friends to picnic in a hidden creek. This, it's accepted, provided the inspiration for Ratty and Mole's picnic in the book's opening chapter.

WATER MUSIC

It just so happens that there is only one creek with a water mill in those environs, and that's Bodmin

Pill. The mill-house, of course, is Sawmills, which stands on the banks of the tidal Pill, a tributary of the River Fowey, and only accessible by boat or on foot along an ancient path known as The Saints' Way. It's a pretty wondrous place with quite a history. There was a Stone Age settlement hereabouts, the



KEY RECORDING TIMELINE



1975

Brit prog group Greenslade record vocals with a local choir for their album *Time And Tide*



1989

New Model Army troop to Sawmills to make *Thunder And Consolation*. The album is a Top 20 hit in the UK



1993

Robert Plant checks into the studio to record his album *Fate Of Nations*, which peaks at No 6 in the charts



Domesday book gives the area mention and there's a medieval quay still visible at the head of the creek.

During the First World War, the woodland which surrounds the Mill was coppiced for timber sent to the Western front. During World War Two, The Old Sawmills was requisitioned by the US Army for preparations in the run-up to the D-Day landings. And today – which is why we're talking about all this – it's one of the UK's most exclusive, not to say enchanting, recording studios.

DOWNTIME HI-JINKS

Opened in early 1974 by producer Tony Cox as one of the country's first residential recording locations, Sawmills was an instant success, its quirky access and romantic setting offering privacy, seclusion and plenty of opportunity for downtime hi-jinks such as kayaking, paddle boarding, hiking and fishing from the quay.

According to producer John Leckie [*HFN* Aug '17], 'If they tell you to be there at four o'clock to get the gear in and you turn up at five and the tide's gone, you have to wait 12 hours before your next chance'.

The structure of the studio is a control room and machine room, plus a live room with two isolation booths and 'The Cave', a small bare rock area at the back. And, without having to worry about disturbing any neighbours, there's the option to record outside and take advantage of the 'Creek Ambience'.

To complement the relaxed but focused environment, the Sawmills studio has always prided itself on the quality of its vintage recording equipment. In-house engineer John Cornfield explains: 'I got involved around 1981, and there was still the same basic set-up as when it first opened. We originally had a 16-channel Sound Techniques desk which had been expanded by another eight channels on the end, a pair of Tannoy HPD monitors, a Studer A62, Revox A77 and an Ampex MM1100 – so it was quite sparse. The essential layout of the

↑ Picture of the Sawmills taken around 1890 (top) and (below) XTC side project, The Dukes Of Stratosphear

↗ Aerial shot of the studio on the banks of the River Fowey in Cornwall, as it is today

↘ Caught on camera in 2012 – Oasis singer Noel Gallagher and (right) the band's 1994 debut album *Definitely Maybe*, recorded at Sawmills

studio is pretty much the same – the monitors are different, we've had Quested 212s since 1985 or '86. We also have an Ampex ATR and the EMT Plate is still there, in a separate room. And, of course, there are computer screens everywhere now.'

In 1986, the studio acquired its centrepiece, the 82-channel Trident 80B console. Cornfield says: 'We added another 24 channels to the Trident, making additional circuit boards on a metal plate. We added automation to it, which we did on a BBC microcomputer. Trident mic amps are quite noisy so we designed our own, which we put in a select few channels for where we needed low noise. It's got a sound that I

personally love. It's a got a really fat bottom end and total clarity'.

And, even as it keeps up with technological advances, Sawmills has gone its own way. While it uses Pro Tools as the main Digital Audio Workstation, it still offers the older Soundscape system.

Leckie had always favoured Sawmills and in 1987 he recorded an album there called *Chips From The Chocolate Fireball* by The Dukes Of Stratosphear, an XTC side-project co-formed by Andy Partridge.

CLASSIC SINGLE

It was this LP that brought Leckie to the attention of The Stone Roses and, after working together on their debut LP, in 1989 he took the band down to Cornwall for 18 days to do a follow-up single.

Leckie recalls that the drums were positioned in the centre of the live area, Mani's bass amp was closed off in the 'cave', John

Squire played his Fender Stratocaster and custom-painted Hofner 335 copy in a far corner using a Fender Twin reverb with JBL speakers captured with either a Shure SM57 or SM58 together with a Neumann U67.

'Things weren't recorded in a big, open space', Leckie confirms. 'They were recorded in closed spaces. But then, the main room itself isn't that big anyway, and the control room is right next to it, separated by a



1993

Recorded over a period of seven weeks, The Verve's debut album *A Storm In Heaven* is a Top 30 hit



1999

Another debut puts a band on the map, this time Muse with *Showbiz*, recorded at both Sawmills and RAK



2020

With music recorded at Sawmills, The Waterboys return with their 14th studio album, *Good Luck, Seeker*

LUMIN

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LUMIN D2 - Hi-Fi News, June 2020

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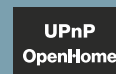
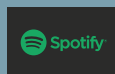
LUMIN X1 - Hi-Fi Plus, 169 Editor's choice 2020

“ Not only is the X1 a first-class component, but the support behind the LUMIN is also as stellar as the unit itself ”

LUMIN X1 - The Absolute Sound, Editor's Choice 2020

“ One of the best sounding streamers at its price then and is also easy to use, stable in operation and superbly built ”

LUMIN T2 - StereoNET, March 2020



THE AUDIOPHILE NETWORK MUSIC FAMILY - LUMINMUSIC.COM



MIKE POSTONS



BEN HOUIDIK/SHUTTERSTOCK.COM



three-foot-thick stone wall, which provided perfect separation.'

Ian Brown recorded his vocals in the control room, an SM58 mic set up between the main monitors that were only about 15ft apart. 'It was a pretty simple vocal', he asserts, 'and we always had the same reverb on his voice; a Lexicon PCM60, rich and clear'. The result was the band's classic single 'Fools Gold'.

MESSED UP

Not surprisingly, Leckie returned to Sawmills at the end of 1992 with Verve to record their debut LP, *A Storm In Heaven*. Of the album's ten tracks, only three had been played live previously – 'Slide Away', 'Already There' and 'The Sun, The Sea' – the rest arriving from jam sessions in the studio. '[The album] was pretty much improvised', says bass player Simon Jones.

According to Leckie, 'They were quite a nocturnal band... they didn't get much sleep'. Singer Richard Ashcroft would often improvise lyrics on the spot – the vocal take for 'Blue' was completed at 6am on the day the label was scheduled to receive the album's master tapes. They sailed close to the wind, but the album was a masterpiece.

Another classic Sawmills recording was Oasis' 1994 debut LP *Definitely Maybe*. The work had begun at Monnow Valley Studio in Wales with a pal of Noel Gallagher's, Dave Batchelor, from Inspiral Carpets producing. The sessions were a disaster. 'It was thin. Weak. Too clean', recalls the band's guitarist Bonehead. Costing £800 a day, with the sessions going nowhere, Batchelor was sacked.

In January 1994, the group decamped to Sawmills and started again. Anxious to capture the attack

of their live sound, they decided to record together in the studio without soundproofing between individual instruments, with Noel overdubbing numerous guitars afterwards. Still not fully satisfied and not financially able to afford a third attempt, the whole kit and caboodle was offered to producer Owen Morris who confesses, 'I just thought, "They've messed up here"'. Among Morris's first tasks was to strip away the layers of guitar overdubs Noel had added and he worked on mastering at Johnny Marr's studio in Manchester, the final mix created on a vintage Neve console in Studio 5 at Matrix Recording Studios in Fulham. The album became the fastest selling UK debut album at the time.

In the meantime, Supergrass had been playing gigs around their native Oxford in early 1993 when they were spotted by producer Sam Williams, who invited them down to Sawmills to record a six-track demo which got them a deal with Backbeat Records, the label releasing a limited number of copies of 'Caught By The Fuzz' and 'Mansize Rooster'. Parlophone took over, re-released the two songs and set the band up for recording

their debut LP, *I Should Coco*, with Sam Williams back at Sawmills. Singer Gaz Coombes recalls, 'One of the highlights was the song "Sofa (Of My Lethargy)". I remember everybody got in the live room and had an instrument and we played, all live, one take... We made *I Should Coco* so fast because we wanted to catch the energy on tape, and do it before the money ran out!'. Of all the acts associated with Sawmills, the one with the closest relationship has got to be Muse. They recorded their self-titled debut EP here in the autumn of 1997 with studio owner and Dangerous Records founder Dennis Smith funding the sessions in return for payment if the band were later signed as a result of the release. Local studio whizz Paul Reeve produced the EP and the set-up continued for their follow-up, *Muscle Museum*, the next year. When it came to their debut long-player, *Showbiz*, John Leckie returned to the 'Mills to help out and the band's second LP, *Origin Of Symmetry*, was also partially recorded at Sawmills by Leckie who mixed it here. Looking back, Dennis Smith says: 'We've never been a truly industry place. We've never put gold discs around the walls. We've always felt people want to get away from that'. 'As the Mole said to Ratty: "You really live by the river? What a jolly life!". "By it and with it and on it and in it", said the Rat. "It's my world, and I don't want any other... Lord! the times we've had together!".' ♪

'Oasis went to Sawmills and started over again'

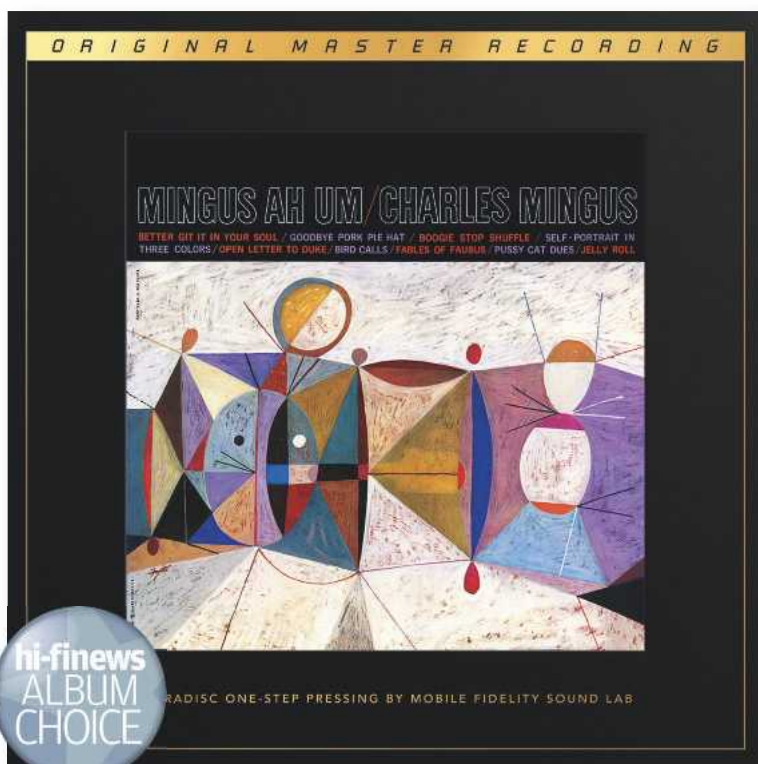
Richard Ashcroft of The Verve pictured in 2019 and (below) Oxford band Supergrass with Gaz Coombes (centre)

The Control Room with its Trident 80B console, Yamaha NS10 nearfield monitors and Quedest 212 main monitors

Muse, who cut their first EP at Sawmills in late 1997



JEFF FONEY



CHARLES MINGUS

Ah Um

Mobile Fidelity UD15 2-010 (two One-Step 45rpm LPs)

I know, I know – this is getting predictable, but I'm gonna be blunt: the audible supremacy of this release, like every other One-Step, is so immediately apparent that you'll want it even if jazz isn't your forte. This is, of course, one of the most beloved jazz albums of all time, a sonic treasure even in normal CD form, but this edition opens up the sound much further. Of course, the lower registers define the music, Mingus playing bass throughout, but every instrument shines, especially the saxes. My favourite track, 'Fables Of Faubus', which slithers like it should be a *film noir* soundtrack, has even more resonance in the current political climate, but that's just one reason why this 1959 release is a must-have. **KK**

Sound Quality: 95%



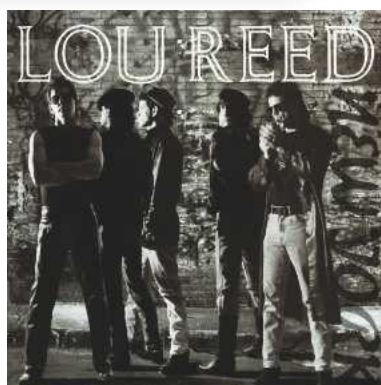
CREEDENCE CLEARWATER REVIVAL

Cosmo's Factory

Fantasy 00888072048645 (180g vinyl)

Marking its 50th anniversary, the sticker announcing mastering at Abbey Road Studios, this isn't the first time CCR's fifth – and probably greatest – has been reissued. I can think of at least two other audiophile pressings, but I'm sticking my neck out to say this may be the best yet. Although it reached No 1 here, CCR remains oddly underappreciated in the UK. That said, when an LP's 11 tracks are all astounding, including 'Travelin' Band', 'Lookin' Out My Back Door', 'Run Through The Jungle', 'Up Around The Bend', 'Who'll Stop The Rain', 'Long As I Can See The Light' and an 11-minute 'I Heard It Through The Grapevine', you're up there in Beatles territory. **KK**

Sound Quality: 90%



LOU REED

New York

Sire/Rhino R2 628762 (two LPs + three CDs + DVD)

Aside from *Metal Machine Music* (and even that has lunatics who love it), each Lou Reed album has its disciples, but this homage to his hometown is extra-special. Here is Lou at his lyrical best, portraying the greatest city on the planet in an alternative vision to the works of Gershwin and Woody Allen. This deluxe set, issued just past its 30th anniversary, contains the remastered album on two LPs, again on CD, a CD of demos and alternate mixes, a third CD of live versions from the 1989 tour, and a DVD of a gig in Canada from the same tour, plus a high-res version of the album. The LPs, though cut from digital masters, still better the CD, and match the DVD. **KK**

Sound Quality: 85%



MARGRIET SJOERDSMA

A Tribute To Eva Cassidy

STS 6111197 (45rpm LP)

