WHARFEDALE
EVO 4.2
loudspeakers

REGA ANIA PRO CARTRIDGE
TEAC TN-3B TURNTABLE
FiiO FH7 HYBRID IN EAR MONITORS
FURUTECH DSS 4.1 LOUDSPEAKER CABLE

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welcome

I guess a lot of people fancy the thought of being blown across the room by a studio monitor. You know – by a loudspeaker with real bass power, something that has a donkey’s kick to it. Wharfedale’s new Evo 4.2 isn’t quite that but it carries the essence – in a small cabinet. Bass unit and midrange dome are tailored to give a fast sound in everyday living rooms, much as this arrangement does in recording studios. But then Wharfedale go and use an Air Motion Transformer tweeter – unknown in studio monitors. Why? This is a fascinating loudspeaker – reviewed on p11 of this issue.

Streamers that play music from internet streaming services – Tidal, Spotify, Amazon Music and so many others – get ever more complex as manufacturers try to add value over those of rivals: the one that ticks most boxes looks best. Japanese manufacturers have played this game for decades. NAD have moved this approach into new territory with their C 658 streamer reviewed in p38. It offers a stunning array of ability – beyond all else. You even get loudspeaker tuning.

But the market for portable audio is far bigger than rooted domestic high fidelity. Headphones walk one major path – think Beats – and in-ears another. It could well be that in-ears will get a larger grip on the market as they tech-up to send sound straight into your ear without hindrance. FiiO think so, delivering the FH7 box set that you’ll find on p14.

NAD deliver it all in their C 658 Streaming DAC, it would seem, until you look at what Klipsch have to offer in their Reference R-51PM loudspeaker that offers an alternative view. A broad swathe of ability in a modest package, this little loudspeaker is worth knowing about. Go to p53 to find out more on what a small active loudspeaker offers today. Why is it like the NAD? Well, you can play LP through it!

Today’s audio products get ever more complicated but we cover them in fine detail. I hope you enjoy reading about hi-fi today in Hi-Fi World.

Noel Keywood
Editor

testing (see www.hi-fiworld.co.uk for full explanations of all our tests)

To ensure the upmost accuracy in our product reviews, Hi-Fi World has extremely comprehensive in-house test facilities, and our test equipment - from big names like Rohde & Schwarz and Hewlett Packard - is amongst the most advanced in the world.

Loudspeakers are measured using a calibrated Bruel & Kjaer microphone feeding a Clio based computer analyzer, using pulsed and gated sinewaves, in a large room to eliminate the room’s influence. Pickup arm vibration is measured with a Bruel & Kjaer accelerometer.

No other UK hi-fi magazine has in-house testing, and none has access to such advanced tests across all types of equipment. That’s why you can depend on Hi-Fi World reviews.

verdicts

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And now...in stereo!

First came Chord Electronics flagship £30,000 ‘Ultima’ monoblock amplifier. This imposing beast was based on the dual-feedforward error-correction ideas of Essex University emeritus professor Dr Malcolm J Hawksford, as refined by Bell Labs’ Bob Cordell and Chord Electronics’ own John Franks - who described the Ultima as the Kent firm’s “most accomplished amplifier yet”.

Those who like the idea but want a lower price tag might be interested in the two new stereo versions that Chord Electronics have just announced - the Ultima 6 (180W per channel, £5,995) and its bigger brother the Ultima 5 (300W per channel, £9,250).

The advantages of Ultima “bring astonishing dynamics, timing accuracy and... unrivalled musicality” Chord Electronics claim. The precision CNC-machined aircraft-grade solid aluminium casework is fronted by a striking 28mm-thick fascia.

Both new models feature balanced and unbalanced inputs, high-quality loudspeaker terminals, 12V triggering and a C19 IEC mains inlet.

Contact: Chord Electronics, (01622) 721444; www.chordelectronics.co.uk

CORNWALL HERETICS?

Distributor Henley Audio is now bringing Klipsch’s latest ‘Heritage Series’ speakers, the Heresy IV and Cornwall IV Speakers, to the UK. The £3,500 Heresy IV is “entirely re-voiced and re-worked” although that iconic ‘50s styling remains. To a new crossover network are connected a 25mm K-107-TI titanium-diaphragm tweeter with wide-dispersion phase-plug, a 45mm polyamide-diaphragm’d K-702 midrange compression-driver feeding a Tractrix horn and a K-28-E 305mm woofer working with a rear port to extend the low-frequency response.

The Heresy IV delivers “even high-frequency dispersion and astonishing detail and dynamics in the midrange, across a wide listening area for easy speaker placement”.

But what about the £6,500 Cornwall IV - all 33.1kg of it? It can be positioned in either a CORNer or against a WALL - hence the name. The Cornwall is a three-way design with horn-loaded compression drivers for the midrange and treble, but in this case a direct-radiating K-33-E 381mm fibre-composite coned woofer serves the low frequencies.

Both new models are available in American walnut, natural cherry and satin black ash finishes, the Heresy IV benefitting from an additional distressed-oak option.

Contact: Henley Audio (UK distributor), (01235) 511166; www.henleyaudio.co.uk
**MAKING A DIN**

DIN connectors are not the best when it comes to audio. They thrived in the 1960s and 1970s, notably with equipment imported from Europe, but were a cheap connector and eventually disappeared. However some manufacturers - notably DNM, B&O and Naim - persisted with improved DIN connectors.

Now Chord Company has announced its “first-ever Epic-range DIN cable”. Epic DIN, we are told, benefits from “wide-bandwidth silver-plated oxygen-free copper conductors, is found in the company’s higher-end cable ranges”, and comprehensive “multi-tiered foil shielding systems for all conductor pairs”. This technique “reduces interaction between all the different signals that DIN cables need to carry”.

DIN-to-DIN, DIN-to-RCA and DIN-to-XLR versions are available, prices starting at £500 for a 1-metre length.

Contact: Chord Company, (01980) 625700. www.chord.co.uk

**DRUNK ON MUSIC**

Master of miniature music monitoring iFi has added yet another mini marvel to its melodic manegiere. The hip-dac is a portable USB DAC/headphone amp with support for hi-res (PCM up to 32-bit/384kHz and DSD64/128/256). Designed to “slip discretely into a pocket”, the hip-dac plugs into the USB port of a compatible smartphone, tablet, PC or Mac.

The result, reckons iFi, is “vastly-improved headphone sound”. Core to the hip-dac is a Burr-Brown converter chip. Other features include a rotary analogue volume control, in-house programmed XMOS USB 3.0 interface, up to 700mW per channel of headphone amplification, format/sampling-rate confirming LEDs, bass-boost, switchable ‘PowerMatch’ gain to accommodate different headphone sensitivities and - to keep jitter at bay - iFi’s GMT “femto-precision clock-locking” technology.

Interestingly, users can download and install different firmwares. As well as keeping the hip-dac up-to-date this encourages experimentation with, for example, the subtle changes in presentation wrought by different digital filters. The hip-dac can drive balanced (4.4mm socket) and standard (3.5mm socket) headphones. Seems like excellent value for £149.

Contact: iFi, (01794) 227204. www.ifi-audio.com

**ACTION REGA REPLAY**

Filmaker Steve Clarke spent “two long days” observing Rega’s employees at the “incredible facility” What he captured has been edited into a beautiful little movie that you can see for yourself at https://youtu.be/3ng1n9y9d8k. Witness turntables, cartridges, amplifiers and speakers being painstakingly developed, built and tested there.

More details: Rega Research http://www.rega.co.uk/

**IN FINE VOICE?**

Black Rhodium’s Operetta interconnect now has a variant of “much higher performance” for “customers who seek high-end audio performance without a high-end price”. The Operetta DCT 2 uses “high-quality conductor wires” subjected to “deep cryogenic treatment” for a “more natural and detailed sound”. They are insulated with a combination of low-loss PTFE insulation and air that reduces the possibility of “time-smeared sound”.

Operetta DCT 2 also features a closely-woven silver-plated copper screen to resist external radio-frequency interference, and gold-plated connectors that have been specially manufactured for Black Rhodium. Prices are 0.5m (£500), 1m (£600) and 1.5m (£700) for stereo pairs with RCA phono plugs that are ‘stock’, although the 1.5m length can instead be supplied with BNC terminations if desired. Other lengths are available on a pro-rata basis.

Contact: Black Rhodium, (01332) 342233 www.blackrhodium.co.uk
VIKING RAIDHOS...

New in the UK, courtesy of distributor Decent Audio, is the range-topping TD Series from Danish loudspeaker manufacturer Raidho. Among the six models are the TD 1.2 2-way standmount, TD 2.2 2.5-way compact floorstander, TD 3.8 3-way floorstander and TD 4.2 TD 4.2 2.5-way floorstander, all of which feature drivers of proprietary design.

First of these is Raidho’s unique “reference-standard” sealed-ribbon tweeter, with “powerful magnet system and a new acoustically-optimized rear chamber”.

The mid and bass drive units of the TD Series have hi-tech five-layer composite cones exploit the properties of the rare metal tantalum in order to meet Raidho’s objective of being “the stiffest and best inner-damped in the world”. A 1-micron layer of tantalum is added to a ceramic layer, readying them for the subsequent deposit of a diamond layer.

Tantalum, a good conductor (it’s also used in electronic components like capacitors) will dissipate heat from the driver’s new “patent-pending motor system”. These “striking...and beautifully-finished” speakers are available in piano-black, walnut...or for that matter “any colour to order”!

Naturally, this stuff ain’t cheap. The cost of ownership starts at £20k for the TD 1.2, and goes all the way to £102,000 for the TD 4.2. And as for the range-topping TD 4.8 3-way floorstander? If you have to ask the price...

Contact: Decent Audio (UK distributor) +44 (0)5602 054 669. www.decentaudio.co.uk

LEARN TO PLAY DAY 2020 FREE MUSIC LESSONS ACROSS THE UK

A nationwide initiative to get people of all ages and abilities playing a musical instrument will take place on Saturday 28th and Sunday 29th March 2020 at venues across the UK. Go to https://musicforall.org.uk/learntoplayday/ to find your nearest venue, or Google ‘musicforall.org.uk’.

Supported by Jools Holland OBE, and run by charity Music for All, the event sees music shops, teachers, venues and schools throughout the UK partner with leading musical instrument brands to offer thousands of free music lessons across the weekend.

Jools Holland said: “As Patron of the Music for All charity, I’m delighted to lend my support to National Learn to Play Day on March 28th and 29th. It’s a pleasure to be able to share the joy of music, and this special day allows thousands to get involved as venues all over the country offer music lessons for free”.

TWO PLAY SOLITAIRE!

New from T+A is the Solitaire P - the German firm’s first ever set of headphones - and, to drive it, the Solitaire HA200 headphone amplifier.

Described as “planar-magneto-stastic”, the over-ear Solitaire P has an ultra-lightweight air-shifting membrane, which is positioned within the planar drive system. The sonic properties are said to have a “spacious, airy feel...unique even for planar headphones”. But then again you should expect nothing less, considering that a pair will set you back £4,800!

The busy metered fascia and £6,600 price tag of the equally-esoteric Solitaire HA200 demonstrates that it’s more just than a headphone amp. Also onboard is T+A’s proprietary “True 1 Bit” DAC technology, which supports 32-kHz/768 kHz PCM and DSD1024. The HA200 boasts two analogue inputs, digital connectivity plus USB, Bluetooth and provision for optional HDMI.

There are three headphone outputs, one of them balanced, plus a high-quality power-supply with separate toroidal mains transformers for the analogue and digital circuitry.

Contact: The Audio Business (UK distributor), (01223) 704669. www.theaudiobusiness.co.uk
THE MUSIC PLAYER FOR MUSIC LOVERS

Nucleus is the center of your Roon music system. It’s the housekeeper, the traffic cop, and the brain that takes care of the music in your life. Using Nucleus, Roon manages all your music – on hard drives, NAS, and streaming content – and allows you to play it on all the audio devices around your home. Nucleus is the best way to run Roon, at any price. For a more advanced solution, the Nucleus+ is perfect for complex or high-end environments and for lightning-fast handling of larger music libraries.

*Reviews of the original Nucleus+, which has the same technical performance of the 2019 revision but a different look.*
Is Wharfedale’s new Evo 4.2 three-way loudspeaker the route ahead? Likely, thinks Noel Keywood.

Our pictures show Wharfedale’s new Evo 4.2 loudspeaker is a compact standmounter, one I could lift easily at 13.4kg. Yet it is a three-way! I was taken aback when I first saw it. Even more surprising was the use of a mid-range dome at centre of the drive unit array, and an air motion transformer (AMT) tweeter at top.

Quite a radical line up – especially for the £599 asking price. So what’s going on here?

I’ll go over the thinking behind it and the sonic implications first, since long ago I started to research
use of a dome midrange for very specific reasons.

A dome puts more energy into the room and sounds open, detailed and forward as a result.

Long ago, however, domes had problems. Those I heard gave forward vocals, but with one drawback – sharpness, especially as volume went up. That’s because they have – or had – a tendency to ‘break-up’, especially at high volume. They were popular in studio monitors for engineers wanting everything thrown at them, but for domestic listeners a tad overwhelming. Measurement showed Wharfedale have used a modern design that avoids this old problem.

Alternatively, it could be that Wharfedale prioritised use of a ‘ribbon tweeter’ and found themselves having to use a dome to match it – another problem I faced when designing loudspeakers. Ribbons give lovely treble quality: I’ve always been smitten by them – but they don’t go low, 4kHz being a typical lower limit for small ones. The AMT is a folded ribbon in effect and reaches down to 3.9kHz Wharfedale say. The problem this poses is of finding a drive unit that works up to 3.9kHz to match it – and this demands use of a midrange unit. A cone or a dome are options and in the Evo 4.2 Wharfedale use a dome, ‘cos they reach higher.

The Evo 4.2’s bass/midrange unit must reach up to 1.4kHz to meet the dome and it has a central parasitic dome – the chrome plated item at centre of bass unit cone – to help do this.

Ideally, drive units should be less than half a wavelength apart at the crossover frequency, explaining why they are usually packed together closely. In the Evo 4.2 half a wavelength at 1.4kHz is 12cm and the dome sits around that distance from the central radiating zone of the bass/midrange unit – acceptably close.

So there you are, a brief explanation of the logic behind drive unit choice in the Evo 4.2. And, providing the drive units work well in themselves, what you can expect to hear from such an arrangement are apparently solid and obvious vocals from the dome, with smooth almost character-free treble from the AMT tweeter. Yes, the AMT tweeters I have heard had less of the sheen of a conventional ribbon, coming over as almost peculiarly “quiet”. I know that’s a funny way of putting it, but really good loudspeakers are drama free – they just let the music through without embellishment. With an AMT expect nothing rather than something!

I admit my description is general and has flaws. Vocals in particular start at 200Hz (male chest cavity) and have components (sibilance) up to around 3kHz, so a dome ‘mid-range’ (as they are termed) does not cover the human vocal range, only higher bits. But in this line up it does a good job in keeping the drivers all working together in-phase so you get a solid and consistent sound overall.

The loudspeaker cabinet measures 455mm high, 250mm wide and 340mm deep, not including terminals with 4mm banana plugs protruding, for which add 30mm or so. Bare wires and spaces don’t protrude of course. The front grille is held magnetically

"really good loudspeakers are drama free – they just let the music through without embellishment"

The rear view shows a curved cabinet to discourage internal standing waves, bi-wire terminals with mono wire links, and a small gap between base and cabinet. This provides clearance for a down-firing port, the narrow gap providing a measure of acoustic damping.
and is acoustically transparent so can be used on or off without affecting frequency response, our measurements showed. The cabinet is solid and quite heavy, but liftable. Wharfedale call it a "bookshelf" design but it requires a large 14in deep shelf, making stand mounting a more likely option.

**SOUND QUALITY**

To drive the Wharfedales I used our Creek Evolution 100A amplifier hooked up with Chord Company Signature Reference cables. A 48 hour run-in was needed to smooth the silk dome since it has strong influence. Sources were an Oppo BDP-2032 Universal player to spin CD, as well as process hi-res from an Astell&Kern portable player connected by optical cable, making it fully isolated.

Dave Brubeck’s classic Just Take Five (CD) quickly identified the projective properties of the Evo 4.2, its trumpet standing forward of the cabinets with solid presence. It was smooth edged and free from rasp: I immediately sensed a gentle approach here and that is how it went, at least in outline. Similarly, saxophone in Pink Panther Theme was big, fruity and forward.

Holly Cole crooned at me about her station antics in The Train Song (CD) and she boomed large; it was almost embarrassing. The 4.2s project almost alarmingly at times.

However, whilst treble balance is mild to self-effacing there were occasions the Evo 4.2s, and I’m not sure why, gave me the impression of heightened sound presence, as in The Train Song (CD). The dome pulls out upper midrange but you don’t get high-end spit from the AMT tweeter. Here I understood why domes are used in monitor horns.

Like Dave Brubeck’s trumpet, Willy DeVille had big, firm presence in front of me. Wharfedale have gone a different route with this loudspeaker, but have kept the drive units nicely balanced relative to each other for a tonally balanced sound. The Evo 4.2s will on occasion jump out with vigour though, throwing not vocals but vocalists at you!

As an almost strange counterbalance the refined AMT tweeter is so mild I didn’t get to notice it much. I spy Nils Lofgren’s Keith Don’t Go (CD) with its close-mixed lacerative guitar work and the strings were sold rather than lacerative, Lofgren’s guitar taking on body, weight and timbral texture. Similarly, Nigel Kennedy’s Stradvarius violin was more big and rich, rather than sharp or edgy, bringing a different character to the sound of most else.

Mathias that here Wharfedale have come to terms with the fact that their potential audience prefer the BBC sound to anything associated with Red Bull and Vodka shots. Additionally, the smooth high end doesn’t draw attention to distortion from CD, making silver disc an easier listen.

But the sheer projection of these speakers carries its own challenge. Safr: Duo’s Samb Adagio was tightly timed, vivid in its leading edges with volume turned right up but mild up top all the same. This track, which is challenging for any loudspeaker, showed the Evo 4.2s well, controlled bass, not overly heavy in its large room of 5550 cu ft.

They are meant for a medium sized room, 15ft-20ft in major dimension, with placement close to a wall and in such conditions will match in well, giving fast strong bass.

Playing Tchaikovsky’s Waltz of the Flowers (24/96), from our Astell&Kern AK120 portable, the Bruckner Orchestra took big form in front of me. Opening horns were meaty and sonorous, having conspicuous presence. Strings were smooth and mild by contrast. The performance was clear yet relaxing, no digital nasties here.

Similarly, with the London Symphony Orchestra playing Mars from Holst’s The Planets (24/48) there was scale, a broad sound stage and again a feeling of solid presence. Kettle drum strikes had strength but did not overwhelm.

**CONCLUSION**

Wharfedale’s Evo 4.2s are interestingly different and appeared to me what you get here is solid presence where vocals and solo instruments have power, projection and a sense of weight. What you do not get is sharpness, or edginess: highs are there but refined. At the price these loudspeakers are different and — I feel — ridiculously good. Get a listen if you can.

**MEASURED PERFORMANCE**

Our frequency response analysis of the Evo 4.2 shows a broadly flat characteristic across the audio band from 40Hz to 18kHz, making the ‘speaker fundamentally accurate. There is no treble lift as is now so common, so no emphasis of distortion harmonics, from CD for example. The sudden dip and peak around 160Hz is due to floor return, so not an intrinsic ‘speaker characteristic. The dome midrange comes in just above 1kHz and its contribution is smooth and well integrated. The AMT tweeter contributes above 4kHz and again its output has been kept in check to avoid treble emphasis. The grille is acoustically transparent, having no impact on these results, so can be left on or off.

Bass extends down to a low 40Hz, the port (red trace) being tuned to 45Hz to add some extra weight in the low bass region. Cut off below 40Hz is sharp as expected for a stand-mount, with no sub-sonics. Also, bass output is restrained for near-wall placement in a medium sized room, helping avoid room boom; this is not a bass heavy design.

Sensitivity was average at 86dB sound pressure level at 1metre, from 1 Watt input. Amplifiers of 60 Watts or more would best suit. Impedance measured a nominal 6Ohms like most modern loudspeakers, the bass unit having a relatively high motional impedance below 100Hz our impedance trace shows and this likely keeps sensitivity down a tad. NK
Despite their £450 asking price, Martin Pipe reckons that FiiO’s FH7 IEMs still represent fine value.

I’ve never come across a more complete package for in-ear monitors (IEM) than the FH7s that top FiiO’s range. At £450 a pair these ‘phones may be pricey, but they are far from being the most expensive examples of their genre. You don’t just get a pair of buds (IEMs) and detachable cabling. There are comprehensive collections of ear-tips and filters that tailor both their fit and sound to the wearer’s requirements and tastes. There are 30 ear-tips in all: balanced, memory foam, vocal, ‘spin-fit’, bi-flange and bass in a variety of small, medium and large sizes. And as if all this wasn’t enough, FiiO provide you with two carrying cases - soft (fabric) and hard (faux leather).

The IEMs they work with are themselves sculpted objects of beauty, their unusual shape...
in a metallic lozenge, screw into the business end of the bud; the tips fit over them. In FiiO’s words, they allow you to ‘create your own sound’. The red filter is recommended for ‘dynamic bass emphasis’, while the green one emphasises treble detail. If neutrality (a balanced sound) is important, screw instead the black filter into position. A sensitivity of 111dB/mW is claimed.

FiiO’s micro-engineers should be congratulated for fitting it all into a bud that weighs a mere 8.15g. Even the supplied 1.2m cable is a high-tech wonder, of which specialist firms would be proud. According to FiiO, it consists of 152 strands of ‘high-purity Litz monocrystalline copper-plated silver wire’ arranged into eight individually-insulated bundles - four for each channel. They snap into the base of each bud courtesy of MMCX miniature connectors, and are reinforced with extra ‘ear-guide’ sleeving at the point of contact with the top of the auricle, thereby providing extra bud support.

