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What is it about mains supply purity that catches everyone's concerns and imagination? You plug into the wall socket and everything works! Seems perfect. But I guess mains power is the background life blood of modern living that, if it fails, brings a lot to lose. The power into our homes – hospitals especially – and big business servers (think British Airways and their recent failure) is a source of subliminal angst. This puts the worries of audiophiles into perspective – but we have the worries all the same! Or so it seems from all our mail on the subject and the coverage mains conditioning gets on the 'net.

And what a worry. As if streaming and how to play DSD wasn't enough, now we are faced with how to sort out the local power station! Technically, this is a subject in a world of its own – and not for the faint hearted. But Britain has companies willing to dive in and get busy with fascinating solutions. Hi-Fi World readers know this and are in a vanguard of users, happy with the improvement a clean, stable mains supply makes. We're happy to bring you a close look at Power Inspired's AG1500S mains regenerator purposed of hi-fi use, on p46. Trying to get a handle on such a product is a tad challenging because it demands test techniques outside the normal idiom – but not impossible. I hope you find our look at this regenerator interesting and informative.

Portable digital players are in their own technology race, getting ever smaller and more sophisticated. Our review of Cowon's Plenue V on p57 shows how today you can buy a player far ahead of what was available yesterday.

But Quad's Artera Solus all-in-one is perhaps the most impressive product here. Hooked up to the amazing Martin Logan Impression ESL 11A hybrid electrostatic loudspeakers (see p11) it wowed us all. High fidelity at an affordable price has never sounded so good, so don't miss our review of the new Artera Solus on p17.

The race ahead for ever better sound quality isn't slowing. Our coverage clearly shows why. I hope you enjoy it all in this great issue.

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

analyser, 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.



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"Tellurium Q Statements are no usual cable affair and if I've called the Silver Diamonds an Emotional Tour de Force what are then the Tellurium Q Statements!? Well, they certainly transcend any typical labeling and this time I'm elevating them on the throne, that they clearly deserve. Their stand out, extraordinary performance can only be recognized with the 2018 Editor Choice Award!"

-Matej Isak, Mono & Stereo

"...you have managed to surpass them [Silver Diamonds] in a truly grand way."



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news

NEW KRELL INTEGRATED AMPLIFIER

Krell – famed for its high power amplifiers – has unveiled a new integrated design.

The K-300i is claimed to deliver 150 Watts per channel into 8 Ohms and 300 Watts into 4 Ohms, using a newly-designed Class A circuit backed by a power supply with a 770VA mains transformer and 80,000µF of capacitance.

In basic form the K-300i has analogue-only inputs – and a price of £4,698.

However, there's a digital version featuring an ESS Sabre DAC that offers optical, coaxial inputs, as well as USB and UPnP streaming – for £5,698. It includes built-in support for Spotify Connect, Tidal, Deezer, Qobuz and vTuner radio stations.

For full details visit Krell's exclusive UK distributor Absolute Sounds at www.absolutesounds.com.



QUAD'S FIRST HEADPHONES

Quad has revealed details of its first ever headphones - a planar magnetic design said to replicate many of the qualities of its famous ESL electrostatic loudspeakers.

The Quad ERA-1 incorporates an ultra-thin, electrically active diaphragm – which is thinner than a human hair yet extremely strong and highly elastic, weighing less than the volume of air it displaces.

Quad say the ERA-1s are also highly sensitive, enabling them to be used with a wide variety of devices from portable audio players to high-end headphone amplifiers.

The ERA-1s come with two types of ear cushion – one made of soft leather, the other of latex topped with a fleecy fabric – as well as a detachable 2.15cm cable and durable carrying case.

Price is £599.95 and more information is available at www.quad-hifi.co.uk.

RAIDHO'S BIG SOUND

Danish loudspeaker specialist Raidho's latest models have arrived in the UK.

The X-5 and XT-5 designs feature the company's own ribbon tweeter alongside a combination of six mid and bass drivers all housed in a slim cabinet with boat-hull shaped tapering cabinets to reduce internal standing waves.

The new 'speakers sit below Raidho's C and D series ranges and cost from £25000 for the X5 and £35000 for the XT-5 - which features improved drivers consisting of an aluminium/ceramic sandwich cone reinforced with titanium.

For more details go to Raidho's UK distributor Decent Audio at www.decentaudio.co.uk.



DIGITAL VINYL?

In the latest attempt to combine the convenience of digital replay with the sound of vinyl, start-up company Zephyr has come up with the Apollo.

It consists of a turntable with a tonearm that can be controlled from a Bluetooth app so you can select whatever track you want – and also dial-in playlists! So, if you want to go to Track 3 of your favourite album it will find it – not an easy thing to do.

It could be a genius invention.

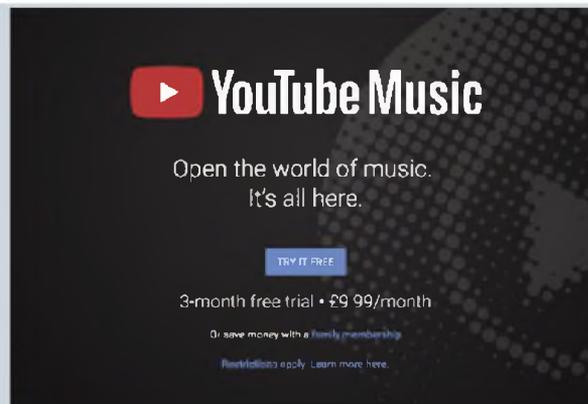
YOUTUBE MUSIC

Not content with dominating the on-line video market, YouTube now has the music streaming sphere going up against the likes of Spotify.

YouTube Music is available as a free, advert-supported service as well as a £9.99 per month premium tier without the ads.

Users are also being offered a free three-month trial if they sign-up now.

With the might of parent company Google behind it the new service could be a serious rival to Spotify.



YouTube Music

Open the world of music.
It's all here.

[TRY IT FREE](#)

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APPLE GOES CONNECTION FREE?

Apple is reportedly looking to remove its Lightning connection from forthcoming iPhones – meaning the devices will only work with wireless headphones such as their own AirPods. The move coincides with the release of a new, higher-end set of AirPods that have improved sound and better waterproofing. It also means those who use their 'phones for listening to music on-the-go will have to change to earphones with Bluetooth.

In another development, informed sources say Apple is looking to develop its own set of high-end, over-ear

headphones. Having bought the Beats brand four years ago yet released few new products this seems likely.

Hi-Fi World contacted Apple for comment but are still waiting to hear back.



KUBRICK TURNTABLE

Bring together Devon, Serbia and the film 2001: A Space Odyssey and what do you get? Well, the new Kubrick DCX turntable.

Engineered by Serbia-based Soulines the Kubrick is inspired by the famous director's movie but is a very unusual design.

It features belt-drive, a skeletal plinth, acrylic platter and a lowish-torque DC motor.

But Devon's turntable expert Dave Cawley listened and found it worked perfectly with his own Timestep T-609 tonearm and T-01HS ebony headshell.

As to the Kubrick, it has an inverted main bearing, machined from solid brass and stainless steel and the motor assembly is mounted on the main plinth. The sub-plinth has differently shaped sections coupled together and strategically damped.

The entire package starts from £4350 including the turntable, armboard, tonearm, mount, headshell and cable.

Watch out for a review in Hi-Fi World soon.



UN Sung SINGING

The forthcoming Festival Of Sound show www.festivalofsound.co.uk

– previously known as Indulgence – has announced a new attraction for this year.

Live music lovers will be able to hear a number of performances in the Chablis Suite, at the Novotel London West hotel, Hammersmith.

The first guaranteed artists are the UnSung Singers – a group of the UK's leading backing singers who've worked with artists as diverse as David Bowie, Tina Turner, Stevie Wonder and Eric Clapton.

Joining them will be their musical director Mike Moran – the producer whose credits include albums by Queen, Ozzy Osbourne and George Harrison.

More attractions are expected to be announced over the next few months so watch this space for further details.



KLIPSCH BREATHES FIRE

Fire-breathing monsters is the term Klipsch are using to describe their latest RF7-III bass reflex floorstanders.

They use a new pair of 10-inch mid/bass drivers allied to a titanium high frequency driver housed in a specially-designed horn-loaded waveguide for best sound dispersion.

Twin 'speaker binding posts at the rear allow for bi-amping or bi-wiring. A claimed 100dB sensitivity means they will go loud with very few Watts.

These new loudspeakers are available now in Black Ash, Natural Cherry or Walnut finish, priced at £3750 per pair.

For more information visit Klipsch's exclusive UK distributor Henley Audio at www.henleyaudio.co.uk.

THE BRISTOL HI-FI SHOW

ORGANISED BY AUDIO T

BRISTOL RE-BRANDS

The UK's biggest electronic entertainment show is to change its name from next year on.

The Sound & Vision Show will become The Bristol Hi-Fi Show. The move is believed to reflect the dominance of two-channel equipment in recent years, although A/V products will still be on show.

Next year's event runs from Friday 22nd February to Sunday the 24th February. Ticket sales will begin October 2018. Log-on to www.bristolshow.co.uk for more information.

70 YEARS YOUNG

Yes, it's 70 years old this summer. The LP that is. Way back in June 1948 Columbia Records introduced its then revolutionary vinyl disc, capable of holding around 20 minutes of music per side.

Within eight years the format had been adopted by every major US music company – consigning fragile shellac discs to the history books.

And as the vinyl revival continues apace it will be interesting to see if CD – which at one point threatened to kill off vinyl – manages to last as long.



LEEMA AND MIAN

Leema Acoustics has partnered with industry experts Mian Audio Distribution, who will take on UK sales and distribution for the specialist Welsh hi-fi manufacturer.

The new arrangement will see Mian look to increase the number of Leema dealers in the UK, offer additional support and manage the company's presence at shows and events around the country. The two companies recently united for the North West Audio Show at Cranage Hall in Cheshire.

Commenting on the new partnership, Nia Davies, Leema Acoustics' Managing Director said, "I am happy to announce our partnership with Mian. We're sure that their years of experience in the hi-fi industry will prove invaluable and help to give the Leema Acoustics brand the representation it deserves".

Mian co-director Andy Moore (pictured with fellow director Mick Neal and Nia) added, "We are delighted to be working with Leema Acoustics. As a team, we can offer unique levels of support to dealers and spread the fabulous word of Leema Acoustics to eager ears".

PRIMARE PUSHES FORWARD

Sweden's hi-fi specialist Primare has released two new products – both based on those looking to stream music as well as play from traditional sources.

They are the I35 Prisma integrated amplifier/network player and CD35 Prisma CD/network player. Both are based around a new Prisma wireless multi-room network module that offers playback from stored and streamed music over wi-fi as well as Bluetooth connectivity.

The I35 Prisma integrated uses Class D amplification claimed to deliver 150 Watts per channel into 8 Ohms – enough to power most loudspeakers easily.

It also has balanced and unbalanced analogue inputs, seven digital inputs – four optical, two coaxial and an asynchronous USB – as well as a coaxial output. The DAC is capable of 768kHz playback and DSD 256 conversion.

The CD35 Prisma CD player has a TEAC CD drive with a 384kHz/DSD 256 DAC fed by optical and coaxial inputs.

Not surprisingly both come in Primare's minimalist but rather attractive Scandinavian styling.

Prices start from £3700 for the I35 and £2550 for the CD35. For more information go to www.primare.net.



CHART CHANGE

To paraphrase Bob Dylan, 'The Charts They Are A Changing'. Video streams and downloads will now be counted as part of the UK's official Singles Chart. It means the ratings will reflect physical CD and vinyl sales as well as downloads from internet sites and streaming services such as Spotify, as well as videos listened to on YouTube.

The move is intended to reflect the way people consume music nowadays and better reflect the overall market.

However, one industry expert cast doubt on whether the change would make much difference. Simon Pepper said, "It's an attempt to stay relevant but the charts have become less important to consumers as they have so many ways of accessing music that the best-seller is not as crucial to them – they can find what they want to listen to more easily".





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Learn more at rotel.com

Pictured with the P9 Signature headphones from Bowers & Wilkins, an exclusive partner of Rotel.

Pure Magic!

Noel Keywood finds Martin Logan's new Impression 11A electrostatics an amazing listening experience.

What you get in Martin Logan's new Impression 11A loudspeaker is a big version of their fabulous see-through

XStat electrostatic panel that delivers unmatched clarity of sound. Based in Kansas, USA, they use latest technologies to hone a loudspeaker right outside the mainstream. Here, a light-weight, see-through Mylar film moves air instead of the relatively heavy cone drive units in conventional loudspeakers – avoiding their inconsistencies, mismatches, colourations and distortion. But electrostatics struggle to produce strong bass so for this the Impression 11A uses a cleverly matched but compact cabinet at the base of the speaker. It's a large loudspeaker for large rooms – and at £12,999 you need a large wallet too!

A key feature of the new Impression is its big XStat electrostatic panel. Measuring 44in (112cm) high and 11in (28cm) wide it delivers more acoustic punch than the company's smaller panels, whilst being only subtly larger in visual terms. Martin Logan work hard to produce a room friendly design. In keeping with this approach the bass cabinet – like that of the Classic ESL9 – is no wider than the panel but houses two 8in woofers, each in its own chamber, individually powered by 275 Watt Class D amplifiers hidden underneath.

The Impression's powered bass cabinet is deep at 28in (71cm) – not

just to get cabinet volume needed for deep bass, but to space the woofers apart to lessen cancellation. Martin Logan note that some distance to a rear wall is needed in any case with an open dipole electrostatic panel that fires sound backwards as well as forwards, justifying their use of this space for cabinetwork – fair enough. It's still necessary to keep the rear away from a wall though, because there's a bass level control, as well as status lights here – and of course a mains input through a standard IEC socket.

As you might hope at the price build quality is excellent, with a very strong, rigid support frame for the XStat panel, a well finished wooden cabinet and neat woofer grilles that can be removed, although there's no need. Martin Logan have fully sorted all the practical problems of electrostatics including dust entry, arcing in humid conditions, panel cancellations, safety and even power consumption: the 'speakers signal-sense and automatically enter and exit power saving mode (<1W). Their website has FAQs about all the funnies.

Maximum power draw is quoted as 500 Watts but in practice with efficient Class D amplifiers I'd expect little more than 50 Watts in normal domestic use, keeping in mind demand upon a mains re-generated power supply.

The Impression ESL 11A is sort-of large, meaning it stands high at 61in (1.55 metres), exact height depending upon adjustment of the floor spikes. That's 5ft in old measure (this is a US product so I'm using Imperial) where most floor standers are 3ft (1 metre). The XStat panel is both see-through and shallow however, and this makes it less visually intrusive than the wooden cabinet of a conventional loudspeaker: you hardly notice the

The XStat panel is supported by a sturdy alloy frame to prevent flexure.



The forward firing 8in (20cm) aluminium cone bass unit, its clip-on cover removed.

Impression's towering height. The XStat is held by a strong alloy frame.

A weight of 90lbs (41kg) for each loudspeaker means they sit firm and need two people to manoeuvre them since the panel should not be used as a lever, although I suspect it has been strengthened partly to withstand this.

A big issue with a hybrid electrostatic such as this is to get the panel to subjectively integrate with the bass cabinet and here the Impression 11A gets complex. There's a front firing 8in aluminium cone bass unit and a rear-firing one. Martin Logan aren't specific about the rear, saying it acts to cancel bass from rear walls. I was expecting it to provide rear out-of-phase sound to make the bass cabinet a dipole at crossover, to match the XStat panel. But no, it appears not. Measurement showed it works below 100Hz only, having no influence at the crossover frequency of 350Hz. There's lots of jiggery-

pokery in all this I found when matching my Quad ESL-63 electrostatics to Celestion SL-6000 dipole subwoofers and you have to trust to Martin Logan's judgement on the subjective effectiveness of bass-to-XStat matching – always difficult with a hybrid.

The Impressions use a Digital Signal Processor (DSP) in the bass section so all sound below 350Hz is converted to digital then back to analogue. The XStat panels are fed direct by an external amplifier, via the crossover high-pass section, but the crossover low-pass feeds an Analogue-to-Digital convertor (ADC), because digital is needed to tailor bass response for Anthem Room Correction (ARC), as well as compensate for the acoustic response of the small bass chambers. A DAC then converts digital back to analogue to feed Class D amplifiers connected direct to the bass units. It's a complex system, making the Impression a lot different to the Classic ESL 9 that lacks all this.

The rear panel dispenses with the peculiar 4mm terminals used in previous models, using sturdy WBT terminals instead that accept bare wires, 4mm plugs and spades. There's a rotary bass level control with very large (approx +/-10dB) adjustment range, but it has a central zero position with detent. In addition there's a small three-way 'mid-bass' toggle switch to fine tune subjective matching between bass cabinet and electrostatic panel. These controls and LED status lights need to be visible, which is why some distance to a rear wall is needed.

The rear panel also has Anthem Room Correction (ARC) facilities, meaning a mini-USB computer input, an on/off switch so ARC can be switched in or out, and an LED status light. There's also an RJ45 ethernet socket for loudspeaker linking so both units can be tuned simultaneously but this is a convenience feature; the 'speakers can be tuned individually without this link.

An optional £300 'Perfect Bass Kit' (PBK) for room sensing enables ARC. In the box you get a microphone with unique Serial Number, stand and cables. Life gets a little complicated here. To use PBK you must have a PC (not a Mac) running Windows 7 to 10 to crunch the acoustic data and send it to the loudspeaker through a supplied USB A to mini-USB cable.

Software for this is available

on the Martin Logan website, needing the mic's Serial Number before download so a mic response correction file can be sent. The mic is then placed around the listening position (5 positions minimum recommended) to compensate for room acoustic variation. The tailored final correction response is loaded into the DSP and stored. It can be switched in or out for A/B listening tests, and does not affect the 'speakers own bass level and 'mid-bass' controls that remain effective. I used ARC without difficulty but I think it is best left to a dealer with a laptop PC.

The idea here is to lessen 'room boom' and similar effects, improving bass quality – effectiveness depends upon the room's acoustic behaviour. The bass level control will effectively reduce room-boom bass, but ARC theoretically offers a finer way of lessening its subjective impact, although I had reservations in listening tests and switched it out under some circumstances.

SOUND QUALITY

Driving an electrostatic for me has always meant using a good valve amplifier. Electrostatics are both a difficult load and desperately revealing of all that feeds them: I used our Icon Audio Stereo 30SE single-ended valve amplifier as always, with Chord cables. Solid-state amps can handle them but it's best to listen first, since they can behave quite differently when faced with the heavy capacitive load of an electrostatic.



Rear 8in aluminium cone woofer, WBT input terminals and rotary bass level control at right – plus much else.

Sources were an Oppo UDP-205 Universal player for CD and hi-res digital, the latter coming from an Astell&Kern AK120 player acting as a digital transport. LP came from our Timestep Evo modified Technics SL-1210 Mk2 turntable fitted with SME309 arm and Ortofon Cadenza Bronze moving coil cartridge, its output amplified by an Icon Audio PS3 all-valve phono stage with MC input transformers.

A clean mains supply is important for electrostatics. I ran the Impression 11As from an Isotek Evo3 Mosaic Genesis mains re-generator (less than 0.3% distortion) and although of 500W capacity it had no problem.

Right off the Impression 11As were as sparkingly clean, clear and massive in their presentation as I expected (knowing Martin Logans

"The 11A is a big 'speaker at a big price, and little else comes close to its unique delivery."

well). With 5ft high panels you get an equivalently high sound stage – and electrostatic imaging picks out singers and instruments in sharp relief against nothing. Yes, nothing. There's no time-domain rubbish from box echoes, the biggest issue that burdens every box loudspeaker, nor drive unit colourations. The XStat panel also has no front or rear obstruction to the sound it produces – and this contributes strongly to its sense of insight and pristine clarity. I did notice that the Impression 11A has a slightly brighter balance than the Classic ESL 9. Spinning James Campbell 'Down in the Hole' opening strikes against guitar strings were strong but clean – and there was fabulous insight. Detailing was dense and the bass line firm, easy and tuneful.

As I worked my way through high dynamic range CD tracks (uncompressed) these characteristics were maintained. Hans Theessink singing 'Mississippi' was delivered



Big crossover section at right, twin Class D power amps, Digital section and linear power supply all sit in the base tray.

with vivid clarity. With Josefine Cronholm's 'In Your Wild Garden' the bass line had solid lows and her voice was shimmeringly clear centre stage – unlike any loudspeaker I've heard. With digital I had ARC switched in

and it did give smooth bass lacking apparent character.

With Renee Fleming singing 'Un bel di vedremo' from Madame Butterfly I was made very aware of every small nuance in her delivery: it was like listening through an aural magnifying glass. Martin Logan's big XStat panel challenges all else to an extent that is frightening – this is a loudspeaker that had me riveted whilst listening.

Life with LP got interesting. Spinning 2L's lovely recording of The Trondheim Soloists fronted by Marianne Thorsen playing Mozart violin concertos I heard about the sweetest and most vivid performance ever from this LP. The big panels bounce violin out into the room with extraordinary ability; nothing else gets close. The sound wasn't just 'technical' but organic and sweet, a definition I have to use because digital is never that. But spinning this LP was an object lesson in what a fine electrostatic can do – and the

ortofon

accuracy in sound



2M

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.

Designed in conjunction with celebrated design house Møller-Jensen Innovation Design, the 2M Series body represents the shape of a diamond, whose contours gracefully trace the grooves on a record's surface.



Red Cartridges

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



Blue Cartridges

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



Bronze Cartridges

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 Cartridges

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.

Impression IIAs are that. However, I do work hard to ensure all sources, cables and supplies are pristine perfect, because ML's big XStat panel can easily sound hard and unforgiving with inappropriate cables, amps and/or dodgy digital. Be very aware of this if you seek a shop demo: I object to even Martin Logan's choice of power amps in Stateside demos!

Moving on to – er – a less delicate place, punching the 45rpm speed button to spin my 1980's 12in singles saw Alison Goldfrap singing 'Ride a White Horse'. Old disco singles like this are interesting in having metronomic synth timing and emphasised deep bass. Cranking volume up, the bass cabinets sounded a little coloured and strained, where they had not with CD. Switching out the acoustical forcement of ARC correction relaxed the bass – the speaker seemingly breathed more easily – and removed colouration. This done, I wound volume right up and the room shook with deep bass, emphasising the clout of Impression's four 275 Watt amplifiers. So much power within small cabinets made them shake too, I noticed when

JON MYLES SAYS

Yes, they are expensive and need to be matched to the right amplifier.

But get this correct and their delivery is sublime. I used them with the Icon Audio valve amplifier at first and the detail and soundstage was a joy to listen to. The only problem? The bass sounded a little boomy. Playing The Clash's 'London Calling' there seemed to be a disconnect between the mid-range and the bass.

However, switching to Quad's new Artera amplifier (see review this issue) brought out a rather smoother response. Bass was tamed while mid-range and treble took on a more even tone.

switching ARC in and out at high volume; it's a hard working system. Turning bass gain down to -4 removed disco emphasis, making the whole sound drier and more composed; I could take my flares off. There's plenty of adjustment available to tailor sound to source, room and taste – a feature of the powered Impressions.

Overall, with LP the 'speakers were stunning. Both classical and Rock came over beautifully, orchestras filling the room, whilst Rock shook the foundations (and the neighbours).

Finally, Quad's Artera Solus (reviewed in this issue) worked wonderfully, with less treble and more apparent balance than the

Stereo 30SE but I suspect was affected by the panel's heavy capacitive load to give a symbiotically balanced result.

CONCLUSION

Martin Logan's Impression IIA loudspeakers are suitably named – they make a big impression. Think huge soundstage and wickedly powerful bass that seemingly goes as deep as you wish – with no power limit. However, unlike big box speakers that offer similar scale, the XStat electrostatic panels offer a see-through clarity that matches their appearance. Nothing compares. The IIA is a big 'speaker at a big price, and little else comes close to its unique delivery.

MEASURED PERFORMANCE

Our frequency response analysis shows reasonably flat and smooth output across the audio band, a characteristic maintained from the centre of the XStat electrostatic panel to left and right 25degree off-axis positions, and vertically too; there is little sign of the panel cancellations that large flat panels suffer, due to the XStat's curvilinear shape. As a result, sound balance will remain consistent to listeners regardless of their position.

The Impression 11A has a brighter balance than the Classic ESL-9 since its has no overall response tilt and this will make treble from its big panel more obvious; it provides much more radiated power than a small dome tweeter and may well sound challenging with harsh CDs. High treble power is fine if the source is clean.

With the bass gain control set to 0 there is substantial bass lift in the system: our analysis shows a bass peak at 40Hz of +8dB. Unassisted loudspeakers rarely have such a characteristic so the Impression 11A will have strong bass against all else. Turning the bass gain control to -4dB gave a perfectly flat response to 30Hz however, so the 'speaker can be set accurate – or

anywhere in-between as there is wide adjustment range of +/-10dB.