What, you might ask, is the point of this – or any tribute LPs – when you can listen to the originals? If that crossed your mind, then this is not for you. But if you want to hear Cassidy's finest numbers reinterpreted with obvious love and affection, and with the sound quality offered by all-analogue recording, direct-metal mastering and 45rpm playback (yes, they managed to fit four tracks per side), with the co-operation of no less than Thorens, you'll love this. Sjoerdsma's voice is gorgeous, like Sophie Madeleine's, and all the Cassidy favourites – 'Fields Of Gold', 'Time After Time' and the rest – are here. Too bad Eva was never recorded this superbly. **KK**

Sound Quality: 90%



AUDIOPHILE: DIGITAL



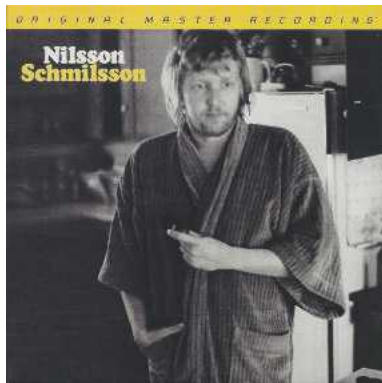
THE EVERLY BROTHERS

Down In The Bottom

RPM/Cherry Red QRPM7550 (three discs)

Containing – with a generous 21 bonus tracks – three entire albums, this sublime set is subtitled ‘The Country Rock Sessions 1966-1968’ and is a must-hear if you’re one of those who worships at the grave of Gram Parsons and needs a reality check. The trio of masterpieces includes *The Hit Sound Of, Sing and Roots*, all filled with self-penned treasures and superlative covers like a lush ‘Trains And Boats And Plains’, ‘Mama Tried’, and more from Goffin-King, Dolly Parton, Randy Newman, Ron Elliott and others, a show of impeccable taste. Acknowledged as setting the standard for rock harmonies, the irony, of course, is that the Everlys always were country rock. *KK*

Sound Quality: 90%



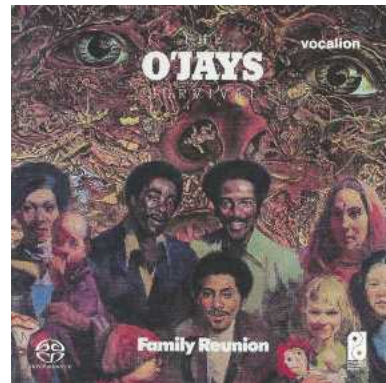
NILSSON

Nilsson Schmilsson

Mobile Fidelity UDSACD2219

In Late 1971, Nilsson – a composer beloved of The Beatles, but also adept at covering others’ works – released his seventh album, and it would turn out to be (arguably) his masterpiece, his best-selling LP and a crash course in his versatility. As was the norm for this mischievous, virtually unclassifiable singer-songwriter, the album’s most famous track was not one of his own, but his No 1 hit and Grammy-winning version of ‘Without You’ written by Badfinger’s Pete Ham and Tom Evans – later butchered by Maria Carey. But it is atypical, as the album ranges from novelty tunes to hard rock to vintage rock ‘n’ roll. Reissued regularly, it wholly deserves to be. *KK*

Sound Quality: 90%



THE O'JAYS

Survival & Family Reunion

Vocalion CDSML8566 (multi-channel SACD)

When a disc opens with the anthem, ‘Give The People What They Want’, a milestone of Philly Sound and a No 1 hit on the US R&B charts, a song so powerful it’s still being licensed 46 years after it was released, you can expect an exemplar of the genre: the two albums contained here live up to the promise. Both charted in 1975, and have stood the test of time as the smooth sound perfectly suited the ‘quiet storm’ radio programming which reintroduced romantic R&B to African-American radio listeners in the 1990s. The two sets feature enough of the easy stuff to lull you into near repose, but then you get hit with some funk. The surround element ain’t bad, either. *KK*

Sound Quality: 85%



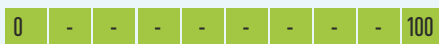
JONI MITCHELL

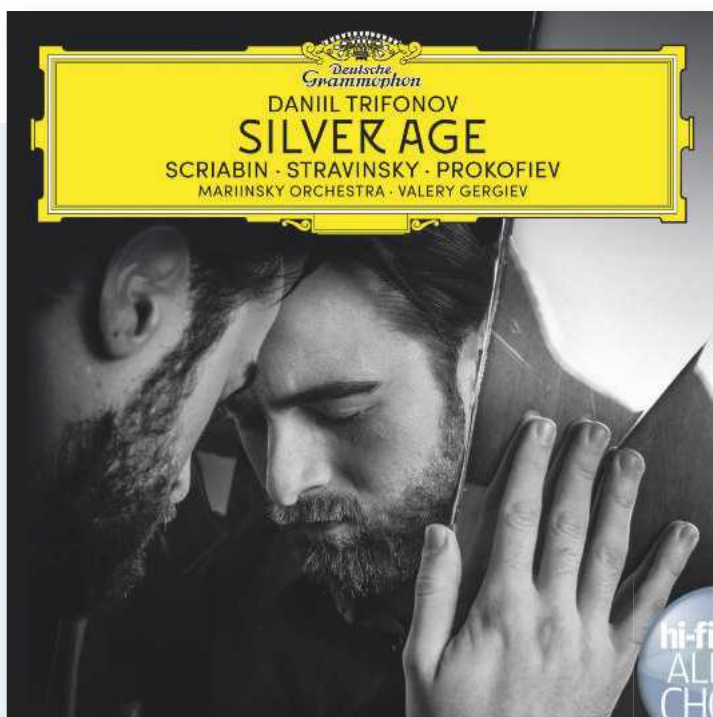
Archives Volume 1

Rhino R2 604555 (five discs)

While sound quality is the primary concern in this section, some releases beg indulgence. Subtitled ‘The Early Years (1963-1967)’, this material comprises pre-fame home tapes, demo recordings, early TV and radio broadcasts and a live set from 1967 filling two of the five CDs. This would have earned our old ‘H’ rating, but the sound is so unexpectedly fine for such raw archival material, and the content... Let’s put it this way: along with the box’s 40-page booklet, whole volumes will be written about the previously unreleased material, including 29 original compositions heard for the first time. If you acknowledge Mitchell as an exceptional, important songwriter, you’ll agree: this had better win a Grammy. *KK*

Sound Quality: 95%





DANIIIL TRIFONOV, MARIINSKY ORCHESTRA/VALÉRY GERGIEV

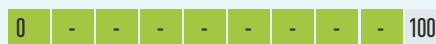
Piano Concertos by Prokofiev (No 2) and Scriabin; Prokofiev & Stravinsky solos (96kHz/24-bit, FLAC)

www.hiresaudio.com; DG 483 5331

The album title 'Silver Age' relates to the pre-Revolution Russian cultural movement. The solo pieces are Stravinsky's *Serenade* and three transcribed movements from *The Firebird* and *Petrushka* ballets, while we hear Prokofiev's big Sonata No 8, his less frequently recorded *Sarcasms* and a *Gavotte* from *Cinderella*. Nowadays with younger pianists like Yuja Wang and Anna Vinnitskaya, his formidable G-minor Concerto

sounds like child's play but Trifonov is too thoughtful and introspective an artist to create this impression – try 'Petrushka's Room. He is able to bring an entirely different palette to the transcriptions from the purely solo works: warmth rather than the customary neoclassical dryness in the *Serenade*, but brilliance in the Prokofiev Sonata's *Vivace*. Excellent support from Gergiev. **CB**

Sound Quality: 90%



CARMEN GOMES INC

Up Jumped The Devil (DSD64/128/256/512; DXD)*

www.nativedsd.com; Sound Liaison SL1043A

Just when you thought you'd heard every possible take on the songbook of Robert Johnson, from true acoustic versions to Clapton's electric tracks, up jumps singer Carmen Gomes with her own rendition. The legendary bluesman died aged just 27 in 1938, amidst all those 'sold his soul to the devil' legends, and left a catalogue of just 29 songs, so you could argue there's nothing new to hear. However, Gomes gives her selected tracks an atmospheric, mystical spin, with minimal backing, a simple mic set-up, in Sound Liaison style, and a 'straight to DXD' as-live recording approach. Her sultry voice has immediacy and intimacy, the instruments captured with real vitality, and the whole recording drips with presence and a sense of performance. I can imagine this one proving popular on the demo circuit if we ever get back to them – and that would be no bad thing. **AE**

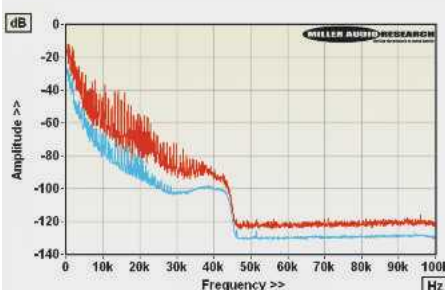
Sound Quality: 85%



OUR PROMISE

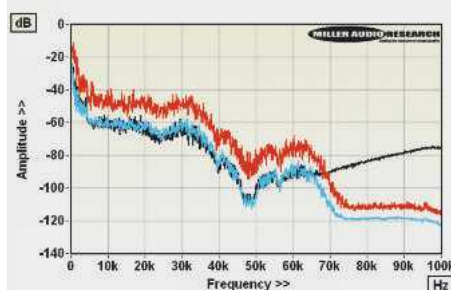
Following our Investigation feature [HFN, Jun '11] in which we examined the claimed quality of high-resolution downloads, *Hi-Fi News & Record Review* is now measuring the true sample rate and bit-depth of the HD music downloads reviewed on these pages. These unique reviews will be a regular source of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

LAB REPORT



These are genuine 96kHz recordings, the Prokofiev and Scriabin captured in St Petersburg's Mariinsky Theatre [17-20, 24-30] showing slightly higher ultrasonic noise [Graph, above]. Dynamic range and ~40kHz bandwidth are well used. **PM**

LAB REPORT



If the original recording format was DXD, the subsequent mixing and mastering of the four mic feeds evidently sees some downsampling to 96kHz – hence the notch and 'reflection' at 48kHz detected on 'DXD' and DSD128 [black] files. **PM**



COMPACT DISC



SUPRAAUDIO



DVD



BLU-RAY



VINYL



DOWNLOAD



ZÜRICH CHAMBER ORCH/DANIEL HOPE

Serenades for Strings by Elgar, Mozart (Eine kleine Nachtmusik) and Tchaikovsky (96kHz/24-bit, FLAC)

www.hiresaudio.com; DG 483 9845

The Zurich Chamber Orchestra debuted in 1945 under founder Edmond de Stoutz, and their earlier recordings have appeared on various labels (repertoire early classical to modern works). Violinist Daniel Hope became Music Director in 2016 and this is their fourth CD programme. In the Mozart (full repeats) accents are sharp, dynamics varied and inner voices suddenly pop up. To some it could seem a little precious – as one critic noted in a 2008 review, ‘Hope’s penchant for minute shadings and nuances can seem over-sophisticated’. His way with timing and accentuation works better in the later works where both slow movements are plumbed for expression. The soundstage has good separation and there’s unusual low frequency extension in this very recent ZKO Haus production. Interesting archive photos in the booklet provided. *CB*

Sound Quality: 80%



RAGNHILD HEMSING & TOR ESPEN ASPAAS

Beethoven: Violin Sonatas Op.30:3 & Op.47, 'Kreutzer'

(88.2kHz & 176.4kHz/24-bit, FLAC; DSD128; MQA)

www.hiresaudio.com; www.nativedsd.com; 2L 2L160

Not unlike the Andreas Staier ‘A New Way’ CD [Harmonia Mundi; HFN Jul '20] this one is marketed as Beethoven’s ‘Testaments of 1802’ – ‘the year Beethoven became Beethoven’ [*sic*]. While the earlier sonata has folk elements, Op.47 was composed in ‘molto concertante’ style, setting a new level for the duo sonata. The violinist here won the 2013 Bonn Beethoven Ring (she also plays the native Hardanger fiddle); Aspaas is her regular partner. They were recorded in Norway’s Sofienberg Church in 2019, the sound reflecting exactly what you see in the promo video – though I preferred a slight rebalancing to the left. Aspaas takes the lead, with Hemsing ever responsive – if without much tonal allure. But at best, these are two performances with a ‘feel good’ factor. *CB*

Sound Quality: 80%



PAPER MOTION

Paper Motion (DSD64/128/256/512; DXD, FLAC)

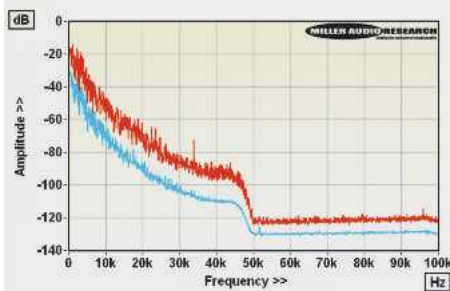
www.nativedsd.com; TRPTK TTK0006

If audiophile prog rock is a turn-off, look away now – you’ll also manage to avoid the pretentious sleeve notes of this self-titled debut set, including ‘inspired by the silence and noise that surrounds us... we thrive to make warm indie rock played with devotion’. I think they might mean ‘strive’, but add in the fact that the booklet takes a whole page to explain the philosophy of the label, and then another to list everything used, right down to the cables, and you can see where the ‘audiophile’ bit comes from. Only problem is, the ‘prog’ side of the equation is neither very progressive nor terribly interesting, setting out its stall with the somewhat dirge-like ‘Grey One’, and going on through tracks with titles like ‘Downfall’, ‘Gloom’ and ‘Cease To Exist’. I’m sure it’s all recorded with the utmost care and attention, but if the music doesn’t hold the listener’s interest... *AE*

Sound Quality: 75%

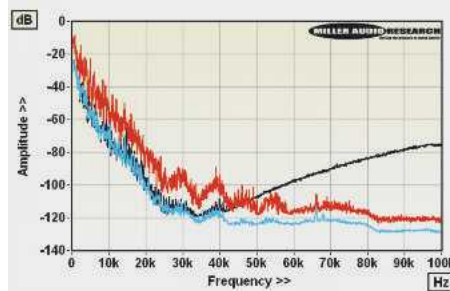


LAB REPORT



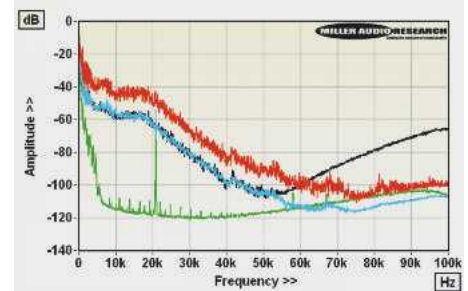
This is a clean 96kHz DG recording with no peaks beyond –1dBfs (typically from –5dBfs to –2dBfs). Good dynamic range and low noise too, with harmonics of the massed strings stretching out across the ~45kHz bandwidth. *PM*

