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Marana Grus 8

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elcome to Hi-Fi World with a new hand at the wheel! Or should that be an old hand, as

I've written in this august journal for the best part of a decade and embarked on my path to audiophile perfection a good twenty five years back.

While I can't tell you the answer to life, the universe and everything, there's one thing I know for sure - don't believe what you read! Or, to put it another way, read everything written in the pages of every hi-fi magazine in its correct context. The point is that, no matter how well a product performs in isolation, it may not work in your system. As such, purple prose from hi-fi hacks means stuff-all unless you can accurately recreate the review conditions, which is often pretty tricky.

That's where Hi-Fi World is different. Rather than running the reviews treadmill, we're about explaining exactly what's good about a product, what's not - and why. If you can get the measure of a bit of kit, then you'll be in a far better position to judge how well it will work in your system.

This month's group test is a case in point. We put together three systems that we thought would be able to take on anything and win. Yours truly, ex-editor Pope and publisher Keywood – with a vast amount of hands-on hi-fi experience between us - came up with some seriously nice sounds, but there was still room for improvement - and argument. For example, both our DVD-Audio and vinyl based systems were immensely characterful, but I doubt if buyers of one would ever go near the other!

That's the essence of this magazine - we're constantly searching both for interesting products and the best way of getting them working together. You simply can't buy decent audio equipment as you would washing machines, fridges and vacuum cleaners - by cubic capacity, power consumption or whatever. Getting great music reproduction is rooted firmly in empirical science, but also very much a subjective art - and Hi-Fi World is the only magazine to have both

bases covered. Enjoy!



how we test the products

- Hi-Fi World has its own advanced test laboratory and acoustically treated listening room.
- Hi-Fi World has a dedicated in-house team of experienced listeners. We review thoroughly by extensive auditioning, rather than by guick-fire group listening tests.
- Hi-Fi World's engineering team designs a wide range of products inhouse. No other hi-fi magazine is so expert and dedicated.

WORLD VERDICTS: This issue marks a change in our rating system, to make it clearer and better understood. As a rule we only review products we find interesting, so don't expect too many low scores. Likewise, five globe awards will be few and far between because there's only one superlative product of its type. The £ sign remains, as we often come across flawed gems that are great value for money.

	OUTSTANDING	-	Simply the best.
	EXCELLENT		Extremely capable.
	GOOD	•	Worth auditioning.
••	MEDIOCRE	•	Unremarkable.
•	POOR		Seriously flawed.
£	VALUE	•	Keenly priced.

<u>/.hi-fiworld.co.ul</u>

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ww.hi-fiworld.co.uk

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visit our website for a comprehensive list of all the products we have reviewed over the past 11 years

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World Radio History

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North East

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South West

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South East

Colchester - Grayston S & V 01206 577682 Brentwood - Audio T 01277 264730 Hitchin - David Orton A/V 01462 452248 Rainham (Kent) Progressive Audio- 01634 389004 Ipswich - Sevenoaks HiFi 01473 286977 Norwich - Sevenoaks HiFi 01403 767605 Worthing - Phase Three 01903 245577 email: news@hi-fiworld.co.uk

THE FINAL CUT?

It's official! 24th March 2003 sees the long awaited digital surround sound release of Pink Floyd's Dark Side of the Moon.

The SACD multichannel release commemorates the 30th anniversary of the original album. It is the first time that the seminal recording has been offered in full 5.1 surround sound. Long time Pink Floyd producer/engineer James Guthrie is the man behind it, utilising the original 16-track tapes from the recording sessions, remastering the tracks on custom-built electronics before final transfer to SACD format. EMI Records says the results are impressive, "retaining the spellbinding atmosphere of the original analogue recordings whilst faithfully capturing the full dynamic evocative range of Pink Floyd's intricately layered music". Two disc layers are offered, the first containing a stereo CD mix and the second carrying a high resolution SACD stereo version and the 5.1 surround mix. Both layers use Sony's Direct Stream Digitał (DSD) encoding process, although the CD layer has been transcribed to CD's 16bit, 44.1kHz PCM format. The new release comes complete with new artwork created by original sleeve artist and renowned designer, Storm Thorgerson.

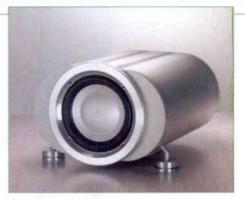
RIGHTS AND WRONGS

A row has broken out in Germany over the country's decision to impose a 12 Euro levy on every PC sold, to compensate copyright holders for anticipated rights infringement by PC users. The European Union is currently in the process of bringing its copyright laws into line with US practice. Opponents of the levy argue that it will benefit media corporations at the expense of consumer rights. The CDR's Chris Lightfoot says, "This is just another attempt to exploit new copyright laws to make consumers subsidise record companies, which are really the dinosaurs of the information age". He points out that such levies are inherently regressive taxation, as they ignore the user's ability to pay. German trade association BITKOM estimates that the tax will cost German consumers an extra 70 million Euros annually. In many European countries, computer users are already forced to pay over-the-odds for recordable CDs on which a similar levy is charged.

SUBMARINER BELLS

Crane Audio's new Submariner active subwoofer is crafted from aluminium and boasts a seven inch cone pressed from the same metal. It weighs in at 150W RMS, with a quoted frequency response of 40-200Hz. Factor in its vertical or horizontal placement options and it's an interesting looking bit of kit for just £449.99 including next-working day delivery.

Tel: +44 (0)870 444 1056



www.craneaudio.com

HORNBY AT PLAY

Nick Hornby, author behind the hit novel High Fidelity, has chosen essays on pop music for his new book 31 Songs. A collection of heartfelt essays about the music that has fired his imagination and made him laugh and cry, it avoids his traditional novel format for a series of very personal, anecdotal observations. There's a brilliantly eclectic range of titles and artists here, ranging from the obligatory (Dylan, Bowie, Stones, Beach Boys) to the oddball and offbeat (Nelly Furtado, Suicide) is one of Hornby's guilty pleasures. Hornby plays the role of the reader's vinyl-junkie friend, making wilfully diverse recommendations to communicate his sheer passion for music. Suddenly, you can see the mind behind High Fidelity at work. Any music-mad audiophile will find this as engaging as it is eclectic.

www.penguin.co.uk

NEVER'S ENOUGH

Fenson Ltd has announced its 'Never Connected' power supply design. The new patent pending circuit is claimed to ensure that equipment is fully isolated from AC mains, giving complete immunity from the resulting noise and interference. Fenson claims "substantial and consistent improvements in sound quality when compared to conventional power supplies". Trichord Research and Michell Engineering have signed up as the first licensees to use the new design in their equipment. Trichord's new Delphini PSU is the first beneficiary, along with its proven Clock 3 upgrade for CD players. Michell's forthcoming HR power supply for the DC motor in its TecnoDec and GyroDec turntables will also feature it. For more information, visit - www.never-connected.com.

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BRAND NEW FRIEND



Ruark has announced a new addition to the range of Tivoli Audio radios it imports from Italy. The curiously entitled Model PAL (that's 'Portable Audio Laboratory', no less!) is claimed to provide top notch analogue radio reproduction in a compact (160x95x95mm) portable package. A custom designed 7cm magnetically shielded speaker, rubberised cabinet and rechargeable NiMH battery are featured, along with an auxiliary input for a CD or MP3 portable. A stereo line out lets you hook it up to your hi-fi, whereupon the Tivoli functions as a hi-fi tuner. Offered in Earth Brown, Moonlight Grey, Spring Green, Pearl White, Sunset Red, Electric Blue, Neon Yellow and Graphite Black, the Model PAL costs £129.

www.rutriner

STORY OF THE BLUES

Sony Japan has just announced what it claims to be the world's first blue laser DVD recorder, which can pack five-times more information on to a single DVD than a conventional red laser DVD burner. This means that a two-hour high-definition TV p ogramme can be recorded on to a single disc. The Japanese giant says sales will start in its home market on April 10th, with prices starting at Y450,000 (£2,500 approx.), compared to conventional red-laser DVD recorders which can be purchased for around Y50,000 (£280) in Japan. Sony's spokeswoman Shoko Yanagisawa said, "The market has already been established, and although it's still looking for direction, there will be a growing number of users who want high-definition recording".

In Japan, digital satellite broadcasting (called BS) offers high-definition TV to a small but growing number of households, and Sony wants a piece of the action. The machine will give Sony a jump on its partners in the Bluray consortium, the nine-member group of industry heavyweights that unveiled a common format for blue laser DVD a year ago. Because blue light has a shorter wavelength than red, it can read and store data at the

LOCK AND LOAD

Quadraspire's hi-fi cabinets more than just your average system support, but "secure units" with lockable doors in clear or sandblasted glass – designed to keep small hands out of your hi-fi! Both its QK and QKAV models have adjustable shelves, and are available in six wood finishes including maple, dark oak and black. The smaller £400 QK unit has four adjustable glass shelves and the larger £900 QKAV has two. Both are available from over 100 stockists in the UK including Harrods. For more information on stockists

> Tel: +44 (0)1225 333360 www.quadraspire.com.



MC TAKEOVER

work in progress.

D&M Holdings Inc., parent company of

MrIntosh

although the specifications are still

Denon Ltd. and Marantz Japan, Inc., has announced its acquisition of McIntosh Laboratory Inc. which was previously owned by Clarion Co. Ltd. The 53 year old US high-end audio specialist from Binghamton, New York, is particularly highly respected in Japan thanks to its classic valve and solid-state amplification, which has a very sweet and smooth sound, D&M Holdings CEO Tatsuo Kabumoto said, "McIntosh is one of the most highly acclaimed brands in the world. The company is revered by audiophiles and has a loyal customer base." The McIntosh brand will be maintained as a stand-alone operation, following the same strategy employed by D&M Holdings with Denon and Marantz.

www.mcintoshlabs.com

Here's a little taster of what we hope to bring you in our June issue:

TOSHIBA SD520E DVD

A budget DVD-A player for the masses, from the originators of DVD, Toshiba. Will this player popularise DVD Audio?

MARANTZ SR6300 RECEIVER

Can Marantz make surround-sound, sound decent?Good question - and we will be answering it with an in-depth report.

HEART CD6000 & HEART BEAT MONOBLOC VALVE AMPLIFIERS

Yes, valves just keep on coming! Here's a valve-output CD player with matching valve amplifiers. Is this the way to hear CD?

con

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World Radio History



Slinging together any old kit won't get you very far, but if you carefully mix and match choice components then you'll be amazed at the results. In this month's Group Test, Simon Pope, Noel Keywood and David Price propose three very different systems with one thing in common – they all offer great sound per pound.

et's be honest here most people purchase hifi systems purely on price. They read a few magazines for a month or two and then buy for the least money possible via mail order, or over the net. Rarely do they venture into hi-fi dealers, whose prices are invariably higher, as they're often wary of being 'sold a fast one' or ripped off. They duly unpack their new shiny new silver boxes, which are often the very best reviewed 'five star' products, plug them in and... Urgghh!

This group test is a great example of why reading hi-fi magazines alone will not bring you the ultimate in audio. Reviews may be useful to read, but however many stars, globes or swing tags a product may win, it matters not a jot if it isn't slotted into a sympathetic system. Getting the best sound per pound is a case of assembling components that work synergistically together, rather than throwing cash at items that have impressed reviewers in isolation on individual occasions.

We've assembled three systems which we feel work particularly well together. Each sounds quite different but has one thing in common -musicality. Think of them as 'living proof' that there's more than one path to achieving a musically involving and satisfying sound. They show that there's no one path to audio nirvana, and that those looking for it should have a complete rethink. Rather, the best way is to take a source that you're happy with and add an amplifier that works well together.



The Budget Audiophile £677 NAD C521i Cambridge Audio A500 Mordaunt-Short MS914

Then, choose the loudspeakers that voice the sound to your taste bright ones to add life, smoothies to mellow things out.

You'll find this modus operandi at work here. In the first, the metal cones of the Mordaunt Short MS914s pep up a fairly smooth NAD C5211 CD source. In the second, the bright sound of DVD-Audio from Pioneer's DV-656 is ameliorated by the ever-refined Cyrus 6 amplifier. In the last, we have the classic vinyl trick of using the rich, fruity Dynavector DV20X-H cartridge to add colour to KEF's dry sounding Q1 loudspeakers. See what we mean? Now go and try it for yourself!



The Digital Dream £1,448 Pioneer DV-656 Cyrus 6 Mission m52



The Analogue Addict £2,474 Michell TechnoDec/Arm Dynavector DV20X-H Sugden A21a KEF Q1

THE BUDGET AUDIOPHILE

Simon Pope puts together something guaranteed to give you a real bang for your buck – NAD's C521i CD player, Cambridge Audio's A500 amplifier and Mordaunt-Short's MS914 loudspeakers.



igh performance needn't mean a high price – this is something we've known for a very long time at 'World. We've

always tried to make up budget systems that rival the more expensive competition and, as far as current products go, this is perhaps the budget system to beat all budget systems. Whilst the amp may be a tad dull looking, the loudspeakers are elegant enough to attract even the most fussy of minimalist urban warehouse dwellers. For a little over £650 you get a very impressive sounding set up that delivers a sound far above its on-paper price.

The NAD C521i is widely regarded as one of the best budget CD spinners you can get your mittens on. It is the updated and improved version of the popular C521, adding lower jitter and improved tracking ability, especially of CD-R and CD-RW discs. It also has good programming features and a nice display window. A full remote control is supplied.

The company has built up a solid reputation for serious sounding CD players at very low prices. Behind the modest NAD-grey front panel lurks some quite sophisticated stuff for the price. Metal film resistors and polypropylene caps are used in key areas and high quality op-amps are used instead of lower grade components.A 20-bit Burr-Brown DAC was chosen for its detail retrieval and separate power regulators are used for digital and analogue sections. Careful attention has been paid to the digital output section of the C521i – the coaxial output is buffered and isolated by a transformer from the converter, which again is rare at the price point.

Next comes the Cambridge Audio A500. Another present day giant killer, this humble looking integrated delivers a quoted 65W into 60hms. This is no mean feat for a £200 integrated and the fact that has a warm and highly fluid sound just adds insult to injury when it comes to the immediate competition, and some at least twice its price. The A500 is basically a serious audiophile amp at a high street price. It has five line inputs and a tape monitor, a high quality buffered pre-amp output for upgrading to the matching power amp, bi-wire 'speaker terminals and is even supplied with a Cambridge system remote.

Last but not least are the Mordaunt-Short MS914 loudspeakers. Under new management (the same holding company as Cambridge Audio) the brand has undergone an extensive and highly effective makeover. Not only do the products look modern and attractive, they also sound superb. Again, this is a true audiophile pair of floorstanders, very well built, for just £300. The 914 has a solid and

www.hi-fiworld.co.uk World Radio History thick 900x205x270mm cabinet firmly bolted together, which contributes to the fine neutral sound. Sensitivity is a very high quoted 89dB which, again is superb at the price and means that these will work well with relatively low powered amps, even 20 watt valve designs! Indeed, DP tells us that they actually use an AudioNote OTO SE in the factory dem room! The 914 uses aluminium in both the CPC shielded mid/bass unit and the 25mm dome tweeter.

Very few systems at this kind of money come anywhere near the warm and smooth sound that greets you here. The listening started with David Gray's ubiquitous Babylon from his White Ladder album. This track demonstrated the system's strengths immediately - it's not the best of recordings, being dry and slightly covered but through this system it sounded big and fluid, with especially smooth and warm bass that was also tuneful. Detail was more than adequate for the system's price point, with Gray's vocals clean and well focussed. What also impressed were the dynamics, as budget systems don't usually do dynamics - full stop. This one did however, and very well too. From the relatively quiet opening to the entrance of the first chorus, there was a marked difference in sound level and the effect was very impressive.

Next on was an audiophile disc in the shape of Eric Bibb's Good Stuff on Opus3 records. This made for very interesting listening. With high end systems, recordings such as White Ladder more often than not sound duff, whereas the likes of Bibb's sleep-inducing oeuvres are mesmerisingly impressive. Here, it was good but the improvement over the David Gray CD wasn't anywhere near as marked as I though it would be. This is ideal for a budget system where a whole host of musical styles and recordings are played, usually for musical enjoyment. Again, it was an incredibly smooth yet adequately detailed reading for the money, with no thinness of sound – it was truly rounded and room-filling.

More big and rich bass came with Paul Weller's 'Stanley Road'. There was increased detail here, due to the amazing recording techniques involved. A slightly splashy ride cymbal would be the only tell-tale sign of a budget system under blind listening. Despite the liquidity and flow of the music there was no laziness or rhythmic drag to the sound. The low frequencies were again particularly impressive – deep and smooth as silk.

Classical orchestral such as Orff's bright and sprightly Tanz from Carmina Burana was big sounding and pleasing. There wasn't any grate in the upper strings or unpleasant edge to the brass and percussion was sweet and precise. The bass drum had the feeling of air really moving – demonstrating the impressive bass capabilities of the MS914s.

Lastly I put on the acid test, as such, for budget gear – the harpsichord in the form of Bach's Partitas. On a lot of inferior hi-fi a harpsichord can sound exactly as Sir Thomas Beecham described it ("two skeletons copulating on a tin roof"). Here, though, there was no such image! There was good detail and presence with realistic lower bass notes, but at times the midrange had a touch of the synthetic about it. Overall there was fantastic body and depth to the sound, though.

This cracking system demonstrates more than any other that 'budget' hi-fi can still impress. When you get to hear this kind of sound for such little money it makes a reviewer's job enjoyable. It's an 'all round' sound that plays virtually anything you chuck at it with the same easy going and highly enjoyable nature, although some classical lacks a smidgen of detail and attack. When I discover this kind of performance for the price it's a delight.

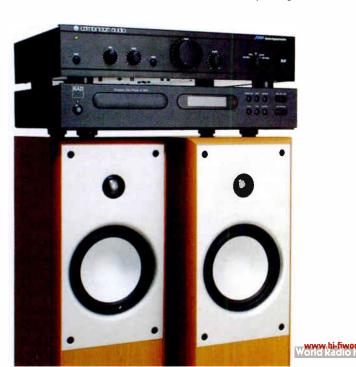
It's important to note, though, that this system only works because of the synergy of the three parts to make a whole. So what would I change? Ideally nothing.

Substituting the Cambridge A500 to a budget Arcam will make the sound perhaps a little more detailed but maybe not quite as smooth and somewhat drier, losing the ambience. The same would go for Mission 'speakers, perhaps - imaging would improve and perhaps the speed slightly, but the ultimate fluidity and openness would disappear. Okay, so the more expensive and slightly more refined sounding NAD C541i CD player would improve things even further but then so would another £200-£300 on an amplifier or loudspeakers. Then the appeal of this system would be lost. The real joy is that you can get a great audiophile standard hi-fi set up that's also musically enjoyable and non-fatiguing for relatively little money - my recommended choice for the budget conscious music lover!

> NAD C5211 £179 Lenbrook UK Ltd. Tel: +44 (0)1908 319360 www.nad.co.uk

Cambridge Audio A500 £199 Richer Sounds Tel: +44 (0)20 7940 2222 www.richersounds.co.uk

> Mordaunt-Short MS914 £299 Marantz Hi-Fi UK Ltd. Tel: +44 (0)1753 680868 www.mordaunt-short.co.uk



THE DIGITAL DREAM?

This system lets you have it all without spending a fortune. Noel Keywood moves in with Pioneer's DV-656A, Cyrus's 6 amplifier and Mission's m52s.

Ithough there's a bewildering array of hi-fi equipment on the market, I don't find it very difficult to select kit for the basis of a really good system. This is because

> although a lot of product may be very good for one reason or another, it just doesn't appeal to me personally. However, the items in this system really do float my boat - they go together beautifully to make an elegant, technically savvy and thoroughly up-todate combination. Let's

start with the Cyrus 6 amplifier, which in some ways reminds me of the first amplifier I went out and bought, rather than built, a Cambridge Audio P50. Elegant and technically right on the button, I was proud as punch with this oftrecommended product. Lovely as it was however, it seemed quite obvious to me at the time that even if there was no distortion in the midband there sure was in the treble, which came at me like a demented hacksaw. The P50 duly went up in smoke, as they did, and I wasn't unhappy at having the opportunity to replace it.

The Cyrus 6 retains some of the qualities that I found so attractive in the P50 but in a modern and reliable package. It's compact, elegant and, with its diecast alloy casework a lovely product to use. In my Cambridge story I should add that the shop took it back and recommended a big Lux. This looked swanky with its brushed alloy front panel and wood side cheeks and also sounded good, but somehow was unconvincing. Its looks were contrived, with big knobs that wobbled on small, weak potentiometers and a tinny fascia plate. And while it sounded clean, bass was inflated and treble sweet but divorced. Its sound simply didn't hang together like my Mullard valve

Modern Japanese amplifiers today have the same piecemeal construction, whereas the one-piece casting of the Cyrus 6 is anything but. It feels sturdy and all-of-a-piece. Fit and finish are superb, and there are no gimmicky labels or logos. It's quietly modern, yet elegant and superbly easy to use. But even though the Cyrus 6 induces no techno-fear, it actually packs a lot of technology into its compact casework.

Having used a Cyrus 7 as a reviewing tool for years, I can vouch for its reliability. Automatic protection circuits guard against catastrophe, and the Cyrus 6 is similarly equipped. It switches on with a flourish of lights as it self tests - the volume control is electronic, as are the other functions such as input selection and balance adjustment. There are five line inputs, a tape in/out and preamp outputs as well. Specified at 40W per channel, we measured 55watts (8ohms), so you get more. The Mission m52s plunge to 40hms at low frequencies though, like most loudspeakers nowadays, making 80watts available from the Cyrus. In use I could not get more than 25watts or so into the m52s measurement showed - and they were producing uncomfortably high volumes, so there's power aplenty.

The Cyrus 6 sounds smooth, well integrated and clear, without the glassiness so common in modern Japanese amplifiers. Unlike my first Cambridge, there is absolutely no high frequency distortion, measurable or audible. The Cyrus has clean and delicate treble that gets quite busy



amps.

with good recordings; there's plenty of resolution if it is required. At the same time, it doesn't have the sort of pronounced top end that destroys the cohesiveness of so many modern solid-state amplifiers. Quite a few reviewers go for this sort of 'conspicuous treble', because it gives what appears to be strong detailing from an in-your-face sound. It isn't easy to live with though, especially with today's loudspeakers which seem to get ever brighter in themselves.

Cyrus has added some extra clarity to their amps through detailed component and power supply changes. If there was a criticism of the Cyrus 7 it is that it could sound a little choked or thick in the midband. My 300B valve amplifier most clearly highlighted this, having a similarly easy tonal balance but tremendous midband resolution but then it is packed with special components not found on commercial amplifiers like Black Gate electrolytics and Jensen paper-and-oil capacitors, so the comparison isn't entirely fair.

Yes, the Cyrus 6 sits on my shelf nicely. This is the sort of amplifier I can recommend, safe in the knowledge that it's a superb design. But it's a stereo amplifier, and you'll have noticed I have chosen a surround-sound source, Pioneer's fantastic DVD-656A, to partner it. By designing and manufacturing a mechanism that will read DVD-A discs as well as SACDs Pioneer has come up with a universal player that is difficult to ignore. With the DV-656A you don't have to choose between DVD-A or SACD – it will play the lot! This is an agnostic player; you don't have to get involved in any format religion, which really is heaven-sent. It means you can buy the music you want to buy, unhindered by format incompatibility.

And if DVD-As and SACDs do start to become common newrelease platforms, reasonably priced, as the music business suggests, then the DV-656A can cope. You can play the high resolution stereo tracks, rather than having to make do with Dolby Digital. The Pioneer will also play CDs, CD-R/RWs and even mp3 on CD. Of course, in this system you will only be using it for stereo, which may seem a waste of its capabilities, but remember that DVD-A discs commonly have 24bit/96kHz stereo tracks that are only available through a DVD-A player. So the Pioneer brings you high resolution stereo, with full surround-sound there if you want it, all for a very affordable £400 (much less at some stores) - a bargain!

So how does it sound with ordinary CDs? Very respectable - I could not help but run it alongside Philips new DVD963SA, (also £400, surprise, surprise!) and predictably the Philips showed that with CD the Pioneer has slightly clanky treble, curtailed resolution of ambience and depth and a generally more mechanical sound. But then the Pioneer does do 24/96 DVD-A stereo which the Philips cannot, and unsurprisingly it then sounds a lot cleaner and more dynamic than CD. Moreover, the Pioneer shades Denon's players and such like when it comes to CD, so by current standards it's a fair CD player, and if you want six channels at a later date the Pioneer has them for you.

At the other end of my system sits a pair of Mission m52 loudspeakers. Mission always produces a technically sound product and the m52s deliver. In line with rivals their flat response gives a challenging delivery, possessing plenty of treble energy. They're strong at detailing and sound both clean and crisp. The contoured front baffle helps them to produce sharp imaging across a well constructed sound stage. Slight box boom is suppressed by sand filling the lower chambers to add mass to an already sturdy cabinet. This also tightens up and focuses the sound. If the m52s have a weakness it is lack of tonal colour. They can sound a bit monochromatic, yet there's no denying that a large, high resolution floorstander like this delivers impressive results from 24/96 stereo. Take Riding With the King as an example: the guitars, drums and bass of a classic blues band have real dynamic power and both B.B. King and Eric Clapton sounded convincingly alive and real through this system. Other high resolution stereo tracks similarly had tremendous impact.

The Pioneer can deliver just about anything asked of it and both the Cyrus 6 amplifier and Mission m52 loudspeakers well resolve the signal sent to them. It makes for an often dramatic sounding system, one that is bang up to date and can cope with tomorrow too. I love it!

> Cyrus 6 £600 Cyrus Electronics Tel: +44 (0)1480 435577 www.cyrusaudio.com

> Mission m52 £450 Mission Loudspeakers Tel: +44 (0)1480 423700 www.mission.co.uk

> Pioneer DV-656 £400 Pioneer GB Ltd Tel: +44 (0)1753 789789 www.pioneer.co.uk



THE ANALOGUE ADDICT

David Price waxes lyrical about Michell's TecnoDec/Michell RB250/Dynavector DV20X-H vinyl front end, Sugden's A21a amplifier and KEF's Q1 loudspeakers.

f you'll forgive me a moment of personal reminiscence, I'd like to draw your attention to The Human League's Dare LP. Most people will know it for the zillion-selling single 'Don't You Want Me', but I rate this 1982 long player as one of the eighties' most impressive albums in its own right. Aside from the small matters of its intelligent lyrics, soaring melodies and seminal production by Martin Rushent, what gets me every time I listen to it is the sound. This system, I'd venture, is the only one in this group test that can

come anywhere close to recreat-

ing it.

Recorded in early 1981, Dare is an amazing trip down memory lane for electronic music fans. It is packed with analogue synthesisers which would later acquire 24 carat cult status thanks to their distinctively rich, warm and vibrant sounds. You'll hear Roland Jupiter 4s, Korg 770s, Casio VLTones and M10s, Yamaha CSI5s and even the much-vaunted Linn drum machine. Together with some superb analogue recording and mixing at Genetic Sound Studios, the result is striking. Music, lyrics and artwork aside, you'll near hear another album quite like Dare. Unless you've only ever listened to it on CD, that is.

Having only ever heard the vinyl version, the digital Dare left me cold. Gone are those shimmering harmonics from the JP4 and that fruity warmth of singer Phil Oakey's often out-of-tune voice - when he forgets his contrivedly deadpan lyrical style, that is. In its place, there's nothing but a black-and-white photocopy of what used to be. Amazingly, even the best SACD

player I've heard (and this album was recently released on this 'advanced resolution' format) can't match this system for sheer colour. If it is music as it was made you wish to hear, then nothing can touch an allanalogue (instruments, recording, mixing, mastering, replay) chain in my humble opinion.

replay) chain in my humble opinion. Michell's new TecnoDec (£599) needs little introduction. We scooped it for the last issue and it was launched at the Bristol Sound and Vision show soon after. Essentially, it's a GyroDec minus suspension and gold-plated brass suspended weights. This means bearing, platter and motor are retained, allied to a bespoke Perspex skeleton which houses the armboard and positions the completely offboard motor. Thanks to dazzlingly high standards of materials, construction and finish. it blows its price rivals into the weeds. In this system, it gains the new Michell arm. Reviewed in full next month, this is a silver painted Rega RB250 with a cleverly designed underslung counterweight, stainless steel rear end stub and new arm wiring added. To match it, I've specified Dynavector's DV20X-H high output moving coil cartridge (£299), a sugary-sweet budget blockbuster that's a natural musicmaker, if ever there was one.

Amplification duties are handled by Sugden's evergreen A21a (£1049). For this writer, it resides in the 'we are not worthy' category. Put simply, I have never heard another transistor amplifier at – or near – its price that does so much. Sounding quite unlike any other solid state amp you'll encounter – Michell Alectos notwithstanding – it lives in a sort of 'hyper space' between valves and transistors. It's far too crisp and clean for tubes, but much too rich and three dimensional for solid-state.

The price you pay for its pure Class A operation is a weedy 25W

www.hi-fiworld.co.uk World Radio Histor RMS per channel. Granted, it feels much louder than a conventional Class B (or AB) amp of the same rating, but Musical Fidelity A308 Power this is not. It is available in either line level or phonostage form (we've gone for the latter for obvious reasons). To this you should add another four line-level inputs, a volume control and err, that's it. Since we last reviewed it eight years ago, it's gained a snazzy titanium finish but is otherwise unchanged. Small at 430x350x80mm but quite heavy at 8.1 kg, this is one very special bit of kit.

Last but not least come the loudspeakers: KEF's Q1 (£250) standmounters complete with Apollo stands. These are budget blockbusters – although not perfect (no 'speaker is, especially at this price). They hang onto enough of the musical stuff to justify spending so much on the components further up the chain. In their way, they're as technically distinctive as both the Michell and Sugden, too - thanks to the 165mm mid/bass driver onto which a 19mm aluminium dome tweeter is coaxially mounted. The reason for this is better integration (crossover is at 2.8kHz) and phase coherence for superior imaging and dispersion. The cabinet has curved and tapered surfaces, which both improve rigidity and break up internal standing waves.

A front bass port provides reflex loading to the 350x220x320mm cabs, which weigh in at 6.25kg each, and suit the superbly built and finished sand-loaded Apollo speaker stands nicely.

The worst thing about this system is power, or lack of it. I'm not talking about emotional force, rhythmic drive or the ability to move you to tears (the system has all three), but good old, unreconstructed, lack of grunt. Although the KEFs are decently sensitive at a quoted 91dB, the Sugden is still unable to summon enough welly to drive them in a large room (by contrast, my reference Pioneer SPEC 2, which indicated a momentary 0.3kW on its power meters before my eardrums burst, is).