The panel works from 350Hz up to 20kHz, the front subwoofer from 350Hz down to a very low 30Hz with a peak at 40Hz – and there is an obvious dip in-between. Since the rear bass unit cuts-off above 100Hz it appears not to make a contribution to the crossover region. A small lower 'mid-bass' toggle switch at rear has +2 / -2 positions and does lessen the dip when set to +2. Martin Logan appear to have lessened bass output in this region, possibly to de-emphasise the monopole / dipole transition.

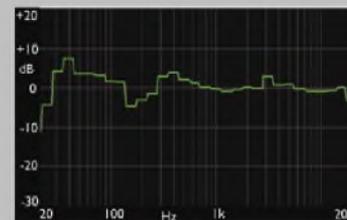
Sensitivity was high at 89dB sound pressure level from one nominal Watt (2.8V) of input so low power amplifiers of 20W-40W will give high volume.

The impedance curve sinks to 1 Ohm above 10kHz – almost a direct short (electrostatics are large capacitors). Some amplifiers may not like this; valve amplifiers cope without difficulty, but should be set to 4 Ohms as the Impressions measured 3.5 Ohms overall. Below 350Hz they draw little current as the on-board bass amps work in this region.

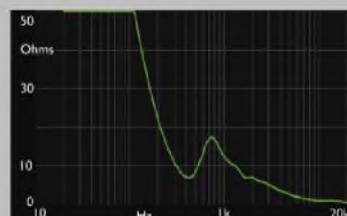
The Impression 11A has been given very strong bass by any standard but setting bass level to -4 makes the 'speaker accurate. Treble output (power) is also strong. In frequency response (sound pressure) terms though it is a very accurate loudspeaker. Like all electrostatics this one is a challenging load at high frequencies and needs careful amplifier matching. NK

FREQUENCY RESPONSE

Green - driver output



IMPEDANCE



MARTIN LOGAN IMPRESSION ESL 11A £12,998



OUTSTANDING - amongst the best

VERDICT

A hybrid electrostatic with masses of bass power, suitable for bigger rooms but tuneable to suit most. Impressive.

FOR

- clarity
- lack of colouration
- bass power

AGAINST

- bass quality at high volume
- mediocre integration
- needs better EQ

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Quad's new Artera Solus all-in-one system is a stellar performer, says Jon Myles.

Quad Goes Solus

At one time they were shunned by the serious hi-fi community – but now one-box music systems are becoming increasingly popular and delivering ever more impressive sound.

The advantages are less space shelf, fewer interconnects and, well, convenience.

Which means even the likes of Quad – which is celebrating its 83rd year of manufacturing equipment – is getting in on the act.

So welcome to the Artera Solus which combines a CD transport, DAC, preamplifier and power amplifier in a single compact chassis – with extensive digital and analogue connectivity options including Bluetooth wireless streaming with aptX capability.

And while it may look relatively

small – measuring 105mm x 320mm x 320mm (H/W/D) – it comes feature packed. Inside there's a Sabre DAC from American digital specialists ESS (capable of decoding file sizes of up to 32-bit/384kHz and also DSD64/128/256) and a Class A/B power amplifier that delivers 80 Watts into 8 Ohms (see Measured Performance for full details).

There's coaxial and Toslink digital inputs plus USB, as well as analogue RCA inputs – and both balanced and unbalanced preamp outputs should you wish to connect to other equipment, like an external power amplifier.

Build-wise the Solus is up to Quad's usual high standards including a glass top, separate stand plus a fully-featured remote control. The latter may not be the heaviest you'll ever come across but it works well. Alternatively, front panel buttons

allow total access to all features.

Interestingly, Quad are working on a 'special' version that will feature a streaming module designed by digital engineer John Westlake.

Buyers of the current Artera Solus will be able to upgrade for a price of £500. In the meantime, the basic Solus costs just £1500.

SOUND QUALITY

Connecting the Quad into a pair of Martin Logan ESL 11A loudspeakers (see review this issue) I couldn't help but be impressed at how smooth and powerful it sounded.

The Martin Logans can be extremely revealing in terms of amplification – but with the Quad Solus they



The remote control feels a little light – but works well and is simple to understand.

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came alive in all the right ways.

Led Zeppelin's 'Trampled Underfoot' via the CD drive had enormous bass presence and energy. The Solus sounded taut and accurate - Jimmy Page's fretwork coming over with an incisive yet natural nature with the leading edge of notes perfectly delineated,

Switching over to a pair of Spondor A1 standmounts - which price-wise is a more natural fit - the Quad still retained its essential nature.

Bruce Springsteen's 'Born To Run' (24/96) via the digital Toslink input had Clarence Clemons' saxophone exactly right. It was bright but not harsh - soaring into the listening room without over emphasis.

In fact, playing this song time and again revealed just how clean, clear and natural the Quad Solus is. It manages to pull music together without sounding overly clinical or

bright while having a muscular Class A/B punch that works to get your feet tapping.

The rather 80s sounding recording of Spandau Ballet's 'Chant No 1' on CD sounded smoother and less harsh than usual. Here the Quad dug deep into the track and let me hear all the instruments. Bass notes again had a firmness about them which other one-box systems fail to match at this price.

The Solus is also quite delicate when needed with the right material. Putting on Robert Wyatt's 'Shipbuilding' the quality and tunefulness of his voice through a variety of loudspeakers was a joy.

Playing the same track via an Android smartphone with Bluetooth aptX saw a small drop in quality compared to CD or high-resolution replay but that is always to be expected.

It's a nice feature, though, and



Inside is a linear power supply based around a large toroidal transformer, plus Class A/B power amps at left and right, attached to their heatsinks. At bottom (in the pic) is the auto-load (no tray) CD drive.

convenient - but to get the best from the Quad Artera Solus I'd say stick to CD or high-resolution tracks.

With either of these the Quad is an absolute stellar performer - one which will get the best out of your current CD collection and digital files.

CONCLUSION

You would be hard-pressed to find a better one-box system than this Quad. A superb DAC, power a-plenty amplifier plus a rather splendid CD drive. For £1500 it's a true bargain.



A full range of analogue and digital inputs/outputs are available on the rear - including an antenna for Bluetooth users.

MEASURED PERFORMANCE

Power from the Solus measured 80 Watts into 8 Ohms and 120 Watts into 4 Ohms - enough to go very loud in any system and room.

Frequency response was flat from 2Hz up to 66kHz and distortion was low under all conditions, the critical 1W at 10kHz test - a measurement of crossover distortion - produced just 0.05%. From low power to full power, distortion hovered around just 0.02%, so this amplifier is very linear and will give a clean sound.

The Aux 1 analogue input needed 450mV for full output - not sensitive; volume will have to be wound up with low gain (MM, x100 / 40dB) external phono stages.

The digital inputs (S/PDIF), including the optical input, all accepted 192kHz sample rate PCM, frequency response measuring flat to 47kHz. Distortion from 24/96 hi-res PCM measured a very low 0.02% from the ES9018 DAC via the XLR

balanced output and 0.04% from the loudspeaker outputs. Unsurprisingly this gave the Solus a massive EIAJ dynamic range value of 119dB - up with the best. Results via USB were the same as S/PDIF, no noise being added.

The Solus measured superbly well though both its analogue and digital sections. **NK**

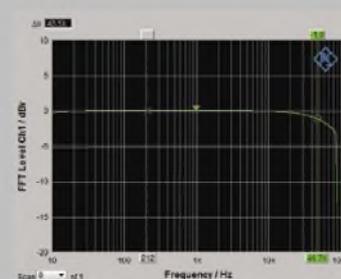
AMPLIFIER

Power 80W
Frequency response (-1dB) 2Hz-66kHz
Distortion (10kHz, 1W) 0.05%
Separation (1kHz) 96dB
Noise (IEC A) -105dB
Sensitivity 450mV

DIGITAL

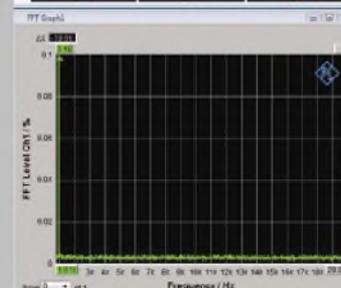
Frequency response (-1dB) 5Hz-47kHz
Distortion (-60dB, 24bit) 0.02%
Dynamic range 119dB

FREQUENCY RESPONSE



DISTORTION

THD @ 100	Level @ 100	Frequency
0.0232 %	7.3726 mV	997.00 Hz
OFF	OFF	OFF



QUAD ARTERA SOLUS £1,500



OUTSTANDING - amongst the best

VALUE - keenly priced

VERDICT

An all-in-one system with CD player, amplifier and DAC that not just measures well but sounds superb.

FOR

- price
- power output
- ease of use
- build quality

AGAINST

- nothing

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FiiO BTR1 BLUETOOTH ADAPTER £39.99

The headphone jack is fast disappearing from mobile 'phones. Apple started the trend with its iPhone 7 model but other companies are now following suit – mainly so they can use the space to pack in more processing power and bigger batteries.

You can get round this with

Bluetooth earphones – but what if you have a pair without wireless capability that you still want to use?

The answer is a Bluetooth adapter like the BTR1 from FiiO.

Weighing just 20 grams it's about the size of a USB flash drive with

most of the body constructed from aluminium. There are just two controls – a rocker switch on the side for volume and track control and a multi-purpose button on the front.

Included in the packaging is a micro USB charging cable and a lanyard to allow the BTR1 to be worn around the neck. The device also has a spring-loaded belt clip on the rear. The internal DAC supports up to 24bit/48kHz decoding from

Bluetooth while battery life is around nine hours.

Plugging in a pair of revealing Noble K10 earphones and paired with an Apple iPhone 7 the FiiO was revealing with a natural sound balance. There's no undue noise to be heard between tracks and the device has a healthy output so those who like to play their music loud will be more than happy.

With The Clash's 'London Calling' Paul Simonon's bass had plenty of punch and the guitar parts sounded clean and detailed.

Large classical pieces such as Mahler's '4th Symphony' also had pleasing scale with good instrumental separation.

At £39.99 the FiiO BTR1 is one of the better Bluetooth adapters for those looking to use their jack-less devices with wired headphones. **JM**

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SOUNDBITES



ISOACOUSTICS OREA INDIGO ISOLATION FEET £59 EACH

The IsoAcoustics Orea Series isolation foot is available in two variants: the Bordeaux supports a high maximum weight value of 14.5kg – aimed at larger separates such as mono-block amplifiers, but I decided to address the Indigo variant (spanning 6 x 3cm in size) that supports up to 7.2kg per unit – for most integrated amplifiers, turntables and the like.

You'll see a brand name on the side of each puck. The company

says that the feet work best with the 'Iso' logo facing forward, as the isolators are tuned to resist lateral movements.

Although keeping quiet about the internal make-up of the noise-reducing components inside, the company did declare that the unit's upper flange, "suction-cup design adheres to the underside of the product", while the upper portion of the foot then becomes "live with the component", while the lower isolator adheres to the supporting surface.

Playing various Peggy Lee tracks

from 'Raindrops Keep Fallin' on My Head', the Orea Indigo feet helped to reel in the Lee vocal. In fact, Lee was dragged back into the mix. Because of this, the voice lost its earlier smearing effect and the vocal now contained a measure of reverb. Before the Indigos were in place, that effect never even existed.

Turning to Thin Lizzy's 'Chinatown', I was impressed by the extra texture to be found in the lead vocal from Phil Lynott. He was better able to project emphasis in certain words. Low frequencies were tracked more effectively and due to the subtle nature of his voice, better revealed.

The Orea Indigo feet look good and, sonically, increase focus, precision and essential tonal realism, while providing important frequency discipline. **PR**

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Here's your chance to win the superb Yamaha A-S801 amplifier we reviewed in the July 2018 issue. Read the review excerpt below and answer the questions.

"The Yamaha A-S801 amplifier is not Class D like so many nowadays, but a very well-developed nominally 100 Watts Class A/B all-analogue design. And whilst the chassis might not be as solid as Yamahas I have used in the past, inside it houses a line up of facilities far beyond those of the past – Yamaha leave little out.

Fitted with an ESS ES9010K2M DAC chip the A-S801 has a whole variety of digital inputs, including USB for connection to a computer for music replay. Traditional S/PDIF digital inputs offer connection via optical cable and electrical cable, the former working up to 192kHz sample rate, so the amplifier won't fall silent when confronted by 24/192 digital over optical cable from sources such as portable music players (aka digital audio players or DAPs).

The USB input accepts up to 394kHz sample rate PCM so plays all high-resolution digital audio files PCs and Macs can throw at it. Bluetooth

wireless connection is available as an optional extra, via an external receiver.

Also playable is hi-res DSD digital from a PC if you load Windows with a Steinberg driver, available on Yamaha's website. It packages DSD into a format (DoP) that can be sent over a USB connection, one this Yamaha can receive and deal with.

In addition to the digital inputs there are five analogue Line inputs, CD, Tuner and three Lines, plus a Phono input".

For a chance to win this great prize, just answer the four easy questions at right. Send your entries on a postcard only, by 11th September 2018 to:

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QUESTIONS

[1] What Class is the Yamaha A-S801 –

- [a] High class
- [b] Class A/B
- [c] Class D
- [d] Entry class

[2] The DAC is from –

- [a] Wolfson
- [b] Michael Mouse
- [c] ESS
- [d] M&S

[3] Max USB sample rate is –

- [a] 394kHz PCM
- [b] 20 mph
- [c] 20GHz
- [d] walking pace

[4] The driver is from –

- [a] Uber
- [b] Ferrari
- [c] Steinberg
- [d] Ocado

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Size:105H x 23W x 30D 20kg (27 kg Super) ea. Offer also includes MFV3 MK II Super for £600 extra. Available from Icon Audio in Leicester and participating dealers in the UK only.

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Audition our full range of amplification and speakers in our Leicester head office. (terms and conditions apply)



An integrated amplifier with a valve pre-amp stage and transistor output, fed by a separate power supply? An interesting concept from Italy's Audiozen, says Jon Myles.

Zen Thinking

Two box amplifiers are hardly new – separating the delicate pre-amp stage from the muscular power amp makes sense in terms of isolation, avoiding interference between the two.

Not so common is the approach Italy's Audiozen has taken with its Alchemy Reference combination. There's still two boxes – but one is a linear power supply while the other is an integrated amplifier.

Naim has long done this with its higher-end power amps – but doing it with an integrated is new to me. It keeps mains transformer hum fields in the power supply well away from the hum-sensitive valves in the preamplifier, giving a quiet output – so there's a logic here.

The integrated amplifier has a valve pre-amp stage utilising two NOS (New Old Stock) E88CC valves, allied to a transistor output to deliver a claimed 90 Watts per

channel into 8 Ohms and 170 Watts into 4 Ohms (see Measured Performance).

Inside the power supply box are three toroidal transformers dedicated to serving the separate sections. To connect the two units a pair of hefty captive umbilical leads are used to supply separate DC power to the pre-amp and power amp sections of the integrated.

The Audiozen combination is big – the main unit measuring 135mm

Come Together
The Beatles
FLAC 192 kHz 24 Bit

4/5

4:16

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Come Together
The Beatles
FLAC 192 kHz 24 Bit

4/5

4:16

LUMIN

× 340mm × 295mm (H/W/D) and weighing in at 4.8kg. Not surprisingly, with its hefty toroidal transformers, the power supply box is even heavier at almost 8kg and measures 95mm × 340mm × 245 mm (H/W/D).

With the integrated amplifier section facilities are kept to a bare minimum – four analogue RCA unbalanced inputs on the rear alongside a pair of large ‘speaker binding posts that will accept banana plugs, spades and bare wire. It’s an amplifier for purists: no fripperies such as an internal DAC or Bluetooth module exist.

On the front there are rotary controls for source selection and volume, plus stand-by/on. In stand-by mode the valves heaters are kept on; switching On triggers a relay in the PSU that turns on HT and the power amp section. A supplied remote control gives full access to all the functions from across the room.

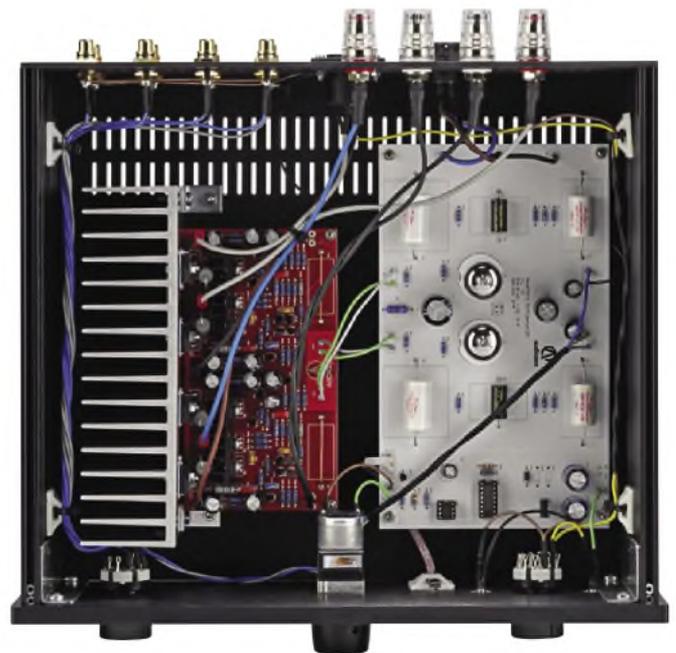
Build-wise the Audiozen is well-constructed with good, solid casework and a smooth feel to the

The Lightning Seeds’ ‘Pure’ was rhythmically taut, having a bite to its jangling guitar parts and good depth to the sound. The Alchemy revelled in the up-front nature of this track, driving it along with verve.

Switching to The Fall’s ‘Live At The Witch Trials’ the late and great Mark E Smith’s voice had its distinctive Northern-infused growl – all flat vowels and biting cynicism.

Due to the valve pre-amp section I was expecting the Alchemy to bring some warmth to this stark album. But no, the Audiozen veers more towards a transistor-like sound, bringing out detail and digging deep in the bass.

That was evidenced on Charles Mingus’s classic ‘Pithecanthropus Erectus’ where his double bass had plenty of body and a realistic tonality.



Inside, the amplifier uses a valve pre-amplifier stage (right) with transistor output stage (left). Note also Alps motorised volume control and mechanical rotary selector switches.

However, Mal Waldron’s piano did sound a little edgy with a brittle feel at times.

Switching to a pair of Sendor AI standmounts – which are more of a price match with the Alchemy and warmer than the Logans – proved a better match on this track. Now, that piano had a sweeter sound although the soundstage wasn’t as big or all-encompassing as through the big American ‘speakers.

The more I listened to the Audiozen the more its qualities came into evidence. Chief among them is its ability to latch onto a beat and sound big and punchy. There’s more than enough power on tap at all times.

Led Zeppelin’s ‘When The Levee Breaks’ made the Sendor’s shake the room with the volume control turned up just a few notches. The wailing harmonica flooded the listening space and brought a smile to my face as I just enjoyed letting the music envelop me.

It was similar with Deep Purple’s ‘Smoke On The Water’ where the famous opening guitar riff sounded like a sledgehammer – as it should.

However, on Arvo Part’s more delicate ‘Tabula Rasa’ via a typically well-produced ECM recording I couldn’t help but feel the delicacy and nuance needed to get the best from this gentle piece went a little



The rear panel of the Audiozen amplifier main unit has four analogue inputs (right) plus the two captive power supply sockets at the bottom.

rotary controls. Because of the size, though, you’ll need a big rack to accommodate both units. In theory they can be stacked but – as the design is based around keeping the power and amplification sections apart – I’d recommend using separate shelves which is what I did during the listening sessions.

For the £2750 asking price you are getting a lot of hi-fi real estate for the money – an amplifier that looks like it should cost a good deal more. But facilities are few.

SOUND QUALITY

Connected to a pair of Martin Logan’s Impression ESL IIA hybrid electrostatic loudspeakers (see review in this issue) and fed via an Oppo UDP-205 universal disc player the Audiozen immediately made an impression with its open sound.



E88CC valves are employed for the pre-amp section. Audiozen sources new old stock (NOS) tubes for this.



A basic remote gives access to all functions.

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Paul Rigby – The Audiophile Man, Dec 16

astray. Gidon Kremer's violin and Keith Jarrett's piano were there but didn't quite seem to gel together as much as you'll hear from the likes of an Icon Audio Stereo 30SE integrated valve amplifier.

There was nothing wrong but a certain lack of atmosphere and nuance about the whole – rather more clinical than it should be with the violin not quite having the resonance I'd want.

It was as though the Audiozen was telling me it wanted to rock and not stroll (sorry!).

But put back into that rock mode with Joy Division's 'Love Will Tear Us Apart' its qualities came to the fore again. Bernard Sumner's guitar kicked out from both the Spondors and



The Audiozen's power supply unit uses large custom-made toroidal transformers to provide steady DC current.

Martin Logans while the punch was back with Peter Hook's bass line. Yet again, the Audiozen was back to its foot-tapping best and motoring along,

making me want to turn the volume up – which I did!

So, in the final analysis this distinctly different Audiozen amplifier won't be for everyone. But I couldn't help liking it for the things it does well and the way it goes about its business. That said, I'd recommend you audition first before deciding.

CONCLUSION

This is an interesting amplifier from Italy's Audiozen. It is powerful, able to drive most loudspeakers with ease and provides a foot-tapping sound. At times it can lack a little finesse but if you like its overall presentation then that can be overlooked. Careful 'speaker matching, though, is recommended to be sure it suits your tastes.



The captive leads attach easily to the rear of the PSU.

MEASURED PERFORMANCE

Power from the Alchemy measured 112 Watts into 8 Ohms and 182 Watts into 4 Ohms, so this is a powerful hybrid that can go very loud in any system and room.

The Alchemy produced second harmonic distortion attributed to the valve sound that seemingly came from its valve preamp stages.

But not so. It got stronger as the power amp was asked to deliver more power. With steady input to the preamp (200mV) distortion from the output stage increased steadily, reaching a high 2.2% (-1dB below full output). But when output power was held constant at 12W and input to the preamp changed, distortion stayed constant at 1%, showing that the transistor power amplifier produces strong second harmonic distortion – perhaps to give a 'valve sound' in Audiozen's view.

Although purely second harmonic our analyser showed, 2.2% distortion is high.

At high frequencies (10kHz) the Alchemy gave a similar result with no extended harmonics – it doesn't suffer aurally unpleasant crossover distortion.

Distortion at 1W of 0.2% and full output of 2.2% from the transistor output stage doesn't look good on paper; how it affects sound can only be judged by listening.

Input sensitivity was very high at 100mV for full output; the Alchemy will jump to high volume at a small twist of the volume control. It also suits low output sources like low-gain phono stages. Noise was low at -85dB (IEC A weighted) considering gain.

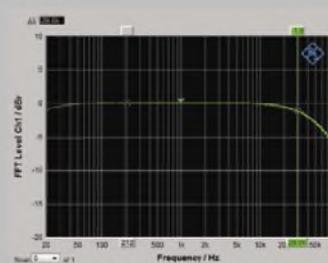
Frequency response reached 30kHz at half volume setting (5 on a scale of 10) as shown, broadening a little at lower and higher volumes.

With lots of power and very high gain, this amplifier will seem powerful to a user. Its distortion characteristics suggest unusual design likely to give a distinctive sound. **NK**

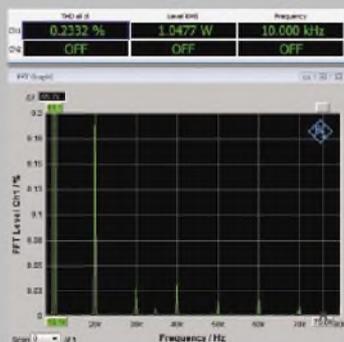
Power	112W
Frequency response (-1dB)	20Hz-30kHz
Distortion (10kHz, 1W)	0.25%
Separation (1kHz)	97dB

Noise (IEC A) Sensitivity **-85dB 100mV**

FREQUENCY RESPONSE



DISTORTION



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AMPLIFIER/
AUDIOZEN
ALCHEMY PSU
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EXCELLENT - extremely capable

VERDICT

The Alchemy revels in up-front tracks. Lacks some nuance but makes up for it with overall performance.

FOR

- big sound
- styling
- rhythmic ability

AGAINST

- best with rock
- careful loudspeaker matching needed

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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 B&W P5 headphones.