LAB REPORT



Recorded in DXD by Lindberg Lyd AS the 352.8kHz master has been symmetrically downsampled to 176.4kHz [red, peak; blue, RMS] and cleanly converted to DSD128 [black]. Piano travels to ~12kHz, the strings out to 30kHz. A good ‘un. *PM*

LAB REPORT



Supplied in FLAC form, the DXD files are best unpacked to WAV before playback. All DXD tracks are normalised to a high –0.1dBfs while the DSD128 files all peak at circa –5.5dBfs [black trace]. Some spurious, esp. at 20.8kHz [green]. *PM*



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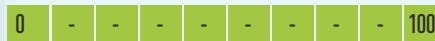
CASPER CLAUSEN

Better Way

City Slang SLANG50317; LP: SLANG50317LP

Clausen is lead singer in Efterklang, a Danish post-rock collective renowned for their imaginative instrumental arrangements and song structures, and that approach feeds into his debut solo album. Clausen tends to work up songs spontaneously from an 'intuition' and on the lengthy, mantric 'Used To Think' rides out on synthetic drum beats – a palette of bright, shifting sonics is introduced before his reassuring voice makes its entrance. The song was influenced by Spacemen 3; and Sonic Boom from that band produces here, creating a soundscape of great depth and detail. On 'Little Words' the treated guitars, flickering electronics and vocal harmonies combine in a potent mix of melody and experimentation. **MB**

Sound Quality: 95%



FLYING MOON IN SPACE

Flying Moon In Space

Fuzz Club FC138CD; LP: FC138V12

This Leipzig septet – which includes four guitarists – improvise at length in concert and they also generate song ideas this way. But on this dazzling debut their expansive workouts never outstay their welcome, and sit alongside shorter atmospheric sketches and near pop song interludes. They wear their '70s Krautrock influences on their sleeves, but favour the tight, propulsive rhythmic approach of Neu! and Can, which lends itself to dance music-style electronic treatments on 'Faces'. The ensemble create a surprising amount of space and the speedy drums, subtly woven guitar lines and vocal incantations of 'The Observer' give it an irresistible momentum. **MB**

Sound Quality: 85%



THE LEFT OUTSIDESS

Are You Sure I Was There?

Cardinal Fuzz CD/CD[R no cat no; LP: CFUL184

The wife and husband duo of Alison Cotton on viola and harmonium, and Mark Nicholas on guitar – they both sing – create a sparse, moody music that is steeped in traditional song, but carries an edgy modernity, with two reference points being Mazzy Star's eerie nocturnes and psychedelic-folk group Espers. 'November On My Mind' has a '60s West Coast breeziness, but the prevailing mood is sombre and stately. Cotton intones a folk-tinged melody over wah-wah guitar on the bittersweet 'Seance', but the darkness descends on 'My Reflection Once Was Me', which feels like a rural Velvet Underground with tolling drums and guitar chords, and ominous viola drones. **MB**

Sound Quality: 85%



PASSENGER

Songs For The Drunk And Broken Hearted

Cooking Vinyl PASS20CD1; 2CDs: PASS20CD2; 2LPs: PASS20VP1

Some break-up albums can be heavy going, but although Mike Rosenberg *aka* Passenger draws here on his own recent history, he appears to view his predicament with a certain feeling of liberation as he sinks another one. The songs are presented in both band and acoustic versions, and at times his vocal inflections are reminiscent of Cat Stevens – his heartfelt advice on 'The Way I Love You' is along the lines of Stevens' 'Wild World'. On 'Remember To Forget' Rosenberg is with a substitute for his lost love, his mixed feelings echoed by a bittersweet trumpet, and 'London In The Spring', with pedal steel guitar and strings, finds him again in love with life. **MB**

Sound Quality: 90%

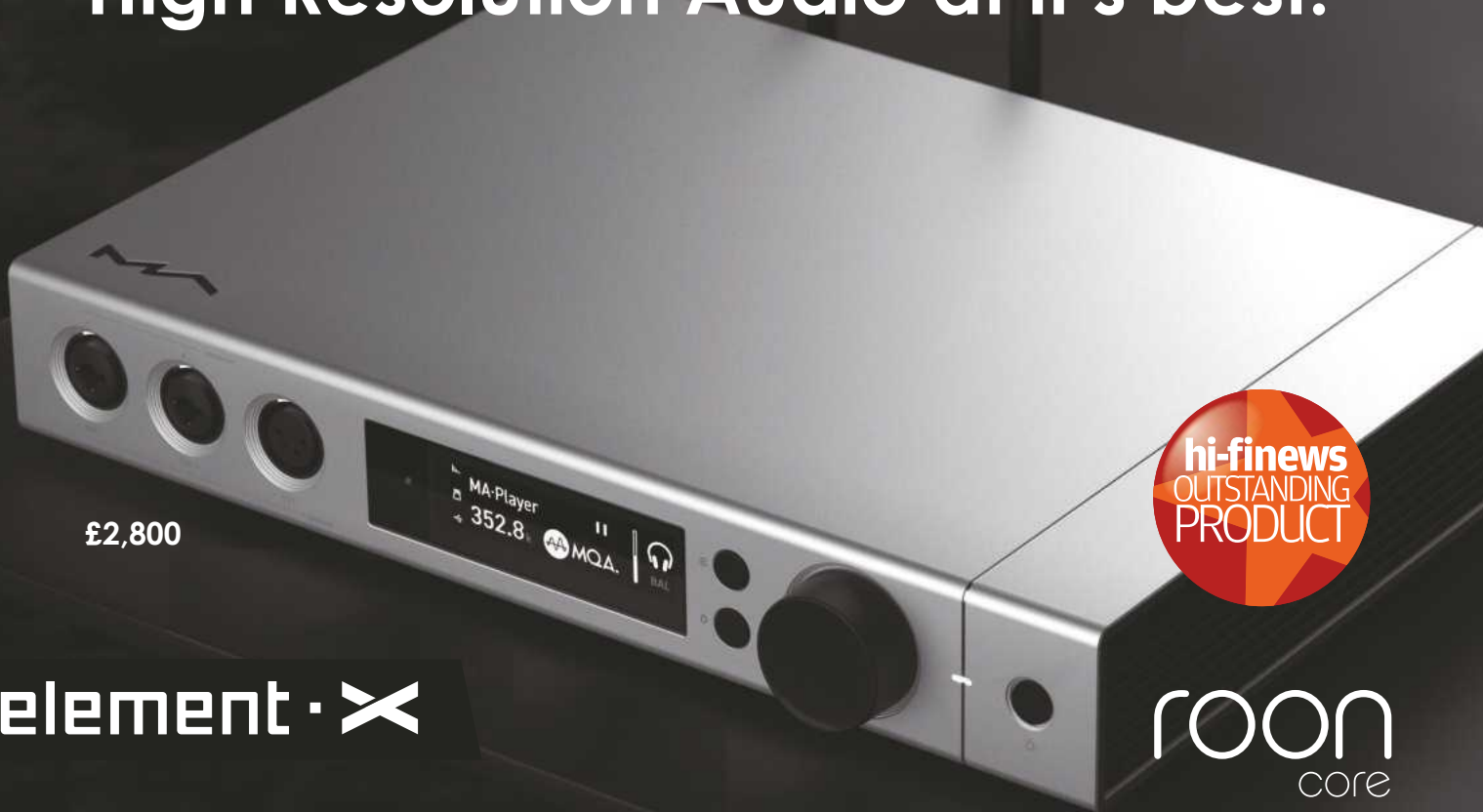


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COMPACT DISC



SUPERAUDIO



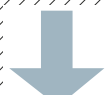
DVD



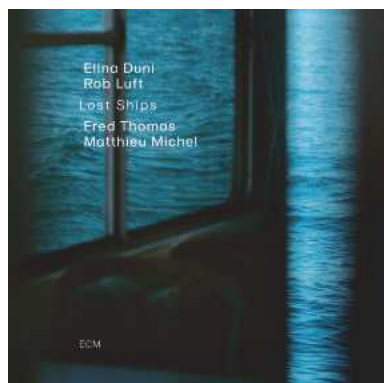
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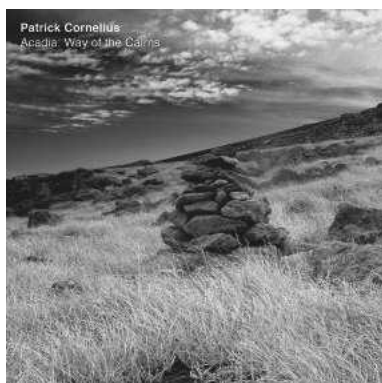


ELINA DUNI, ROB LUFT Lost Ships

ECM 0739322

This collaboration started in 2017, when the virtuoso British guitarist met informally with the Albanian-born, Swiss-based singer in Lausanne while she worked on her *Partir* solo album. Luft's versatility, electronics skills and selfless empathy helped Duni explore a variety of song genres. Which, with UK pianist Fred Thomas doubling on percussion and Swiss flugelhorn player Matthieu Michel, the two do brilliantly here, while their heartfelt title song and other originals engage with contemporary issues including Europe's migration crisis. Luft also gives perfect support in two traditional Albanian songs, where Duni still has the power to stop your heart. *SH*

Sound Quality: 90%



PATRICK CORNELIUS Acadia: Way Of The Cairns

Whirlwind Recordings WR4766; 2LPs: WR4766LP

Back in 2016, the Texas-raised, New York-based saxophonist themed his octet album *While We're Still Young* on A A Milne's poems. This time, he's partly re-convened the Transatlantic Collective of a decade ago and, as America's National Parks, including Acadia in Maine, come under threat, the group's new name makes a serious point. With dense yet free-flowing piano from Estonian pianist Kristjan Randalu, the music is driven by Luxembourg native Paul Wiltgen on drums and American bassist Michael Janisch (also owner of the London-based Whirlwind label). But don't miss the almost filmic nostalgia of 'Valse Hesitante', or the warm evocation of 'Seawall Sunrise'. *SH*

Sound Quality: 80%



VARIOUS ARTISTS Blue Note Re:imagined

Decca 710012 (two discs); 2LPs: 890927

Among the young artists revisiting their jazz influences here are London's Ezra Collective with Wayne Shorter's 'Footprints' (1967) and Alfa Mist, spacey on Eddie Henderson's 'Galaxy' of 1975. The opener is Blue Note at one remove as Jorja Smith covers St Germain's 'Rose Rouge', in which the French house/nu jazz artist sampled soul singer Marlena Shaw's 1973 live recording. But then come saxophonists Shabaka Hutchings, reworking Bobby Hutcherson's 'Prints Tie', and Nubya Garcia, following up her own album *Source* with a muscular tribute to Joe Henderson in 'Shade Of Jade'. Go online for a playlist that lines up these 16 new tracks with the originals. *SH*

Sound Quality: 85%



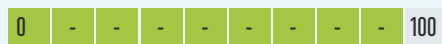
LAN TRIO (ARGÜELLES, LAGINHA AND NORBAKKEN)

Atlântico

Edition Records EDN1164, LP: EDN1164LP

Three very distinctive instrumental voices, in a refreshing and open-sounding lineup that justifies the label's 'super-trio' accolade as they launch their second album together. British saxophonist Julian Argüelles came to prominence with Loose Tubes in the 1980s and has recorded prolifically ever since. Like Portuguese pianist Mário Laginha and drummer Helge Andreas Norbakken, he's long been open to African musical influences, but plays with a European sensibility. He offers engaging musical logic on his clean-sounding tenor sax and is matchlessly clear and lyrical on soprano. Recorded in Lisbon, it's a sonically satisfying album as well as a musical treat. *SH*

Sound Quality: 90%



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CBSO/MIRGA GRAŽINYTĖ-TYLA

Britten: Sinfonia da Requiem

DG 483 9072 (download options MP3-96kHz/24-bit resolution)

Issued in digital form only, at a special low price (but without a booklet), this live recording was made towards the end of 2019 at the Hamburg Elbphilharmonie. It's the second DG recording by the young Lithuanian conductor: appointed to the CBSO following Andris Nelsons' tenure. Their first CD, music by Weinberg, won the *Gramophone's* 2020 'best album' award. Mirga Gražinytė-Tyla's *Sinfonia da Requiem* is markedly individual – her outer movt timings (9m 30s/5m 34s) contrasting with Britten's own, in his 1964 NPO recording for Decca (8m 51s/6m 37s). Her grip never falters in that slow *Lacrymosa* and if the young Britten's *Dies irae* sounds too clever by half, the emergence of the *Requiem aeternam* touches the heart. **CB**

Sound Quality: 95%



RAM SOLOISTS ENS/TREVOR PINNOCK

JS Bach: Goldberg Variations (arr Koffler)

Linn CKD609 (downloads to 96kHz/24-bit resolution)

In 1980 Trevor Pinnock made an Archiv LP of the *Goldberg Variations*, playing a Ruckers harpsichord. Here, however – with his Royal Academy players augmented by five strings, guests from the Glenn Gould Conservatory, Toronto – he's opted for an orchestration, not by a contemporary of Bach's, but (in 1938) by the Polish composer József Koffler, later executed by the Gestapo. Scored for four solo winds and strings the intricate transcription was recorded at Snape Maltings in May '19, and it's fascinating to hear how Koffler changes the instrumentation for each Variation. Pinnock's affection for the project shines through as does the RAM wind playing. **CB**

Sound Quality: 85%



JAMES EHNES, ANDREW ARMSTRONG

Beethoven: Violin Sonatas Op.30:3 and Op.96

Onyk ONYX4209 (downloads to 96kHz/24-bit resolution)

This fourth CD concludes the Beethoven cycle by these artists – they gave three Wigmore Hall recitals covering the ten sonatas, but the two recordings here were produced at Wyastone Leys. It's a recital hall soundstage but the earlier sonata is set closer to the listener. With, say, the fine Kremer/Argerich [DG] set you could say the players were complementary; however (as other reviews have noted for this series) with Ehnes and Armstrong it's a narrative as if voiced, with differing timbres, by a single person. The give and take, and Ehnes' soft violin playing make this a remarkable conclusion – for me, Op.96 is the loveliest of these works anyway. Recommended. **CB**

Sound Quality: 90%



BUDAPEST FEST ORCH/IVÁN FISCHER

Mahler: Das Lied von der Erde

Channel Classics CCSSA40020 (downloads to DSD256 resolution)

This is Iván Fischer's own 'Abschied' to recording Mahler Symphonies, and was made back in March '17, with Gerhild Romberger and Robert Dean Smith (sounding more at ease under studio conditions than in the Jurowski/Pentatone live version). But it's the German mezzo whose vocal technique is so compelling – producer Jared Sacks has set both soloists slightly left of centre with a finely judged balance. Fischer has made a video where he talks about this score and in the finale his control of the oriental elements dancing then darkening to become serious in intent is quite masterly. Of the post-Klemperer versions this is the one to have. **CB**

Sound Quality: 95%



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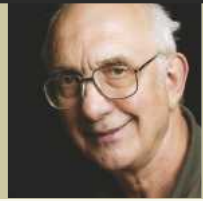
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Barry Fox
Technology journalist

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

Counting the cost

Does it ever bother you how much of your electricity bill is down to using your hi-fi system? **Barry Fox** has fitted smart metering to give him some answers, but doesn't like the promo ads

How much power is your hi-fi system using? How much is it costing you to run it at full wick, and how much to leave all or part of it on standby? Good questions, which I used to try and answer with a rather expensive removable mains socket display that I clumsily had to plug and unplug between individual bits of kit.