In truth, the A21a was never designed for silly feats of decibel derring-do, so look elsewhere if this is your bag, baby. If, however, you have a small-to-medium sized listening room, neighbours and/or partner, then this system will charm its way to your very soul.

Slipping out my aforementioned copy of Dare and cueing up Darkness, it was clear by the end of the first four bars that this system was doing its stuff. Although the KEFs aren't famously rich and colourful sounding (quite the reverse, in my opinion), the presence of the aforementioned all-analogue recording and playback chain caused them to emit a deliciously vibrant and lucid sound. Although not as ripe as the Rega Planar 2/R100, NAD 3020A and KEF Coda system I first played this disc through back in 1982, it was nevertheless a fascinating blend of all those good old fashioned analogue attributes and the forensic rigour of a top modern digital system. To use a well-worn phrase, it's about 'traditional values in a modern setting'. To wit, inside an expansive soundstage with boldly articulated stereo images (a TecnoDec trademark), there's a wealth of detail which is conveyed with brilliant texturality. Not only can you hear what instruments are in the mix and where, but also why the band and producer chose them in the first place.

Move to acoustic music and – if anything – things get better still. Lee Morgan's The Rajah on BlueNote came over with delicious ease, the music just wafting out of the speakers with incredible realism. By

> contrast, an equivalently priced digital system with, say, Arcam's excellent FMJ CD23T as its source, would seem to stand on ceremony – as if it needed a shot of

good, stiff single Malt.

Bass was tight and taut (another Michell characteristic) but fulsome and sumptuous nonetheless. Moving up to the midband and the KEF's brilliant imaging really lifted an already excellent performance, trumpets soaring right into the room as drums bounced along in the background with wonderful insouciance.

In the treble regions, the silky Dynavector moving coil really flattered the steely tendencies of the QI's metal dome tweeters while still allowing them to project oodles of air and space. And as for the hi-hats, rarely have I heard such a sweet sound coming from any system at this (not inconsiderable) price.

My system isn't perfect – far from it. A change of speakers to something like Castle's exquisite Conway 3 would lift it further still, but then you'd have £750 less to spend on your music. The point is that it gives you the beginnings of a sound system that is so musically rewarding, so rhythmically enthralling, so texturally and tonally satisfying that you may never want to upgrade it again. Think of it as 'affordable esoterica'.

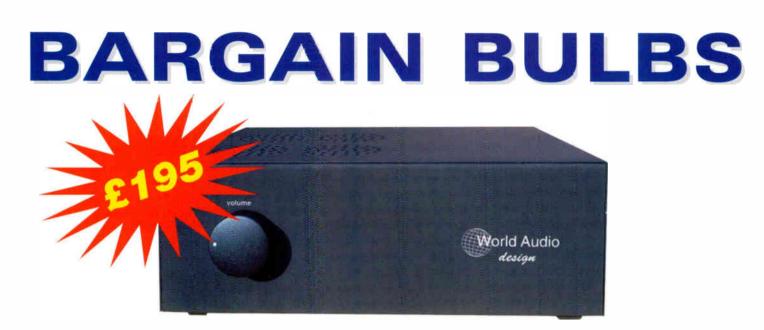
Two and a half grand is a lot to pay for hi-fi, but this does more than just make sound – it gets you right to the heart and soul of the mix. Whether it's Crosby, Stills, Nash and Young's Country Girl, The Sex Pistols' Submission or the aforementioned Human League classic, you come out feeling like your soul has been satisfied. Very few things and any price can do that.

> Michell Technodec/Arm £875 Michell Engineering +44 (0)20 8953 0771 www.michell-engineering.co.uk

Dyanvector DV20X-H £300 Pear Audio Ltd +44 (0)1665-830862 www.dynavector.co.jp/english

> Sugden A21A £1049 JE Sugden +44 (0)1924 406016 www.jesugden.co.uk

KEF Q1 £250 KEF Audio +44 (0)1622 672261 www.kef.com



If you've always thought of valve amps as temperamental and expensive beasts, think again. World Audio Design's latest kit is designed with the budget conscious beginner in mind.

The Kecl82 was created from a brief that demanded simplicity, ease of build and a super low cost. In order to achieve a reasonable power output we went for a push-pull amplifier.

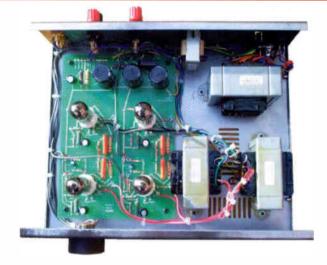
We chose the ECL82, a triode/output pentode. This tube is readily available and has a good sound. In push-pull mode it delivers 8Watts. Realistically you need a speaker of around 89dB or above. This is possible at a budget price - try the smaller Triangle models, or a Tannoy mX3 or even one of the older Missions like the 773e, or if you like building your own speakers, try the Adire Audio HE10.1, as reviewed in HFW October 2002 issue.

You will see that the front has only a volume control, and it is fed by one pair of phono sockets. A selector and tape/source switch were not used in this amplifier as they are tricky to wire up, and the aim was to make it easy to build. In fact, in many ways the Kecl82 would be great powering a second system, using a CD player as a source, and will definitely give you a taster of what valves can offer. Measuring 30cm wide, 23.5cm deep and 11cm height with feet, it is entirely self-enclosed. The valves are visible through the four upper circular vent holes (one directly above each valve). We have kept the look simple with the minimalist front panel holding the volume potentiometer. The two-part chassis is constructed from 1.6mm mild steel with a durable black powder-coat finish. The whole unit is very sturdy, weighing in at 9kgs.

The signal input is in the form of a pair of gold plated RCA phono sockets that sit at the rear of the chassis. The speaker sockets accept 4mm banana plugs as well as bare wire. The mains switch is positioned at the rear of the amplifier, on the right hand corner for easy access. Mains power is received via an IEC lead. The Kecl82 is based on a printed circuit board (PCB). The PCB is easy to follow with all component names, locations and orientations shown clearly. The amplifier requires no set up, you just turn it on. The kit will come with comprehensive instructions taking you through the build step-b-step.

SOUND QUALITY BY SIMON POPE

Purity is the key to this amplifier's design and sound. Because there's very little to get in the way of the signal what you get is an exceptionally sweet and simple sound that also has a superbly wholesome roundness to it. A high quality recording of Mahler's Das Lied Von Der Erde on Reference Recordings showed that the Kecl82 faithfully reproduced all the depth and space of a full symphonic orchestra without any problems. Violins were smooth and sweet, as was percussion (which virtually sparkled) and the woodwind section was especially impressive, with a spacious and airy sound.



A run through Miles Davis's Kind Of Blue saw the little integrated delivering a detailed and precise sound that highlighted the warmth of Coltrane's tenor sax and the rich, deep sound of the upright bass. Rock and Pop records such as Radiohead's 'Lucky' demonstrated that the valves inside the amp, whilst small, are quite robust sounding, with commendable clout and bass depth for a humble budget 8W valve amp. This is a great introduction to the sonic art of the valve amp and a big upgrade for anybody with a mid-price solid-state amp that wishes to swap over to something more musically engaging, for a price that's virtually as cheap as chips!

MEASURED PERFORMANCE

hum	0.5mV
sensitivity	850mV (suitable for CD)
power output	8 watts into an 8 ohm load
Frequency response	+/-3dB 15Hz - 75kHz

The Kecl82 amplifier kit is available from World Audio Design Tel/fax: 00 44 (0) 1908 218836 or order on-line at www.worldaudiodesign.co.uk

> Kecl82 amplifier kit (UK price) £195.00 (inc. vat & carriage)

Kecl82 amplifier kit (EU price) £195.00 (inc. vat, exc. carriage)

Kecl82 amplifier kit (Overseas price) £170.00 (exc. carriage)

A TECHNICAL VIEW OF OUR SYSTEMS

Here's a look at the technology in our systems - and how they measured on our test bench.

MICHELL TECNODEC TURNTABLE, DYNAVECTOR DV20X-H CARTRIDGE, SUGDEN A21A AMPLIFIER, KEF Q1 LOUDSPEAKERS.

The Rega 250 arm used in Michell's TecnoDec is well known for the rigidity that comes from a one-piece alloy casting, free from mechanical couplings such as a headshell bayonet. The arm's tapered construction eliminates the usual pipe resonance (ringing) than comes from traditional arms. The benefits are strong bass, but a particularly clear upper bass region, which is where most arms "go off".

Mounted in the 250 arm is a Dynavector DV-20X-H. H stands for High, which in this case means high output, equivalent to that of a moving magnet cartridge, allowing the DV-20X-H to work direct into any phono input, without the need for a preamp or transformer. Relatively low impedance allows the DV-20X-H generator to provide a flat frequency response within 2dB limits from 20Hz up to 20kHz, which contributes to its smooth sound but good detailing.

The Sugden A21a is a 25watts per channel pure Class A solid-state amplifier. The output transistors are biased fully on all the time, so they remain thermally stable (but hot!). The system is inefficient, but it also gives superb sound quality. There's a degree of clarity, free from harshness, that eludes most Class A/Bs.

At the end of this system lies a KEF Q1. It is sensitive enough for the Sugden amplifier, offering 88dB from 2.8V (one nominal watt) input our measurements show. The real strengths of these 'speakers are their coaxial drive unit where the tweeter sits inside the woofer, firing out through the cone. It gives a coherent source without the asymmetric dispersion pattern of conventional two way 'speakers. This makes for a very even sound in the room. So here's a great small loudspeaker that'll fit a shelf, but provide superb quality.

PIONEER DV656A SACD/DVD-A PLAYER, CYRUS 6 AMPLIFIER, MISSION M52 LOUDSPEAKERS.

Technically, Pioneer's multi-format DVD-A, SACD player potentially puts this system in another league, since both offer much greater dynamic range or, perhaps more importantly, considerably lower distortion than CD, our measurements recording 0.0003%. They also offer wider bandwidth, reaching 100kHz against CD's 21kHz. Recent digital 24/96 recordings from artists like Rebecca Pigeon clearly show how clean and punchy DVD-A can sound though, whilst SACD is smooth and silky.

The Cyrus 6 amplifier has plenty of power, producing no less than 55watts into 80hms and 80watts into 40hms measurement showed. It also produces little distortion right across the audio band, explaining its mild sound. The power output is just about right for the Mission m52s, since they need a bit more power than is common for a speaker of their size, our measurements revealing a mediocre sensitivity of 85dB. However, the m52s have a super-flat frequency response, with a tweeter than measures almost as flat as a ribbon unit. You can hear

this flatness in the m52s, which have an almost master tape sound.

NAD C5211 CD, CAMBRIDGE A500 AMPLIFIER, MORDAUNT SHORT MS914 LOUDSPEAKERS.

This system kicks off with a CD front end, but one that that does its utmost to avoid the pain caused by bad CD reproduction, such as hard, steely treble, grittiness, and blurry focus. The NAD C521 runs right up to 21kHz our impulse analysis revealed, but above 10kHz there is a slight roll off to keep things smooth sounding.

The Cambridge A500 amplifier has plenty of grunt, delivering 72watts into 80hms and no less than 120watts into 40hms. Tests showed that distortion from this amplifier actually decreases as current draw increases, meaning the amp actually favours low loads. With lots of bandwidth, from 8Hz up to 100kHz, the A500 puts in a cracking measured performance.

This amplifier feeds Mordaunt Short's MS914 floorstanding loudspeakers. Frequency response has been worked on to make treble fall away gently, making for a mild – but not dull – sound. The tweeter comes back up at 20kHz and this adds a little filigree detail, plus a bit more space in the treble due to its supersonic extension – useful with SACD and DVD-A.

These are 40hm speakers but have quite reasonable sensitivity at 86dB our measurements showed, matching the A500 well. It can cope with the 914's difficult load characteristics, driving them effectively to get the best possible performance.

SHOW TIME!

Back at the end of February, David Price sleuthed around Bristol's fantastic Sound & Vision 2003 show to bring you some of this year's hottest hi-fi products...

ith possible recession and war looming, it wasn't surprising to find fewer feet

through the door this year at the Bristol Sound and Vision Show, held from the 21st to the 23rd February. All the same, show spokesman Rob Follis reported that sales were quite a lot higher and spirits generally seemed good amongst exhibitors and visitors alike. There were more hardcore hi-fi nuts and fewer casual browsers, which probably explains the enthusiastic atmosphere.





A veritable audio-visual feast from Arcam on display

ARCAM

A most impressive demonstration of the

company's latest stereo and multichannel products resulted in a very well attended room. Among the many goodies on show included the DV89 DVD-Audio spinner, and the new £399 T31 tuner, Purveyors of fine FM tuners since the original late seventies T21, it's news when Arcam announces a new radio. The company modestly claims "above average sound quality combined with low distortion, good levels of sensitivity and a smart design". It comes in a nice solid FMJ chassis with precision machined alloy front panel. RDS with RadioText is offered, along with improved sensitivity, dimmable display, signal strength meter and remote control.





player (£750), the CD6 upgradeable CD player (£600), the CD8 high-end CD spinner (£1000), Pre X preamplifier (£1000) and Mono X zero-feedback monoblock power amp (£1200). New Cyrus solid core interconnects (£90/m), Speaker Cable (£250 for 2x5m) and Arbour range of equipment stands and accessories completed the arm's-length list of new goodies.

CYRUS

"Sweet 16" was how Cyrus described their stand – no. not a reference to the average age of company employees but the number of new products they had on show. No less than three new ranges - the 6 series, 8 series and 10 or 'X' series made their debuts. These are either updates or outright replacements to the existing product lines. Highlights included the DVD 6 audiophile DVD

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Bristol 2003 gave vinyl junkies a fantastic fix

Outside the rarefied climes of the media pit could be found a wealth of new and interesting bits of kit – made all the more accessible by the slight decrease in numbers wandering around Bristol's Marriot hotel where the show was held. The theme of the show was multichannel – without a doubt. Large numbers of manufacturers could be found demonstrating systems with large numbers of loudspeakers, and often a swanky plasma TV sitting inbetween. A good number of DVD-A and SACD players could be seen (and heard), but it was also very interesting to note a large number of new turntables making an appearance - a testament to both the diversity of the show and the eclectic way hi-fi is developing.

EPOS

Inside the Epos room could be found a really neat looking new two-way bass reflex loudspeaker, the ELS3. It sports a 130mm woofer with injection moulded polypropylene cone with dust cap and rubber rolled surround on a heavy die-cast aluminium chassis. The 25mm aluminium dome neodymium tweeter is an entirely new Epos design, and in the company's tradition a minimalist crossover is fitted. A cost-effective vinyl wrap finish is used, permitting a very keen £200 price tag. Magnetically shielded, these baby Epos boxes are designed for both budget audiophile twochannel hi-fi and rear surround sound applications. An ELS-3C centre channel speaker will soon be available.

APOLLO

Hours of rigorous research led the editor to conclude that the best looking hi-fi furniture of the show hailed from the Black Country. The boys from Birmingham had some seriously nice looking stands on display, such as the AZ range of single square steel pillar models. The finish was beautiful, and they can be sand or shot filled - 6mm floor spikes are included, as are 6mm top spikes and neoprene speaker pads. The Soprano range of supports looked good in their new finishes, and proved strong enough to sit on!

Stand and deliver – Apollo's new AZ range



At last, a good old unreconstructed CD spinner from Creek

CREEK

In a world where everyone and his dog is dropping Compact Disc like a stone for all-singing, all-dancing DVD, it's nice to find folk making bespoke CD players. Creek Audio's new £700 CD50 uses a 'real' CD mech in the shape of Philips' CDM12 and CD7 chipset running on neoprene sound isolation washers. Custom Creek software controls everything, along with advanced error correction algorithms. Crystal Semiconductor delta-sigma 24bit, 192kHz DACs and analogue filtering via precision circuitry complete the picture. It may look unassuming, but the sound is something special. Factor in a new T50 tuner (£500), A501 amplifier (£475), OBH15 phonostage (£199) and OBH21SE headphone amp (£250) and there's a lot of nice new kit on offer.



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RUMOUR 4

ANTHEM



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Record players: SME models 10, 20 and 30; Kuzma Stabi, Stabi Reference; Nottingham Analogue Interspace, Space Deck, Hyperspace and Dais; Michell Orbe; VPI AriesScout; Avid Volvere, Sequel and Acutus. Arms: Rega 300/600/900; SME Series IV and V; Kuzma Stogi; Triplanar. Cartridges: VanDenHul Grasshopper and Colibri; Kuzma KC Ref; EMT; Reson Reca and Elite; Cartridge Man Musicmaker; Benz-Micro including Ruby Open Air; Kondo Io J. Armplifiers: Border Patrol; Canary; Sugden; Art Audio; Monarchy; Western Electric; Icon; Tom Evans Audio Designs; SJS. CD Players: Wadia; Sugden; Primare; Resolution. Louspeakers: Living Voice; Vitavox; Lowther. Cables and Tables by Living Voice.

Sale

New

Sale of Part Exchange and Ex-dem Items

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Mirage 890i - fine condition - giveaway	£200	
Art Audio Vinyl 1 - moving magnet phono stage - chrome - fabulous	£1100	£1550
Art Audio VP1 - line pre-amp - chrome	£1000	£2000
Art Audio Concerto - 6550 line integrated	£1200	£2650
Art Audio VP1 special - line pre-amp - full of Hovlands	£1150	£2250
Canary Audio CA 301 - 300B - 22 big watts - very good	£3400	£5400
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Canary Audio CA 309 - 300B parallel p.p 45 mad watts - superb	£9500	£13500
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Nottingham Analogue Hyperspace - turntable - 2/3 years old	£1000	£1700
Nottingham Analogue Space - tonearm	£250	£450
Nottingham Analogue Mentor - tonearm	£390	£800
Jamo Concert 8 - loudspeakers - 21/2 years old - spotless	£800	£1365
Townaend Seismic - speaker standa - for bookshelf speakers	£450	£695
Tube Technology MAC - mm and mc phono - nearly new	£700	£1400
Audio Innovationa L2 - line pre-amp	£350	£750
Audio Innovations Series 1000 - silver circuit - 50 watts class A	£1100	£2500
Audio Research SPLS2(B) - line pre-amp	£1250	
Alchemist Forsetti ADP 15A - integrated amp	£700	£1400
Alchemist Forsetti ADP 20A - stereo power amp	£700	£1400
AudioNote Soro - phono integrated - serviced - new valves	£700	£1900
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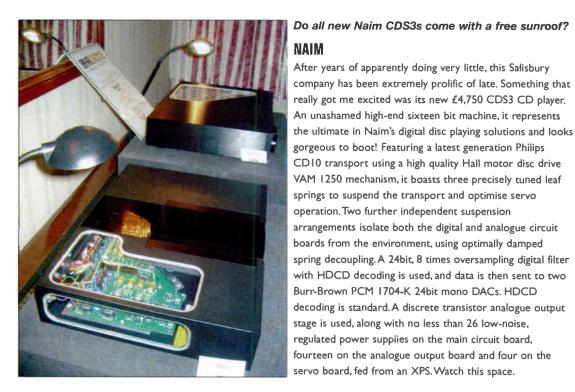
open up and focus your systemproviding transparency and speed. Our silver OFC cables, due to their high current capacities (up to 240 Amps), produce effortless music from current hungry devices. All mains connections are treated with a contact enhancer prior to shipping and soldered with Lead free 4% silver solder.

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www.hi-fiworld.co.uk World Radio History



With a drive unit complement reading like the editor's Christmas wish list, this is one serious 'speaker

T&A

From the same factory that makes B&W's gargantuan Nautilus comes the cabinetry for this exquisite bit of

woodwork, the



T&A Criterion TCI IE.A whopping £6,000 buys you this huge German transmission line loudspeaker, complete with electrostatic treble unit aluminium cone midrange and twin carbon fibre bass drivers. And yes, it sounds as good as it looks! Watch this space for a full review as soon as we've gathered the strength to unpack them.

The great and the good gather

As well as being a treat for avid audiophiles, the Bristol Show is popular with the British hi-fi business, attracting most of our specialist manufacturers. Even the denizens of the UK hi-fi press manage to extricate themselves from various nooks and crannies just to be there. The annual manufacturers' press conference, which kicked proceedings off, was a treat. Here we could experience the great and

NÖRDO Fatiline ca

the good opining on subjects close to their corporate hearts, such as the joys of Blue Ray lasers (Bob Stuart), DTS (Rob Follis) and HDMI (John Dawson).

The latter, in case you haven't heard, is "the next big thing" according to Arcam's MD – the reason being that at present there's no digital link for either DVD-A or SACD because the music business don't want the digital signal made easily accessible until it is copy protected. DVD-A and SACD can only be passed into amplifiers via three pairs of analogue audio cables, which is an undeniably messy arrangement. It also makes digital processing outside the player, in either amplifier or receiver, impracticable. HDMI (High Definition Multimedia Interface) uses HDCP (High bandwidth Digital Content Protection) to prevent digital copying, making direct digital connection for 'advanced resolution digital audio' a goer. Expect to see a new type of plug and socket on the back of your hi-fi (and on computers too) soon. Tweaky types should check out www.hdmi.org for more info.

Bigger even than Glastonbury's Pyramid stage is Meridian's System 7000

MERIDIAN

As you'd expect from one of Britain's most enthusiastic purveyors of high end esoterica, Uncle Bob Stuart had a surprise or three for us in the Meridian room. The DSP7000 Active Loudspeaker system costs a trifling £16,175.00 per pair (in black), with single loudspeakers at £8,800.00 a pop. As you'd imagine, the sound is something special in either stereo or multichannel configuration.



Philips' brand new DVD963SA is a serious sounding CD player says Noel Keywood, and it also plays SACD too.

he DVD963SA isn't 'just' a DVD player, but also a sublime CD player that's a joy to listen to. It transformed even my difficult discs - that hard, steely midband dissolving away before my very ears into an easy and open sound. Gone was CD's typically mechanical footprint and in its place a fine, easy going and surprisingly delicate quality. It wasn't perfect, of course. The player looses a little definition and power down at the bottom end. There's no mule-like kick. but bass lines had plausible power, if not real punch. Still, this player manages well enough, sounding tonally well balanced.

The 963SA upsamples CD's 16bit/44.1kHz code to 24bit/96kHz or 24bit/192kHz (the default setting). A menu allows selection of all three settings, but I stayed with the default 24/192 option. Upsampling like this cannot add information, but does allow better filters to be used, decreasing noise above 21kHz. It's ironic then that Philips should

highlight this feature when SACD is, conversely, a very noisy encoding format above 21 kHz! The machine's upsampling really does work though, helping it deliver a delicious sound from ye olde 16/44 CD.

Yet the DVD963SA is much

more than a £400 CD player. That money buys you a lot of technology nowadays, including full DVD video and SACD playback. It plays Super Audio CDs with six channels of super quality surround-sound, or just plain old stereo should you prefer it. The only thing it doesn't do is DVD-Audio. It reads the discs, and reproduces tracks containing stereo or surround-sound in compressed Dolby Surround or DTS, so you can get decent audio through any conventional amplifier without the need for a surround receiver with on-board decoding or a digital link. But what you don't get is the full six channels in 24/96 or two channels at 24/192 - the highest quality possible. Whether this matters much depends on your ambitions in this area, of course.

Connecting up wasn't difficult, but the stereo output isn't in fact for your stereo but a lo-fi output for a TV. It accompanies the S-Video and CVBS (Composite Video Baseband) video outputs meant for a TV. These are alternatives to the more convenient SCART, which carries RGB video and audio and is the best connector to use – just remember to mute the audio through the TV! For stereo connection to a hi-fi amplifier, use the Front Left and Right outputs of Multichannel. Digital outputs (coaxial and optical) can be used for PCM, MPEG 2, Dolby Digital and DTS, but SACD is available only from the six analogue outputs, so you need surround-sound amplifier/receiver with high quality analogue inputs – and to maintain quality, no in-line signal processing.

Philips talks loudly about Crystal Clear Pro, Progressive Scan and natty digital signal video processing courtesy of a Faroudja S2301 chip. The 963SA converts PAL to NTSC before outputting to the TV, so Progressive Scan can be applied without hitting copy protection muting. The trouble is that all this is available only though the Component Video output, meaning high quality projectors, plasmas and just a few top-end TVs only need apply. I had no criticism to make of picture quality via SCART, although it comes with colour saturation much reduced over other players, looking washed out until adjusted. But Philips favour accuracy over effect in their video products and the DVD963SA was a fine DVD (video) player which gives full surround-sound from all outputs.

The handbook's author must have ran off screaming when asked to describe loudspeaker set up. Proper instructions barely exist as a result, and whilst on-board bass management is available for SACD



(analogue output only), whether Time Delay is available is unclear. Philips told me it was. Similarly, the book fails to mention that the 'speaker setup menu alluded to is hidden off-screen right, making it difficult to find. It also neglects to describe how to use the set-up system, or mention that if you toggle subwoofer 'on' the surround (rear) speakers automatically switch themselves to Small, which removes their bass! Only small on-screen icons warn of this confusing piece of automation. You can however, get six full range channels working, plus subwoofer, by going back to the surrounds and switching them back on! Loudspeaker sensitivity set up signals (noise bursts) are available, and time delay up to 30mS (30ft) in one millisecond steps is provided. Output to the sub has a good 12dB adjustment range. All preset management can be toggled off if desired. Setting correct time delays is important in getting a cohesive enveloping sound, especially with

classical music, but Philips give no guidance on this. Reference to a Philips website tutorial would help. In this respect, the handbook is abysmal.

It is with SACD that this player shines brightest. A simple, clean stereo recording like Eleanor McEvoy's Yola shows just how smooth, clean yet punchy the format can be.With Isn't It a Little Late, kick drums gave the loudspeakers a good firm push and stroked cymbals had a smooth yet sweet presence you don't get with CD. Eleanor McEvoy's simple, centre-mic'd vocal was vibrant in a lush and rich manner that was totally beguiling. SACD lacks the chrome-plated attack of PCM, either early 16bit or modern 24bit. From the DVD963SA it offers a wonderfully rich sound reminiscent of a good valve amplifier, whilst at the same time having the dynamics and visceral punch of DVD-A. I cannot imagine anyone not being totally drawn in by the 963SA's wonderfully vibrant sound from

SACD. From large choral works to contemporary rock music, I found this player offers spectacular quality with a naturalness that's unmatched by other sources. If you love strings and classical, or the most realistic vocals imaginable, SACD recordings played through the DVD963SA are unmatchable.

An audiophile's dream, this player boasts superb sound from CD and especially SACD. The hard edginess of modern digital is banished, to be replaced by performances where any atmosphere captured in the original recording is faithfully conveyed in an almost magical manner. It is rare to hear what approaches sweet treble from old I 6bit, banging away at 44.1, but that's what the 963SA does. Factor in fine video and this player is a powerful package that's difficult to ignore. Heartily recommended.

Philips DVD963SA £400

Philips Consumer Electronics www.philips.com

MEASURED PERFORMANCE

With CD the DVD963SA has a ruler flat frequency response, with some filter ripple at the top end. With SACD it runs from 2Hz right up to 40kHz within 1dB, rolling off gently to -11dB at 100kHz. This is likely to make treble sound 'obvious', rather than unpalatable with CD.

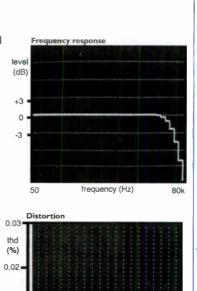
Distortion levels were very low over the entire dynamic range of the player with CD (upsampling on), no harmonics being visible in our -30dB analysis. Levels were low at -60dB, hence the very high EIAJ dynamic range value of 111dB.With SACD distortion measured 0.1% at -60dB and 10% (mostly noise) at -100dB. There was serious hf noise as usual with SACD.

In line with Philips usual performance nowadays the

DVD963SA measured very well in all areas, with both CD and SACD. NK

NK

Frequency response 4Hz - 20.75kHz				
Distortion -6dB	left 0.006	right 0.006		
-30dB	0.005			
-60dB	0.35	0.33		
-90	4	4.2		
Separation	left	right		
lkHz	123	121		
20kHz	101	100		
Noise (IEC A)		-108dB		
Dynamic range		IIIdB		
Output		2.07V		





0.0

0 1k

21k

frequency (Hz)

Competition

founders original

[c] Guy Fontaine [d] Rupert the Bear

name? [a] Guy R. Fountain

come?

[1] What was Tannoy's

[b] Rupert Guy Fountain

[2] From where does

the Tannoy name

[a] Tan Oyster Cult

[c] Suntanning oyl [d] Oyl tanker

[b] Tantalum Lead Alloy

[3] What is 'a Tannoy',

[b] a public address loud-

[c] an industrial manufac-

[d] a classic nineteen sev-

enties chocolate bar

[4] What does the

term 'Wideband'

[a] a sizeable piece of

[b] underwear for large

[c] a Porsche Carrera car

[d] wide audio bandwidth

May Competition

Kilburn Park Rd.

London NW6 5LF

Hi-Fi World Magazine

Unit G4 Argo House

The Park Business Centre

describe?

elastic

people

in common usage? [a] anything coloured

brown-beige

turing process

Questions

HI-FI WORLD'S

GREAT COMPETITION WIN A FABULOUS PAIR OF TANNOY SENSYS LOUDSPEAKERS IN

THIS GREAT COMPETITION!

rom Andrew Lloyd Weber musicals to the BBC, from ITN to NBC, from Tokyo Broadcast to Universal Studios, from the Sydney Opera House to the Hard Rock Hotel Las Vegas, Tannoy loudspeakers can be seen and heard all around the world. Indeed, so omnipotent are the company's products that it's the only hi-fi manufacturer ever to have its own place in the Oxford English

Dictionary! The story started back in 1898 with the birth of the company's founder, Rupert Guy Fountain. Born in Selby, this enterprising Yorkshireman changed his name to Guy R. Fountain in 1905 and subsequently moved south to London. In 1926 he founded the Tulesmere Manufacturing Company, and began researching ways of making battery chargers suited to home use. He perfected a new type of electrolytic rectifier which used two different metals, Tantalum and Lead Alloy - from this the name Tannoy was coined when he subsequently set up a tiny factory in

Hi-Fi & Computer Audio World Competition rules and conditions of entry

- 1. Only one entry per house hold.
- Multiple entries will be automatically disqualified.
- Purchase of the magazine is not a pre-condition of entry.
- No correspondence will be entered into.
- The Editor's decision is final.
- No employees of Audio Publishing Limited, or of any companies associated with the production or distribution of the prizes may enter.