At the other end of the cable is a substantial 3.5mm stereo jack plug, right-angled to minimise protrusion. A balanced cable with 2.5mm plug is available for players with balanced 2.5mm output.

Some of the accessories featured in FiiO’s impressive FH7 package - hard and soft carrying cases, a Velcro cable-tidy, a small brush for removing wax and gunk from the sound pathways, and a giant collection of eartips - 28, plus the pair attached by default.
LS50 WIRELESS.
THE SOUND SYSTEM.
REINVENTED.

THE BIGGEST SMALL MUSIC SYSTEM

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Use and sound quality
Thanks to the comprehensive collection of tips, it was easy to find ones that presented a comfortable and snug fit with my auditory canals; as with the filters (I stuck for the most part with the 'black' ones) there are subtle differences in terms of how your music is presented, and I'm sure FH7 owners will have a lot of fun experimenting with them.

The 'phones proved comfortable over long periods of listening and the good ear seal was effective at keeping ambient noise at bay. Not only that, but they stayed put during gym workouts, as with most devices of this sort though, the occasional push is needed to restore bass reproduction. Thanks to its ability to rotate around the earbud connector, arranging the cable guide so that it 'loops' over the ear could be a rather 'fiddly' operation. I tried the FH7s with a number of devices - an Audirject Beam 'micro-DAC', connected to a Dell laptop or Google Pixel 3a phone (both running VLC), and an ADL A1 USB DAC/headphone amplifier driven by a desktop PC. I also used my FiiO X3 portable player, and a Chord Hugo TT and Prism Calla desktop DAC/headphone amplifiers.

Even the diminutive USB stick that is the Audirject Beam managed to drive them, usable sound levels being attained without unacceptable distortion. All players proved that the FH7s are startlingly-revealing. I don't recall being wowed behind the scenes, but the Pay Corner Audio's The Mirror Ball Cracked, and Calla's somewhat primitively-recorded classic Tago Mago was rather gritty in places. Yet the FH7s manage to deliver music in a compellingly-enjoyable manner.

You'd expect guitars to feature heavily in a song by a band called the Red Guitars - and the one-time Peel fave Good Technology is indeed full of them. The individual characters of its different guitar parts were clearly and cleanly resolved, as was the characteristically-1980s boomy drum sound. Bass and lower-midrange were in fact remarkably uncoloured, vocals - sung or spoken - being correctly-proportioned. Bass went satisfyingly deep, too, as the synth of the aforementioned Pay Corner Audio track (a CD FLAC rip) reveal.

Conventional bass guitars fared well too, and I thoroughly enjoyed listening to the Beatles albums Rubber Soul and Sgt. Pepper (24-bit/48kHz). The sheer detail imparted to McCartney's bass-playing was little short of astonishing; I could also make out some of the more unusual additions to Ringo's percussive armoury.

The ear tips provided by FiiO allow wearers to achieve a favoured balance of snugness and sonic delivery. Among them are balanced, memory-foam, vocal, 'spin-fit' (described as a "premium soft silicone material"), bi-flange (which make contact at two areas, thereby achieving a better seal) and bass, all in small, medium and large sizes.

"the dynamics were given sufficient room and the sheer presence - right down to string scrapes"

Sometimes, presentation is a little too bright, with cymbals and their like to the fore; oddly enough, the red bass-boost filters can help tame them.

Also faring well was the rich 'twang' of the sitar in Norwegian Wood. Some of this is down to a slightly 'forward' character that brings lead instruments to the fore; the unusual synthetic instrumentation that defines Ryuchi Sakamoto's B2-Unit album (CD FLAC rip) benefits as a result.

I can't fault the FH7s with classical music, either. A capture of the lossless 48kHz/16-bit stream dynamics were given sufficient room and the sheer presence - right down to string scrapes and the most subtle of audience mutterings - managed to convince.

CONCLUSION
These high-tech wonders are not the cheapest earbuds...IEMs on the market, but they nevertheless represent tremendous value for money. FiiO should be congratulated not only for its engineering achievement and the comprehensiveness of its offering, but the sheer standard of sound that the FH7s can pour into your ears.
Transfiguration

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“The PG-1 turntable within this system is a two-speed (33, 45rpm) belt drive design that, judging by its arm, comes from Pro-Ject of Austria. It has an internal phono stage (MM only) that will feed any amplifier direct, but it can be switched out if an external stage or amplifier with its own phono input is used.

Unusually, there’s a digital output in the form of Bluetooth wireless transmission, but only Bluetooth and nothing else – there’s no S/PDIF digital output in optical or electrical form. The Bluetooth stream is 16bit / 44.1kHz – CD quality.

Bouncing cartridge onto LP always was a big problem with vinyl, resulting in bent cantilever and the cost of a replacement stylus. Audio Technica have a good remedy in their AT-3600 MM cartridge; it has a carbon composite cantilever able to withstand such heavy use – and that is what Blue Aura fit to the PG-1. Yep – it’s a workhorse that tracks at 3.3gms but the use of carbon fibre in the cantilever gives it a wonderfully smooth and deep sound that is entirely in-character with LP – and preferable I feel to the brighter sound of metal cantilevers, which most are”.

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QUESTIONS

[1] How many turntable speeds?
(a) two
(b) twenty two
(c) reverse
(d) variable

[2] The digital output is –
(a) DSD
(b) I2S
(c) Bluetooth
(d) semaphore

[3] The cartridge is –
(a) VDH Grasshopper
(b) Shure M3D
(c) Goldring 1042
(d) AT3600 MM

[4] The cartridge cantilever is –
(a) steel
(b) brass
(c) carbon composite
(d) wood

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JANUARY 2020 WINNER: AUDIO TECHNICA OC9X SH CARTRIDGE
Mr. Roy Russell of Dorset
The Classic Evo utilises a simple and elegant “frame” design, which bears a notable resemblance to some of the most famous turntables of the 1950’s, 60’s and 70’s. But the design is more than just aesthetically pleasing, it also combines proven hi-fi technologies with the ‘simple to set-up and own’ principles associated with Pro-Ject turntables, so you can just focus on enjoying your music.

The improved two-plinth design utilises Thermo Plastic Elastomers (TPE) to isolate the metal-finished inner-chassis, rather than the traditional method of a spring-loaded sub-chassis, but this construction effectively decouples the motor from the main bearing and the tone-arm, reducing unwanted interference between the components.
Mail

Visit our website at www.hi-fiworld.co.uk or send your emails to letters@hi-fiworld.co.uk. Letter of the month wins a pair of KEF Q150 bookshelf speaker.

Answers by: NK - Noel Keywood; JM - Jon Myles; PR - Paul Rigby; MP - Martin Pipe.

Letter of the Month

It was interesting to read Malcolm Watts’ letter in Hi-Fi World (February 2020 issue) and his call on other readers for what they would pay for their music.

Cost is a factor, but it is also related to availability, changing habits and attitudes towards music. If you can obtain music for a nominal sum (e.g. stream/download) or watch and listen to it free from the Internet (e.g. YouTube) you will have no need to pay for it. If you won’t pay much or at all for music, it develops into a situation that it no longer has much value.

As a hobbyist musician I know of the extremely poor returns on streaming sales of online albums. One stream of a track retailing at around eighty pence results in typically less than one penny in royalties.

The BPI and the ERA (Entertainment Retailers Association) have recently reported streaming sales far outstrip any physical format sales. Just like DVDs of films and TV shows, I’ve seen full album release CDs for sale at less than fifty pence (even if they were second hand). I still remember my weekly pocket money of a pound as a school boy in 1979 was still not enough to buy a second hand LP.

As someone who is part of the small market who likes to buy original copies of old vinyl albums and singles, I would love to get them at the price of new re-issue LPs. My main interest is in buying 1960s to early 1970s pop and rock music by artists whose records never sold many copies new. They have now become collectables and as such, many are out of reach for me because...
Music. Literally the first word in 'music streaming', and always our top priority. Our network players feature cutting-edge technology – developed over 3 years by 25 expert engineers at our Salisbury HQ – but more importantly stay true to our founding mission, to take you closer to the authentic emotion of the music you love.

So, whether you’re listening to your own digital library, commercial music services such as TIDAL, Spotify, Qobuz and internet radio, or exploring the world of Roon, you’ll enjoy music streamed with our signature pace, rhythm and timing. Handmade here in England, the slimline NDS XS 2, Classic superstar NDX 2 (pictured) and flagship ND 555 players are winning Awards around the world. Hear the difference with your favourite music at your local Naim specialist retailer.

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Awards for NDX 2
Beats headphones – massively popular with younger listeners.

They can command four figure prices.

However, if I can find them and afford to splurge out, I will as I still prize the originals as the best way to listen to what was created back in its day, in my opinion when they knew how to make records.

It’s strange to me as a music lover but many people I talk to, usually younger than myself, have no interest in music. Those that say they do are mainly of my age group (fifty plus) but most say they never listen to music at home on what they still call a stereo.

If I mention I still buy and enjoy vinyl records there’s no response or interest, apart from a grin. Sometimes its followed by statements like, its just a fad or records are for old people!

I’ve often replied to this with what seems like, an reflection, a prepared statement. It goes as sound is an analogue wave form and records are analogue media I find them the most enjoyable way of listening to music. This usually results in a continuing grin and nothing else.

Talking to my ex hi-fi retailer made me think again about trotting out my neat little statement. He told me that when he was a dealer in the 1980s, only five per cent of the population were interested enough in music to invest in hi-fi. He reasoned if most people didn’t understand or care about sound quality then, why should they do so now?

Thanks,

Tony Bilny

Hi Tony. Then there is the Beats headphone phenomenon and the whole portable audio market that is now far larger than that for traditional hifi. Its users are consuming music so presumably enjoying it – and they are mainly young. My son (20) has an encyclopedic knowledge of all music from yesteryear to today but listens mainly on headphones, even though he plays electric guitar as well as keyboards through a traditional Fender valve powered loudspeaker cabinet (that, I am assured, is on another plane to transistor cabinets!).

So listening habits have changed it seems to me, but not necessarily appreciation of music.

Why young people think a hi-fi is for old people I do not understand at all. It is agnostic as a technology. But it could enjoy trendy revival, like the flat cap.

Potentially all those headphone listeners would appreciate a full size hi-fi so the market is still there, as well as that amazing back catalogue of old music of the sort you collect.

I admit to being fascinated by YouTube, mainly for its historical material. Seems like there’s no past performance not on there – and you get to see the artists perform. As you note, with music for free it would appear to devalue performance, yet even with – or perhaps because of – the billions of downloads achieved by Adele, for example, she still packed the Royal Albert Hall.

A miserable situation for most artists, as you explain in cruel economic terms, but some do well out of it. NK

OLD WISDOMS

I’m an old hand at hi-fi, by which I mean I was out-fut with hi-fi up until the early nineties at which point family and responsibilities meant it fell by the wayside. I am now in the enviable position of having time, space and money to re-indulge an old interest but the world has moved on a pace and my old system is now decrepit and only fit for the junkyard.

For the last year or so I have been reading the five major publications in the UK and I feel I need disabusing of my old assumptions and would benefit from some informed advice.

The prevailing wisdom was to invest in a quality pre-amplifier and power amplifier but now there are many high power integrated amplifiers that seem to punch the same weight. Working on the assumption that I want to invest in quality amplification, am I better off with one box or two?

I understand that recommendations are frequently based around source and speakers but all those are up for grabs too so I am looking to buy quality

For big traditional sound brought up to date the Wharfedale Linton is a fine choice and would likely suit an attic room.
LETTERS & EMAILS

Roon collects data from the internet, including pictures and histories, to accompany the music it stores and delivers, either on a computer or from a dedicated server.

amplification and then build a system around that. I have budgeted around £5000 for an amplifier but I can be flexible.

My son-in-law demonstrated his Naim NDS network device which was spectacular to listen to and conjured up a convenience that was utterly seductive to a creaky old goat as myself; my days of bouncing off the sofa every twenty minutes to flip vinyl are long gone. I would like to preserve my 500+ collection of CDs which represent a golden time in my life but I am not wedded to the idea of a CD player.

Finally, a choice in speakers will take much trial and error to find something that works well with my attic room and the amplifier so I am only looking for recommendations for source and amplification. I recognise how nebulous this must sound but I need pointing in the right direction I think since I have the electronics in place I can enjoy the process of auditioning speakers.

Thanking you in advance for whatever advice you can offer.

Tony Kingston

Rugby

Hi Tony. The last bit seems more important than the first bit: “an attic room”. Can I presume this is of limited dimensions/volume? Most are.

If so, then it’s likely 60 Watts will suffice, especially as you probably won’t be head banging any more. These days Watts come cheap so let’s say 60-100 Watts for your amplifier. If you bear in mind most loudspeakers are now nominally 6 Ohms, amplifiers give more power than their 8 Ohm spec, so if you bought a 50 Watter you’d be getting around 70 Watts in practice.

As a general approach I’d suggest you consider a lower power amplifier and larger, more sensitive loudspeakers. Wharfedale Linton’s (reviewed December 2019 issue) with 87dB sensitivity will give you more than enough volume and a sound you’ll appreciate from a 60 Watt amplifier for example – and you can probably fit them into an attic room.

For this sort of power an integrated amplifier will do perfectly well and I’d suggest you look at a Quad Vena II or a Creek Evolution 50A. They are easily within your proposed budget but transistor amplifiers are well worked out these days and don’t differ hugely in sound, so not to panic. Both these amplifiers are smooth sounding and an easy but fulfilling listen, their linear power supplies giving solid bass.

It’s common to archive (rip) CDs to a computer master file, using dBpower amp or XLD software. You will need a computer with a CD player, or one with an external CD drive. It will take a while but from this point on the digital files can be played by any number of means that won’t get you bouncing off the sofa to change a CD (let alone an LP – heaven forbid!). An easy way is to copy them to a flash drive and play from a Naim Uniti or a Cambridge CXN, for example, both of which provide streaming services as well.

Also, Roon may suit you. A Roon server will give you a very nice experience, with artist and album info, cover artwork etc, on an iPad to replace the battery. The retailer I bought the DAP from has said they have no idea whatsoever where I can procure a new battery, but my own research has identified a number of good possible sources. Unfortunately the Samsung S3 batteries advertised on eBay seem in the main to be either fakes or duds.

Does my experience mean that for the majority of DAPs we just have to accept that their batteries are not likely to last for longer than 5 or 6 years" asks Russell Hawkins.

DAP LIFE

I have been a regular Hi-Fi World reader for many years and thoroughly enjoy reading the magazine. The article this month regarding the FiO M1 I Pro got me thinking about what we can expect regarding longevity of DAPs generally.

I have an IBasso DX50 which has given me good service for the last five years (its quality is not particularly high-end but it was good value for money with a smooth sound and fine for portable use), but its battery is now no longer holding its charge for very long. It takes a Samsung S3 mobile phone battery, so I do have the option...
"I think the Pro-Ject Pre Box S2 Digital is actually a solid gold serious DAC" says Mike Tartaglia Kershaw.

the majority of DAPs currently available (and especially those that do not have consumer replaceable batteries), we just have to accept that their batteries are not likely to last for longer that say 5 or 6 years, after which, unless returned to the manufacturer for repair, the DAP then becomes useless?

Best regards,

Russell Hawkins

Hi Russell. Good point. Tektronix say "The typical estimated life of a Lithium-Ion battery is about two to three years or 300 to 500 charge cycles", although that seems a tad pessimistic to me. It’s still not a lot though and most DAPs are not built to be taken apart for battery replacement as far as I can see. In your case there are plenty of suppliers of the Samsung S3 on-line and at £10-£20 you’ll have to order and hope for the best. Or ask a mobile phone repair shop if they can help.

NK

CLEVER BOX

I have now been listening to the Pro-Ject Pre Box S2 Digital for 48 hours (almost non stop)! I un-boxed the insanely tiny unit, loaded the driver software, plugged the USB into my Windows 10 PC and phone cables into my Prima Luna Dialogue Premium HP and Monitor Audio Gold 200 speakers. I started up J River Media Centre 26 and fiddled about with settings. It all worked. I even got the blue light for MQA files. But who thinks up all these ridiculous names? Give me ‘Vena’ and ‘Artesa’ any day.

Straight out of the box the sound is special. I am trying not to let my knowledge that John Westlake was involved colour my judgement. The instant response to a wide range of music was the wonderfully wide soundstage with instruments located precisely, and good clean deep bass. Add to this lots of subtle detail highlighting the sound and texture of different instruments and vocalists.

It was love at first hearing. I could go on and on about the subtle sound quality.

I tried not to compare the Pro-Ject to all my other Dacs but to keep my feet on the ground. I did do a back to back comparison with the Audiolab 8300CD as it uses the 9118 Sabre DAC. Yes, The Audiolab did perhaps add some power and warmth and solidarity – especially in the bass – but much of the sound quality was very similar, as you would expect.

However the dual mono 9038 Sabre DACs in the Pro-Ject did seem to produce a slightly deeper if lighter bass and a smidgen more separation of instruments and sense of space and air around instruments and voices. In fact the lingering sensation with the Pro-Ject is a transparent airiness to vocals and instruments and deep and wide sound stage in all types of music. The Pro-Ject also seems to focus on rhythm: with clean, deep bass drums can be quite visceral (Joss Stone – Right to be Wrong). Separation of massed and solo orchestral strings is amazing (Respighi – Ancient Airs – Raudales). It even makes free Spotify and MP3 sound OK. I just love it.

Perhaps the Audiolab wins for a more overall ‘weighty’ sound but the delicacy of the Pro-Ject can be mesmerising at times. So, for a mere £300 you can turn any PC/laptop/netbook into a hi-fi source equal to, or perhaps in some ways better, than a £1,000 Audiolab CD8300. I haven’t yet compared it to my (John Westlake) Audiolab M DAC+ or even my (John Westlake) Cambridge Audio DAC Magic Plus.

I think Pro-Ject have released the Pre Box S2 Digital disguised as a tiny headphone amp so that it does not compete with items higher in their range. It is actually a solid gold serious DAC that easily fits into a good quality hi-fi system, a bit like the Chord M Cyo. I have not yet compared the sound to my M Cyo. I might not bother. I just love this silly little miniature DAC for what it is – another piece of John Westlake magic.

Best wishes,

Mike Tartaglia Kershaw

Hi Mike. Thanks for the comparisons that I hope readers will find interesting. John Westlake is a larger-than-life character and a very nice person too – charming but sincere. In my experience you are right to admire his creations. I certainly do.

NK

CLAMP DOWN

Thanks for your comments following my original letter about RF interference from LED bulbs – and thanks also to Mike Bickley who followed up on the topic.

Soon after I wrote, I thought about trying ferrite clamps to reduce this noise – which I used many years ago – and so bought three different sizes (from RS components, for cables of maximum diameter of 5.2, 6.5 and 7.5 mm) I also bought via eBay a cheap job lot of 10 medium size clamps from a Chinese source which arrived very quickly. Then the Russ Andrews catalogue arrived and I saw he too was following the same line of thought.

I’ve done a little experimentation since – and yes there is an improvement, but my power supply to the workshop is jury rigged and the aerial on my radio is not well set up, so there’s room for significant optimization on this side of things I’m sure, to stop the LED bulb transmitting noise to the radio and perhaps the hi-fi.

I did wonder if using a 3-core power feed (i.e. with an earth wire) might also lower the radiated noise, but it may be that the (inductive) impedance at RF is too high for an earth wire in the supply to make much difference. I need to improve my layout and supply to the workshop, and now should also consider
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what needs to be done inside the house itself, with the plethora of power-saving LED bulbs which have been installed.

Also, I take the point about wall-warts, and suspect these should all be treated in the way Russ and others recommend. I’m not ready to install a DC feed though Noel, and then I suppose you would have to find genuine LED-only bulbs to run from this. Anyway it’s got me thinking, and in the new year I will be investigating and experimenting further.

I am also now motivated by having just bought a stand-alone valve preamp, the first preamp I have ever had that I didn’t make myself. It is a thing of beauty, and now I will have to do justice to its potential for sound quality!

In the meantime, thanks again and if there are any further ideas on this topic, I am happy to learn.

Best regards,

Dr Richard H. Barton

Hi Richard. Thanks for raising what may seem to readers an abstruse subject, but we do now have conflicting standards where hi-fi equipment is mandated not to produce RF noise whilst LED bulbs and switch-mode power supplies are free to produce such noise. Your Medium Wave radio did a great job in detecting it.

I was not seriously suggesting, when replying, that you turn your lighting circuits to d.c. and install bulbs that I then thought unavailable, so much as ponder on an old argument about whether we should be using a.c. or d.c. power supplies in the home or for transmission purposes.

All the same, it would be fairly easy to convert domestic lighting circuits to d.c. feeding LED bulbs directly. This makes the bulb smaller, simpler and cheaper, eliminates transmission of RF noise and improves safety.

There are MR16/11/16 base low voltage LED lights available, plus suitable power supplies – see the Elite 12V/5W LED bulb at BLT Direct (£5.59) for example. A few of these would light your garden shed workshop I guess and eliminate radio interference. Also see the next letter for LED lights in the house, not just the shed.

In the meantime RF clamps on lighting circuits and wall warts make good sense and offer a way to cut down all the radio frequency rubbish that ideally we should not be producing.

NEW HOUSE

I am currently in the throes of building a new house and could really do with a bit of advice regarding the mains supply. I have a fairly competent system that has taken me 30 yrs to achieve and would like to give it the best chance to perform.

There is a fair bit of advice available on specialist cables, sockets etc but not a huge amount on the actual consumer units themselves. My question is, are there tonic differences between the various makers’ and types of consumer units and where can I find the information?

Best regards,

John Price.