Now I can do it for free with a much smarter and more accurate system that cost me nothing. How so? I simply gave in to all the current advertising pressure from the gas and electricity supply companies to let them install smart meters, at absolutely no cost to me.

Now I can carry a low voltage portable LCD display round the house, switching stuff on and off and plugging and unplugging equipment on standby, while watching the display give a watts-being-consumed readout that updates a few seconds after switching or plugging.

NOT SO SMART

Here is not the place to dig into the details of how smart meters work. Briefly, the electricity or gas meter passes usage readings to an electronic hub which relies on a dedicated cellphone network to send the meter readings long distance to a data collection agency. The agency then tells the gas or electricity supply company how much energy a customer has used, and the company sends out a bill.

The hub, hidden in a cupboard or under the stairs, also uses a low power Zigbee radio link to send the meter readings a short distance to a portable domestic display. Thanks to bad planning there are two system

RIGHT: The author's portable power meter showing watts consumed in near-real time



RIGHT: How much are you spending when you leave your hi-fi system on standby, or rockin' out to music with the volume level up high? You can easily get precise answers for free nowadays



KENON/SHUTTERSTOCK.COM

generations: SMETS 1 and 2 (Smart Meter Equipment Technical Specifications). All you need to know really is that you need SMETS 2 to let you swap energy suppliers.

It will take an engineer several hours to fit the kit but it really does cost us nothing. The energy companies foot the bill. Why? One reason that the energy companies don't talk about is that it means they can eventually sack all their human meter readers.

More important, and what the energy companies also don't talk about, is the fact that smart meters can be remotely switched, to turn off our gas and electricity. So if people don't pay their utility bills, and then won't let fitters into the property, the supply company no longer needs to send out men with tools and shovels to cut the underground supply cables or gas pipes.

On the other hand, if you are someone who pays your bills, having smart meters fitted is a win-win situation. You no longer have

to scabble around trying to read your meters to avoid being 'estimated' – and you get a wonderful free and accurate portable power meter. How come you didn't know this, perhaps? Because

the gas and electric companies are advertising their smart meters in a very clumsy way.

TV advertisements picture wind farms generating electricity and assure watchers that 'smart meters are helping to upgrade Britain's

outdated energy system'. Full-page newspaper ads show a wind turbine with the headline promise that 'smart meters help give Britain greener energy'.

HARD TO COMPLAIN

I complained to the Advertising Standards Authority about all this, and my complaint was rejected. Given my past experience of lodging complaints that rely on technical skill to evaluate, I wasn't that surprised. Much more importantly, it emerged that the ASA has recently changed its complaints procedure, in a way which will make it even more difficult to complain successfully about adverts for broadband and suchlike. Put another way, who is now watching over the watchers? ☹

'It's really so they can sack all their meter readers'

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Barry Willis

Journalist for top American audio-video publications

While his main interest is high-end audio, Barry Willis also writes about the culinary industry, visual art and theatre for a huge variety of US newspapers and magazines

Worlds apart

After trying to debate audio techniques and aims with others wedded to different technologies, **Barry Willis** regretfully concludes that there's little mutual understanding to enable discussion

A friend I see on a semi-regular basis is a digital engineer in Silicon Valley. His specialty is circuit board design for high frequency signal processing, the kind of work that requires microscopes and wide-bandwidth (20GHz) storage oscilloscopes.

Marvin, as I will call him, is far from a narrow-focus engineering nerd. He's pretty familiar with pop music, is a good amateur athlete, and is also a decent carpenter, mechanic, and designer. But he has no interest in analogue electronics, high-performance audio, or hi-res video. He and his wife don't own a TV or a hi-fi system of any kind. Their phones and computers deliver all the entertainment they can possibly want.

COMICALLY INEPT

He was visiting recently and while looking over my electronics workbench, spied a Leader wow-and-flutter meter alongside some cassette and reel-to-reel alignment tapes. He asked in all honesty what the meter was. I replied that it was for testing the speed and stability of turntables and tape decks.

He looked at me blankly as if I were describing a device for testing the compression ratio of a steam engine. He also noticed my harmonic distortion analyser, an old piece of test gear that

I had built from a kit in student days, one somehow, amazingly, still working. I explained that it generated an audio tone, fed it to a unit under test, then nulled the test unit's output – 'whatever remains is distortion, expressed as a percentage of the fundamental'.

Another blank look. He and I are both electronics experts in our respective fields, but we are like native speakers of a common language whose dialects are so diverse that we cannot communicate. I couldn't design a high-data-rate circuit



LEFT: Essential items for working on tape machines – a Leader LFM-39A wow and flutter meter, and one of the author's alignment tapes



board if my life depended on it, and he wouldn't know where to start if asked to fix a misbehaving receiver.

Our conversation can sometimes be comically inept. I once tried to chat with him about how power supply design is crucial to the performance of an amplifier, and he cut me off with 'power is power', as if any further discussion was pointless – and for him, it was. It would have been just as willfully ignorant on my part to say something stupid such as 'bits is bits', the sort of catch-all shortcut uttered by people who have only a marginal understanding of digital technology.

My interactions with Marvin have been presaged by others with digital engineers. Years ago I had a consulting gig with a Silicon Valley maker of telephones intended for tabletop use in conference rooms: pods containing speakers and microphones to cover 360°.

The goal of the project was to make such a phone that could operate all day on battery power, without the need to connect to the electrical grid. This was during the digital era, but well before we were saturated with all things digital.

In our first engineering meeting, I suggested that they start by picking drivers (in my language, tweeters,

midranges, and woofers – in their language, bits of software) with high efficiency ratings, as a power-saving strategy. I was greeted by a row of blank stares.

It was only then I realised that they didn't understand some basic audio technical specifications. They'd been selecting drivers based on bulk price. I also counselled bandwidth-limiting as another power-saving option: cutting off the top octave and the bottom four in order to limit power usage.

While these frequency ranges are important for music, they don't contribute anything to conversational intelligibility. Limiting them reduces energy demand and has been standard practice since the early days of telephony.

DIFFERENT COMPARTMENTS

We had what I thought were a few productive meetings and the project continued without further input from me. It has always bugged me that what I thought was common engineering knowledge proved to be not so. After decades in this industry, seeing designers re-invent the wheel time after time, I still wonder why technical expertise is so frequently compartmentalised. ☹

'They didn't understand basic audio specifications'

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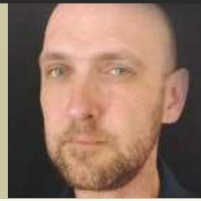
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Mark Craven
Contributing Editor

Mark Craven has been editor of *Hi-Fi News'* sister title *Home Cinema Choice* for nearly a decade and has a passion for music, film and everything in between

Music or muzak?

Mark Craven is poised to go through his old collection of cassettes, and recalls how they made you listen right through. Now we have slick alternatives, but do they hold your attention less?

Last month I added yet more hi-fi hardware to the Craven household. I use the term 'hi-fi' loosely, because the portable cassette player/FM radio/'boombox' that's currently sitting on my kitchen worktop isn't going to give my living-room set-up sleepless nights, but at least I can now reacquaint myself with a tape collection that's spent the best part of two decades stored and ignored in my attic.

START TO FINISH

I used to have a soft spot for cassettes, right up to the time when I bought a new car and the integrated sound system didn't have a tape player. It was a format that came with its own little issues, such as having to tighten the spool with a pencil, or accidentally cracking those oh-so-fragile cases. And more than CD and vinyl, and anything since, it encouraged users to listen to albums from start to finish (with a brief pause to flip to Side 2), thanks to the guesswork nature of its fast-forward/rewind functions.

I once had multiple racks to house my cassettes, latterly replaced by CD storage towers. Such low-cost bits of furniture have an important role to play, because the process of choosing what to listen to is, for me, a cherished part of the hi-fi experience. And to my mind, at least, it's something streamed music systems just can't quite provide.

There's been a long-running battle between devotees of physical and digital media, with sound quality typically at its heart. Lossless and hi-res formats continue to gain traction, tipping the balance in favour of digital. Yet there's another skirmish that rumbles on, where physical media has the upper hand. And that's because it is *physical*. 'Pride of ownership' is one phrase used to explain the sense of joy we get from looking

RIGHT: Cassette tapes – remember them? Pictured here sitting in storage racks, back in the day they might also be displayed in tower units or other functional furniture



PHOTO: HELLO TWINK

at, handling, and displaying our music collections – and why IKEA has made a small fortune selling its Expedit and Kallax storage units to vinyl enthusiasts!

BREAKING BARRIERS

Beyond that, of course, is the fact that physical media is so simple to use. Times I've been unable to work out how to operate a CD player? Zero. Times I've failed to pair my smartphone with my network player? I've given up counting...

Back to the listening process. Streaming platforms are getting better in this regard, offering user interfaces rich in album artwork and facilitating exploration. They're breaking down barriers between your digital collection and your ears, too. The streaming music platform Tidal, for example, recently launched Tidal Connect, which is like Google's Chromecast on steroids, and finally enables the platforms' premium formats (including MQA and Dolby Atmos) to be ushered wirelessly from the Tidal app to compatible hardware from KEF, Bluesound, DALI, Monitor Audio, *et al.*

But (there's always a but) the slickness of listening digitally can turn enjoying music from an active experience to a passive one. Hit play on your Spotify account or shuffle your Roon playlist and it might be hours until you need to even think about what to hear next. At times, that's fine. But often I find myself wandering off and doing something else entirely different, while my digital library carries on regardless.

THE WAY WE LISTEN

I'd even argue that, despite the quality now on offer, digital music isn't what hi-fi is all about. There's no pride of ownership to a FLAC library, there are no pleasing rituals to thumb-scrolling on a smartphone, and it can turn music into muzak. For audiophiles spending considerable money on a system and considerable time getting it set up, it makes sense to also spend time choosing what to listen to, and then sitting down and actually listening to it.

I'm not jumping on the retro format bandwagon, as there's only so much exhilaration to be had from 30-year-old Prince, Led Zeppelin and Aerosmith tapes. But the way we used to listen to music certainly had a lot going for it. 🎧

'I'd even argue that digital isn't what hi-fi is all about'

Loudspeakers of Distinction



LEFT: Eggleston Works Emma Evo. MIDDLE: Amphion Argon 3LS. TOP RIGHT: Kudos Titan 6o6. BOTTOM RIGHT: Kerr Acoustic K32o.

Amphion Designed and made in Finland with a unique controlled dispersion technology enabling their speakers to achieve a high-quality sound repeatable in a variety of rooms. The Argon range is well made and offers exceptional value. They are very natural in tone and timbre with no excessive brightness. Bass is extended, well controlled and without exaggeration. A passive radiator design used from the mid-way up the model range offers excellent room integration.

Eggleston Works A renowned US company making high quality loudspeakers with curved sided cabinets and facets that reduce resonances, finished with a durable metallic polyester paint. An immediately engaging sound, delivering a large-scale sound, wide beyond the outer edges of the speakers, and layering rearwards for a deep sound stage. Extended high frequencies without being forward, with an authoritative bass resolving good textural detail. Voices are rendered accurately and in correct proportion to the instrumentation. Fast dynamics with excellent timing.

Kudos Audio A long-established UK company making some of the finest sounding speakers today. Their speakers have a neutral tonal balance, very precise imaging, and are well balanced across all frequencies. High resolution of fine details producing a broad and deep soundstage. Bass is very fast and controlled especially in the Titan range where isobaric technology is employed. Their models use SEAS drive units uniquely designed for Kudos.

Kerr Acoustics An artisan UK manufacturer using some of the finest drivers including True Ribbon high frequency units, and Scanspeak or Volt units for mid-range and bass duties. A birch-ply transmission line cabinet further differentiates them from others. Contrary to many transmission line designs, these speaker have fast and tight bass response that can be placed closer to walls than most dynamic designs. An open and large sound stage, a natural presentation, and an impressive ability to disappear.



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

Easily tripped

Jim Lesurf mulls over the options available to us to keep our homes electrically safe and at the same time reduce the bane of RFI interference in our hi-fi systems – it's swings and roundabouts

I live in a house old enough to still have fuses to protect one from excessive currents being drawn from the mains. The concern in the past was that excessive current due to a fault might produce a fire. The risk of getting an electric shock was dealt with by assuming that all the wiring, plugs, etc, should insulate the users from any live wires. However, as domestic uses of electric power have increased, the powers that be decided that people need greater protection. So modern homes have devices such as a pre-installed ELCB (Earth Leakage Circuit Breaker).