Dalton Road, West Norwood, to manufacture them.

In 1936 Tannoy developed a complete high-powered 'public address' system for outdoor applications. By the time the Second World War started in 1939 it was employing a workforce of 40 people. A number of contracts with the Ministry of Defence ensued, for extensive PA systems to be installed in RAF airfields. 'Tannoy' fast became a verb, then a household name. By 1944, there was even 'a Tannoy' in the House of Commons too! In 1947 the word entered the Oxford English Dictionary for the first time.

Tannoy never looked back - in 1948, the year LP records were introduced and Bell Labs invented the transistor, Ronald Rackham invented the 15" Dual Concentric loudspeaker and the rest, as they say. is history.

The company has gone from strength to strength. In 1977 the factory moved from Canterbury Grove to Coatbridge in Glasgow, where it remains to this day. Tannoy's first range of Super Red Studio Monitors were launched in 1979 and by the early eighties the benefits of Tannoy's large Dual Concentrics were well known. The Arden, Berkley, Cheviot, Devon and Eaton range became classic standards around the world, followed by the Mercury and Revolution ranges. The compound horn loaded design of the Autograph was brought up to date with the Westminster Royal, which has a huge reputation and following around the world.



Now, the new Sensys range looks set to attain future classic status. The big idea is wideband after launching the ST-100 supertweeters to critical acclaim two years ago, the idea of offering superwide bandwidth has found its expression in an altogether more affordable product. The new Sensys 1 you can win here goes right up to 51 kHz, making it ideal for the new age of 'advanced resolution digital audio'. Although a budget design, there's nothing cheap about the build or performance - you get a nicely finished 350x210x292mm reflexloaded box with strong internal damping. Inside this is a 175mm multi-fibre paper pulp coned mid/bass driver with cast chassis and 25mm, 25-micron titanium dome tweeter, complete with strong neodymium magnet system.

Winning a pair of these fantastic loudspeakers couldn't be easier. Simply answer the questions on a postcard and send it to our address, at left, by 30th April 2003. The first correct entry out of the bag will receive this superb prize.

CONGRATULATIONS

...to Ms Sally Hall of Hebden Bridge, W. Yorkshire, the winner of our March competition. A pair of Eclipse TD 512 loudspeakers are on their way to you.



Sevenoaks sound & vision



From starter systems to custom designed multi-room and home cinema installations, our friendly staff are available in all outlets to advise, demonstrate and guide you through the home entertainment jungle. If you're interested in home entertainment and want to avoid the confusion, contact your local Sevenoaks Sound & Vision outlet and experience more. 0% interest free option* is available on most products. "Written details on reguest: Licensed credit brokers. Multimum balance £400. Subject to status."

MUSICAL FIDELITY Tri-Vista Series

Celebrating Musical Fidelity's twentieth anniversary, the new limited edition Tri-Vista



series offers both audio excellence and value for money. The first products released are the Tri-Vista 300 Integrated Amplifier and the Tri-Vista CD/SACD Player, with Pre and Power Amplifiers following later this year. Both products are already receiving excellent reviews - Hi-Fi World (January 2003) said "If you want extreme power with superb grace the new Tri-Vista 300 is quite

exceptional" - while the CD is, according to Hi-Fi Choice (January 2003), "Simply the best CD Player MF has ever made and one of the finest available anywhere."



New Outlets Now Open

We are delighted to announce that we have opened new stores in the following locations: Poole 01202 671677 • Solihull 0121 733 3727 • Swindon 01793 610992 and Wolverhampton 01902 312225. In addition, the Leeds store has relocated to larger premises and offers an improved product range and demonstration facilities.





ARCAM (·M)

Arcam has been at the forefront of designing home cinema since 1996 and has established an international reputation for audio excellence. This highly specified combination is enhancing this reputation even further, having already been described as "Arcam's best ever product to date."

The ultra-flexible AV8 Pre-amp Processor offers Dolby Digital, THX-EX, Dolby Pro Logic II and DTS decoding and is among the first processors to have THX Ultra II certification for music and movie post processing. According to Arcam, the partnering P7 Power Amplifier is a "true audiophile powerhouse" delivering over a kilowatt of power from seven channels each THX-Ultra rated at 150 watts.

This combination has recently been awarded 'Editor's Choice' by Hi-Fi Choice magazine - being described as "A fantastic achievement from this respected UK brand - an AV processor par excellence." - while Hi-Fi World (March 2003) concludes, "Right now, this is the best reason to go multichannel I can think of, Exquisite."

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Please refer to Page 7 for full address and telephone number details.

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experience more



PRO-JECT

Debut II Turntable (Black) £114.95

"The original Debut turntable romped away with a Product of th Year Award in 1999, and the MKII version continues the extremely good work. It's a simple affair, that's easy to set up, but don't let the price fool you - it sounds a whole lot more expensive than that. This

£349.95

Up to £.50 is a fine turntable, and it clearly reveals the benefits of listening to vinyl, with a rich and detailed soundstage, and a good dynamic response.

It's available in six funky colours, so you should find one to suit your decor, and at just a smidge over £100, you can have no excuse not to keep that old vinyl collection in employment for a good few years yet."

F HI-F17 Best Buy 2002

Selected outlets are Project Turntable Centres. Colour Options are available at additional cost

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Michell Gyro SE/RB300 £1049.95

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marantz:

CD4000 (Black) CD Player PM4200 (Black) Amplifier

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ROTEL

RA-02 Amplifier "The amp has a fast, detailed and yet satisfyingly full presentation. That allows it to make a fine job of the beats of Groove Armada's

RCD-02 CD Player £379.95

Goodbye Century set without losing sight of the fine details of the mix, and also husking out Marianne Faithfull's deliciously smutty vocals on Kissing Time with real relish. Add in decent levels or

Best Buy

equipment - and the convenience of remote control, and we reckon Rotel has a winner on its hands.

Aegis Evo One Speakers **£179.95** ACOUSTIC ENERGY



The original Aegis Ones were great speakers, to the extent that they were category winners in our 1998 awards. Since then a host of new models have raised the standards in the sub-£200 category, and the Aegis: Ones soon went from stunner to also ran. AE's response to that is an EVO version.



page uvo

The Aegis Ones genes are clearly evident. The original's refinement and bass weight are preserved and backed up

with better openness and more free-flowing dynamic ability. The old speakers would have delivered a cool and calm version of Pink's Missundaztood set they'd be enjoyable, but would lack a little drive and excitement.

The new speakers, however, address those limitations... Add authority and good stereo imaging to the list of plus points and it comes as no surprise to find these speakers at home

with classical, too, indeed, running through our test room's extensive CD library we couldn't find a

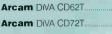


KEF Q1 • £249.95

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Up to £200





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ARCA Claim £200 Off the Speakers* of your choice When purchased together with any Arcam CD & Arcam Amplifier combination. Min Spk Value £400 DiVA CD82T CD Player **DiVA A85** Integrated Amplifier

£599.95 £799.95

DiVA CD82T "Arcam's lastest sounds like a more mature version of its luttle brother. On an initial listen the increased solidity and refinement are obvious, but over time the subtler dynamic shading and more assured handling of transients come to the fore... The Arcam CD82T is one of the best CD players available at this

DiVA A85 "You'll have realised by now that we rather like this amp. It took us completely by surprise, and further strengthens Arcam's already impressive product range ... The A85 is superb, and we can't wait to put it up against its peer in a group test." **** March 2001



B&W Bowers & Wilkins DM602S3 Speakers £299.95

Speaker Cable* worth £50 with ALL Speakers over £280

WHAT HI-FIT

"But the B&W 602 S3 are our winners. They're big and not particularly beautiful, yet if it were our money they're what we would buy No rival can match the wide ranging dynamics or low frequency performance of these not so compact

standmounters. Add all-round sonic excellence and the choice is easy. Give them sufficient space to breathe, then sit back and enjoy Supertest Winner August 2002 the music."



WHLAT HE FTT

B&W CDM NT Series • Prices start from £749.95

DRX-701ES Digital Tuner £229.95 Save £20

This new tuner from the recently renamed Pure is based on the 2001 Award-winning Videologic DRX-601ES, but under the lid is an all new third-generation digital radio engine, in the form of Frontier Silicon's Chorus FS1010. Its biggest advantages are lower energy consumption and above all cost - it's the major reason why the

DRX-701ES is £100 less than last year's model.

The tuner uses 24-bit/192kHz conversion with 4x upsampling and data interpolation, and is powered by a low-noise toroidal transformer - such attention to sonic detail pays off. Digital outputs are provided



on electrical and optical feed, but most people will use the



analogue out, and these sound very good indeed. As usual the tuner is subject to the signal quality off-air, but when it's fed from a high-quality outdoor aerial and a good signal it's capable of a crisp, powerful and detailed presentation. Even more populist music stations like Radio 6 benefit from the mix of a neutral balance and fine weight, while speech is also neutral and easy to follow If you want a quality home tuner for digital radio, you need look no further."

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Cyrus 7Q CD How it compares directly (with the competition) is a matter for a group test, but I can tell you now that it'll be a close one, because the CD7Q is a fantastic CD Player offering all you'd expect from a disc spinner at this price, and more... The CD7Q is a major upgrade from the

class-leading CD7. Its weighty, detailed sound puts it at the pinnacle of CD players at this price."



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"The 8 is a large step forward from older generations of Cyrus amplifiers, and takes the company back into the leading pack in the sub-£1000 integrated amp sector... The Cyrus 8 is a must-audition product.



ROKSAN Kandy KA1 MKIII Amplifier £544.95

5 Claim £100 Off the Speakers* of your choice When purchased together with any Roksan CD & Roksan Amplifier combination. Min Spk Value £200

"When we tast reviewed Roksan's Kandy integrated amp in February it fought off serious competition to come top in a Supertest. This is its replacement, the MkII Internal changes include an uprated power supply for the preamp section and identical mono modules for the left and right power amp sections. Roksan also

Internal changes include an uprated power supply for the preamp section and to claims 50 percent lower distortion on line-level inputs and a whopping 150 percent less on the phono input. The rated power output is an impressive 120 watts per channel into 8 ohms, and this amp has a confident, muscular way with music that bears this out. But don't be fooled into thinking this amp is raw but unrefined. With Van Morrison's *Down the Road* the Kandy has the guts to render the performance exciting and dynamic, but also the guile to deliver subtle details.





The upgraded Kandy MkIII is an excellent amp, the MkII version was

impressive but MkIII is a stunner. It betters all the amps here in the timing department, and has a wonderfully robust character that works well with all types of music. It manages to retain the good points of the MkII while adding extra resolution and subtlety All the amps here have a place in the market. It's just that at £550 the Kandy really does set the pace."



roduct

Free Speaker Cable* worth £50 with <u>ALL</u> Speakers over £280

11L Speakers £379.95

"Quad is best known for its superlative electrostatic designs, which start at £3500. So any £379 pair of speakers that carries the company's name has to be going some to avoid tarnishing the family reputation. The first surprise is that the

11Ls come in real-wood veneers covered with piano-gloss lacquer. This type of finish is almost unheard of at the $\pounds1000$ mark let alone at this price. Has anything been sacrificed for such a luxury finish? Here's the second surprise: apparently not.

The final surprise? Well, saving the best for the last, the sound quality of the 11Ls is phenomenally good. These are small speakers at just

33cm tall, but the scale and authority of their performance is terrific The laws of physics dictate

bass extension limitations, but thanks to a clever dual rear firing port arrangement the 11Ls plumb the depths with the determination of a rottweiler, even when placed in free space.

Also Available

Monitor Audio

Silver S1 • £299.95

If you're in the market for a pair of top quality standmounters these Quads are a must listen. Quite simply, they're good enough to scare the competition big time."



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B&W CDM 7NT	£1249.95
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B&W DM601 S3	£249.95
Cyrus CLS70 (Black)	£799.95
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KEF XQ1	£999.95
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Mission m74	£299.95
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Replacing the **WHAT HI-FI? SOUND AND VISION** Award Winning A3 CD and Amplifier, the new A3.2 models have been further refined and re-styled. The A3.2 CD Player now incorporates the same DAC, filter assembly and control mechanism as the highly-acclaimed Nu-Vista CD Player. The A3.2 Amplifier draws on experience gained through the development of the Nu-Vista M3 amplifier and as such has inherited many of its qualities, producing a sense of ease and flexibility that is normally only associated with far more expensive designs.

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series for its acclaimed and award winning Silver Series speakers. "The aim has been to offer real advances in performance and value", says technical director Dean Hartley. " New models include the S1 and S2 standmounters, the

British loudspeaker manufacturer Monitor Audio has introduced a replacement

WITH ALL SPEAKERS OVER \$500 With a close-miked track such as James Taylor's Line 'Em Up from SACD they really deliver the character of the singer's voice and they're just as expressive with the cultured rhythms of Groove Armada's latest outing, having just the right mix of rhythmic control and fluidity... But amazingly the bes: i:: yet to come: these are simply beautiful speakers for classical music. once a few days thrashing has tamed their initial rawness. With the latest release of Holst's *The Planets* on DVD-Audio,



These are rather magical speakers, with a poise and grace that belies their ability to turn on the power when required. Pair them with a good CD player and suitably accomplished amp, and you won't go far wrong."

Pioneer PDR609 CD-RW Recorder £199.95

"While it looks simple the Pioneer has an impressive array of features, including the handy double-speed disc finalization and CD-Text compatibility. Internally, the PDR609 is a big step up from the Award-winning PDR-509 it replaced: the DAC is now a 24-bit/96kHz number, aided and abetted by Pioneer's Legato Link conversion technology, and it has 24-bit A-to-D conversion, which is ideal for copying your vinyl onto CD. If this is your plan, you'll appreciate that the Pioneer makes it easy to create first-rate copies from any source, helped by the manual recording-level controls. It was hard to tell our copy of Jim White's No Such Place from the original.

While the Pioneer's replay quality can't match the Marantz, it costs £120 less which would buy you a lot of blank discs. If you've already got a dedicated CD player, we'd go with this recorder."

they thunder out Mars with true conviction

Recorder Selection

Also Available

Marantz DR6000

CD Recorder • £279.95

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KGVIcLaren

AV30R AV Processor £1799.95 100x5R Power Amplifier £2994.95

TAG McLaren's AV30R AV Processor is aimed at the home cinema enthusiast who is concerned with keeping up-to-date with the latest surround formats. When partnered with TAG's 100x5R Power Amplifier it makes an exceptional combination.

According to What Hi-Fi? Sound and Vision magazine in their October 2002 issue: "In use, the AV30R, connected to TAG's 100x5R power amp, is superb. True, it can't quite match the clarity and power of the latest-specification TAG flagship, the AV32Rbp-192, but by any AV standard this is a very high-end piece of kit, with excellent impact and fine detail across a range of movie soundtracks from Once Upon A Time In America to the explosive actionfests. Channel steering is immaculate, and the sense of a soundfield wrapped around you - even in 5.1-channel mode - entrancing, with spine-tingling rear-channel effects. The fine Pro Logic II implementation serves music as well as it does non-discrete AV soundtracks, and with an SACD machine hooked up via the 5.1 channel inputs, the lack of coloration and sheer bass oomph is extraordinary."



COU





Strata IIISubwoofer (Wood)£799.95Q150ESubwoofer£499.95

REL is an audiophile company who take great pride in designing and building their highly acclaimed subwoofers. Because of their total commitment to performance, REL sometimes adopt unusual solutions to otherwise straight-forward problems.

"The aggression of Rage Against The Machine's Take The Power Back is near-tangible, the midrange a spitting, spiteful companion for the tight, deep, air-agitating bassline. As for the more deft creations of Chick Corea, the REL's articulate nature serves subtly to underpin basslines, rather than swamp them. The adaptability makes the Strata III a highly recommended subwoofer - it's a very versatile, musical piece of kit, and it doesn't cost the earth."



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Linn Classik Music System £999.95

The Classik Music System is an alternative to the sound and looks of mass market compact systems. Designed to be useful throughout the home, the

Classik is simple and stylish with all the advanced features needed to satisfy the most demanding hi-fi enthusiast or discriminating music lover.



"Since the Scottish company added a tuner to the amp/CD player, mouths have gaped even wider in appreciation. The addition of colour options panders to the public's taste for kit to match their interior design, but it doesn't just look lovely in the lounge: the Classik sounds simply marvellous. Boasting fine impact and drive, it retains its grip even as it thumps out rock and dance tracks. Ask it to play quiet acoustic music and its smooth, liquid presentation impresses still further. The Classik offers the performance you'd expect from high quality separates in one lovely package

- this is a very superior product."

Buy £1000 plus

page SIX

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Founded in 1972, Sevenoaks Sound & Vision are one of the largest and most successful hi-fi and home cinema retailers in the country.

Each Sevenoaks Sound & Vision outlet stocks a wide range of quality products, covering all categories of specialist home entertainment, from DVD Players to Widescreen Plasma Televisions and Projection Systems, all at highly competitive prices.

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Unique styling and advanced technological design needn't cost an arm and a leg, says Simon Pope. But is Mirage's OM-7 omnipolar loudspeaker just a product of his fevered imagination?

first encountered the Mirage sound when someone brought a pair along to audition with a pair of World Audio Design valve monoblocks. "What on earth are those?", was my first thought as these medium sized obelisk shaped transducers were placed in the listening room. However, once fired up and fed with the valve amps, what at first seemed a bit of a gimmick to me became a valid

and beguiling audiophile product. Curiosity got the better of me and I was intrigued to hear more.

Mirage is no new kid on the block. The company was formed back in the heyday of hi-fi in 1977 by a small group of audio devotees, which soon developed a reputation for designs that marry new and unorthodox technology with impressive sound quality. The brand never really took off here in the UK though, and it's only now with some new distribution and slick PR that the brand is finding its way onto the pages of distinguished journals such as this!

BIGGY IN THE MIDDLE

The aforementioned Mirage 'speakers actually turned out to be the OM-9, the smallest model in the three-strong range of omnipolar OM floorstanders. The OM-7 I'm reviewing here is the middle man in the series and certainly carries some weight, literally. Not many 'speakers at this price weigh so much. It's beyond solidly built and needs some serious packing to transport it (note – getting the things back in the boxes makes those puzzles on the Krypton Factor look like a nursery jigsaw!).

The OM-7 is a sleek looking beast akin to the likes of a Martin Logan hybrid; due to the solid lower base which houses the passive bass unit (the flagship OM-5 uses a powered active unit). Indeed the look isn't merely default. Mirage has apparently studied the target market and come up with the following: "The analyzed results showed the typical OM series client is somewhat affluent, open minded to embracing new technology, recognizes the differences of natural versus coloured sound reproduction, is fashion/ décor conscious, and willing to dedicate the necessary space to maximize audiophile quality speakers." So there you have it - saves me the job!

ROUND AND ABOUT

But whereas the Logans have a flat panel for the upper frequencies, the Mirage model uses slightly more traditional transducers, although with a twist. As well as physical weight it also carries some technical weight, too. Mirage is a champion of the omnipolar design, a complicated but interesting phenomenon based on the theory that we only hear roughly 30% of direct sound in a concert hall, whereas the remaining 70% is made up of reflected sound. The sound is dispersed around and above the loudspeaker like a large invisible globe. The Mirage omnipolar technology was designed by a certain lan Paisley (stay calm, not that one), who made his name in acoustic design with Paisley research before Mirage and is now Vice President of

Engineering of API International – Mirage's holding company.

Onmipolar designs really do have their strengths. Done properly, they have characteristically wide dispersion which results in a full, room-filling sound with no dreaded hot spot or extreme directionality. What you get is a 'speaker sometimes bereft of traditional audiophile loudspeaker traits such as pin-point imaging and sound staging, but which is invariably an enjoyable listening experience due to the 'big sound'.

To create the omnipolar design in the Mirage models, the midrange units and tweeters in the OM-7 are mounted in both the front rear upper portion of the 1" MDF cabinet. The drive units used consist of two 1" Pure Titanium Hybrid tweeters and two 4.5" polypropylene cone midrange units (one of each sited either side of the 'speaker). They radiate in-phase to create the omnipolar dispersion pattern. For bass duties there are two 8" polypropylene cones with a longthrow butyl surrounds.

SOUND SENSE

Setting up the OM-7s needs a bit of experimenting. The same as any speaker that radiates from both sides (such as electrostatics) you have to play around to find a healthy medium. The sound has to be as open as possible and tonally well balanced to get the best from them. Gladly, I can reveal that the OM-7s weren't as fussy as some of the ilk. Placement around I-2 metres from the rear wall is necessary to stop unwanted hard reflections and waffley bass. They also benefit from a big room and wide 6-8 feet placement apart.

If you can do this successfully, then these babies really can sing. They are also pretty sensitive, so a 30-40W valve amp is also a fine match (our WAD 20W 300B monoblocks also





drove them well). Putting on a well recorded and detailed CD such as Paul Weller's Stanley Road through Marantz's high-end and very fine SA12 CD/SACD/DVD player and using Quad's smooth but powerful 909 power amp with a WAD valve preamp provided superb results.

When the sound first hits you, it's immediately noticeable that these speakers have some serious bass taut and low, with very little boom (if kept away from walls) due to the massively thick lower section of the cabinet and a tight drive unit. You then move up to the midrange and treble which although having a slightly forward sound are still very sweet and open, and well balanced with the bass. One slight criticism could be that the bass seems sometimes detached from the rest of the frequency spectrum, but slight lack of full integration apart, these are incredibly exciting and fun loudspeakers.

Heavier and less well recorded rock in the shape of Soundgarden's Superunknown showed that the OM-7s could get a rough(ish) recording and make the most of it. The bass and the drum kit were especially impressive but the heavy guitar layers



and shouted vocal lines pushed perhaps a tad more than I would have liked.

Moving to the smoother and more refined sounds of Miles Davis's Kind Of Blue and the OM-7s pleased yet again. They have an unmistakably smooth 'high-end' sound, so beloved of our transatlantic allies but also have an edge of clout and exciting danger that others in this mould lack. Individual instruments had superb presence and a good, realistic timbre. Coltrane's tenor sax had real body and warmth, along with an almost 'he's in the room' realism.

Classical orchestral works had

the breadth and space that are the mark of a fine large loudspeaker – you often need that big sound to get anywhere near recreating the full sonic architecture of Bruckner's Ninth Symphony. But here was the Berlin Philharmonic under the baton of the late, great Bruckner specialist Gunther Wand giving their all. It was very dynamic (so important in Bruckner) and had a fine sense of scale. In the mammoth climaxes the strings grated a little through those metallic tweeters, but it wasn't distracting from the overall enjoyment.

Overall then - give or take a couple of very minor quibbles such as pin-point integration and a slight coarsening at the upper end with rock recordings - the OM-7s are a great buy. They're stylish and very much in the whole high-end mould, but have a way with recordings that makes you want to play your whole collection - twice. These are genuinely fun to listen to, and that's all too rare in hi-fi these days.

Mirage OM-7 £2,000

API UK Ltd. Tel: 01787 249656 www.miragespeakers.com

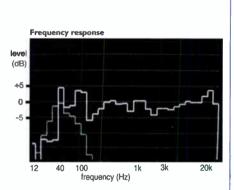
MEASURED PERFORMANCE

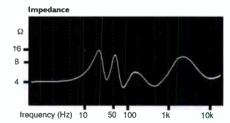
The OM-7 metal dome tweeter peaks up at 16kHz, something that may pass unnoticed except on bright sounding CDs, when the tweeter may well stand out. Otherwise, integration with the midrange unit is good and the two work well together across the audio band. An identical arrangement on the rear panel fires backwards, to reflect sound from the rear wall.

Output from the midrange unit falls below 160Hz before the bass unit kicks in at 10Hz. This delivers much more bass than is normal in relation to the midrange unit and the peaking that occurs suggests bass quality will be over-large and none too well controlled. How this unit integrates with the dipole mid/tweeter array is best judged subjectively but measurement suggests integration will not be subjectively seamless

The OM-7 is sensitive, producing a healthy 88dB from one nominal watt of input. A low measured impedance of 50hms helps toward this, minima of 40hms can be seen in the impedance curve.

The Mirage should create a spacious sound and is accurate enough for this purpose. It is no monitor as such. **NK**





World Verdict Superbly built with a sweet yet dynamic sound. Bass is tight and deep. The OM-7s are a taste of the real high end at a faintly sensible price.

www.hi-fiworld.co.uk World Radio History

METAL FOR MUTHAS



When it's more metal for your money that you want, then Musical Fidelity has a resounding answer in the shape of its A308 preamplifier and power amplifier combination. David Price pumps iron.

uch as we cultured and sophisticated audiophiles appreciate sparsity, mini-

malism and aesthetic and ergonomic understatement, there comes a time when the old adage 'less is more' no longer applies. If you're well heeled enough to live someplace where space is an opportunity rather than a limiting factor, and price is merely a row of figures at the bottom of an invoice, then less is less, more is more and Musical Fidelity's A308 prepower is for you.

The preamp sports full dual mono construction, with an isolated choke regulated power supply for the output stage said to minimise the effects of high current ripple effects and power supply noise on the driver circuit. There's even a high quality phono stage! Measuring 440x143x410mm and weighing 20kg, most power amps look small fry by comparison – and this is just the preamp!

The A308 Power is the stuff of headbanging dreams. A strategically placed advertisement in Kerrang! would doubtless put it at the top of every teenage boy's wish list along with a Norton Nemesis and Penelope Cruz. It is claimed to pump 250W RMS per channel into 80hms, rising to 450W into 40hms, although our tests showed this was optimistic.

Measuring 440x143x394mm and weighing in at 23.5kg, it's a perfect visual match for the already steroidally enhanced A308 preamplifier. The circuitry is a dual mono, low feedback design with fully choke regulated power supplies. Usefully, it has a loop out for passive bi-amping (oh matron!) and two switchable inputs – this is an interesting feature which means it can be connected to two systems at the same time and easily switched between. I can see this being handy for those determined to keep their hi-fi and AV systems as separate as humanly possible.

This combination has pretty neutral sound quality – by which I mean it's not obviously 'voiced' for speed, detail, warmth, dynamics or grip. Rather it has a very good measure of all of the above. Tonally just a touch on the bright side (but only very slightly, mind), this isn't an amp that reminds you of the (solid) state of its circuitry. It is extremely open and uncoloured, yet stonkingly powerful and punchy.

All that grunt is a joy. Akin to a

big Yank V8, when asked to swing vast amounts of current it promptly picks up its skirt and runs, very gingerly, in massive hobnail boots. The massive sub bass sequencing of 4hero's 'Universal Love' shows this to brilliant effect. Even at windowrattling volumes, the A308 Power just trifles with difficult-to-drive loudspeakers as if they were feathers blowing in the wind. The result is awesome tracts of LF that pummel you in the back of your chest like a Shiatsu massage. It's a physical thing, you understand. It is not big, fat and lazy however - the speed isn't up to Naim NAP250 standards but it really isn't that far off.

If its low frequency performance is utterly addictive, its midband is superb. It's 'brightly lit' and open character lets the real tonal colour of any given instrument or voice flood out. To wit, the female vocals in MJ Cole's 'Crazy Love' were brilliantly carried. More than just another 'grey' voice, here was a brilliantly rich instrument in all its powerful, captivating glory. Despite being called upon to pump more current than your average electricity sub-station, this gruesome twosome was well able to communicate the sheer delight of the singer's voice. Although not forward or harsh in any way, this amp needs to be matched to laid back sounding speakers - such as Castle's Conway

3, which it suited brilliantly.

Treble is where this combo least impress - simply by being merely very competent. If its low frequency articulation is an almost religious experience and the midband a delight, the highs are simply good. Here I've heard valve amplifiers run rings around its rather matter-of-fact 'there you go' inclination. Cue up Lee Morgan's 'The Rajah' and there's a nice, sweet hi-hat sound with decent air and space and no appreciable nasties, but it won't have you blinking in disbelief. It's decently rhythmic and tuneful, covers all the bases, but there's still that characteristic solidstate clang coming through. Although not coarse or uneven, it's just not as sumptuously smooth or transparent as a decent single-ended valve amp. Can't have everything, I guess...

A top pre-power amplifier combination, then. It does so much so well and gives away so little to its price rivals from all sides of the field. Its open and smooth, yet manages to pump vast amounts of power without assuming the identity of an uncouth Neanderthal with its knuckles dragging on the ground. I'd say the Musical Fidelity

CR - CHOKE REGULATION

Chokes are big, heavy and expensive coils of wire on a iron/steel core, much like a transformer. They filter out all noise and ripple, unlike regulators which are noisy. This reduces graininess in the sound and reveals low level information.

A308 pre-power will be all that most people will ever need from a hi-fi amplifier – which makes it surprisingly good value for money even at its high price.

> Musical Fidelity A308CR pre/power £3150.00

> > Musical Fidelity Ltd Tel: 020 8900 2866 www.musicalfidelity.com



MEASURED PERFORMANCE

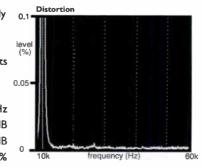
The A308 CR power amplifier justifies its weight, producing 230watts into 80hms and a massive 400watts into 40hms. Since loudspeakers these days commonly have 40hm bass units the A308 will actually deliver this power if wicked up appropriately. The A308 CR needs to be used with care.

The power amp produces minimal quantities of distortion even when pushed to full output into 40hms at 10kHz – a vicious test. In fact, distortion levels into 40hms were no greater than 80hms and hovered around 0.004% at low power, rising a little to 0.02 just below full output at 10kHz, third harmonic dominating. The A308 CR will sound clean no matter how hard it is pushed in use, The pre-amp gives a normal x4gain, except through phono where the MM stage gives x415 gain, a normal enough figure that gives 3.3mV sensitivity. MC is available. With low equivalent input noise and high overload this stage measures well. It has a flat, wide response that extends down to 12Hz (-1dB), so there is no warp filter.

The A308 combo is a real powerhouse. It measures extremely well in all areas. **NK**

Power	230watts	level (%)
CD/tuner/aux.		0.05
Frequency response	5Hz-100kHz	
Separation	90dB	
Noise	-119dB	
Distortion	0.006%	0 .

Sensitivity	350mV
dc offset	5/6mV
Disc (MM)	
Frequency response	l 2Hz - 44kHz
Separation	71 d B
Noise (e in)	0.22uV
Distortion	0.006%
Sensitivity	3.3mV
Overload	180mV



MAY 2003 HI-FI WORLO & COMPUTER AUDIO



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In the tradition of Japanese high end, Toshiba's SD-9500 DVD-Audio player has everything – including upsampling. David Price tries it out for size...

o be brutally frank, the Toshiba name is not synonymous with quality in this country. Indeed, it could be said that even in its native

Japan, the name hardly exudes class. But the exigencies of marketing might impede – but cannot prevent – a good product getting to market. And the SD-9500 is more than good; it's superb. So, what is it about the SD-9500 that makes it special?