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



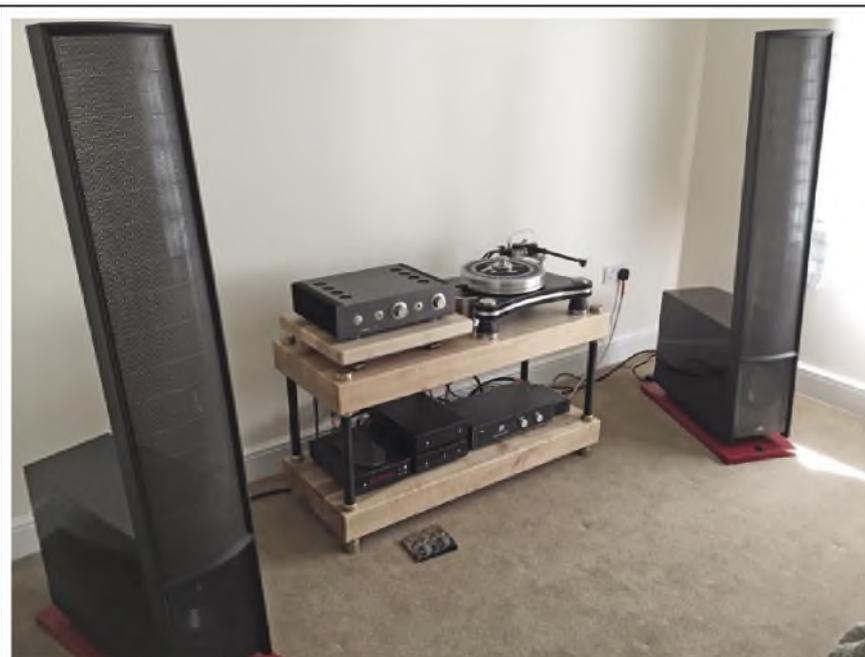
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For more advice see Letters from earlier issues at www.hi-fiworld.co.uk/letters

A pair of B&W 686 S2 loudspeakers are on their way to ANDRE HYDE, Letter of the Month winner in our August 2018 issue.

Letter of the Month



Martin Logan Classic ESL9 hybrid electrostatic loudspeakers, U.S. version but in the UK – and with MCRU power upgrade.

Note also the big Mapleshade rack and RSA granite slabs under the 'speakers.

USA IN UK

I thought I would drop you a brief update following my move back from New York.

Following a lot of listening I have finally got my system set up and running here in UK and must state that I'm extremely happy with how it is sounding. Apart from a possible CD/DAC and maybe phono stage upgrade

I think that I will be listening to this system for a long time.

First though, to update from last correspondence, the items moving to France are the Devialet, Vortexbox and Sonus Faber Cremona with Chord cables.

System here in the UK consists these days of VPI Prime Signature turntable with ADS supply, Ortofon

Quintet Black MC cartridge, Sugden A2/SE amplifier, Rega Apollo CD player DAC and Aria phono stage, all wired with Morrow Audio cables. The 'speakers are the Martin Logan ESL 9 Classics.

As you can see from the pictures, the system is on a heavy duty rack from US manufacturer Mapleshade and I also invested in some granite slabs from RSA under the speakers to cut

down the slight bass boom, as they're on a suspended floor. It is used in a dedicated room upstairs, about 14ft by 12ft.

Moving back to the UK also meant that I had to replace the power supplies to the 'speakers. I used MCRU for this and would state that this made a significant improvement. That, along with the rack and granite bases, really have helped ground the sound: everything sounds right.

Just before setting the system up I had the opportunity to be an observer while a good friend of mine had his system set up by real professionals who had flown over from Dublin. Super guys and the changes they made to my friend's system really was impressive. Little things like changing cable direction and moving pieces of cork under the CD player did make noticeable changes. I have tried to take some of the lessons learnt while watching and listening. I think it has made a big difference as it showed what was possible.

I am now listening to far more music and really enjoying the experience. What it does show though is the importance of set up, the room (e.g. a big difference having records and CDs lining the wall behind me). In the future I will probably look at whether softer furnishing on the back wall will make any difference but reckon well into law-of-diminishing land here.

What I am also finding is that I enjoy all sorts of music on this system, from AC/DC, Kate Bush, Florence and the Machine, Roger Waters, talk talk, the Jam, New Order, Pink Floyd, Bob Dylan, Jazz divas etc. I recently played a vinyl copy of Dire Straits best hits: Private Investigations and Money for Nothing were incredible and took me back to the '80s— well, until I was told to turn it down!

One last thing What I have found is that now the system sounds superb at lower volumes and I find myself not needing to listen really loud, I actually am finding it more enjoyable. There is a tendency to focus on volume to achieve a realistic sound. What I am now finding is that I can achieve at normal levels at which it is possible to talk and be heard...far more neighbour friendly, why is this?

Last point, can you suggest final upgrade for CD, DAC and maybe phono stage?

Kind regards,

John Speight.

Hi John. Keep it classic and consider a Quad Artera Play CD player I'd



A large CD and LP collection improves room acoustics. There is "a big difference having records and CDs lining the wall behind me" says John Speight.

suggest. I sound like a stuck record here, but it has the world wide popular ESS Sabre 32 ES9018 DAC and Quad's (IAG) knowledge on how to use it – you can't go wrong.

On phono stages you have two options: those with silicon chips and those without; they sound quite different. Most come chip-equipped and sound, shall I say – "similar". Those without come with valves, now that the art of discrete transistor design has been lost.

Here you have the choice of Icon Audio's PS 3 MKII or Quad's QC 24P. I strongly suggest you work to get a demo of one or both, since your Martin Logan Classic ESL9s will make their uniquely dimensional presentation very obvious. The LP comes alive with a valve phono stage but people are daunted by them I suspect. They should not be because 'small signal valves' have a 10,000hr life, so none of the upkeep needed with a power amplifier. Get a listen if

you can. With Classic ESL9s I would not use anything else.

Really weak, audibly subliminal signals don't reach your ears from cone loudspeakers, because of stiction, cone mass and obstructive suspension systems. Only when volume is turned up does the threshold of this low level non-linearity get overcome – and that's why studio engineers play at such high levels – to hear low level detail lost by their studio monitors. The fine films of your XStat panels do not suffer this phenomenon so you miss nothing – even at low levels. No need to turn volume right up to hear low level detail. Let others suffer for their pleasure!

You should work on your room acoustics. I suggest a soft dense wall hanging, like a small colourful rug, behind the 'speakers. At present you are firing a lot of treble energy into the corners of your room. At one time I hung thick fibre carpet



Quad Artera Play CD player. Fitted with an ESS ES9018 Sabre32 Series DAC, it has a smooth but revealing sound that brings life and depth to CD.

underlay 6in behind my stripped down Quad ESL63s to suppress back radiation (moths loved it too). You need to experiment here to find the balance you prefer. **NK**

DIGITAL UPGRADE

I play both vinyl and CDs on my system. I use vinyl only, or CD only, per listening session. Recently I have noticed that the first CD I play is great, and thereafter the following CDs do not hold my attention in the same way. I have a Meridian 588 CD player connected to a Meridian pre-amp and power amp, by balanced Missing Link Cryo Reference interconnects. My CD player was one of the first off the production line.

I feel that technology has moved on at a terrific pace, and wondered if a replacement DAC would improve things. I am leaning towards an Audiolab M-DAC+. I am retired and funds are limited. Am I wasting my hard saved pennies, or do you think this could be an improvement? If you have any other suggestions of DACs in this price range, I would welcome your advice.

Ronald Stevenson.

Hi Ronald. DAC technology has moved on and the ESS ES9018 DAC in Audiolab's M-DAC+ has become a world-wide favourite. Its popular acclaim is warranted in our view. The Audiolab is not only well priced, it also has a unique and effective filter set designed by John Westlake that subtly but usefully alters the superb sound of the ESS chip, making it more user-tweakable than any other. If it is within your budget you will not be disappointed by its sound. As we always say, try to listen first.

Alternatives? Chord Electronics offer a different view, a sound that is open and clear, as well as deeply detailed – and the new Qutest at £1200 may also suit. It uses an external switch-mode power supply



Icon Audio PS 3 MKII valve phono stage, matches MM cartridges direct and MCs through silent input transformers. Electrostatic loudspeakers reveal its spacious sound.

that keeps size down; the Audiolab has a high quality internal linear power supply. **NK**

TRANSPORT FAILURE

I am currently running an ageing SACD/HDCD/CD player and the transport mechanism has started to make a whirring sound and is hinting at becoming unreliable, so I fear that it is not long for this world, and may already be delivering performance somewhat short of what it was originally capable.

Having read roughly 1112 issues of Hi-Fi World each year for several years now, I find to my surprise that I have no idea what disc player to buy as a replacement.

It seems transports are the least reliable of modern components – on a par with analogue cartridges in terms of expected longevity, so I am inclined to go with the guidance of an editor of a US publication who advised against dropping big bucks on digital. That would rule out the McIntosh player about

which you waxed lyrical a few of issues back.

There are also your measurements to consider which obtain identical distortion readings on CD playback (0.22% if memory serves) and state an absolute ceiling for dynamic range (102 dB) for all competently designed CD players, owing to the inherent compromises of the medium itself.

You have though been enthusiastic advocates of the ESS Sabre DAC chips, (although your enthusiasm for the latest iteration, which you have described as “dark sounding” seems to be not as strong as that for some of the earlier variants). Nevertheless a number of players at sensible prices now house them.

Amongst SACD spinners there are a couple from Yamaha. New models from Arcam, Creek and Quad are also contenders in the “pure” CD spinning stakes; doubtless there are others. Denon seems to have a proprietary 32 bit chip that in its players is said to substantially narrow the gap between CD and SACD playback, at least according to an Australian magazine, and not by making SACD sound worse.

An intriguing prospect is the Sony UBP X800 which has a chip of the same provenance as the McIntosh, and which is available for a sub-£300 street price; others have commented on its engaging musicality. What you heard in the McIntosh was perhaps a refined, tweaked, turbo-charged version of this sound.

Do you have experience of any of these players, are any/most of them any good? I have not mentioned Oppo here since the brand is exiting the specialist



"I am leaning towards an Audiolab M-DAC+" says Ronald Stevenson. "Do you think this could be an improvement?"

hi-fi marketplace, even though stock is still available, albeit not of the 10SD which you list as a "World Standard".

Obviously, you have to drive the magazine in a direction you perceive to be current and contemporary, and have therefore focused more on streaming. The thing with streaming though, apart from the fact that I want to be able to play my existing discs, is that it is rather like taking out a subscription to Sky Sports if you support a tennis player, as opposed to buying tickets and actually attending matches; nobody would be any the wiser as to whether you are principally interested in whether Andy Murray can regain former glories, or whether you are enthused by the prospect of watching the relentless but graceful efficiency of Roger Federer.

In other words your connection to the music world becomes via a streaming service, which introduces a degree of distance between yourself and the performing artist. Many artists sell merchandise at gigs, and the profits from any sales then accrue directly to them, but unless you are buying the vinyl, you do need a CD player to spin the discs you have thus acquired.

When I listen to Geoffrey Smith's Jazz, the wonderful programme that



Yamaha's CD-S2100 will play SACD as well as CD. Not so good however if you wish to avoid using a mechanical transport. DSD downloads then become the best option as a replacement for SACD.

goes out at midnight on BBC Radio 3 on Saturday night, I try to find time to click on the link to the programme on the BBC website, before listening on FM via a Creek Tuner, in a possibly forlorn attempt to signal to the powers at the Beeb that deem it value for money to pay football pundits colossal sums of money, that some of us have interests that lie in a different direction.

Cheers,

Graham Boyd.

Hi Graham. If you have a collection of SACDs you want to play then Yamaha make the CD-S2100 (£1500) and Denon the new DCD-I600NE (£900). With DSD going onto the

The new Qutest DAC from Chord Electronics. It's priced close to the popular M-DAC+ and offers great resolution within a lighter presentation.



'net as downloads, recordings committed to the SACD silver disc long ago receive little commercial attention nowadays. Sony's UBP X800 is a Universal disc player with no analogue outputs; it must be used with an AV receiver, connected via HDMI. Perhaps get an Oppo player new or second hand, even though they are exiting the hi-fi market.

The world has moved away from the silver disc and choice of stereo SACD players for a hi-fi is becoming limited. You are faced with a small

HEART OF OAK

Thank you for the most accessible and useful hi-fi magazine, though I do rather struggle with the computer element as an analogue traditionalist revelling in the resurgence of vinyl.

My main system consists of Naim tuner, Rega P9 turntable, Astin Trew AT3500 plus CD as sources, into Croft 25 R and 7 R pre and power amps gently driving my lovely sensitive Audionote ANE speakers. The addition of a large Isotek Vision mains filter, means rather a lot of black boxes overcrowding my Atacama Equinox rack. I have a friend who also loves hi-fi and wood and is able to build wonderful things through his wood working skills.

We would like to design and build a bespoke hi-fi support in Oak using spike kits in the legs for isolation and possibly for isolating shelves or sorbothane supporting separate shelves. The proposed material would be solid Oak but other woods could be used. I live in an older house with suspended wooden floor and limited space for wall mounting.

We would be very grateful if your experts at Hi-Fi World could offer any thoughts or advice on this thorny topic of support and isolation we should consider in our design and build of our ultimate bespoke support.

Thank you again for your previous advice and inclusion of my letters in your publication.

Best Wishes

**Mark Armitage
Exeter**

Hi Mark. Basic practicalities are a 19in (48.3 cm) width minimum, because this is a traditional 'professional' rack specification adhered to today. Audio products rarely exceed this width, but many get very close, so add some clearance, or just

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getting products in and out will be difficult.

If you want to place a turntable on the top shelf 19in is again about right, as turntables like your Rega (and many others) come in around 18in wide, the legs usually slightly less apart.

The depth dimension is more fluid but 19in (say 50cm) might be a sensible minimum as manufacturers, limited by width, sometimes choose to make a product deep. Also, a deep rack can support small accessories, power supplies etc hidden away at the rear.

Full height and shelf height are more difficult to decide. Valve amplifiers in particular can be high, but you can't make every shelf suitable for them because it will limit the number of shelves. The bottom shelf usually needs to be high to accommodate a big power amplifier or, of course, a means of shelf height adjustment is needed.

Shelf suspension systems and support struts all consume valuable height. How to approach this difficulty will be up to you. Slim but rigid shelves have benefits, but power amps can be very heavy – 10kgs or so.

It's best to use a conventional four leg design. Three leg units won't rock on an uneven floor but a central rear leg can obstruct rear sockets, bearing in mind that plugs often protrude by many centimetres.

Wood is a strong non-resonant material that looks good – but wood shelves? A high strength plywood may work, or there's glass or metals.

Remember that high racks on suspended wooden floors will rock when people walk around, causing a pickup arm to jump. They're far from ideal for vinyl replay. Perhaps you can work out a stabilising system like that used for hand held video cameras!

NK

LP TODAY

My system is Linn Mcjik LP12 with Hercules PSU and Pro-ject arm, Dynavector 10X5 cartridge, Heed Questar MM phono amp, Boss BR900CD digital recording studio, M-Audio BX2 speakers which are wall mounted, as is the LP12 wall mounted on its own shelf. I've also a Furman mains conditioning unit that cost me £900 although it's excellent.

Problem is the stylus on the 10X5 needs replacement which will be £450 with fitting at the Linn dealer and I've only £250 budget! Plus our Linn dealer



Hi-Fi Racks make attractive wooden racks that work well – a great option for those lacking the skills and equipment to build their own.

is 120 miles away and although the LP12 is very good it's just too much hassle back and forth to dealer, plus escalating maintainable costs are becoming just too high for us now.

So option 2 is sell my LP12 – I have been offered £1400. If I sell the LP12, the Heed phono amp and add the £250 I intended spending on new stylus for LP12 I would have about £1800 at my disposal for, say, a brand new system, all hi-fi, i.e. Rega Planar 3 with its Rega cartridge, a Rega Brio and Dali 3 speakers...the mid range vinyl system recommended in What Hi-Fi. Or something else around a Rega turntable and maybe Rega speakers. What can you recommend? Would this be a wise



Rega RP3 turntable. "A brand new system with Rega Planar 3. Would this be a wise move?" asks Michael Moore.

move as regards sound quality?

Thanks and regards,

Michael Moore

Hi Michael. Yes, you can move ahead with this, the reason being your Pro-ject arm and Dynavector 10X5 can easily be bettered by modern products and were never a great choice for the Linn I would suggest.

Get a new Rega RP3 turntable, but fitted with an Audio Technica VM740ML MM cartridge (£300). The smooth Rega Brio amplifier is fine but I would suggest for loudspeakers Acoustic Energy AE109s or Q Acoustics 3050s, to stay close to budget.

You will be surprised at just how good an RP3 and VM740MK sound, being bang up to date LP products superbly honed for top quality. Vinyl playing has moved on from the days of your products and gets ever more impressive. This system will put a smile on your face! **NK**

NEVER CONNECTED

I feel I must write to you on a particular subject that has got me thinking. As an avid reader of your magazine, and many other hi-fi magazines, I have noticed there is a big debate going on regarding the quality of domestic mains supplies and what can be done to overcome the issues. For example the large selection of the mains leads, conditioners and re-generators etc etc that are currently available.

Well, a short while back I was in contact with Steve Rowland at Michell Engineering regarding the speed stability of my Gyrodec and the possibility that the pulley on the motor was worn. I received a new pulley and all is now well. However, I sent Steve a photo of my set up and he noticed I had an

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aftermarket mains lead fitted to my HR power supply. He questioned this and I said it was a habit of mine to ditch the standard supplied mains (kettle) leads and fit a better quality lead. He asked me if the better lead had made any difference, and to be honest I did not know. So off came the kettle lead (literally) and this was put on the HR power supply and set to work.

I was surprised at the result, no difference: the sound and the speed stability stayed the same. To my ears the difference in quality of the mains leads did not make a difference to the performance of the Gyrodec. Having said that, the aftermarket mains leads do make a significant difference on my other equipment, as does the Isotek mains conditioner I use.

This got me thinking, there's not many products out there that use Never Connected technology, this may be because of the cost, possibly the power limitations, or even copyrights or that not many manufacturers see any benefit with this technology, I really don't know. But in reality if Never Connected technology was feasible and worked as well as the Michell HR power supply, and was fitted to all hi-fi equipment, then quite possibly thousands of people within the power supply accessories industry would be out of a job. Could this be the real reason why Never Connected technology is not seen on more equipment and why it is not used by the big boys?

I understand there will always be cost and design implications and some people might not want the option of having Never Connected technology fitted because they like to experiment with their gear. But could Never Connected power supplies be a possibility now with current technology on main stream and hi-end equipment, your thoughts and comments would be appreciated.

When I mentioned to my local dealer that I used a mains conditioner, he was not too impressed and said they were not necessary and hi-fi kit sounded better without them, but I bet he would sell me one of the many aftermarket mains leads on his shelf without batting an eyelid. This is just one of the reasons why this subject puzzles me.

Regards,

**Neville Octon,
Newcastle upon Tyne.**

Hi Neville. That all makes sense. A special mains lead will not affect speed stability of a belt drive since this is a mechanical problem, due mostly to bearing clearance and



"Aftermarket mains leads do make a significant difference on my other equipment, as does the Isotek mains conditioner I use" says Neville Octon.

related precession of the platter spindle in its housing. Mains conditioners have most affect upon pre-amps.

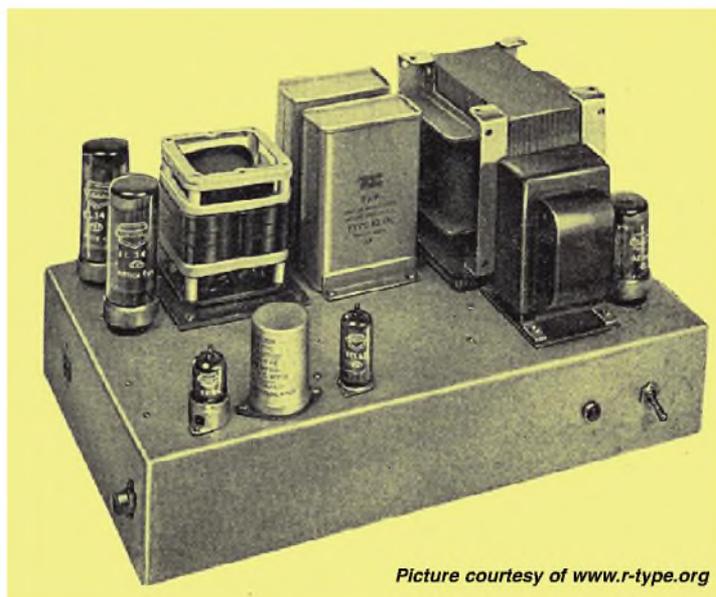
I know little about Never Connected Technology from Trichord Research. It seems that one big supply capacitor is charged from another and over this period the main d.c. rail is not connected to the rectifier directly. However, a mains transformer is mandatory for safety reasons and it is ground leakage currents in the transformer that are the problem. 'Never Connected' will not affect this. And in theory at least, no power supply lets through mains noise when permanently connected – big smoothing capacitors with parallel high frequency capacitors eliminate it.

Mains conditioners attenuate

high frequency noise, whilst mains regenerators attenuate the distortion harmonics caused by waveform clipping (voltage regulation) that stretch from 50Hz up to 1kHz our spectrum analyser shows.

Power amplifiers may well be better connected to a conditioner than a regenerator, or possibly through nothing that raises mains supply impedance (i.e. no filters at all). It really depends upon the architecture of the amplifier's power supply. If you buy an amplifier with an expensive low-leakage (internally shielded) mains transformer there may be little or no benefit to mains conditioning of any sort. With expensive mains regenerators especially, ask to borrow a dealer demo. unit for use at home.

Note by the way that we always



Picture courtesy of www.r-type.org

The Mullard 5-20 – a DIY amplifier from the early 1960s. "I built a Mullard 5-20 from scratch and experimented on it whenever something interesting came up" says Aaron Procter.

used big frame transformers in our kits of yore, not toroidals that run saturated cores that designer Andy Grove detested. Now ask yourself: who uses big, ugly, heavy and expensive frame transformers in their products? Audionote, Icon Audio, McIntosh and...**NK**

DAME JANET TEST

I've been a fan of Hi-Fi World since Issue 2 with the amazing valve powered digimeter! You taught me a lot over the years: I built a Mullard 5-20 from scratch and experimented on it whenever something interesting came up. I concluded I preferred triode and pentode operation to ultra-linear, using the 4 Ohm output tap and a parallel triode input instead of the EF86, which sang like canaries with no signal! I could never eliminate mechanical hum – and the weight of it plus the rising cost of output tubes forced me to solid state.

But I remembered what I learnt and followed the chip amp route with great success. I use the LM3886 chip at +/-28V with a gain of approx 30dB driving AE Aegis One loudspeakers. I measured the a.c. output voltage at 'normal' (my listening level) and calculated it to be about 70dB, equivalent to 12.6mW into 8 Ohms. That set me wondering: what level do you use for reviewing? And why do manufacturers parade Watts like trophies, is it a macho thing?

I have a theory, based on the Dame Janet test: listen to her singing Elgar's Sea Pictures with the LSO and Sir John Barbirolli. If all is well it will sound wonderful with plenty of orchestral detail and Dame Janet's voice captured beautifully. If all is not well it will sound dire. I know from experience – the AEs can be unforgiving!

So what to do? The answer is look at the PSU (power supply unit). I was using very large capacitors, 4x22000uF for a 35W amp and it was poor. Clearly, using large filter caps alone was no good so I trawled the internet and arrived at TNT audio with a fascinating article on power supplies. Having digested all that I added X2 filter caps around the transformer and rectifiers, and additional filtering around 2x22000uF caps. The result was startling and the amp passed the Dame Janet test with flying colours.

Out of curiosity I looked up various amp. circuits and discovered almost all only had a basic PSU which I'm inclined to think must be compromising performance. Was it Noel, or a colleague who said what was really needed was a really good 5W amp? Based on my limited experience it would seem to



The World Audio Design 4 Watt amplifier designed by Tim De Paravicini – and very popular in its time. "What matters is not so much an amp's absolute power as its ability to deliver it" notes Aaron Proctor.

be true. What matters is not so much an amp's absolute power as its ability to deliver it, and I would suggest that would be a fruitful avenue of research, especially in these environmentally conscious days. Bring back your 4 Watter!

**Regards,
Aaron Proctor.**

Ah yes Aaron – you are getting a bit philosophical here! When it comes to that truly wonderful sound, judged by the Dame Janet test in your case (I'm intrigued!) power doesn't come into it. Especially now that loudspeakers are becoming so sensitive: just one Watt will produce high volume from a decent floor stander, plenty enough to wake the household and annoy the neighbours. Around 20-40 Watts is plenty enough to accommodate occasional peaks when playing really loud. With volume turned down to 'normal' 4 Watts will do – and as you imply this means complexity goes out of the window and purity in through the door.

To answer your question, when reviewing I keep an eye on our McIntosh MC152 power meters and they hover around 5 Watts (in a big 6500 cu.ft. room). With volume up they will kick up to 20 Watts. Using an oscilloscope that shows short term peaks better, the result is much the same.