BLOCKING RFI

I can't argue against the use of these because they have certainly saved many lives – particularly those of children. And I can recall more than one time when I've had a 'belt' from the mains because I was unwary or didn't realise something was wrong. Unfortunately, there is a fundamental clash between the way an ELCB operates and providing effective mains RFI (Radio Frequency Interference) suppression.

An ELCB will react to even a slight 'imbalance' between the live and neutral currents, or when it senses the presence of more than a very tiny earth return current. These are all assumed to be a sign that something is wrong – and that, indeed, someone in the home may be experiencing an electric shock from the mains wiring. Hence the response is to immediately disconnect the mains power.

However, various forms of RFI enter the mains wiring via the live and/or neutral wires. To block this a filter can take two approaches: one is to insert a series impedance in the live and neutral paths which then presents a barrier to the RFI currents. The devices used may be either inductors, or ferrite blocks, or both.

'ELCBs fitted have certainly helped save many lives'



ABOVE: Switching an MCB (Micro Circuit Breaker) on a UK domestic electrical consumer unit. In the old days you had to cut appropriately rated fuse wire and refit it to your mains plugs

The other is to connect small 'shunt' capacitors. These link the live/neutral/earth leads and so 'divert' RFI currents before they can reach any equipment that they would otherwise affect.

Traditional, high-performance mains RFI filters have used a combination of the above techniques in order to maximise their effectiveness. But a snag arises when you try to use live-earth or neutral-earth capacitors, because these will also 'leak' a small current at 50Hz.

Since the live mains voltage is normally much bigger than the neutral wire voltage this draws more current from the live than from the neutral, and the difference is sent back up the earth wire – promptly triggering the ELCB! You can avoid this by choosing shunt capacitors with a much smaller value. But they then become much less effective for dealing with low frequency interference, which tends to be the most audible if it can sneak inside your hi-fi system. As a result an ELCB and really effective RFI filters tend not to make good housemates.

The use of an in-series mains isolation transformer helps you to dodge this problem as it is able to prevent any live/neutral imbalance from getting back to the ELCB. So it can isolate the cause of what is upsetting the ELCB. But it also means you then need more care regarding the neutral wiring, and items powered from that transformer.

SPIKING IT

Clipping ferrite blocks onto the outside of mains cables helps block 'common mode' RFI. But not when the RFI currents on live and neutral are going in opposite directions. So you might get a better result from ferrite blocks or beads placed individually on the live, neutral, and earth wires. But to be honest, even ferrites would work better if you can have shunt capacitors to follow them... though you then risk annoying the ELCB again!

Using 'spike suppression' voltage dependent resistors tends to avoid these problems, but they can be a bit hit-and-miss when it comes to removing RFI. However we shouldn't complain too much. After all, you can't really enjoy listening to your hi-fi set-up if you've just had an electric shock... ⚡

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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

All change!

Companies that have created iconic audio products have been obliged to find new owners. **Steve Harris** traces the history of some UK manufacturers and brings their stories up to date

Great brand names somehow survive any number of changes of ownership. Britain's three most senior speaker companies are all cases in point. Celestion is the oldest, dating from 1924. In 1947 the company was absorbed by a UK offshoot of the American Rola company, becoming Rola Celestion. Production moved from Kingston-upon-Thames to the Rola factory in nearby Thames Ditton.

In 1949, Rola Celestion was bought by Truvox, owned by the formidable Dr D D Prens. Born in Vilnius but living in Berlin, in the 1920s Daniel Prens became a doctor of engineering and one of Germany's best international tennis players. But in 1933 the Nazis banned him from competition because he was Jewish. He moved to England and set up Truvox, which later made tape recorders and, finally, floor-cleaning equipment.

ON THE TANNOY

At the end of 1968 Celestion opened a new factory in Ipswich, and the G12 driver, used in the Vox AC30 guitar amp, was the first product made there. In its mid-1970s heyday, the factory employed 900 people. Dr Prens passed away in 1991, and the following year Celestion was sold to Gold Peak of Hong Kong, which at the same time also acquired KEF.

When Guy R Fountain founded Tannoy in 1926 he started by building chargers for radio batteries, using a tantalum alloy rectifier – hence the name. But he soon opened up a market for public-address systems, and, in 1947, Tannoy's brilliant engineer Ronald Rackham came up with the Dual Concentric. Tannoy was bought by the American Harman Group in 1974 and moved to a new Glasgow factory in 1976. A year later, Dr Sidney Harman sold off his business interests because of his

RIGHT: Portrait of Tannoy founder Guy R Fountain. And (below) the company's Autograph Mini, with its tiny 4in Dual Concentric driver, carries Guy R Fountain's signature, just like the big 1950s Autograph

role in the Carter administration, and Tannoy became part of Beatrice Foods group.

In 1981 the directors bought the company out from Beatrice and, in 1987, merged it with Goodmans to become Tannoy Goodmans Industries or TGI. In 2002, TGI was acquired by TC Group of Denmark. In 2008, TC was set to merge with the Gibson guitar company, but this didn't happen. Instead, in 2015 TC was absorbed by Music Group, since renamed Music Tribe.

Gilbert Briggs started Wharfedale in 1932 and continued at the helm until 1958, when he sold Wharfedale to the Rank Organisation. Raymond Cooke, his technical manager since 1956, soon left to found KEF. Wharfedale went on to open a big new Bradford factory in 1967.

But in 1982, following a deep recession, Rank closed the factory while

it sought a buyer. Wharfedale re-opened under the auspices of Tradewest Ltd. Despite this hasty reorganisation, 1982 also saw the launch of a seminal product: in the form of the original Wharfedale Diamond speaker, selling at £65 a pair.

In 1993, after more tough times and further changes, Wharfedale re-emerged as part of the Verity Group, a new entity also encompassing Mission and Cyrus, and which two years later would take



over Quad. Verity disposed of these interests in 1997 to transmute itself into NXT. Wharfedale then became part of Hong Kong's International Audio Group, headed by Michael and Bernard Chang. IAG grew out of the brothers' Sanecore company, a distributor of AV, camera and lighting brands.

GOT THE T-SHIRT

So where are they now? Wharfedale is now one of the half-dozen British brands in IAG's portfolio. Back in 2008, IAG licensed the name to Argos for electronics (not speakers), allowing the store chain to sell Wharfedale-badged TVs, DVD players and DAB radios. But today, Wharfedale still offers the latest Diamond models among its loudspeaker ranges.

Tannoy's commercial installation and pro audio products today outweigh its sales of consumer speakers. Yet happily, some Tannoy speakers are still being built in Glasgow. Celestion ceased to make complete speaker systems back in 2006, KEF having proved to be the stronger consumer brand. But Celestion still thrives, making drivers for nearly 70 guitar and bass amplifier manufacturers. And even if you're not a roadie, you can still buy a Celestion t-shirt. ☺

'The old
Wharfedale
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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.

DOLBY: HISS AND MISS PLAYING TAPES ON NON-DOLBY OPEN-REEL

The Dec '20 issue of *HFN* carried a wealth of useful information on buying vintage reel-to-reel recorders. However, neither Ken Kessler's excellent Investigation feature called 'Top 10 open-reel decks' nor the piece on reel-to-reel recorders reprinted in 'From The Vault', mentioned Dolby.

I have been lucky enough to acquire a Revox A77 MkIV machine in near-mint condition, the variant supporting Dolby B-type noise reduction for reducing tape hiss. This is based on the same principles as the professional Dolby A system, but simplified for use in consumer recorders.

If one plays pre-recorded vintage tapes that have been Dolby-processed (ie, with increased amplitude of low-level signals in a variable range of high frequencies), they will require Dolby playback processing to reduce these levels back to the

original signal. So it would appear that these tapes are unplayable on (the majority of) tape recorders?

I assume that a few of the fine machines featured in the pages of the December issue do support a Dolby function, but that it was not mentioned. Thank you for your very interesting magazine!

Daniel Deloddere, via email

Ken Kessler replies: Because it was less necessary than for cassettes, Dolby B pre-recorded open-reel tapes were not much more successful than Dolby FM. To provide context, out of 1600+ pre-recorded tapes I've acquired over the past three years, all on major US labels, all ¼-track, and both 3¼ and 7½ips, only six are Dolby-encoded. I don't own a Dolby-equipped open-reel deck, so this was my solution to enable proper playback of these tapes: I found three external Dolby B processors (one Rotel and two from TEAC) for £25 apiece on eBay!



ABOVE: Reader Daniel's Revox A77 MkIV with Dolby B selected via a toggle switch

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Music to our ears

STREAMING, FRESH SOUNDS AND *HFN*'S RECORD REVIEWS

I just wanted to give you some praise for the magazine's fantastic Album Reviews section. Like most readers, I imagine, I buy each issue for the equipment tests and for years skipped across the music review pages, wishing more space could be allocated to equipment. Well that changed a few years ago when it dawned on me the Album Reviews were a goldmine of fantastic music to seek out and listen to. This is especially true when it comes to streaming.

Together with the monthly Vinyl Icons and Vinyl Release features your Album Reviews have introduced me to so much more new music that I can't thank you enough. Just now I'm listening to Shoes' *Elaktrafied* and it's everything and more Ken Kessler said in his Oct '20 review of the album. Keep up the great work in guiding readers to so much wonderful, life-affirming music.

Bill McCardle, via email

Ken Kessler replies: Like many of you, I am in this for the music, regarding hardware as a means to an end, and I delight in celebrating lost artists. Because of the limit of four per category, we try to review discs worth your attention. Shoes? One of many great bands worth discovering, so my mission has succeeded. And just wait until you hear Sophie Madeleine [see p29]!

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OUR HI-FI WORLD THROUGH THE EYES OF WHITWORTH



"IT'S DIFFICULT TO TOAST NEW YEAR WITH THESE EXCITABLE HIGH-END TWEETERS!"

Power struggles

MAKING SENSE OF MAINS CONDITIONERS AND EARTH LEAKAGE

In the April issue Jim Lesurf says 'old-fashioned RFI filters' can cause excessive earth leakage currents that may cause problems with Earth Leakage Circuit Breakers (ELCBs) tripping. With the purchase of our first LED TV I bought a mains conditioner from a well known brand to go with it. I already used one with my hi-fi system and it seemed effective.

We subsequently began having problems with our oven, the main ELCB tripping when the grill was switched off. I had our wiring tested and the outcome was that there was excessive earth leakage. This was narrowed down to the hi-fi spur and the circuit supporting the TV. The electrician suspected the mains conditioning unit and removing it

cleared the problem. He then did a PAT test on both mains conditioning units and they both failed on earth leakage. So it isn't just old-fashioned conditioners that cause problems.

I ended up putting the hi-fi onto a new spur, supplied from part of the consumer unit not fed via the ELCB via a 1.5kW balanced transformer. Ferrite rings are distributed, including the incoming meter tails, and it seems that bass has benefited the most!

Denis Holliday, via email

Jim Lesurf replies: If the people who'd written the standards for ELCBs had talked to AC filter designers the problem might have been avoided. But users may have to find a 'fix' of the kind you have used. See my Opinion [p111] for more.

Kick out the cables

CAN FIBRE OPTIC CONNECTIONS BEAT USB INTERCONNECTS ON NOISE?

I'd like to respond to Paul Miller's reply in the Dec '20 issue to Paul Radford's question on USB cable measurements and the difference in sound quality between varying USB interconnects. USB cables can introduce analogue noise into a DAC and if the DAC's circuitry isn't isolated from such noise, it is possible it may affect performance. Measurements show this effect to be minor at most and that the noise mostly affects those DACs that measure poorly to start with.

The solution is to design DACs that accept fibre optic inputs. So long as the signal is bit-perfect, such a connection cannot be improved upon and any equipment upstream will be irrelevant when it comes to sound quality. MSB produces such DACs.

I have posited this thesis to both DAC and streamer designers alike

and have yet to hear an argument to the contrary. Are there any?

Michael Kandarakis, via email

Paul Miller replies: Toslink optical connections were introduced alongside their electrical S/PDIF 'equivalents' (on coaxial/BNC) for this very reason back in the late 1980s/early 1990s. It was understood from the very beginning that only an optical link could entirely eliminate circulating RF and other noise between a CD transport and DAC. However, a compromise exists in the limited bandwidth/risetime and transmission distance of popular optical transmitters and receivers, and the 1mm-diameter PMMA core between them. Early experiments with 'faster' AT&T optical systems, with finer glass-fibre interconnects, were promising but the idea never achieved mass appeal.



ABOVE: Rear of iFi Audio's ZEN Blue DAC with its Toslink optical output glowing red

JITTERBUG

USB Filter



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

Yes and no: Using the same equipment and a quality DAC, a 24/96 file (for example) will always sound better than a CD 16/44.1 file ... but, even a single JitterBug will often allow a CD file to be more musical and more emotionally stimulating than a Hi-Res file without the benefit of a JitterBug.

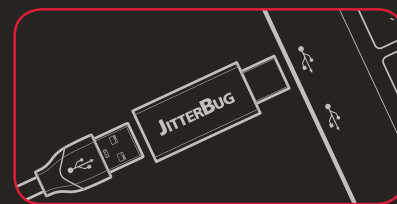
Noise is the problem. Real noise—the kind you can't hear directly. Most often, the word "noise" is used to describe tape hiss or a scratch on a record, but these sounds aren't noise; they are properly reproduced sounds that we wish weren't there.

Problem noise is essentially random, resonant or parasitic energy, which has no meaning. It can't be turned into discrete sounds, but it does compromise signal integrity and the performance of everything it touches.

JitterBug's dual-function line-conditioning circuitry greatly reduces the noise and ringing that plague *both* the data and power lines of USB ports, whether on a computer, streamer, home stereo or car audio front-panel USB input.

A single JitterBug is used in between devices (i.e., in series) as shown below. For an **additional "wow" experience**, try a second JitterBug into another USB port on the same device (such as a computer). Whether the second port is vacant, or is feeding a printer or charging a phone, JitterBug's noise-reduction ability is likely to surprise you. No, the printer won't be affected—only the audio!

While a JitterBug helps MP3s sound a lot more like music, high-sample-rate files have the most noise vulnerability. Try a JitterBug or two on all your equipment, but never more than two per USB bus. There is such a thing as too much of a good thing.