This machine is an archetypal Japanese 'battleship' product. Its rear

UPSAMPLING WHAT?

Digital's latest New Big Thing, this is the process of adding additional digital filtering, making for a more accurately recreated analogue sound wave. This additional computing power generally alters the overall response of the digital filtering, in turn making for a reduction in out-of-band noise components. Contrary to some people's claims, it will not magically turn your 16bit, 44.1kHz CD into something with the resolution of the latest 24/192 DVD-A discs - far from it. It is however, generally agreed to a have a subtle but perceptible effect on CD sound - as indeed it does with Toshiba's DV-9500.

panel, complete with balanced XLR socketry, is the classic 'give-away' sign of its designers' intentions. In Japan, only the one, truly special machine in the range gets these - all the others, however many gadgets may festoon them, can whistle. Factor in gold plated 5.1 and stereo RCA phono outputs of the very best quality, plus coaxial and digital ins and outs and component video socketry, and you're

with a rear panel busier than its front.

looking at a machine

For the Nipponese audiophile, this is the second 'declaration of serious intent' – as the song said, the SD-9500 is 'going for the one'.

No, you didn't misread. The Toshiba has digital inputs and well as outputs. Press the INPUT SELECT button under the remote control's hinged flap and a tiny EXTERIOR INPUT LED blinks on to denote the fact that you are now using it as a DAC. But why would you want to use it thus? Well, aside from the aforementioned XLR outs (which even if you don't use them in full balanced mode, sound surprisingly superior to RCA phono outs thanks to the greater surface area), the SD-9500 has upsampling. It's switchable on the remote (another little blue LED glows when engaged), and yes, it really works (see box). This feature, which lets you make best use of the machine's 24bit, 192kHz DACs for which Toshiba claims a dynamic range of above 120dB and THD of less than 0.0006% [see our measurements], lends it yet more audiophile street credibility.

The feature fest doesn't stop there, either. As you'd expect, Dolby Digital and DTS audio decoders come as standard, and it's also CD, CD-R, CD-RW, HDCD and MP3 compatible. Toshiba's Enhanced Audio Mode is fitted, giving virtual surround sound and dialogue enhancement of the centre channel during Dolby Digital via the analogue audio outputs – although it's not worth bothering with in my opinion.

Progressive scan, a Hyper Anti-Alias Filter and DNR technology complete the video side of the equation. Fortunately for us audiophiles, all picture-related activities can be switched off at the touch of the remote's VIDEO ON/OFF button, whereupon another little light shines to proclaim the fact. The final thing worth switching off is the fluorescent display, which can also be dimmed if you just can't part with it.

SOUND QUALITY

Listening kicked off with CD - in the shape of Van Halen's pomp rock opus Jump. Maybe not the most seminal song ever committed to tape, but it was most illuminating. With both video and upsampling switched out. the Toshiba put in an impressive performance. Essentially it sounded much like all the other high end Jap DVD machines when asked to play CD; smooth, open, detailed, refined and enjoyable. Switch upsampling in, and it's like this only more so. There's a perceptible change in the treble, which becomes obviously smoother and more spacious. The upper midband loses some of that characteristic chrome-platedness, and the



whole experience becomes very couth and slick. Music feels a little more direct and less between it and you.

Indeed, I was sat there marvelling at the wonder of it all, until I decided to resurrect my old reference Sony X77ES sixteen bitter – probably the best CD player to come out of Japan in 1989! The bad news for the Toshiba was that it absolutely pasted it. The Sony proved far more powerful, propulsive, dynamic, rhythmic and engaging – the only downside being the aforementioned brightly lit midband and slightly splashy, untidy treble.

Anyway – the point is, if you want really gutsy, musical Compact Disc with earth moving bass and oodles of midband drive, don't get a DVD player – upsampling or not.

Moving to DVD-Audio, the SD-9500's character really showed through. It is of the silky smooth disposition (partially explaining its slightly lackadaisical sixteen bit performance, methinks). Even the strains (and I use this word advisedly) of Fleetwood Mac's Rumours DVD-A were unusually bearable. Through Denon's DVD- 3800 (admittedly cheaper at £999), this bright disc is, erm, bright – but the Toshiba make it quite sumptuous. I was quite struck by the smoothness of female vocals; there was a delicious absence of grain and the sense that you could hear right down into the mix. On other rival machines however, the disc's acerbic midband has you running for cover.

Bass is sumptuous and fluid. It's not the most gut-churningly powerful you'll hear, but its richness and (slight) looseness gives you a sense of the good life. You know Naim bass – well it's the opposite.

Move up to the midband and there's an effortless transition into a sepia-tinged soundstage that flatters to deceive. It's not the most incisive or forensic, but once again makes you think you're listening to something incredibly expensive and svelte. It's very smooth and there's a marked lack of distortion - a really nice result. Soundstaging is big and bold (as with most DVD-A players), but this one falls back quite a lot more than most (which tend to jump out at you and bite your head off), offering impressive depth perspective behind the axis of the speakers.

Treble is quintessential Japanese high end – as sweet as Belgian chocolate with an equally pleasant lingering aftertaste.

A deeply nice player, this machine boasts superb video performance, excellent ergonomics, worthwhile facilities and a genuinely enjoyable and beguiling sound. It is not a stonking CD player, but makes up for it with a DVD-A performance that's

REVIEW SYSTEM

Sony CDP-X77ES CD player

Musical Fidelity A308

Yamaha NS1000M loud-

Integrated amplifier

speakers.

one of the most SACD-like you'll find at the price – music just seems to ebb and flow out of it with consummate ease but no lack of involvement. Those who've run DVD-A through

a high resolution system will know that smoothness is no bad thing, if the software releases so far are anything to go by.

Toshiba may not be the greatest name even now, but just as with those old Aurex products, it can still do the right thing.

Toshiba SD-9500 £1,500

Toshiba UK Tel: +44 (0)8704 424 424 www.home-entertainment.toshiba.co.uk

MEASURED PERFORMANCE

As a flagship machine Toshiba have given it exemplary measured performance. Our response analysis shows perfect flatness out to 46kHz with 96kHz sample rate DVD-A, and the player manages 92kHz with 192kHz sample rate material.

Distortion measurement was complicated by the players refusal to accept a Philips test disc, needed for CD tests, but figures were otherwise exemplary, 16bit at -60dB returning a low 0.3%, whilst 24bit gave nothing other than noise. At -90dB an undithered 16bit signal gave 43%, about normal, whilst 24bit again gave only noise that read 0.2%. With normal output level, very wide channel separation and low noise, likely due to muting, the SD-9500 measures exceptionally well. **NK**

Frequency response			Frequency	response	
(CI	D) 4Hz	-20. 5kHz			
DVD-A	3Hz	96kHz	level (dB)		
Distortion (DVD-A)	left	right	+1		
-6dB	0.005	0.005	0 -		
-30dB	0.005	0.005	-1		
-60dB	0.005	0.005			
-90	0.2	0.2			
Separation	left	right	62	frequency (Hz)	100
lkHz	135	133	Distortion		
20kHz	127	122	0.1		
Noise (IEC A)		-122dB	thd (%)		
Dynamic range (CD) 112dB			0.05 -		
Output	2.2V		0.01 - 4-10		mahamme
			0 1k	frequency (Hz)	2

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Audio Note, famed for their high-end valve amplifiers, are exploring other avenues of audio with success. Simon Pope considers the importance of the DAC 3.1X Signature.

here's a very interesting story attached to these converters, the DACs feature no digital filter and 1x oversampling. The genesis of these

designs came about in early 1995 when Audio Note started work on their first filterless DAC. Since then the company has slowly but surely developed and built on the idea to create a range of highly individual digital devices. Their range of domestic converters culminates in the gulp inducing DAC 5 at the princely sum of £36,500, with a higher level DAC 6 in development. Yikes. We've dropped to a slightly more, er, acceptable financial level here, with the DAC 1.

First a little explanation of the idea and technology behind the filterless DAC, with a little help from Mr. Qvortrup. The 'brick wall' filters used in DACs are merely used because it's impossible to design an analogue filer, which would roll off quickly without phase distortion a time smearing. Over to Mr. Q: "if an impulse lasting only one sample is fed into the digital filter, it gets smeared out into a ringing signal several milliseconds long, hardly supporting the claims of accurate reproduction." He regards digital oversampling filters as being akin to analogue corrective feedback systems that also

try to stop or reverse time and often result in inferior sound.

Audio Note's answer is to place an analogue filter after the digital-toanalogue conversion section. This filter is a third-order design with a silver wired inductor and silver capacitors and is designed to slowly attenuate the higher harmonics more naturally, so as to preserve as much as the waveform as possible.

Audio Note calls this 1x oversampling 'direct from disc' circuit topology, and it is used from the DAC 5 down through the range.

This technology claims to dispense with all the correction measures found in other DACs and presents the digital signal directly to the converter after reformatting. This, believes Qvortrup, allows the listener "to hear what is actually recorded on each disc, rather than, as has been the case up to now, some technically and cosmetically altered version. As a result, the reproduction is more reminiscent of a master tape in quality."

Being an Audio Note product, the 3.1X Signature of course uses valves for that unique extra touch of sound quality rarely encountered in a digital-to-analogue converter. The valves are used in the traditional Audio Note way of using simple signal paths with no correction or feedback. The valves are at their most linear operating this way, which means theoretically better sound quality and longer life.

Also found in the 3.1X Signature are the much revered Black gate capacitors. We at HFW have long admired these little Japanese capacitors. They are relatively rare and hard to get hold of but Audio Note has near enough the full range and uses them consistently in finished products. They are universally admired and renowned for their superb sound quality. Black Gates are almost 100% guaranteed to improve the performance of any product when used.

Physically the 3.1 is big – very big and weighty for a DAC and is stuffed full of decent components, hence the top heavy price. It has XLR type AES inputs as well as the standard RCA type.

SOUND QUALITY

For our review I used the 3.1 Signature with two transports, one the very fine mechanism from the Sony 555ES two channel SACD/CD player and the other Audio Note's CDT Two which is a top loading device with a Philips CD Pro transport. This is topped by a weird looking but heavy pan-like lid and has copper wired digital output transformers and AES as well as RCA outputs.

What does the 3.1 sound like then? Well, very different to every other DAC I've heard. Digital source manufacturers always lay claim to their product sounding 'analogue', when it rarely does. The 3.1 genuinely does. It has roundness and a cohesive 'whole' to the sound that's very rare in any form of digital audio. This is best demonstrated in CD remaster of classic old classical recordings such as Solti's classic Mahler 8 on Decca with the Vienna Philharmonic Orchestra. The sound through both the Sony and Audio Note transports was unmistakably organic and free from any digital nasties and unlike the sound you'd expect from a CD source. Strings were smooth and lyrical and voices were forceful and well rounded. The soundstage was wonderfully deep and wide

Although you get a great sense of space and air in the recording the one thing that was missing that some audiophiles may crave is low level detail. There's enough there to make listening a fully enjoyable experience but what some expect from hi-fi isn't what you always get with Audio Note, which is what makes it such a unique outfit. I, for one, didn't find the lack of ultra fine detail spoiled the performance one bit.

THE TIMES

Playing Devil's advocate somewhat, I next put on a hybrid SACD/CD of Faure's Piano Trio played by the Florestan Trio on a Hyperion recording. This, being a chamber piece unlike the massive Solti Decca recording has immediate presence and intricate detail. Again, through the DAC the sound was rich and full. Playing the disc 'straight' through the Sony and then adding the DAC was a jaw-dropper. You don't expect this level of difference with digital. Changing the loudspeakers or cartridge, yes. Adding a DAC, not necessarily. The players were well focussed and the playing was again cohesive. This was a musical whole as opposed to merely layers of instruments.

Overall the DAC 3.1 is a hard beast to pigeonhole. I highly recommend it but with one reservation, which is that if you're into hi-fi for hi-fi's sake and you think of music as a science as opposed to an expressive art form, don't go there. Others can give it a long and hard listen before taking the plunge, as £3100 is a lot of money to drop on a DAC. I personally think it's a very musical, highly interesting (actually, almost revelatory) product.

> Audio Note DAC 3.1X Signature £3,100

Audio Note UK Ltd Tel: +44 (0)1273 220 511 www.audionote.co.uk

MEASURED PERFORMANCE

The frequency response of this convertor, above 150Hz, rises gently to form a curious plateau stretching from 600Hz to 5kHz. The rise isn't great, amounting to +0.3dB or so, but as CD goes it is unusual. Above 5kHz output falls away quickly our analysis shows, measuring -I dB at 9kHz and -3dB at 20kHz. This result was consistent with either an impulse signal or a steady tone test signal, showing it is the result of conventional filtering, rather than digital processing. The lift across the midband will add a sheen to the sound, whilst the roll off above 5kHz will remove any of CD's spittiness and sharpness with treble-forward recordings.

Frequency response also rolled down below 20Hz, so the DAC is band limited at both ends of the spectrum and sub-bass will be attenuated.

Distortion was higher than normal, but only at high levels was this caused by the valves, which produced characteristic second harmonic. At -30dB, 0.025% distortion was produced, a low enough value. Our analysis shows extended harmonics, beyond 9th order.

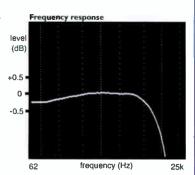
At -60dB the channels measured 1% / 0.6%, showing quite a degree of unbalance, and at -90dB results were 68% / 38% (undithered). These values are quite high and likely from a multi-bit convertor.

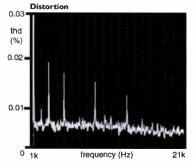
The Audionote DAC is a bit unusual by current standards, having high-ish distortion at lower signal levels and a tailored frequency response. It will certainly sound different. **NK**

Frequency response 20Hz - 9kHz

Distortion	left	right
-6dB	0.21	0.22
-30dB	0.028	0.023
-60dB	1.08	0.66
-90	68	38
Separation	left	right
lkHz	80	81

20kHz	62	64
Noise (IEC A)		-91dB
Dynamic range		-100dB
Output		2.7V



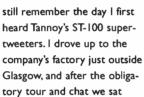


World Verdict COCO Very different from the norm, this 'filterless' DAC brings warmth and lyricism to even the hardest digital source. Not the ultimate in detail, though and expensive.

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SENSYS WORKING OVERTIME?

Tannoy claims that its new Sensys 1 loudspeaker will engage your senses. David Price turns on and tunes in - but doesn't drop out.



down to do some serious listening. Despite the fact that most of us can't hear much above 15kHz (and lower still as we get older), the effect they had was as clear as the difference between night and day. It shouldn't have worked of course, as the lowest crossover frequency on the ST-100s was 14kHz (16kHz and 18kHz were also provided), and my shell-likes pretty much give up the ghost soon after.

Even more interesting was the fact that it was easily demonstrable with CD which, as every student of audio should know, contains no audio energy whatsoever above 22kHz.At this frequency, the supertweeters were just beginning to open up as they gave usable output all the way up to 100kHz! The fact that the distortion figures at the upper end of Compact Disc's frequency band aren't a pleasant thing to contemplate is all the more fascinating - how could the ST-100s make things sound better if they were reproducing more of CD's grungy top end? The fact is that, whatever the source, the tweeters

fitted to standard loudspeakers do generally seem to benefit subtly from a helping hand. Even the beautiful beryllium domes in my own Yamaha NS1000Ms, were flattered by the fact

that there was another pair of tweeters stretching right up to 100kHz.

Tannoy's new Sensys I standmounting loudspeakers are a completely different kettle of fish from the ST-100s, but what they do share is the company's wideband philosophy. Although a pair of these costs about the same as a handful of those exquisitely finished gold shorting plugs on its original supertweeters, you're still supposed to get the benefits of an extraordinarily wide bandwidth. The fact that DVD-A and SACD are capable of seriously extended highs makes this more apposite than ever before. Your average 24bit, 96kHz DVD-A disc stretches up to 48kHz (in theory), just enough for the Sensys 1s to





cope with in its entirety, as they go up to 5 IkHz. Considering their very modest retail

price, these speakers are very well screwed together. The

350x210x292mm reflex-loaded cab is a solid 7kg affair, cut from 15mm particle board and braced internally with a front baffle acoustically damped with fabric. To this, a 175mm multi-fibre paper pulp coned mid/bass driver with cast chassis is holted below the aforementioned 25mm, 25-micron titanium dome tweeter, complete with strong neodymium magnet system. The two meet and great one another at 2.7kHz. Bi-wiring, RF grounding and variable port damping all come as standard, as does magnetic shielding for near-TV operation. Finish is any colour you like as long as it's maple, which I thought looked very nice.

I tried the Sensys I through Philips superb new DVD963SA (for



SACD), Pioneer's excellent DV-656A (for DVD-Audio) and Marantz's fine SR-6300 AV receiver. Kicking off with Eleanor McEvoy's I've Got You to See Me Through, the Tannoys proved a particularly interesting performer. Despite the claimed high frequency extension, the treble response sounded obviously rolled off. However, they didn't sound rolled off in the traditional way, where the highs are simply lopped off, never to appear again. Rather, although the treble level was down a bit, it still came over with a fine amount of air and space. The result was a smooth, gently tapering high frequency performance, but one which had an uncanny presence. Hi hats had a particularly delicate filigree detailing, with little of the chrome-plated zing you get from rival wideband loudspeakers.

Sitting 60cm away from the back

wall, I found these 'speakers bass too light for my tastes, so I moved the Sensys closer back. The result was a gentle reinforcement that added weight to the notoriously bright DVD-A pressing of Fleetwood Mac's Don't Stop. This made for a nice smooth sound right across the frequency range, despite those nasty, hard vocals. Bass was still lacking articulation, but was obviously tuneful and rhythmically satisfying. Ultimately, there was a smidgen of cabinet boxiness slowing things down - but no more than any of this loudspeaker's rivals. If you want to listen to a 'speaker that doesn't boom - spend four grand on a pair of Quad Electrostatics!

With a tapering treble and light, gentle bass, there was only one way for the treble to go - up. Yes, the Sensys is slightly forward tonally in the midband, but such is the couthness and refinement of the drivers - and the even way in which they crossover - that you never get the impression of harshness or grain. Again, I won't pretend for a moment that they're as smooth or seamless as high end designs, but I've yet to hear a price rival that comes close. This made for satisfying rendition of Foreigner's Waiting for a Girl Like You on DVD-A - the analogue synth fills were sugary smooth and were satisfying. Above this, the vocals projected consummately well - this is a traditional Tannoy trademark (especially with the Dual Concentrics), and the Sensys are no exception. Indeed, vocal performance is a great strength - from the shrill

strains of Toni Braxton's He Wasn't Man Enough to traditional choral music, these speakers showed strong imaging, fine stage depth and good lateral image placement. Coupled to that smooth, even, clean and detailed midband and you've got a very nice sound indeed.

Overall, I'd call the Sensys I a budget audiophile speaker – it has speed, detail and smoothness in equal measures. It suits the new breed of budget DVD-A and SACD very well. The whole package is very well designed and produced. A great value product, and capable of worrying both price rivals such as Wharfedale's Diamond 8, and more expensive designs such as KEF's Q1 at £100 more, alike. It is, however, a distinctively voiced loudspeaker, so an audition with your source and amplifier is essential.

Tannoy Sensys | £150

Tannoy Limited Tel: +44 (0) 1236 420199 www.tannoy.co.uk

SPEAKERS' CORNER

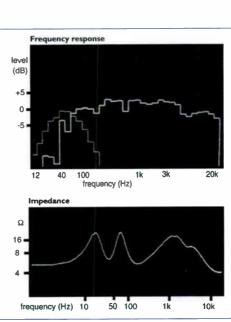
Alex Garner joined Tannoy in 1976 as Chief Transducer Engineer. He had previously worked for Wharfedale for six years designing loudspeakers, before which he'd done a degree in Electrical and Electronic Engineering at Leeds University. He believes Tannoy's reputation was made on the Dual Concentric driver design, "the 15 inch Duals never cease to amaze me in theatres around the world where the audience has no idea that they're providing substantial sound amplification for the performance." In future, he says we can expect a move towards speakers offering very wideband performance with linear time responses – of which the Sensys range is just the beginning...

MEASURED PERFORMANCE

The Tannoy Sensy 1 has a pronounced step down in treble output from its tweeter our analysis shows. This will give it a less fierce sound than rivals and the noise test signal sounded quite mild. Low frequencies roll down slowly too, although the 'speaker gets down to 40Hz and the port goes down a little further. Near-wall mounting is probably best.

Impedance was quite high at 7ohms as Tannoy use a 5ohm (DCR) bass unit. In spite of this sensitivity was a healthy 87dB, so the Sensys I is efficient; it is also an easy load. The impedance characteristic is very mild.

The Sensys I is a nicely balanced allrounder that will have a milder sound than most rivals. It will match all amplifiers. **NK**



World Verdict Correction With a fast, smooth and musically communicative sound, the Sensys demands consideration – but its distinctive character means you'll need to match it carefully.



GET THE BALANCE

RIGHT?

I was wondering if you could help? I've recently come by a pair of Wilson Benesch Orators (not by theft I hasten to add). I've heard these speakers previously on a decent system and know they can sound fantastic. Unfortunately my system currently consists of a Cambridge Audio AI amp (second-hand), Goodmans CD player (rescued from a skip) and several lengths of bell wire! As you can imagine

I'm keen to upgrade in order to enjoy my new speakers, however I don't have a lot of cash... with a few months saving and working long hours I think I can come up with around £800 to spend on a new amp and CD player. Any thoughts on what combination would get the best out of my

'speakers at this budget, and should my cash be split evenly between the two components? Ben

Wow. Good as the Cambridge A1 is, it may be a tad too much to ask it to get the best from your newly acquired WBs! It all depends if you want new or second-hand. With the option of buying second-hand you'll get more for your money and a better all round match but a couple of options, believe it or not, do exist at the new mid/budget end. Firstly consider one of the following CD players - NAD's C521i or C541i. Both deliver a high quality sound that's underpinned by a good amount of smoothness and decent detail. The C541, being the dearer of the two, has a more sophisticated sound but the equally good value C521i gives you more money to play with for an amplifier which may be the best option, as the Orators will need to be driven by something more powerful than the AI. Marantz's impressive CD6000 OSE LE is a great buy at £300, too. The other consideration for a new CD spinner would be the top loading Rega Planet 2000, which at £498 offers a genuinely impressive and 'analogue-esque' CD replay for a very sensible price.

The choice of a new amplifier may not be so easy within the constraints of your budget. Whilst options are available from the likes of NAD, Arcam and Marantz, I'd opt for something a with a little more it's worth getting the very best you can afford to match the Orators. Wilson Benesch makes some very fine products indeed and hopefully you'll go further down the path of audiophilia once you fully realise their merits! **SP**

And you could also check out the Philips DVD-962SA, which offers great CD replay and SACD too, now being discontinued. **NK**



body and smoothness to match the detailed and neutral high end sound of the WBs. The obvious choice is a Cyrus 6 at £600, which would keep you in budget if you plump for the NAD C521i and is upgradeable later with the PSX-R power supply. Other possibilities are the Rega Mira at £400 (smooth and detailed but not too powerful at 30 watts) and the very fine Primare A10 at £500. Also the Roksan Kandy at £475 is a possibility.

When you consider secondhand then the doors really open wider. Classic CD players to look out for are Meridian's 506.24 which you could find knocking around for £500 or so and the likes of Musical Fidelity's X-Ray which you can pick up for about £250. For second-hand amps, a combination of Creek P43MkII and A43MkII pre and power amps would do the job very nicely for about £400, as would any Musical Fidelity X or A Series amp you can afford (and there's plenty knocking around!) Whatever option you take, The Rega Planet CD player would be a fine 'budget high end' purchase.

TELL METHE LINGO?

I'm thinking of upgrading my early 1990s Linn Sondek LP12 with a Lingo power supply but am unclear what this entails. The Linn is standard with an Ittok LV II arm and Linn Asaka cartridge. Does the power lead from the deck plug into the Lingo or what? The Linn website is unclear how this upgrade is accomplished. The rest of my system, all from the early nineties, comprises Naim 32.5/140 amps with Hicap PSU, Linn Kan speakers, Arcam Delta 170 CD with Black box 3. The tuner is an Onix with power supply which sounds superb, DAB I can get via Sky digital.

What I may do next is send the Naims back to the factory to be serviced, but would not want to lose the fine sound I have at present. How does the modern Naim sound compare?

One final question if I may - you often say to bin the headphones which

come with portable equipment and buy a pair of Sennheisers, so I was wondering which ones you recommend as my HD 580s may be a little over the top!

Regards Richard French Romford, Essex

Hi Richard. The answer to the first bit of your question is easy. You simply walk into your local Linn dealer with the readies and they'll install the Lingo for you. The LP12 needs to be out onto a 'jig frame' and the base plate taken off to accommodate the various new gubbins - worry not, Linn retailers are well trained and won't wreck your deck. The mains lead from the LP12 is replaced with a DIN lead which plugs into the Lingo, which is in turn connected to the mains. If you want a cheaper and more 'hands on' option then look up the £299 'DIY' Origin Live DC motor review in this very issue, although performance wise the Lingo comes out best.

The 'new' Naim sound differs very slightly from the amps that you have. The grip and control of rhythms remains but there is an added sense of openness and smoothness which makes them perhaps a more aurally 'user friendly' option. It's slightly less grey but if you like the sound you have, then have them looked over by the excellent service department at the Salisbury HQ. Naim do a fine job in dealing with their existing customers in this way.

Finally, as far as tiny in-earphones go, Sennheiser's MX500s are superb at \pounds 20 and vastly superior to the vile things supplied with most portable devices! SP

THE LONG AND WIND-ING ROAD

Have you ever felt the need to tell someone the secret to happiness? After thirty five years of searching for audio Nirvana on the budget of the common man... Haven't we all sought that moment, that intangible thing, in the hope that within our equipment there is the ability to mimic truth, to deliver what we think we should hear? We sit listening for it, but then the reality dawns that we are expending a lifetime excusing the faults of our machines, or the recording, only to invest more and more to move ever onward and upwards in that quest for the Holy Grail. Do we actually ever hear reality?

Surely the music we admire has been recorded in a studio, and even most live recordings have been massively processed? And in the studio, doesn't each musician strive for the one perfect performance, to be overlaid by the resident genius who can weave a tapestry of audio magic to give the audience what they expect? In real terms, this ends up nothing like actually being there, yet in many ways it can sound much better! How many of us can afford front row seats in a concert held for one or two, with the best musicians in the world?

I repeatedly ask myself if audio heaven exists. Clearly yes, though some would say at a price, and that price can be very heavy indeed. I have been through countless upgrades - SME this, Tannoy that, Shure this, Mission that spinning in ever-decreasing circles into a rapidly depleted wallet. Well done the audio industry! But now I would like to thank Hamish at my local retailer in York for having been introduced to Linn - I know, I know! This was a six month rollercoaster of a ride, leaving me ten metres short of an LK400. We listened, and thought, I bought, and upgraded, then the sun crept over the horizon... Then I went active, and what a revelation! Even her indoors could hear every difference each piece of kit made, and yes, she virtually chose the speaker system and not just because they looked nice!

So why am I writing? Well, I have almost reached that moment! I have settled into a Karik III with Numerik DAC, Kairn Pro with two LK 100s, Aktiv Katans and a Sizmik, but it was some Christmas present. The final piece came into play on Tuesday night when a friend and I spent the evening pushing our jaws back into place, and I have to say my mate Pete is no mug (Martin Logans, Voyd etc). We were both quite stunned. Contrary to popular belief and a lot of advice, a one-make system does work. I had almost given up hope that niryana exists.

But now, the wallet is dented but there was no need to rob a bank, mortgage the kids. I just hunted around and bought sensibly - having taken very good advice. So I would advise anyone to try the Linn active option — it really works effortlessly. It is musical, revealing, spacious and boy, it can rock! So I have actually stopped figuring out the next upgrade and settled back to listen to the music from the best seat in the house. Of course if I want the buzz of reality, I can always sneak out for the night and jostle for position amongst the crowds.

Richard Bentley

Congratulations Richard – now you've found your audio Nirvana, you can dispense with all that hi-fi fuss! All I can recommend now is that you to purchase some train tickets and very good value Season Ticket to this year's Prom concerts! SP

NOISE ANNOYS?

I'm driving a pair of KEF Reference 3.2s from a Cyrus 8 amplifier. Although I'm well aware of the damage one can do by pushing an amp into clipping, l wonder about those historic remastered recordings from the golden years that contain all sorts of harmonic distortion, overload etc. in their original transcription? Will this strain amplifiers and fry 'speakers - or am I right in thinking that this is simply a component of the signal source, and in that sense no different from anything else that's audible? I think I've probably got paranoid about this - but after thirty years or more of hi-fi, just playing and listening without incident - I'm now forever reading that speaker coils are disintegrating the world over in epidemic



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proportions. Is the problem really that widespread? Melvyn Hopwood.

No need to worry about that distortion on the original recording, as far as I know, you've got it right. I've been playing the classic Giulini Verdi Requiem, with its atrociously audible distortion in the 'famous loud bit', for literally years. No problem thus far! As for 'speaker coils disintegrating I couldn't find any information on this particular world disaster. If any more knowledgeable (on this topic, anyway!) readers can report further, please let us know by the usual means! SP

Some loudspeaker manufacturers rather overplay the problem of amplifier clipping and loudspeaker (tweeter) burnout. I suspect they have been horrified at seeing a burnt out loudspeaker and have over-reacted. Most people just cannot stand the volume needed to do this, the big exception being a party where there are lots of bodies to absorb the sound and perhaps as much alcohol to dull the senses.

Whilst the distortion that lies within a recording will distribute energy upward in that recording and therefore tax your hi-fi system commensurately more, it won't be worse than the energy distribution found on some 'normal' Rock recordings. You are right in thinking that this recorded distortion is a component of the signal source. Providing you don't play your system really loud for a long time there's very little likelihood of suffering 'speaker damage from clipping. **NK**

TAKING THE FLOOR

I am the proud owner of a Bow Wazoo XL 75 watts per channel integrated amplifier. At the moment my set-up consists of Marantz CD 6000 KI Signature, Linn Keosa floorstanders, Atlas Navigator interconnects and QED Anniversary speaker Biwire.