Hi Jon. Sadly, I have to tell you we have never auditioned domestic consumer units – and I doubt anyone has! They must all have 60A pass-through ability so large connections and a reasonably pure path.

I suggest you consider installing a balanced line to the hi-fi, as some studios do for their power supplies. Airlink Transformers have a whole section devoted to them. Plus fact sheets that any electrician would need since this is a left-field subject (although well understood). If electrical noise comes in through the outside feed, or perhaps from the consumer unit itself, look to use a balanced mains supply with RF filtering that Airline also offer.

Check out their BPS3120 that comprises transformer in steel case price £330. It provides 13A current delivery and can be used by any mains powered equipment connected to the usual UK 13A socket, so you could plug in a vacuum sweeper for example.

A balanced line cancels out noisy earth leakage currents as well as being inherently safer, hence its use in site transformers. An electrician could install this transformer close to the mains distribution board / consumer unit and run a spur to the listening room. With a balanced mains supply each line runs 120V above ground so it’s intrinsically safer as well as quieter.

Also, in your new house I would suggest you consider its lighting circuits. This is a subject in flux. Old incandescents were replaced...
Airlink BPS3120 that comprises balanced transformer in steel case, price £330. It's for permanent installation and would suit a new home. You get two 120V a.c. supplies relative to ground, so safer than a 240V line.

by fluorescents, then halogens and now we have LEDs. But LED light bulbs have internal switch-mode power supplies that are electrically noisy; they radiate RF that all other electronic equipment, from vacuum cleaners to hi-fi, are mandated not to produce. See our letter from Dr Richard Barton in the November 2019 issue where he picks up interference from them on a Medium Wave radio, and also his letter preceding this one.

You could consider moving to low voltage/current LED lighting to eliminate RF noise, improve safety (low voltage, low heat) and of course minimise power consumption. The high street currently has little to offer here, most LED bulbs being high voltage, so fitted with internal supplies – a fact most retailers fail to clearly and consistently mention in the specs. However, Leyton Lighting (UK) have an extraordinary (pdf) catalogue of products, with operating voltages clearly and consistently stated. There is a section on Drivers and Controllers that covers 12V and 24V supplies, for connection to the consumer unit, and there are fascinating new forms of LED strip lighting now becoming available. By this I mean lighting tapes where a tape is cut to length and connected it appears, stick it along ceiling or floor to provide light. There are also low voltage down lighters.

I had my house re-furbished in the 1980s and much installed back then is now redundant, including TV and Radio (VHF/FM) co-ax cabling and low power consumption FL Series fluorescent hall ceiling lights. I'd suggest you bear in mind that whatever you install now may have to be changed in future so keep accessibility in mind. Have access floorboards screwed down, for example, don't let the builders nail them. And perhaps run ethernet cables. I hope your new house doesn't slide out of date as fast as mine did! NK

DIGITAL VINYL

Adam Curwin seems to have issues when digitising his vinyl collection. Here is my method for any analogue source. You will need a PC running Windows, an ADC, a fixed output such as a tape loop, which the Musical Fidelity MB preamp has I think. The ADC is connected to the output of the preamp, then the ADC is connected to the PC via a USB cable, Windows may already have the drivers for ADC, depending on the make of ADC.

The recording software is a matter of choice. I use LP Recorder by CFB Software which, compared to Audacity, is delightfully easy to use see https://www.cfbsoftware.com/. Also required is a ripping software such as LP Ripper also from CFB, the reason for this is LP Recorder records say an LP as one file, so it will need chopping up into its tracks.

Some tweaking in Windows Sound Options is usually required. The advantage of the method above, is that any source that uses the preamp is recordable, such as a turntable.

Regards
Mike Bickley.

Hi Mike. Thanks for your helpful comments. Audacity isn't so user-friendly I must admit. You fail to mention what the mystery ADC is however! It needs to be a decent 24bit converter and there are plenty of PC sound cards / breakout boxes that would work in such a situation. Alternatively, see the following letter where Furutech’s ADL GT40a is used. NK

DIGITISING VINYL

Re: Adam Curwin’s letter in the February edition about digitising vinyl. I have very successfully used a Furutech/ADL GT40a USB analogue to digital converter and am extremely pleased with the results. This little box of tricks is also a USB DAC and includes a phono stage (MM and MC) which can be switched to RCA line-in so your own pre-amp can be used instead. This switching provides an effective set of options, as I use the line-in for a Rega RPi/Rega Aria and the ADL’s MM input with a Pro Ject Essential III (for really damaged/dirty/crac boat etc. vinyl)

Using free Audacity software and 24 bit/48kHz quality, the files sound great and are of manageable size when in FLAC format. This allows me to listen to my ever-growing collection anywhere via a NAS, I don’t think for the money anyone would be disappointed. Sure there are more expensive options available but for me it produces a balance of excellent results for reasonable outlay. Oh – and the DAC itself is pretty good as well. Win, win, win I think (apart from the time editing files and adding metadata).

Mark Eley

Hi Mark. Furutech ADL’s GT40a 24bit converter has to be one of the best solutions currently available for sending LP to digital, as you explain. I found it gave great sound quality, free from the greyness and compression of cheap 16bit ‘CD quality’ converters. And very easy to set up and use.

The free Audacity sound editor must then be used to chop up a continuous LP side into individual tracks and it takes some learning. Interesting to hear about a simpler alternative – LP Recorder by CFB Software – from Mike Bickley’s previous letter. NK
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LEVEL PLAYING FIELD
Just getting through Jon Myles review of the Cambridge CXA61 amplifier in your January edition. What I noticed was a little odd, remembering this is a £750 amplifier. The review included a pair of PSB T20 speakers at £599, which could be a considered match. But then Jon also included a pair of Titan Nemesis in the review at £1500 – twice the cost of the amp itself. And almost three times the speakers. Why, when the likelihood of this would be so remote? Laziness, just happened to be kicking around! I’m pretty sure Jon has many more cost effective cables to demonstrate the worth of these products...
All were given excellent reviews. Level playing field please Jon
Regards
Ashley Trafford,
Winchester.

Hi Ashley, Personally, I feel many people misjudge the effects of cables on their system. The Titans definitely justify their cost. They brought a new sense of vibrancy to the sound. Worth the money? Matter of opinion. But I’ve found frequently that you can unleash more of your system by investing in cables than upgrading an amplifier/CD player/streamer. Give it a go with your own system. You might be surprised.

J M

NEW MUSIC ON TV
I have just been reading with interest, the article penned by Jon Myles in the January 2020 edition, regarding the lack of TV programmes featuring up and coming music acts. He makes some very good points but I feel he has done Jools Holland a great disservice in not giving him at least a mention. His programmes may not give the fully comprehensive exposure that new music requires, but he deserves some credit for bringing some new acts to the attention of the greater public.

Personally, I feel that there is greater opportunity for finding new music via the myriad of online radio stations. I think I have investigated and invested in more bands and artists this way than any other medium
Regards
Derek Gooding.

Hi Derek, I agree, Jools Holland has done a great deal to introduce new bands. It was through his programme that I first discovered The Blind Boys Of Alabama who were actually formed in 1939! A more prominent role on television would really be better for him and us all!

As for internet radio – yes, you can search but that can take a good while since there are so many of them. This makes it lengthy and, for me, rather tiring. No doubt that there’s variety however and some stations offer intriguing different fare from standard Western output.

CAMBRIDGE CXA61 AMP
Regarding Jon Myles review of the Cambridge Audio CXA61 amp in the January 2020 issue. I was surprised to read “The PSBs sounded good on the end of a Creek Evolution 100A but with the CXA61 they came alive in a different, more vibrant way”. The Creek 100A appears to be your current reference amp for reviews and was originally tested in March 2015 at a price of £1499...
The Creek was Outstanding – Amongst The Best – and gave 136 Watts into 8 Ohms and 225 Watts into 4 Ohms. Meanwhile distortion was miniscule at 0.002% into 1 watt.

Meanwhile Jon says the £750 CXA61 gives 72 Watts at 8 Ohms and 110 Watts at 4 Ohms and has distortion of 0.005%...

I know specifications aren’t everything (although you publish them with every review) just curious how your reference Creek amp ended up to sound worse than the poorer specified and half the retail price Cambridge amp? Maybe it is just some weird synergy with the PSB speakers.

I was thinking of buying the Creek 100A but maybe I should reconsider and buy the much cheaper Cambridge CXA61?

I currently run a Creek 50A amp with a Creek 50CD CD Player / DAC with fairly inefficient AV! Neutron IV bookshelf speakers in a small listening room...

Regards,
Adam Tate,
Hertford,
Hertfordshire.

Hi Adam, Our Creek Evolution 100A amplifier is a hard working review machine that copes well with all we throw at it – it is very consistent. It is also smooth and powerful. The Cambridge had a faster sound as I recall. Amplifiers can perform wonderfully in sonic and measured terms – but sound different all the same. It’s impossible to say what is correct, or ‘definitive’ perhaps.

Measurement reveals flaws, characteristics and design intentions: it is vital. However, below a certain threshold differences become irrelevant to the listening experience and – with amplifiers – Harold Leak’s age-old criterion of 0.1% is about right. The difference between Creek 0.002% and Cambridge 0.005% is not subjectively important.

Best to audition alternatives to your Creek Evolution 50A – ask your nearest dealer to see if they can help. I would suggest you don’t jump too fast since your Creek 50A is a fine amplifier.

NK

“I was thinking of buying the Creek 100A but maybe I should reconsider and buy the much cheaper Cambridge CXA61?” says Adam Tate.

“There is greater opportunity for finding new music via the myriad of online radio stations” says Derek Gooding. Internet Radio has 27,532!
Hugo 2 has taken one giant leap: with a new addition of the 2go streamer/server device, which brings wireless and wired streaming, up to 4TB of storage, plus auto source-switching for seamless music playback between playback applications. Hugo 2 with 2go is now a DAC, preamp, headphone amp, streamer and digital music library, all in one class-leading British-built device.
4TB Storage
DLNA Device
Wireless/Wired
Battery Powered

Chord Electronics Ltd,
chordelectronics.co.uk
Made in BRITAIN
PURE AUDIO since 1989
The most unlikely idea ever is surely to play LP through a streamer, is it not? Like letting a steam roller loose on a FI track somehow the two just don’t go together. A contradiction like no other it would seem, but that’s what NAD’s C 658 offers – and more bizarrely it has loudspeaker room correction! Eh? It’s best to think of the C 658 as a Swiss Army knife pre-amplifier that does everything except make the tea. Well, what do you expect for £1499? Although there’s plenty of analogue ability this is basically a deeply digital device. The analogue inputs are converted to digital (there is an analogue bypass) and it’s run by a BluOS app on a phone or iPad, although you get remote control also, if not of all functions. Its software comes with Dirac LE (light) loudspeaker room correction and a microphone is supplied for set-up. As a streamer it’s connected to the internet via ethernet cable or wi-fi. Since the outputs are analogue, to feed a power amplifier or perhaps active loudspeakers, there is an on-board DAC and it is from ESS no less. Amazingly, there’s also Bluetooth output so it will link with Bluetooth loudspeakers or headphones wirelessly.

This is one big bag of tricks then, so there’s a User Manual of equivalent proportions, plus numerous additional set-up leaflets that do have to be read! The User Manual is available on-line and on-line savvy is needed to update firmware,
Dirac etc. Setting up the C 658 isn’t plug’n’play – more plug’n’ponder. I updated our review sample to latest (Nov19) 3.6.12 firmware before starting the review.

There are two Line inputs and a Phono input for a turntable purposed for moving magnet (MM) cartridges – no great limitation since today’s MM’s are pretty sophisticated. All inputs are through RCA phono sockets; there are no balanced XLR socket inputs. However, there are balanced outputs as well as unbalanced with RCA phono sockets. With very high maximum gain the C 658 is a capable preamplifier that can handle all analogue inputs, even a moving coil cartridge. It has a headphone output and volume can be adjusted by remote control or app, as well as a front panel rotary control.

Bass, treble and balance can be adjusted on the preamp only, not the app, but the remote has a ‘tone defeat’ function. Surprisingly, the bass and treble controls are not switched out by selecting Analog Bypass, but the internal ADC (type unspecified) is, eliminating its 2.3V input overload headroom limit should a source exceed this (few do). As NAD say and our measurements showed, their bass and treble controls affect spectrum extremes only and there was very good resolution so fine changes could be made, top limit being a sensible +/-7dB.

The digital section has an ‘ESS Sabre 32bit DAC with 118dB Dynamic Range’ they say, but the model is unspecified. Our sample managed this on one channel but not the other, average being 115dB (see Measured Performance). There are electrical and optical digital inputs (S/PDIF) but not a USB B for computer connection, since BluOS can read both PC and Mac (iTunes) music libraries via network connection using Windows SMB file sharing, in what is termed Network shares on the app.

More conveniently perhaps, there is a USB A socket at rear for reading a flash drive, so music files can be played from there without a computer being on, but this function is available only on the app – somewhat less convenient. Even a simple USB drive track list on the front panel display, of the sort used by Cambridge in their streamers, would have helped, in conjunction with access by remote control. Selecting USB on the remote flags up a message to use BluOS, but the front panel display does show track information.

BluOS will however give access to a wide range of streaming services including Amazon Music, Spotify, Qobuz, Tidal, Deezer, Napster, radio stations and much else. Inputs can be selected from the app too.

Dirac room correction proved a little challenging. Where AV receivers carry on-board software for set-up and ‘room tuning’ the C 658 does not. Instead Dirac must be run on
Titanium Diaphragm Hi-Frequency Driver
Polyimide Diaphragm Midrange Compression Driver
12” Fibre Composite Cone Woofer
Stylish Magnetic Woven Grill
MDF Cabinet With Four Fine Veneer Finish Options
Tractrix Horn Ports for Improved Airflow

The Heresy IV offers unparalleled sound quality from a relatively small speaker. Utilizing Tractrix geometry, the all-new Heresy IV ports allow for the most efficient, fastest air transfer in their class, which reduces port noise for punchier low frequencies. In addition to delivering smooth, dynamic and low distortion sound, the Heresy IV is available in a high-quality Natural Cherry, Distressed Oak, American Walnut, or Satin Black Ash wood veneer finish. A removable slant riser base is included for ideal floor placement.
a separate computer (PC or Mac) on the network. An active internet connection is needed too.

The computer sends test signals (frequency sweeps) to the NAD and a connected (USB) measuring microphone collects data from the listening position and sends it back to the computer for processing.

Dirac on the computer then produces a correction curve and sends that back to the C 658. Up to five correction curves can be stored. The LE version of Dirac covers 50Hz-500Hz and there is an upgrade ($99) for the full frequency range. It’s a very complicated process I found, not for the faint of heart.

The final response and its correction curve were much as I expected from a sine wave sweep of a room and the correction curve can be manually tweaked to suit taste. Correction is digital and will not function with analogue inputs if Analog Bypass is selected.

Although it uses compact switch-mode power supplies so lacks a heavy mains transformer, the C 658 is quite heavy at 8.2kg and measures 435mm wide, 100mm high and 405mm deep. It’s built on a standard pattern pressed steel chassis, sombrely finished in NAD style. A master power switch lies on the rear panel but there’s a front power button that puts the unit into standby, duplicated on the remote control, but not the app. The app will control volume through all inputs though, which is important.

I had no problems operating the C 658 once I had acclimatised to the fragmented structure of its user interface, where some functions are handled natively but others by BluOS alone – with the remote control sitting somewhere in-between! Dirac loudspeaker compensation took this to an extreme in set-up complexity; on-line guides are available from NAD and Dirac but are poorly structured and written. It was all a bit scrappy.

**SOUND QUALITY**

I connected the NAD to our Creek Evolution 100A amplifier through Chord Company Epic balanced cables. With balanced inputs selected the Creek’s volume control is switched out, so volume was controlled by the NAD. An Oppo BDP-205D Universal Player acted as CD transport supplying an optical digital signal through QED Quartz glass optical cable. I played hi-res and CD from a rear flash-memory drive (Memory Stick) and this offered best sound so was my preference. Other sources come in through cables that add jitter and noise, whilst ripped files to flash drive are re-clocked to sound cleaner and more stable, as well as being cable-limitation free. Loudspeakers were Martin Logan ESL-X hybrid electrostatics, connected with Chord Company Signature Reference cables.

Running through a broad selection of un compressed CD tracks that I use regularly, it was obvious from outset that the C 658 has NAD’s characteristic warm n’ easy sound balance. Since this is also characteristic of ESS Sabre32 series DACs, hardly surprising the C 658 should sound open and big chested with Missa Criolla, where the choir was spread large, wide and deep between our electrostatics, with a smooth almost enveloping warmth. ESS DACs have deep insight into low level information and this allowed the NAD to retrieve atmosphere from this live performance.

With Nils Lofgren’s Keith Don’t Go, with its cutting close-miked guitar strings, the C 658 was mid-mannered rather than sharp and fast. Lofgren’s vocals were big-bodied and the performance atmospheric, the whooping audience wrapping

---

**The Dirac loudspeaker response correction screen, with measurement of a small bookshelf loudspeaker, suggested correction curve and manual tuning options.**

There are external wi-fi and Bluetooth aerials for efficient radio connection. Inside lie densely populated circuit boards full of huge chips, including the ESS DAC (near centre). Switch-mode power supply (screened) so no mains transformer visible.
SOUND WITH STYLE

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around behind our loudspeakers, but there were no sharp edges. Think big, warm, rich.

Mowing on to hi-res I heard the same with Fleetwood Mac’s Dreams (24/96) where cymbals in Fleetwood’s drum kit were rich rather than raucous, as they can be from this old recording – but there was good low end heft to his drumming. Bass was weighty, rather than speedy.

Cyndee Peter’s singing House of the Rising Sun (35D) had large presence: her slow drawl eased out through the loudspeakers. She sounded weighty enough to be real so I paid due attention. Slow cymbals strikes were sweet in tonality but mild in manner, with no spotlight on them. Spinning LP on our Timestep Evo modified Technics SL-1210 turntable with SME 309 arm and Audio Technica VM750SH Shibata tipped MM cartridge worked well. The cartridge is on the brighter side of audio life, fast and detailed.

This suited the C 658 nicely; it was a symbiotic pairing. Fast drum work in Sing Sing Sing, from the Syc Lawrence Orchestra (180gm, Direct Cut), had visceral power and the musicians sat in broad panorama in front of me. The C 658 images well but it isn’t showy about it, more gentle and beguiling. I enjoyed spinning LP through it, but best to use a cartridge with fast, forward sound, Audio Technicas filling this bill well.

CONCLUSION
NAD’s C 658 preamplifier does so much it is hard to take in. In classic NAD fashion all works well at basic technical level, ensuring good sound quality of a nature expected from this company; full bodied, warm and smooth – not a speedy sound. Operationally, the user interface is fragmented and awkward, and with Dirac loudspeaker tuning challenging. But once accustomed I found it all worked well. If you want a preamplifier that does it all, sounds good and does not cost a fortune then the C 658 is well worth considering.

MEASURED PERFORMANCE
Frequency response reached 45kHz before rolling down sharply, our analysis shows, with a 192kHz sample rate digital input via Coaxial 1, where the usual limit is 96kHz. The optical input accepted 192kHz sample rate and gave the same result.

Left and right outputs differed in quantisation noise level and therefore dynamic range, Right measuring 113dB and Left 118dB (EIAJ Dynamic Range) – a large difference. The average of 115dB is mediocre, behind the 120dB+ result becoming more common, it still enough to reveal the benefit of hi-res over CD (100dB dynamic range). The ESS Sabre32 series DAC (model unspecified) is spec’d at 118dB NAD say. Harmonic distortion at -60dB (24bit) measured 0.04% – good but 0.02% is now possible.

Preamp measured a high x12 (22dB) with volume turned to maximum (12dB), from phono socket Line 1 in to both phono and XLR output sockets, where XLR commonly gives double gain and output. Both sets of outputs overloaded at 4.7V – quite low. Volume is best set to 0dB where gain is a conventional x3 (10dB). The analogue inputs overloaded at 2.3V in, just good enough to accept 2V from a silver disc player – but Analog Bypass bypasses the ADC, eliminating this issue.

Phono stage equalisation was accurate, giving flat frequency response from 10Hz (-1dB) to 20kHz. Gain measured x200 at 0dB volume setting and x760 (58dB) at full volume – more than enough for all MM cartridges. With 47k input this stage is purposed for MM but gain is just about usable with MCs with volume turned up.

The C 658 performed well under measurement, but its digital section is slightly beneath highest standards.

PHONO STAGE

<table>
<thead>
<tr>
<th>Frequency response</th>
<th>10Hz-20kHz</th>
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<td>x760 (58dB)</td>
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FREQUENCY RESPONSE

DISTORTION

DIGITAL

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PREAMP

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<tr>
<td>Gain</td>
<td>x12</td>
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<tr>
<td>Output max (unbalanced/bal)</td>
<td>4.7V</td>
</tr>
</tbody>
</table>
WORLD STANDARDS

Your guide to the best products we’ve heard that are currently on sale in the UK...

TURNTABLES

AVID INGENIUM
£800
Great bass response and upper midrange detail allied to clarity makes this a must-have at its price point.

CLEARAUDIO INNOVATION
£960
Expensive, but offers great results from a finely honed and beautifully finished belt drive turntable, with servo control from the platter to keep a grip on turntables like few others. Can be fitted with a Clearaudio tone arm, or any conventional design. Awesome.

INSPIRE MONARCH
£4,350
A return from the ground up. Technics Direct Drive, having blistering pace and dynamics allied with smoothness, suppleness and purity of tone. A true reference.

LINN LP125E
£3,600
The UK’s most iconic turntable, the legendary Sinden, goes from strength to strength. New Keilcut cartridge and radial DC motor add precision and grip to one of the world’s most musical disc spinners. Expensive though.