Power supplies in amplifiers are a little contentious. You can go down the 'constant voltage' route – most popular nowadays and achieved by using low output impedance but noisy voltage regulators that are feedback amplifiers of dubious transient behaviour (but cheap). Or you can go down the 'total silence' route (no noise) that by its nature compromises

voltage stability (a little) but avoids putting feedback amplifiers in the power lines.

Since big capacitors are no use on the output of a low source impedance voltage regulator you are in effect in the latter camp – and you'll find me there! For deep silences and a silky pure sound noise must be banished from all sources, including power lines – and capacitors help do this. You can also tune capacitors I am told; biggest isn't best.

Our little World Audio Design 4 Watter was very popular by the way; it was a Tim de Paravicini special and sounded lovely.

Low power amplifiers can be beguiling, but high power figures sell – and that's the market today. It's a numbers game. **NK**



A DIY LM3886 power amplifier at Circuit Basics website (www.circuitbasics.com). Well worth reading to find out what makes up a hi-fi amplifier, including ground issues.

Regenerate?

Providing pure mains power to your hi-fi is a thorny subject. Noel Keywood provides a simple guide to the issues.

The idea of regenerating the mains supply to a hi-fi system is catching on. In this issue I review Power Inspired's AG1500S and – yes – it does improve the sound. But this is a left-field subject for hi-fi that raises obscure issues, such as 'how bad is your mains?'. Here is a quick and simple guide to the issues.

A mains regenerator takes 'dirty' mains power and turns it into clean mains power. Unlike mains filters, that eliminate high frequency rubbish but leave the basic waveform untouched, regenerators produce an entirely new 250V sine wave signal, making them far more complex than filters. They give total mains isolation and are potentially able to eliminate noise and distortion completely. Most regenerators are not designed for hi-fi use, but as computer backup uninterruptible power supplies (UPS) – an important point to bear in mind.

By their nature, such regenerators produce a dirty output, by chopping d.c. and passing it through a high frequency transformer (as in switch-mode power supplies). This technique offers high conversion efficiency but is notorious for producing radio interference and noise.

A regenerator suitable for hi-fi must have internal filtering to remove such noise, it must be low in distortion and it also needs to be silent, free from humming, buzzing or fan noise.

I suspect that PS Audio and Isotek don't chop d.c. but use high voltage power amplifiers – another way of doing it, but one that demands heat sinks since conversion efficiency is lower. Such supplies are large as a result.

Specs are important and we're talking power supplies, not hi-fi, so you are faced with a host of different issues.

Companies specialising in hi-fi



PS Audio Power Plant 15 mains power regenerator, able to deliver 1200 Watts (VA).

regenerators are, in the UK, Isotek (www.isoteksystems.com), Longdog (www.longdogaudio.com) and Power Inspired (www.powerinspired.com). From the USA comes PS Audio (www.psaudio.com) available in the UK from MCRU (mcruc.co.uk).

OUTPUT VOLTAGE

What voltage do you need for a hi-fi? Target is 230V since this is Europe's nominal supply voltage and therefore a safe choice for universal use across Europe and elsewhere, if not the USA and Japan.

However, the UK runs 240V or so and North West London gets a reasonably steady 243V measurement shows, from which amplifiers give 12% more power than 230V.

An output of 240V is best, with an upper limit of 250V. A properly designed amplifier will have plenty enough margin to accept this without difficulty. Regenerators can set output voltage and hold it with relative ease; some are adjustable, some not.

OUTPUT FREQUENCY

Mains frequency is an issue for the motors of synchronous turntables and is locked to 50Hz in UK.

Regenerators commonly supply a stable 50Hz, or 60Hz for the USA. Frequency is commonly adjustable, but this is unnecessary unless you intend to move between 50Hz and 60Hz zones, taking the hi-fi with you.

POWER CAPACITY

The most confusing issue facing purchasers is that of power capacity. The power requirement of peripherals like streamers, CD players, phono stages, preamplifiers, tuners and turntables is both steady and low, less than 100 Watts – often much less. A 500 Watt regenerator will handle such items with ease. You can add up their quoted power consumption from the manufacturer's specs to get a reasonably good idea of what they might draw in total.

Hi-fi products draw current at waveform peaks (turntables with directly connected motors are an exception), have a Power factor of 1 and are a resistive load, so VA (Volt Amperes) and Watts are the same. PS Audio quotes capacity as VA, but read Watts.

Amplifiers vary their power draw according to how loud you play. At idle even a valve amplifier draws



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barely more than 50 Watts, but our Creek Evolution 100A transistor amplifier is rated as 600 Watts for example. It will only draw that when driven to full output on both channels – unlikely in normal use.

Most amplifiers will not consume more than 200 Watts or so in use, but big power amplifiers initiate a switch on surge as they charge large internal capacitors and this could conceivably trip the protection circuits of a regenerator. Arrange a demo to check or be prepared to plug the amplifier directly into the mains, not through the regenerator.

It may be necessary to put a whole system, with a powerful amplifier, onto a regenerator in an area where power comes through a line shared with industrial or agricultural equipment from a power station far away. Voltage will sag and both distortion and noise rise and fall according to load on the line; people report there are good times of the day to listen – and bad ones! A regenerator cures all this, where a mains filter will not.

How well a regenerator works

"it must be low in distortion and it also needs to be silent, free from humming, buzzing or fan noise".

for you is affected by the quality of your local supply, explaining why people may differ in their experience. All the same, hi-fi regenerators provide cleaner power than is ever likely from raw mains and should always give audible improvement, power amplifiers arguably excepted. A 500 Watt unit will do for most people, but 1kW or more gives leeway for an entire system.

DISTORTION

The primary requirement of a regenerated supply for hi-fi use is to reduce mains distortion. Look for a quoted distortion value of less than 1%. This needs to be maintained from low to full load. Regenerators vary the spectrum of distortion harmonics they produce according to load, our spectrum analyser shows – and dynamic distortion modulation patterns are detected by the human ear if they get into the hi-fi. The lower the distortion the better, since

SPECIFICATIONS

Model	AG1500S
INPUT	
Voltage	120-295Vac
Frequency	50/60±10%Hz (50/60Hz Autosensing)
Power Factor	≥0.99
THDi	<5%
OUTPUT	
Capacity	1500VA 1500W
AC/AC Efficiency	>90%
Power Factor	1.0
Voltage	208/220/230/240±1% Vac. (Selectable via LCD)
Frequency (Hz)	As input. 50/60±0.1 on battery
THDv	<3% Linear, <5% Non Linear. 1% Typ
Overload	115% for 1 minute. 133% for 1sec. 200% for 200ms
Optional Battery	
Voltage	72Vdc (Note 1)
Type	External 72V 9Ah Cab
Charge Current	1A max
Other	
Communication Inter-	RS232+USB+EPO. Can be replaced with Optional Dry Contact or SNMP
Display	LCD
Alarm	Battery Low, Fault
Protection	Low Battery, Overload, short circuit, over temperature
Noise	< 55 dBA Alarm. <20dB typical
Cooling	Dual Low Noise Fans with temperature dependent automatic PWM fan speed control
Working Temperature	-5 to 40°C
Relative Humidity	0-95% non Condensing
Dimensions	438x420x80 mm (WxDxH)
Weight	8.5kg

Note 1: The AG1500S has a different battery voltage requirement (72V) to the superseded AG1500 (96V)

Specifications for the Power Inspired AG1500S showing the issues you face with a regenerative mains power supply.

construction and quality – and no manufacturer will admit to using an inadequate component here. It's best to judge by listening.

In addition to harmonic distortion, asymmetric waveform clipping introduces a d.c. component to the mains, but regenerators eliminate this as well.

ELECTRICAL NOISE

Regenerators cannot pass on mains noise, but can produce their own noise. Look to see noise quoted as less than 80dB (<80dB) or so. Noise can be filtered out fairly easily so is unlikely in a dedicated hi-fi regenerator, although the filters should have low impedance.

POWER FACTOR, HEAT, MECHANICAL NOISE

Power factor is a measure of 'goodness' shall I say and should ideally be the maximum value of 1 (one). Power supply companies like this (a purely resistive load). It doesn't affect the hi-fi.

With high efficiency, UPS type regenerated supplies should run cool – even at high load. However, if cooling fans are used they must be quiet. Look for some acknowledgment in the specs about this, such as a fan noise value of <40dB SPL at 1m or less.

mains distortion produces rubbish from 50Hz up to 1kHz – right where we don't want it.

Around 3% distortion is common in the UK mains. Bear in mind that measuring mains distortion is rarely done. If a regenerator lacks it then steer clear: it is not for hi-fi use.

Why does distortion matter? All hi-fi products convert a.c. (alternating current) from the mains to d.c. (direct current) for internal circuits. The d.c. is smoothed by large capacitors that remove hum, noise and distortion, seemingly making the issue irrelevant. But there is a back-door mechanism, little appreciated, by which pollution can occur – and that is by leakage currents to ground from the mains transformer. This puts mains distortion harmonics and noise into an entire system, high gain phono stages being especially susceptible.

How much leakage occurs depends upon mains transformer



Power Inspired's new AG1500S AC mains ReGenerator has been honed for audio. Noel Keywood looks closely at just how well it works.

Power To The People

Cleaning up the mains supply to a hi-fi by using a filter has become a popular idea: it's inexpensive and improves sound quality. One step further than

removing high frequency rubbish with a mains filter is to re-generate the mains altogether – and that's what the Power Inspired AG1500S I'm reviewing here does. We've had many requests to review this prod-

uct because it is relatively inexpensive at £590 but has already gathered a following.

Dedicated mains re-generators for hi-fi systems are complex and specialised beasts costing thousands.



We use an Isotek Evo3 Mosaic Genesis (£8000) to ensure products reviewed aren't tainted by our distorted London mains supply – and it makes a difference.

Power Inspired's AG1500S was not, in original form, purposed for hi-fi use, but as a computer back-up that isolates from mains glitches and can provide power should the mains fail altogether, giving enough time to start an emergency generator. So the AG1500S isn't an Isotek – but is it effective?

Backup mains power supplies are a big issue wherever failure could cause serious problems, in hospitals, data centres etc – and Power Inspired have a wide range. The AG1500S not only produces a clean mains supply free from interference and low in distortion, but is quiet – meaning low cooling fan noise – all requirements for audio. It will switch automatically to running from batteries if so configured but we used it without batteries – an

external pack (72V) is additional cost. This review looks at suitability for hi-fi use, meaning how clean a supply it provides. Re-generation isn't a clean process in itself, producing distortion and noise. The issue is for hi-fi: how much distortion and noise?

This unit can deliver up to 1500 Watts (1.5kW). That's a lot – easily enough to drive a typical hi-fi system where an amplifier like our Creek

valve amplifiers – and if it's all too much protection circuits prevent overload.

As a dummy load I plugged in an electric fire with 400W (resistive) elements to see how the AG1500S would cope and it drove three elements (1.2kW) simultaneously without difficulty. I ran two elements drawing 800 Watts – 50% load indicated by the front panel display

"It may look a bit industrial, but the AG1500S has massive ability"

Evolution 100A is rated at 600 Watts (but consumes much less in ordinary use) whilst peripherals like Streamers, CD players, turntables and what have you typically consume around 100 Watts. There's plenty of leeway to plug in a whole system, even those with current chewing

– and it remained silent; the fans did not speed up even after one hour, in a room at 25C ambient (a rare sunny day in the UK!).

Distortion from the AG1500S is rated as 1% typical and we measured less than 1% (see Measured Performance for more detail) so

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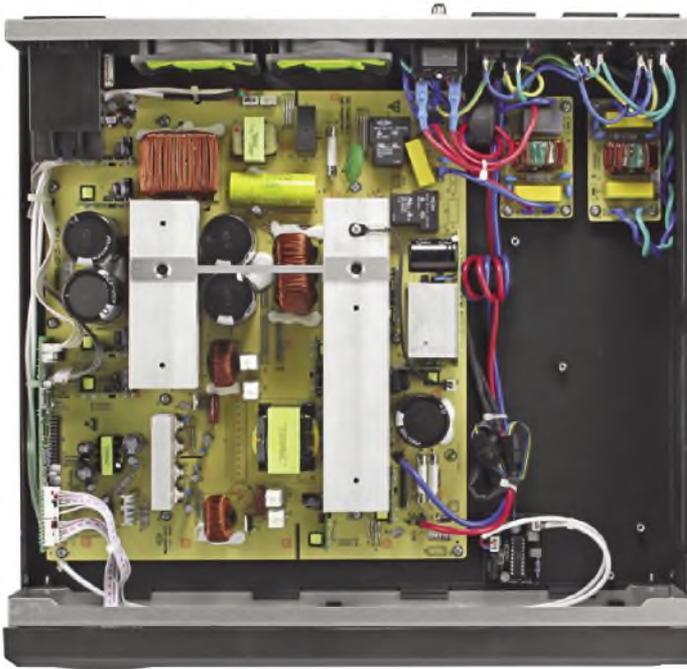
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It looks like a hi-fi amplifier in layout, with sheet metal chassis, circuit boards and electrolytic capacitors, but numerous sturdy wound coils and frame transformers point to another purpose.

it does clean the mains since our supply comes in at 3% distortion. However, the Isotek produces 0.3% maximum so the AG1500S doesn't provide the improvement a dedicated hi-fi unit achieves, but it offers more power, so there are trade offs.

Since power amplifier manufacturers like Naim prefer their amplifiers to be run direct from the mains, with nothing in the way – see our boxout on this – the issue of power isn't necessarily critical; the AG1500S has so much leeway here it allows experiment, but the lesser AG-500 at just £295 is better value perhaps, especially if the power amplifier doesn't need such a supply.

Physically the AG1500S is large – necessary to handle 1.5kW. It fits a professional 19in rack so will fit

most hi-fi racks/stands that also meet this universal standard, but is best kept away from the hi-fi; rack mounting in this context is not a good idea (see The Technology). It can also be stood on its side using clip on feet, perhaps on the floor, flat against a wall behind a rack to take up minimal room space. Dimensions are 438mm (17.2 in) wide, 420mm (16.5 in) deep and just 80mm (3.2in) high,



A high power mains lead with 13A UK style mains plug IEC C20 line socket is supplied, plus a mains distribution block with high current IEC C20 line plug and 13A output sockets.

THE TECHNOLOGY -

In the world of power supplies the AG1500S is termed a 'double conversion' design. It turns incoming a.c. mains to d.c. to charge batteries. It then turns d.c. from the batteries back to a.c. at required output voltage. The batteries don't have to be there; they only provide support for mains power failure.

From a hi-fi point of view it is the conversion back to a.c. that matters as it involves chopping the d.c. at high speed before passing it through a high frequency transformer. A similar technique is used in switch-mode power supplies, infamous for producing radio noise and a dirty a.c. output. Not a good start then.

However, both problems can be suppressed, using r.f. screening and d.c. smoothing from large capacitors and voltage regulators. Just how effective such measures are can only be judged by measurement – which is why we measured the AG1500S thoroughly.

For hi-fi use it is crucial that output is substantially cleaner than the mains, meaning distortion less than 1% and no high frequency noise. This cleans transformer leakage currents within hi-fi products, reducing noise and hash in the sound.

Supplies like this, including switch-mode types, are best placed as far from the hi-fi as possible to avoid any possibility of RF interference intruding, especially into turntable pickup cartridges and phono stages. This cuts out rack mounting, but floor standing a few feet (er – a few 0.3 metres) distant is suitable.

weight 8.5kgs (18.7 lbs). It accepts a wide mains voltage input of 120V-295V (50Hz or 60Hz) – fine for the UK and most other countries, if not for U.S. 110V.

Build quality is conventional, a sheet steel chassis covered by a sheet steel case. The front panel carries a small LCD display panel and three push buttons: On, Off and Select. The display shows input (mains) voltage and frequency, as well as output voltage that can be set to 208V, 220V, 230V or 240V; I used 240V that gives rated power from amplifiers. It also shows output frequency and load in terms of percent of 1500W – and I never got past 30% (500W) on this display with hi-fi equipment, including a valve amplifier. There is protection for output overload, over-temperature and short circuit, as well as low battery volts. The LCD display shows these conditions too but in use the unit can be set to output volts and left there. It is claimed to be 90%

efficient and did not get hot in use, running at 30C with 30% load – I did not get close to using its full 1.5kW capacity.

The rear panel has a high power IEC C20 input socket and a matching mains lead with 13A UK style mains plug is supplied. There are six IEC ('kettle') output sockets providing regulated output, plus one high current IEC C20 outlet for a mains distribution block with 13A output sockets that is supplied. There's also an overload re-set button here, d.c. battery inputs, two fans and a USB / RS232 / EPO computer (PC) panel for monitoring that I did not use.

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The rear panel carries six IEC power outlets, plus a high current outlet for a 13A mains block. Also, there are two cooling fans, an overload re-set switch and computer monitoring outlets (right).

The fans start up vigorously but slow down to a quiet idle unless temperature rises. Fan noise is an issue for hi-fi use: the unit must be effectively silent – and it was with an 800 Watt load run for one hour. The fans will speed up to keep things cool if a heavier load is driven but this is unlikely with a normal hi-fi system, even one equipped with valve amplifiers.

SOUND QUALITY

Re-generators clear hash from the sound and add both detail and focus – and that is broadly what the AG1500S did wherever I used it. It brought a sense of deep background silence to the Martin Logan Impression IIA loudspeakers, putting space between instruments of the Trondheim Soloists, painting the violin of Marianne Thorsen into stronger relief against the background. The sound seemed firmer, more solid and stable. The AG1500S starts with a strident squeal from an internal warning alarm before powering slowly to full output after a delay of 5 seconds or so. I ran the entire review system of two powered loudspeakers, Oppo Universal player and Icon Audio Stereo 30SE valve amplifier from the four way mains distribution block supplied, which it handled easily (26% capacity).

Swopping from AG1500S to our Isotek was not a night-and-day difference. The Isotek put a tad more detail into the sound, giving cymbals a slightly richer quality and making violins sound fractionally more embellished. I would have to use the Isotek for reviewing electrostatics that are all about such resolution, but for everyday use the AG1500S did a fine job sonically.

CONCLUSION

The AG1500S re-generating supply has massive capacity and can run any hi-fi system easily; I could not get

it past 30% of full power, except by using a dummy load. It is awkward to set but once done easy to use: just press On or Off. It cleans the mains as claimed, to below 1%

distortion and removes noise too, our measurements showed, usefully improving sound quality. It may look a bit industrial, but the AG1500S has massive ability at a good price.

A BAD IDEA?
 Power amplifier manufacturers in particular may object to anything between their product and the power station, because notionally it will compromise voltage regulation and – potentially – bass quality. Both manufacturers and their dealers may advise against such supplies, but it's best to judge effectiveness by listening test: ask for a home demo.
 If an amplifier's mains transformer suffers leakage because it's cheap, a clean mains supply will lessen distortion from ground currents and sound will gain clarity, especially through high gain internal phono stages.
 Note that real life power consumption of most amplifiers is far lower than the peak figures commonly quoted. Surge currents at switch-on may trip protection circuits all the same: only a demo or trial can reveal this potential problem.

MEASURED PERFORMANCE

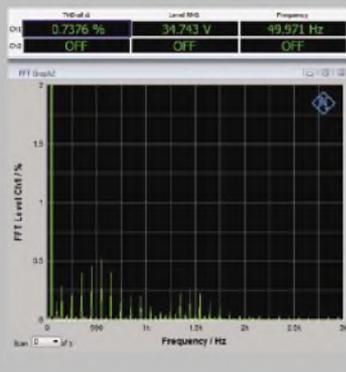
An ideal hi-fi mains supply should deliver (in the UK) a 240V – or thereabouts – pure sine wave at 50Hz, with no distortion or noise.

When set to 240V the AG1500S delivered 240V at 0.7% distortion under no load and 0.8% distortion at 800 Watts load, the front panel display

OUTPUT WAVEFORM



DISTORTION



accurately showing 50% loading under the latter condition. As claimed it delivers less than 1% distortion, which is a large improvement on our London mains supply at 3% that appears to be representative of the UK. The AG1500S typically reduces distortion by a factor of four irrespective of load.

Our distortion analysis shows residual distortion harmonics up to 2kHz that varied little with load, so the unit does not modulate heavily according to current draw – a very good result from a complex d.c. to a.c. convertor capable of delivering high current.

An extended analysis to 250kHz showed no high frequency noise, except for a small noise cluster at 20kHz, but it was far below distortion harmonics stretching to 2kHz.

With an 800 Watt load driven for one hour the cooling fans remained quiet and the casework was cool.

The AG1500S does, as claimed, reduce mains distortion to less than 1%, and it also eliminates noise. It provides substantial improvement in mains quality and remains silent and stable in behaviour even with a very heavy load applied, being able to drive a large hi-fi system without difficulty. **NK**

AG1500S AC REGENERATOR 1500W PSU £599.00



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'70s Special



Martin Pipe revisits JVC's JA-S11, which was the late-70s budget integrated amp of choice until NAD came along...

The 1970s brought us glam, disco and punk that coincided with a hi-fi boom unequalled before or since. So strong was the interest in high-quality music reproduction at home that high-street chains like Boots and Argos sold hi-fi. Sometimes the budget purchaser could get a good deal regardless of his choice of retailer. JVC were big in hi-fi at that time and their JA-S11 amplifier was well featured for an affordable product, each channel yielding 30 Watts. That was enough for smaller rooms and the speakers then available. You got the usual three inputs – phono (moving magnet), tuner and the catch-all 'Aux' – good for CD but that was yet to come!

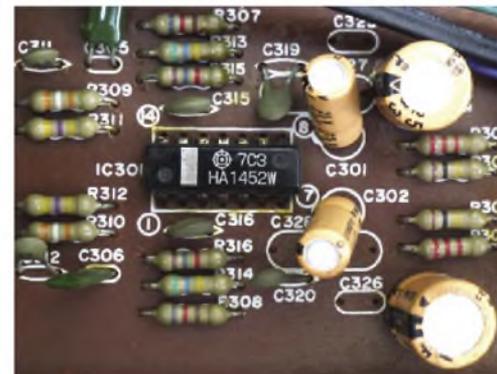
There were facilities for two tape recorders, complete with cross-dubbing courtesy of a pair of chunky switches that, like the chunky aluminium knobs and brushed-aluminium front-panel, firmly-date the JA-S11 to its period. A genius touch was to put the second set of terminals on the front panel. Decent tape equipment was expensive back then; one can imagine a JVC design bod realising that copyists on a budget would simply borrow a friend's deck as and when it was needed! Budget speakers were simpler and somewhat more

affordable, and so the JA-S11 made provision for two sets of them. You could stick your main pair in the lounge, and the others wherever music might also be required – a bedroom, conservatory or kitchen, maybe. A switch routes your listening to either or both pairs. Interestingly, the Victor-branded version (as sold in Japan) has a stereo mode (stereo/reverse-channels/mono) switch in place of the speaker selector. The obligatory bass and treble tone controls can't be defeated, but thankfully this isn't also true of the loudness compensator (which boosts the frequency extremes at lower listening levels).

Inside, the JA-S11 was built using components and techniques that were of their time for mass-market Japanese hi-fi – a pressed-steel chassis, wire-wrapped connections and phenolic-resin circuit boards populated with through-hole components. The phono stage made use of a dedicated Hitachi pre-amp chip; today, a budget integrated would almost certainly employ an op-amp for the task. The output stage also made use of integrated circuits, two slab-like Sanken devices – one per channel – being bolted to the generous heatsink. These unusual seven-pin components contain transistors, in an internal

circuit configuration known as the 'Darlington', to achieve the current gain needed to drive speakers. The advantage of this approach? Transistors can be matched to ensure consistent performance. It also helps to make manufacturing more cost-effective, although repairs are another matter...

Thanks to JVC's techniques, the JA-S11 didn't cost a king's ransom. Forty years ago – 1978 – this lower-rung model from its amplifier range could have been yours for less than £80. So far, then, just another



The JA-S11 uses a purpose-designed Hitachi HA1452W phono preamp chip. It has low noise and works very well. Then again, vinyl was a key source of music before CD arrived.

Japanese commodity to serve a hi-fi hungry public. But something elevated the JA-S11 to more than a nondescript amp that would be forgotten in the mists of time. Someone discovered that it actually... sounded good!

Such an concept was quite radical at the time, conventional wisdom saying that – putting aside the issue of power output – all competently-designed power amps would sound the same. This simply wasn't the case. A good few solid-state designs from the Land of the Rising Yen, then the world's hi-fi manufacturing powerhouse, had a gritty and harsh character that would fatigue after a while. Funnily enough, the top-of-the-line models with their busy front panels, complex filters, tone controls, superfluous gimmicks and sophisticated solid-state output stages tended to be the worst offenders. And here we had this little JVC that trounced 'em all when it came to the apparently simple business of conveying music.