I am fairly happy with the system but would like to change my speakers. I feel with a change of speakers I would achieve greater clarity of sound and add more bass depth. I've considered the PMC FBI (as floorstanders they would be my preference), but do you have any other recommendations? Would I be right in thinking higher sensitivity speakers would suit the Wazoo best? My budget is around £2,250. **Mr Paul Jennings**

West Malling, Kent There's no particular need to match the Bow amp with high sensitivity 'speakers – 75 watts per channel will drive most transducers happily. Saying this, high sensitivity models give a greater immediacy and an overall bigger sound with 75 watts, so the choice is yours, really. The FBIs are a very good design indeed - elegant and non-intrusive, yet big sounding and incredibly exact with deep and tight bass, too. They remain a great buy at their £1,400 price point. Also in this category you should listen to Elac's superb 512 floorstander, which again have great accuracy along with a smooth detailed treble from the ribbon tweeter and very fine tuneful bass.

For a higher sensitivity model in the £1,000 - £1,500 price range get a listen to both the 90dB Castle Conway 3s and the 92dB Living Voice Auditoriums for something more lyrical and perhaps fruitier than those above. Your budget of £2,250 means that you could also consider the impressive and stylish Mirage OM-7s, which would be an interesting match for the Bow both sonically and physically. Also at the very top end of your budget is the superb B&W Signature 805. It's a standmount but has impressive bass and incredible detail. SP



PMC's FB1s are a solid buy at under £1,500.

DO YOU SPEAKER MY LANGUAGE?

Hello from down under! My current system comprises a Linn Sondek LP12/DIY Armageddon/Akito/Garrott P77 vinyl front end, Sony CDPXA-5ES CD player, Marantz PM17 amplifier and TDL Studio 0.5 loudspeakers. I am currently looking around for a new pair of 'speakers with a budget of about AUD\$ 2000. I have been reading reviews of the JMLab Chorus 715 and 725 (AUD\$1600 and 2000 respectively), and the Mordaunt-Short 908 (AUD\$2000). I want to replace the TDLs for two reasons: First, they are getting on a bit and I believe modern 'speakers should be able to outperform them. Also, they occasionally misbehave by making a strange buzzing/scraping noise! Secondly, they were capable of reaching suitable levels in my previous, small living room, but I now live in a much larger house with an L-shaped open plan room and high (up to 15 ft) ceilings. With their 86dB/W/m sensitivity, they sometimes struggle when I want to party.

The JMLabs and M-S speakers have received some good reviews and have a significantly higher sensitivity than the TDLs. Are there any others at this price level that warrant investigation? Also, Australia has numerous domestic speaker manufacturers and I intend to listen to a few models from these manufacturers, such as Legend, Krix and Sonique. Have you had any exposure to any of these brands? Musical Tastes are varied, but mainly I listen to seventies and eighties Rock/Electronic (Anything from Motorhead to Tangerine Dream), eighties and nineties Indie/Alternative (Smiths, Joy Division, Travis, REM, Pixies etc.) with occasional jaunts into Classical/Folk/Jazz. Any help would be greatly appreciated! Phil from Brisbone

Hi Phil. There are a few possibilities that should match your fine PM-17 down to the ground. I'm not too au fait with prices down there but Mission's new 782se models may fit into your price category. They are brand new and improve on the already highly impressive 782 'speakers. They deliver a clean and deep bass from the passive side firing bass units and due to a fast cone, a solid cabinet and fine tweeter they have a beautifully detailed and neutral quality. The slim cabinets also mean that they image a dream. If these are not available, then consider Tannoy's clean and precise Eyris 2 or

Denmark's entrant, the Dali Royal Tower, both of which are well detailed yet smooth in the upper frequencies - which the Marantz likes! As for the Australian brands you mention, I know nothing – but watch this space for a review of the new Perigee Acoustics FK-1F. SP



The 782s are still one of the best in the sub-£1,000 class.

OLD KIT, NEW WORLD

My current hi fi system has developed in a rather unplanned fashion over the years, and is now sounding as if it is well past its sell-by date. Either that or I am getting critical! It comprises Quad 34/405-2/FM4, Arcam Alpha + CD player, Linn Axis Basic plus/K9 and IPL M3 Transmission line speakers, built from a kit.

The system as a whole has a nice even tonal quality, which is fine for long listen periods, but imaging, detail and overall excitement are somewhat lacking, both on vinyl and CD. My suspicion is that the dear old 34/405-2 combination is to blame here, but I am not really sure how this compares to more modern equipment

Due to budgetary constraints I will be concentrating on vinyl replay, and I am looking to put together a fairly simple system which offers similar tonal qualities to the Quad 34/405, but with better imaging and low level detail retrieval. The Axis will be the main source, and in the short term the K9 will be retired in favour of something like a Goldring 1006. Longer term I suppose an arm upgrade would help, but is this really worthwhile?

As for amplifiers, power is really not the main concern here and I am wondering whether something like a Cyrus 2 might be a cost-effective solution. Although I still like the IPL m3s, due to domestic considerations (my young daughter knocking them over) they have really got to go, so small standmount / bookshelf speakers will be the order of the day. In the past I have been impressed with the imaging of dual concentric drivers, but I am not sure how these will react to near wall placement. In short, I know what I want to achieve, but I am not sure how to allocate my modest £600-700 budget to best effect, and would welcome your advice

Tom Aspin

As you suspect, Tom, the Quad items are not the most revealing, nor the most dynamic. It was not Quad's best period and even they admitted later that capacitor upgrades would improve the sound of the 405. Whatever - it's all history now! The Cyrus 2 appeared in 1995; the Cyrus 6 is the latest 'budget' model, price around £600. It's a lovely amplifier in a refined way, but it will stretch your budget. You may like to aim down a little and go for a NAD C350 and at the same time replace the somewhat bright and bland K9 (souped-up ATIIOE) with a half-decent modern cartridge.

I would favour something like a Goldring 1012 or better – and both the 1022 or 1042 are not expensive at £130 and £150 respectively. Furthermore, they track at a respectable 1.8gms, so providing your arm bearings are still in good nick (balance out the arm and check that it swings freely), either should match. Don't forget Creek either; their amps are super smooth and refined, but the latest 4350 is quite expensive at £699. You'll not get a Tannoy Dual Concentric on a budget, but KEF's lovely Uni-Q driver can be had in the dynamic Q1. It has a lively sound and great focus from that coaxial drive unit. At less than £250 this bookshelf will help bring your system alive, NK

CARTRIDGE CONUN-DRUM

I have been an avid reader for many years and now wish to consult your wisdom. The system I am using is Michell Gyro SE with Origin Live Silver 250, current cartridge is an Ortofon MC10 Super. This feeds into a World Audio Pre II and phono stage, then into a Bheringer active X-over on to a WAD Kat88 (If), Quad IIs (hf) into home made transmission line (Kapplemiester design) using 6" Tannoy Dual-Concentrics. Other sources are tape via a Nakamichi DR3, tuner via Quad FM4, digital via Marantz CD 17KI Signature mkII.

I would like to change the cartridge for something a little more up to date (upgrade-itis). I have about £200 to spend. Would a cartridge like Dynavector's DVI0x4 overload the WAD Phono stage with MC step up transformers or would it just drive it with more aplomb? Or should I just stick with the MC10? It does sound good, although the volume control has to be cranked round a bit. Lindon Lait

The MCI0 measures well and is basically accurate, but it has little of the magic of a moving coil cartridge. In fact, it is quite cold and steely, which is a little disappointing. Ortofon managed much better with the MCI0 Supreme, but it costs around £350, so is over your budget. The MC20 Supreme is a trifle smoother, but loses some of the speed and punch of the MC10 Supreme. Both sound sweet and open, and very spacious. Like all good MCs they are more accurate than an MM and have far less wire in them!

At £300 also you could get the fantastic Shure VI5 V XMR, a MM cartridge with the speed and punch of a Decca London – but none of the problems! This is one of the best cartridges I have ever heard in some respects: it is fearfully dynamic, keeping vinyl right up with SACD, give or take a few ticks and pops. I'd suggest you try these items of you can stretch up a bit. The Dynavector DVI0x4 is less expensive granted, but you'd do much better by splashing out a little more money. It is virtually impossible to overload our

a emai

valve phono stage. Unlike solid-state it takes volts of input, swinging something like 50V out! NK

reserve and a clean punch, like a Roksan Kandy. You could also try an Arcam Diva A65 or even a Marantz



The Dynavector DV10-X4 Mk2 is an impressive option, but can be bettered.

HEARING A MESS

I would be very grateful for your advice on my system. It's a Sugden CD21, Sugden A21a and Harbeth Compact 7SE-2.1 should be hearing a sweet, detailed sound with good clarity but I'm hearing a mess. Bass has no definition and it can sound tiring to listen to. Cabling is VdH 102 III and Chord Rumour. The equipment sits on a Stands Unique 5 shelf Sound Tower and the speaker stands are Atacama SE24 and are positioned about 1.5 feet from the back wall. The sound is equally disappointing from my Rega Planar 3/Elys deck. I don't have the room to put the speakers further into the room.

I also have a Naim Nait 5, Arcam Alpha 7SE and Castle Isis speakers. This system made me want to change things in the first place. Should I scrap everything and start again or am I missing out something really simple? I like a mixture of music from female vocals to punk and in my head I want clarity, good bass definition, no grain and involvement. All of this has so far eluded me. Your advice would be much appreciated.

S. Singer London

You have good quality system components here and "a mess" is precisely how it shouldn't sound! But at 25W per channel the Sugden A21a looks under-powered for the Harbeth Compact 7SE-2s and all the symptoms you describe fit in fairly well with amplifier overload. The best way to solve this question is to borrow a more powerful amplifier - and I'd suggest something that has real

PM6010KI. The Marantz might seem the most curious choice, but it may well breathe life into the Harbeths.

The other approach is to keep the superb Sugden A21a, which is one specialised amplifier and in some ways is beyond compare, and try loudspeakers other than the Harbeths. You need high sensitivity designs and large floorstanders usually fit this description. You may well like to try the superb Castle Conway 3s I review in this issue. They'll fully resolve the properties of the Sugden amp. in a way few others ever could. Seeing that you like Rock I think this is your best route quite frankly; the Harbeths were never designed for Punk!

If the Conways are a little too fulsome then try Mission 782SEs. They are super smooth, if not quite of the sensitivity I suspect you need. B&W make sensitive floorstanders too, but their Kevlar cones and metal dome tweeters are challenging. It may be worth your while doing a few auditions though. You may well have to take the A21a with you to the showroom - and that'll surprise a few assistants! NK

END OF POPERY

I am sad that it is now the end of the Popemeister. He will be missed. He always looked so jolly on the editors intro page. What does the Popemeister mean by becoming a civilian - is he giving up audio interests? Hmmm! So does that mean he has been doing a five year joke on us readers or not? It would be great if he has. Anyway, I think that the Popemeister had and did a great job, no matter what complaints he made in print. To use a line from the Prince song: You can be President, I'd rather be the Pope. I'd rather have the

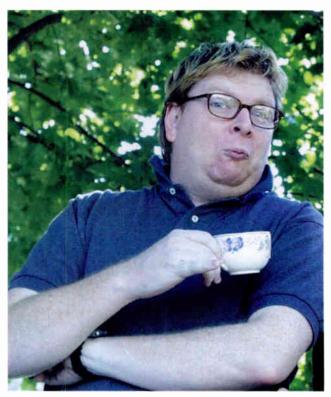
Popemeister's job than the one Mr. Bush has. Please could you print that picture of the Popemeister with his pinky up, holding a tea cup and making the most ridiculous face this side of a gurn - it's really funny? So is Price going to be the next Editor - since he's all over (the) world? I wouldn't mind about Price if only because he's able to get great hi-fi references from the 1980s. Thanks

C. Vithana

No, Simon isn't giving up at all - he's just 'relaxing'. We inculcated him with the one true way: single-ended valves with electrostatic loudspeakers. Once you've heard this there's no reason to go any further, so with a frisky one year old, the ultimate hi-fi system and a few bottles of - well various estates and vintages - in the cellar, he's decided to take it easier. Don't worry though, we are phoning his mobile regularly and when he switches it on the Popemeister will be hauled back!

You have to admit that David has breadth. He knows the history of the hi-fi industry, including the mags., and he knows all its products. David speaks Japanese and knows the Japanese outlook on all things audio, from his time living in the country. Also well into his music, he picks up quite naturally where Simon left off completely immersed in audio. That's Hi-Fi World! NK

Simon Pope, International Man of Mystery.



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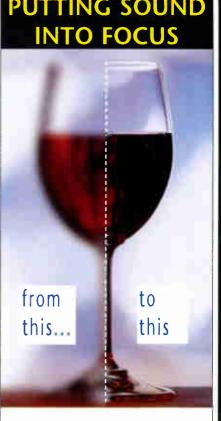
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PICTURE THIS

Noel Keywood enjoys the sound and vision from Cyrus's undeniably pretty new DVD8 DVD player.



VD spinners hardly come simpler than this. I plugged in a coaxial digital link, analogue stereo interconnects and a

high quality SCART to my Philips widescreen TV. Other outputs comprise a set of three phono sockets for high quality Component Video and an S-video socket.

There are no analogue surroundsound outputs, only stereo, because the machine is designed to be hooked up directly to Cyrus's own AV8 processor – it has no onboard 5.1 processing of its own.

SOUND QUALITY

I wasn't surprised to find the usual Cyrus sound. Smooth and open, but with a characteristic softness at the top-end that kept harshness at bay, it proved an enjoyable experience. The orchestral strings of the Berliner Staatskapelle were smooth and vibrant on Beethoven's Eroica, where they often sound harsh and edgy through other players. Vocals from Larisa Stow were reasonably easy and natural, losing the hard edge of DVD-Audio, for example. At no time did the DVD8 sound wanting at the bass end. Running through various movie bass tests like Top Gun and Apollo 13, the stereo soundtrack came over as

weighty with the full gamut of digital channels from the Marantz. The DVD8 is no three kilogram weakling! However, at this point it's worth remembering that it doesn't do 24/96 in any guise, from DVD movie soundtracks

to DVD-Audio discs - you get bandwidth to 21kHz and that's your iot!

Its video performance was good picture quality was clean, but it didn't match Philips' DVD963SA.

Cyrus's DVD8 is a very nice little machine, with good connectivity for those with an all-Cyrus system and sophisticated sonics. Despite its beautiful build and ergonomics however, its price is so far above that of other similarly specified DVD video players that it must surely limit appeal.

Cyrus DVD8 £1200

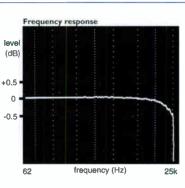
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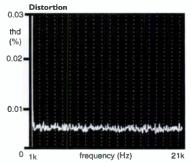
MEASURED PERFORMANCE

The Cyrus 8 DVD player offers DVD video and CD replay. Unfortunately, it does not reproduce 24/96, where this exists on DVD Video discs, such as some audiophile recordings from the States. Measurement showed a bandwidth no greater than CD, limited to 21 kHz. Our analysis shows frequency response possesses a slight downturn at high frequencies, enough to ensure a smooth sound.

Distortion was low with high level music signals but on low level signals it rose to 0.5% - more than the usual 0.3% or so from CD nowadays. This reduced dynamic range (EIAJ) somewhat too. Such matters apart, the Cyrus measured well enough and is likely to turn in a tidy sound as a CD player and DVD video player. **NK**

Frequency response	4Hz -	21kHz
Distortion	left	right
-6dB	0.005	0.005
-30dB	800.0	0.008
-60dB	0.52	0.5
-90	9.5	8.3
Separation	left	right
lkHz	114	115
20kHz	102	102
Noise (IEC A)		-9 9dB
Dynamic range		107dB
Output		2.1V





World Verdict Control of the second s

TAKING THE FLOOR

Here's a big floorstander with an equally big sound. Noel Keywood plays gooseberry as Castle's new Conway 3 takes to the floor.

he Conway is a loudspeaker that instantly appeals - there's nothing like a big floorstander providing it does a good job, and this one does! Standing 960mm tall in unspiked form, it boasts a full complement of carbon fibre drive units. And it's also superbly finished, with the loveliest wood veneer you'll find this side of a vintage Bentley.

Helping the Conway 3 blend in with domestic surroundings is a room-friendly width of 220mm and 250mm depth. The black fabric grill is easily removed to reveal the aforementioned twin carbon fibre cone bass/midrange drivers and a central fabric dome tweeter.

The Conways are 'handed', and it is usual to place the tweeters on the inside when this is the case. Handed pairs and rounded edges work together to minimise surface wave interference effects, improving image sharpness, solidity and stability. Tricks like this have a cumulative effect, helping a well-designed modern loudspeaker give an entertainingly broad spread of believable images right across the sound stage between the cabinets.

Knowing how dramatic the imaging can be from well contoured loudspeakers – and being a listener who likes to hear realistic vocals, cleanly wrought, centre stage – all this sort of thing gets approval from me. But then, Castle are craftsmen who split from Wharfedale many moons ago and they do things in honest Yorkshire fashion. This includes a sturdy, well made crossover, populated with quality components, including generous inductors. The rear panel carries over-proportioned screw terminals that allow bi-wiring and accept bare wire or 4mm banana lugs. There isn't an inch of the Conway 3 that doesn't ooze quality.

What you won't find on the rear panel though is a port - because it's on the floor! Yes, the Conway 3 is reflex loaded, but the port is in the base of the cabinet. The cabinet sits on a low plinth, held a small distance above it by spacers to give a resistive port that provides well damped bass. Castle now suggest two or three spacers can be used, according to the amount of damping needed. I used two spacers, because that provides best damping. Low position ports effectively drive a room's vertical mode and can give quite fast sounding bass as a result; taking advantage of 'room gain' an 8ft ceiling gives a useful boost at 136Hz, for example.

Running the Conway 3s with Radio 2 for live speech, especially that chestiness you get from male presenters speaking close into the mic, showed they sound smooth and fulsome, with a generous balance of low frequencies. I was worried about the undulations revealed by measurement which suggested coloration, and although there is some to enrich voice a little it's not really intrusive, seemingly lying behind the presenters, as it were, I suspect there is a little in the time domain from the cabinet, but the initial output from the carbon fibre cones is as clean and neutral as you'll get.



and very

smooth, bordering on warm, is unarguable and I was just a wee bit disappointed that my much beloved 300B valve amp, which technically matched well, in practice sounded just a little too warm with the Conways. I settled with the clean, reasonably bright, muscular but revealing Musical Fidelity A308 pre and power amps, which proved a fine match, keeping a grip on the Conway's ample bass whilst also

That the Conways are large

putting some sparkle into the upper midband. The Conways' balance, then, makes them predisposed to good, modern solidstate amps with enthusiastic output at extremes - rather than supersmoothies.

You could say they need balancing out a bit, so pronounced is their response imbalance and resultant character. In less stratospheric climes than the A308s, some of Marantz's creations come to mind, like the PM6010 KI. You could equally well say that loudspeakers like this tame the conspicuous brightness of many modern sources and amplifiers, whilst at the same time revealing their strengths. This brings me to another observation: these speakers' transparency really highlights amplifier sound quality differences.

A loudspeaker that's warm, fulsome and smooth doesn't always come across as particularly revealing at first, but the Conway 3s are. Their quality carbon fibre drivers give a better damped and 'darker' sound than either Kevlar or metal, making Renee Fleming sound richly embodied and nicely defined at a point midway between the large cabinets. It was a lovely rendition of Madam Butterfly, natural and beguiling, with quite a large image from the twin drivers in each 'speaker. The background simply dropped away behind her to give an



inviting sense of space and acoustic. Strings of The London Symphony Orchestra sounded smooth but vibrant behind Askenazy playing Rachmaninov's Piano Concerto No2, spread wide and deep behind a piano whose dynamic contrast was fully conveyed. From the lightest of touches on the keys to strenuous crescendos, the Conway 3s remained lucid and unstrained.

This smooth, rich sound is underpinned by powerful bass and vivid dynamics. Even apparently untaxing recordings like Peter Hurford playing Cezar Franck on the organ at Saint Sernin moved from gentle chordal progression to the impressive power and majesty of the large pipes with an easy fluency beyond most loudspeakers. These big boxes were always relaxed and in control, even as the room gently moved as Hurford used the 32Hz Contre-Basse. Castle certainly knows how to make large loudspeakers, and these are another superb example. I hardly need say

they go very low, quite how low being down to room size.

In every sense a beautiful loudspeaker, Castle's new Conway 3 is easier to drive than nearly all its rivals, and can thus get the very best from even low powered amplifiers. It offers superb dynamics and a powerful sound. It does have a characterfully 'full' balance by modern standards, plus bass that borders on over-large. All the same, if you want the power of a big floorstander coupled with mellow grace, there's little to match the beautifully built Conway 3.

> Castle Conway 3 £930 Tel: + 44 (0)1756 795333 www.castleacoustics.co.uk

THE EDITOR SAYS:

Back in the old days, a 'speaker like this would have been described as having "a good tone". Rather than being forensically revealing, the Conway 3 chooses to voice everything it touches in a pleasantly euphonic way. No matter what you feed it, it invests music with a sweet, warm, velveteen quality that is, to my ears, totally seductive. Interestingly, rather than employing woolly drivers to give it this 'flavour', it's the cabinets that do it. The drive units are actually brilliantly crisp and open, but the cabs provide an over-warm bass that stretches right up to the lower midband. These speakers aren't the most neutral you'll hear, but don't let that put you off - I absolutely adore them.

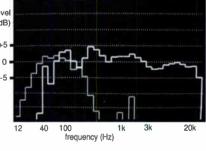
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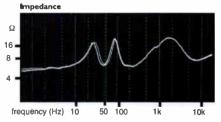
The large Conway measured out at exactly 80hms nominal impedance, using pink noise. Whilst an 80hm loudspeaker is an easy load it is usually insensitive too, but not the Conway, which managed a high 90.5dB SPL from one nominal watt of input (2.8V). With a smooth impedance curve this loudspeaker is one easy load, suitable for transistor or valve amps – and they need not be powerful; 40watts should do.

The two bass/ midrange units give identical output and are configured in a D'Appolitto arrangement around the central tweeter to give balanced dispersion. Twin bass drivers also increase cone area to give more push to bass, less distortion and better power handling. The port is broadly tuned, suggesting good acoustic damping, and it works down to 25Hz. Forward output from the bass units gets down to 40Hz and the port is tuned fairly low, to 45Hz with two spacers between plinth and cabinet and 50Hz with three.

Castle go for a big, full bodied sound without screech and this can be seen in the Conway's frequency response where the tweeter's output is set a few dB below the bass/midrange unit. Some peaking in the latter will increase warmth or body still further and may be a sign of coloration. The 'speaker is likely to sound large bodied and warm. It measures very well but will possess the company's distinctive sound. **NK**









VOICE

Like manna from heaven, the next generation of surround sound comes from above. Noel Keywood explains the wonderful world of periphony.

5.1 SET.UP DI

V D

ust as the average British audiophile is getting his or her head around the concept of a listening room with more than two stereo loudspeakers, from across the pond comes news of something altogether more extreme - sound from above. Certain industry insiders are well aware of this and have coined the term, "God speakers"! Fascinated by this concept and what it might bring, I began investigating hi-fi's possible next step - periphony.

For reviewers like myself, the concept holds some interesting challenges. Will reviewers have to reference the exact position of the Angel Gabriel? Will we have to lie on our backs to check image sharpness on the great celestial soundstage?

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The set-up menu of Meridian's 861 processor offers a height option. Here, it relates to MDG's 2+2+2 technique.

Okay, so the idea of listening to sound from above holds great comic potential – but it is in fact quite a serious matter. So much so that it could even pose a challenge to conventional contemporary surround sound, just as 5.1 seems to be usurping two-channel stereo.

UL BURROUND

Perfect periphony has much to offer. Take for example a periphonic helicopter - it must be able to approach from any specified direction, even from directly above, descending slowly until it lands on the lounge floor at a specified point. It may be impossible to make it pass through your head vertically, but it isn't impossible for it to fly past horizontally. The sudden amplitude and phase changes needed to achieve this illusion have already been catalogued by researchers, and we can reproduce them. Our helicopter must be able to fly toward a listener from any direction, pass through or closely past, and then fly away. It could perhaps hover above and move in gentle circles, just like police helicopters tend to do over my house ...

Why then would we ever want to reproduce such things with so much accuracy, when they're as about attractive as listening to a diesel lorry in stereo? Well, Hollywood would obviously be interested in any system that further added to cinematic realism, especially now that DVD has shown quality combined with convenience is a vital factor is sales success. Then of course we have artists who like to experiment with recorded sound, ranging from Pink Floyd in the seventies to Josh One today. With classical music the acoustics of the venue could be brought into the home to give an apparently vast acoustic in a small room otherwise containing just one anorak and his pizza.

OF

Ausgezeichnet!

Finally, there's the sheer challenge of being able to do it. because encoding sound into any position on a sphere is an exercise in advanced psychoacoustics. Much of the challenge comes from being able to convince the ear and brain about what is supposed to be going on, when it isn't going on and perhaps never has been. By this I mean in a video game, for example. All sorts of crazy sonic effects may be created purely by 'pan potting', or artificially manipulating sound source position. The sound would be artificial, and so would its movement, but precisely where the flying object might be in space could be important. If you've listened to Jimi Hendrix's Electric Ladyland on headphones, you'll know what it's like to have sound rushing through your head. Periphony could well be the method that finally achieves this with loudspeakers, with intriguingly ethereal sounds coming from anywhere, even passing through you.

That's the theory, if not - at present - the practice. Because

www.hi-fiworld.co.uk World Radio History



periphony is alive and working, providing extra atmosphere and realism to a small catalogue of specialist recordings. It isn't mainstream, nor are there any proposals from any governing body to make it so, but it's fascinating idea whose time may come sooner than you think – simply because in DVD Audio and SACD we have the technology to deliver it. So it's an extremely powerful system, with numerous potential creative uses, but the question remains – is it practical in the home?

In America, Telarc and Chesky both offer recordings with height information, if not perfect periphony. And in Germany so does specialist label MDG. Where does this leave Britain? With S Club 7, you might think uncharitably. But whilst the UK music business might be able to see little past this, luckily others have managed better. One is Professor Michael Gerzon from the Oxford



The Cantares SSP-1 Ambisonic decoder has an overhead level control!

gave periphony a tentative grounding in the UK audio firmament. Little has come of this activity in Britain, but the University of York continues research and Meridian's Bob Stuart (founder and MD) was a participator back then and remains so now. Periphony in the UK is sleepy, but not dead.

If you're worried that periphony may get a little complex then you'd be absolutely right. But today's working systems are real enough and not difficult to understand – and also fascinating.



Telarc recordings have one height channel. Telarc suggest the loudspeaker is placed centrally and above, as shown here, or two in series are placed either side, like the Chesky arrangement.

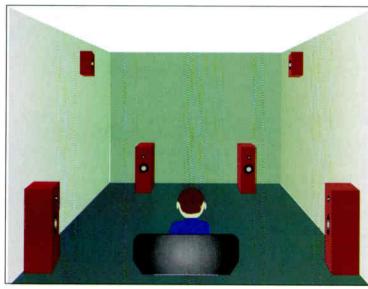
University of Mathematics who, way back in the 1970s, brought us the spatial mathematics needed to describe sound localisation on a sphere. This gave rise to Ambisonics, UHJ surround-sound and the Calrec sound field microphone, all of which

TELARC

This specialist US record label (www.telarc.com) uses the subwoofer channel of DVD-A and SACD to carry height information. Both these formats possess six fullbandwidth channels and the subwoofer channel can go unused if a producer decides bass should go through the main channels (which is the best place for it on a music-only disc, of course). Telarc places height ambience information through this (LFE, or Low Frequency Effects) channel, gathered from microphones placed in the same position as the replay loudspeakers. There are a few ways of handling this unusual arrangement in the home.

Telarc recommends that one loudspeaker is mounted above the front centre channel loudspeaker.A height is not specified, but 6ft or a little above would probably do. How to do this? The easiest way it to put up a shelf, put a small loudspeaker on it and let the wire dangle down the wall. It isn't an arrangement that's easy on the eye, unless the loudspeaker and wire are concealed and for most of us that means channels in the plaster or holes though the wall. An alternative might be a flat cable up the side of the chimney breast.

As an alternative Telarc suggests that two loudspeakers connected in series (in-phase presumably) are placed high up at left and right. In theory this should give a central (mono) image, mimicking a high centre-front loudspeaker. Left and right might not be so visually obvious, if loudspeakers on the picture rail could, by any stretch of the imagination, be described as less than obvious. Perhaps high wall shelves, with books and plants as visual distractions, might be a way to mount left and right height loudspeakers, but the cables remain an eyesore.



In Chesky's system height loudspeakers are placed either side of the front Left and Right speakers, and high up.

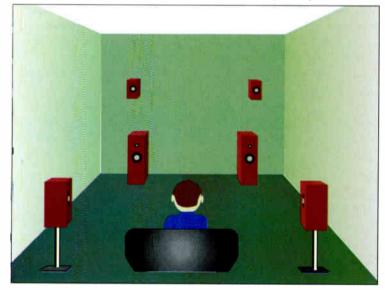
CHESKY

Another US specialist (www.chesky.com), Chesky suggests that the best place for height speakers is above the front left and right main loudspeakers, but a bit further out, at 55 degrees off-centre rather than 30 degrees recommended for stereo front 'speakers. This may put them on the side walls. Again, a shelf high up would seem to be the best way of accommodating this, providing easy position adjustment. And again quite how this would go down with sane people who thought the home was for people rather than loudspeakers is open to question. Perhaps they will change their mind when they hear what it offers, because the Chesky technique is a little more ambitious than Telarc's. It uses both the centre front channel and the subwoofer channel to carry height information, so there are two discrete channels of height information in this system, rather than one as in Telarc's. However, the centre dialogue channel loudspeaker disappears. Chesky argue that this is for speech reinforcement in cinemas and is unnecessary in the home with music, where centre is the sum of left and right (i.e. it is there already). This makes the Chesky system incompatible with 5.1 video surround-sound, unlike Telarc's, unless switching is used. It is, however, a more sophisticated version of surround sound with periphony.

idea more suited to ambient rear channels than those carrying discrete instruments, But then MDG offers only classical recordings and from the descriptions of instrument placement the rears only carry ambience, in which case they should match the fronts and be placed at equal height. In effect, this makes MDG recordings stereo with surround-sound height information. Since listeners don't sit in the middle of an orchestra, this arguably is the most realistic perspective. It should give listeners a great heavenly chorus - and it appears MDG, of all the labels, has its head highest in the clouds.

AMBISONICS

This is a method of encoding an entire soundfield properly, so that sounds can be recorded then reproduced at precisely defined



German MDG suggest that in their system the height loudspeakers be positioned above the main Left and Right loudspeakers. The rear loudspeakers should also be raised up.