MICHEL GYRO DEC
£1,100
Wonderful styling coupled with great build and finish make this turntable a delight for friends and family. It has an attractive clear acrylic dust cover and you can mount just about any arm. A current design standard.

PRO-JECT ESSENTIAL DIGITAL
£300
A budget turntable that turns in a great analogue performance, but also has a hi-res digital output. Send 24/96 across your lounge via optical cable to a DAC and get great audio quality. Or record LP to your laptop.

REGA RP3
£350
The first of the super-quality Regas, little compromised by price and featuring Rega’s outstanding RB333 tonearm, suitable for MM and MC cartridges. A standard at the price point.

TIMESTEP EVD
£2100
Two Technics SL-1210 MkII Direct Drive turntables with improved plinth, isolation, main bearing and power supply, plus an SME arm (add £1900). UB convenience, rock steady pitch and top sound at a great price. Our in-house reference.

REGA RB603
£300
A one-piece tapered casting makes this arm not only structure armed, but also a great dynamite source. Superbly shaped for MM and MC. Reference quality.

SME 312S
£1,600
Twelve inch magnesium alloy tapered arm tube plus SME V bearings. An insightful, yet smooth and resolved sound. Superlatively built and completed.

SME 308
£1500
One-piece tapered arm finished like a camera and slick to use. Superb SME quality and sound at affordable price.

SME V
£3000
Offers rapid fire timing and a sense of precision, plus rock solid dynamics. Top dollar for deep pockets.

CARTRIDGES

AUDIOTECHNICA AT-OC9 MLIII MC
£420
A fine sounding MC with strong bass and superb treble from a great stylus – yet inexpensive.

TONEARMS

ORIGIN LIVE ENCOUNTER MKIII
£1,745
Origin Live combines carbon fibre and ebony to marvellous effect in its new 12-inch arm. Creamy and rich in presentation, the Encounter driver deep into the mix for a satisfying listen.

HADDOCK GH-242 EXPORT
£910
Consistently musically landing sounding tonearm, iat needs the right turntable.

ORIGIN LIVE DYXX
£450
Easy, smooth, creamy nature that reminds you why you’re listening to vinyl in the first place. Essential audition at the price.

AUDIO TECHNICA AT-F3//II MC
£150
Great value entry level moving coil with detail and grip you just can’t get from similarly priced moving magnets.

BENZ MICRO ACE SL MC
£995
Smooth, linear and full-bodied sound winner, hand-made cartridge from Switzerland.

BENZ MICRO WOOD SL MC £945
Highly finished Swiss moving coil that plays music with reference precision.

DENON DL-103
£180
A popular and much loved budget MC with big bass, smooth treble and deep sound stage. Fantastic value.
LYRA TITAN I MC £3,500
Breathtaking speed and dynamics from LP, helped by diamond coated, boron rod cantilever.

ORTOFON 2M MONO SE MM £80
A mono cartridge purposed for The Beatles in Mono microgroove LPs. Fitted with a top quality Shibata tip. Fab for the four.

PHONO PREAMPS
CAMBRIDGE AUDIO 651P £200
Clean, concise sound from MM and MC cartridges at a very low price. A real bargain.

ICON AUDIO PS3 MKII £2,500
All valve MM phono stage with MC transformer option, graced by big, spacious and relaxed sound.

LUXMAN EQ-500 PHONOSTAGE £4,495
A fairly equipped phonostage from Japanese manufacturer Luxman that offers comprehensive cartridge matching allied to superb sound.

LEMA ACOUSTICS ELEMENTS ULTRA £1,199
Smooth arc-decorc source with the ability to accommodate most modern cartridges. Exceptional value for money.

PRO-JECT TUBE BOX DS £425
Compact MM and MC phonostage with valve output circuit and a big sound.

PREAMPLIFIERS
ICON AUDIO LA-4 MKIII £1,400
Uses early 6SN7 triodes for liquid sound. Has plenty of gain and a remote control into the bargain.

MF AUDIO CLASSIC SILVER £4,500
One of the best preamplifiers we’ve heard at any price, the transformer-coupled marvel does very little wrong. It’s powerful, clean and open, yet delicate. Its sound is unmatched at or near the price.

MING DA MD7-SE £1,520
A valve preamplifier with six open, effortless sound and a big soundstage. It has plenty of gain so will accept any source and drive any power amp. A real beauty.

INTEGRATED AMPLIFIERS
ARIA PRO845SE £1,499
Pure single-ended valve magic. Low powered but immediately gorgeous, easy-going yet forcefully dynamic at the same time.

LEMA ACOUSTICS VRS40 £3,660
Power house sound with enormous pace and punch from traditional U.S. muscle master Audio Research. Breathtaking, but expensive.

CREEK EVOLUTION 100A £1,500
Superb build and smooth confident sound make this powerful amplifier a benchmark.

SHURE M97X £80
Big warm sound, but great tracking and bullet-proof stylus protection from damped guard. A survivor.

VAN DEN HUL DOT-DI SPEcial MC £995
Long-established cartridge from Holland with an open and dynamic sound.
WORLD STANDARDS

ICON AUDIO STEREO 60 MKII £2,800
Excellent tube integrated with plenty of power and an expansive soundstage, plus KT150 tube option and bias meter for easy adjustment.

NAIM NAIT 5Si £925
Naim’s famed entry-level integrated amplifier is updated to its status. Demo Naim’s superbly muscular sound at entry level.

SUZDEN A21SE £2,480
Class A amp with fantastic sound quality producing hard, sculpted images, deep detail and tight bass. Just don’t expect disco-like sound levels!

POWER AMPLIFIERS

AUDIO RESEARCH VS175 £7,498
Powerful, fast valve sound that makes everything else look weak at times. Needs careful matching but well worth the effort.

AUDIO RESEARCH VS115 £5,000
Outs of power with enormous punch. Rafael Todes said it provided “shock and awe” while retaining incredible smoothness and texture.

ICON AUDIO MB645 MKII £7,600
With 120W from big B45 valves right down to low frequencies, this power amplifier has massive dynamics and bass swing, yet is easy on the ear.

ICON AUDIO MB811PP £15,000
Big Russian transmitter valves deliver 200W from these massive monoblock amplifiers. Frightening in every sense.

MCINTOSH MC-152 £4,995
Stunningly insightful sound with enormous bass punch from a uniquely designed transistor amp. Amazing audio, a league up, if expensive.

QUAD II-EIGHTY MONOBLOCKS £6,000 PR
Powerful and expansive sound from modern design monoblocks that also look lovely. Superb – used by us as a reference.

QUADRAL CROMION VIII AKTIVS £6,20€
Active loudspeaker with light, powerful bass; perfect accuracy and detailed treble from a ribbon tweeter.

LOUDSPEAKER FLOORSTANDER

B&W 803 D3 £12,500
B&W’s updated statement floorstanders deliver depth and definition with breathtaking speed and authority, aided by a diamond coated tweeter. Expensive – but enormously impressive.

CASTLE AVON V £1,600
A big floorstander at a modest price that suits the average room. Refined ribbon treble and deep bass give it a great delivery.

ENIMENT TECHNOLOGY LFT-8B £2,500
Excellent U.S. planar magnetic loudspeaker at bargain price. Utterly superb – a must hear.

FOCAL ARIA 926 £1,400
Simple, clean, neutral sound – easy going but well engineered and affordable.

MARTIN LOGAN SUMMIT X £16,998
Matches Martin Logan’s XStat electrostatic panel to a powerful subwoofer to provide extended, powerful bass. Dramatic sonic purity. Awesome – all but unmatched.

MARTIN LOGAN ELECTROMOTION £2,500
Martin Logan’s budget baby XStat hybrid electrostatic. Fits into any lounge to give electrostatic levels of clarity and imaging.

QUADRAL ORIKAN VIII AKTIVS £6,20€
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Q ACOUSTICS 205i £480
A large floorstander at a budget price. Offers high sensitivity and big sound and has very few flaws for the price.

SPENCER SPI16 R2 £6,495
Retro looks but a sound that’s hard to match. Spencer’s 12” bass unit provides massive low-end grunt with a room-filling sound.

SPENCER A2 £1,30€
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TANNAY DEFINITION DC10 Ti £6,000
Enormous power with great projection. Glorious subwoofers too. Need little power to go very loud and have superb traction into the bargain.

TANNAY KENSINGTON £9,950
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LOUDSPEAKERS STANDMOUNT

ACOUSTIC ENERGY AE1 V2 £225
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ACOUSTIC ENERGY AE1 CLASSIC £845
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ELAC BS243 £1,000
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WHARFEDALE DENTON £500
A beguiling mixture of retro looks with modern, high-technology drive units. The Denton has an easy-going, big-hearted sound with a touch of trad warmth that should appeal to many.

EMINENT TECHNOLOGY LFT-16A £1,200
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CHORD RED REFERENCE MKII £16,600
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ESOTERIC K-03 £9,495
Superb high-end silver disc spinner that is beyond criticism. Devoid of its own character but has a flawless presentation.

MUSIC FIRST PHONE BOX £276
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DACs

AUDIOLAB M-DAC £600
Excellent sound from ESS Sabre32 DAC and impressive flexibility with a wide range of filter options make this a stand-out product. Low price is the icing on the cake.

AUDIOLAB Q-DAC £250
Striped-down version of Audiolab’s M-DAC loses some features but retains much of the sound, making it a very bargain.

ANTELOPE ZODIAC GOLD/VOLTIKUS £3,095
DAC/preamp/power supply combination majors on detail but has a remarkable un-digital sound. One of the best at its price.

CHORD 2QUTE HD £990
Superb build quality and exceptional sound from this compact unit. Boasts the ability to handle DSD direct via USB and has an exceptional soundstage. One of the best DACs you can buy.

TUNERS

CAMBRIDGE AUDIO AZUR 651T £299
Value-packed AM/FM/DAB and DAB+ ready tuner. Precise and detailed with excellent resolution of spoken word.

CREEK DESTINY 2 £550
Creek’s tuner expertise shines through in the Destiny 2. This AM/FM receiver is wonderfully three-dimensional and smooth.

META0M OCTAVE £729
Unique two box digital-to-analogue converter with great sound at a great price. Cuts upper treble, though.

MAGNUM DYNALAB MD-30T £1,900
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QUAD PLATINUM DMP
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DIGITAL SOURCES

ASTELL&KERN AK100 MKII
Portable high-definition digital player with superb sound quality. Punchy and test.

NAIM NAC-N172 XS
A pre-amp/DAC/streamer package provides a taught, rock-solid presentation with a tonally rich midband and a superior sense of rhythm.

PROJECT STREAM BOX RS
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NAIM MDX
Interesting one-box network-enabled hard-disk mains system that gives superb soundscapes together with impressive ease of use.

NAIM UNITALITE
A 50W amplifier with traditional Naim Heidi, a CD player and vinyl/radio, plus network input and Bluetooth make this a great all-in-one.

HEADPHONES

AUDEZE LCD-3
A planar magnetic phone that offers monitor quality. Strong sound with silky, dark quality that others struggle to match.

BOJO TQ-50
Big, warm sound with plenty of volume and clean at high levels. Muscular sound compared to many rivals.

UNUSUAL PRO-JECT
Twisted to fight off radio frequency, the Black Rhodium speaker cable is easy on the ear with a fine sense of clarity and focus. A remarkable performer at the price.

NOBLE K10
Custom fit in-ear phones with 10 drivers deliver a sound that is out of this world. Personal and perfect.

HEADPHONES

TELLURUM Q BLACK
A deep, dark, velvety performer that’s nevertheless highly musical. It represents excellent value for mid-price cables.

TELLURUM Q SILVER DIAMOND
An open, natural and transparent sound that is difficult to beat, from these great loudspeaker cables.

FIO X3
Fabulous value player with nice easy sound and full range of abilities. Small and light. For newbies.

OPPO PM-1
Planar magnetic phones with a warm, easy but big bodied sound that draws you in. Need a lot of tone, but deliver superb bass.

DIGITAL SOURCES

LOTTO PAW GOLD
Reference quality sound; it’s like carrying your hi-fi in your pocket. Equally large too, but stunning headphone quality.

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Offers a slightly pace with a precise nature. Fast performance enhance frequencies and beautifully etched detail.

CHORD SIGNATURE REFERENCE
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OPPO PM-1
Planar magnetic phones with a warm, easy but big bodied sound that draws you in. Need a lot of tone, but deliver superb bass.

HEADPHONES

SENNHEISER HD700
Tremendously fast with a strong, focussed, lower-frequency range and a full bass punch.

YAMAHA HPH-MT220
Purposed for indoor monitoring yet light and comfortable enough to be use on the move. Excellent sound quality marred only by a slight warmth to vocals.

DIGITAL SOURCES

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Let us not beat about the bush. These beautifully-finished but, at £342 a metre, expensive DSS-4.1 speaker cables from Furutech are big. Really big. With an outer diameter of no less than 19mm, we’re talking bigness of towing-boats proportions. And they’re heavy.

What makes them so big and heavy is what makes them so expensive. The Tokyo firm kicks off proceedings with the finest copper it can lay hands on. The conductors that carry the precious audio signals are made of “DUCC Ultra Crystallized High Purity Copper...supplied and regulated under strict quality control by Mitsubishi Materials industries”.

The Mitsubishi manufacturing process “optimally aligns the crystals while reducing the number of crystal-grain boundaries, resulting in a tremendously-efficient conductor”. Furutech refines the high-grade metal with its proprietary “Alpha Super Cryogenic and Demagnetizing treatment” and the end-product is “Alpha OCC”. A clever stuff.

At the centre of each independent signal-carrying conductor is a 0.8mm-diameter black polyethylene core. Furutech’s ‘wonder-copper’ is then applied in no fewer than three layers, each of which is wound in a slightly different way. These constructions are wrapped in two insulating layers, one fluoropolymer and the other colour-coded polyethylene.

Dealers can fit any choice of Furutech-designed spade terminals and 4mm banana plugs. Our three-metre review samples were fitted with £130-per-pair CF-201(R) spades intended to mate with an amplifier’s output connectors and CF-202(R) banana plugs – £172 per pair – at the speaker end. Robust and good-looking, they feature rhodium-plated alpha pure-copper centre conductors, composite “damping rings” and non-magnetic stainless-steel/carbon-fibre body construction designed with resilience and stability in mind. I used an Arcam A49 and Cambridge Edge W amplifiers with them. Completing my signal chain was a Cambridge Edge NQ, the W’s matching streamer, fed a diet of 320kbps AAC digital radio, CD rips and hi-res material.

Compared to my existing cables orchestral material, even from Radio 3 broadcasts, sounded noticeably more open and cleaner. With well recorded rock material improved treble clarity was evident.

Bass tautness and definition, though, proved to be even greater beneficiaries.

These refinements were noted with upper mid-range hi-fi; I wonder what might be achievable with truly high-end kit; the review samples do, after all, cost more than two pennies for a three-metre stereo pair.

CONCLUSION
These sturdy and well-engineered Japanese cables turned in the performance improvements that are to be expected, given their sheer expense. They are very heavy and their size might make them difficult to conceal. It’s just as well, then, that they look as good as they sound.
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Small but large

Small price but large sound from these Klipsch active ‘speakers has Noel Keywood listening.

They may look like small loudspeakers but in fact the Klipsch Reference R-51PMs are a complete hi-fi system, with 60 Watts per channel plus an array of inputs and remote control, all for £500. Unbelievable. But can they be any good at this low price? I measured them and listened to them and came away surprised. They are definitely worth knowing about if you fancy a budget all-in-one with some interesting strengths.

What you get at this price is a pair of compact MDF cabinets measuring 338mm (13.3in) high, 178mm (7in) wide and 232mm (9.12in) deep, finished in artificial black ash veneer. With a modest weight of 4.8kg they’re easy to move around and can stand on a 10in deep shelf, for example, although 12in would give easier rear access since there’s quite a lot at rear including a rotary volume control. However, these ‘speakers are meant to be remote controlled from a small, light, plastic handset. It is very easy to use, being dedicated to the ‘speaker only, not to other Klipsch products, so there are no superfluous buttons to clutter the fascia.

One loudspeaker (Right) is powered and needs a mains connection, the other is a slave. A
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slim cable connects them through ordinary loudspeaker terminals; there’s no dedicated connector as with some interconnected loudspeakers, and this makes linking easy, the cable supplied measuring 4m (12ft) long.

With no app or such like, setup is quick and easy, the only slight puzzle being that if you want to use a turntable to spin LP then it will have to be placed close to the Right loudspeaker cabinet. I did this by placing the speakers on stands, one being next to a rack system with our turntable at top. Best not to place a turntable on a shelf next to the Right speaker because it will suffer feedback.

So as you’ve now guessed, these active loudspeakers can accept a turntable, with moving magnet (MM) cartridge. But they can also accept much else, having analogue line inputs through phono sockets when LP is not used (switch selected Line/Phono), analogue line input via a 3.5mm jack, digital input via an optical S/PDIF cable or USB B computer attached and acoustically transparent our measurements showed, so can be used on or off.

**SOUND QUALITY**

I started out by running the digital optical output of our Oppo BDP-205D Universal player to the Reference R-51PMs for CD from a good source. This ‘sort of’ went well and was impressive, showing immediately that the speakers have a grippingly large sound stage that makes them stand out. The Tractrix horn of the tweeter works well here, delivering a massively spacious sound that engulfed the area beyond the loudspeakers at left and right. There was a sense of height too, images occupying area rather than being pin-point. As I span a stream of uncompressed review tracks and moved around the room to grab CDs, I also became aware that the stage was vertically phase consistent, sounding much the same wherever I was in the room.

All went well with CD, Antonio Forcione’s guitar in Tears of Joy was large and forward, strong in it but not spitty up top. Josefine Cronholm singing In Your Wild Garden was also pushed right out and took on big presence; there was almost a gap here. Klipsch’s R-51PM speakers are detailed and insightful, forward and with large scale.

The bass line in this track was reticent until I selected bass EQ, but...
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this was in our large listening room. In smaller rooms, for which the R-51PMs are designed, and near-wall placement they will better match work with room modes to give a balanced result that avoids room boom.

There are no tone controls, only dynamic bass EQ that lifts bass at low volumes, but less so as volume rises to avoid overload. It was easy to use and effective, adding obvious extra "bong" (a slightly bouncy quality) without overdosing it, so the speakers remained in control – free of bass wallow. A matching sub-woofer is available.

It was when I got to Nigel Kennedy playing Vivaldi's Spring that I felt the strings of his Strad, and those of the English Chamber Orchestra behind him, were on the hard side. This property was there with Rock but less intrusive. So I jumped up and connected the Oppo's analogue output to the Aux input, in effect bringing in the player's ESS ES938 Sabre32 Series DAC and what a difference! Now there was tonal colour in the sound as if sunlight had flooded in, violins taking on an altogether livelier and natural quality, whilst still being strongly embodied on the big sound stage.

The message here is, then, that the digital section is not the sweetest and most tonally rich – but that's what we know from budget digital. To get the most from these speakers – and they really are very good – best to drive them from their analogue inputs. Bringing me to LP.

With an Audio Technica VM735SH Shibata tested cartridge in our SME309 arm on Timestep Evo modified Technics SL-1210 Mi2 Direct Drive turntable, the R-51PMs came alive, throwing out a huge stage with nicely solid bass. Hand drums were dryly controlled, stabbing at me in Hugh Masekela's "Umtshintana" (180gm, analogue) and his trumpet blared out in big form. There was some slight glare again, the tweeter is forward but that's where all the detail and projection comes from.

Similarly, Cheryl Porter singing "God Bless America on Two Countries One Heart" (180gm analogue) was dangerously close at times (!) when I turned volume up, but the images and the sound stage were so high and wide anyone would be impressed. For such a small loudspeaker they deliver a spacious sound unrelated to their size. The dryness of the sound (no bass waffle) kept LP neat but sweet – and certainly impressive. The two went together very well.

CONCLUSION

These little loudspeakers outperformed themselves! The Klipsch Reference R-51PMs were beyond good at the price. Impressively large and open sounding, their huge sound stage suited Classical and Rock equally. Where small speakers commonly sound pinpoint focused, these put up a massive display. Being used to a large stage from our Martin Logan ESL-X electrostats I was quite taken aback to hear the R-51PMs attempting to go there.

They're not electrostatics – far from it – but at the price they manage absurdly well. With so many inputs and such ease of use, plus a low, low price – well worth getting an audition.

MEASURED PERFORMANCE

Through analogue input (3.5mm jack), frequency response of the R-51PM showed some small upper mid-band lift of a few dB around 4kHz. Measuring 20 degrees off-axis lessened this a little, but our third-octave analysis of pink noise (green trace) shows the 'speaker still has a peak here and will sound forward as a result. It will also very detailed, especially as high treble is strong up to 12kHz.

Output below 1kHz slopes gently

FREQUENCY RESPONSE

Green - driver output
Red - port output

BASS EQ

The aluminium dome tweeter has a front phase plate to smooth its output, before being guided into the room via the Tractrix horn.
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www.BlackRhodium.co.uk
Mordaunt-Short may now be part of the South London-headquartered Audio Partnership, where it’s a sister company to Cambridge Audio, but its late-1960s beginnings couldn’t have been more different. After Norman Mordaunt and Rodney Short joined forces in 1967, the duo’s first ever speakers enjoyed exclusive distribution through a famous retailer in a better-known part of London – namely Harrods of Knightsbridge. In between, Mordaunt-Short brought us three ranges of speakers – Festival, Carnival and Pageant – and moved into the 1980s with its radically-different MS series.

The speaker described here - the two-way medium-sized bookshelf-type MS3.30 – is a later example of the MS series, appearing in the early 1990s. Mordaunt-Short, like most audio companies, was by then coming to terms with the impact of globalisation. Its speakers had to be innovative, affordable, capable of strong performance and styled in a manner that would appeal internationally. The 8.2kg MS3.30’s technology was certainly interesting, for a pair of British speakers that sold for £200 (by the time they had crossed the Atlantic, US buyers were being asked to pay approximately $460...plus a further $130 for the matching stands). To this end the MS3.30’s drive units employed unusual materials, the crossovers featured protection circuitry and the enclosures were constructed differently.