As a result, the JA-S11 was seen on dealers' shelves between 1976 and 1979, when JVC replaced it with the restyled A-S5, and frequently recommended by dealers and magazines alike. In his 1977 'Amplifiers' edition of Hi-Fi Choice, Hugh Ford praised the modest unit: "having regard to its price, it is clear that much thought has been given to performance, rather than to the provision of extra facilities". But by the late 1970s, the market was changing. There was competition from good-sounding budget amps like the Sansui AU-217 (which had even fewer frills!) and the iconic game-changer that was NAD's 3020. What chance did the A-S5 have against that?

The JA-S11 still impresses today – putting to one side its dreadful speaker terminals. Dynamics transcend JVC's modest power specification – although it can understandably strain at high listening levels – while stereo imaging is superb. Also noteworthy are clarity and fulsome bass. But, as was the case forty years ago, it's the JA-S11's ability to communicate and involve that stands out above all else. Also praiseworthy is the phono stage, which turns in a revealing and natural presentation - remember that when the JA-S11 was being sold, vinyl was the pre-eminent source of recorded music. Funnily enough I lent my own model, given to me many years ago



Construction and design of the JVC JA-S11 is fairly typical of 1970s mass-market Japanese hi-fi gear. Its power amplifiers use Sanken S-40W 'hybrid Darlington modules'. Rear internal metal work is cadmium (passivated) plated – now viewed as toxic – so beware.

by a work colleague, to a friend for use as a phono stage!

Overall, the JA-S11 is reliable thanks to its simplicity. Mine hasn't been used for more than a decade, and all that was needed to restore the amp to its former glory was to service the headphone socket (the contacts of the internal switch that changes from speakers to 'phones on insertion of the plug had tarnished, so the right speaker was 'dead') and the 'protection' relay that protects

headphone socket or relay might be to blame – as it was with mine.

Hitachi HA1452W preamp chips turn up inexpensively from time to time on eBay, and so if you get results from line inputs but not vinyl then all is not lost. Faulty JA-S11s are cheap, and even working ones start from £50; the service manual, should you need it, can be found on the superb (and free) Hi-Fi Engine website (specifically https://www.hifiengine.com/manual_library/jvc/ja-s11.shtml).



Small, shaky screw-type terminals are fitted for the speaker connections, making it difficult to use decent-grade cable. Phono sockets were tin plated back then and tarnished.

your speakers (more tarnished contacts to deal with, leading to intermittency). Other problems might be more difficult. The Sanken S-40W 'hybrid Darlington modules' are long-obsolete, and hard to find. Some repairers have actually replaced dud modules with their own versions, built from discrete components! But if your specimen lacks one channel, a simple-to-fix problem with the

Many thousands of these amps were sold, and as a result they are widely-encountered second hand. Remember that a cheap unit with 'one channel down' could yield a S-40W to restore another JA-S11 in the same state. If you're on a tight budget or want a second system for a small room, the JA-S11 is a worthy contender – and what's not to love about that Seventies styling?

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Not So Plain Plenuie

Cowon's latest high-resolution digital audio player has space-age looks and excellent sound, says Jon Myles.

Portable high-resolution digital audio players (DAPs) have come on in leaps and bounds over the past few years. The first had basic controls, small screens and were cosmetically simple compared to something like Apple's iPods and the iPod Touch.

Today, touch screens are becoming standard, while shape, style and build quality are becoming ever more important in a crowded and dynamic market. Nothing typifies

this more than the latest player from South Korea's Cowon - the Plenuie V I'm reviewing here.

Take it from the box and this sleek machine looks more like a high-tech communicator from one of the Star Trek films than a £270 DAP.

Featuring a sculpted metallic body that tapers to a point at the base and has an angled back, the Plenuie measures a pocketable 9cm x 5.5cm x 2.5cm. Place it on a flat surface and the front screen is angled up in an elegant manner.

That screen can be used to control all the functions via Cowon's graphical user interface that - while featuring a number of the usual drill-down menus - is intuitive and easy to operate. There are also physical buttons for volume, playback and search on the right hand side.

A USB charging lead is supplied and a microSD card slot fitted for adding extra memory up to 128GB. As the Cowon has 64GB of internal memory there's a total of 192GB available - more than enough for



“Can you please develop a phono stage?”



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a decent high-resolution collection unless you specialise in DSD, whereupon the limit falls to a few hundred tracks.

One quirk is a power button that consists of a Plenuo logo on the back of the machine that's pressed to turn on and off. Cowon don't explain the



One side of the Cowon Plenuo V has the USB socket for charging and a microSD card slot for adding extra storage (up to 128GB) to add to the unit's in-built 64GB memory.



The on/off power button is (unusually) on the rear of the player and consists of a Plenuo logo. Manual side buttons allow for all other functions to be accessed.

logic of this – and it isn't easy to use.

Inside, the Plenuo V uses Cirrus Logic's CS43131 DAC that offers 24bit/192kHz reproduction and, the

Phase-comp, Slow/Low-latency, Slow/Phase-comp, Non-oversampling - to enable users to tune the sound to their own individual tastes (more of

"touch screens are becoming standard, while shape, style and build quality are becoming ever more important".

company says, has been optimised for low-power consumption. Cowon claims 27 hours of high-resolution audio playback is possible from a single charge. In testing I managed a maximum of 25 hours - but, then again, I do tend to play my music loud!

The DAC also has five digital filters - Fast/Low-latency, Fast/

which later).

In terms of design there's very little to dislike about the Plenuo V. Yes, it looks different but that's no bad thing – and its compact dimensions means it will easily fit into a shirt pocket without weighing you down. I can't help think that if Apple produced a similar looking product people would rave about it.



The touchscreen front panel gives access to all features as well as displaying album artwork. It's menu-driven but not too complicated.

OPTIMISED FOR PERFORMANCE BY LENGTH

After testing 15 different lengths of cable we found that 1.7 metre power cable sounds better than any other length.



"I was totally blown away with how they improved these systems in terms of detail, ambience and timing.

The improvement was not subtle, more akin to a 'top flight' upgrade!"

SH, Bulgaria

"This is the best Black Rhodium cable I've heard in the last few years from the outfit and is one of the best power cables you can buy at the price point" *theaudiophileman.com*

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SOUND QUALITY

I plugged the Plenu into a variety of headphones including my Noble K10 in-ear monitors, a pair of AKG K702 Reference open-back over-ear studio headphones – both ruthlessly revealing - and the new FiiO F9 Pros (see Hi-Fi World review July 2018).

Music included standard 44.1kHz CD tracks, plus a variety of high-resolution material loaded onto a microSD card from a MacBook Air.

With the Nobles K10s the Plenu demonstrated excellent definition on Eleanor McEvoy's 'I've Got You To See Me Through' (24/96) from 'Yola'. The opening piano notes

"Excellent sound at its price with an easy to use interface."

were strikingly good, having a natural decay. This is an exceptionally well recorded album and the Plenu V made the most of it. McEvoy's guitar playing throughout came over as crisp and tight – her voice soared.

Switching to the AKGs the soundstage opened up - which is something open-back 'phones are better at compared to in-ears - with an almost loudspeaker-like quality that added an extra degree of atmosphere to the sound. Now it was as though the vocals and instruments were coming from around my head.

I've heard more expensive DAPs that don't delineate between different headphones with such accuracy and a sense of which transducers you have plugged in.

Switching to Oasis with their 'Definitely Maybe' debut on a standard CD rip showed the usefulness of the various filter options. Here Non-oversampling softened the searing guitar on the opening 'Rock 'N' Roll Star' - reining back the treble to give a much more nuanced presentation.

It meant I could turn the volume up that bit louder without wincing. On gentler material, though, I preferred the other settings. Miles Davis's 'Kind Of Blue' lacked some top-end until I moved to the Fast/Low-latency - and this mode certainly brought the best out of the FiiO in-ear 'phones which don't have the same outright resolution of the other pairs.

What did impress throughout, however, is the even-handed nature



Manual buttons on the right of the player give full control of all functions.

of the Cowon. There's a lack of digital harshness on high-resolution music - one which suits well-recorded tracks. It also goes loud quite easily and handles bass with a distinct grip.

same punch of the likes of the better Astell&Kern players. Listening to The Clash's 'London Calling' through the latter's AK70 MkII revealed better drive and excitement. But then the Cowon is £270 compared to the Astell&Kern's £600 and has a rather more attractive form factor.

This is a DAP that doesn't break the bank but offers excellent sound at its price with an easy to use interface.

CONCLUSION

The Plenu V is an excellent DAP from Cowon. It is sleek and eye-catching but most importantly sounds extremely natural and detailed. Get used to the quirky power button!

Jah Wobble and saxophonist Evan Parker's 'Passage to Hades' (24/96) with its surging low-end was never short of tempo whichever headphones I was using. The Plenu and its Cirrus DAC remained unfazed no matter how deep the bass went.

Admittedly, it doesn't have the

MEASURED PERFORMANCE

Frequency response of the Plenu V measured flat to 84kHz with a 192kHz sample rate digital signal (PCM) – very wide bandwidth. The filters affected this result little, non-oversampling reaching 60kHz.

However, with CD at 44.1kHz

sample rate all filters were flat to 21kHz except non-oversampling that rolled off high treble, giving a 14kHz (-1dB) limit, so it will slightly soften harsh CD digital.

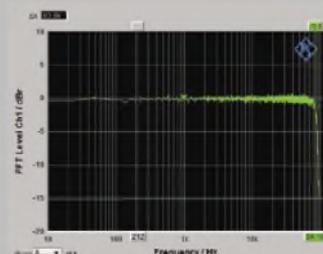
Output was 1.74V – slightly less than the 2V–3V that is common – but the Plenu V will still go very loud with all headphones, since 1V is more than enough.

Distortion values were very low from the Cirrus Logic CS43131 DAC and support circuits, measuring 0.02% at -60dB with a 24bit signal, where 0.05% or so is common. Consequently, EIAJ dynamic range was extremely high, measuring an impressive 119dB – as good as top hi-fi DACs. Cowon suggest 126dB but this is optimistic; the best hi-fi DACs barely reach 123dB.

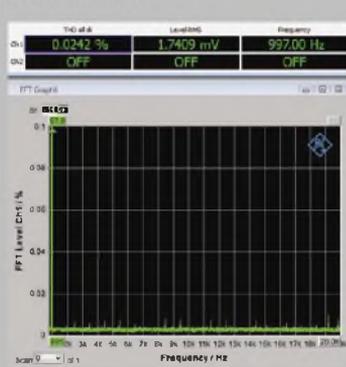
The tiny Plenu V delivers impressive measured performance figures – against other similarly priced portables in particular. It is likely to sound very good as a result. **NK**

Output	1.74V
Frequency response (-1dB)	8Hz-84kHz
Distortion (-60dB, 24bit)	0.02%
Dynamic range (EIAJ)	119dB
Noise	-118dB
Separation	102dB

FREQUENCY RESPONSE



DISTORTION



COWON PLENU V £270



OUTSTANDING - amongst the best

VALUE - keenly priced

VERDICT

Cowon has raised the game with this DAP. Beautifully designed and engineered with a sound to match.

FOR

- looks
- build quality
- digital filters
- natural sound
- compact

AGAINST

- nothing of note

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PAUL RODGERS

Free Spirit
Quarto Valley Records

This is a 3LP set, presented in a double fold-out gatefold sleeve, capturing Rodgers in a live setting, the Royal Albert Hall in London, as he meanders through the catalogue of his former band, Free. The pack includes an extra disc of performances from both Paul's daughter, Jasmine Rodgers and Deborah Bonham, the sister of the late Led Zeppelin drummer, John who acted as openers for Paul on the evening.

You'll find all of the classics here such as 'All Right Now', 'Wishing Well' and 'Fire and Water' but you'll also hear songs that the band never actually played live, including 'Love You So' and 'Catch a Train'.

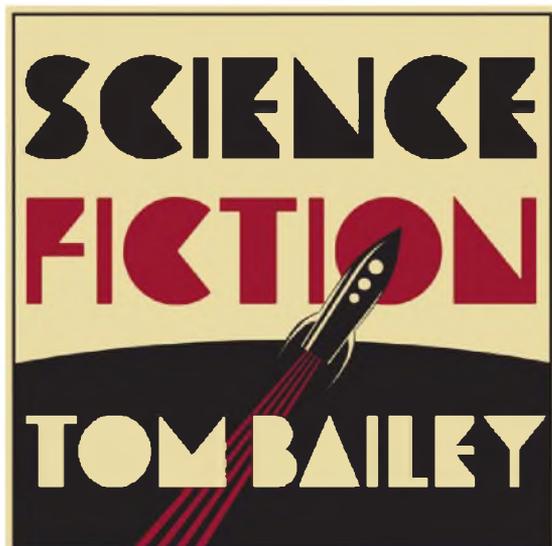
One nice addition, in addition to the photographs of the live concert on the outer sleeve, arrives on the six sides of the inner sleeves as each is plastered with newspaper cuttings that track that rise, success and break-up of

the band.

Generally speaking, in sonic terms, live albums are rated on damage limitation because audiophile productions they are not. As per usual and by strictly audiophile standards, this new release is full of bloomy bass, tizzy treble and unbalanced tones. More than that, the Hall is not the best sonic stage in the world, it has to be said.

That said, for a live album, it ain't half bad, while the raw material has been mastered well with very little compression if any, providing a warming glow to the presentation – apt and heart-warming. The balance between the performers and audience is good, the audience being audible but not dominant. Rodgers' vocal is relatively clear and emotive. Above all, the performance conveys the passion of the evening. A heartfelt occasion wallowing in nostalgia: play these grooves and feel the love.

AUDIOPHILE VINYL



TOM BAILEY

Science Fiction
Mikrokosmos

Bailey was the lead singer with the eighties pop combo, the Thompson Twins.

This is Bailey's debut solo album. The first since the Thompson Twins' last album release, twenty-seven years ago. Bailey commented that, "I have concentrated on other areas of music for the past couple of decades - but I find it incredibly rewarding to be making pop music again. There's something so special about the way this kind of music works and, for me, it's like finding a long lost friend".

The album wasn't recorded in one particular studio. A self-confessed "wanderer", Bailey roamed the world as he recorded this work and co-produced the final recordings: "These days, my studio is a laptop and a pair of headphones!" he said.

In terms of mastering, I was slightly perturbed to hear a touch of compression on this analogue

release which adds a slight edge to the vocal performance and produces a rather cool, sparse feel to the background instruments. The compression is a little wincing during crescendos on high volumes but the effects are not debilitating, just slightly irritating.

The songs themselves rely on an electro-pop presentation, combining organic and synth-based instruments. Bailey's performance is excellent, it's a real blast from the past. Yes, his voice has matured, maybe there's a slight constriction in range, a drying of the delivery? But the core of the Bailey sound is there in spades, while the songs are suitably poppy and full of joy, packed with hooks, energy and rhythmic passion that will have heads nodding and feet tapping.

I have the urge to lambast Bailey for taking so long to sort his life out and release this first solo work. So he'd better get going on a sequel, pronto, to make up for lost time. Get back to work Tom!

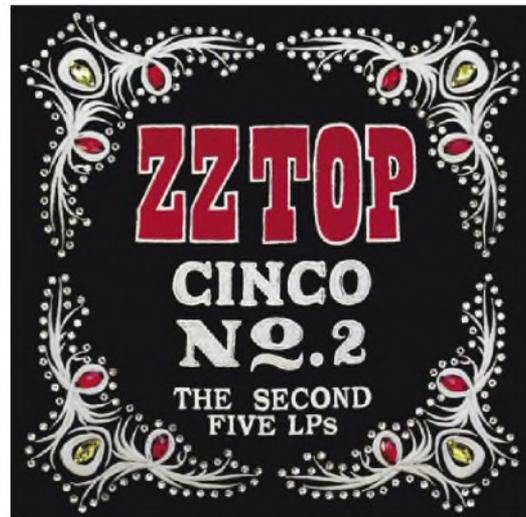
A box set of five LPs from the beardy rockers, the whole is packaged within a slip case box and is mastered nicely via Rhino. The collection features, with two exceptions, the band's eighties output of slicker and, if anything, more humorous outings. One of those exceptions is the excellent *Degüello* (1979), which reflected back to their early seventies glory days. Trouble is, the guys don't know when to stop because the almost kiddy 'naughty jokes' and polished production is taken too far with 'El Loco' from 1981. It's fun but it's almost too much for its own good.

The band snaps out of it by the time of their 1983 release, 'Eliminator', with a superb array of singles and heavyweight chart action via 'Gimme All Your Lovin'', 'Sharp Dressed Man' and 'Legs'. The production has dated the

presentation bit and the computerised studio work has removed a slice of soul from the guy's playing – but this is still a joyous release.

'Afterburner' is a bit like after the Lord Mayor's show, retaining that mechanical feel with too many Yamaha DX-7 synths washing over the soundstage. As such, this album is 'Eliminator' on steroids. Good but again 'too much'.

The second exception is the 1990 release, 'Recycler', which continued the synth-based bcogie. Offering more energy, yes, but the processed sound digs an even greater hole for itself here as the 'one trick pony' of processed blues fades into schtick. Don't get me wrong, this is not a poor album, there is much to like here with plenty of worthy songs that remain highly enjoyable. But did they have to wrap it up in overly-slick production?



ZZ TOP

Cinco No.2
Rhino

AUDIOPHILE VINYL

We're taking a trip to the bottom of the sea on this outing that was originally released in 1979 and provides a sort of Richard Pinhas/Heldon approach to krautrock-esque music, combining natural instruments with the Korg 800 DV duophonic analogue synthesiser, Clavinet and various effects boxes.

Originally on the French record label, Le Kiosque d'Orphée, this release is limited to 500 copies and sees its first ever vinyl reissue.

The album has been well mastered, having a disciplined suite of basic sonics. It never misbehaves in terms of bloomy bass or edgy upper mids, being a well balanced and detailed production.

The LP is full of varying textures. In fact, the first track allies itself more to the finger

picking talents of Leo Kottke than any lost electronic album, with its melange of acoustic guitar.

Soon after that, though, the intense synth work moves into view and with some effect. Backed with plenty of bubbly, under the sea effects, the lead electric guitar provides an almost melancholic, yet rather beautiful and wholly laconic presentation that manages to be sadly beautiful while adding uplifting elements. It's a remarkable combination. Throughout, the guitar remains cutting and intricate in its approach.

The flip side adds an introspective air to the compositions, layering in almost folkish constructions in terms of rhythm and beat. It is at this point that the music looks towards krautrock influence, offering both complexity and adventure that demands careful attention.



ALAIN MEUNIER

Voyage aux fonds de la Mer
Wah Wah



BRODMANN

ACOUSTICS



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Designed by Hans Deutsch is many years of experience and ideal of perfection are evident in all the Joseph Brodmann speakers.

The stunning range from the FS to the JB205 their sound is as amazing as the finish on the cabinets. The in and on wall speakers can have the finish of your dreams be this to match your wall or a picture you admire.



"It brought more muscular dynamics to the sound of LP"



Noel Keywood

Listening to the vivid presentation of a Glanz MH-94S stainless steel arm against the altogether more composed sound of the SMEs I use reminded me just how different pickup arms can sound. Notionally, they should have no sound of their own, just act as a neutral platform for the cartridge – but oh that it could be so simple!

Measurement shows much of what is going on and why there's a sonic difference – but what listeners may prefer isn't necessarily going to correlate.

It raises interesting issues about sound quality, why we hear what we hear and – most vapid of all – what we prefer.

With the LP revival arms are now a hot topic on the 'net where they are strongly argued about – if not so well understood. But that's not for lack of trying by some manufacturers – and here Britain scores well.

I got my first education in arm behaviour from Garrard – way back in the early 1970s when I asked them, as a young sprog at a press reception, why they used a wood insert in the Lab80 arm. It seemed totally out of place in a 'high technology' arm that used a Mazak casting, not an alloy tube. "It's there to suppress arm resonance" I was told, this resonance being visible in a standard cartridge frequency response trace as a little blip around 200-Hz.

Garrard understood that tubular alloy arms of the time visibly affected a cartridge under measurement, realised this was colouring the sound and went to some lengths to eradicate the problem.

I walked away from this conversation fascinated, because in those days arms turntables were considered inert objects with no

sound of their own, at least by esteemed journalists of the time who, I thought, understood such things (cough).

Poor old Garrard never really got credit for their insight here and, I almost shamefully admit, it was journos like me who ceaselessly talked up Japan's Pioneer PL12D when it arrived, as a proper audiophile turntable – which the Garrards arguably were not, even though they were lovely – especially the gold and white Zero 100S.

A metal tube rings when you hit it, much like a tuning fork or an orchestral triangle. This isn't meant to happen; an arm is meant to be totally inert, as well as rigid. Looking back I now see why Garrard used alloy tubes in their budget models like the SP25 but a rigid cast shape in the Lab80 with damping insert – quite an advanced construction.

Many years later I got into conversation with Roy Gandy of Rega on this topic and was unsurprised when he introduced the tapered alloy RB300. This was, for me, the arm that changed everything, upping the game completely.

At that time I was using the tubular alloy SME3009 but its design ethos was low mass rather than high rigidity, to suit compliant high trackability cartridges. The RB300 was different: it swapped mass for rigidity and lack of tube resonance. Effective mass went up from the SME's minuscule 9gms to 12gms – not ideal for super compliant ADC cartridges perhaps but fine for moving coil types.

The RB300 had very concise stereo imaging and separation in the lower midband, making percussion like hand drums stand out in positional certainty on the sound stage like no other arm I had heard.

Stereo information twists an arm and here the rigid and damped Rega

arm tube was supreme. It brought more muscular dynamics to the sound of LP – if a darker sound with less zing. That was OK by me, if not quite with everyone – there were some mutterers!

So much for basic arm structure – but what about the headshell? Headshells are in a crucial position and play a big role, especially in treble clarity because they resonate at high frequencies, becoming lively above 1kHz. They should be rigid and non-resonant, free of flexure and ringing. Many now are, but some conspicuously are not.

There are two design tricks commonly used to achieve rigidity that you can look out for. The first is the use of side walls. Cheap alloy shells can be punched (formed) to have them – it helps. SME headshells have deep side walls and although most people don't notice them they are crucial.

Then there is the use of a strengthening side web on the inside of the shell (platter spindle side). Linn have used it to great benefit; sound quality wise it was a distinguishing feature of Linn arms I felt.

Arms that don't ring have great dynamics but a darker sound to ones that do. Being used to my magnesium alloy tapered SME 312-S 12in arm at home and an SME 309 arm – also tapered alloy – in the office I was taken aback at just how different the Glanz MH-94S stainless steel tubular arm sounded: it was "vivid" – brighter than SMEs / Regas. It brought a spotlight onto music, and a fast, hard edge to transients, reminding me just how different arms can sound.

Some listeners may well prefer a sound like that from the Glanz. It was dramatic, reminding me just how much the pickup arm can affect sound – as Garrard once explained to me. ●



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"Never dismiss music. No matter what type it might be".



Paul Rigby

In music, the more you learn, the less you know. That is, when you learn about one element of music, that will invariably open a door onto a whole new world which will take some time to fully explore. Then the cycle is repeated and you end up in a completely different place to where you started.

When I was younger, I was fascinated by rock music but, as someone who has less regard for lyrics and more interest in the actual music, electronic music took a lot of my attention. From there, I was enamoured more by post punk than punk itself (although I caught up on the genre later on), then indie music (when indie was a real genre) and on it went.

Of course, while we have our musical likes, we also have our musical dislikes. Throughout this time, I was adamant: I hated country music. Even now, there's plenty of music within the genre that fails to wow me. I dislike the glossy aspect of it intently: big teeth, model looks and Nashville chrome. There's nothing 'real' in that lot. I also used to hate anything with the irritatingly twangy lap steel guitar. Music played by overly folksy, god-fearing WASPs with a wink in their eye and blandness in their soul.

But, you see, that's where I was wrong. Wrong to add broad brush-strokes to an entire genre of music. I wouldn't 'hate' rock music because I happened to dislike a band who happened to play the stuff. How short sighted would that be?

I found my entry point into country through familiar territory. The Byrds for example whose later work is country-fied. Then there's The Eagles, Doobie Brothers and

elements of Neil Young. From there, I became very attached to Emmylou Harris who delighted because she dares to experiment with the genre. Twisting it. Bending it. Infiltrating it with alien textures. Then there's the bad men and the thoroughly disreputable that added a hard edge and a sense of rebellion to this often safe musical genre. One of which I grew to love. Johnny Cash remains unique in the entire country genre. His independent creative paths married to his strong core beliefs still take the breath away.

The Grateful Dead took me on a roots-based journey without me realising it. It took a while to 'get' the Dead. A band that, at first sight, sounded like a 'me too' outfit with nothing unique to offer. I was wrong about that too. Listening to their music, I was further introduced into country and American folk.