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Cornered by speaker choice

READER SEEKS HELP TRACKING DOWN ALL-ANALOGUE ACTIVE BOOKSHELF MODELS

I want to buy bookshelf speakers and was drawn to the KEF LS50 W as I have brought analogue feeds to wall alcoves to avoid visible, or trailing wires. But while you can bring left and right analogue signals to the righthand speaker with the LS50 W, the left signal is digitised and fed to the left speaker via a USB lead. I would thus have to dangle a USB lead across my mantelpiece or hearth.

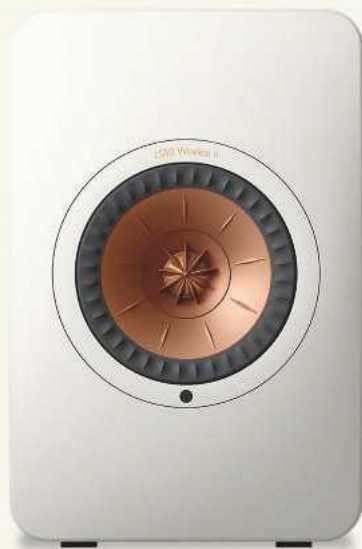
I then looked at active speakers to see if there were any that were all-analogue. One of the first was the B&W Formation Duo (I should add that I was looking for speakers in a white finish). The B&W models look wonderful and are clearly very high spec. However, they are the most avowedly digital speaker of any, and can only be fed via Wi-Fi or LAN inputs. When I installed the alcove wiring I installed LAN cables, so I *could* use these speakers, but if you want to drive them from an analogue control unit you have to use an A/D converter unit, which B&W makes.

The Dynaudio Focus 20 XD also seemed suitable, but then I discovered the crossover circuitry operates in the digital domain, and then feeds digital power amps. Is there anybody staying analogue all the way, with a choice of finishes?

There *is* the Acoustic Energy AE1 Active at £1000. I'm not ruling out digital, but it does worry me that A/D and D/A conversion is used so readily. For speaker manufacturers to design digital (Class D?) amps for their own drive units can be no bad thing as they can optimise the interface. But I'm surprised how hard it is to find an all-analogue product.

Nick Willans, via email

Andrew Everard replies: The KEF LS50 Wireless II would be one solution, as it adopts an entirely wireless connection between the two speakers. Yes, you can connect the two with an Ethernet cable, but they connect wirelessly at up to 96kHz/24-bit, which should be more than adequate for most needs. The alternative would be to look at one of the wireless music systems, such as the Denon Home range. The loudspeakers in this lineup have a 3.5mm 'aux' analogue input, and



ABOVE: KEF's LS50 Wireless II loudspeaker uses wireless connection and costs £2250

can then send the sound to a second speaker wirelessly, creating a stereo pair.

Beyond that, one of the conventional active speaker systems, such as the AE1 Active, would be a good choice, but such speakers tend to be aimed at the 'pro' user, so the choice of finishes is limited. However, the Dynaudio LYD range comes in white, while Focal's Solo6 Be speakers are available in a red wood finish, and use hybrid BASH technology to drive the bass, and Class AB for the treble. The Genelec 80-series is also available in white.

If you're going to use the speakers in alcoves, a degree of built-in tuning in the speakers to compensate for positioning would be useful. The Focal Solo6 Be has adjustments for bass and treble levels, but only has balanced inputs, so would need adapters to connect it.

I wouldn't get too hung up on the question of digital amplification (Class D amps are typically analogue rather than 'digital'). For use in active loudspeakers, where size and thermal efficiency are important, Class D amplification has its advantages, and there are more than a few fine-sounding Class D modules found in some very high-end amplifiers. But to return to your main point, digital signal-handling makes a lot of sense in wireless systems such as the KEF, Formation and Dynaudio Focus models you mention. It's much easier to transmit a digital signal wirelessly between loudspeakers!

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A double helping of digital dilemmas

HARD DISKS, SAMPLE RATES AND A DAC THAT DISAPPOINTS... WE HELP YOU FIND RELIEF FOR YOUR HI-RES HI-FI HEADACHES

About a year ago I bought a very expensive secondhand DAC without having heard it first. Yes, I know, it's a mortal sin for us audiophiles but this is the first time I've committed it. Synergy is important! My reason for buying it was that I thought I'd at last be able to enjoy my 1.5TB hard disk of music.

But alas, the sound is clinical compared to when I listen to my LPs on my Acoustic Solid Black turntable with Ortofon Quintet cartridge played through a Pro-Ject Tube Box SE II phono stage. What's worse, my CDs also sound better played on my BlueNote Koala CD player or Oppo BDP-105EU [*HFN* Jan '13] when these are not connected to the DAC. When these players are connected to the DAC, the sound doesn't improve.

I'm 71, fairly useless when it comes to anything digital and not especially confident about how to connect this kind of equipment up. The DAC was installed by a dealer, with cables going into the DAC and XLRs running from it to my Unison Research Unico 200 amp with Mullard tubes. If I were to buy the Musical Fidelity MX-DAC [*HFN* Oct '20] to replace the secondhand DAC, what will I need to make the music stored on my hard disk come to life?

Espen Lange, via email

When I use a digital source, it is from my laptop running Windows 10 via a USB connection to a Devialet Expert Pro 220 integrated amp driving Sonus Faber Amati Tradition [*HFN* Oct '17] speakers. But I find the sample rate is always 48kHz, whether it's Radio 3 via BBC Sounds or a high-resolution music file. I have just discovered that you can manually change the sample rate in Windows 10 but I'm not sure if there is any point in setting



ABOVE: Devialet's Expert Pro 220 stereo integrated amp features a 'Magic Wire' DAC



ABOVE: The Musical Fidelity MX-DAC and (below) iFi Audio's iDefender+ filtering device

it to, say, 96kHz or 192kHz as this may be higher than the source rate.

One alternative might be to transfer the music files to a USB thumb drive and plug this into my Oppo UDP-205 player. But then it will be converting from digital to analogue and back to digital again in the Devialet amp. Any advice would be really appreciated.

Martin Phillips, via email

Andrew Everard replies: Two letters, and two sets of digital problems. Without knowing how Espen is playing his files from his 1.5TB hard disk, it's hard to give definitive advice, but I assume from the information to hand that it's via a computer into the DAC via USB, and thus into the amplifier. In that case, a cause of the clinical sound could be noise on the USB line, which is hampering the efforts of the DAC. An audio-type USB cable – one with the usual 5V power line on the connection severed – might remove one source of noise, but I'd suggest this is something Espen should explore with his retailer in the form of a loan cable to try. An alternative would be a filtering device

between the computer and DAC, such as AudioQuest's



pioneering JitterBug [*HFN* Oct '15] or either of iFi Audio's iDefender+ and iSilencer+ solutions.

The same company's iGalvanic3.0 may go even further in silencing any noise on the USB line, using a combination of galvanic isolation and re-clocking/regeneration of the USB audio, but it's not inexpensive at £379. Another one to borrow and try, perhaps?

Or he could try something like one of the several re-clockers on the market. I use the Gustard U12 – which I think has now been discontinued – in my desktop system between computer and amplification with good results, and the superb Mutec MC-3+ USB [*HFN* Feb '17], in my main system for the same purpose, although the latter is quite an expensive – if certainly very effective – solution, at a shade short of £900.

Then again, perhaps given Espen's comments on using the DAC with his disc sources, maybe it's just not a suitable model for him – and yes, that is one of the problems with buying without hearing. Would the Musical Fidelity MX-DAC [*HFN* Oct '20] improve things? Well, maybe – but that's something only likely to be decided after some lengthy auditioning on Espen's part.

Regarding Martin's problem with his laptop and Windows 10, there's no issue with upping the sample rate to 96kHz or 192kHz, provided the DAC can handle it – which of course the Devialet model in question surely can. All you're setting is a maximum sample rate that can be passed, and content at lower sample rates – such as the BBC radio feeds – will be passed at their native rates.

For music files on USB, yes – the UDP-205 could be pressed into service, and without going down the DAC-ADC-digital amp route. It's possible to take a coaxial connection from the player to the Expert Pro 220, and that way keep the path purely digital.

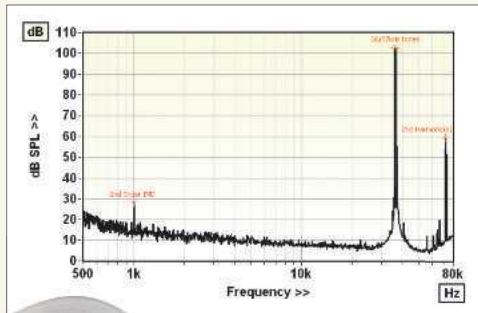
An artist in resonance

WHY YOU'VE NOTHING TO FEAR PLAYING HI-RES FILES VIA THIS 'DOUBLE DOME' TWEETER

After reading your review of the B&W 603 S2 Anniversary Edition loudspeaker [*HFN* Jan '21], I have to admit to wondering about the pros and cons of these new tweeter designs. Editor PM's boxout accompanying the review explained that the 'Decoupled Double Dome' tweeter used in this speaker raises the first break-up frequency to 36-37kHz. This was clear from both the frequency response and CSD waterfall graphs published in PM's Lab Report. So my question is this: won't that big 36kHz dome resonance create a lot of distortion with hi-res music files?

Chris Isidro, via email

Paul Miller replies: Chris raises a valid concern – super-light/super-stiff tweeter domes are certainly a popular engineering solution to achieving a very extended HF response while also pushing the inevitable breakup mode(s) to higher frequencies still, well outside the notional 20Hz-20kHz audioband. However, these modes are typically very abrupt, energetic or 'high Q' in nature,



ABOVE: Harmonic and intermodulation distortion associated with the primary break-up mode of B&W's 600 series aluminium laminate tweeter



ABOVE: B&W's 'Decoupled Double Dome' aluminium tweeter, close up

as we saw with the beryllium dome in Paradigm's Persona B [51kHz – *HFN* Oct '20], the carbon dome in B&W's 702 Signature [48kHz – *HFN* Sep '20] and the laminated alloy dome used in the B&W 603 S2 Anniversary. The latter sings out at 36-37kHz, well above direct audibility, even at a level that's a full +15dB above the speaker's own midrange output.

But with DSD and 96kHz+ music files all delivering 'signals' at these ultrasonic frequencies [see *HD Music*, p96-97] what types of distortion may occur? To test this I applied a two-tone (36kHz/37kHz) signal to the 603 S2 at 2.83V/1m. The results were surprising [see Graph, above, and note that the X axis is Log and not Linear Frequency]. If 36kHz is inaudible then so is the mere 0.06% 2nd harmonic distortion at 72kHz (or 74kHz for the 37kHz signal).

Instead it's *intermodulation* between ultrasonic signals at the dome's peak that may cause distortion (IMD) back in the audio range – hence my choice of tones which would result in distortion at 37kHz-36kHz = 1kHz. But with IMD at just <0.01% the 603 S2 Ann. looks remarkably 'clean'. B&W's engineers clearly know more than they are telling us!

LEFT: B&W's 603 S2 Anniversary Edition with its 'Decoupled Double Dome' tweeter



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HFNO221P

Sony CDP-C5M CD player

We hear a midi-sized multi-CD player from 1987 boasting a digital filter on board, but does multi-play convenience mean there's a penalty to pay in terms of sound?
 Review: **Tim Jarman** Lab: **Paul Miller**

The word 'autochanger' strikes fear into the hearts of LP listeners, bringing thoughts of clanking levers, heavyweight arms and stacks of records slamming on top of each other. The situation is more favourable when it comes to CD. Most players handle discs mechanically anyway, and so only a relatively straightforward extension to the mechanism is needed to allow more than one disc to be loaded at a time.

What's more, every CD player requires a microprocessor of some sort to control the complex business of retrieving the data from the disc and turning it back into an audio signal. This can easily be expanded to control disc changing too. The result is simple and foolproof operation.

LIFE IS A CAROUSEL

The Sony CDP-C5M represents one type of multi-CD player: the carousel type. Discs are loaded onto a turntable (for want of a better word) that presents them one at a time to a conventional optical unit, which in this case is located at the back of the machine. Size constraints limit the number of discs this type of player can take to five or six, although the ingenious refinement introduced in later models of holding the discs vertically rather than horizontally expanded it to a hundred or more.



ABOVE: The Sony CDP-C5M could be any late '80s CD player, until you spot the five lights and buttons allowing a choice of discs to be selected

The alternative, as championed by Pioneer, was to house the discs in a cartridge. The advantage was that the user could buy multiple cartridges and share them between home and in-car players, provided they were of the same make, as there was never anything approaching an industry standard. The disadvantage was that the players tended to be more mechanically complex and more expensive.

Sony was not the first company to bring a multi-CD player to market in the UK, that honour going to Toshiba with its twin-tray XRV-22 of late 1985. The Sony CDP-C5M appeared in 1987, by which time the design and construction of the basic parts of a CD player had become sufficiently routine for the extra ones required for multi-play operation to be added without the finished machine being unreasonably expensive. The 'M' suffix refers to the width of the fascia, at 355mm or 'midi' size. Just a few months later the CDP-C5F appeared, the 'F' standing for full width (430mm).

OVER THE WALL

Internally the two models were identical, an empty extension box being screwed to the side of the CDP-C5M chassis to fill the space inside the larger cabinet. Despite starting out with carousel players, Sony also made cartridge models in the years that followed. Sharing the ten-disc XA-10B cartridge with its early in-car changers, the



LEFT: Despite the complex facilities on offer, the CDP-C5M still manages to be no more daunting to operate than a single-play machine. Both single and multi-play modes are available



CDP-C100 of 1988 also featured a Philips TDA1541A dual-DAC chip with fourfold oversampling to befit its large size and status as an upmarket machine.

The CDP-C5M also demonstrated the gradual improvements that were being made in digital audio technology. Oversampling and digital filters were at last appearing in Japanese players after years of reliance on 'brick wall' analogue filtering in the final stages of the circuit. The digital filter used in the CDP-C5M was still a simple twofold oversampling affair and a single time-shared DAC (a Burr-Brown PCM56P in this case) was retained. But the oversampling did at least halve the phase error between the two channels inherent in the single-DAC method and eased the design problems associated with brickwall filters [see PM's Lab Report, p129].