MDG

This German label's (www.mdg.de) system, dubbed 2+2+2, is similar to Chesky's. It uses two of the six channels available on DVD-A (centre and subwoofer) to carry independent height signals. These are channelled to loudspeakers situated above the front left and right loudspeakers. The height speakers are best angled outward to fire off the side walls, they suggest - a different arrangement to Telarc and Chesky who prefer inward firing loudspeakers. MDG appears to favour the rear loudspeakers being placed high up above ear height, an

positions anywhere around a listener. This means anywhere above you, as well as around you. It's an exciting prospect and Ambisonics exists today. Again, recordings are scarce but listeners report that with Ambisonics the existence of height information has a dramatic effect.

The Ambisonic system in theory allows loudspeakers to be placed anywhere, soundfield information being decoded to suit loudspeaker position so that the soundfield is accurately reproduced. This means height 'speakers could be placed anywhere too, although ideally the listener needs to sit at the centre of a hemisphere with all loudspeakers equidistant unless time delays are introduced (but this applies to all surround sound systems). If the front loudspeakers are 9ft away, the height loudspeaker should be 9ft high – or in the room above if you have low ceilings! Sidewall loudspeakers can be used, ideally 9ft distant, and this is perhaps the most practical solution.

Ambisonics is a big subject and a fascinating one. It has captured the imagination of both recording engineers and audiophiles around the world. Ultimately, it is the only way to perfectly reproduce the periphonic helicopter, since it will get position and movement right, as well as provide firmer images than conventional surround-sound. It also allows artificially generated sounds to be placed anywhere, with precision, something of importance to the computer games industry (so Microsoft are onto it), as well as studio engineers. The Telarc, MDG and Chesky discs use microphones to capture height information, which includes phase and amplitude. With Ambisonics this isn't necessary, although special Ambisonic microphones exist to capture a complete soundfield.

You can buy Ambisonic recordings today and you can even buy a decoder. As Meridian told me, "Ambisonics has rather got lost in the excitement of DVD-A". But DVD-A is perfect for Ambisonics, as is SACD and most other surround systems.

Getting height information from it is easy enough technically, because height is intrinsic to all Ambisonic recordings. Decoders are available from Meridian and, until recently, Cantares in Canada (www.cantares.on.ca). If you want height, rather than Ambisonic surround-sound through a 5.1 system (it images better than 5.1, especially along the side walls), then you'll need to buy a Meridian 861 processor, price around £9,000. But this is a full DVD-A processor with digital input and digital processing to provide time delay, level adjustment and bass management, before converting to analogue. The provision of Ambisonic height information within the 861 is currently a side issue, because there's so little demand.

As with the other height systems, Ambisonic discs are scarce,

but are available. The best source of information is at www.ambisonic.net. The Discography and Links sections list both discs and decoders. There's a mountain of easily understood but technically concise information about Ambisonics here, including much about height, as well as the subjective impact of height information on music reproduction, which listeners report as both significant and impressive.

THE HEIGHT PERSPECTIVE

On a practical level, height reproduction in the home might appear to be the madcap province of audiophiles who have lost all sense of reality. But it does raise some serious issues, including questions about surround-sound as it stands today. For example, Ambisonics highlights the fact that modern 5.1 surroundsound systems are based upon the same fallacy that dogged earlier quadraphonics, notably that images can be placed between loudspeakers purely by varying amplitude. If images are to sound solid and stable between loudspeakers then both amplitude and phase information is needed. To fill the gaps between loudspeakers even more channels with more loudspeakers are being proposed, including side speakers and a centre rear speaker. But even with all these loudspeakers - assuming anyone would want them - a modern surround-sound system still will not reproduce height information.

We actually only need four channels driving four loudspeakers to reproduce Ambisonic surroundsound perfectly - including height. The trouble is - it wouldn't play stereo properly. But this does illustrate what a predicament surroundsound is in. Telarc, Chesky and MDG all understand the limitations of cinema style surround-sound and issue their own specialist recordings to overcome it. All three have concluded that height is important in bringing a really superb sense of atmosphere and dimensionality to recordings. Here's what MDG say: "with stereo

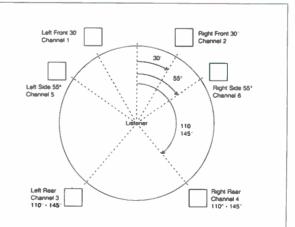
reproduction, alongside the flute we hear a harpsichord further back to the right, with a cello in front of it, whilst there is a lute on the left and a portative organ behind that. The 5.1 procedure makes virtually no change to this. The 2+2+2 process enables you to locate the instruments in space before you. You hear that the flautist is standing, you hear the harpsichord with its lid open and the organ has a truly three-dimensional presence behind the ensemble." This is the difference height makes.

Height reproduction in the home is likely a step too far for most people, although both Chesky and MDG show us that it needs no more than the six channels already available to us on DVD-A and SACD. The loudspeakers just need rearranging differently – some need to go up the wall! But if you are of a mind to try it, you can do it today; the recordings and equipment exist.

In the longer term it would be in the interests of companies like Microsoft or Dolby to promote Ambisonic encoding to give us improved surround-sound that can optionally include height. Presented to games developers and the music industry, it could be an effective way to heighten our audio/visua! experience – and that makes commercial sense. Sound from above doesn't just mean holes in the ceiling - it could be heaven sent for all of us!

Chesky and Telarc discs are available from:

Vivante Productions Tel: +44 (0)1923 822186 www.vivante.co.uk



Chesky like their Height 'speakers (Proscenium) to be positioned as shown above (Channel 5 & 6). They are placed 55degrees each side of ahead.



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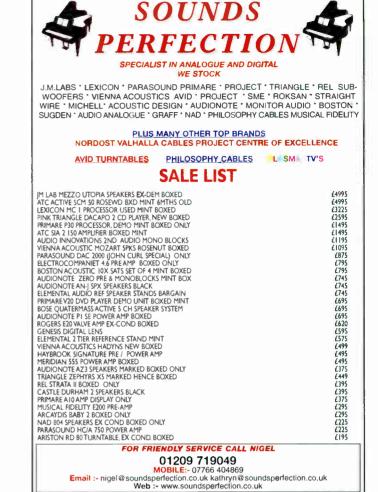
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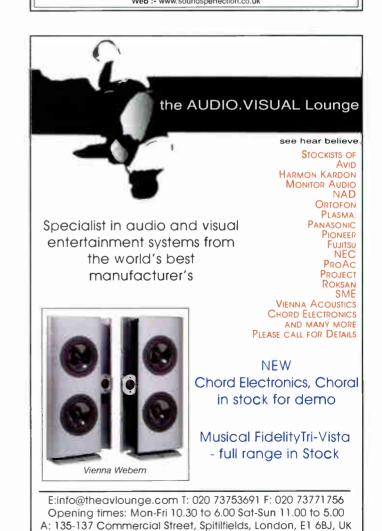
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PURE AND SIMPLE?



The sub and sats of PURE's LiFE 4/10 surround sound system are music to a stereophile's ears, reckons David Price.

URE, just in case you didn't know, is VideoLogic's new name.VideoLogic, just in case you didn't know, is the brand that started off making PC graphics cards, but moved into soundcards and then multimedia loudspeakers. So successful were these that the likes of me and many other hi-fi snobs found themselves quickly won over. The moment I clapped ears on the Sirocco (now discontinued), it was obvious that this company knew its loudspeaker onions.

About a year ago, PURE launched the uninspiringly titled £2,499 LiFE 4/10 5.1 channel home cinema and hi-fi surround system, comprising four component elements, the £499 DAP-601ES digital audio processor and £549 MCP-601ES multichannel amplifier, plus five £225 SAT4 satellites and the partnering £499 SUB10 subwoofer. It's a very worthy combination, but I have to say that the bits I found most titillating were the speakers – for reasons which will soon become apparent. As these are all available separately, I decided to take a closer look...

High Definition Aerogel is something of a Hi-Fi World hobbyhorse. The landmark loudspeaker to use this was Henry Azima's seminal Mission 752 (original, non-Freedom version, trainspotters!). I personally still use a well worn pair as my 'sensible shoes' reference for when my Yamaha NS1000Ms are deemed over-the-top. Beautifully warm, fast and fluid, they're a classic 1990s design. With this in mind, I was intrigued to hear that PURE was also using HDA in the SAT4s, courtesy of French drive unit manufacturer Audax.

Each SAT4 runs twin 100mm HDA mid/bass units complete with "the latest" 20mm textile dome Audax tweeter with neodymium magnets and ferrofluid cooling. Measuring 320x135x240mm, the cabinets are very narrow, with the tweeter tightly sandwiched between the other two drivers for optimum imaging. Round the back is a largish bass port and a pair of standard binding posts. The cabinets themselves are beautifully made from thick MDF with a choice of superb Maple real wood veneer or satin black finishes. PURE claim a frequency response of 55Hz-22kHz (+/- 3dB) and a power handling of 70W RMS.

The PURE SUB10 is another superbly well screwed (glued?) together MDF box finished in '1980s







www.hi-fiworld.co.uk World Radio History black', measuring 385x285x335mm and weighing in at a hefty 17.6kg. Inside is an Audax 250mm ultra longthrow drive unit with high power edge-wound voice coils. Beneath this on the front baffle are two large reflex ports.

Round the back are the usual line inputs, high level ins and outs (via binding posts), and phase, level and crossover (40-160Hz) controls. Inside lurks a 250W RMS amplifier, with meaty heatsinking on the rear panel. Claimed frequency response is 37-180Hz.

After the obligatory running in period, plus a long time spent siting the speakers and sub, I managed to get extremely impressive results from this combo. The sats have to be rigidly mounted and toed in around ten degrees, preferably from right back against a rear wall. The sub can do without any help from the room, and as such works best some way into the room. I found a relatively high crossover setting allied to a relatively low level (i.e. light bass reinforcement) worked best. It really helps if the sub takes it easy and the sats get a bit of oomph from the rear wall.

Suitably set up, this system sounded superb. Indeed, I don't think I can name a conventional pair of floorstanding loudspeakers for the PURE's £1,000 selling price that comes close. Essentially very, very fast and tight yet utterly civilised and



smooth, you really do get a gripping listen. James Taylor Quartet's 'Wait a Minute' was a barrel of fun. The combination of those light, rigid Aerogel drive units and small cabinets made the sats able to push the music out with great speed, and project very accurately indeed. Bass was strong and firm, although it has to be said the sub is less impressive individually than the sats, and integrated generally very well with the lower end of the sats. As soon as these took over, things got super tight and bouncy, the sats really singing their hearts out.

Midband was brilliant - oh so

clean, clean and crisp – they lack the slightly underdamped feeling of some HDA coned speakers I've heard. Similarly, they're less tonally 'sharp' than other similarly coned boxes. The result is a brightly lit but very open sound with excellent imaging. Moving up the scale, the Audax tweeter is a peach. It integrates nicely with the midrange drivers and gives a smooth, crisp and extended high frequency performance. Although not as open as a ribbon of course, it has a pleasantly warm tonal character that makes hihat cymbals a pleasure to behold. Although quite 'crisp', there's little coloration or splash - a very well designed unit.

Together, this system really sings. I still don't think the bass and midband is perfectly integrated, but then again the same can be said for most one box floorstanders, so this is a moot point. However, the system does offer the combination of brilliant speed and clarity allied to sophisticated and refined tonality – usually it's a choice between one or the other. To wit, I'd recommend you to seriously consider this combo if you're in the market for a £1,000 loudspeaker – providing the system's been set up properly, you won't be disappointed.

> Pure SAT 4 £450pr Pure SUB 10 £499

www.videologic.com/pure

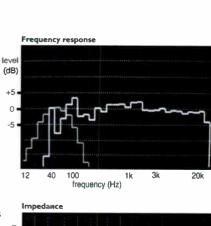
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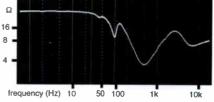
It's easy enough to see what Pure were trying to produce here – a smooth but very capable sound from a sat/sub system that takes up little space. The High Definition Aerogel drive units in the satellites give a wonderfully smooth response and are well integrated with the centrally placed tweeter in D'Appolito arrangement, which improves overall dispersion. They have a carefully tailored response with a crucial slope down at high frequencies, to steer the sound away from brightness.

The subwoofer looks a little less successful than the satellites, with a peaky response from a hardworking bass unit, and little output below 40Hz. This is a powered bass unit rather than a true subwoofer. The port does go down a bit further though.

As with most powered sub/sat systems sensitivity was good, measuring 88dB from one nominal watt of input and because impedance measures out at 80hms this is a true watt.

The Pure system will sound smooth and refined as sat/sub systems go. Bass quality may be mediocre though. **NK**







61



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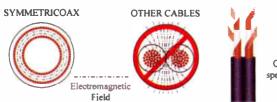
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GOING LIVE

Origin Live claims its new Advanced DC motor package will bring new life to your Linn. Simon Pope listens in.

ver the years, numerous Sondek power supply options have appeared, from the likes of Naim, Pink Triangle, Heybrook and Manticore to name but four. Personally speaking, the one that has impressed me most is Linn's own Lingo in its latest and greatest guise - the only problem being its £850 price tag. Origin Live's latest DC motor and power supply combo claims excellent performance at one third of the price however - but you'll have to be prepared to get your screwdriver out!

I must admit that I'm not the most practical of people, so if you can put an amp kit together - for example - you'll be able to fit this in two shakes of a lamb's tail. I took a little longer! Also, realising my own faults and not wanting to wreck my first team vinyl source complete with Linn-fitted Lingo, my recent purchase of a bargain-basement LP12 with Valhalla proved the ideal guinea pig. Thankfully, no drilling of the top plate is required and the modifications are 'easily reversible'.

Fitting is a case of removing the LP12's mains plug and base board, then disconnecting the wires leading to the Linn motor and unscrewing the slotted pan head screws that control its angle. You then undo the Allen screws that allow you to remove the motor itself, but must retain the four spacing washers that sit between the motor and the top plate. Next, fit the OL motor

as demonstrated in the

manual, and attach it to the speed unit (33.33, 45 and 78 RPM are all catered for), and you're up and running. The motor speed unit needs at least three hours use before the components are fully run in, and actually changes speed during this period. There's some resistor tweaking needed, but this painless exercise is covered comprehensively in the manual.

I called upon a Linn Akito arm and Klyde MC cartridge, and fed the LP12 through a WAD Kel34 valve integrated and valve phono stage into a pair of Quad ESL 988s.

Overall performance is very good indeed. I started off with Miles Davis's exotic and richly coloured 'Sketches of Spain' and found that the sound had more breadth and depth of soundstage, plus a slightly

> better focus on instruments, compared to the Valhalla. The overall ambience of the recording also had more space, while rhythms and percussive lines were firm and focussed. This grip was further



emphasised with New Order's Dreams Never End, which had a new presence and control about it that was impressive. Again, there was good clarity and focus, but the drive of the music really caused a smile. Classical discs such as Schubert's Trout Quintet and the superb pianist Clara Haskell playing Scarlatti Sonatas on a classic Westminster recording sounded full and lucid, with a fine lyrical line and separation of instruments.

Origin Live's Advanced DC motor is a very fine upgrade for any Valhalla LP12, but the big question is, does it improve on the Lingo? I'd say not - the latest Linn PSU is significantly more musically cohesive, with better control of rhythms and an overall grip, smoothness and sweetness that the OL cannot match. That said the Lingo is £850 and the OL £299, so it damn well ought to be better. This takes nothing away from the Origin Live package then, which is a brilliant purchase for anyone looking for something more affordable. Highly recommended and great value for money.

> Origin Live Advanced DC motor £299

Origin Live Tel: +44 (0)2380 578877 www.originlive.co.uk

World Verdict £ 8888

A true value for money alternative to Linn's expensive LP12 motor upgrades, this solution brings extra cohesion and clarity to your vinyl for a relatively small outlay.

63



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KECL82 VALVE AMPLIFIER KIT

The Kecl82 is out latest introduction for the true beginner and designed by Andy Grove. A simple and elegant design based on the classic ECL82 valve, a triode and power pentode sharing the same glass envelope. The amplifier consists of two ECL82s per channel, the triode sectons work as the input/phase splitter and the pentode sections work in push-pull for the output stage. The amplifier offers 8 watts into an 8 ohm load, the hum level is extremely low, comparison to solid state standards. The chassis is constructed of 1.6mm mild steal with a black powder coat finish, there is only one signal input pair controlled at the front by a volume control for that simple touch. The speaker connects are the standard 4mm banana type, positioned at the rear, as are the mains input which is received through an IEC lead, mains switch and earth post. We have made the construction as simple as is humanly possible with comprehensive instructions. The circuitry is based on a single printed circuit board. Ultimately this kit is for the guy who has always fancied a go at building a kit, but never dared. Simon Pope says," It's a great introduction to the valve sound. For it's humble price it delivers a full and rich sound with great detail and good depth." Kecl82 weighs 9kg, External dimensions are 30cm(w)x23.5cm(d)x11cm(h)



£580

KIT6550 VALVE INTEGRATED AMPLIFIER KIT & KAT6550 VALVE POWER AMPLIFIER KIT



These are our new 6550 series amplifiers. A pure class A design providing 40 watts into a 8 ohm load.(available in a 4 ohm version if required) A truely high end design by Andy Grove, using Svetlana 6550Cs in push-pull (any 6550 or KT88 tube can be used with this amp). It features valve rectification (5U4) a choke pi filter power supply and is hard wired.Weighs 19kg with dimensions 390mm(w) x

Kel84 VALVE INTEGRATED AMPLIFIER KIT

The Kel84 features a pair of EL84 valves per channel in push-pull configuration. They give 15 watts into an 8 ohm load. The output transformers are Ultra Linear. Up front the ECF80 input/phase splitter valve has an extremely smooth sound. The Kel84 has very low hum, for simplicity the kit is built on a printed circuit board. A strong steel chassis is fronted by a 3mm anodised front panel and attractive chromed custom made knobs. There are five line level inputs, plus one monitor input, with a tape output included, all controlled from the front panel. At the rear is a mains switch/IEC power input, earth post, phonos, and 4mm bannana sockets. Simon Pope says, "The quality that can be gleaned from this amp is a fine introduction to the joys of the valve sound. The Kel84 will highlight all the intricacies and depth of detail in your favourite recordings whilst retaining a warmth and fullness that is almost exclusive to pure valve amps and is rare at this price point." Kel84 weighs 10kg. External dimensions with valves are $300mm(w) \times 270mm(d) \times 150mm(h)$.

2A3 PSE INTEGRATED AMPLIFIER KIT

The 2A3 PSE integrated amplifier offers a seriously hi-end sound, but without the cost usually associated with single-ended amplifiers. The stereo chassis houses, on the output, $2 \times 2A3$ in parallel single ended configuration and a single 6SN7 as the driver tube per channel. The valve rectified power supply consists of a 5U4 and a 10h choke. This feedbackless design provides 8.5watts into an 8 ohm load, so a good sensitivity speaker is required above 90dB. It can accept 6 line-level inputs fully controllable from the front panel. We provide the excellent Alps Blue potentiometer as standard. The amplifier is hard wired so plenty of scope for tweaking in the future. Simon Pope says, "The 2A3 PSE is extremely impressive piece of kit, good imaging, wide sound stage, nicely extended on the high frequency and tremendous bass thump.Weight - 20kg. external dimensions with valves fitted - 390mm(w) x 360mm(d) x 220mm(h)





KaT6550

330mm(d) x 190mm(h) with valves or 220mm(h) with cage. Simon Pope says - "If

you favour attack and rhythmic grip, together with a smoothness of sound that's

incredibly easy to live with the KiT6550 could well be the kit amp for you. The 6550 is one for those who like a valve sound married to the attack and clout of a

good quality solid state design".



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DIY KITS IN THE WORLD

ALL NEW SERIES II MODULAR PRE-AMP KIT

The PRE-II is a valve pre-amplifier with six inputs, tape monitor and two sets of output sockets. It utilises a high quality line driver transformer and x5 gain. The PHONO-II is a dedicated valve phono stage that incorporates a step-up transformer for MC users. Finally, PSU-II is a power supply unit that feeds both the PRE-II and PHONO-II.

Power Supply Unit (PSU-II)	£195.00
Pre-amplifier (PRE-II)	£195.00
Phono Stage (PHONO-II)	£110.00
Moving coil step-up transformer	£77.00
Passive pre-amplifier (PAS-II)	£215.00



£495

KAT34 VALVE POWER AMPLIFIER KIT & KIT34 VALVE INTEGRATED AMPLIFIER KIT

300B









KiT34 is a 32 watt stereo valve integrated amplifier, featuring a pair of EL34s, in push-pull mode, per channel, plus an ECF80 pentode/triode as input/phase splitter. The power supply is valve rectified ($2 \times 5U4$), using a heavy duty chocke to achieve exceptional smoothing. The output transformers are 14% Ultra Linear tapped to keep distortion down to its lowest level and the kit is totally hard wired utilising three tag boards. It has five line level inputs, plus a tape-in and tape out, all



controllable from the front. Simon Pope says, This integrated bring together the best sonic virtues of our KiT88, kel34 and top of the range 300B PSE in an affordable package. The highlights of the sound are a deep and taut bass response, together with an open and highly detailed mid and high frequency response that only the best valve designs can achieve... a true valve classic. "Weight 22kg, External dimensions with valves fitted - $390 \text{m}(w) \times 360 \text{m}(d) \times 210 \text{m}(h)$

300B PSU MONOBLOC KIT

Our Parallel Single Ended amplifiers offer ultimate sound quality Each monobloc has two of the beautfully linear 300B directly heated triode in its output stage, producing 20 watts into an 8 ohm load.

At the front we have a 6AU6 pentode and an ECC82 as the driver valve. This design utilises a 5U4 rectifier valve in the power supply, in combination with a 10H choke, giving an extremely quiet supply. Both mains and output transformers we E/I pattern.

For purists, feedback is switchable and the kit is totally hard-wired. For those that require valves we provide the superb Tesla 300Bs, Russian 5U4s and European 6AU6s & ECC82. Simon Pope says, "Not to put too fine a point on it, the sound these monoblocs create is among the finest that can be encountered in hi-fi." Our 300B PSE kit bears an affordable price of £875.00 (UK price) excluding valves. Each monobloc weighs 23kgs., external dimensions with valves: $25cm(w) \times 38cm(d) \times 22cm(h)$ per monobloc.

HD83 VALVE HEADPHONE AMPLIFIER KIT

The HD83 headphone amplifier is a beautifully simple design using Mullard ECL83 valves, a triode and power pentode housed in the same envelope. It works directly from any source, be it CD, tape, tuner etc., or from an amplifier's tape out or pre-amp out sockets. The circuit uses high specification E/I output transformers that will drive any headphone load from 16 ohms to over 300 ohms depending on how the secondaries are wired up. The HD83 is a single-ended design with the power pentode wired up in triode configuration for added sonic purity, and it is as quiet as a mouse. For sound quality Jon Marks says," The bass is punchy and controlled without becoming artificial, while treble has the crispness of the best solid-state, with the tonal purity, delicacy and speed associated with valves." External dimensions 18cm(w) x30cm(1) x 8cm (h) weight 4kg.







MILTON KEYNES, BUCKS MK16 OEE - CALL FOR DETAILS ON 01908 218836

KiT34 Upgrade kit I x 100K Alps blue Potentiometer Kel84 Upgrade kit BARGAIN BASEMENT I x 100K Alps blue Potentiometer 2 x 1000uF, 16V Black Gate 2 x 1000uF, 16V Black Gate 4 x 100uF, 50V Black Gate 4 x 100uE 50V Black Gate 4 x 0.22uF, 400V Jensen paper 4 x 0.22uF, 630V Jensen paper £130 £100 2A3 PSE chassis and base plate (without face plate), slight flaw in oil in oil on paint work, can hold 1 x 120 lam, 2 x 78 lam E/l trans-KiT6550 Upgrade kit KaT34 Upgrade kit 2 x 1000uF, 16V Black Gate former, 3 x octals and 4 x UX4s, hardwired. Price - £50.00 I x 100K Alps blue Potentiometer 4 x 100uF, 50V Black Gate 2 x 2200uE 16V Black Gate 4 x 100uF, 100V Black Gate 4 x 0.22uF, 630V Jensen paper £120 4 x 0.22uF, 630V Jensen paper in oil Kel84 chassis and base plate (Without face plate), slight flaw on £130 in oil paint work, can hold 1 x 78 lam, 2 x 29 lam E/l transformers 300B PSE Upgrade kit 2 x 470uF, I6V Black Gate KaT6550 Upgrade kit and 6 x B9A. Price - £40.00 4 x 100uF, 100V Black Gate 2 x 2200uF, I 6V Black Gate 4 x 100uF, 100V Black Gate 2 x 0.22uF, 630V Jensen paper in oil 4 x 0.22uF, 630V Jensen paper 2 x 0.47uF 630V Jensen paper in oil Audax drive unit, HM130Z0, aerogel, 5 inch mid/base unit £120 4 x 35A Bridge Rectifier KBPC3502 in oil UK price £35.00 each 4 x 4700uF, 16V £150 5687 valves, double triode UK price £7.00 each Kit34 chassis - UK price £50.00 each Pls fax/tel 00 44 (0) 1908 218836 to order "KiT34 Upgrade Kit" Mains transformers & Chokes 300B PSE mains E/I transformer 130mm(h) x 95mm(w) x 115mm(d). drop through fitting with zinc cap. Secondaries: 380/40/430V (300mA/150-0V-150V, 25mA/0V-5V, 1,2A0/0V.5V, 1.2A/0V-5V(3A/3.15V-0V-3.15V,0.4A suitable for TRANS I mains toroidal transformer 95mm dia. x 50mm(h). Secondaries: 0V-370V, I50mA/0V-6.3V,3.5A 300B EJ choke 65mm(h) x 70mm(d) x 80mm(w) open frame fitting, 10H, 180mA. KIT6550(KAT6550 mains transformers) 2 inch stack. 130mm(h)x120mm(w)x135mm(l) drop through fitting with zinc cap. Secondaries 425V-07-425V, 350mA, 0V-5V, 6A, 3.15V-0V-3.15V, 9A. Suitable for 120V & 240Vac opeation KEL84 E/I choke 0.5 inch stack, 40mm(h)x 35mm(d)x 70mm(w) clamp fitting, IH, 250mA operation

KEL84 mains transformer 1.5 inch stack, 90mm(h)x 80mm(w)x 95mm(d) drop through fitting with zinc cap. Secondaries: 0V-240V 300mA, 3.15V-0V-3.15V, 5.5A, suitable for 120/240V operation

KIT88/KAT88 mains toroidal transformer 120mm dla. x 60mm(h). Secondaries: 195V-0V-95V,450mA/0V-27V, 100mA/3.15V-0V-3.15V;9A, suitable for 120/240V operation

KIT34/KAT34/KIT6550/KAT6550 choke 1.25 inch stack, 65mm(h)x105mm(w) with fitting holes x 60mm(d), clamp fitting, 2.5 H, 350mA

Output transformers

KARAOKE

KIT6550/KAT6550 E/I 16% TAPPED UL push-pull output transformer 2 inch stack, 80mm (w) x 95mm(l) x 100mm(h), drop through ficting with zinc cap. Primary-secondary 4.5% UL tapped. Secondary 4 0r 8 ohm, pls specify on order. max output 45 wats, max current 180m, valves, KT88, 6550 ecc

KEL84 E/I Ultra Linear push-pull output transformer 1.25 inch stack, 76mm(h)x 65mm(w)x.76mm(d)Primary - seondary, 8K with 12.5% UL tap - 80hms, max o/p-15watts, max current 150mA valves EL84 etc

KIT88/KAT88 E/I push-pull output transformer 80mm(w)x95mm(I)x100mm(h). Primary-secondary 10K - 80hms max 0/p-40watts, max current-160mA valves-KT88, 6550, EL34

anton

KEL80 mains toroidal transformer (encapsulated) 130mm dia. x 65mm(h). Secondaries: 195V-0V-195V,390mA/0V-27V, 100mA/3.15V-0V-3.15V,7.5A, suitable for 120/240V operation

HD83 mains toroidal transformer 80mm dia x 35mm(h). Secondaries: 0V-165V,75mA/3. 15V-0V-3.15V,1A, suitable for 120/240V operation

PSU-II mains toroidal transformer 80mm dia. x 35mm(h). 5econdaries: 0V-270V,60mA/0V-10V,2A, suitable for 120/240V operation

TH 134/FAT34 E/I 14% tapped Ultra Linear push-pull output transformer 2 inch stack. 80mm(w)x95mm(l)x100mm(h), drop through fitting with zinc cap. Primary-secondary 6.4K, 14% UL taps, Secondary 80hm, max output 34watts, max current 150mA, valves EL34, 6L6, 6CA7 KIT34/KAT34 E/I 14% tapped Ultra Linear push-pull output (Printed circuit boards

HD83 E/I single ended output transformer 40mm(w)x50mm(l), primary-secondary 4K - 4 x 640hms windings, max o/p-1 watts, max current-25mA valves-ECL83 etc

Pre-II E/I driver transformer 80mm(w)x60mm(I) x65mm(h). 6:1 step down transformer, max current-I0mA valves-6922 etc pre-amp stage 300B PSE E/I parallel single ended output transformer 130mm(h) x 95mm(w) x II 5mm(d). drop through fitting with zinc cap. Primary IKS Secondary 8R, output .

PSU-II E/I 40mm(h) x 35mm(d) x 70mm (w) clamp fitting, ISH, 20mA

KIT34/KAT34 mains transformer 2.5 inch stack, 120mm(h)x115mm(w)x95mm(d), drop through fit-ting with zinc cap.Secondaries 365V - 0V - 365V,300mA/0V - 5V, 6A/3,15V - 0V - 3,15V, 7.5A. Suitable for 120/240V operation.