Because The Grateful Dead is a spider-like subculture of spin-offs and creative friends, I was then introduced to New Riders of the Purple Sage (a side-project for the Grateful Dead's Jerry Garcia). I still haven't quite made my mind up about them but you should check out 'The Best Of' (Floating World, floatingworldrecords.co.uk) which offers plenty of attractive harmonies and rock vibes integrated within the country flavours.

Grateful Dead members also appear on 'Sunfighter', another rootsy release, this time from Jefferson Airplane's Grace Slick and Paul Kantner (Floating World).

If those harmonies are attractive then Pure Prairie League's 'Firin Up' (Floating World) might just for you. Again, there's that rock element in there. A bit of The Eagles to help the cross-over and remove too

much pain.

In many ways, I respect bluegrass more than country as a genre, although both are connected via umbilical chord. Bluegrass seems to connect more directly with the human condition and stretch way back to the early days, days that saw struggling settlers desperate to survive in a strange land.

It also appears to be more inclusive, incorporating elements from English, Irish and Scottish folk, African American jazz/blues and more. I first noticed this genre via 5-string banjo player Earl Scruggs and guitarist Lester Flatt who played the cracking theme tune for the TV comedy show, 'The Beverly Hillbillies' (the first LP I owned as a child) but retained an appreciation for their instrumental skills later in life while I paid careful attention to the serious and more contemporary recordings of the genre from Dolly Parton who actually lived that life as a youngster. One of the best proponents of the genre were the brothers Jim & Jesse. Check out the new reissue, 'Diesel on my Tail' (Floating World) to hear more.

And the point of all of this detail? To illustrate that country music is a very large umbrella term for a host of specialised sub-genres. Some of which you might like, others you might dislike but all of which you must taste before you decide.

The larger conclusion? Never dismiss music. No matter what type it might be and no matter how strong your bias. Even if you think that you are turned off by one particular genre, there's still plenty of nuggets to be found within it and they are worth seeking out. Believe me. Just have faith in your Uncle Paul on this one. ●

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“Streaming frees the shelf space taken up by a large CD collection”



Jon Myles

Of all the letters, e-mails and telephone queries that arrive daily at Hi-Fi World towers, one topic dominates – the issue of streaming. Be it sending music from a Network Attached Storage (NAS) drive to an existing hi-fi system, accessing the millions of tracks provided by the likes of Tidal, Spotify, Qobuz, or simply using Bluetooth to send tracks from a smart 'phone or tablet to a suitably-equipped amplifier, the topic seems to baffle and intrigue in equal measure.

I've met no end of hi-fi enthusiasts who would love to amalgamate their digital music collections (high-resolution tracks and standard CD quality) onto one relatively small NAS drive that can be hidden away behind a sofa yet accessed with ease whenever needed.

However, doubts creep in when this convenience demands the introduction of a home computer network – of the wired or wireless variety.

To be honest, the caution is understandable. Many listeners balk at the idea of having computer technology anywhere near their sensitive hi-fi equipment. Others find the entire process of setting up a network completely impenetrable.

Even myself – a fairly computer literate sort of guy – needed the help of a well-known industry expert who kindly spent two hours maximising my Naim streaming set-up with the help of some top-notch Apple equipment and a new, dedicated configuration for music.

Since then it has worked perfectly; no drop-outs, no glitches and a glorious, full-bodied sound.

Not everyone is quite so lucky and fairly often the equipment supplied by the main internet

providers is a big part of the problem. Sign-up to Virgin, Sky, Talk Talk et al and they'll supply you with a router – basically a black box that serves to bring the internet signal into the house.

Unfortunately, their routers are often not as robust or capable as they could be. The companies are, in total, supplying hundreds of thousands of these boxes a year, so they're built to a low price to aid acceptance.

With the number of internet connected devices in most homes increasing exponentially these routers can struggle to cope. Imagine you are listening to a 24bit/192kHz recording of Mahler's 'Symphony No 3', whilst upstairs your son or daughter is playing an internet game with friends located on the other side of the world. Meanwhile your partner is tuned in to a web-based radio station in the kitchen.

At the same time smartphones, iPads, a Kindle e-reader plus a computer in the study and a laptop may also be accessing the internet automatically, to gather an OS update in the background for example.

That's an awful lot of bandwidth being used and, ultimately, there's only so much to go round. It sounds like a lot of internet-connected devices, but some households can have even more!

In the end everything will start to slow down and the music you are listening to will begin experiencing drop-outs where everything goes silent for a few seconds before starting up again, only to repeat the process on a regular basis.

It's frustrating and one of the main reasons people are wary about the whole business of streaming music.

But no music replay system

was ever free of glitches. Vinyl can get scratched or skip, CDs are not immune to similar problems (despite what TV programme Tomorrow's World claimed back in 1983 when it hailed the silver disc's virtually indestructible properties).

Heck, I've lost count of the number of compact cassettes I've owned whose tapes unspooled, became twisted or whose cases simply came apart in my hands.

Oh – and don't even get me started on the vagaries of the ill-fated Minidisc (as clever as it was at the time).

But streaming, if properly set-up, can work perfectly and has the advantage of freeing up all that shelf space consumed by a large CD collection, as well as making it simple to find whatever specific track or album you are looking for. I've lost count of the number of long-forgotten albums I've rediscovered since bringing them together on one 2TB NAS drive (which cost less than £100).

So if you are still intrigued by experimenting with streaming I'd whole-heartedly encourage you to give it a try.

And for those who remain technophobic regarding the marriage of the internet and hi-fi the good news is that more and more dealers can now offer expert advice on just what you will need and how best to install it.

Many dealers will send a technician out to set everything up and make sure your system is working perfectly – and offer further back-up should you experience problems in the future.

So my advice would be to find a good dealer (and there are still plenty about), explain your needs and then tap into their knowledge. You may quickly find you'll become a streaming convert like me. ●

"Somebody at the BBC hinted the Proms might benefit from virtual-reality coverage"



Martin Pipe

It's the time of year when thoughts turn to the Proms, the 2018 season being less than a week away as I type these words – and set to continue the BBC's tradition of excellence.

This year Centenaries that will be noted with appropriate musical fervour include the birth of Leonard Bernstein, the death of Claude Debussy, women's right to vote and the end of the First World War. Great orchestras in attendance – the BBC's fine players apart – will include the Berlin Philharmonic, Swedish Symphony Orchestra and Aurora Orchestra, with debuts from the Baltimore Symphony Orchestra and Estonian Festival Orchestra. Every Prom will be heard on Radio 3; in my experience, the best way of listening in will be via the online 320kbps AAC stream (as also used for the iPlayer 'catch-up' service).

In addition to familiar works – among them Bach's Brandenburg Concertos, Holst's Planets, Beethoven's Choral Symphony, Mahler's Eighth, Rachmaninov's Symphonic Dances, Vaughan Williams' The Lark Ascending, Ravel's Bolero and Mozart's Clarinet Concerto – will be a variety of new commissions that demonstrate the festival's commitment to nurturing talent; over the season, we'll hear 27 world premieres. The Proms will once again break beyond the confines of the Royal Albert Hall, with performances scheduled for Alexandra Palace, the Camden Roundhouse, Hyde Park and Lincoln's Drill Hall.

Cadogan Hall will host the popular lunchtime chamber recitals, while the Ten Pieces Prom and Proms Inspire aim to promote classical music to younger audiences. The Late Night Proms promise

something a little bit different with influences as diverse as reggae, salsa, New York and the musical output of the BBC's pioneering Radiophonic Workshop. The latter, most famous for Delia Derbyshire's Doctor Who theme, demonstrated the BBC's commitment to exploiting new technology for the benefit of broadcasting.

What might the BBC have up its technological sleeve for the Proms? In previous years, we've had quadrasonic surround sound, binaural presentation for headphone listening and (most recently) lossless streaming.

A good place to look for this sort of thing is the BBC Taster website (<https://www.bbc.co.uk/taster/>), where such experimental projects are usually announced. As of July 7th, though, nothing Prom-related was up there. What a shame; I would love to have tried listening to those FLAC streams via my Cambridge CXN streamer which, thanks to a software update, theoretically supports them. Somebody from the depths of the BBC hinted that some Proms might benefit from virtual-reality coverage, but nothing has been officially announced yet. Keep your eyes on that webpage...

Fresh ideas certainly await those who can journey into London. On July 12th, the day before the 2018 Proms kicks off, a sound-and-light 'curtain raiser' show is planned for the Royal Albert Hall. While the musicians play one of the aforementioned Proms commissions - Anna Meredith's Five Telegrams: Sender, a musical interpretation of communications during WWI – within the iconic venue related visuals created by 59 Productions will be projected onto the building's exterior.

Richard Slaney of 59 Productions, whose credits include War Horse, UN Global Goals and the Sydney Opera House's 'Lighting Up The Sails' show, told me that the size and shape of the Royal Albert Hall presented all manner of challenges. 59 Productions' high-resolution visuals, which were brought to life by a team of seven animators, occupy a couple of terabytes storage and feed no fewer than thirty strategically-placed projectors. Meredith's 25-minute piece will be performed again at the First Night of the Proms, and it is understood that at least some of Slaney's spectacle will be shared with BBC2 viewers.

For now, the BBC Taster website may harbour little of interest to Proms listeners, but something else there fascinated me. Many of you remember the BBC Computer Literacy project of the 1980s. This was public-service TV at its best, preparing the UK for a future where computers are ubiquitous. Courtesy of the portal, 146 of its archive programmes can now be viewed online (<https://bit.ly/2m2DFmY>) alongside related BBC material and interviews.

Check out 'If I Had A Hammer' (Micro Live) to see Bob Moog demonstrating his Minimoog, and Human League producer (and confessed Bowie-sampler) Martin Rushent using his Linn Drum and Synclavier to record eighties hopefuls Then Jerico. Record-care wasn't Rushent's forte! Turn to Sink or Swim (from 1980 series 'The Silicon Factor'), and catch (6m12s in) a glimpse of an early Philips CD player prototype. It's not just The Proms that the BBC are good at – there's much more than Proms 2018 hidden away on their websites. ●

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"The Garrard SP25 MK3 turntable was mechanically worn out with its arm hanging off!"



Dave Tutt

I have a Rogers Ravensbourne in the workshop today. It's been a while since I had one of these historic amplifiers. The last one had drifted off so far in its power supply that the left channel had faded out. This one was similar. You can't really take these amplifiers apart and get them going properly without replacing all the capacitors in the power amp stage, but once this is done and the presets are correctly adjusted they work fine.

I don't think I have ever had to change a transistor in a Ravensbourne – which you would have to say is a rare event for an old piece of kit. They are, I think, rather bass heavy with slightly edgy treble that you can get used to, so might not be to the taste of many modern listeners. All the same, that makes them work with speakers that are somewhat bass light. I tested the Ravensbourne with my little Teac boxes, along with a Denon CD player as the source, and it seemed fine. I do hate the old DIN speaker sockets though. Who ever thought of those?

Talking of DIN speaker sockets, I am also working on an old stereo record player by Dynatron. It is in a nicely veneered box and has the Queens Crest on it of course. Shame its Germanium transistors were mostly shot – but then you would expect that really, considering their age.

So how to get this old player going? A trip to eBay found a 40 Watt stereo amp kit, a stereo preamp tone control unit and an RIAA preamp too, the whole lot costing about £50 – needing just a transformer. The cartridge of this player, an old Goldring G800, was dead on the left channel and had a damaged stylus, so an Audio Technica AT91 was a good bet here as a

replacement.

Its Garrard SP25 MK3 turntable was going to be useful manual only, as it was mechanically worn out with the arm hanging off! And the tuner, well the less said the better!

Four inbuilt 8x5 speakers of the Dynatron must have loaded the amp down as they gave much less volume than expected on each channel. Parallel connected external speakers, even though it had switched speaker sockets, must have driven the amp to its death.

Again, I can't quite see the fascination with the DIN format. The 'speaker ones needed an additional pin to engage the switch function of the Dynatron.

To try to keep this player as close to the original idea as possible its DIN sockets stayed, but with a front panel switch to enable them.

The Tuner function got a new set of input phono sockets, fitted over missing preset push buttons, so the customer could connect up a CD player. It seems to work! The mid control of the preamp was hidden inside to allow some tone tweaking for me.

The general performance of the Dynatron seemed good after all these changes, although I wouldn't really call it 'hi-fi'. It is a straight forward all-in-one record player better than the cheap players made of plastic nowadays presented to the new generation of vinyl lovers. Feeding FLAC audio in whilst using external speakers proved the eBay bits were not that bad, thanks to their NE5532 op-amps, used in their thousands in many studio mixers as well as much hi-fi. The player was a step up from the normal junk from well known sources that most refer to as hi-fi – and in a nice cabinet from the '60s, so a bit unique.

What else? Well I have an Akai 4000DS reel-to-reel tape recorder

here. You may want to turn these away as far too expensive to fix, given that there are four thick-film type 9pin amp modules (Sanyo LD3141), so you might just think, forget it. Actually, I think I have only had one of these modules ever fail and they are available from Hong Kong for under a tenner, so the Akai can be repaired today.

But the capacitors around these modules? Get out your desoldering tools as most are duff! Dead channels in its record or playback amps – or both – means a good place to start with a repair are these caps, marked as 6V types. After that then anything that couples the signals into and out of the LD3141 modules. With a blanket replacement totaling about 32 caps the baby Akai will be singing again I'm sure.

I always replace the main power supply capacitors too as they are all a bit long in the tooth.

The 4000DS is pretty good to work on, unlike the earlier 4000 which isn't – and doesn't sound as good either. Those looking for a tape machine to experience what was happening in the '70s can't go far wrong with one of these machines.

The return of the Goodmans Maxamp 30 I have been repairing might be something you would like to know about. Its problem is instability. The power amps work fine, as does the tone control network and volume control, so you could easily use it like that with a different preamp in front of it. The culprit is the first and second transistor stage which includes all the RIAA EQ wrapped around it in a feedback loop. I'm going to change things inside to sort out its instability as I can't have it 'motorboating' around as at present. The Maxamp has a stability problem I am determined to fix! ●

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NAIM NAIT 5Si £925
Naim's famed entry-level integrated amplifier is updated to si status. Demos Naim's superbly muscular sound at entry level.

SUGDEN 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
Oodles of power with enormous punch. Rafael Todes said it provided "shock and awe" while retaining incredible smoothness and texture.

ICON AUDIO MB845 MKII £7,600
With 120W from big 845 valves right down to low frequencies, this power amplifier has massive dynamics and bass swing, yet is easy on the ear.



ICON AUDIO MB81PP £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 ELITE QMP MONOBLOCKS £2400 PR
The proverbial iron fist in a velvet glove. Plenty of power but delivered with an assured and confident nature. Smooth on top and easy on the ear but can rock out when needed.

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.



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.



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

EPOS K2 £1,000
A fun sound that is tidy all round and very engaging, with solid bass. Music as you hope it to be.

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

MARTIN LOGAN SUMMIT X £16,698
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 CHROMIUM STYLE 8 £1,700
A supremely smooth yet open sounding loudspeaker. Clean and detailed treble from a fine ribbon tweeter. Accurate yet informative and enjoyable. Pure class.

QUADRAL ORKAN VIII AKTIVS £6,200
Active loudspeaker with tight, powerful bass, perfect accuracy and detailed treble from a ribbon tweeter.



Q ACOUSTICS 2050i £480
A large floorstander at a budget price. Offers high sensitivity and big sound and has very few flaws for the price.

SPENDOR SP100 R2 £6,495
Retro looks but a sound that's hard to match. Spendor's 12" bass unit provides massive low-end grunt with a room-filling sound.



SPENDOR A3 £1,300
Fine little floorstander with a smooth, natural midband and even tonal balance. Ideal for smaller rooms.

TANNOY DEFINITION DC10 Ti £6,000
Enormous power with great projection. Glorious subsonics too. Need little power to go very loud and have superb finish into the bargain.



TANNOY KENSINGTON £9,950
Big but not overpowering, punchy modern sound from classic cabinetry. Need little power to go very loud and suit a traditional home, or castle.



LOUDSPEAKERS STANDMOUNT

ACOUSTIC ENERGY NEO 1 V2 £225
Civilised sounding speaker with fast and tuneful bass.

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



ELAC BS243 £1,000
More transparent and spacious than they've a right to be at this price, these refined mid-price standmounters represent top value.



EMINENT TECHNOLOGY LFT-16A £1,200
U.S. planar magnetic bookshelf loudspeaker with unrivalled mid-band and treble. Hear it before all else.

WHARFEDALE DIAMOND 220 £200
Builds on the success of previous Diamond ranges with better bass, more detail and a greater sense of scale.



KEF LS50 £800
Supremely musical mini-monitors which sound much bigger than they look.



MARTIN LOGAN MOTION 35 £1,300
Folded Air-Motion tweeter gives a taste of Martin Logan's electrostatic sound in a standmount. Different from the standard mini-monitor and all the better for it.



PMC TWENTY.21 £1,575
Transmission line loaded standmount with a big box sound from a compact cabinet. Punches well above its weight.



Q ACOUSTICS 2020i £165
Great little bargain-priced stand-mounts with a friendly, fun yet surprisingly refined sound. Hard to better for a pair of starter loudspeakers.

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.



HEADPHONE AMPLIFIERS

CREEK OBH11 £150
Designed specifically for low to medium impedance (30 Ohm – 300 Ohm) headphones the little Creek has a marvelously well-judged sound.

CHORD MOJO £399
Class leading portable DAC and headphone amp with ability beyond all else. Big, open spacious sound.



EPIPHANY EHP-02 £99
PP3 battery-powered portable gives great sound quality at an almost giveaway price. Happy with the output from an iPod or CD player, the little epiphany is a true bargain.



ICON AUDIO HP8 MKII £650
The HP8 MKII valve-based headphone amplifier brings the spacious sound of valves to headphones. And it matches 'em all.



FIDELITY AUDIO HPA 100 £350
Great little headphone amplifier with a lively yet refined and open sound.

MUSIC FIRST PHONE BOX £276
Brings a big stage, plenty of detail and rich, deep colours to the sonic spectrum.



OPPO HA-2 £250
Remarkable performance and sound from ESS Sabre32 DAC in a slim portable package.



CD PLAYERS

AUDIOLAB 8200CDQ £949
Inspired CD player and DAC with price-performance ratio like no other. Capable of matching designs costing much more.



CANOR CD2+ £3,100
Musically coherent and tuneful valve-driven CD player from Slovakia. Lovely liquid sound.



CAMBRIDGE AUDIO AZUR 651C £410
Snappy modern presentation from this budget CD player. Cracking audiophile entry point for any digital fan.

CHORD RED REFERENCE MKIII £16,000
A unique and massive engineering exercise that could well be the best CD player available. Chord's Pulse Array DAC technology produces a musical experience like few others. A true reference player.



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.



EXPOSURE 101 £395
Detailed player with fine sense of timing should be an automatic entry on any demo list at this price.

ELECTROCOMPANIET EMP-1/S £4,650

Epic in scale, lavish in tone and exuberant in its musicality - this is a memorable SACD spinner. Quirky in operation and modest in finish, though.



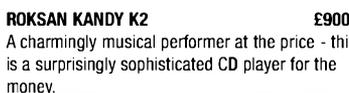
OPPO BDP-105D £1200

Universal player and DAC that makes CD and Blu-ray (+DVD) sound deep, spacious and full bodied. Reference quality that's affordable.



REGA APOLLO-R £550

Rega comes up with a fine CD player again. Tremendous detail and an easy, unforced sound at all times. Few bells and whistles but made up for by its superb sonic ability.



ROKSAN KANDY K2 £900

A charmingly musical performer at the price - this is a surprisingly sophisticated CD player for the money.



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.



MAGNUM DYNALAB MD-90T £1,900

Exceptionally able, but commensurately priced, audiophile tuner that cannot fail to charm.



DACS

AUDIOLAB M-DAC £600

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



AUDIOLAB Q-DAC £250

Stripped-down version of Audiolab's M-DAC loses some features but retains much of the sound, making it a veritable 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.



DCS DEBUSSY £8,000

DCS's bespoke 'Ring DAC' circuit gives a beautifully-fluid, almost analogue sound that encourages long listening sessions. Not cheap but worth every penny.



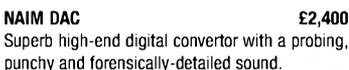
NORTHERN FIDELITY DAC £650

Packed full of features, including Bluetooth and USB, this ESS Sabre32 equipped DAC offers crisp, insightful sound at low price.



METRUM OCTAVE £729

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



NAIM DAC £2,400

Superb high-end digital converter with a probing, punchy and forensically-detailed sound.



TEAC UD-501 £699

Feature-packed DAC with benefit of DSD playback. Superb sound means little to touch it at the price.



RESONESSENCE INVICTA MIRUS £4,499

One of the most highly spec'd DACs available, with a smooth yet enthralling presentation. Few approach it.



NETWORK PLAYERS

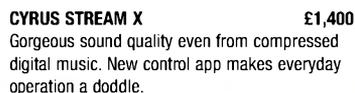
CHORD DSX100 £7,500

Chord's proprietary DAC circuit shines in their top-of-the-range streamer. Hear-through clarity with a sound rich in detail, dynamics and soundstage.



CAMBRIDGE AUDIO NP30 £399

Budget offering from Cambridge offers a great introduction to network streaming.



CYRUS STREAM X £1,400

Gorgeous sound quality even from compressed digital music. New control app makes everyday operation a doddle.



CONVERT TECHNOLOGIES PLATO £2999.00

A network player with amplifier that does it all, including turn LP to hi-resolution digital, and add cover artwork from the 'net.



NAIM NDX £2,995

Clean, incisive and very detailed sound with Naim's traditional pace and timing make this one of the best network music players around.

NAIM ND5XS £2,175

Great sound quality with traditional Naim heft. A wonderful DAC with full 24/192 handling. Only the display could be better.

NAIM NAC-N172 XS £1,650

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



PRO-JECT STREAM BOX RS £1,095

Unusual valve-based streamer/preamp with variety of inputs and a lovely liquid sound. Not the most detailed but compensates with sheer musical verve.

QUAD PLATINUM DMP £2,500

Combined CD/network player has all the usual Quad elements but with added zest and detail that brings life to everything you care to play.



DIGITAL SOURCES

ASTELL&KERN AK100 MKII £569

Portable high-definition digital player with superb sound quality. Punchy and fast.



FiiO X3 £150

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

LOT00 PAW GOLD £1,500

Reference quality sound; it's like carrying your hi-fi in your pocket. Equivalently large too, but stunning headphone quality.



NAIM HDX £4,405

Interesting one-box network-enabled hard-disk music system that gives superb sonics together with impressive ease of use.

NAIM UNITILITE £1,995

A 50W amplifier with traditional Naim heft, a CD player and vhf/fm radio, plus network input and Bluetooth make this a great all-in-one.



PORTABLE SPEAKERS

BAYAN SOUNDBOOK £149.99

Superb design and great sound make for one of the best portable Bluetooth speaker/radios on the market. Not the cheapest – but worth every penny.



IRIVER IBA-50 £69

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

CABLES

BLACK RHODIUM TWIST £71/3M

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.



MAINS CABLES R US NO.27 £95

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



CHORD SIGNATURE REFERENCE £900

Majors on timing, detail and openness. Capable of getting the best from most systems and a recommended upgrade.



TELLURIUM Q BLACK 280/3M

A deep, dark, velvety performer that's nevertheless highly musical, it represents excellent value as mid-price cables go.

TELLURIUM Q SILVER DIAMOND £804/M

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



HEADPHONES

AUDEZE LCD-3 £1,725

A planar magnetic 'phone that offers monitor quality. Strong sound with silky, dark quality that others struggle to match.



B&W P3 £170

Beautifully presented headphones from the loudspeaker specialists. Feed them a good quality source signal and they reward with excellent sound.

JAYS V-JAYS £49

Wonderful little budget over-ear portable 'phones with a clean, clear sound to beat the best of the rest at the price.



NOBLE K10 £1,279

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



OPPO PM-1 £950

Planar magnetic phones with a warm, easy but big bodied sound that draws you in. Need a lot of drive, but deliver superb bass.



SENNHEISER HD700 £599

Tremendously fast with a strong, focussed, lower-frequency range and a firm bass punch.



YAMAHA HPH-MT220 £150

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

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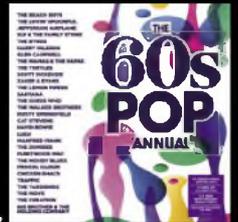
RSD IN A BOX

From the last Record Store Day comes Vampi Soul's (www.munster-records.com) rather lovely looking 7" box set of soul, R&B and garage from labels such as Rampart, Faro, Gordo and Linda. Spanning 1963-1971, bands include The Atlantics (1965, solo star Barry White's old group), The Mixtures (1963), The Majestics (1965, another old White band), The Four Tempos (1967) and Thee Royal Checkmates (1967). Entitled, 'Takin' Care of Business', accompanying the included ten 7" singles is a nicely produced booklet.