Let’s start with the cabinet, which measures a domestically-acceptable 460mm x 240mm x 260mm. It may be made of a 15mm-thick particleboard-type material, as seen in countless other speakers of the time, but the baffle that fronted it was not machined from wood. It is instead a lightweight plastic moulding that achieved its strength through ribbing. Doing so offers many advantages. Over long production runs, injection-moulding is much cheaper than traditional woodworking methods. Furthermore, it becomes easier to accommodate features – notably ports (the MS3.30 is a bass-reflex design) and rounded edges. The latter reduce diffraction effects, thereby improving imaging. Finally, these mouldings can be given an attractive contemporary appearance that would otherwise be difficult to achieve.

Get this right, and your product will have timeless appeal – it has to be said that Mordaunt-Short’s designers did a great job with the MS3.30. Chances are, you won’t feel a need for the edge diffraction-free frameless cloth grilles.

Note the absence of visible screws – indeed, the 200mm bass-midrange driver looks like an integral part of the moulding. It isn’t, of course; the four screws holding it in place are hidden by a clever circular trim with tabs that neatly slot into the baffle. Said drive unit is built around a cast-aluminium basket. It features a polypropylene cone, coupled to a 32mm voice coil wound onto an aluminium former. The black cone visually-complements the baffle, an injection-moulded dust-cap contributing further to the MS3.30’s neat lines.

Its surround is made of a synthetic rubber material, which has much greater longevity than the foam used by some manufacturers. Mordaunt-Short had plenty of free rein here, having designed and built this MSB-200 woofer specifically for its products (as opposed to simply buying in drivers from third-party companies). The engineering team could therefore optimise it for the task at hand; a natural 60Hz bass roll-off...
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Although good

Also attached to said crossover – which features a resistive device called 'Positec', to protect the drive units from being driven beyond their capabilities – is the 25mm tweeter, which goes up to 22kHz and features a dome made from aluminium instead of plastic. If the specs are anything
to go by, the overall system has a sensitivity of 90dB (1W/1m) – pretty good even by today's standards.

The recessed binding-posts – which present the nominally 8 Ohm load of the speaker to full-range signals from amplifiers rated at 100W or less – are gold-plated.

This is the MS3.30's MSB-200 bass-mid drive unit. Note the use of an aluminium casting for rigidity. For best results, you'll need to replace a failed unit with the same model, as Mordaunt-Short designed it specifically for this speaker.

parts for proprietary Mordaunt-Short products, there's another option. My attention was drawn to Lockwood Audio (http://www.lockwoodaudio.co.uk/mordaunt_short.htm), which holds "all remaining spares and information for pre-1994 Mordaunt-Short spare parts, produced before the brand was acquired by the Audio Partnership".

Although bi-wiring isn't accommodated, the nominally 8 Ohm MS3.30s still manage to yield a good standard of performance from their full-range input terminals. Mordaunt-Short recommended amplifiers rated up to 100W.

and substantially-built. They will take bare wire or 4mm banana-plugs. Four threaded holes on the base of each speaker are provided for the matching optional stands, which raise the MS3.30s a half-metre or so above the ground. Mine wasn't accompanied by these, but any decent furniture of this sort should be fine. Mordaunt-Short's advice was to position each MS3.30 "approximately 20–50cm from the rear wall", and at least half a metre from a side-wall.

And who are we to argue? Such advice was followed when setting up my particular MS3.30s, which had lain dormant for a while. They were hooked up to a Marantz PM66-SE Kt, as featured in a previous Olde Worlde and a Cambridge CXN v2 streamer with access to Internet radio and lossless-compressed music both CD-derived and hi-res.

Mordaunt-Short's cleverly-designed plastic baffle and custom drivers got listening off to a good start, Radio 3 live concerts (320kbps AAC stream) benefitting from a wonderfully-spacious yet natural stereo image. More artificail pop/rock studio concoctions, such as Talking Heads' Remain With Light, also fared well. I was left with no doubt as to where the engineer had positioned the musicians.

That Talking Heads album, notably pacy tracks like Born under Patches, demonstrates that the MS3.30 can cope well with punchy and complex rhythms. But one cannot expect everything from a small speaker. The monster synth baseline of Stevie Wonder's Living For The City loses its impact here, although its definition emerges largely intact. A slight warmth, bordering on mellowness, was however noted with male speech (Radio 4 announcers, for example). There's also an upper-treble bias, which gives percussion and the overtones of some instruments more 'bite'. Great though the MS3.30 aluminium-domed tweeters were in their day, they can on occasion sound a tad brittle at higher listening levels. modern tweeters are noticeably more open and detailed.

For all their limitations, though, these speakers make for enjoyable listening. They would be great in a starter system; second speakers in another room or quadraphonic/surround rears. I've seen second-hand pairs go for between £20 and £50; they crop up on eBay and at audio jumbles fairly regularly, suggesting that they sold well to start with. Be warned, though, in the words of the present-day operation "all Mordaunt-Short products built before 1994 were manufactured by a different company". As a consequence, this present-day incarnation of Mordaunt-Short "cannot supply spare parts", as they are not its "intellectual property".

How did I find this out? Sadly, one of my MS3.30 bass/mid drive units failed somewhere between photography and restoration to my listening room; somehow, its voice-coil had gone open-circuit. Thankfully, I found a reasonably-priced ex-equipment driver at short notice on eBay, and was thus able to continue this article. If you have no such luck trying to find replacement
Billy Mackenzie and Alan Rankine, straight from Edinburgh, Scotland, managed to pull it off. They produced a creative entity that was, to my eyes and ears at least, unique. Even for the time—a time of upheaval in broad terms and especially in music—where boundaries were being pushed and innovations determined, The Associates managed to stand apart. This art rock, glam, synth pop duo, a sort of OMD production mixed with Roxy Music and Marc Bolan with operatic overtones, landed on Earth with ‘The Affectionate Punch’, the duo’s 1980 debut.

With 1982’s hit single Party Fears Two, from the album ‘Sulk’, the band were trying to be reeled in by the New Romantic movement but, again, I never saw them in that vein, despite the makeup et al.

Then Mackenzie split up the group and started to create trouble with his label, Warners. He hated the industry and rejected the notion of repeating the same hits formula. Drugs didn’t help.

Mackenzie teamed up with Dundee punk guitarist Steve Reid, co-wrote ten songs, brought in a backing band and started a new 1984 Associates LP, ‘Perhaps’. The LP was a chaotic experimental mess (drums filled with water, anyone?), fraught with delays, ran horrendously over budget, said hello and goodbye to five producers, gave several people at Warners nervous breakdowns and never made a dime.

Now presented in a gatefold sleeve, over two CDs and a host of bonus tracks plus booklet, is Perhaps classic Associates? Not really. The first four tracks have a camp, on a Tenerife beach sipping red drink, mono tempo, synth pop-by-numbers, Soft Cell rip-off feel. That said, devoted fans will still love it and there are highlights: ‘Helicopter’ ‘Helicopter’ plugs into thought, ‘Thirteen Feelings’ plugs into imagination while the rest are ‘fine’. Great mastering, though.

You might know him for his time with Deep Purple (from 1973 to 1976), Black Sabbath, Trapeze (for which he began musical life as bassist and vocalist) and slightly bizarre appearances with the likes of the KLF (the 1991 single ‘America: What Time Is Love?’), but Hughes also made a host of solo albums. This collection of six CDs, available in a clamshell box plus fold-out mini-poster plus notes, packs each album in a card sleeve with a generic style and unique cover image.

‘Feel’ (1995), the first album here, was actually Hughes’ fourth solo release in total. Including slices of pop, soul and funk, it included Guns N’ Roses and Velvet Revolver drummer Matt Sorum and a collaboration with his Hughes-Thrall partner, Pat Thrall. The funk might put hard rockers off but it’s a worthy outing from the man himself.


He’s there on ‘Building The Machine’ (2001) too that includes a version of the Deep Purple classic ‘Highball Shooter’, features Pat Travers, who duets with Hughes on the Rare Earth cover ‘I Just Want To Celebrate’ plus Toto’s Bobby Kimball.

‘Songs in the Key Of Rock’ (2003) keeps the funk in the rock, includes bassist Billy Sheehan and Red Hot Chili Peppers’ Chad Smith. Oddly, the rock outings are arguably the weakest parts of the album. Nevertheless, it’s one of the best releases of the entire box set. Thumbs up for the mastering too.
Josh White sang a combination of blues and folk but he was also part of the New York scene populated by the likes of Woody Guthrie, Sonny Terry and Brownie McGhee. He may have been a folk revivalist but he was also a free-thinking bohemian who supported civil rights in the USA. Just flip over the included booklet in this single CD issue to see the sincere face of the man himself, short open, the neckline plunging.

A clue to his diversity perhaps, but there was also versatility there and the fact that he could adapt his creativity to many directions, including acting.

Despite this rather hip, day tready image White had hardcore roots with his associates including Willie Walker whom White saw as the Art Tatum of guitarists and Blind Blake, a pioneer of the finger-style ragtime guitar.

White never took the easy path, though, as his clashes with the corrosive McCarthy political movement attests. Accused of being a Communist sympathiser (he wasn’t), he was blacklisted. He then moved to Europe, only being able to work again when JFK invited him to appear on American TV in 1963.

It was during those dramatic years that both of these LPs appeared. Volume 1 was created over two sessions in 1956, backed by pianist Sam Basson, Leonard Gaskin on bass and Panama Francis on drums. From 1956 to 1957, Volume 2 was created with Basson again, Al Hall on bass, J.C. Heard on drums plus White’s daughter, Beverley, on guest vocals. Both LPs appeared under the ABC Paramount label.

This release is well presented with admirably intimate mastering that well reflects White’s smooth, easy digestible vocal delivery. His guitar supplies a tight, rhythmic backing that accompanies rather than dominating.

THE JOSH WHITE STORIES VOLS: I & II

Jasmine

No, this is not another review of a classic album from the band’s catalogue. This is – wait for it – a new album! In fact, the release helps to celebrate the band’s 50th anniversary (that can also be found on vinyl). The twin lead guitars are there and there’s even a single ‘We Stand as One’. A worthy title if ever there was one. In this incarnation of the group, you’ll find founder member, guitarist and vocalist Andy Powell, drummer Joe Crabtree (who joined in 2007), Bob Saxton on bass and relative newcomer Mark Abrahams on guitar who was apparently playing Wishbone Ash duties since he was nine.

This new album appears in a digipak with a colour glow booklet stuffed in the available pouch, packed with lyrics for all eleven songs.

Mastering is very nice indeed, encouraging the broad soundstage into an epic state of presence. The midrange has also been enhanced with both air and space that allows guitar reverbs to roam easily. Percussion is big, bold and bombastic from the lower end but the ear can still pick out delicate cymbal taps from the treble area.

The songs here are admirable in lyrical terms. Apart from the usual ‘Hymn to the Siren’, hopes, dreams and security, there’s a measure of sentimentality relating to the band and its journey, raging against politics, raging against corporations and the powerful who ride roughshod over the ordinary geezer, as well as the weaknesses of our fellow man. Twas ever thus, eh?

Of course, there is a little bit of the ‘old man shaking his fist at the sky’ thing going on here and the words are sometimes more impressive than the music covering it but I’m happy that the group itself actually has something to say.
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- Convenient size
"I have considered buying a hard hat and attaching the mic to that"

Our music reviewer Paul Rigby made the comment recently that "I don't know why live music should be seen as a quality standard because it's rubbish." Er - yes! And very true. But there's live and live in very different surroundings: and live is rubbish but also the best.

I came across the problem when wrestling with camcorders. Just try to capture live sound with one of these and you soon realise that it's a challenging process that fights the notion of quality.

The big issue is the baby in the background. I know because they infect all my otherwise wonderful videos shot in super HD with me concentrating furiously at the controls, trying to get it all right. Stand against a lamp post to prevent camera shake, don't breathe 'cos the mike will hear you, but don't faint either - and hope wind, birds and babies are all absent at the same time. Some hope! There's always a baby that creeps up behind and is impossible to suppress. All videographers should carry a bag of dummies perhaps and throw 'em out when this racket starts.

But that's just my suffering with the subject. What Paul was lamenting was quality of much live concert material, or just live in general, where the considerable challenges of recording had not been addressed satisfactorily.

You have to put effort into live recording and this very much draws you into the whole subject of live sound, where technology and technique must come together in glorious unison for even a half-decent result.

I am not a live recording engineer but the subject fascinates me, mostly with regard to cinematography where the sound track is vital. Film sound tracks are carefully controlled or dubbed: it's a big issue. Live Rock concerts vary from very good (The Who at Kilburn, a carefully arranged 'live' performance) to very bad - and there are no end of these. Prompting Paul to declare live "rubbish".

But what is live? An artist playing live in a studio captured on a microphone is surely live. The studio acts to keep out noise, as well as giving a tailored acoustic. It helps if there is some reverb for a 'live feel' or the sound comes across as dead (unsurprisingly!) - and none of us like dead.

Once you get out of a studio and into the open air the amount of noise surrounding us all comes as a surprise when you start live recording. The human ear and brain do a great job in filtering most of it out, but directly you set up a mic and listen on headphones this filtering mechanism collapses and the noise from wind, birds, traffic and aeroplanes is high to overwhelming. With live concerts there is the audience to cope with and here microphones have to be close to their subject - instrument or singer - to stand any chance of capturing decent sound.

What I quickly learnt is that in most circumstances surrounding sound is not what's wanted. It picks up noise from all around, especially from the camera operator. Yet consumer camcorders commonly boast such microphones.

Better is a frontal mono microphone that's directional, can be attached to the camera and plugged into its external mic socket (which most have). The trouble here is built: it can be difficult enough just trying to handle a camera and all its controls, especially zoom, without having a microphone in the way. I have considered buying a hard hat and attaching the mic to that.

Live recording can alternatively be tackled with the interesting M/S (mid/side) microphone arrangement where a single directional forward microphone (M) picks up the subject being filmed - a singer or musician - whilst the Side mic picks up stereo information that can be used later if desired, but this needs a dedicated mixer and post-processing.

I love using a camcorder because good footage can be great to watch. But getting even half decent sound is a real struggle. Common audio quality criteria like wide bandwidth are not very helpful. Good low frequency response makes deep noise from vehicles and machines overwhelming so a high pass filter is useful. And there's not much point in trying to capture exquisite highs either, meaning a low pass filter is also useful. You can use wide audio bandwidth in a studio, but only if there are no trains nearby, something Decca suffered in their Kilburn studios.

One solution is a bulky semi-pro video camera with microphone on carrier at top, complete with sound level meters, balanced XLR connectors and what have you. Not the idea of fun, especially when you are filming on the move.

I notice people nowadays shoot short HD sequences on compact still cameras, something Geoff Marshall manages well on his journeys around Britain's rail network (YouTube). Check out the mono microphone strapped to his camera when you see it in a reflection.

Live recording is nothing other than challenging. Modern cameras can do a great job picture wise, but the sound - oh dear! As Paul says it is so often rubbish. I know why.
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"A wretched ditty from the original artist, Lobo. One I would loathe for all time"

There's a distinction to be made, I feel. When looking back on your life and the music that infused it — how to describe the distinction? Well, you know when people say that you can choose your friends but you can't choose your family? I feel that there are two similar kinds of music, at least there was in my musical history. I wonder if you're the same and I'd like you to tell me if I'm right or even close on this one.

There's the music that we loved. The music that we gravitated to. The music we sought out and cared for. The 'vinyl' we bought, the tapes we gathered and the CDs we collected. The music we purchased after hearing concerts or after watching TV programmes like 'Top of the Pops.' There's the music we loved from a friend's recommendation.

Music that represented how we thought, how we acted and even, how we dressed. Music that said a lot about how we thought and acted. That paralleled our own philosophies. That represented our frustrations. That reflected how we saw the world. The lyrics from these songs were our mantra. They explained, possibly in a more poetic manner, our innermost thoughts and feelings.

And then there was the other kind of music. The music that was around you, unbidden and unrequested. Unwritten and barely tolerated. This was music that blared at you from the family radio, that blared at you from the car radio, that blared at you from parent's record players and siblings' cassette players.

It was there as muzak in shops and supermarkets. It was there in adverts. It was there in films. It was there.

The sad thing is, such music became a focal point of the negative on more than one occasion. I say negative, that sounds so finite, but it wasn't really. Such thoughts roamed on a sliding scale. Hearing these records may have tapped the odd foot or even hummed a choral snipper. But no more. And hearing it too often would have been plain annoying, of course.

It's odd but now, looking back, the entire situation seemed unfair. I was unintentionally painting a creative artist's entire career and reputation on a three minute nightmare. Or so I often thought, at the time. If not a nightmare then a song that grated or, at least, triggered less positive thoughts.

Three (well, three and a half) things dovetailed, at least in my case, to create this unhealthy situation. The recipe was this: the seventies, my school age and BBC Radio 2.

The seventies were a problem because 'that' music was prevalent, popular and played. My age was a problem because I had very little control over 'that' music, where it was played and when it was played. I also had no power to remove it. The BBC were a problem because 'that' music seemed to emerge from BBC Radio 2 than just anywhere else. Oh and maybe I should have added the DJs, Terry Wogan and Jimmy Young. Lovely guys and both Radio 2 legends but they played this stuff. BBC Radio 2 was everywhere during my childhood. In my home, in the car, piped into local shoes. Everywhere.

Now, as much as I love Matt Munro and I have many of his original pressings on vinyl in my personal collection, if I ever hear his rendition of 'Born Free' again, you will find me shaking a wreck in a dark corner. I noticed it on a new issue, 'Stranger in Paradise: The Lost New York Sessions' (Universal) which couples the same with a 'Best of.' The former releases treasures from the Capitol vault, complete for the first time. Even so. Born Free? Hmmm.

Then there's Stonewall Jackson. I saw his name on Jasmine's (www.jasmine-records.co.uk) excellent 'Singles As&BS 1957-1962.' A highly talented country singer, his country hit 'Waterloo' hit was so big, it also made it into the pop charts and launched the man on TV.

But then he had to release his 1971 rendition of 'Me and You and a Dog Named Boo.' A wretched ditty from the original artist, Lobo, never mind Jackson. One I would loathe for all time for its happy, clappy, toothy-grinned, nicy, nicy, momma's apple pie, saccharine decay. The song made David Gates sound like John Lydon.

Even poor Bobby Charles' who penned 'See You Later Alligator' riled me after Bill Haley's quiet took up the reins. A superb song-writer who worked with The Band and wrote for Fats Domino but had little success as a solo artist, Charles' 'Later Alligator' can be found on the Jasmine 2CD release, 'Alligators, Sprockets and Bended Knees.'

Trouble was, my parents would shout out the title to each other whenever one of them would leave the house. Good grief. Once is funny. Twice is cute. The fifty-seventh time? Now! I wouldn't care less. But aged 12? Another matter.

The three are a tiny, tiny tip of a very large iceberg. I should list them all as the sort of primal scream therapy variation that Lennon would have been proud of. So, dear readers, spill. Tell your Uncle Paul about it all.
The EVO and the new EVOke Now you have a choice of any SL-1200! The new EVOke has world beating performance figures that are comparable with the world’s most expensive turntables. The ability to fit any arm or cartridge to any SL-1200 new or old, means you can now have the EVO that you want at the price you want!

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Hi-Fi+ ISSUE 172 REVIEW, HANA ML/MH

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"in their heyday, some were so busy they had to turn away clients"

The Who's reassuringly-angry new album WHO may be redolent of past glories like Baba O'Riley, Magic Bus and My Generation. But much has changed since the early 1960s when The Who entered a recording studio for the first time.

Studios play an important role in this band's story; the album's sleeve notes reveal that at least some of WHO was recorded at British Grove and Metropolis. It's reassuring to know that these two iconic Chiswick (London) studios, the first of which is owned by Dire Straits guitarist Mark Knopfler, still exist.

Elsewhere in London is Abbey Road, made famous by another '60s band...thankfully, that's still around too. I've been fortunate enough to visit all three; hi-fi companies regularly-launch products there.

In their heyday, some studios were so busy they had to turn away clients. So it wasn't uncommon for major bands to acquire their own fully-baked facilities, not simple home-recording affairs, where they could be assured recording time that suited them, not others.

Among them was The Who, whose Ramport Studios was established in a derelict Battersea church. By the mid-70s, it boasted a Neve 40-channel mixing desk, 3M 24-track recording and a fancy digital clock in the reception area (but, to the best of my knowledge, no pinball machine).

The Who's original intention, according to a December 1974 Studio Sound feature, was to set up Ramport exclusively for its own rehearsal and recording activities. As the costs mounted, though, The Who had no choice but to run Ramport commercially on a 24-hour basis – and that meant selling time there to others. Among the classic albums recorded at Ramport were Suppertramp's Crime of the Century and Thin Lizzy's Jailbreak, as well as The Who albums Quadrophenia, Tommy and Who Are You?

Recording studios flourished in the sixties, reflecting the growth in music consumption. Some were owned by record companies (CBS, EMI and Virgin etc), but most were independent operations that competed with each other. They contained one or more of the acoustically-treated rooms in which musicians performed, associated control-rooms with mixing desks, effects-racks and recorders, all interconnected by miles of balanced wiring. Potential customers were presented with a rate-card that listed the kit at their disposal – desks (and the attendant engineers), recorders (and how many tracks they had) off-board effects, musical-instrument collections and microphones.

Out-of-the-way residential studios based in the countryside (like the Manor of Tubular Bells fame, started by Richard Branson in Virgin's early days) became popular. For stars with sizeable budgets to blow, overseas studios in exotic locations were an option, like the Montserrat sister to George Martin's Air, and the quaint Château d'Hérouville near Paris.