Sony used the word 'Unilinear' to describe its new CD technologies, but the word was applied indiscriminately across a range of widely differing models, robbing it of any real meaning. Despite

'Sony called its new CD technologies "Unilinear"'

being an up-to-the-minute design at the time, 16-bit/2x single-DAC players were only really a feature of the 1986 and 1987 seasons. By 1988 twin DACs and fourfold oversampling were the norm.

LOAD AND STORE

The machine's disc-changing mechanics were straightforward, adding only two extra motors to the three that CD players of this era normally have. The carousel slid out on a power-operated drawer so that discs could be loaded one by one, their presence being detected automatically so one could load as many as one liked. Interaction with other Sony units was possible via the Control S standard connection, multi-CD players being a natural addition to an automated system. For the less ambitious, the RM-D5 infrared remote control unit (included as standard) allowed armchair operation of the commonly used functions.

ABOVE: A tray holds five discs in a carousel with only the disc in the central position accessible for loading. The carousel itself turns around one position at a time for other discs to be loaded

Operating the CDP-C5M is only slightly more involved than using a single-play machine of the same era. Discs are loaded one at a time in the position presented in the centre of the tray, which can be incremented round by pressing the 'Disc Skip' key. Playback starts with the last disc loaded, or whichever one is selected using the five direct-access keys by the display.

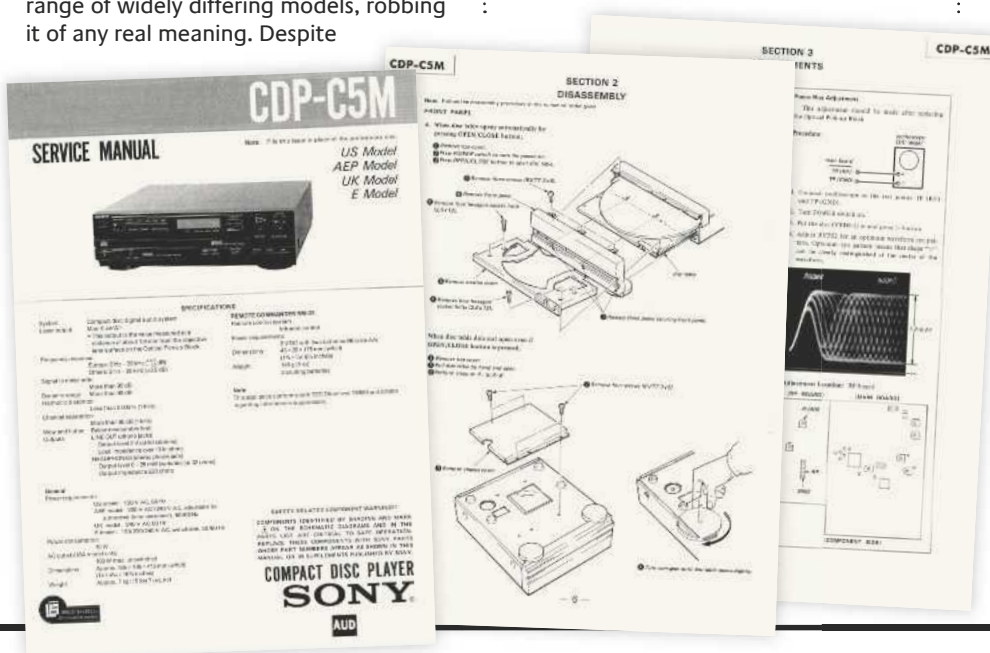
Each of these 'Disc Select' keys has a coloured light. If it is red this indicates that a disc is present in the corresponding slot, green means that a disc is playing or will be in the front slot when the carousel is opened, while orange denotes that the player has just discovered there is no disc in the slot that is ready to be played next.

Loading is reasonably rapid if you load the discs strategically, but annoyingly slow if you don't. The carousel only rotates clockwise, so stepping backwards (eg, disc four to disc three) involves almost a complete lumbering rotation. The discs are read quickly once they are clamped into the optical deck, they can just take a while to get there!

SINGLE PLAY

The shuffle play option turned out to be a disappointment. Random selections are only made from one disc, and not until every track has been played (albeit in a random order) is the next one chosen. Random play between discs would have been more entertaining. Still, one can also use the CDP-C5M as a single-play machine which speeds up the loading process. Pressing

LEFT: Sony's service data focused on the mechanical aspects of the CDP-C5M as the parts the machine shared with regular players were largely conventional in design



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RIGHT: The servo, digital signal processing and audio circuit is located on a single (green) PCB. The optical deck and changer mechanics are to be found beneath a protective steel plate

the 'Single' button sees the disc from the frontmost loading position (whichever that may be) played directly and the discs in the other slots on the carousel not checked. Used in this manner, the Sony CDP-C5M almost feels like a traditional CD player.

All the other features and fittings are what one would expect from a mid-to-late '80s machine. One can skip tracks or search within a track, and there's a track programming mode. However, the inclusion of a headphone socket with its own volume control is a welcome bonus, with reasonable level available from it if required.

TIM LISTENS

The Sony CDP-C5M certainly shows how the sound quality available from the company's mainstream CD player range improved since it launched the CDP-101 [*HFN* Jan '12] in 1982. This has been detailed in *HFN* via the Sony-designed Ferguson CD 01 and CD 03 models [*HFN* Jan '19 & Sep '19]. The use of a digital filter elevates the CDP-C5M further still, although to my mind it still does not reach the gold standard set by Philips at the time.

The CDP-C5M also shows that the belief there is a specific sound quality penalty to pay in return for multi-play convenience is simply not true. Indeed, one would have to have entered an elevated and fairly exotic realm of the Sony range at the time to usefully better it for audio performance.

As well as determining the key sonic signature of the Sony machine, I was also keen to figure out what one might use such a player for. I confess to having found it a challenge to settle on which of my discs were my favourite five, and who knows what one would be wanting to hear in three hours' time? Classical and opera buffs may appreciate an almost uninterrupted performance, but around six hours of anything non-stop is bound to get fatiguing.

RIGHT: Original marketing literature explains (in Japanese) what fun a CD multi-player can be! The inevitable comparison of the CDP-C5M with a jukebox is also made (left)



The rather limited random play option only compounds the problem, but I did find one collection of discs that suited my needs perfectly. *Now 100 Hits Forgotten 80s* [Sony CDNNOW82], issued by Sony music oddly enough, is a 5CD set sufficiently varied for the purposes of reviewing yet which the player could chomp through while continuing to engage my interest musically. So there it is, pile in the compilation discs of your choice and just let the machine get on with it.

'Just pile in the discs and let the player get on with it'

The rather hard and sterile nature of many early Sony players is still in evidence here to some extent. What has improved is the overall structure of the sound, the at times diffuse imaging of previous models no longer a major issue with this iteration of the design – even if it is not completely resolved. Bass showed an incremental improvement too, being smoother and richer-sounding. Yes, the presentation the CDP-C5M low down is still not indulgent in the manner of the classic Philips machines, but I did feel that the compromise on offer is a workable one and makes for an enjoyable listen.

GOLD RUSH

What one gains in return for an overall sound that can be a bit dry and matter of fact is an excellent sense of focus, notes and sounds seeming to start and stop in sharp relief. Hearing the CDP-C5M unravel The Stone Roses' 'Fool's Gold' [Silvertone ORECD 535] was impressive. Often this track can sound like it's ☺



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VINTAGE HI-FI



ABOVE: The rear offers standard audio connections and remote control sockets for system integration while the metal box in the centre contains the mains transformer

being heard from somewhere down a corridor, but with the CDP-C5M you are at least in the same room. That instantly recognisable bassline chunks away pleasingly too. This isn't a classic heavyweight player in the style of the Technics SL-P1200 [HFN Apr '13] or the Philips CD960 [HFN Jul '20] but it certainly comes far closer than its appearance may suggest. The only real issue is the player's slightly brittle, splashy treble which, to an extent, is always present. This isn't a corollary of the design's basic topology. After all, Aiwa's DX-1500 with its 16-bit/2x DAC is in many ways a less developed version of the same idea and yet it still sounds smooth and refined.

Percussion and female vocals bring this effect to the fore. Tracks such as 'Walking In The Rain' by Grace Jones [Island IMCD 17] sound a little synthetic and overproduced when played on this machine. This is not to dismiss Sony's first UK market multi-CD player as an irrelevance to the vintage hi-fi enthusiast. It performs as well as, if not better than, many of its rivals of the era. It has proved to be durable too, so the chances of finding one that still works properly are favourable.

BUYING SECONDHAND

One flaw inherent in the design of the CDP-C5M is that if the machine is tipped up or carried while there are discs in the carousel they fall out and jam up the mechanism. This is by far the most common fault encountered with this model. Other than this, the disc-handling system is robust, the only weak point being the belts linking the motors to the rest of the gearing. If these stretch or wear the mechanics can lock in a

position where further dismantling becomes difficult, making for a potentially time-consuming repair.

This aside, this carousel player is far less problematic to own than a cartridge-type player of the same generation. For anything other than the simplest of service inspections it is necessary to unravel some of the internal wiring. Afterwards, this must be dressed back in exactly the original pattern to avoid it becoming caught up in the works. The laser,

meanwhile, is a KSS-150A, which is a type that can be cheaply replaced if faulty. Be aware, though, that the quality of those available today can be variable so you

may have to try several before you find one that works.

Poor soldering is the most common problem on the main PCB, as is the use of blobs of glue to support some of the components. This can become conductive and corrosive with age, in extreme cases dissolving the component legs and copper track-work. ⚡

'The instantly recognisable bassline chunks away'

HI-FI NEWS VERDICT

You will find that the fragile mechanisms of multi-CD players often disintegrate after a few short years, so to find a durable example of the breed functioning after three decades of use is a testament to the care taken in the design and manufacture of the CDP-C5M. While its chip technology was soon outclassed it's nonetheless a well ordered machine, and a good player to listen to. Why not give it a try?

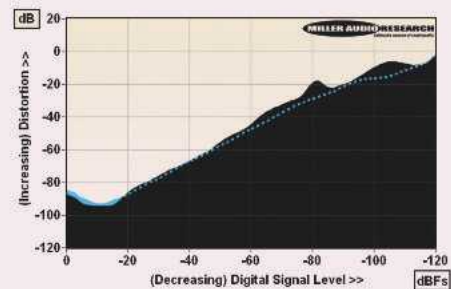
Sound Quality: 75%



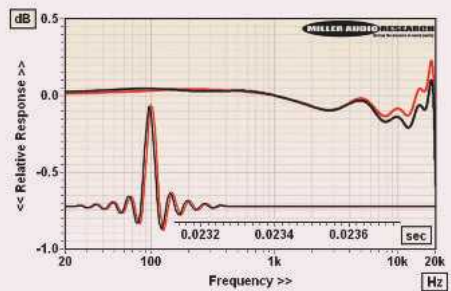
SONY CDP-C5M (Vintage)

As Tim describes in our review, the technology inside the CDP-C5M is illustrative of a short-lived stepping stone in Sony's digital journey. The impulse response [inset, Graph 2] shows the pre-ringing associated with a basic FIR 2x oversampled digital filter with coefficients that look very close to those employed in the D-88 portable [HFN Jul '16], launched just a few months later. This is combined with a relatively relaxed analogue filter in the CDP-C5M, yielding a mere 24dB stopband rejection and a frequency response with a slightly attenuated presence/treble and uptilted high treble of $-0.2\text{dB}/12\text{kHz}$ and $+0.24\text{dB}/18.5\text{kHz}$, respectively. The limited tap length of this linear phase filter is also reflected in the $\pm 0.06\text{dB}$ ripples seen in its passband response – a feature better suppressed in Sony's next-gen 4x oversampled players. Also, the 1.7V output level is some -1.4dB lower than the norm while the 2.2k Ω impedance is really too high.

The 16-bit PCM56P DAC brings its own 'character' to the ensemble in the form of a slight step or 'kink' in its low-level resolution at -80dBFS . This is also visible in the THD vs. digital level trend [Graph 1, below] which also shows the close parity of distortion between midband and very high frequencies ($\sim 0.004\%/0\text{dBFS}$ and $\sim 0.015\%/-30\text{dBFS}$) something rarely seen these days as digitally-derived distortions are typically much lower and where HF THD is more often set by the associated analogue stages. So, in this case, the player's linearity is good to $\pm 0.5\text{dB}$ over the top 80dB of its dynamic range but with a $+2.5\text{dB}$ error below this. At the time, Burr-Brown graced this DAC with a 15-bit monotonicity, a figure that also corresponds with the 93.5dB A-wtd S/N ratio measured here over 30 years later. Jitter, meanwhile, is impressively low at 245psec. PM



ABOVE: Distortion versus 16-bit CD digital signal level over a 120dB range (black = 1kHz; cyan = 20kHz)



ABOVE: Pre/post-echoes on impulse reveals an early 2x FIR digital filter. Note also $\pm 0.06\text{dB}$ in-band ripples

HI-FI NEWS SPECIFICATIONS

Maximum output level / Impedance	1.78Vrms / 2.16k Ω
A-wtd S/N ratio	93.5dB
Distortion (1kHz, 0dBFS/-30dBFS)	0.0033% / 0.017%
Distortion & Noise (20kHz, 0dBFS/-30dBFS)	0.0045% / 0.013%
Frequency response (20Hz-20kHz)	-0.20 to $+0.24\text{dB}$
Digital jitter	245psec
Resolution @ $-90\text{dB}/-100\text{dB}$	$+2.5\text{dB}$ / $+2.6\text{dB}$
Power consumption	9W
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Marantz Project T-1

Classic tubes meet modern tech in the £30,000 Project T-1 monoblocks. Is this Marantz's ultimate amplifier, asks an awestruck **Ken Kessler**

*Hi-Fi
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Contemplating the Project T-1 power amplifiers from Marantz, I realise that nothing in hi-fi should surprise us any more. If, in 1990, someone had told you that, by 1997, the hi-fi community would be clamouring for single-ended triodes and horn systems, that Quad and McIntosh and Marantz would reissue their valve classics, that Mobile Fidelity would open a new LP pressing plant and that Krell and Audio Research would introduce integrated amps, you'd have had that someone committed.