DEMON TRIO

Three releases from this UK outfit (www.demonmusicgroup.co.uk). 'Eighties Alternative' is a vinyl-only double disc 30 tracker featuring an interesting array including John Foxx, Ultravox, Pixies, Bauhaus, Art of Noise, Blancmange, Gary Numan and The Bangles.



'The 60s Pop Annual' is another vinyl-only 2LP collection including songs from Santana, The Guess Who, The Turtles, Traffic, The Yardbirds, The Lemon Pipers, The Byrds, David Bowie and The Creation.

Finally, look out for Hank Marvin's 'Hank', his 2014 LP is available on wax for the first time and on blue vinyl!



MAJOR ROCK

From Bear Family (www.bear-family.com) is rock legend Eddie Cochran and 'The Year 1957' 10", two disc, eighteen track gatefold package featuring Cochran's Liberty 1957 studio session work with a very nice booklet penned by the reliable Bill Dahl. Superbly produced.

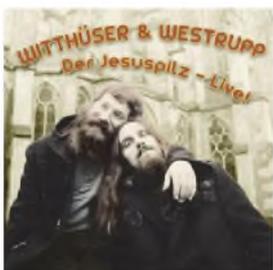


From Spinefarm (spinefarmrecords.com) Orange Goblin's 'The Wolf Bites Back' brings heavy metal with stoner edges and plenty of mature song-writing. Give this one time to sink in.

Featuring The Cult's Billy Duffy, the new LP from The Alarm, 'Equals' (Twenty First Century; thealarm.com) is a paean to rock-pop positivity reflecting lead singer (Mike Peters) and band member wife (Jules) recent cancer battles. It combines raucous rock and backing electronica. A strong outing, in more ways than one.

Krautrock outfit, Witthüser & Westrupp, perform their 1971 concept LP 'Der Jesuspilz - Live!' with prog-folk, organic sounds, added wah-wah guitar, hypnotic vocals and spaced-out thoughts. This is a fine intimate recording of a public rehearsal before an official concert in Essen, Germany. Fits right into the Krautrock canon.

Speaking of Krautrock, Agitation Free's third LP, 'Last' (1976, Wah Wah, www.wah-wahsupersonic.com) combines psychedelic jamming with avant-electronic soundscapes. Classic experimental sounds with melodic interruptions.





THIRD MAN

First up from this US-based outfit (thirdmanrecords.com) is a pair of 'Live At Third Man' releases. The first is from the indie rock band, Pile who offer subdued vocals and a driving beat.

Chain and the Gang uses a similar treatment but the presentation is pure attitude, insolent vocal smears and theatrical cool.

Joshua Hedley's 'Mr. Jukebox' provides classic country complete with lap steel guitar. Offering a pure vocal tone and exemplary diction, Hedley coats his work with a nostalgic purity.

Jack White himself is back with a new LP, 'Boarding House Reach' and, hey, this is New Jack Time. Less blues, more funk, screwed up shouty soul and crunchy psyche-garage. It's all rather lovely.

MUSIC ON VINYL

The label (www.musiconvinyl.co.uk) starts with Thelonus Monster's 'Beautiful Mess' (1992) a sort of Replacements ramshackle rock outfit who finally shook themselves to pieces after this patchy LP.

Machine Head's 'The Burning Red' (1999) offered aggressive metal core and was their best album, at the time. Looser, free wheeling and more relaxed in their violence.

Hardcore/thrash outfit, Vision of Disorder's self-titled LP (1996) offered rip-roaring riffs but strained vocals. The band tried a bit too hard here and it showed.

Ex-Hawkwind man, Robert Calvert's 'Captain Lockheed and the Starfighters' (1974) offers an overlooked and potty concept piece featuring a host of stars from members of Hawkwind (including Lemmy), The Pink Fairies, Brian Eno, Viv Stanshall, Arthur Brown and more!

Also look out for Signal Red's 'Under the Radar' (2018) and Simon Dupree & The Big Sound's 'Without Reservations' (1967).



...AND FINALLY

Reissued from 2004, Max Richter's 'The Blue Notebooks' (*Deutsche Grammophon*; www.deutschegrammophon.com) includes previously unissued tracks over two discs. Post-classical piano hypnosis with electronica additions.

Newly reissued is Chris Rea's classic 'The Road to Hell' (1989; Warner Music), a damning comment on modern society.

Blues Pills guitarist, Dorian Sorriax's solo release, 'Hungry Ghost' (Soulseller) offers a 12", 45rpm EP 4-tracker packed with Americana-infused vibes with a Neil Young-like delivery.

Thirsty's 'Nomad' (*Thirsty Music*; www.thirstymusic.com) includes ex-Quireboys within the line-up. It offers lazy, weary, slightly snoozy and just a bit sleazy blues rock. Pass the whisky.

From LWVW, '3PE' (*Leaf*, www.theleaflabel.com) is Luke Wyland asking 'What if?' in terms of tones, space, rhythm and melody. It's almost a real-time research project with an improv sense.

The Record Company's 'All of This Life' (Concord) adds Americana moods to a blues template and a rocking beat. This is rock on a dusty road.

From Arp, 'Zebra' (*Mexican Summer*; mexicansummer.com) is a 2LP 45rpm release with a slight trip hop-esque vibe folding jazz beats, electronica, cool beats with a fresh Balearic breeze blowing through the lot.



Black and Blue



Blue Aura now has a phono stage for its V40 integrated – but the PH1 can be used with any amplifier, as Martin Pipe demonstrates

A couple of years or so ago, we glowingly reviewed Cambridge-based Blue Aura's Blackline V40 – an affordable low-power (10 watts per channel) stereo valve amplifier with Bluetooth and USB connectivity. But although this versatile little ECC82-based design also boasted a line-level analogue input, vinyl wasn't catered for. Since the V40 started its life on the drawing board, interest in those magic black discs has increased. Blue Aura realised this, and an external upgrade was the obvious answer. "To be honest," the company's founder Nick Holland told me, "a matching phono stage has been requested by

V40 owners for some time – and so it made sense to add one to our Blackline range".

The fruit of his labour is the modestly-priced PH1, a simple wall-wart powered unit that caters for MM and MC cartridges. Its line level output can of course feed any stereo amplifier without phono input, and not just the V40. A prototype version of the PH1 was previewed in a system built around a Clearaudio turntable and other Blue Aura components at last year's Indulgence show, and the company "was greatly enthused by visitor comments". It's aimed not only at "newbies", but "the more discerning listener" too. Interestingly, Blue Aura may benefit

from the vinyl renaissance more than some hi-fi brands because, as Holland revealed to me, it supplies product "to independent vinyl stores whose customers are less hardware-orientated and more interested in the sound...a large percentage of customers are new to 'good quality' audio"! Devices like the PH1 can be used as an upgrade; Blue Aura reckons that theirs "will offer an improved performance, as most built in phono stages are not of high quality...from the testing we have conducted, the PH1 sounds better than built in preamps". Although it's tube-free, the PH1 is – as you would expect – a good visual match for the V40 with its glossy front panel

and blue LED. That's the uncluttered face presented to the world by the PHI; the backside is its business end. There you'll find the DC power input, together with one of the tiniest rocker on/off switches I've ever seen, and a ground terminal.

Alongside them are the input and output terminals – both using standard RCA sockets – and a switch that flips between moving-magnet and moving-coil cartridges. The latter has more gain (60dB) and a lower input impedance (100 ohms or so) than the former (47dB and approximately 50 kilohms respectively) to reflect the very different requirements of moving-coil carts. As we're in budget territory, there are no internal jumpers to set gain and cartridge loading – Blue Aura have instead gone for the best compromises. Asked about cartridge recommendations, Holland mentioned that Blue Aura have "used Ortofon, Rega and the Clearaudio Concept MM and MC models", adding that "Clearaudio was the most revealing, but given the cost I guess that is to be expected".

Inside, construction is neat. A mix of through-hole and surface-mounted devices populate a decent-quality PCB. The main audio components are ST MC44078 audio-grade dual op-amps; capacitors and resistors in their feedback paths are used to provide equalisation that follows the RIAA curve. Fairly standard practice, in other words - many on-board phono stages employ a similar configuration. However, you'll seldom see parts of the high grade seen here in built-in preamplifiers – which, while we're at it, seldom makes provide for MC cartridges. Blue Aura's designers seem to have specified a single-rail configuration – meaning the audio ins and outs are capacitor-coupled. Maybe that's why a timed relay is used to provide a power-on mute function, thereby avoiding audible 'thumps'.

SOUND QUALITY

I used two turntables – a Systemdek IIXE900 belt-drive fitted with Alphason Opal arm and Denon DL304 MC cart, and a Technics SL1200 Mk2 direct-drive with Stanton 500 (DJ, spherical tip) or Audio-Technica AT440MLb (audiophile, microline tip) MM cartridges. With these very different units and an extensive vinyl collection the basic idea was to put this phono stage through most of the scenarios it is likely to encounter in the 'real



Internal construction is of a high standard, using a mixture of surface-mount and 'through-hole' components. To the bottom-left of the preamp can be seen the power-supply regulator circuitry. The PH1 uses small low noise op-amps – ST MC44078s. To avoid switch-on thumps as the circuits stabilise their d.c. operating conditions Blue Aura has included a relay muting system.

world'. The chosen 'table was fed, via the PHI, to one of the line inputs of an Arcam A49 integrated amp and thence to Quadral Aurum Wotan VIII speakers or Focal Utopia headphones.

I started off with the Systemdek. Via the PHI, its Denon yielded an

bass drum and footstomps of Cecilia pounded along relentlessly, while The Boxer's bass harmonica enjoyed a prominent role. I did note a little 'cone-flap', which suggests to me that infrasonic filtering is not a PHI feature. A lack of 'early roll-off' is undoubtedly good for bass, but be

"Every nuance of the piano was evident and the bassline had depth."

expansive and detailed sound with no sensitivity issues (in other words I didn't experience distortion, or have to turn up the volume). A 1970s CBS pressing of Simon and Garfunkel's Bridge over Troubled Water was certainly an enjoyable listen, with great imaging and dynamics although I could hear an occasional trace of vocal sibilance

However, every nuance of the piano was evident and the bassline (played with two guitars!) had depth. Yes, the PHI is capable of excavating your record's low end; the prominent

wary of warped records...

There is however plenty of detail in the presentation. I could clearly follow the xylophone in Cecilia's background, as Paul Simon plays a fast sequence of random notes. Similarly, with Keep The Customer Satisfied the Hammond organ was resolved accurately – but not at expense of the other contributions. The string section of So Long, Frank Lloyd Wright was meanwhile given the lushness it deserves. I then switched to Klaus Schulze's Audentia, a portrait of a life painted with an

hear the music . . . not the equipment

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- WDPSU3 High performance choke power supply
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amalgam of analogue and digital synthesisers.

But there's more to this double-LP than electronics, the layers of which are distinguishable here, as one can pick out a cello in the mix. The pulsing synthetic percussion here sounded maybe a little forward and bright – indeed, with all of the cartridges I tried (but especially the AT) I noted a slight treble emphasis. Switching to the Technics/AT, I found that the bass synth of Kool and the Gang's Street Kids was tight; the brass parts were – thanks to that treble character – given bite. The track's rhythms flowed naturally.

A play of George Benson's Masquerade revealed some delicate percussive flourishes underlying Benson's jazz guitar and the piano groove.

Switching to classical (a 1958 EMI stereo recording of the Berlin Philharmonic performing Dvorak's New World Symphony, under the baton of Rudolf Kempe) yielded a palpable orchestral space in which players were positioned. The span of tonal colour was done justice, and detailing is such that I could even perceive some fidgeting and seat-shifting during quiet passages.

A Harmonia Mundo LP of historic European organs fared well too, and it was possible to identify

each instrument through its unique timbres.

Finally, I swapped headshells and the Stanton became part of the system. I noticed some lower-frequency colouration with the Simon and Garfunkel album, but this sort of cartridge is more at home with a very different form of music (it's also great for spinning seven-inch singles). A twelve-inch of heavily-modulated breakbeat techno – The Scientist's Exorcist – came across with plenty of energy, and its massive bassline intact. Better still, overload distortion was mercifully absent.

CONCLUSION

Musically speaking, the PH1 gave the best possible account of itself with

the Systemdek/Alphason/Denon combo – no great surprise there – but a budget phono stage is unlikely to be used with a £400+ moving-coil cartridge! In practice it's more likely to be partnered with an MM design, and the PH1 was found to work well with both the Audio-Technica and Stanton cartridges. The lack of 'tweaker' does mean the stage cannot be optimised completely for a given cartridge, but it the upside is better long term reliability through lack of switch contacts. The PH1 is a neat little unit that will slot into any system where, with an MM cartridge, it offers more gain than most others, suiting low output high quality types such as expensive Audio Technicas. Low, low price plus high ability makes the PH1 a real bargain.



Standard RCA sockets are provided for signal input and output. There's also a binding-post for ground – if you're getting hum, connect the chassis of your turntable here. A small slide switch changes characteristics to suit MC or MM cartridges. There's a tiny power rocker switch too, on a 12V d.c. input socket that connects to a wall wart supply.

MEASURED PERFORMANCE

The usual gain values for silicon chip phono stages like the PH1 is x100 for MM and x1000 for MC. The PH1 gave a high but useful x222 (47dB) for MM (moving magnet) cartridges and x1000 (60dB) for MC (moving coil) cartridges.

The high gain value for MM helps it suit high quality, low output types.

The MC gain value is fine except for very low output specialised designs where more gain is needed.

Overload levels were normal enough, being set by gain versus output ceiling – a reasonably high 8V. That computes to 36mV in for MM and 8mV in for MC, which was confirmed by measurement – more than enough to avoid overload.

Frequency response measured flat via both MM and MC settings, our analysis showing MM. There is no warp filter to suppress loudspeaker cone flap, so warped LPs are not catered for – but conversely the deep

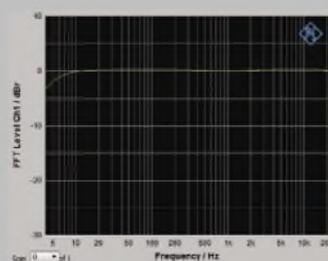
subsonics of LP get through.

Input noise was a bit up (+4dB) with MC – 0.16µV where 0.1µV is possible nowadays., but satisfactory for a budget preamp and suitable for high output MCs. At 0.2µV input noise (e.i.n. IEC A weighted) with MM was low, but here thermal (Johnson) noise from MM cartridges dominates in any case.

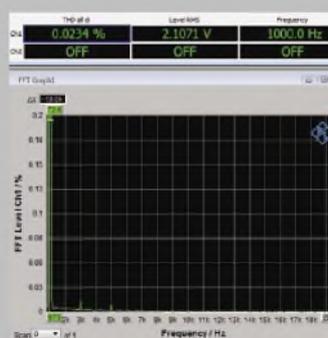
The PH1 measured well in all areas. It is a simple but clean design without drawbacks. **NK**

**Frequency response (-1dB)
7Hz-20kHz
Distortion (10kHz, 1W) 0.01%
Separation (1kHz) 89dB
Noise (input noise, MM, MC)
0.2µV, 0.16µV
Gain (MM, MC)
x222 (47dB), x1000 (60dB)**

FREQUENCY RESPONSE MM



DISTORTION



BLUE AURA PH1 MM/MC PHONO STAGE £159



EXCELLENT - extremely capable

VERDICT

A simple, neat phono stage with detailed sound.

FOR

- energetic, musical and surprisingly revealing
- very easy to set up and use
- looks good!

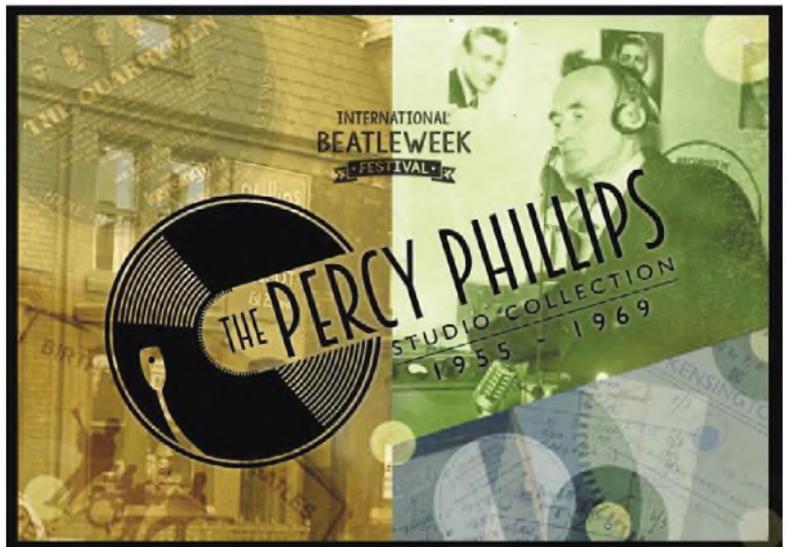
AGAINST

- gain and loading 'fixed'
- could sound a little bright
- no effective warp filtering

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Percy Phillips: The Kensington Years

It was sixty years ago that The Beatles made their first ever recording as The Quarrymen – and they did it in a terraced house run by the incredible ‘backstreet engineer’, Percy Phillips. Paul Rigby talks to his grandson Peter Phillips about Percy’s life and times.



He was a one man industry, fascinated by technology and its advancements. He started The Beatles on their recording career and could have easily have been Liverpool’s equivalent of Sun Studios. Percy Phillips worked from a cramped terraced house, situated just outside the heart of Liverpool’s city centre while Sam Phillips began Memphis Recording Service, in an eighteen by thirty foot room at 706 Union Avenue.

Sun Records developed and ended up spawning stars such as Elvis Presley, Johnny Cash, Carl Perkins and Jerry Lee Lewis. Kensington Records (a fully paid up member of The Association of Professional Recording Studios, no less) didn’t develop at all in size and stature – but began life by being the first studio ever to record The Beatles, Billy Fury, The Swinging Blue Jeans, Johnnie ‘Guitar’ Watson and...

Ken Dodd (how very Liverpool to throw in a spanner, as a laugh).

In short, while the USA had Sam Phillips, the UK had Percy Phillips. Yet Percy missed out on a potential empire. Who knows who else would have been ‘signed up’ if Percy had established himself as a forthright musical entrepreneur like Sam Phillips, actively promoting his new recordings? Can you imagine the pull on new talent looking to sample a drop of the magic that spawned the Gods of rock and pop, in the same way that later bands would launch a pilgrimage to Abbey Road?

The problem was age. Sam Phillips was then a young man, just as much into the music as his recording artists, while Percy – born earlier in 1895 – preferred Hank Williams and Harry James. “Percy used to call the new rock’n’roll groups ‘Blink Bands’. That is, ‘Blink and you’ll miss it’. He thought they were all a fad”, said Percy’s grandson Peter Phillips.

Percy Phillips was a self-taught engineer, taking over a Raleigh bicycle dealership in 1927 and then, later, motorbikes. When he moved to 38 Kensington Road, a terraced house in Liverpool, he converted the house into a family business, opening a battery charging depot – of the lead acid type.

The house he lived in was three rooms deep. Percy had a record shop in the front room, his recording studio in the middle room and the back room was the family kitchen and dining room. “He would obtain boxes of records from the local American airbase and then sell them in his shop”, said Peter.

It was 1955 that Percy had a brainwave. “My Dad, at that time, was on a course with EMI, training to be an electrical engineer”. Percy visited him in London and, while he was there, bought a professional studio for £400 - basically a year’s earnings back then. “It was an MSS Recording Studio that EMI and also



Not all records cut at Kensington were music based. Often social events were recorded for posterity.



Peter Phillips holds an acetate cut in Percy Phillips' studio and Percy's studio logbook.



The HMV microphone (left), around which the future Beatles made their very first recording.

the BBC used at that time".

STUDIO DETAILS

The MSS Recording Studio was a Master Sound System, consisting of a MSS CLED3/3 disc cutting lathe with MSS cutting heads, FC-1 1/4"

reel-to-reel tape deck, amplifier with built-in speaker powered by a 6V6 valve and a pre-amp mixer attached.

This list underlines the fact that Percy Phillips was not using sub-standard gear at this time. Some observers may have looked upon Percy's place of work and wondered if this guy was a bumbling hobbyist, fumbling around with toys. Not a bit of it. In fact, when he bought the studio, Percy Phillips owned state-of-the-art studio facilities.

Percy also bought two microphones, a HMV 2350H, made in 1949. The other mic was a Reslo RV Black ribbon model. He also had a reverb unit, "...an upturned tin bath in the cellar with a microphone and speaker in it!" said Peter. "There was a cable going up through a little hole he drilled through the floor".

In 1963, he upgraded the tape deck to a three-headed 1/4" Vortexion WVB reel-to-reel. "Joe Meek also had one of these", said Peter. "Percy also upgraded the reverb unit to a Grampian reverb unit". A Type 636 (as also used by Lee "Scratch" Perry of the Upsetters, would you believe)".

RETIREMENT

As the Kensington label progressed through the sixties its music never moved into the psychedelic era, "...more brown and beige than psychedelic", said Peter. Instead, Country music became more prevalent at Kensington, along with folk songs from local artists including Steve Stewart. One of the last discs Percy cut was a cover version of Simon & Garfunkel's 'Cecilia'.

Percy closed his studio in 1969 but the record shop lasted until 1974.

He retired then. Percy lived a quiet retirement, although he was troubled by the effects of being gassed in WWI, which damaged his lungs. He died at the age of 88, in 1984. His wife died at 97, in 2007. "When we sold Percy's equipment she received the cash so her final years were rather more comfortable", said Peter.

Percy Phillips never received due recognition for his achievements during his lifetime which is why Peter Phillips has created a new plaque to commemorate Percy.

Also "We've created two double CD packs, four CDs in



The MSS CLED3/3 disc cutting lathe with MSS cutting heads.



FC-1 1/4" reel-to-reel tape deck.

total and one double vinyl package, produced as a 10" special edition, limited and numbered to 500 copies, via Speakeasy Recordings, entitled 'The Percy Phillips Studio Collection', spanning 1955-1969. It will be launched at this year's Beatles Convention, within the Adelphi Hotel in Liverpool on 26 August 2018. There will also be an extensive Percy Phillips exhibition, while the new plaque will be unveiled at the launch event by Julia Baird (John Lennon's sister) and Carol Higgins (Percy Phillips' daughter)".



In addition to the CD releases, 26 August 2018 sees the release of the archive on limited-edition vinyl.



Expect to see two double CD packs, four CDs in total packing in the Percy Phillips' archive.

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DECO AUDIO

THE FIRST TIME

A variety of artists recorded with Percy Phillips for the very first time. Here is a small selection from Percy's logbook, as detailed by Peter Phillips.

Johnny Guitar

"This disc was made in 1957, the first rock'n'roll record recorded by Percy, a cover of Little Richard's 'She's Got It'. It lasts for one and a half minutes. He was with Paul Murphy on guitar. Johnny Guitar (actually Johnny Byrne) was a famous guitar player in Liverpool and was a member of Rory Storm & the Hurricanes, Ringo Starr's old band."



Ken Dodd

"He appeared in 1957. He sang and my grandma played the piano. In fact, she played the piano on a lot of the recordings. He recorded 'Tonight Beloved', which has never been heard before. Grandpa loved Ken's singing voice. In fact Ken was a friend of my Dad's and Grandpa was a pal of Ken's Dad who ran the coal yard in Knotty Ash."

Everton Football Club

"The team had just won the league and I think the club answered a newspaper advertisement that Percy ran. The entire team appeared with a professional singer name John Dunbar and they recorded a pop song called E-V-E-R-T-O-N."



CONTACT:

Peter Phillips is co-founder of 'Shamha Vibration CIC', providing African drumming workshops and cultural events for local communities in South London: www.shamhavibration.org.

Also look out for:
www.phillipsacetates.com
www.percyphillips.com
www.speakeasyrecordings.net

The Quarrymen

"John Lennon, Paul McCartney and George Harrison all stood in a circle around Percy's HMV ribbon mic, in the middle of the room on a stand, while Colin Hanton was next to the fireplace, sitting at his drum kit with John Lowe playing the piano, situated against the wall.

"Apparently The Quarrymen couldn't afford to record onto tape. You would normally pay seventeen shillings and six pence to record to tape and then, if you were happy with the tape recording, that would be transferred onto disc while you were there. The Quarrymen could only muster eleven shillings and three pence for a direct-to-disc recording. Grandpa would hold up his hand in readiness. Then, when the time was ready, he'd drop his hand, put the cutting head onto the disc and the hand started playing.

The Quarrymen did that for both sides of the record. 'That'll Be The Day' and 'In Spite of all the Danger' were the tracks. The latter song had never been played live. Paul McCartney had written it. On the disc, Percy has written McCartney/Harrison because George wrote the guitar solo.