Studios tended to be converted from cheaply-acquired property that was in need of substantial renovation. This was an eminently-sensible measure. Given that so much work was needed to make them suitable for their new roles (acoustic isolation, for example), they had to be reduced to shells anyway. Studio owners hired specialist consultants like Eastlake to help them with the work. That wasn't cheap – and neither was the high-tech hardware with which they were equipped. The August 1976 issue of Studio Sound, which features Abbey Road, reveals that a used Neve 24-input/8-output csek could have been yours for £12,500. A second-hand 16-track Studer A80 tape machine, meanwhile, was a snip at £8,750. To put things in perspective, the average UK home then cost £10,520.

Today, you can do this stuff on a computerised home studio or a laptop loaded with the right software like Apple's Garage Band. All you'll need are musical instruments and the skill to play them, plus microphones for vocals.

Thanks to globalised mass-production and distribution, even once costly microphones are uber-affordable. Take for example the Lyra Ultra-HD. Aimed at the modern-day user who creates content on a laptop, this multi-mode hi-res USB condenser mike can be yours for a mere £139. No wonder expensive-to-maintain dinosaur studios are disappearing.

Metropolis, British Grove and Abbey Road may still be with us for now – but what of the others? The Manor, the Château, Ramport, Townhouse, Trident, Olympic, Townshend's Eel Pie and countless other studios large and small have been lost to developers. Air London relocated from its original Oxford Street base to Hampshire in 1991, while its Montserrat counterpart was put out of action by a hurricane in 1989.

Next time you listen to an old classic album, perhaps from The Who, spare a thought for the recording studios that helped make such music possible.
The 2M Series, named after the abbreviation of Moving Magnet (MM) technology, is an affordable range of pick-up cartridges with first-class audio design principles throughout. Featuring Ortofon’s trademarked split-pole pin technology for a flat frequency response, all 2M cartridges have a high output for easy integration into any turntable system.

Ortofon’s philosophy is to play the record sound as accurately as possible, without colouring the sound in any way. Both the 2M Bronze and 2M Black have diamonds which are cut and polished to the highest standards of the industry. The 2M Bronze and 2M Black also have interchangeable stylus units, and replacement styli are readily available in the UK.

The 2M range has been structured in the same way as the popular Rondo and Cadenza Moving Coil series, with ascending quality as you move from Red - Blue - Bronze - Black. The spectacular 2M Black has become the flagship of 2M, and all Ortofon moving magnet cartridges. 2M was also the last product designed by Ortofon’s former chief engineer, Per Windfield, who developed the 2M series over the final 2 years of his 30 year tenure with Ortofon.

Red
A hugely popular all-purpose cartridge with a Tipped Elliptical stylus that delivers an open, dynamic sound with a slight touch of warmth.

Blue
An affordable step up in the range, which adds a greater resolution, dynamics, and detailed sound thanks to the Nude Elliptical stylus.

Bronze
Featuring a superior body, the Bronze picks up even the highest frequency information for a rich, detailed and deep soundstage, and can be further upgraded with ease.

Black
The musician's choice and flagship of the range, the 2M Black features a Nude Shibata stylus which guarantees a true-to-life sound performance. This is truly the best MM has to offer.
"this does directly affect the repairability and whether the customer wants to have the work done"
WORLD CLASSICS

Here is our list of the great and good from audio’s glorious past, products that have earned their place in hi-fi history. You’ll also see some oddities which aren’t classic as such, but are great used buys. The year of introduction is given, alongside the original UK launch price.

TURNTABLES

EAT FORTE 2009 £12,500
Lavishly finished two box, two motor turntable with gorgeous brass 437 tonearm housed exceptionally stable and antidraft performer with a relaxed but highly transparent sound.

MICHELL ORBE 1995 £2,500
The top Michell disc spinner remains a superbly capable all-rounder with powerful, spacious sound that’s delicate and beguiling.

SME MODEL 10A 1995 £4,700
Exquisitely engineered deck and SME: V tonearm combo that’s an extremely accomplished performer with classical music.

LINN AXIS 1987 £253
Cut-price version of the Sondek with LUX arm. Elegant and decently performing package. Later version with Ax tonearm better.

REGA P2 2008 £360
Excellent value for money engineering, easy setup and fine sound.

ROKSAN XERES 1984 £500
Super tight and clean sound with excellent transients - less musical than the Sondek, but more neutral. Sizing plinth top-plates make it a dubious used buy.

DUAL CS505 1982 £75
Simple high quality engineering and a respectable low mass tonearm made for a budget budget buy. Polished, smooth and slightly band sound.

REGA P3-24 2008 £415
Serious affordable audiophile deck with fine-bundled tonearm/tweakersy and really sings with aotonal £139 outboard power supply.

TOWNSEND ROCK 1979 £N/A
Novel machine he has extremely clean and fluid sound. Substantially modified through the years, and capable of superb results even today.

MARTANZ TT1000 1978 £N/A
Beautiful stainless steel end and drive with sweet and clean sound. Rare in Europe, but big in Japan.

ARISTON RD11S 1972 £94
Modern evolution of Thorens' original belt drive paradigm. Scotland's original super-deck was warm and musical, a bit soft. Still capable of fine results today.

GARRYARD 301/401 1953 £19
Tremendously strong and articulate with only a velvted treble to let it down.

THORENS TD124 1959 £N/A
The template for what’s every 1970s “superdeck”, this concise design was the most for competition for Garrard’s 301. It was sweeter and more lyrical, yet lighter and less impactful in the bass.

FUNK FARM VECTOR II 2009 £860
Innovative engineering gives a middle, juicy and musical sound that’s one of the best at the price.

REGA P3 2008 £360
Excellent value for money engineering, easy setup and fine sound.

MCINTOSH MT10 2008 £9,995
Big expensive, controversially styled and grows more than some might consider necessary, but an absolutely good performer.

REGA P3-24 2008 £415
Serious affordable audiophile deck with fine-bundled tonearm/tweakersy and really sings with aotonal £139 outboard power supply.

ACOUSTIC SOLID ONE 2007 £4,000
Huge turntable. Both a terms of sheer mass and sonic dynamics fit up to three arms and enjoy. Just don’t damage your back moving it.

AVOID VULVERE SEQUEL 2007 £4,600
Stylish high and vinyl spin with industrial strength build quality and a sound to match. Sound is edge-of-the-seat stuff.

MICHELL GYRODEC SE 2009 £1,119
Design can with sooty mass. Sound is beautifully smooth effortless and exceptionally expansive.

MARTANZ TT1051 2005 £1,299
Classy all-in-one deck/arm/cartridge combination, this must surely be the best sound plug and play package at this price point

MICHELL TECNODEC 2003 £570
Superb introduction to Michell turntables - on a budget, top quality build and elegant design mean it’s still the class of the mid-price field.

REGA PLANAR 3 1978 £70
Blessedly simple, clean and musical performer. Complete with Acos-derived S-shaped tonearm. 1983 saw the arrival of the £30000, which added detail at the expense of warmth. Super budget buy.

SONY PS-880 1978 £80
First outing for Sony’s impressive ‘Bioracer’ electronic tonearm. Suitably with a clean and tidy sound, albeit having wasted movement. Scarily complicated and with no spare parts and - buy with caution.

TRIO LD-70 1978 £80
The best all-in-one turntable package ever made. Clean, powerful and three-dimensional sound, ultimately limited by the tonearm.

AOCC ACCUTRAC 4000 1976 £300
Innovators 1970s direct drive that uses an infra red beam to allow track selection and programming. More of a visual and operational delight than a sonic stunner.

PIONEER PL-596 1976 £800
Sturdy and competent motor unit that performs well with a wide range of tonearms. Check carefully before buying due to electronic complexity and use of some now-obsolete ICs.

PIONEER PL120 1973 £36
When vinyl was the leading source, this bought new standards of noise performance and stability to the deck, plus a bow-fchon S-shaped tonearm. Later PL120 was off the pace compared to rivals.
TONEARMS

REGA RB251 2009 £136 Capacitator way past its price point, far row 3 point manual version of this classic RB250 series up to a real, detailed sound. A little long for some tastes, but generally well reviewed and counter-weight modification.

HELIX DWEQA 2008 £1,595 Stained and solid arm with fabulous build quality, that turns in a dynamic and weighty performance.

AUDIOPHILE/PAD 2007 £1,300 Take older Synergy HPI up a gear with a great feature: Haunted heads add to weight, with any mass length and colour you can fathom. Finish sound much improved.

GRAHAM PHANTOM 2006 £3,160 Similarly stunning arm with magnificent bass detail and soundstaging. Build quality up to SME standards, where this really shines!

TRIPLANAR PRECISION 2005 £3,600 Immaculate build, exquisite design and one of the most naturally musical and laid sounds around.

MICHEL VECCHIA/MA 2003 £442 Cover reworking of the Rega frame, using blending, drilling and reworking.

SME 309 1989 £767 Mid-price SME comes complete with cast out aluminium baseplate and detachable headshell. Light, neutral sound with good tonality, but lacks the SME’s price and precision.

NAI/M ARD 1987 £1,425 Clearer imaging is a boon at frequencies out problems in the midband. Very evocative and engaging.

SME SERIES V 1987 £2,390 Vice-like bass with incredible detail with clear midrange and tonal balance, although some don’t like its matter of factness.

NAI/M ARD 1986 £675 Truly understated and phenomenal performer - wonderfully engaging mid-band makes up for softened frequency extremes.

TECHNICS EPA-501 1979 £N/A Popular pioneer for late seventies tendency motor units. Nice build and finish. Wires that can’t compensate for midband sound.

LINN 1010 URI 1978 £253 Japanese design for Linn space made for a musical, rhythmic sound with real dynamics. The final URI version worth stealing out.

AUDIOTECHNICA AT 1120 1978 £75 Fine finish can’t compensate for this ultra low mass arm’s limited sonic - a good starter arm if you’ve not got a few quid to spend.

HADDOCK GH22 1976 £46 Evergreen stylish with lovely sweet sound. Excellent service backup.

ACOS LUSTRE GST-1 1975 £46 The entry-level S-shaped seventy arm, good, proportionate and involving sound in its day but rugged and anodyne now.

SME 309 1969 £180 Racine state of the art, but long passé. Musical enough, out years at frequency extremes and reliant in the midband. legendary serviceability and stunning build has made it an used prices understandably high.

PHONO STAGES

CREEK DHB-8 SE 1996 £180 Potentially musical character with the high-side of detail makes this a good budget auditor classic partner with Goldring G1042 for an unbeatable budget combination.

MICHELL ISO 1988 £N/A This form factor-designed black box started the trend for high performance off-board phono stages. Classic musical and punchy - if lacking in finesse.

LINN LUVNK 1964 £149 Naim designed MC phono stage built to partner the original Naim NAIT – yes, really! Fine sound, although off the pace these days.

INTEGRATED AMPLIFIERS

NAIT NAIT X 5 2009 £1,250 In all of the sound of the Supernatant half the price, this is a powerful, articulate and smooth beyond class expectations.

MUSICAL FIDELITY PRIMO 2009 £7,000 Seriously expensive but also often contains why Woodfully excellent sound that can only come from a top quality tube design.

SUGDEN A21A S2 2008 £1,469 Crystalline clarity, dizzying speed and forensic detailing. Power limited to needs sensitive speakers.

CREEK DHB-2 2008 £350 Brilliant value budget passive, with remote control, mute and input switching. Plus an easy, neutral sound.

CAMBRIDGE 840A V2 2007 £750 Version 2 addresses version 1’s weaknesses to turn in a mightily accomplished performance, offering power, finesse and detail.

SUGDEN I4A 2007 £3,650 Goody enough of Class A power, cleanly and a breathtakingly fast, musical sound - make this one of the very best super-integrated.

NUFORCE P-9 2007 £2,200 Inexpensive box, green with superb resolution and an engaging sound.

MELODY PURE BLACK 101D 2007 £3,295 The fiscally and opinion of values plus firm grip and the detail, make this a predictor musical bench.

AUDIOLAB 8000E 2006 £400 In another life, this sold for three times the price, making it a stand-out bargain now. Very clean, powerful and tidy sound.

MCINTOSH MA6800 1995 £3735 Effortlessly sweet, strong and powerful with semi-styling to match.

DELTEC 1987 £1900 Fast, dry and with excellent transients, this first DA integrated is the real deal for eighties obsess. Dazzlingly punchy 80W per channel from a tiny half-size box. Ideal, cool, and more than a little strange.

EXPOSURE V7/VI 1985 £625 Semi-pro power: offering most of what Naim amps did with just a little bit extra smoothness. Lean, punchy and musical.

AUDIOLAB 8000A 1985 £495 Smooth integration with clean MM/MC phono stage and huge feature count. Extremely reliable, too. Post ’93 versions a lot used buy.

VTL MINIMAL/5OW MONOBLOCK 1985 £1,300 Rugged, professional build and finish allied to a lively and punchy sound (a lot with limited power) make them an excellent used buy.


MISSION CYRUS 2 1984 £299 Classic 1980s minimalism combines arresting styling with clean, open, lively sound. Further upgradeable with PSX power supply.

NAIT NAIT 1984 £350 Superb rhythms and dynamics make it truly musical, but tonally monochromatic; fine phono stage, very low power.

CREEK CAS404 1983 £150 More musical than any budget amp before it. CAS4140 loses tone controls, gains grip.

MYST TMA 1983 £300 Madcap eighties minimalism, but a strong and tight performer all the same.

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ROTEL RA-820BX 1983 £139
Lively and clean budget integrated that arguably started the move to minimisation.

NAD 3020 1979 £69
Brilliantly smooth, sweet and sunny at the price and even has a better photo stage than you'd expect. The archetypal budget super-amp.

ROGERS A75 1978 £220
Lots of sensible facilities, a goody power output and nice sound in one box. The later A75s and A100 versions offered improved sounds and were seriously sweet.

AA6 A60 1977 £115
Sweet and musical feature-packed integrated; the Audiolab 8000A remains a classic.

SUGDEN C51/P51 1976 £130
Soft sounding early Sugen combo with a plethora of facilities and filters. A sweet and enduring performer but lacking in power and poor load driving ability.

SUGDEN A21 1969 £ N/A
Class A transistor integrated with an extremely smooth and musically Limited inputs via DIN sockets.

ROGERS CADET III 1965 £34
Sweet sounding valve integrated, uses ECC86 output valves, even has a half useable photo stage, sweet, warm a good introduction to valves.

CHAPMAN 305 1960 £40
Smooth pre/power combo with a sweet and open sound. Not quite up to Leak/Quad standards but considerably cheaper secondhand.

POWER AMPLIFIERS

ELECTROCOMPANION NEMO 2009 £4,995 (EACH)
Norwegian power station as cool as a glacier tonally, yet impresses with sheer physicality and fleetness of foot. 600W per channel.

NUFORCE REFERENCE 95E V2 2006 £1,750
Brilliant value for money monoblocks with massive power and super clean, three dimensional sound.

QUAD II-80 2005 £8,000 PER PAIR
Quad's best ever power amplifier: Dramatic performer with silky but dark tonality, blistering dynamics, serious power and compellingly musical sound.

QUAD 909 2001 £900
Current dumper has a smooth and expansive character with enough welly to drive most loads. Not the most musical, but superb value all the same.

NAIM NAP 500 2000 £17,950
Flagship amplifier will drive just about any speaker with ease. Factor in the company’s trademark pace, rhythm and timing and it all adds up to one effortless musical package.

MUSICAL FIDELITY XA200 1996 £1000
200W of sweet smooth transistor in a grooved tuba. Under-rated ability.

PIONEER M-73 1988 £1,200
Monoblock from this seminal Japanese power amplifier, complete with switchable Class A and Class B operation. Clean, open and assured sounding, albeit a tad behind in the pace on high speed dance music. Rosewood side cheeks and black brushed aluminium completes the experience.

KRELL KMA100 II 1987 £5,750
Monoblock version of the giant KSA-100 is one of the seminal 80s transistor power amplifiers. Massive welly allied to clean and open Class A sound makes this one of the best amplifiers of its type.

RADFORD STA25 RENAISSANCE 1986 £977
This reworking of Radford’s original late sixties design was possessed of a wonderfully rich, old school valve sound with enough power (25W) and lots of subtlety.

QUAD 405 1978 £115
The first of the current dumpers is a capable design with smooth, effortless power and a decently musical sound 606 and 707 continue the theme with greater detail and incisive.

HI ELECTRONICS TPA-500 AMPLIFIERS 1973 £110
Simple design with easily available components, solid build quality and fine sound make for a surprisingly overlooked bargain.

LEAK STEREO 20 1958 £31
Excellent workaday classic valve amplifier with decent power and drive. Surprisingly modern sounding if rebuilt sympathetically impressively musical and fluid.

QUAD II 1952 £22
The all-time classic valve amplifier, with a classically fluid and lyrical voice. In other respects, though, it sounds hopelessly dated. Low power and hard to partner properly.

LEAK STEREO 60 1958 £N/A
Leak’s biggest valve power amp offers 35 Watts per channel and more low end than the smaller Stereo 20. Despite concerns over reliability, raw value means high price.

PRE AMPLIFIERS

AUDIOLAB 8000C 1991 £499
Totally grey but fine phono input and great facilities make it an excellent general purpose pre.

CROFT MICRO 1986 £150
Budget valve pre-amp with exceptionally transparent performance.

CONRAD JOHNSON MOTIV MC-8 1986 £2,500
Minimalist FET-based preamplifier is brilliantly neutral and smooth with a spry light balance in the mood of Sugen. Something of a cuny, but worth-while nonetheless.

AUDIO RESEARCH SP-3 1982 £1,400
Beautifully designed and built high end tube pre-amp with deliciously sweet and smooth sound. Not the last word in precision or grip.

LEAK ONE, TL10, TL12.1, TL12 PLUS 1949 £28
Early classics that are getting expensive. Overhauling is de rigueur before use, using original parts if possible. Surprisingly crisp and musical. Deeply impressive in fine fettle.

QUAD 22 1958 £25
The partner to the much vaunted Quad II monoblocks - cloudy and vague sound means it’s for anachronisms only.

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LOUDSPEAKERS

WHARFEDALE DIAMOND 10.3 2010 £290
Great small standmounters for audiophiles on a budget, dry punchy sound with impressive soundstaging at the price.

YAMAHA NS1000 1987 £5,000
Excellent soundstage and clarity, but a bit boxy and not quite the best value for money.

MISSION 770 2000 £532
Great value for money with a smooth, neutral soundstage.

AKG K702 2016 £2,695
Superb open-back headphones with fantastic soundstage and clarity.

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CLASSIC

B&O 8010 2006 £10,500
In many respects, the ultimate studio monitor, dazing clarity and speed with commanding scale and dynamics.

REVOLVER CYGNUS 2006 £5,995
Revolver pull out all the stops and show what they can do with this magnificent flagship loudspeaker. A superb monitor that is a mini B&W 8010 in many ways.

USHER BE-718 2007 £1,600
Beryllium tweeter in a cost and punchy bass driver. The result is subtle, smooth and emotive.

USHER S-520 2006 £350
Astonishingly capable budget standmounters that offer style and dynamics well beyond their price and dimensions.

ACUSTIC ENERGY AE1 CLASSIC 2006 £845
Brilliantly successful remake of an iconic design, not flawless, but surely one of the most musical loudspeakers ever made.

MISSION X-SPACE 1999 £499
The first mass production tube and solid state system using NKT panels was a sure-fire future classic - not flawless, but a fantastically unobtrusive soundstage nevertheless!

MISSION 752 1995 £495
Cracking design, with the bass big and powerful.

TANNOW WESTMINSTER 1985 £4500
Folded horn monsters which sound good if you have the space. Not the last word in business but can drive large rooms and image like few others.

CELESTION SL6 1984 £350
Small-tube two-way design complete with aluminium dome tweeter and plastic midrange unit. Set the word for nineteen eighties loudspeakers. Very clean and crisp, still a great reference loudspeaker.

HINCHLIFFE 1992 £130
Peter Comerford has designed a range of speakers with an amazing price and performance ratio.

MISSION 110 1999 £532
High-tech Beryllium/magnesium tweeter and beryllium/brass woofers in massive sealed cubed imaging cube that sounds better than any loudspeaker.

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High-tech Beryllium/magnesium tweeter and beryllium/brass woofers in massive sealed cubed imaging cube that sounds better than any loudspeaker.

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MISSION 110 1999 £532
High-tech Beryllium/magnesium tweeter and beryllium/brass woofers in massive sealed cubed imaging cube that sounds better than any loudspeaker.
SPENDOR BC1 1976 £240
Creation HF 1300 tweeter meets bespoke Spendor Baffle mini-bass unit. The result is a beautifully warm yet focussed sound. A little bass boom necessitates careful low-stand mounting.

HI ELECTRONICS TPA-50D AMPLIFIERS
1973 £110
Simple design with easily available components, solid build quality and fine sound make for a surprisingly overlooked bargain. Not exactly stylish, however.

BBC LS3/5A 1972 £88
Extremely low colouration design is amazing in some respects – articulation, stage depth, clarity – and useless in others (both frequency extremes). Came in wide variety of gasses from various manufacturers building it under licence.

LEAK SANDWICH 1961 £39 EACH
Warmed sounding infinite baffle that, with a reasonably powerful amp, can sound quite satisfying.

QUAD ESL57 1956 £45 EACH
Wonderfully open and neutral sound puts box loudspeakers to shame. Properly serviced they give superb midrange performance, although frequency extremes less impressive. Ideally, use in stacked pairs or with subwoofers and super tweeters.

SYSTEMS
MERIDIAN 5000/505 2.1 2010 £6,990
Crisp stylish, bright, colourful touchscreen, plus excellent search facilities. This is one hard disk music system with a difference. Best partnered to Meridian active loudspeakers.