Yet all of this has come to pass. So I'm not surprised that one of the greatest amplifiers on earth comes from a division of Philips, a mass-market-oriented, Japanese/Dutch corporation, big enough to have purchased Argentina just with what it must have lost from DCC.

But that division happens to be Marantz. If there's a single Japanese manufacturer capable of taking on

ABOVE: The Marantz Project T-1 with its nine tubes and 'retro' round meter

the extreme high-end, it could only be Marantz. After all, this is the company sharp enough to employ the legendary Ken Ishiwata. So, the source of the Project T-1 Monaural Tube Power Amplifier isn't a total surprise. However, what *is* a surprise is the amp's performance.

SMART GLASS

Brainchild and swansong of Marantz engineer Mr Kosaku Ueno, the Project T-1 is as *outré* as the sort of insanityware which comes from a typical two-men-in-a-garage operation. Only they don't have a board of directors to appease...

Its initial impact is such that you know you're in the presence of something very special, just because it looks like no other amplifier that came before it. Not counting the valve cage, a single T-1 measures 556x495x496mm (whd) and it

weighs a backbreaking 65kg. A pair of these monoblocks occupies a lot of floor space for a 50-watter, but it's worth it just to see the faces of bowled-over audiophiles.

Before you even get to the luscious array of glass, the front panel catches your eye for its single 'retro' touch, a round meter recalling elder Marantz designs. This one isn't needed for tube biasing as this is an automatic function in the Project T-1, but it does monitor tube behaviour and it looks great. I'd want it even if it didn't do a thing. Below it is a selector to choose between monitoring the gain stage tubes (V1 and V2), the driver tubes (V3 and V4) or the output tubes (V5 and V6). To the right is the on/off rocker, while the extreme left contains a gain control.

CYLINDER HEAD

No less inspiring is the back, nearly filled with a vast heatsink, a set of massive terminals and XLR-type balanced-only connection to source or preamp. As the Marantz CD-12 KI Signature CD playing system has proper XLR outputs, I ran the review set-up completely balanced without having to use a separate preamp. But you want to know about the nine cylinders on top, right?

Ueno-San either has a great sense of humour, or he just understands tube psychotics better than most: the T-1 uses both 300Bs and 845s. The real dig at the SET enthusiasts, though, is this little nugget: the 300Bs aren't the output tubes. Heh, heh, heh. But note that the full lineup consists of a 5U4G, four 845s and a quartet of 300Bs. Still, I'll bet there are hundreds of 300B geeks running around shouting, 'See? Marantz uses 300B output tubes!'

Instead, the Project T-1 uses one pair of 300Bs as the input stage, the second pair as a pre-driver stage and two of the 845s as the final output stage, to deliver a claimed 50W into an 8ohm load (with a maximum of 75W attainable within spec).

The amp is transformer-coupled throughout, and numbers freaks will note that each chassis houses seven transformers, three high-inductance filter chokes and 11 power supply stages. Solid-state rears its head in

the form of a microprocessor which monitors the amplifier's status and prevents overload during turn-on, and it protects the amplifier if you forget to attach a speaker load.

The tube filament power is derived from solid-state constant-current supplies, for longer life and stability, allowing Marantz to claim with a straight face that a T-1 should


be '...as reliable as a solid-state amplifier'. The T-1 runs in push-pull mode, Class A all the way, balanced throughout and without negative feedback. That solitary 5U4G is

the PSU rectifier for the first two stages, while the remaining pair of 845s service the other pair of 845s, Marantz having decided that solid-state rectifiers are too noisy.

Parts quality? It's a parade of designer goodies, including Dale resistors, Johnson tube sockets, Aerovox caps, OPT transformers and specially selected tubes. The steel

chassis is entirely copper-plated, with solid aluminium surfaces. The two power transformers and two chokes are fitted to the upper surface behind the valves, with the other transformers mounted internally to establish the shortest signal path. The binding posts aside, which only accept small spades or bare wire, there is nothing to criticise. This amp is so handsome, so physically commanding the most transistorised tube-hater on earth will be dazzled just by its presence.

SOUND QUALITY

With the Marantz CD-12 player connected directly via Mandrake cables and the T-1s connected to the various speakers used during the listening with a set of Harmonix cables, I approached the system still reeling from the impact of the Audio Research Reference 600 monoblocks [HFN May '96]. I wasn't expecting anything to be joining their hallowed ranks quite so soon. In fact I figured Audio Research had the top of the heap to itself for at 

**'Parts quality?
It's a parade
of designer
goodies'**

BELOW: The T-1 employed both 300B and 845 tubes. The real dig at the SET enthusiasts, though, was this little nugget: the 300Bs weren't the output tubes



FROM THE VAULT

least the rest of the century. And in a way, it does. But the Marantz Project T-1 is breathing down its neck.

This amp isn't about power but about delicacy and subtlety. It does things which, if they involved flight, would make a butterfly seem ungainly. It is everything the single-ended crazies covet, but without the power limitations. Or, indeed, the politics. Yet by virtue of its push-pull topology, the T-1 is identified as *declassé* by the SET brigade, so its members might never know what they'd gain when freed from the shackles of single-digit wattage.

POWER TO BURN

If ever an amplifier steered you toward the type of music it prefers to amplify, this one must have its homing device set for female vocalists. From the sultry sweetness of Billie Holiday to the passion of mid-period Bonnie Raitt to the emotionless bloodbath of Nico, this amplifier knows how to caress a vocal, as if it were a pair of hands holding a rare blossom. It's not as though the T-1s fell to pieces when I entered lobotomy mode and wallowed in some Motörhead, for the T-1 has dynamic capabilities which could fool you into thinking it came from Transistorland, Connecticut, USA.

The bass? So rich and deep that anyone whose recent experience consists only of SETs and horns will wonder where the extra octaves were hiding. It rolled out of the Wilson WATT/Puppy loudspeakers, spilled across the carpet, bass so palpable that I thanked those who built my house for predicting the need for solid floors. And it reached the limits of a 12x22ft lounge.

As far as maximum levels are concerned, the T-1s would have to be sited in a room twice that size and populated by listeners with serious hearing problems before the word 'undernourished' reached anyone's tongue. But this amplifier is, despite its toe-tingling bass and slap-upside-the-head dynamics, a real midband/treble champion.

With speakers which never exploit its lower registers, like LS3/5As without a subwoofer or the old Quads, the T-1 behaves just

like you'd expect of a classic tube design. Only you're not sampling all it can offer. Still, even those of you not using speakers which operate below 80Hz would still enjoy the textures with in-your-face realism, and not just the various vocal tics which help you to distinguish Crystal Gayle from Dolly Parton.

The amp's way with textures carries over to each and every instrument, enough to allow you to use a compilation like the tribute, *Rattlesnake Guitar: The Music Of Peter Green*, as a guide to different guitar models. It also means that incredibly fine details come through without a fight, with spatial clues so vivid that you can picture the walls of Abbey Road's Studio 2

when you play the Fab Four. And you will hear vertical images just like the Cheskys said you would. It's a near-magical experience, restricted only by speaker sensitivity

rather than frequency response, driver type or impedance. Still, it has power to burn, compared to a SET.

CONCLUSION

At around £30,000 a pair, the Project T-1 should be one of the world's finest amplifiers. For me? I now know what I'll buy first if my lottery numbers come tumbling out of the barrel, even before the Bugatti, the Patek and the Lempicka. It's the answer to a dream I didn't even know I harboured. ☺

'It caresses, like a pair of hands holding a rare blossom'



Also in *HFN* this month in 1997

DIGITAL CLIMAX

Paul Miller tests six CD spinners over £1000: Audio Alchemy DDs/DDe v3, Audio Research CD1, Audiolab 8000CD/DAC, Linn Karik II/Numerik III, Meridian 500/566 and Naim CD/CDPS.

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AUTHENTIC SIGNATURE

The QLN Signature Splitfield is a Swedish monitor loudspeaker with an outboard crossover.

PLATINUM REFERENCE

Grado's £250 Platinum cartridge is the entry-level model in its new Reference Series.


BELOW: Original pages from the Jan 1997 issue of *HFN* which saw Ken Kessler make house room for a pair of the mighty Marantz Project T-1 power amps



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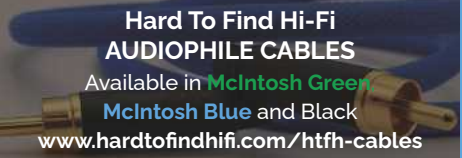
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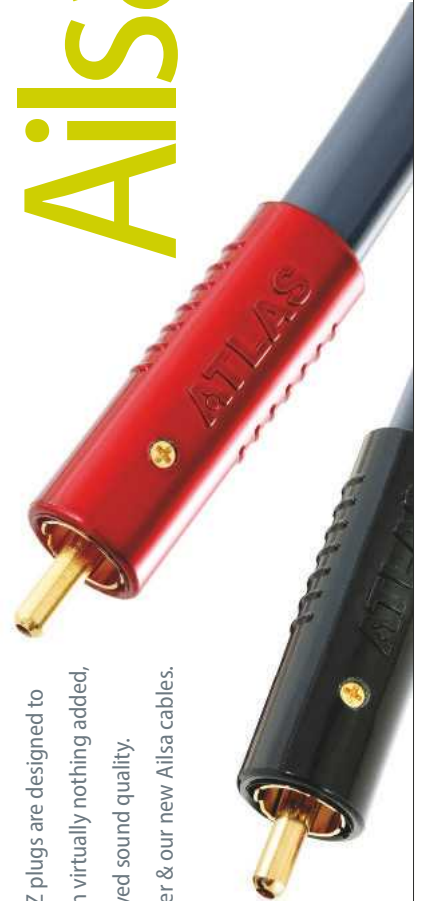
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OFF THE LEASH!

KEN KESSLER TELLS IT LIKE IT IS...

Match and don't mix was the old rule of thumb. But **Ken Kessler** thinks that can be a big mistake



Towards the end of last year [HFN Nov '20] I was writing in this column about the challenge of buying one's first system. I want to follow this up with an issue which has hamstrung hi-fi for over a half-century. Nurtured on both sides of the Atlantic it concerned multiple brand liaisons, and how they restricted freedom of choice, whether deliberately or inadvertently.

THE FULL DEAL

It started out as a well-intentioned, if commercially-motivated, means of ensuring that consumers could assemble systems without fear of mismatches. It seems this was not a primary concern in the 1950s and '60s, because hi-fi enthusiasts were then arguably more knowledgeable and less sheep-like. That said, precious few brands were able to supply one-make, source-to-speaker systems of real merit, though many certainly tried.

Among the more successful to do so were Quad in the UK (though its only source was a tuner), and Acoustic Research in the USA, which made loudspeakers, turntables, tuners, receivers and integrated amps. Other manufacturers not focusing solely on amps, turntables or speakers offered more than one type of component, if not whole systems. For example, Empire made cartridges, turntables and speakers, while Infinity produced speakers, a tonearm

and even a portable tape player. But the reality was that audiophiles, then as now, mixed components from different brands.

What happened in the 1970s and '80s, however, did much to demoralise those lacking confidence. Let's not be coy about this: the three most successful pairings – Magneplanar and Audio Research, Apogee with Krell, and Linn-plus-Naim – were inspired initially by expediency, in both retailing and marketing those then-young brands.

In each case, it was an electronics firm with a speaker brand – or, in the last-named, a speaker/turntable brand. What this did for anxious customers, understandable given the nature of far too many hi-fi retailers, was to ensure technical and sonic synergy.

Each brand would eventually outgrow the relationship, the two American teams more amicably, but the net effect from the get-go was to create a sense of unease when trying to assemble systems. What if one wanted Apogee loudspeakers but wasn't interested in Krell amplifiers? Could Naim amps be paired with other

loudspeakers? Yes, it was that illogical...

The paired-up brands became aware of the need to ensure that retailers carried both lines, to avoid lost sales and other unforeseen downsides, which undermined such clear benefits as sharing exhibition rooms at hi-fi shows. Wendell Diller of Magneplanar told me about the eventual split

'We set up the test system to sound of its very best'

with Audio Research. 'Some of the dealers complained because they sold too many speakers and not enough electronics... but I think Jim [Winey] wanted to go off on his own because he had developed the Magneplanar MGII and he had his own vision. It had served the purpose for both, [but] it had a natural lifespan because Bill [Johnson] didn't need Magneplanar and Magneplanar didn't need Audio Research.'

Despite the pairings eventually parting, it would take years for consumers to accept that they could match up whatever they wanted to, that they wouldn't be struck down by celestial lightning, that you could use a Linn Sondek front-end in a Naim-less system, or run Naim gear without Linn. I imagine there are diehards who'd still disagree, but in 2021, they are less than relevant. And yet... there seems to be an inexplicable aversion in consumers even to consider *outré* combinations.

THAT WORKS THEN

That's where reviewers come in, because, unlike retailers, we're not bound by suppliers: we are not brand-restricted in any way. That's why I am driving Falcon Acoustics LS3/5as [HFN Jan '19] with EAT's E-Glo i [HFN Oct '20] integrated amp – who knew? I've used sub-£1000 phono stages with £10,000+ cartridges, £3500 headphones into an £800 portable, and played SACDs through a \$49 Blu-ray player I brought back from the USA in order to play Zone A discs. Rules are made to be broken!

There's much to recommend about the delight in finding oddball combinations which work so well. Our reviews are not overburdened with copious descriptions of the review systems used because such info is unneeded – you can assume that the contributors to our magazine set up review equipment to sound of its best. With the exception of cartridge reviews, which are arm-dependent, you only need be warned of exceptional mismatches.

Why ignore matching up 'the usual suspects'? Because it frees you of the burden of feeling constrained by your choices – or limited by your existing system. In other words, try whatever you like. And prepare to be pleasantly surprised. ☺

Mar Issue
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EXCLUSIVE TESTS:

- VAC Master Preamplifier/Signature 200 iQ
- Denon DL-A110 'Anniversary' moving-coil
- VPI Prime 21 turntable
- iFi Audio NEO iDSB DAC/headphone amp
- JBL 4349 horn-loaded loudspeakers

PLUS:

- Vintage Review: Philips CD10 portable CD player
- Investigation: Choice albums launched in 2021
- Classical Companion: Strauss' *Der Rosenkavalier*
- From The Vault: We crack open HFN's archive
- Vinyl Icon: U2's *Joshua Tree*

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