PHONO-II Printed Circuit Board 105mm(w) x 130mm(l) x 14

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Kel84 Printed Circuit Board 280mm(w) x 135mm(l)x 1.6mm(d), KiTat/KaT88 Printed Circuit Board 140mm(w) x 310mm(l) x 2.4 Kel34 Printed Circuit Board 140mm(w) × 310mm(l) × 2.4mm(d) ID Printed Circuit Board (a pair) 120mm(w) = 215mm(i) = 2.4 HD83 Printed Circuit Board 140mm(w) x 160mm(l) x 1.6mm(d). PSU-II Printed Circuit Board 105mm(w) x 130mm(i) x 1.6m PRE-II Printed Circuit Board 105mm(w) x 130mm(l) x 1.6mm(d,

NO auc

These are expert kits, not for the inexperienced. You must be able to solder and read a circuit diagram. The valve kits contain lethal voltages. We cannot be held responsible for any errors arising from the construction of these kits. ohsite @ OR OUT W

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Kool92 unities amplifies kit (with unities) (augilable 01/10/00)	Keel00 (with welves)	D	(inc vat & carriage)	(exc. vat & carriag
Kecl82 valve amplifier kit (with valves)(available 01/12/02)	Kecl82 (with valves)	H	£195.00	£170.00
2A3 PSE valve integrated amplifier kit (with valves)	2A3 PSE (with valves)	H	£550.00	£471.00
2A3 PSE valve integrated amplifier kit (without valves)	2A3 PSE (without valves)	<u> </u>	£450.00	£385.00
(aT6550 valve power amplifier kit (with valves)	KaT6550 (with valves)	u	£580.00	£495.00
(aT6550 valve power amplifier kit (without valves)	KaT6550 (without valves)		£450.00	£380.00
CaT 6550 upgrade kit	KaT 6550 upgrade		£120.00	£105.00
KiT6550 valve integrated amplifier kit (with valves)	KiT6550 (with valves)		£595.00	£510.00
(iT6550 valve integrated amplifier kit (without valves)	KiT6550 (without valves)		£465.00	£395.00
iT 6550 upgrade kit	KiT 6550 upgrade	ō	£130.00	£110.00
AT34 valve power amplifier kit (with valves)	KAT34(with valves)	5	£480.00	£410.00
AT34 valve power amplifier kt (without valves)	KAT34(without valves)	ä		
		H	£415.00	£354.00
aT34 upgrade kit	KaT34 upgrade		£120.00	£105.00
iT34 valve integrated amplifier kit (with valves)	KiT34 (with valves)	9	£495.00	£420.00
T34 valve integrated amplifier kit (without valves)	KiT34 (without valves)		£430.00	£365.00
iiT 34 upgrade kit	KiT34 upgrade		£130.00	£110.00
el84 valve integrated amplifier kit (with valves)	Kel84 (with valves)		£278.00	£237.00
el84 valve integrated amplifier kit (without valves)	Kel84 (without valves)		£248.00	£212.00
el84 upgrade kit	Kel84 upgrade	ā	£100.00	£85.00
SU II power supply unit module	PSU - II	ā	£195.00	£167.00
RE II pre-amplifier module	PRE - II	ä		
		H H	£195.00	£167.00
HONO - II phono stage module (with valves)	PHONO II	9	£110.00	£95.00
AS II passive pre-amplifier module with 10K or 50K attenuator (pls specify	,	<u> </u>	£215.00	£185.00
loving Coil step up transformers	MC - step up (pair)		£80.00	£68.00
D83 Valve Headphone amplifier kit (with valves)	HD83 (with valves)		£195.00	£167.00
00B PSE Valve Monobloc amplifier kit (with valves) - a pair	300B PSE (with valves)		£1177.00	£1002.00
00B PSE Valve Monobloc amplifier kit (without valves) - a pair	300B PSE (no valves)		£875.00	£745.00
000B PSE Upgrade Kit - a pair	300B PSE upgrade kit		£150.00	£130.00
parts description	order No.	qty	uk	overseas
			(inc vat & carriage)	(exc. vat & carriag
A3 PSE mains transformer	2A3 PSE mains T	U U	£115.00	£98.00
T/KaT6550 mains transformer	6550 mains T	U U	£120.00	£105.00
iT34 mains transformer	KiT34 - mains T	U U	£100.00	£85.00
el84 E/I mains transformer	Kel84 - mains T	Ч	£60.00	£47.00
D83 mains toroidal transformer	HD83 - mains T	4	£39.00	£34.00
SU-II mains toroidal transformer	PSU-II - mains T	H	£39.00	£34.00
00B PSE E/I mains transformer	300B - mains T (each)		£115.00	£98.00
T34 E/I chokeKiT6550 E/I UL			£40.00	
	KiT34 - choke			£34.00
el84 E/I choke	Kel84 - choke		£20.00	£17.00
el84 E/I choke iT6550 choke	Kel84 - choke KiT6550 choke		£20.00 £40.00	£17.00 £34.00
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el84 E/I choke IT6550 choke D0B PSE choke A3 PSE choke SU-II E/I choke IT6550 E/I UL push pull output transformer (4 chm? or 8ohm?)	Kel84 - choke KiT6550 choke 300B - choke 2A3 PSE choke PSU-choke 6550 - O/P T (pair)		£20.00 £40.00 £40.00 £40.00 £20.00 £130.00	£17.00 £34.00 £34.00 £34.00 £17.00 £112.00
el84 E/I choke 1T6550 choke 00B PSE choke A3 PSE choke SU-II E/I choke 1T6550 E/I UL push pull output transformer (4 ohm? or 8ohm?) 1T34 E/I UL push pull output tranformer (4ohm? or 8ohm?)	Kel84 - choke KiT6550 choke 300B - choke 2A3 PSE choke PSU-choke 6550 - O/P T (pair) 34 - O/P T (pair)		£20.00 £40.00 £40.00 £40.00 £20.00 £130.00 £130.00	£17.00 £34.00 £34.00 £34.00 £17.00 £112.00 £112.00
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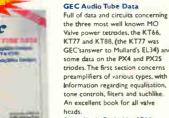




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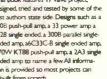
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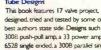
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classic cuts

With a new 5.1 SACD release imminent, Andy Giles takes a reflective look at Pink Floyd's tour de force, Dark Side of the Moon.

> he original vinyl pressing was first released on March 8th 1973, and totally enmeshed me to this day it remains a classic cut and a true

'must-have' album. Dark Side Of The Moon was the album of the 1970s and brought about a new era of LProck, transforming Pink Floyd from acid-hippy conceptualists to giants in the world of contemporary music.

Recorded during the summer of 1972, at a time of swift technological development, it was cut on standard 16-track equipment at Abbey Road with the new Dolby noise reduction system being implemented halfway through the sessions. A decision was taken not to do a quadraphonic mix, although that ill-fated system was just about to emerge on the domestic market. EMI carried on regardless and commissioned a guad mix from Alan Parsons, which the record company demonstrated at the Planetarium during a press reception to launch the record. Not surprisingly, the group didn't approve and boycotted the event, their place being taken by life-size cardboard cut-outs!

Pink Floyd maintained a steady concert schedule throughout the period of the recordings, and Dark Side Of The Moon was the first album which the band had both written and toured with before taking it into the studio. "It was called Eclipse when we first played it live," recalls David Gilmour. "We showcased it to begin with at five nights at the Rainbow, which tightened it up performance-wise, although one or two of the pieces which were a bit more performanceoriented got thrown out and replaced in the studio. On The Run started as some strange onstage jam, but when we discovered the sequencer capability of the little VCS3 synthesiser we used that instead."

Dark Side Of The Moon has been available in CD format bearing EMI's 001

catalogue number since August, 1984, and it remains among the top ten selling CDs of all time. With its striking sound effects of chiming clocks and ringing cash tills, it was exactly the type of recording which would have appealed to the audiophile section of the rock market and was a priority purchase for many proud investors in the new CD technology of the time. Such fans may be surprised to discover that the early CD version of the LP was transferred not from the master tape, but from a standard 15 ips Dolby copy, a practice David Gilmour believes was fairly widespread at the time. "We weren't involved initially. They just went ahead and did it. When we found out about it we had to do an investigation to find out where the real original master was, and then have it remastered."

Undoubtedly a pinnacle in the Pink Floyd odyssey, Gilmour now recalls that, "it changed our fortunes everywhere. We became much more visible. We were selling out 12-15,000-seater venues in America, but thereafter we could sell out vast football stadiums and we had to change our ways of doing shows. Whereas we used to get a respectful silence from the audience, once



Money had been a hit single (it reached Number 13 in America) we had thousands of kids partying at the front. Some of the things we had been able to do previously, such as very quiet sequences, simply didn't work any more."

Roger Waters took a sceptical view of its impact. In 1987, he told the world that Dark Side Of The Moon, "finished the group off. Once you've cracked it, it's all over."

The album remains a work of rare passion, a powerful evocation of the obscure corners of the rock psyche. Large portions of it continued to feature prominently in the live performances of both Pink Floyd and Roger Waters for years and it has undoubtedly become part of collective rock consciousness. As Gilmour notes dryly, "I thought it was a very complicated album when we first made it, but when you listen to it now it's really very simple." Oh yeah?

If you duri't sheady own a onpy of Dark Sale of the Moon them File emissed. A quality with recording should be sought out – if sut, the restatered CD is available on Harvest CDP7 46001 2.





once attended a hi-fi lecture that I will never forget – it was the only one I've been to where I didn't understand a thing. I don't think anyone else did either, because there was a stony silence as the lecturer

furiously scribbled equations across a board and spoke in terms alien to my experience of high fidelity. At the

end of it all - and I don't recall anyone leaving whilst he was speaking everyone sat there aghast. There was no rush to ask questions because no one quite knew what to ask. The lecture was held by the Audio Engineering Society in New York back in the 1970s, and we were receiving first information on how to encode a sound field from Professor Michael Gerzon, from the Department of Mathematics at **Oxford University.**

His basic theory was subsequently converted into a sound field encoding scheme called Ambisonics. It told anyone who cared to listen that quadraphonic sound (4.0 in today's money: two front, two rear) was a misunderstanding! It wasn't the reason that quad died, but it did show how we could and should be doing things to really crack the problem of providing surround sound all round.

At a commercial level Ambisonics went nowhere, which I felt was a great shame. There were a few recordings, a Minim decoder and much talk about 'methods', such as UHJ encoding/ decoding. Derived in the UK, it wasn't going to go out on the world stage at a time when large British electronics companies were being bought up by the Japanese who could seemingly do no wrong.

Getting four channels of quadraphonic information on to an LP was a problem that taxed ingenious minds in Japan, and kept the rest of us intrigued. But the reality of quad was less than spectacular. There were loudspeakers and wires everywhere, whilst amplifiers either inflated hugely in size or dropped spectacularly in power to cram four channels into a space where once lay just two. And at the end of it all, when a quad LP was finally put upon platter and played, it just didn't seem worth the hassle. Sounds came from

There was no rush to ask questions because no one quite knew what to ask.

the loudspeakers and although they did pan across the room, the effect wasn't convincing.

Quadraphonics died because no one wanted it. It was primarily a Japanese idea - which meant the hardware was there - but as long as America and Britain dominated the music scene, then the software was not. Music studios were reluctant to adopt the format, although CBS of America did develop SQ but was unable to take it far. British studios were uninterested, and because this country's music was so strong in the seventies, it did quad no favours.

Even now, Ambisonics shows us that modern surround-sound systems are little better at generating sound fields than nineteen seventies quadraphonics. DVD-A and SACD are methods of storing and transporting audio, but putting more channels on them isn't an intelligent way to get better surround-sound, because we don't necessarily need them. Rather, a properly constructed sound field is required, which is an entirely different matter. Both amplitude and phase information must be provided and whilst a microphone provides both, pan potted images in the studio alters only amplitude in each channel, failing to provide sufficient information for the ear.

At least modern digital systems alter arrival time according to loudspeaker distance, one advantage over quadraphonics, but more information is needed in the actual recording itself to generate really good all round images.

Much as before, the stumbling block to Ambisonics isn't consumer acceptance so much as music

> industry acceptance. Recordings must be Ambisonically encoded in the first place and here we're up against the chicken and egg problem of why encode in the studios when there are no decoders in people's homes? Ambisonics has been

around long enough, and is strong enough to have answers to some of these questions. With 5.1 surround, where loudspeaker positions are largely pre-determined (with three fronts and two rears, all at ear height and equidistant), music can be Ambisonically encoded to greatly improve planar imaging (that is, imaging between the loudspeakers in a flat, horizontal plane) and a decoder is not needed. So we could get better results now, providing studios were prepared to use encoders, and providing we used only 5.1 'speaker set-ups. Loudspeakers in other positions wouldn't work properly, although the errors might well be acceptable to most people. This means there's no stereo compatibility, but nor is there with 5.1. Rather, it has to be mixed down or a stereo mix provided. The same would happen with an Ambisonic signal, until consumer decoders became available that is.

It's difficult to get much better than Ambisonics in principle, although a newer version known as 'second-order' is being bounced around by the academics. Unfortunately it remains an academic plaything rather than a useful technology - it was born that way, and so it has remained ever since!

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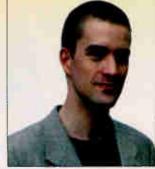
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he integration of computer and hi-fi is a possibility that's been explored for well over a decade now. Indeed, in the professional industry

it's almost unheard of now for mixing consoles not to feature some type of computerisation. Specialist publications such as this also promote the

benefits to enthusiasts of both persuasions. Yet, it has to be said that the public at large has still largely to realise the benefits of combining what has always been considered two separate entities.

From a retailers perspective, it's still a concept many are finding

particularly tricky to come to terms with. They've only just persuaded the consumer that sound and vision can be integrated with AV systems, so trying to persuade the public the benefits of computer audio looks like too much hard work. In some respects they're right. First of all though, one has to break down what exactly is meant by computer audio. I would break it down into the following categories: Computerisation of home automation, of which the hifi is simply a single component. Computer technology used within hifi components, and functions that can be integrated into a computer but also work as stand alone devices. If we look at the latter of these first it seems odd, at first glance, that so many DVD players should have been sold to customers who already have the format built into their PC's and Mac's. Of course, everyone who actually uses both knows the reasons full well. The computer tends to generate too much fan noise, and is cumbersome to use in conjunction with a television. Yet, this really needn't be the case. I can see no reason why the operation of a DVD integrated into a computer should require the use of a keyboard at all.

Surely it's not beyond technology to fit such devices with radio remote controls and full on screen graphics, from a separate output, to allow the computer's DVD player to be operated from another room if necessary. Heat build up, and controlling it, within computers is a different matter and as far as I'm aware has been for ages. Of course

Yamaha and Linn are just two of the well recognised hi-fi names that have committed themselves to hard disc.

> DVD isn't the only format to be integrated within the computer, CD, CDR and hard-drives were there long before. The concept of storing lots of information on a hard disc drive is hardly new to the world of computing, yet is only now just starting to be explored within the hifi realm. Yamaha and Linn are just two of the well recognised hi-fi names that have committed themselves to hard disc. Looked at with logic, though, it does seem odd that although we've had the ability to store hundreds of hours of music on our computers for years now, most of us haven't bothered. All the more strange, when we might actually rather like the idea of a "juke box" type system, and could even be possibly considering one of the new stand-alone boxes. I think the move is towards storing more music on hard disc, as slowing sales of prerecorded music testifies, yet there are still user interface issues that need to be addressed. These interface issues are namely that the computer and hifi are separate entities in the eyes of many, and the thought of using both together simply doesn't occur. I'm certain that one day the two will come together, as both industries realise they can't do it alone. We're

already starting to see this, with Apple joining forces with Harmon Kardon, who supply the amplified loudspeakers for the Mac range. Whether anyone considering a topnotch hi-fi system will ever walk through the doors of PC World, however, is a different matter.

An area, where computers and hi-fi work rather more harmoniously

> is that of home automation, or multi room hi-fi. The perception here is that the hi-fi is seen as a separate entity, and doesn't have to fight against the computer chip. The key here is that there is a clear distinction between that of the hi-fi and control system. The best hi-fi components can, and are, used, but the computerisation comes in, in getting them

to all work harmoniously together, and in a user-friendly manner. It doesn't matter if the music storage system is part of the computer or hifi "bit", because the perception is already of a whole "house hi-fi". It's this type of thinking, or should I say marketing, that needs promoting and filtering through to the less ambitious hi-fi systems.

In terms of computer influences effecting hi-fi I was intrigued to learn about I-link the other day. This is a digital connection that's designed to replace both the co-axial and 6-chanel outputs of DVD-A and SACD players. It can carry 700Mb per second of information, allowing it to simultaneously carry other information, such as mode recognition, in addition to the music signal. Pioneer's awesome VSA-AX10I amp' and DV-757Ai already use the system, and it looks set to become an industry standard for the carrying of digital signals.

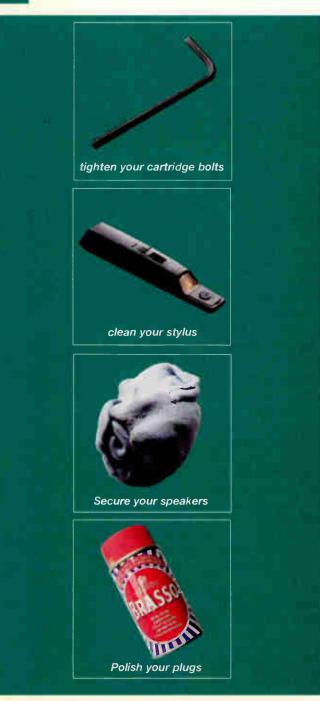
All good stuff you might think, but in order that most music loving yet tech phobic consumers aren't turned off, the industry has a huge PR task on it's hands. Audio and computer industries are already inexplicably linked, yet letting the public know and benefit from this is a different matter.



David Price shows you how to radically improve your system for pennies, using a few basic bits and some classic accessories. Follow his simple, sensibly priced tweaks and be amazed!

THE BASICS: SIGNAL PURITY

[1] Put a liberal amount of metal polish, such as Brasso or T-CUT, on a cotton bud and work it around the insides of all phono plugs and the outsides of sockets in your system. It should then be buffed off with a



duster or cotton bud until it shines, and then cleaned with isopropyl alcohol on a cotton bud and then wiped dry with another. The insides of phono sockets can be cleaned with pipe cleaners dipped in isopropyl alcohol, with the unit's power switched off and disconnected from the mains!

[2] Ensure all your mains plugs are clean, using the cleaning method above. It's even worth opening up the mains fuse (disconnected from the mains, of course!) and cleaning the fuse and fuse holder in the manner detailed above. If a 3 amp fuse is fitted then it can be usefully substituted for a 13 amp type for better sound.

[3] Avoid multi-socket mains junction boxes if possible, plugging each component into its own wall socket. Use only high quality junction boxes if you must, preferably unswitched. If you're really fastidious, you can wire two items into the same plug (i.e. so that your pre and power amplifier share the same mains socket) to remove needless 'layers' of sound degrading connections.

[4] Controversial as it may seem, entire hi-fi systems can benefit from gentle demagnetisation with products such as Densen's DeMagic CD (£10). Do not run this at high volumes, however, or you may blow your loudspeakers!

MECHANICAL ISOLATION

[1] Stand each hi-fi component on a separate medite sub-table, under which you should place one half of a tennis ball cut in half per corner. A more elegant but pricier solution is to substitute Foculpods (or similar types of feet made from Sorbothane rubber) for the tennis balls. Least elegant but most effective is a bicycle inner tube placed under a glass or MDF slab, partially inflated to provide a gentle springiness. [2] Use a purpose-built equipment support, such as Audiophile
Furniture's Base SP-01 (£60), which is a neatly finished isolation platform with resonance reducing bars and sorbothane feet. Better still,
Townshend Audio's Seismic Sink (£160) – which uses an air-filled
bladder to absorb ground-borne
vibrations, is thought by many to be the best vibration absorber around.

THE SPECIFICS: DVD/CD PLAYERS

[1] Disconnect your player from the mains and remove its casing. Dampen a cotton bud with Isopropyl alcohol and without touching ANY other componentry, clean the laser lens very gently, wiping off the fluid and buffing with a micro-fine lens cleaning cloth such as a Pentax cloth (available from opticians or camera shops) or a clean, dry cotton bud. Important note: You should only do this if (a) you know what you are doing and (b) your player is outside its warranty period, as opening it up may void the warranty. Otherwise, try this instead:

[2] Buy a laser lens cleaning disc, such as Audio Technica's AT6078 CD lens cleaner (\pounds 20). This special cleaning disc is a breeze to use, taking just twenty seconds to restore your lens, making for a clearer, smoother sound. Other types are available, but we've found this to be by far and away the best.

TURNTABLES

[1] Cartridges should be properly aligned and securely fixed to the headshell. Use a good quality alignment protractor such as that from Ortofon/ Henley Designs, or the hard-to-find Mobile Fidelity GeoDisc (try the internet!), and secure the cartridge in place with quality Allen bolts (such as those from SME), tightened hard. Not too



Clean your phono sockets



Clamp your records

Isolate your electronics

hard mind, or you'll crack your cartridge body or headshell! When fitting the cartridge, don't touch the bare cartridge pins as the dirt from your fingers will degrade the electrical connection and dull the sound - if possible, always clean them with liberal amounts of isopropyl alcohol before fitting.

[2] Don't trust your tracking force to your tonearm - unless you have something of the quality of an SME Series V! Ortofon's stylus force gauge is very accurate, cheap at £6 and easy to use - better still, Technics' long-deleted SH-50P1 is a breeze to use and still occasionally available in the classifieds for under £20. Rega RB300 owners - and indeed any users of arms with springs to apply downforce - should try setting the tracking force to zero (effectively disengaging the spring) and balancing the arm via the counterweight and a stylus pressure gauge. The springs in some arms can cause sound degradation.

[3] The condition of the main bearing is paramount, so be careful when moving your deck around. Always remove the outer platter - and avoid heavy turntable mats or record clamps that could overload the bearing. Most main bearing housings can be flushed out with detergent, cleaned with isopropyl alcohol and then refilled to the recommended level with the lightweight fully synthetic motor oil such as Mobil I (as used in Michell decks). [4] Turntable drive belts should be renewed if excessively loose, or otherwise regularly cleaned with isopropyl alcohol on a lint-free duster. Check the cleanliness of the belt's path (the surfaces it comes into contact with, including the drive pulley and inner platter) and clean it if necessary with isopropyl alcohol, including the pulley, belt and inner

platter.

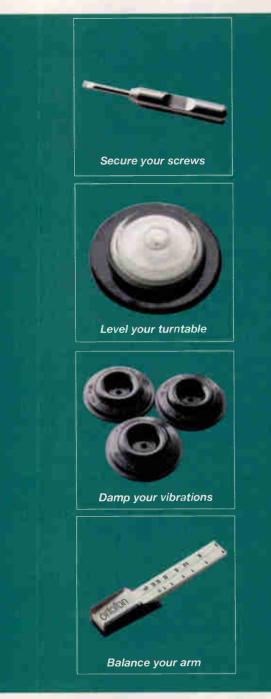
[5] Stylus cleanliness is all-important. Isopropyl alcohol is the stuff to use, applied on a smart fine artist's brush from back to front. Take care not to get fluid onto the upper part of the cantilever, as it can work its way up into the suspension with unfortunate results. An even better answer is vibrating stylus cleaner such as Audio Technica's AT637. Now long deleted, they can still be picked up in the classifieds for under £25. Back in the eighties, obsessive vinyl users used to keep their styluses clean with a special type of sandpaper such as Linn's Green Stuff - it's effective but has disastrous consequences if used any more than occasionally. Another idea is Cardas's Sweep record, which not only cleans the stylus by vibrating it ultrasonically but also offers a Densen DeMagic-style demagnetising track too. Again, look online or in the classifieds.

LOUDSPEAKERS

[1] All loudspeakers benefit from speaker stands, with the exception of very well designed floorstanders. Late eighties frame-type models, such as Linn's Kan, Heybrook's HBSI or Linn's Sara (depending on whether you have small, medium or large standmounters) generally offer better support than modern column stands. All can be picked up in the classifieds for under £40. Spike your speakers to your stands and your stands to your floors, although Blu-tack can be used to secure standmounters to stand top-plates or bookshelves. Wherever you choose to site your speakers, aim for rigidity: The more they wobble around, the more you lose dynamics and clarity. [2] Many speakers also benefit from having their drivers tightened - often the Allen bolts or screws securing them to the front baffle are too

loose, making for diffuse imaging and muddy bass.

[3] Ported designs with over-full bass can benefit from having their ports blocked or restricted with foam or even old socks!





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column

t was back in 1994 that I first arrived at Hi-Fi World. Having just completed my Masters Degree, I was aching to get out of academia and into something altogether more abstract – journalism! The fact that I'd spent most of my term time leaf-

I'd spent most of my term time leafing through the pages of this magazine - gazing at the merry mix of

vinyl, valves and exotic loudspeakers - when I should have been in the library studying was good preparation for life as an editorial assistant. No longer did I just get to read about all the cool stuff, I got to play with it too! But that was way back when, sometime in the distant past when I

joined this magazine so cut my teeth in the unusual world of hi-fi journalism.

Mainstream it isn't! In the real world Journalism (with a capital J) is a tad sharper in many respects, I've discovered from my labours at with a famous Sunday Newspaper. So much so that mainstream journalists would laugh at the audio press. But laugh they should not, because not only is audio a technical minefield, it is also highly subjective in the final analysis and there are plenty of dedicated hifi engineers running hi-fi companies who are unwilling to tolerate errors or sloppiness in what we write about their products.

Since I joined this magazine, hi-fi has changed remarkably. Although fewer than ten summers have passed since I first knocked on Noel's door, the transformation that new technology has wrought on the audio scene is staggering. Back in 1994, hi-fi was still very much getting over the nineteen eighties. Aside from the fact that black boxes and cottage industry build were standard fare for much British equipment, there was a radically different philosophical climate around. For example, almost all the rival hi-fi magazines of the day still insisted that Compact Disc was to all intents and purposes - perfect. The notion that analogue was inherently superior – a far higher resolution format than their beloved 16bit digital – was laughable.

Even then, this magazine was far more circumspect, routinely running editorial championing the cause of vinyl.

No longer did I just get to read about all the cool stuff, I got to play with it too!.

> Similarly, the fact that we dared to suggest that valves could form the heart of a serious modern hi-fi system was greeted with howls of derision. Funnily enough though, if you pressed many of the nay-sayers, they'd often admit that tubes sounded 'nice', it's just that they weren't 'neutral' like solid-state. Since then, World has done much to rebalance the equation by showing how solid-state is as 'coloured' as valves, but in a different way. Rather that turning the colour balance up as tubes often do, solid-state shifts it right down until you're almost listening in black and white. The eighties ideal hi-fi was a lean, mean fighting machine, but nowadays the latest hi-fi is trying to claw back all that lost tonal colouring and lustre. How times change!

Loudspeakers are another area of great developments. Partly from a desire to find decent speakers sensitive enough to work with valve amplification, this mag began a campaign for modern materials in 'speaker design. In a world where most drive units were still made of slow, unresponsive polypropylene or fast but ragged paper, Hi-Fi World championed carbon fibre and High Definition Aerogel. Nowadays you can't move for exotic cone materials, resulting in loudspeakers with a tight and fast but smooth and clean sound - that are also easy to drive. Contrast this to the power hungry, inefficient, shouty and shrill mini-monitors of the nineteen eighties and you can truly say, 'that's progress'!

> Finally, the advent of DVD-A and SACD has proved categorically that all those pro-CD reviewers of ten years back were talking out of their, erm, bass ports. Compact Disc was always sonically flawed, as anyone with a turntable could have told you back in 1983. This is not to say that the new 'advanced resolution' digital discs are perfect, but they're certainly a

sizeable step in the right direction. And the fact that they're even releasing some decent titles now – as opposed to out-takes from experimental Albanian avant-jazz noise quintets – actually means the new formats might just take hold.

Right now, the word upon everyone's lips is surround sound. This is truly going to revolutionise hifi, but don't think it's a universal panacea. Vast numbers of punters are going to buy bad systems they won't enjoy just because they're being told it's the next big thing.

I'd advise stereophiles to make the most of what they've got - in most cases a decent stereo system and follow developments closely. We're fast approaching the time to seriously countenance making the move, but don't think for a minute that six channels of 24bit, 96kHz digital audio will automatically sound better than a well matched and set up budget CD or vinyl system - it won't!

As I always say, in hi-fi as in life, it ain't what you do, but the way that you do it! And that means you don't have to splash a lot of cash for a good sound. You just have to know what you are doing. I hope we can help.

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Price is expected to be around $1,2000 (\pounds 900)$ on its May launch. For more information, check out www.pioneer-

between 5x write speeds to the hard drive for the direct transfer of content. Users can store up to 1500 CDs

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receivers possible.

Already available in Japan, it is expected to hit Europe and the US this summer and retail for around \$199 (£150). Sony's vice president of PC marketing, Mark Hanson, calls it, "essentially a networking hub for swapping data between disparate devices". It allows music stored on PC hard drives to be played on stereos or TVs, while the hard drive can also function as a video recorder. Cable or wireless connection via Wi-Fi is catered for. Japanese RoomLink buyers are also able to stream DVD video from one device to another, but this may be disabled in other markets for legal reasons. The system only works with Sony's multimedia software bundled with VAIO PCs. Check out

Meanwhile, Sony's new RoomLink is designed to make the easy networking of PCs, televisions and stereo

GETTING LYRA-CAL

usa.com.

Thomson's new LYRA Wireless RD900W will digitally transfer music anywhere in the house using Thomson's proprietary Digital Sound Mix technology. It beams 100MHz signals at near CD-quality up to a range of 100 feet using USB-compatible transmitter. It integrates with MusicMatch software, letting users create playlists and organise their digital music libraries using ID3 tag song data to display artist, album, song title and genre. A radio frequency (RF) remote control is included, which can be operated from anywhere in the house, letting users switch between sources (such as mp3 files, CDs or Internet radio).

The new RD2780 Audio/Video Jukebox is claimed to deliver a complete digital entertainment experience in the palm of one hand. The size of a small picture frame, it sports a 3.5-inch TFT LCD screen and multiple audio and video codecs (including MP3, MP3PRO and WMA

files). It can also be used as a computer storage device, or connected to most ix standard televisions via a composite

www.vaio.com for more information.

standard televisions via a composite video output. The built in hard disk stores up to 80 hours of TV, movies, home videos or music. High speed USB 2.0 and Compact Flash memory card compatibility complete the picture. Available this summer for around £300, more information can be obtained from

www.lyra.com.

PRAISE BE!

Computer Audio World can exclusively reveal that the copy protection system applied to Roxette's The Ballad Collection has proved a resounding success. Even judicious use of Nero CD authoring software by our experts could not break it. Here's hoping that Capitol Records will now apply it to every title in Roxette's back catalogue, thus preventing any further proliferation of this music.

ON THE MOVE

Samsung's first hard disk-based digital audio 'jukebox' is the £349 YP-900. It boasts a 10GB hard-disk drive, multi-format storage, voice recording facility, an FM tuner, direct USB 2.0 connection to PCs and a rechargeable battery giving 10 hours of playback time.

Samsung also has a new DVD walkie measuring just 23.5mm, the new DVD-L100 is said to be the slimmest portable of its kind on the market. A 10-inch TFT LCD screen is fitted, along with Memory stick compatibility and MP3 Audio file playback with Audio Manager software. Price Is £999 from June 2003. Point your browsers at

www.samsung.co.uk.