NAIM UNITIQUE 2010 £995
Great little half width one-box system with truly impressive sound allied to a wealth of source options.

ARCAM SOLO MINI 2008 £850
Half the size and two-thirds the price of a full-sized Solo, the Mini gives very little away in terms of performance to its bigger brother.

MERIDIAN F80 2007 £1,500
Fantastically built and versatile DVD/CD/DAB/FM/AM unit, designed in conjunction with Ferrari. Ignore nay-sayers who sneer that it isn’t a ‘proper’ hi-fi product. Just listen.

MARANTZ ‘LEGEND’ 2007 £22,000
The combination of SA-751 disc player, SC-752 preamp and MA-652 monoblocks delivers jaw-dropping performance.

SHANLING MC-30 2007 £600
Quite possibly the cutest all-in-one around with fine performance from the CD player, tuner and MP3 player input. Very low power, though.

ARCA SOLO NEO 2006 £1,100
Excellent all-in-one system, with a warm, smooth and balanced sound to match the features and style.

PEACHTREE AUDIO DECO 2009 £1,000
Superb sounding iPod dock, impressive DAC and fine amplifier section make this an excellent one box style system.

ROGERS T75 2017 £126
Superb mid-range British audiophile design completely understated black fascia. Smooth and sweet with fine dimensionality.

SANSUI TU-9900 1976 £300
A flagship Japanese tuner. It boasts superlative RF performance and an extremely smooth and laid back sound.

TECHNICS ST-8080 1976 £180
Superb FM stage makes for a clean and smooth listen.

REVOX B760 1975 £520
The Revos offer superlative measured performance although the sound isn’t quite as engaging as the numbers. Fine reference, and surely the most durable tuner ever?

SEQUERRA MODEL 1 1973 £1300
Possibly the ultimate FM tuner. Massive in terms of technology, size and features dedicated to extracting every ounce of performance from radio including impressive multi-purpose oscilloscope display.

LEAK TROUGHLINE 1956 £25
Series I an interesting ornament but limited to SS-100kHz only. II and III are arguably the best sounding tuners ever. Adaptation for stereo easy with phone multiplex socket. Decently sized with true dimensionality.

MAGNIM DYNALAB MD-100T 2006 £1,895
One of the best ways to hear FM that we know; superbly open and musical sound in a quirky but characterful package.

MYRYAD MXT4000 2005 £1,000
Sumptuous sound and top-notch build quality make for a formidable AM/FM package. Warm and richly detailed on good-quality music broadcasts.

NAIM NATO3 1997 £595
The warm, atmospheric sound is further proof of Naim’s proficiency with tuners.

CREEK CAS3110 1985 £199
Excellent detail, separation and dynamics - brilliantly musical at the price. T400 continued the theme...

QUAD FM4 1983 £240
Supreme ergonomics allied to a pleasingly lyrical sound with plenty of sweetness and fatal charm. This one of the best tuners around upon its launch.

NAD 4040 1979 £19 Tremendously smooth and natural sound allied to low prices and good availability make this budget analogue system a real winner.

MARANTZ ST-8 1978 £383
Marantz’s finest radio moment. Warm, organic sound plus an oscilloscope for checking the signal strength and multipath.

YAMAHA CT7000 1977 £444
Combines sleek engineering, high sensitivity and an expected detailed sound.

SONY ST-3950 1977 £222
One of the first Dolby FM-equipped tuners, a format that came to naught. Still, it was Sony’s most expensive tuner to date, and boasted good sound quality with brilliant ergonomics.
HEADPHONE AMPLIFIERS
GRAHAM SLEE NVD 2009 £255
Dynamic headband amplifier with a great sense of timing. Open, clear treble and warm midrange gives an involving sound.

MUSICAL FIDELITY X-AN WB 2008 £350
Dyne and directionally damped sound plus serious bass wallop. A great partner for most mid-to-high-end headphones.

CD PLAYER/RECORDERS
MUSICAL FIDELITY TRYSTA 2002 £6000
When playing SACDs, the sweetest, most laid-back and lyrical of all CD players. The spinners are quiet and accurate.

Sony MDs-JE55ES 2000 £600
The best sounding MD deck ever. Thanks to awesome build and sound at SACD-557 Type R coding.

Pioneer PD-555RW 1999 £480
For a moment this was the CD recorder to have. Clean and detailed.

Marantz DP-8 1999 £1100
Perhaps the best sounding CD recorder made. Built like a brick with a true audiophile sound and HDCD compatibility.

Cambridge Audio Dac 1998 £200
A classic soft in the treble and warm in the midrange, but outstanding in every other aspect.

Sony CDP-30 DATMAN 1996 £599
Superbly designed and built. The sound is crisp, clean, and detailed.

Link K-Air 1995 £1775
The first CD player to have a truly transparent sound. Packed with features and a superb build quality.

NAIM CDS 1990 £130
Classy Philips 16x4 chipset with serious attention to detail, especially in the midrange.

Cambridge Audio Dac 2000 £250
Exceptional transparency, smoothness, and detail. A perfect complement to any top-of-the-line system.

ANALOGUE RECORDERS
A WA XD-099 1989 £800
A true classic. The sound is warm, open, and detailed. A great addition to any high-end system.

Nakamichi DR-10 1987 £800
Exceptional transparency, smoothness, and detail. A perfect complement to any top-of-the-line system.

Sony WM-90G 1986 £490
Exceptional transparency, smoothness, and detail. A perfect complement to any top-of-the-line system.

Sony CDP-R/05A-R 1987 £3000
Exceptional transparency, smoothness, and detail. A perfect complement to any top-of-the-line system.

SONY MDS-JE55ES 2000 £600
Exceptional transparency, smoothness, and detail. A perfect complement to any top-of-the-line system.

Pioneer CTF-950 1978 £450
Exceptional transparency, smoothness, and detail. A perfect complement to any top-of-the-line system.

Yamaha TC-800GL 1977 £179
Exceptional transparency, smoothness, and detail. A perfect complement to any top-of-the-line system.

Sony TC-377 1972 £1800
Exceptional transparency, smoothness, and detail. A perfect complement to any top-of-the-line system.

REVOX A77 1968 £145
Exceptional transparency, smoothness, and detail. A perfect complement to any top-of-the-line system.

COMPACT DISC TRANSPORTS
Esoteric PD 1997 £8000
Exceptional transparency, smoothness, and detail. A perfect complement to any top-of-the-line system.

Teac V-RS9-T 1994 £500
Exceptional transparency, smoothness, and detail. A perfect complement to any top-of-the-line system.

Kenwood 9010 1986 £600
Exceptional transparency, smoothness, and detail. A perfect complement to any top-of-the-line system.

DACS
Dcs Elgar 1997 £18500
Exceptional transparency, smoothness, and detail. A perfect complement to any top-of-the-line system.

DPA Little Bit 3 1996 £299
Exceptional transparency, smoothness, and detail. A perfect complement to any top-of-the-line system.

QED Digit 1991 £190
Exceptional transparency, smoothness, and detail. A perfect complement to any top-of-the-line system.

CABLES
Missing Link Cryo Reference 2008 £495.05
Exceptional transparency, smoothness, and detail. A perfect complement to any top-of-the-line system.
ROCK
The Deathrags’ ‘Demon Solar Totem’ (Svart; svartrecords.com) sees this death metal outfit deliver slightly lower key metal with clean, rather epic vocals from Kvohst. New wave revivalsists, The Futureheads’ 2004, self-titled, high energy, 2LP reissue (Warner) offers Wire-like spicy guitars and XTC-like vocal precision. Between the Buried and Me’s ‘The Great Misdirect’ (2011; Craft), over a two LP gatefold, has been remixed and remastered. From speed metal to prog metal and a host of complex variants in-between, this is a bucket of ideas thrown at a wall. Your task? Watch as they drip down the thing.

Cold n Berlin’s ‘Rituals of Surrender’ (New Heavy Sounds; www.newheavysounds.com) provides jolly, sludgy, goth, doom rock while Maya’s twisting open delivery makes the difference.

RINGO
Possibly the man’s last LP ‘What’s My Name’ (Universal) features Paul McCartney as guest on ‘Grow Old With Me’, from a John Lennon demo, that includes a snippet of George Harrison’s ‘Hear Comes the Sun’. The Fab Four connect for the last time!

MOBILE FIDELITY
Two classics from this US-based audiophile cult fit include heavy, psychedelic rock from Butterfly’s ‘In-A-Gadda-Da-Vida’ (1968) – a paean to the gross excesses of the time and how music could represent a lack of control and direction yet remain representative of a place in history.

From 1975, Grateful Dead’s ‘Blues for Allah’ was a huge success, in studio terms, when you look at the rest of their studio output. ‘Slipknot!’ offers complexity, ‘King Solomon’s Marbles’ reflects greatly on fine keyboard work while ‘Crazy Fingers’ is a home for fine lyrics.

DEMON
Tim Buckley’s ‘Live at the Electric Theatre Co, Chicago, 1968’, is a fascinating dual LP set within a gatefold. It’s described as a sort of ‘thinking on his feet’ performance as he sketched ideas to a variety of songs.


Finally, leader of Chairmen of the Board, General Johnson’s Invictus original, ‘Generally Speaking’ (1972), a soul LP of broad variety and commercial appeal.
SPEAKERS CORNER
From the German audiophile outfit (www.speakerscornerrecords.com) comes the superb debut from the remarkable jazz pianist, Phineas Newborn, with Oscar Pettiford on bass, drummer Kenny Clarke plus Calvin Newborn on guitar. On ‘Here is Phineas’ (1958), he is technically flamboyant. He should have been one of the true greats but he was diverted by mental illness.

Also check out ‘Mingus at Antibes’ (1960), a superb live set featuring Eric Dolphy (alto, flute, and bass clarinet), Ted Curson (trumpet) and Danne Richmond (drums) plus guest tenor, Booker Ervin.

Also look out for Warren Zevon’s ‘Stand in the Fire’ (1980). Despite being the friend of everyone, remained an outsider, singing about outsiders. This live album proves the man could also rock out.

MUSIC ON VINYL
From this audiophile label (www.musiconvinyl.com) comes Moloko’s ‘Stutter’ (2002; numbered on blue marbled vinyl), the band’s final release: rhythmic, sad, drama, beauty and philosophy.

Also look out for ‘The Best of Chapterhouse’, on vinyl for the first time (2007; numbered, purple & pink vinyl) over two LPs.

CRAMMED DISCS

Also look out for ‘Kinshasa 1978 (Originals and Reconstructions)’ of previously unreleased originals. Includes a CD of extra unique tracks.

...AND FINALLY
There is something vaguely A-Ha about Electric Litany’s ‘Under a Common Sky’ (Apollon; www.apollonrecords.no) offers clean, shiny guitar rock with synth wallpaper and some incise lyrics.

David Norlind’s ‘Gum Tear Stain’ (Denovali; denovali.com) proceeds along the subtly creepy neo-classical/ambient/piano pathway. Space, isolation, introspection, a brooding meditation. It’s all there. Unique! No. Consummately executed! Oh, yes.

Seun Kuti & Egypt 80’s self-titled afrobeat LP was recorded direct to disc, live at Artie Studios in Holland, providing immediacy and energy to burn.

A Girl Called Eddy’s ‘Been Around’ (Elefant; www.elefant.com) aka Erin Moran offers introspective alt-pop with a seventies-infused, earthy, thoughtful delivery.


My Bus ‘Our Life in the Desert’ (Onomatopoeia; www.onophonic.com) is a new floaty, reverb-laden, light pop release from the guys responsible for 90s band, Butterfly Child on Rough Trade. An often contemplative journey.

From Third Man (thirdmanrecords.com) comes Jonathan Fire@Eater’s ‘Tremble Under Boom Lights’, a 1997 reissue from this excellent ‘coulda-shoulda’ band with a retro Nick Cave/garage rock delivery with bonus track, in the Head.

The arresting vocal delivery of Paul Vickers and the Leg’s ‘Jump’ (Tenement; www.tenementrecords.com) will be familiar to fans of Dawn of the Replicants. Vickers was a founder of that group. Here you’ll find drunken experimentalism and fractured innovation.
"Tellurium Q’s Ultra Black II’s can be see as one of the best loudspeaker cables on the market at their price"

- Jon Myles, HiFi World

"The differences were stunning.....What I can state is that the Ultra Black 11 cables are currently the best I have heard in my system.”

- Ian Ringstead, Hifipig.com

"Tellurium Q Ultra Black II is a remarkably coherent and “well-timed” cable”

- Jason Kennedy, HiFi +

"I have yet to hear a speaker cable which delivers timing like this one.”

- Chris Kelly, The Ear

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Classic style

Pro-Ject’s Classic Evo turntable comes with a moving coil cartridge for wonderful vinyl sound finds Noel Keywood.

As its name suggests, Pro-Ject’s The Classic Evo turntable is traditional or ‘classic’ belt drive design, with arm. There is no on-board phono stage and no automation of any sort: with this one you lift the arm manually onto an LP then lift it off at end. The intention is to offer a relatively simple to use basic turntable of good underlying performance, free of fripperies. But it is for those who don’t mind getting involved, as a prodigiously large bag of bits that accompanies it testified. I had to roll my sleeves up!

The Classic Evo is fundamentally a two speed belt-drive design – 33rpm and 45rpm – but you can, with a belt change, get it spinning at 78rpm. However, since the arm has a fixed headshell changing to a cartridge with 78rpm stylus makes this impractical and unlikely.

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moving-magnet (MM) cartridge with easily replaceable stylus is an option. Because old shellacs are a minority interest spinning 78s is a side issue I won’t get into here.

Instead The Classic Evo comes with an Ortofon Quintet Red moving coil (MC) cartridge purpose for the same. The Quintet Red is a budget MC, by the way, priced around £250 if bought separately.

from acoustic vibration, so there are transit screws to be removed before set-up. And where Thorens used a synchronous a.c. motor Pro-Ject use an altogether more modern d.c. servo motor driven by an internal supply, fed from an external wall-wart 15V (0.8A), with lead 2m (6ft) long. That means speed change is electronic and at the push of a button, speed accuracy and stability determined by electronic means internally. The system worked slickly, small black push-buttons selecting speed or, with a long press, turning off.

On top of the steel hub sits a heavy steel platter with thin felt platter mat. The platter only needs to be removed if the separate 78rpm belt is fitted. The standard belt is a high precision flat-ground type, whilst the 78rpm belt is a simpler O-ring type.

Pro-Ject fit their own wrapped carbon fibre arm with integral headshell. The finger lift is flat and not to my liking because it’s difficult to get a finger underneath – too little clearance above the LP – and, being flat, easily slips out of a light grasp. But most people will use the damped lift/lower. It would be better if Pro-Ject dispensed with their finger lift altogether, offering an optional bolt-on type with upward curve for easier and more assured use. These cost pennies and can be left off by those who’d prefer to use the cue platform.

Now to the bag of bits! And there are plenty of them. For a start, you get two belts, plus handling gloves and a dustpan, and signal cables (with earth). There’s a screw-on uncalibrated counterweight, bias weight on thread, alignment protractor, hook tool, three screw-on feet, three hex keys and simple stylus pressure gauge, but no bearing oil or stylus brush. The instruction manual didn’t list all the bits in our box (duster, alignment gauge) so contents may vary.

Before all else the three feet must be screwed on and they are height adjustable, as well as offering a degree of isolation. Well made and a nice touch, ignored by even Rega with their Planar 10. The hex keys are for setting arm height and cartridge azimuth. The balance gauge is needed because the counterweight is uncalibrated – unlike most turntables from the Far East. Don’t know what the hook tool is for: the manual makes no mention of it. Possibly to hook the belt?

A small technical note is that use of an external 15V supply means the unit is not mains earthed, making a hum loop impossible – so no hum from this source. It’s now a common and effective design approach.

The arm’s fixed headshell makes cartridge changing difficult. But this is a classic design aimed at those who are able and prepared to cope with such a fiddly process – so not an issue perhaps. Top quality arms from Rega and SME have similarly fixed head shells – if with better finger lifts – making Pro-Ject’s arm no different from other high-end types in this particular respect.

A solid acrylic dust cover is supplied, moving on simple friction hinges. Not as smooth and slick as those with spring counterbalanced hinges, but satisfactory.

Once this melange of parts had been assembled and all adjustments made the Classic Evo looked good – neat and shiny. Dimensions of 462mm wide, 131mm deep and 351mm high lid closed, and 432mm high, 390mm deep. (15in) lid open, make it a standard package size-wise but a deep shelf is needed. It will fit a 19in rack easily. Weight was a solid 11.5kg, due substantially to the steel hub and platter – heavier than the light, cast aluminium platters favoured in budget Far East turntables.

Raising the issue of big platters – and big main bearings to support them. A massive platter in an equally massive main bearing on a firm base resist vibration and historically have yielded best sound – think Garrard 401 here. Technics turntables also follow this constructional logic. The Classic Evo is similarly built.

**SOUND QUALITY**

I connected The Classic Evo to our Icon Audio PS3 Mk2 valve phono...
Cut into outer grooves, Neil Young’s Tell Me Why is as good as it gets for close-mixed acoustic guitar strings and here I heard a full-bodied sound, guitar sounding rich and resonant. There wasn’t the speed/laceration I know from better styli tips ($1/bata etc), the Quintet bringing a softer approach – in line with its frequency balance, I would have liked a little more speed and vivacity.

With 8 g Band Spectravari, a recent direct-cut of the Sydney Lawrence Orchestra, the rolling drum intro to Sing Sing had thunderous power and a strong grip on tempo. This is a masterful recording, one able to belittle CD – and that’s just what I heard with The Classic Evo. It brought out the sheer listenability of LP as well as its dynamic power. Some hardness of tone contributed to the sense of pace and control, so think speed and drama here, rather than mellowness. Yet at the same time our electroacoustics put up a big sound stage that was both clear and deep, that sense of depth LP can provide being on full display.

CONCLUSION

Pro-ject’s The Classic Evo is a turntable for vinyl enthusiasts who know a thing or two about set up and are prepared to make the effort. Once up and running it gives glorious “classic” sound from Ortofon’s Quintet Red moving coil cartridge – but you will need a decent moving coil preamp to hear this. Then you get true vinyl sound in the higher echelons of what is possible, albeit on a mid-range turntable.

MEASURED PERFORMANCE

With a 3150Hz test tone (DIN 45-452 test disc) Pro-ject’s The Classic Evo held speed both accurately and tightly, wandering from 3150Hz-3153Hz on our Wow&Flutter meter, making it essentially accurate in speed and with little variation around nominal. The turntable was run for 24hrs before this measurement.

As a result of low wander, speed stability was very good for a belt drive. Wow measured just 0.1% (DIN) and Flutter of 0.06%. The total W&F value, DIN weighted, was 0.07%, our speed stability analysis showing the usual variation peak at 33rpm (0.53Hz) at low-ish level. There is little in the way of flutter peaks at right.

Although not an aluminium tube, the arm is still rigid and rings quite obviously under analysis with a Bruel&Kjaer accelerometer on the head shell, tuning-fork type resonance occurring at 220Hz. However, this apart the arm is fairly well controlled and damped, especially at high frequencies (above 1kHz) where the integral carbon fibre headshell works very well.

Frequency response of Ortofon’s Quintet Red fell steadily toward high frequencies, measuring -3dB down at 10kHz. On inner grooves this rose to -5dB down – substantial and subjectively obvious as warmth, or dullness. Tracking was good at 2.3g recommended VTF.

The Classic measured well but wasn’t without small blemishes in arm and cartridge. NK

****

PRO-JECT

THE CLASSIC EVO £1250

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Gimme Three

With three-point fixing Rega’s new Ania Pro cartridge comes alive, finds Noel Keywood.

I was surprised to learn that Rega have started making their own moving coil cartridges, rather than buying in from outside suppliers like Sumiko or Audio Technica. Not an easy thing to do: an exercise in micro-engineering. As I understand it, cantilevers and their diamond tips must be bought in from the few suppliers of micro parts around the world able to produce such items, like Nagaoka and Ortofon.

Into this exotic world of micro-manufacturing Rega have produced a range of moving coils whose bodies and motor assemblies (magnet, coil, etc) are made in-house. At top comes the Aphelion with a boron rod cantilever, then Apheta 3 (£1250) and just below the new Ania Pro (£750) that I’m reviewing here. It’s up against stiff competition from Ortofon’s Quintet range of budget moving coils and Audio Technica’s recent OC9X series that top out at £660 (reviewed October 2019 issue). But Rega have their own ideas on how hi-fi should be engineered and how it should sound, so Ania Pro differs from much else.

To kick off, this cartridge is very light at 6gm, due to use of a lightweight moulded body with aluminium internal mounting block. Our SME309 test arm barely managed to dial on 2gms downforce before the rear weight hit its forward end stop, so arm compatibility is a potential issue.

Then there is use of a third fixing screw ahead of the traditional screws (M2.5) set half-an-inch apart. The only arm that can accept this screw to give three-point fixing is – as you might guess – a Rega arm. Blind captive nuts are moulded into the body to make fitment easy, but they are shallow and Rega supply just three very short stainless steel screws for them. Again, suitable for a Rega arm but otherwise – with thicker non-countersunk headshells – you’d need to buy a screw set with longer screws.

And then there is a peculiar issue of height that Ortofon say is lower than industry standard by a few millimetres. Rega arms suit but others must be lowered at the pillar. A 1mm mounting plate is provided to compensate.

Put all these issues together and you can see that Rega cartridges are purposed for Rega arms. They can be used in other arms, by adding weight to the headshell and lowering the arm pillar. I am not aware of other arms with three point fixing but a removable bayonet fitting headshell could conceivably have a third hole drilled into it.

So before getting past even a simple basic description of the Ania Pro you can see it is different and Rega-ish.