"This was the first record they ever made, the first time they'd visited a professional studio, it was the first of just two records they ever made in Liverpool and the only recording credited to McCartney/Harrison. They did come back in 1960 to record a second disc, a one-sided 7" single, an early version of John Lennon's 'One After 909' but that disc has disappeared. They were The Beatles by then".

Billy Fury

Ron Wycherley (aka Billy Fury) came in with his acoustic guitar in 1958.

I loved what Percy did with the recordings. It's got five songs on the acetate. Ron used that disc to get his contract with Larry Paines. This is why Side A is so poor in quality because it was regularly used to promote 'Fury'. They didn't listen to Side B.



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MOTOWN'S MAGIC

A book on the history of Motown by Graham Betts,
reviewed by music expert Paul Rigby.

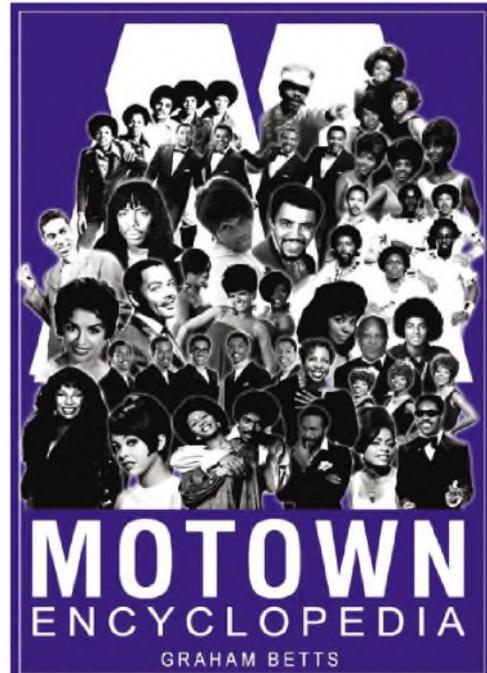
MOTOWN ENCYCLOPEDIA

Author: Graham Betts

Publisher: AC Publishing

Price: £17.99 (paperback)

£3.77 (Kindle)



One of the iconic record labels from the sixties and beyond, Detroit-based Motown was the host and stable for an array of legendary singing talent from Marvin Gaye and Diana Ross to Stevie Wonder, The Temptations and The Jackson 5.

A rack of hits were produced there with a unique sound that included 'Baby Love', 'My Girl', 'Signed Sealed Delivered', 'I Heard It Through The Grapevine', 'ABC', 'Tears Of A Clown' – and so many more.

This book is a true encyclopedia, spanning 586 pages. By that, I mean it is formatted in classic fashion, moving from letters A through to Z and cramming anything and everything relating to each letter within.

That means biographies of all 684 artists who had releases on Motown and their various imprints, as well as biographies of sixteen musicians, twenty-three producers, nineteen writers and thirteen executives. There are also details of the fifty or so labels that Motown owned, licensed to or licensed from the label. All nine films and the seventeen soundtracks are also featured.

But there's a lot more – the book doesn't rest there. Every Motown single, album and EP that

made the Top Ten of the pop charts in either the US or UK also have their own entries.

There's details of 222 singles, eighty-four albums and five EPs.

More? How about thirty-six other entries, covering such topics as the Hollywood Walk of Fame, the Motown Revues, Grammy Awards and the most played Motown songs on radio.

This is a hefty and thorough book that crams in 1,178 entries.

An absolutely amazing piece of work that I have yet to see bettered as a work of Motown reference, even those of you who consider yourself Motown experts will be enlightened by a host of rare nuggets within these pages which delve deep into music lore. For example, those hardcore 7" single collectors who look out for rarities from the likes of Tempo and Topper may not know that the man who launched those labels, Dave Hamilton, was one of the first musicians Motown owner, Berry Gordy, ever used in the studio (he played on Jackie Wilson's single 'Lonely Teardrops, for example).

The only problem I have with the book is the paper-based version. Like all reference books of its type, the paper-based book is a chore to search when quickly seeking a much-

needed fact.

Let's take our friend, Dave Hamilton. Apart from his own entry in the book, Hamilton appears in three other entries in the same tome. If you have the paper-based book you might never know that. Load up the Kindle version and search under Hamilton's name and, behold, it takes a couple of seconds to show Hamilton appearing in the early Berry Gordy label imprint, Workshop Jazz. The imprint released eleven LPs and survived for two years but Gordy never promoted it, so not many people were aware that these records even existed at the time. That's still the case, meaning rarities like Workshop Jazz can now come to the fore, available for both Motown and jazz fans to seek out.

Apart from the enhanced search capabilities offered by the Kindle version it is also more user friendly if used on the move – at a record fair or inspecting a collection. The Kindle version can be of real help here when trying to quickly find more information for a potential purchase.

In short? A great book. My advice? Buy both - the print version for the reading experience and bookshelf, the relatively cheap Kindle version for its search capabilities.

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VERTEX AQ SILVER SOLFONN TONEARM LEAD	DIS/DEM	£795
MICHELL ISO PHONO STAGE & HERA PSU	EXCLT	£299
VAN DEN HUL MC D 501 SILVER HYBRID TONEARM CABLE (SME V ETC)	EXCLT	£195
OKKI NOKKI RECORD CLEANING MACHINE 1 OWNER	BOXED	£249
THORENS TD160 SUPER	VGC	£225
VOYD VALDI AND HUGE PSU 1 OWNER FROM NEW	PLEASE	
ANTIQUE SOUNDLABS MINI PHONO & PSU (VALVE)	DEM	£249
GRAHAM SLEE FANFARE & PSU-1	EXLT	£249
NAD PP-2 PHONO STAGE	MINT/BOXED	£99
CARTRIDGE MAN WEIGHT GAUGE	DIS/DEM	£149
DPA/DELTEC MINUET PHONO STAGE NEW OLD STOCK	MINT/BOXED	£275
ORTOFON KONTRAPUNT-B 1 OWNER LIGHT USE	EXCLT/BOXED	£349
ORTOFON 2M BLACK 1 OWNER LIGHT USE	EXCLT/BOXED	£225

DIGITAL

XINDAK 20th ANNIVERSARY TRANSPORT & 32 BIT DAC (SUPERB!) ONE OWNER FROM NEW	MINT/BOXED	£1995
CYRUS X-DAC/PRE AMP & PSXR PSU ONE OWNER	EXCLT/BOXED	£1450
PERPETUAL TECHNOLOGIES P-1A/P-3A MODRIGHT SIG.II DAC & MODWRIGHT P-3B MONOLITIC PSU EX.DEM	EXCLT/BOXED	£1150
PERPETUAL TECH.P-1A NEW OLD STOCK	EXCLT/BOXED	£395
PERPETUAL TECH P-3A MODWRIGHT SIG.II DAC NEW OLD STOCK	EXCLT/BOXED	£395
DENON DCD 2010AE SACD/CD PLAYER ONE OWNER	MINT/BOXED	£995
MUSICAL FIDELITY KW DM25 DAC (SUPERB)	MINT/BOXED	£895
VACUUM STATE JLTI MODDED MARANTZ SACD PLAYER (£1300)	NOS/BOXED	£695
TRICHORD DIGITAL TURNTABLE/ACOUSTIC RESEARCH ISOLATION	VGC	£450
KENWOOD DP-7090 CD PLAYER (8 X BURR BROWN CHIPS) 1 OWNER	VGC	£275

ARCAM R-DAC	EXCLT	£149
TECHNICS SLP-S7 REMASTER CD PLAYER ONE OWNER	EXCLT/BOXED	£295
TECHNICS SLP-1200 AND REMOTE CONTROL PRIVATELY OWNED	EXCLT	£695
INCA TECH KATANA	VGC	£395
THETA CARMEN CD/DVD TRANSPORT 1 OWNER	EXCLT/BOXED	£695
THETA DS-PRO GEN III COAX AES/EBU/AT&T RCA/BAL.OUT 1 OWNER	EXCLT/BOXED	£750
PINK TRIANGLE ORDINAL (GETTING RARE)	GC	£349
PIONEER CLD-D925 LASER DISC/CD 1 OWNER LOW USE	MINT/BOXED	£299
TEAC CD-RW890 CD RECORDER/PLAYER 1 OWNER	EXCLT/BOXED	£75
PIONEER PDS-702 LEGATO LINK CD PLAYER	VGC	£99
MICROMEGA STAGE 2	MINTY	£169
KENWOOD X-10D HEAVYWEIGHT TRANSPORT 1 OWNER	VGC	£350
HARMON KARDON HD-970 CD PLAYER DEM USE ONLY	MINT/BOXED	£165

LOUDSPEAKERS

KEF REFERENCE 1 AND DEDICATED STANDS 1 OWNER (5.5K)	MINT/BOXED	£3450
PMC.TWENTY/24 FLOORSTANDERS 1 OWNER FROM NEW	MINT/BOXED	£1795
PMC TLE-1 POWERED SUB 1 OWNER FROM NEW	MINT/BOXED	£995
MBL 300E FLOORSTANDERS PIANO BLACK (10K)	EXCLT	£2750
WILMSLOW PRESTIGE FAC. BUILT GRANITE PLINTHS 1 OWNER	EXCLT	£1550
SONICS BY JOACHIM GERHARD (AUDIO PHYSICS) AMERIGO (5K?)	DEM/BOXED	£1850
BOLZANO VILLETTRI BV3003 & BV SUB. FANTASTIC!	SALE!	£2795
ART AUDIO PRECISION MONITOR (PIANO BLACK 6K+)	DEM+1	£1250
AURUM CANTUS VOLLA	EX.DEM/BOXED	£1250
MARTIN LOGAN DECENT SUBWOOFER	GC	£1150
SPENDOR LS35A MATCHED PAIR	VGC	£895
INNER SOUND ISIS ELECTROSTATICS	VGC	£995
POLK RTI A1 STANDMOUNTERS 1 OWNER FEW HOURS USE	MINT/BOXED	£249
NHT 1.8 STAND MOUNTERS	EXCLT/BOXED	£325
MERIDIAN M2 ACTIVES & DEDICATED STANDS ABSOLUTE COLLECTORS CONDITION PROBABLY THE BEST AVAILABLE 1 OWNER FROM NEW	BOXED	£795
NHT 3.3 FLOORSTANDERS (SEE STEREOPHILE REVIEW!!)	EXCLT	£1395
PODIUM 1s PANELS VERY LOW USE (£6000? NEW)	1 OWNER	£1250
AUDIOSTATIC ES-100 ELECTROSTATICS	EXCLT	£995
ALR JORDAN CLASSIC 2 (BIRCH VENEER £800+)	NEW/BOXED	£450
AURUM CANTUS MUSIC GODDESS (£2500)	DISPLAY	£1250
FOCAL ARIA 906 (FEW HOURS USE ONLY)	MINT/BOXED	£550
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CHECKED AND SERVICED PROBABLY THE BEST/NICEST PAIR ON THE PLANET		£2450
TANNOY CPA-12 MONITORS	EXCLT	£995
AMPHION NEON FLOORSTANDERS EX DEM PAIR	EXCLT	£795
SYSTEM AUDIO SA-1750	VGC	£349
MONITOR AUDIO BRONZE BW-10 SUBWOOFER 1 OWNER	EXCLT/BOXED	£275
MONITOR AUDIO STUDIO 15 ROSEWOOD	GC	£350

TUNERS/STANDS/MISC.

NAKAMICHI /ST7E TUNER ONE OWNER FROM NEW	EXCLT	£295
OKKI NOKKI RECORD CLEANING MACHINE 1 OWNER	BOXED	£249
BEN DUNCAN PURE POWER 1KW P-100 POWER TRANSFORMER 1 OWNER	EXCLT	£375
MUSICAL FIDELITY X-CANS V3	MINT/BOXED	£175
BLACK RHODIUM 1.2 METRE POWER CORDS	NOS	£99
TEAC V-5000 REMOTE CASSETTE DECK 1 OWNER	EXCLT/BOXED	£195
CREEK OBH-21SE HEADPHONE AMP	EXCLT	£149
TARGET WALL STAND	EXCLT	£99
APOLLO WALL STAND	NEW	£79
PARTINGTON SPEAKER STANDS	EXCLT	£125
SOUNDSTYLE SPEAKER STANDS	EXCLT	£99
OPTIMUM PREMIUM 6 SHELF OAK/GLASS STAND	EXCLT	£249

INTERCONNECT

TOWNSEND DCT RCA 1 METRE PAIR	DIS/DEM	£225
HOVLAND PINCUS G3 2 METRE PAIR XLR	DIS/DEM	£275
ABBEY ROAD REFERENCE 1.5 METRE PAIR EICHMAN PLUGS	DIS DEM	£375
ABBEY ROAD REFERENCE 1.5 METRE PAIR EICHMAN PLUGS	DIS DEM	£375
ABBEY ROAD REFERENCE 1 METRE PAIR EICHMAN PLUGS	DIS/DEM	£345
ABBEY ROAD INTERCONNECT 1 METRE RCA PAIR	DIS/DEM	£199
MADRIGAL CZ GEL 1 METRE XLR PAIR	DIS/DEM	£249
AVID SCT STANDARD BLUE 1 METRE RCA	NEW/BOXED	£249
CHORD INDIGO 1 METRE RCA 2 PAIRS BELIEVED UNUSED MINT	EACH PAIR	£399
OPTIMUM PREMIUM OAK 6 SHELF STAND	EXCLT	£249

LOUDSPEAKER CABLE

CHORD CO.EPIC SUPER TWIN 3 METRE PAIR	DUE IN	TBA
CHORD CO.EPIC SUPER TWIN 2 METRE PAIR	DUE IN	TBA
ABBEY ROAD REFERENCE 5 METRE PAIR	DIS/DEM	£599
HOVLAND NINE LINE 2.5 METRE BI WIRE PAIR	DIS/DEM	£350
GOERTZ M12 VERACITY SILVER SPADES 7.5 METRE PAIR BOXED	DIS DEM	£450
TRANSPARENT MUSIC WAVE BI WIRE 7.5 PAIR!!	VGC	£575
MIT MH-750 8 METRE PAIR!!	EXCLT	£1195

free reader Classifieds

TERMS AND CONDITIONS: Only one advert per reader. No Trade adverts. This section is strictly for readers selling secondhand hi-fi equipment only. Maximum length per advert is 30 words. Adverts over 30 words will not be accepted. Telephone numbers and E-mail addresses are treated as one word. Model numbers are treated as one word i.e. Quad 303 = two words. Email your advert to; classifieds@hi-fiworld.co.uk or fill in the form on page 97 and post it to Hi-Fi World Free Readers Ads, Studio 204, Buspace Studio, Conlan Street, Notting Hill, London W10 5AP. Sorry, we cannot accept adverts over the telephone. The Publisher reserves the right to judge submissions.

TECHNICS SL6 turntables (two), SL2 (one). Pioneer CT979 cassette deck Reference Transport, need belt. All offer. Goodmans Maxim speakers, £50. TDL Nautilus speakers, cherry, mint, £60. Tel: 01708 457 691

WIREWORLD STRATUS 5 mains lead, 2 metres, £30. Black Rhodium Symphony XLR interconnects, £80. Isotek Mainline filtered mains lead, £80. Tel: Stuart 07555 263 931

WANTED WORKING or non working Quad 44 preamp serial no. 23000 onwards. Contact Mike 01758 613790.

GARRARD 401 chassis £749, Rega RB300 tonearm (rewired) £279, Goldring 1042 cartridge (used, boxed) £249, Plinth for 401 £199, power supply for Class A amps £300. Tel: 0207 499 8729

REGA RX1 standmount speakers in cherry, 1 year old in excellent condition (£798), £425. Sony MDR Z7 headphones, 18 months old, pristine and barely used (£550), £275. Atlas Ascent Ultra digital coaxial i/c [ed plugs], 1m, virtually unused (£224), £125. All items boxed in original packaging. Tel/text Richard on (07772) 711432 or 01494 269889 (Bucks) or Email: richard.schofield@kcl.ac.uk.

CABLES: ATLAS Equator Mk3 1m interconnect £60, Missing Link Alaquia interconnects 2x50cms, £50 each, 1x75cms £75. Yulong A100 Class A headphone amp £150. Tel: Andy 07508035671 or Email: andy.aldridge@gmx.com (Cumbria)

ONE PAIR Quad 2805 speakers. £2300 ono. Smoker. Tel: 01324 824 991

AUDIO RESEARCH VT 60 power amplifier (silver) near mint and boxed £569 ono. Tel: 02392453382 (Hants).

GREAT SOUNDING highly reviewed Class D amplifier in upgraded SE Japanese case. See here for reviews and users' experiences <https://www.nordacoustics.co.uk/feed-back> £1500 Tel: David 07793749178 (London)

TANNOY BUCKINGHAM Loudspeakers. Fully re-foamed and are fully working and have been with same owner from new! Good condition and sound fantastic. also, Tannoy Berkeley in near mint condition with re-coned drivers and crossovers supplied by Lockwood audio. Sound amazing!! Also from same owner. Open to serious offers please on each pair. No dealers please! Based in South London. Tel: 02084060807 Mob: 07402780424

HI-FI CHOICE: The Collection Series from 2004 to 2011 inclusive offering in-depth reviews of the world's finest (high-end) equipment. £35 for the set. Collection only-Cheshire Area. Tel: Ray 07708431963

PHILIPS CD200, plays with Instructions Folder and Service Manual. Collection only, Staines, £150 for one of the first CD players purchased in May 1983, please contact Paul on 01784 459349.

TROELS GRAVESEN Illuminator 4 Speakers. World class sound from Troels Gravesen's personal speakers see <http://www.troelsgravesen.dk/Illuminator-4.htm> for pictures of these speakers. Delivery included £6,500 07793749178 (London)

HUMAX FREESAT, Russ Andrews upgraded PVR with 1Gb hard drive £150 in original box. Stax SRM-006T Energiser and SR-404 Signature headphones £696, Arcam DVI37 DVD player £120. Tel: 01704 628968 or 07968769595 (Southport)

ANYONE IN the hi-fi community wishing to sell a vgc near mint example of this Aura TU 80 tuner preferably with box and manual. I would be interested to buy. Tel: Keith 07919061178 or Email: keijab@googlemail.com.

CANADIAN GUTWIRE Synchrony 3 metre length speaker cables. Superb, totally new condition. £700. (Synchrony Interconnects available separately). Email; stephen.adolphus@gmail.com Tel: 07787 574784.

A PAIR of fully working and tested and refoamed Tannoy Buckingham's (not the monitors) in good condition for its age, original owner from new. Sound fantastic. Open to realistic offers. Tel. 020 8406 0807 Mob. 0740 2780 424

HUYGEN STANDS for Snell/Audionote K's, £250. Kelvin Labs integrated, £350. Rowe Ami valve power amp, 15 watts, £295. Leak Troughline mono, mint, reasonable offer. Tel: 0113 255 9475

GARRARD 401 chassis £749, Rega RB300 tonearm (rewired) £279, Goldring 1042 cartridge (used, boxed) £249, Plinth for 401 £199, power supply for Class A amps £300. Tel: 0207 499 8729

CLASSIC SYSTEM 30 years old. Planar 2 Ely's, Nait 2, Linn Kans. All working. You just need at least 3.5 metre stereo pair NAC A5 speaker cable. Offers. Tel: 0121 476 8507

ONE FAIR Quad 2805 speakers. £2300 ono. Smoker. Tel: 01324 824 991

NEXT MONTH

OCTOBER 2018 ISSUE

VINCENT SV-237MK CLASS A HYBRID STEREO INTEGRATED AMPLIFIER.

Vincent (Germany) hybrid amplifiers, with valve preamp stage and transistor output have a great reputation for sound quality. Their new SV-237MK is an update with improved circuitry of the popular SV-237. With a claimed 150 Watts per channel and digital inputs – even tone controls! - it's more than a little unusual. Don't miss our review next month to see just how well it works.



Also, we hope to bring you –
MCRU NO.75 MAINS CABLE
HANA SL MONO MC CARTRIDGE
ECLIPSE TD508 MK3 SPEAKERS
SCHEU ANALOG CELLO CLASSIC
SHANLING MO PORTABLE MUSIC PLAYER
ACOUSTIC ENERGY AE309S LOUDSPEAKERS
QUAD ERA-1 PLANAR DIAPHRAGM HEADPHONES
CHORD SIGNATURE REFERENCE SPEAKER CABLES
...and much more.

This is a selection of what we hope to bring you, not a complete list. We regret that due to a wide range of issues, we cannot guarantee that all products listed above will appear.

**PICK UP THE OCTOBER 2018 ISSUE OF HI-FI WORLD ON SALE AUGUST 31ST 2018,
OR SUBSCRIBE AND GET IT DELIVERED TO YOUR DOOR: SEE PAGE 54**

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NOVEMBER 2018 - 5TH SEPTEMBER

DECEMBER 2018 - 8TH OCTOBER

BUFFALO SPRINGFIELD

BUFFALO SPRINGFIELD AGAIN

RHINO



"it would be nice to have a group as big as that steamroller"

Neil Young talked to presenter, Dick Clark on the American Bandstand TV programme in 1967. He was fresh faced, innocent in tone, animated, excited and yet very warm in his approach. Quite amazing for such a shy man – but then shy people can be great actors in social situations for limited periods. "Bruce [Palmer] and I came to Los Angeles in an old hearse to try to be stars. We were just about to leave when I saw him [pointing at Stephen Stills] coming the other way on Sunset and he stopped me and we stopped and...then we started."

Clark looked out into the audience. "Have you ever seen a steamroller? The things they roll over roads and that sorta thing?" He turned back to Young. "Isn't that how you got the name?"

"Yes", agreed Young, "from a Buffalo Springfield steamroller". And then Stills leant into the conversation and added, "We thought it would be nice to have a group that would be as big as that steamroller".

Nearly. But not quite. The group were only together for just over two years and, during that time, the line-up would change so that nine people would constitute the final tally. There were creative arguments and fall-outs – and Neil Young discovered he had epilepsy, suffering sudden fits at inopportune moments. Which certainly didn't help matters for young kids who didn't know how to respond or cope with such a situation.

Then there was Palmer's fight with deportation and his gradual detachment from reality with increasing drug use, Stills increasing ego and Young's increasing habit of just walking out of the band when he was bored. He was seemingly always on the verge of doing that. And then he did it for good as the band died.

When the band worked, it worked well and the members sparked off each other with a sense of creative gusto. Stills commented how he and Young connected when playing guitars, "By looking at each other and emulating each other. We'd copy each other and by doing that we'd meet in the middle. He was much better than I was at first, although I had a better

stroke for rhythm. But he was instrumental in teaching me how to play lead, showing me positions and stuff".

Three LPs emerged from the fracas but this LP is arguably the best of the bunch, closely followed by the self-titled debut. Stills contributed 'Bluebird' and 'Rock & Roll Woman' as folk-rockers, plus 'Hung Upside Down' and the jazzy 'Everydays'. Young wrote 'Mr. Soul' as well as 'Expecting to Fly', along with 'Broken Arrow' adding a psychedelic flavour.

Chatting to jambands.com, Richie Furay commented on his favourite tracks from the album, in addition to 'A Child's Claim to Fame' and 'Good Time Boy'. "From my own personal standpoint, 'Sad Memory', because when I sang 'Sad Memory' it wasn't even planned on being on a record. It was something that I was doing while I was waiting for Steve, Bruce, Dewey and Neil to show up at the studio. I was just getting some acoustic sounds and all. Then Neil came in and heard the song and really liked it.

The song held a real special place in my heart and he said I want to record on this right away. That was impressive.

I really like that song of Steve's: 'Bluebird' was the song that I thought was going to launch our career. I didn't think it would be 'For What It's Worth'. I thought it would be 'Bluebird' because it was probably around about that same time when we were working it out.

Not all of the band were present on the tracks but the album as a whole offers variety in terms of vision and application, with a series of top quality song-writing.

Now you can grab the album in amongst a newly produced and well mastered box set. 'Complete Albums Collection' is a five-vinyl disc set including 1966's self-titled debut in both stereo and the band-preferred dedicated mono mix.

The follow-up, 1967's 'Buffalo Springfield Again', is also included in both dedicated mono and stereo. 1968's 'Last Time Around' (stereo only) completes this box.

The audio has been remastered from the analogue tapes and overseen by Neil Young. The vinyl set is limited to 5,000 copies in gatefold packages, which replicates the originals. **PR**



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To create the ERA-1 – our first-ever headphones – we developed a planar magnetic driver delivering a fast, open and transparent performance. The resulting sonic realism is fully in keeping with Quad's heritage, displaying qualities akin to the world-famous ESL loudspeakers. Once again, Quad delivers 'the closest approach to the original sound', bringing you up close and personal to the music you adore with beguiling clarity and definition.

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- Noel Keywood - HiFi World - July 2016



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