But there is another significant issue to bear in mind: sound quality. Rega products are consistently mid mannered and that’s very much the case with their pickup cartridges, including this one. If you want strong treble “just walk away Renee”. More later.

The Ania Pro comes in a small clear acrylic case with its three fixing screws holding it to the packaging. There was a short hex key for them too. A Rega arm will, I believe, cope with it – ours did.

The stylus guard terrified me so I barely used it. There is very little clearance between it and stylus, so
I was taken by the sense of strong and steady imaging, the sheer power of Young's acoustic guitar and the forceful expression of his vocals

Widely spaced rear signal pins, unobstructed by body overhang, make connection easy. Clear colour coding, Right channel (+red/-green) and Left channel (+white/-blue) help get things right.

Three point fixing made clear in this shot of the Ania Pro. The two rear captive nuts fit any arm, the front one is purposes for Rega arms.

The front spigot accepts a small plug-in stylus guard.

I have made before. Preamplifier was an icon Audio PS3 MkI with silent input transformers and valves, feeding an icon Audio Stereo 305E single-ended valve amplifier driving for a gentle balance. But whilst heights were un-accentuated the Ania Pro had obvious low end strength and control, delivering a big-bodied sound. I liked what I heard and it is different from most rivals, which have a brighter balance.

In Rega's RB3000 arm, with the benefit of three-point fixture, the sound stage became firmer and instruments better fleshed out, as well as stable and assured. Also, Rega arms have always drawn attention to lower midrange image stability, hand drums in particular having definable position on the sound stage. Deep bass kick drums have to be mono images with LP or the needle will jump out of the groove. But hand drums can have stereo position.

I got to hear all this with Sing Sing Sing from the Syd Lawrence Orchestra, on the Big Band Spectacular LP (180gm, direct-cut). Drums had a sense of solid and stable power to them, anchored to the ground. Short breaks on side percussion were pinpoint sharp, with a lovely grip on timing, yet a great sense of time domain cleanliness: there was no blur between strikes, it was all smoothly but cleanly correct. No problem with low end dynamic strength either: think a muscular sound. I squirmed at the improvement three-point fixing made here – I should have known.

Much the same with In the Mood where slow plucked bass was firm and trumpets blasted out with a sense of stable confidence free of edginess. There was fantastic insight into timbral properties of individual instruments and the orchestra as a whole had body and was seemingly locked into position on the sound stage.

Spinning Neil Young's After The Goldrush, an all-analogue re-master on 180gm vinyl, I was taken by the sense of strong and steady imaging, as well as the sheer power of Young's acoustic guitar and the forceful expression of his vocals. The Ania Pro in Rega's RB3000 arm delivered this performance with a solid surety. I've not heard before – and it was gripping. Missing was the cutting

miss when trying to locate it onto the frontal spigot and that's the stylus gone.

However, this apart the rear signal pins are well spaced and unobstructed by bodywork, as well as colour coded, making attachment to a Rega fixed headshell arm easy I found. Stylus tracking force is quoted as 1.75-2gm with no optimum stated so I used 2gm.

SOUND QUALITY
We had a Rega Planar 10 in the office, reviewed in the March 2020 issue, and since the Ania Pro with three-point fixing is purposed for a Rega arm, I felt obliged to mate the two. For measurement though I rely on the quartz-lock accuracy of our Timestep Evo modified Technics SL-1210 Mkll with its SME309 arm, partly because test records must run at correct and stable speed for a spectrum analyser to lock-on.

After testing I listened to the Ania Pro in this turntable, then moved it to the Rega Planar 10 where it would receive the benefit of three-point fixing – not a comparison

Martin Logan ESL-X hybrid electrostatic loudspeakers through Chord Company Signature Reference cables.

Our measurements of arm headshell behaviour with a Brüel&Kjaer accelerometer show that most are lively at front where they are unconstrained, less so at back where attached to arm tube. Three point fixing a cartridge damps these front-back modes where two point does not. Explaining improvements I heard when I used the Ania Pro in Rega's RB3000 arm.

Moving from our test platform to Rega's dedicated environment was a minor shock. In basic form, nothing changed, but underlying subtleties changed significantly, to the point I squirmed. In our test platform the Ania Pro sounded easy going as expected from measurement: no treble spit and a full bodied delivery that was different to current idiom, in keeping with Rega's preference
Rega arms have a third fixing screw ahead of the two conventional ones, seen here with the Ania Pro in Rega RB3000 arm. It stiffens the headshell in effect, giving a more stable sound.

speed of his guitar strings I’ve heard from Audio Technica’s OC9X Shibata and Special Line stylus tipped cartridges in particular, but in its place there was deep insight into the performance, to the extent I was transfixed. Almost surreal that such an old recording could come over with such wonderful sound – but that’s Neil Young I guess.

For inner groove performance I currently use Time To Say Goodbye, where Rosella Caporale holds the most astonishing vocal crescendo at the very last moment, almost into the run-out groove – and here the Ania Pro kept a grip beyond anything I have heard.

Rega make much of their stiff but light body moulding. A long stylus cantilever provides good disc clearance with correct vertical tracking angle, for low distortion.

Our frequency response analysis of Rega’s Ania Pro shows output falls steadily toward high frequencies, measuring -2dB down at 10kHz on outer grooves (JVC TRS-1007 test disc), enough to give a warm sound. On inner grooves (red trace) this increased to -3dB down at 10kHz and -8dB at 20kHz, from tracing loss due to stylus tip geometry, further enhancing warmth on inner grooves.

Tracking of standard 300Hz test tones on CBS-STR112 test disc was excellent, the Ania Pro just clearing a very high 90µm lateral track at 2gms VTF. At 1kHz (B&K2010) where acceleration is higher and tip mass more influential, the highest 25µm/sec band was negotiated, if with slight mistracking – a very good result.

Distortion was higher than usual at 2% on lateral modulation, mostly second harmonic, against a typical figure of 1%. On vertical modulation the figure was unusually low at 0.4% after mod. slant angle correction, due to a measured vertical tracking angle of 21 degrees (DIN 45 452 test disc). Optimal is 22 degrees and it is rare for any cartridge to get below this figure. This brought distortion down to 1.2% overall, a low value.

Output was unusually low, measuring 16µV Left channel and 17µV Right channel – 173µV average at 3.45cm/sec (Shure TTR-109 test disc). This is 8dB below the output of Audio Technica’s OC9X at 450µV, for example, so a quiet MC preamp with plenty of gain is needed. Channel imbalance was 0.6dB – tolerable and separation 22dB (Shure TTR-109).

The Ania Pro will have a mild to warm sound, especially on inner grooves. Conversely it will sound full bodied and smooth. Output is extremely low so a quiet preamp is needed. Tracking was superb. NK

before Volume right up, Ms Caporale came though our electrostats like no other, pinning me to the settee. I was left aghast at this.

And finally, this cartridge has incredibly low output, at 0.173mV (173µV) the lowest I have ever measured. so must be used with a low noise preamp. Our Icon Audio PS3 MKII has input transformers that are super quiet and there was no hiss after turning volume up, but with some preamps hiss may be audible.

CONCLUSION

I am reviewing not just Rega’s Ania Pro moving coil cartridge here, but also Rega’s RB3000 arm and the effectiveness of three-point cartridge attachment.

By any standards this is an unusual cartridge with its mellowness, sound balance, light body weight and low output. All the same, in a Rega arm it delivered a sound that others would struggle to match, ignoring reticent highs that rivals make more obvious.
Keep It Simple

A simple belt drive turntable from Teac, reviewed by Noel Keywood.

Keep it Simple Stupid – KISS – and that’s what Teac have done with their new TN-3B turntable I’m reviewing here. It’s nothing other than simple in outline and operation. Price circa £395 so it won’t break the bank – and you get digital too.

Where budget Direct Drives are now available, Teac stay with belt-drive here, with two speeds: 33rpm and 45rpm. Having an electronically controlled d.c. motor, speed is switch-selectable – no need to move a belt on a stepped pulley, instead a neat little rotary switch at right has an Off position, 33 and 45 positions.

The arm is entirely manual in operation, aided by a damped cue platform; there is no auto-stop or
auto-lift, strictly DIY. In keeping with simplicity it has a conventional removable headshell with bayonet connector, balanced at the other end of the arm tube by a calibrated counterweight. This makes setup easy.

Fitted as standard is a light (6.1g) Audio Technica VM95E budget moving magnet (MM) cartridge that can be upgraded by changing the removable stylus assembly – and the arm is good enough to do this. The VM95E comes with green stylus carrier signifying elliptical stylus profile set on a ronnel, to ride fluff. Above this rugged budget fluff-rider are upgrades – to nude elliptical for better high frequency tracking (more easily upset by fluff), Shibata for better high frequency end-of-side resolution and MicroLinear for top high frequency resolution, best used with LPs in good condition – so there’s plenty of leeway to upgrade here; our review in the January 2019 issue covers them in detail. As the arm can accept cartridges up to 12gms in weight other models can be fitted.

Sliding this deck into a system won’t be difficult as it’s fairly compact, measuring 420mm wide, just 117mm high with lid closed and 336mm deep. As always though, the hinged lid needs top clearance to open fully, 40cm here, and a shelf at least 40cm (16in) deep is needed to clear lid rear overhang when open. Weighing 5kg (11lb) the TN-3B is quite light so it needs to be put on a firm surface, that could include a weighty marble slab. The MDF plinth feels rigid and sits on four isolating feet, but they are not height adjustable, which is a pity. It means the turntable needs a level surface. It is also microphonic: close the lid when playing and there’s noise from the loudspeakers. Build quality and finish were superb. The clear acrylic lid moved smoothly on its hinges – easy to use whilst an LP was playing. The plinth looks lustrous and the arm was easy to use, its cue platform dropping the arm smoothly but lifting it fast. I hand cued without difficulty. Platter start was almost instantaneous.

A phonostage is included, together with small by-pass switch so an external stage can be used if preferred. Additionally, the stage has a USB digital output for computer connection, so digital recordings can be made. Teac talk about the analogue amplifier chip in this stage, stating it is a NJM8080 (never heard of this one!) but are strangely silent in their literature about the crucial analogue-to-digital converter (ADC) so it is going to be ‘budget’ and is – unsurprisingly – a CD quality, quoted as 16bit with 48kHz maximum sample rate.

Feet on ground with ADCs in budget turntables – they offer basic functionality rather than hi-fi sound quality. Under test this one had limited dynamic range, much like rivals, but it got the basics right. If you want good digital from LP indistinguishable from the analogue sound, then an external phonostage with better 24bit converter is needed.

Power comes from a tiny wall-watt 12V power supply fitted with 5ft (1.52cm) ong lead. It accepts 100V-240V input and delivers 500mA out to the motor and in-built phono stage through a thin, light lead. 0.5W consumed at standby and less than 2W when playing. Won’t break the bank.

A small d.c. servo controlled motor drives the platter rim by belt, putting the drive mechanism on display.

**SOUND QUALITY**

I connected the TN-3B, set to Line output, to our Creek Evolution 100A amplifier, driving Martin Logan ESL-X hybrid electrostatic loudspeakers through Chord Company Signature Reference cables.

Spinning our evenly balanced but cleanly recorded all-analogue Two Countries, One Heart LP Fanfare for the Common Man was crisp and clean, rather than warm or fulsome. There was an obvious grip on pace, the sudden orchestral episodes sounding snappy time wise. Kettle drum was firm and fast, but not weighty. Running through this track and others on this benchmark LP I found the TN-3B light in presentation, if precise and detailed. So I turned to our fuller bodied LPs and they gave a similar result. Spinning Walk Of Life, from Dire Straits on a Mobile Fidelity 45rpm all-analogue re-master, Mark Knopfler’s vocals were well resolved.

The removable headshell carries an Audio Technica VM95E cartridge. The green stylus carrier can be removed to fit improved stylus profiles.

At rear are analogue phono socket outputs and earth terminal. A slide switch selects direct output or the internal phono stage. A USB socket for digital connection to a computer offers digital recording ability.
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but the balance was on the bright side from an LP. I know as fairly fulsome and weighty. My attention wasn’t drawn to the bass line, being grabbed by what was going on further up the frequency scale.

Mark Knopfler again, and The Fish and the Bird, from Kill To Get Crimson. This also is a smooth, full bodied LP but the Teac focussed more on insight and pace than low frequency strength.

With an original Rumours LP from Fleetwood Mac, Second Hand News was clean and well resolved but I wished for stronger low end resolution and a greater feeling of depth in the sound.

Switching the phono stage to Bypass at rear, I connected up our Icon Audio PS3 MkII valve phono stage and the sound changed completely. Now there was solid bass, plenty of stage depth and the cartridge changed to sounding a tad soft in balance (which it is), allowing for stylus upgrade to get more high end definition and presence.

Best to bear in mind though that the AT-VM95E cartridge fitted does have a brighter balance than many and an AT-3600 or Rega Carbon, with their softer sound, would better suit I feel.

A nicely finished plinth and arm give the TN-3B an air of elegance.

CONCLUSION

Teac’s TN-3B turntable is attractive in many ways. It looks good, was nice to use and is an easy way into spinning LP without either set-up hassle or operational drawback, although it is strictly manual. Sound wise its internal phono stage has a light balance short of vinyl warmth and depth perspectives – not in keeping with the vinyl experience. An external phono stage is needed to better hear what the turntable is capable of – and a more appropriate cartridge would help too. So, good in essence – but could easily be better in sound quality terms.

MEASUREMENTS

From a 3150Hz test tone (DIN 45-432 test disc) the TN-3B produced 3178Hz on our Wow&Flutter meter, making it nearly 1% fast – about the limit of acceptable error before pitch becomes quite obviously high. This points to lack factory adjustment.

Although speed accuracy was poor, speed stability was very good. There was almost no basic speed wander and this resulted in a low Wow value of 0.1% (DIN) and Flutter of 0.06% – both very good results for a budget belt drive. The total W&F value, DIN weighted, was 0.08% – very good. Measured to the Japanese JIS Standard this was 0.05% (for comparison with Japanese turntables). Our speed stability analysis shows the usual variation peak at 33rpm (0.55Hz) – basic rotational frequency – but it is low. There is little in the way of flutter peaks at right.

The internal phono stage has a very low gain of x55 and overloaded early, just 7mV in / 385mV out tainted by 0.2% distortion. At 18mV in / 990mV out distortion hit 1%. These are not wonderful figures but arguably satisfactory in a budget design. Output is low so volume needs to be turned up in an accompanying amplifier. Progressive distortion will muddle the sound a little with loud LPs.

Equalisation was accurate, making frequency response flat from 30Hz to 20kHz within 1dB limits. There is slow roll-off in gain below 30Hz our analysis shows, to suppress subsonic warp signals that cause loudspeaker cone flap.

The 16bit analogue-to-digital (ADC) converter reached maximum (0dB FS) at 16mV from the cartridge but distortion was high at 1%. At -60dB distortion measured 1.5% but it was noise; there were no identifiable harmonics. Dynamic range (EIAJ) measured 81.6db – reasonable for a budget 16bit ADC. Better range from a 24bit converter is needed for inaudible conversion but this one could at least resolve a -60db signal.

Frequency response was identical to that of the analogue output, with no change above 10kHz due to anti-alias pre-filtering.

Frequency response of the AT-VM95E cartridge runs flat to 20kHz with just a slight roll off towards high frequencies so there’s no sharpness. It does not suffer generator loss and resultant warm sound. Tracking is excellent too.

The TN-3B gave a basically good measured performance, but its integral phono stage is mediocre. NK

| Speed error | +0.9% |
| Wow | 0.1% |
| Flutter | 0.06% |
| Wow & Flutter (DIN wtd.) | 0.08% |

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I don’t know of too many people who were named after actor, Roger Moore, from his stint on the TV show ‘The Saint’. Yet that’s happened to Ranking Roger, a gifted toaster (i.e. lyrical chanter, a variant of rapping) as part of the UK ska-revival band, The Beat. A racially integrated pop group from Birmingham, The Beat found fame and success in the UK and in the USA with hits such as ‘Tears of a Clown’, ‘Hands Off She’s Mine’ and ‘Mirror in the Bathroom’.

Roger’s family moved from the Caribbean island of St Lucia to England in 1959, Roger was born in 1963, pushed at the boundaries of behaviour as a child and was quickly exposed to rampant racism during the seventies.

Hence, it’s no surprise that this book looks at Roger’s life in the band but it’s also a social history of the times and the culture, as well as a reflection of the social mores back then: he conveys his emotional reaction to Nazi-saluting skinheads during a band concert, his view of a National Front march through his neighbourhood and his views on being that rare thing, a black punk.

It’s a timely reminder of seventies England and how attitudes were broadcast and digested then. On that subject, it’s intriguing to hear his views on the Rock Against Racism political and cultural movement, that emerged in 1976 and was supported by the punk and independent groups of the time. “Rock Against Racism was for everybody but when I went to an event the majority of the audience was noticeably white. It always bothered me.” He wondered where the black people where. He added “People were cocooned in their separate cultures, there was a lot of justifiable mistrust”.

Which showed how difficult it was to build a solid and tight response to fascist aggression. Roger would exclaim that “The change would come with 2 Tone (an independent record label featuring racially mixed bands, devoted to the ska revival) and with it the first real evidence of black and white cultures mixing on the dance floor.

His toasting talent would work well in The Beat, although all of that talent was temporarily frozen when the band made its first appearance on the legendary BBC TV programme, ‘Top of the Pops’, to sing (well, mime) their first single, ‘Tears of a Clown’. On stage, having been told to look at the cameras with red lights a-top because that would be the ‘live’ camera, introduced on the programme by DJ Mike Reid, Roger said, “The song started and I didn’t know what to do. If you watch the footage you can see I was hit by nerves. About thirty seconds into the song I remember I had been told ‘Make sure you smile’. All of a sudden I was grinning like a Cheshire Cat”.

After, the band were delighted to receive a congratulatory telegram from the songwriter of the original version, Smokey Robinson. Later, this book tells stories involving bands like The Specials, The Police, The Pretenders, Au Pairs, The Clash, REM and more. Then covers the band’s break up and Roger’s later musical projects. But it’s his time with The Beat that forms the core of the book and reflects that unique period of UK music when Caribbean rhythms thoroughly infused British music.

A family man and a father of five, it was in January 2019 when we discovered that Roger had undergone surgery for two brain tumours. Health issues struck him from all angles though as he was also hit by lung cancer.

Tragically, Ranking Roger died at his home in Birmingham on 26 March 2019 at the distressingly young age of 56. I, for one, am happy that this book exists to tell his story. It’s a fine memoir and a perfect reflection of the times. PR
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I wonder how they really feel about the tag? It's one I'm not too familiar with, I have to admit but when a band is described as 'yacht rock', I sense derision.

So what is yacht rock? It's a sort of soft rock approach to music but distinctly Southern California in tone and normally from 1976 and 1984. The yacht part kicks in because yuppies of yore supposedly found the music appealing while they jaunted on their yachts, sipping champagne and snorting cocaine. Not the most respectful picture, I'm sure you'll agree.

Singer Michael McDonald once told Rolling Stone 'The way I look at it, it's something people love to laugh about, but they still have a certain affection for it'. When he was asked about his 'Captain of Yacht Rock' tag, he replied 'I'll take whatever I can get at my age'.

And maybe that's the point, the tension between The Doobie Brothers and critics and the adoration between the band and the public. If ever a band survived and even thrived upon a schism, it was and arguably still is, the Doobies. "We always kind of had to look for our validation from our fans because that was really where we got it, on the road playing for people live and having that communication. As far as the media goes, we weren't referred as a cutting-edge band" said McDonald.

I got that. Even back in 1978 when I first became aware of the group via their then hit single in the UK 'What a Fool Believes'. Being a sucker for harmonies, I loved this track – even if others didn't. Reportedly, one music industry executive from their own record label exclaimed that 'Minute by Minute' "...would be the final nail in their coffin". Then the band won four Grammys, just to spite him. The label didn't even want to release 'What a Fool Believes'.

'Minute by Minute' was a boundary, a transition. Partly because guitarist/vocalist, Tom Johnston had withdrawn due to health concerns, the band transformed from a guitar band to a smooth soulful outfit. More piano and horns than guitars. So, there was possibly less instrumental skill and mastery on offer here but there was certainly more commercial funk flavours inserted into the mix that would enable the band to reach more ears. Three million ears, in total.

"I don't think we'd had a real strong hit for a couple of years, maybe" said guitarist Pat Simmons "so we were concentrating harder. We'd be a little harder on ourselves".

The first single from the LP, "What a Fool Believes", was developed from three or four bars, repeated over and over. Michael McDonald was encouraged to finish it but he couldn't. "I actually wound up writing most of the verse/lyrics on an aeroplane ride from New York to California. Just came to me. But I didn't have a bridge or a chorus. I was planning to get together with Kenny Loggins and we were looking to write together and thinking that you're timid to get together with someone you've never written with. So I was playing a little bit of this piece for my sister and I said, 'Hey Kenny Loggins is coming over tonight. I was thinking of playing him this. I was playing her that piece and he was at the door. She said 'Yea, that's a neat idea'. Then the doorbell rang. The door opened and he said, 'Whatever it was that you were just playing, can you remember it?' I said 'Yea, sure. I've been goofing around with it'. He said, 'Let's work on that'".

When McDonald joined the Doobies, he moved from living in a garage to a very nice apartment. He was kicked out of the same because he was making too much noise. Musicians, eh? "My neighbours hated me" he said. Evicted, he found a less than salubrious abode. "I was on the road so didn't have the time find a new apartment so flopped in this dinky place for a while". This is where he wrote the title song for this LP with Lester Abrams.

McDonald had to project ahead on this track because, in his opinion, without the background harmonies, the track would have been dead in the water.

And that's what I also get from this LP, a sense of the group and, in every way, a sense of harmony. The music flows easily, without any effort. Music without friction, you might say.

Critics, eh? Who needs 'em. PR
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