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GET IT ONDIO

In a sea of me-too MP3 portables, Archos's new Ondio offers something different. But does it have enough to tempt David Price.?

> he MP3 market is getting pretty mature these days. Any new digital audio portable has to - in my opinion offer something special

to succeed. And this is just what Archos seems to be trying with its new Ondio.

The first Archos product to use flash memory (all their previous MP3 portables have been hard diskbased), it comes with a generous 128MB sized helping which can be expanded by the MMC (MultiMedia Card) slot. This translates to a minimum of two hours MP3 music, but the player can also be used as a dictaphone, giving over four hours of recording time. When not doing MP3 playback or dictaphone duties, there's a built-in FM tuner for your pleasure, with the novel option of being able to record from it directly into MP3 format

Better still is a facility to record external sources onto the Ondio's MMC, via a top-mounted 3.5mm minijack socket. Archos adds that the Ondio can also serve as a 128MB flash memory disk for transferring data, too.

Essentially, it's a smallish (81x47x25mm) but quite heavy portable player with just the bare minimum of buttons and an unusually large display. Upon switch on, the Ondio offers up a choice of FM Radio, Settings, Browser and Recorder. Using its front-mounted buttons, you select your desired option from the menu and you're off. If you wish to play MP3s, the Browser menu comes up with all your available files which can be easily selected and played. If you wish to listen to the radio, it's just a case of hitting the FM Radio option and tuning in via the digital display. Disappointingly, perhaps, no presets

are offered, nor is there any form of RDS or Radio Text.

The radio can be recorded by going into the Recorder option with the source set appropriately in the Settings Menu. This also allows you to set the quality (on a scale of 8) and the sampling frequency (up to MP3's maximum permissible 48kHz). Interestingly, Archos offer something akin to the 'Time Machine Recording' facility on Sony MiniDisc machines the player uses a thirty second recording buffer which is constantly monitoring the input, and can thus commence recording the signal input thirty seconds prior to when the record button is pushed. This feature will doubtless be handy to some, but I can't say I've ever used it. The maximum recording time with the supplied memory card is three hours, assuming the lowest 96kbps bitrate is set.

Using the Archos is relatively straightforward, although I did not like the display, which wasn't the most legible and could clearly have done with being backlit. The buttons are fiddly, too - it's hardly the best built or most tactile product. In this respect, the likes of SONICblue's Rio S35 is better. File transfer is easy (albeit slow) via the supplied USB I.I interface - which works with both PC or Macs - being simply a case of 'dragging and dropping' the desired MP3 in to the relevant file browser window.

The Ondio was a breeze to install - my PC recognised new hardware and found the drivers automatically without so much as a prompt. The supplied CD-ROM comes with MusicMatch Jukebox 7.2 - which was older and considerably inferior to the latest MMJ 7.5 that I'm running, so I didn't bother to install it.

This player's sound quality



in the middle class. Frankly, the latest

Rios will seriously outclass it and the Philips Rush SA-126 (now discontinued, I believe, but still my reference) gives it a pasting. Essentially it's warm and woolly, with a fairly curtailed treble response and none too impressive dynamic abilities. What is does have, however, is a strong headphone amp which gives plenty of welly for a big, fat bass sound. In conjunction with a decent pair of in-ear phones like Sennheiser's MX-500 (£20) it was capable of making half decent MP3 music. However, the reception I got from the FM radio in my local area (Bristol) was very poor - so don't expect to be able to DX with this thing! Neither was its FM sound too hot - just as soft, warm and mushy as its MP3 performance. The overriding virtue of the Ondio is, however, that it never offends or upsets - which is pretty rare for MP3 personals.

All in all, the Ondio is a mediocre product. I can't really recommend it - simply because its sonics were middling and the radio reception - which is supposed to be one of its key selling points - wasn't up to par.

> Archos Ondio £170 www.archos.com

World Verdict

Dull MP3 sound allied to bad FM radio reception and uninspiring ergonomics make this an altogether less impressive product than Archos's most expensive HD-based Jukebox Recorders.

DRIVE TIME

It's been a while since Computer Audio World tested a Philips CD burner, so we decided to take its latest PCRW4816K for a spin...

he first Philips CD writer I ever clapped eyes and ears on was a 2x machine that cost the best part of £300. Amazing - isn't it - to think that the company's latest 'ultra speed' internal machine you see before you costs a fraction of this and burns many times faster – just a few years down the road!

The PCRW4816's vital statistics are 48x read, 16x CD-RW write and a staggering 48x write – all for well under one hundred quid.

Personally, I do not do any music burning at over 4x if I can possibly avoid it. I've found that on my PC rig at least, the quality tends to drop at high speeds, producing a curious 'flanging' sound. And before you put this down to me copying the assorted works of the Electric Light Orchestra then I'll point out that it even occurs on music not penned by the great Jeff Lynne! To get the best burns, you should always use good (preferably branded) CDR blanks and spin as slow as you possibly can. For this reason, for audio use at least, the Philips' amazing 48x write capability wasn't an issue.

What does count is the overall quality of the unit, which is very good. It comes in the usual distinctive Philips livery, with separate 'Read' and 'Write'LEDs on the front panel as well as the usual headphone socket, volume control and single, streamlined Open/Close button to control the tray.

The CD tray runs quite smoothly and expeditiously. It's a nice package with all the right features – Seamless Link buffer under-run protection, a 2MB buffer (big ones aren't necessary if a drive has the aforementioned buffering safeguard), a near universal ATAPI/ E-IDE Ultra DMA connection and Thermo Balanced Writing technology. This system analyses the quality of the recording media and adapts the writing strategy to reduce errors, the result being more reliable burns at high speeds.

The Setup CD ROM has Philips' custom setup software which includes a video demo, NERO Burning ROM and InCD packet reading software and Acrobat reader. The drive works with Windows 98SE, ME, 2000 and XP.

The PCRW4816 was tested on my 1.5GHz P4 with Microstar motherboard, with IBM UDMA drives and an LG DVD ROM as slave to the burner, running Windows 98SE. The supplied CD-ROM was inserted to install the drive and software – at first the Philips software recognised the drive but after the first re-boot there appeared to be no CD ROM drives present on the secondary IDE interface! After several restarts the best it could do was to recognise the Burning ROM (5.5.8.7) and InCD software.

After I'd finally got it on the road, the Philips proved impressive. Lacking the vibration or whine that often accompanies fast spinning drives, it did its job without fuss. In non-audio mode, it proved its mettle by copying nearly 600MB of digital photos from a hard drive in around four minutes! Those who occasionally copy music CDs (for their own personal use of course) may be interested to know it has a 40x DAE (Digital Audio Extraction) rate. It did burn music at this rate but contained clicks and other distractions - the same files burned to a CD at 4x were noticeably better and well worth the extra wait! With InCD the formatting process to prepare for packet writing took just under thirty minutes and copying files at 16x using Windows Explorer and 'drag and drop' was very impressive.

Overall then, a perfectly good

PHILIPS

LG DVD ROM – the Philips was gone forever! This conflict was finally resolved with a clean installation of Windows 98SE, where after the dreaded Philips Installation Wizard did its job, recognised the burner and installed the Nero modern machine that does everything you could reasonably want with grace at a low, low price. Great software, a two year warranty and the knowledge that you're buying from the inventors of the format itself, don't exactly hurt either. Recommended.

> Philips PCRW4816K £59 www.consumer.philips.com



David Price tries out Perception Digital's brand new hard disk-based music recorder, the PDHercules Jukebox II. Is it as strong as its name suggests?

he first computer audio separate was, of course, the CD player. A very simple design running late seventies technology, it took a series of

binary digits read from its optical storage input device (the CD drive), verified them, corrected them if necessary and then crunched them in real time, whereupon its digital converters turned them into audible sound. Given this, it's a wonder that it took hard disk based music servers such a long time to percolate down from the specialist 'pro audio' environment to the dominions of affordable hi-fi.

Still, they're here at last and like buses, they all seemed to have arrived together. Barely days after Yamaha's CDR-HD1300 had been boxed up and shipped back, this new Perception Digital device arrived on my doorstep. And what a difference! Whereas the Yamaha has the company's traditionally crisp, clean ergonomics, this thing feels far less 'trad' hi-fi and much more techno gadget. For this, read cluttered, awkward and annoying to use, until you get the gist of it, that is...

Neither is it particularly handsome, thanks to the very plasticky case and fascia. Still, it's surprisingly heavy (at 6kg) given its average (430x300x95mm) dimensions. All the controls are on the remote, with the minor ones under a hinged front flap. The 16 character, 2 row backlit LED display is small and not the easiest to read at just 64.5x16mm. Still, although it may lack the feel of a Paul Smith suit or the looks of high-end Japanese esoterica, at least it doesn't cost the earth at £350.

Oh, and it does a dizzying array

of stuff too. It works as a normal CD player, but will also playback MP3 CDs. Either of these disc types can be recorded to its built-in hard drive which, thanks to its generous capacity of 40GB, can store vast amounts of your fave tunes in a choice of 128kbps MP3 format (up to 1000 CDs worth, in fact). Of course, the music storage capability drops if you encode at the other, high quality, option of 320kbps and even more if you opt for uncompressed WAV format where it holds about 60 CDs.

Personally, I'd have liked to have had the option of 192kbps (a good compromise between sonics and size) and VBR encoding (ditto). There's also the option of a 40GB HD.

You can use the HD Jukebox II to record via the analogue line inputs in real time in either WAV or MP3

www.hi-fiworld.co.uk World Radio History format – great for archiving your LP or cassette tape collections. Additionally,

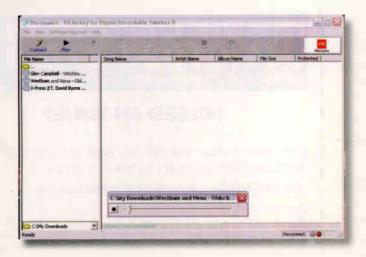
you can transfer your existing MP3s directly to it from your PC via the USB link feature. Given that more and more people have broadband, through which downloading a four minute pop song takes under sixty seconds (via Grokster, Bearshare, Kazaa, etc.), then I can see this facility being quite popular... However, my reservation with this is the choice of interface – USB is practically Palaeolithic in these days of FireWire. Why not USB 2.0?

ME WARK W

One of my favourite features is the ability to transfer stored MP3 songs directly onto SmartMedia™ cards via the built in slot. Other clever things include the chunky (70x40.5mm) remote control, which sports a massive backlit LCD window that forms the eyes and ears of the recorder. There's also a built-in, upgradeable, Gracenote CDDB database that contains full artist, title and track information on over 600,000 CD titles. The usual playback mode and maintenance functions are included, such as temp list, playlist, edit, song search, delete file and format hard disk.

Round the back, two pairs of RCA phonos take care of analogue input and output duties, and there's a TOSLINK digital optical output for good measure. The supplied PDJockey software is the HD Jukebox II's file download and management program. Besides facilitating the downloading of MP3 songs from your PC, you can also match album titles via on-line database, or edit or delete songs stored in the jukebox hard drive at the click of a mouse button. The system works straightforwardly enough, but then again iTunes it is not...

Its MP3 sound quality is good particularly at 320kbps - but by and large the codec is the limiting factor here and not the player's electronics. Given a decently recorded bit of music such as Al Jarreau's 'Try a Little Tenderness', ripped to the HD as a WAV file, the PD really impressed me however. Whereas its finish, ergonomics and packaging may be second rate, I was genuinely surprised by what it was capable of in the sonics department. Its 24bit Cirrus Logic digital-to-analogue converter is unusually rich and creamy, making the aformentioned Yamaha seem thin and analytical by comparison.



In truth, the top-end is very rolled off - an old trick when you want smoothness from budget digital - but even though it's not the most atmospheric it's still tonally very pleasant, indeed, you could also go as far as calling it silky. This character extends downward into the midband, which isn't the most penetratingly detailed and incisive in the world, but maintains a pleasantly warm and sweet demeanour. A little soft and rounded (akin to a Leak Troughline tuner in a way), it's unable to give ten-tenths of any dynamics on a disc, but makes up for it with a very beguiling musicality. Things flow along in a pleasantly 'wafting' sort of way a bit like an old Jag. Female voices are impressive too; no nasties here. Bass is soft as a marshmallow, but nice and fulsome. Pink Floyd's 'Breathe' showed it to be sumptuous and warm but decently propulsive and tuneful. It impresses more by its sheer weight than by any particular insight it has into a bass player's movements on the fretboard, and the fact that this warmth extends right up to the lower midband giving a full tonality.

Its soundstaging is quite good too. There's little of the Yamaha CDR-HDI 300's detailed analysis as to the precise location of the instruments in the mix. However, the PD does a great impression of analogue by serving up an unusually expansive soundstage, with very wide left-to-right image placement (albeit not great in terms of stage depth). The overall effect of this, plus that nice creaminess and softened high end is of a very listenable bit of kit – quite unexpected at this price.

Overall then, I was rather pleasantly surprised by Perception Digital's PD Jukebox II. There's no denying its fine sound and excellent feature count – it's just that clunky control layout I don't like, along with the fact that you're forced to use a remote control with all the tactility and grip of a wet fish and software with the visual appeal of Microsoft Windows 3.0. Still at its low, low price you get one hell of product. Recommended.

World Verdict £ Surprisingly good sound and generous storage capacity more than compensates for lumpen ergonomics and feel.

Perception Digital PD Jukebox II £350

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Here's a list of products that are a good buy. We've tried to cater for a range of tastes, identifying strong products in every area. We're agnostic so you'll find a wide range of products, from valve pre-amps through to MiniDisc players. Products marked * are recently out of production but make a good second-hand buy.

Prices shown are those at the time of the review



Sonic Frontiers Transport Cutting edge design and technology.

COMPACT DISC

ARCAM FMJ CD23 £1100 This British-built player is extremely versatile. Controlled and detailed with a musical insight that few match. (Jul 2000)

CAMBRIDGE CD4SE* £200 A touch soft in the treble but outstanding in every other respect. (Feb 98)

KENWOOD DP-3080/II* £180 Has great clarity and presence for the price. Not as naturally expressive as the CD4SE though. (Feb 98)

LINN KARIK III* £1775 Under rated and overlooked, the final Karik was a gem, Superb transport gives a brilliantly tight, grippy dynamic sound, albeit tonally rather dry.

MARANTZ CD-17 KI-S £1100 The Marantz excels in all areas. Without doubt this is one of the most involving CD players on the planet. Build quality is also exemplary. (Sep 97)

MARANTZ CD-63 MKII KI-S*

Similar to the CD-63SE but more powerful bass and an all-round smoother sound. The famous KI tweaks pay off again. Whether or not it is still pre-eminent against the vastly improved competition is a matter of opinion.

£400

£1000

MERIDIAN 506 20-BIT* £1100 Very detailed and revealing player. More cerebral than visceral sounding, however. (May 95)

MUSICAL FIDELITY X-RAY £800 Commonsense sturdy CD player of exceptional ability. Clear and detailed with high quality internal processing system. The X-Ray is inclined to show up poor recordings, but it's only doing its job! (Feb 99)

NAD \$500

This dynamic top of the range Silverline spinner delights with any type of music. Exciting, sophisticated sounding and highly recommended.(Jun 2000) ROKSAN CASPIAN £895 The Caspian has a smooth, slightly bright sound with some of the clearest treble in the business. Very engaging, dynamic character. (Aug 97)

ROTEL RCD 951 £300 HDCD capability at a midrange price. Plain Jane looks but solid construction. There is some higher than average measured distortion which may take the edge off this otherwise tempting product. (Aug 99)

COMPACT DISC TRANSPORTS

SONIC FRONTIERS

Cutting-edge design and technology combine to make this one very desirable product. The only problem is the fantasy hi-fi price. (Sep 98)

66999

£99

 TEAC P-30
 £2500

 Cheap it isn't, but then it sounds like a million digital dollars. Nothing short of superb. (Jun 97)

 TEAC VRDS-T1
 £600

 Excellent mid-price silver disc spinner with a powerful, expansive and warm sound. Easily beats most sub-£1000 designs. A good choice for the budget concious who want the best. (Feb 95)

DACs

CAMBRIDGE AUDIO DACMAGIC 3* Superb value for money with extensive

facilities and solid, detailed sonics. Upgrades any sub-£300 player.

DCS ELGAR £8500 Future-proof convertor which will handle 24/96 and 24/192. Extremely open and natural performer. (Nov 97)

DPA LITTLE BIT 3* £299 A taste of the high end on a budget. Rich, clean, punchy sound transforms budget CD players.

MIDIMAN FLYING COW (299) Excellent as a DAC and doubles as an ADC for archiving to CDR. (Jun 98) Great value, as is junior version Flying Calf at £109. (Feb 99)

MUSICAL FIDELITY X-DAC* £300 A bargain for normal CDs and even better with HDCDs. (Nov 97)

SONIC FRONTIERS PROCESSOR 3

PROCESSOR 3 (6999 Quality never comes cheap! This DAC oozes class and when matched with the Transport 3 is certainly up with the best. (Sep 98)

TURNTABLES

LINN SONDEK LP12 BASIK £1100 Off the pace these days in many respects but still an extremely sweet and engaging listen with a quintessentially analogue sound. MICHELL GYRODEC SE £775 Exquisitely built, infinitely upgradeable deck that gives true high end sound at mid-fi prices.

MICHELL ORBE £2000 Fantastically capable all rounder with

commanding, powerful, detailed sound that gets the best from almost any arm and cartridge. Supreme build, brilliant value. (Apr 95)

ORIGIN LIVE STANDARD (KIT) £145 Good in standard form with AC motor; frighteningly good with a DC motor and battery PSU.

PINK TRIANGLE TARANTELLA6680 Not only does the Tarantella have more style than a catwalk full of models, it also combines PT's usual clarity with real authority. (Oct 97)

PRO-JECT DEBUT £110 Straight out of the box and onto the shelf? Nothing short of a bargain. Vinyl's never had it so good, so cheaply!

REGA PLANAR 2 £214 Brilliant starter deck with extremely polished manner. Better built £274 Planar 3 is a great all-in-one package that eats mid-price CD players for breakfast.

ROKSAN XERXES X £1295 DSU or XPS 3.5 power supply £150/170 extra. Excellent pitch stability from a new Swiss motor and outboard power supply. Very tight bass, fine dynamics and revealing clarity. (Jan 97)

SYSTEMDEK IIX900*/RB250 £330 A fine all-rounder and easy to upgrade too. More depth and breadth than Rega Planar 3. (Sep 94)

 VESTAX BDT-2000
 £225

 A stylish looking deck with infinitely variable speed 16-90 rpm, DC belt drive and built-in MM phono stage. Good value, with plenty of chassis room for alternative arms, if required. (Sep 99)

TONEARMS

HADCOCK 242 SE <u>6649</u> Latest of a long line of unipivot arms. Added mass makes the 242 suitable for both low compliance MCs and straw-in-the-wind high compliance types. Revised geometry and

chromium plating completes a first-class job. (Jun 2000) NAIMARO* £975 Truly endearing and charismatic performer -

wonderfully engaging mid-band makes up for softened frequency extremes REGA RB300 £180

 REGA RB300
 £180

 Some may prefer the simpler RB250 at £130.
 Detailed, tight, rhythmic sound but tonally rather grey and cold-sounding. Still excellent value, though

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Naim 3.5 CD Player	£1,300	£ 695
HiCap PSU (also for pre-amps)	£ 750	£ 375

Audio Innovations Series 500 (s/h) as new Integrated valve amp with phono input	-	£ 595
Audio Research's classic SP9 III Rare and exquisite; silver; mint (s/h)	£2,850	£1,250
Ayre Acoustics K1 Pre-amp with phono stage World class, bal/ s-e, silver (Ex-dem, 5 yrs old)	£8,000	£3,250
Ayre Acoustics V-3 Power Amp Ex-Dem, hard to believe it's solid-state	£3,750	£1,750
Gryphon Sonata/ Allegro/ Legato State of Heart pre-amp with psu and phono stage Final price reduction. (Ex-D)	£10,600	£5,900

Manley Labs 240/100 Monoblocks (pair) Pentode/ triode switchable, amazing pro gear Current list is for a revised "Neo" model (Ex-D)

Mark Levinson Power Amplifiers		
No 335 (250 wpc) (s/h, mint)	£8,495	£4,995
No 335 (250 wpc) (New, sealed box)	£8,495	£5,995
PassLabs X-150 Power amp (s/h)	£4,550	£1,950
S/h mint condition		
PassLabs Aleph-5 (s/h)	£3,350	£1,750
60 wpc, s/e RCA and Balanced		
PM Components 211SE monoblocks	£2,800	£1,295
Near Offer Considered; additional set of GE NOS valve Schematic included; very impressive	es	
Selection of unused GE NOS tubes for above	£ 370	£ 200
Tenor Audio 75 Wpc (OTL tube monoblocks) Winner TAS Golden Ear 2002	\$20,900	POA

£8,450

£3,500

Kharma Ceramique 1.2 Reference Monitors Focal tweeter, piano black, crated, as new	£14,995 <mark>£8,495</mark>
ProAc Future Point Five (Cherry) Just run in, mint, boxed (Ex-D)	£3,500 £2,495
Revel Performa F-50 Ceramic Latest spec (Cherrywood) (s/h)	£6,500 £3,250
Wilson Audio 6.1 Crated, 18 months old, piano black Final Price Reduction	£20,000 £10,995
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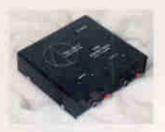
connections.

And here's a tip: use a *£14.95* bottle of Kontak cleaner to keep them clean.



World Padio History

Prices shown are those at the time of the review



Pro-ject Phono Box. Provides an inexpensive introduction to all that vinyl has to offer.

£309

£689

£30

SME 3009511

Once state of the art, but no longer. Weak at frequency extremes and detail, but its legendary serviceability makes it a cult in Japan. Can be picked up for peanuts secondhand. (Jan 93)

SME 309

A down-market version of the IV and V with aluminium armtube and detachable headshell. Tight, neutral sound with good tonality, but lacks the IV's pace and precision. Like the older SME 3009 series, this arm is also available in 10" and 12" versions. (Jan 93)

CARTRIDGES

AUDIO TECHNICA

Great starter cartridge that's refined, detailed and musical beyond its price. Best value MM under $\pounds 50$

GOLDRING 1012GX £74 An accomplished MM with a solid bass, slightly forward midband and clean transients. Very reasonable price for such an able performer: (Jul 93)

DNM MICA £185 Betters Goldring's 1042 and costs only £135 on trade-in. An assured and transparent MM. (Feb 98)

DYNAVECTOR DV20X-H £299 The best modern budget MC combines deliciously sweet sound with fantastic get-upand-go. High output version works a treat with valve phono stages too.

MUSIC MAKER

When mated with a good quality arm, this hand finished high-output pick-up gives an ear-boggling account of itself. Very high compliance ensures maximum information retrieval. An absolute (grain orientated) gem. (Feb 99)

£575

£2000

ORTOFON MC 7500

Conclusive proof that there's hope for the world. It's a long time ago now but this highpriced favourite still earns its niche - CD lovers would die if they heard it. (May 94)

ORTOFON MC 15 SUPER II

SUPER II £140 Not quite as good as the dearer Supremes but the Super II is a splendid introduction to the joys of moving-coil cartridges.

GOLDRING 1042 £130 One of the best Moving Magnet cartridges going, with beautiful treble and muscular bass. New low price makes it a bargain.

ORTOFON ROHMANN £1000 In a way it's MC 2000 meets MC 7500 with great tonal strengths and a dynamo sound. (Apr 96)

INTEGRATED AMPLIFIERS

AUDIO ANALOGUE PUCCINI SE **£595** This superbly-built Italian integrated has a lucidity and control which leaves others nowhere. Sound stage a wow. (Dec 97)

AUDIOLAB 8000a * £495 Well rounded integrated with smooth and detailed sound plus a huge feature count. Great build makes later versions a top used buy.

DENON PMA-250SE £160 It might not have bags of grunt but the Denon can sound exceedingly natural and open. (Feb 97)

McINTOSH MA6800* £3735 The MA6800 not so much plays music as takes control of it, with effortless bass drive. (Sep 95)

MISSION CYRUS 2 * £299

Classic eighties minimalism combines arresting styling with clean, open, lively sound. Further upgradable with PSX power supply.

MUSICAL FIDELITY X-CANS2

X-CANS2 £160 Warm, sumptuous, sweet sound h/phone amp. gives startling results with a decent set of headphones.

NAIM NAIT 3 * £575 Superb rhythms and dynamics make for great music making, but tonally monochromatic. Super optional phono stage makes it ideal for vinyl junkies.

ROKSAN CASPIAN £695 Smooth, warm integrated with remote control that works happily into most 'speakers. (Dec 97)

SONNETEER ALABASTER £995 Builds on the strengths of the Campion with ample control, colour and drive. (Oct 97)

PHONO STAGES

CREEK OBH-8 SE £180 Punchy, rhythmic character with oodles of detail makes this a great budget audiophile product.

LFD MISTRAL PHONO STAGE * £300 The Mistral has a warmth and involvement that make many pricier stages sound overpriced.

MICHELL DELPHINI MONOBLOCS £1995 Analogue tour-de-force gives supremely clean, detailed and finely resolved sound with breathtaking dynamics. Great value, even at

this price.

MUSICAL FIDELITY X-LP £125 One of the famous MF X series. Full marks throughout for clarity and detail. Switchable between MM and MC. Indestructible build! (May 99)

PRO-JECT PHONO BOX £39 Not the last word in many respects but a thoroughly honest piece of work. Inexpensive introduction to all that vinyl has to offer. MM and MC provision plus choice of two impedances.

ROKSAN ARTAXERXES X £950 With the Attessa PSU the Artaxerxes X MM/MC stage still shines. Great stage depth, neutrality and tonal colour. (Oct 97)



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The New Naim Range, on demonstration now.

Building on the strengths of previous designs, the new Naim series combines elegant new styling with a new level of technical and musical performance including re-designed circuitry, improved power supplies and new user features. The AV8 Preamp Processor offers Dolby Digital, THX-EX, Pro Logic II & DTS decoding with THX Ultra II certification, it is a true audiophile powerhouse and the 7 channel P7 Power Amplifier delivers over a kilowatt of power from seven channels.



The Arcam FMJ AV8/P7 Cinema Powerhouse

MAY 2003 HI-FI WORLD & COMPUTER AUDIO

SONNETEER SEDLEY (399 Combines transparency and fine dynamics with excellent rhythmic ability. (May 98)

PRE-AMPLIFIERS

AMC 1100 £150 Suffers from un-defeatable tone controls but an extremely good value piece of kit. Partners the similarly budget level AMC 2200 power amplifier, also at £150. Comfortable beginners' choice. (Mar 99)

AUDIO ANALOGUE BELLINI £475 Showcases AA's characteristic mix of clarity and musicality and blasts the competition. (Apr 98)

CHORD CPA1800 £1800 Clarity, insight and control are second to none - an addictive mixture. (Mar 98)

CROFT VITALE£350A modestly priced valve pre-amp with
exceptionally transparent performance. MM
phono stage plus three line stages are
standard. Volume controls are separate for
each channel, thus giving balance adjustment.
A remarkable item in all respects.(Feb 2000)

XTC PRE-I * £1000 Almost valve-like in its smoothness, the linelevel Pre-I is warm and seductively clear. (Nov 96)

POWER AMPLIFIERS

ARCAM 9 * £400 With 70W on tap, the 9P will drive most loudspeakers with a spacious and detailed sound. Good bass welly too. (Dec 96)

CHORD SPM400 £1400 There's a sense of effortless power to the Chord that gives music real scale and presence. (Mar 98)

 MARANTZ MODEL 9 *
 £8000

 Authentic reproduction monoblocs still more than cut the sonic mustard. Highly expensive and highly sought after.(Mar 97)

MICHELL ALECTO £1989 Crisp, clean and beautifully controlled with gorgeous styling. Partnered with the £1650 Orca this is a superb winning combo. (Oct 98) MUSICAL FIDELITY X-A200£1000/pair 200W of high-end monobloc power in a

NAIM NAP180 £1060 Partnered with a NAC82, this has classic Naim control, and a superbly rhythmic presentation.

TUNERS

grooved tube. (Aug 98)

CAMBRIDGE T500 £180 An extremely engaging tuner with a performance at odds with its low price. Not exactly a Troughline, but you may not notice... (Feb 99)

CREEK T43 £399 Excellent detail, separation and dynamics. A great little tuner and unbeatable at this price (May 98)

 MARANTZ STI7
 £600

 A positive dreadnought of a tuner. Sweet and refined but with a heavy punch when needed.

 A tuner of this quality demands a decent aerial. (Jul 99)

MISSION CYRUS FM7* £300 Clear and lucid sound puts it up with the best. Superb build too. (Apr 94)

NAIM NAT03 £595 The NAT03's warm, atmospheric sound is further proof of Naim's proficiency with tuners. (Sep 93)

SONY ST-SA3ES* (250 Beguiling RDS tuner for the sonIcally discerning. Good ergonomics and sensitive too. (Apr 97)

CASSETTE DECKS

AIWA AD-5750* £200 Sonically a very decent machine at the price. Comes fitted with Dolby B, C and the dead handy Dolby S. (Apr 96)

AIWA AD-S950* £300 A stable transport, superb head and Dolby S make the AD-S950 an excellent all-rounder. (Feb 95)

KENWOOD KX-3080* £160 A simple deck, but excellent-quality head and transport give top quality sound. (Oct 96) PIONEER CT-S740S £430 A great piece of engineering from Pioneer, with first-rate sound. (Jun 96)

YAMAHA KX-580SE* £250 The 'SE' tag is more than a marketing gimmick. Sound is solid and clear with Dolby S. (Sep 97)

LOUDSPEAKERS



Kef Cresta | loudspeakers A very musical sound

CASTLE EDEN £469 Impressively vice-free 'speakers that offer great transparency and involvement. One of a select band that simply makes music regardless. (Mar 97)

EPOS ES12 * £495 Strong, punchy bass is allied to finely detailed, articulate midrange and sparkling treble. (Oct 96)

KEF CRESTA I £100 Delightfully sophisticated presentation for the price. Won't blow the roof off, but will deliver a very musical sound. (April 2000)

KLIPSCH HERESY II £1100 An outstanding high sensitivity loudspeaker with midrange and treble horns coupled with infinite baffle 12" bass driver. Effortless, fast and accurate. (May 99)

MISSION 752 * 2495 Cracking mid-price mini towers combined HDA drive units and metal dome tweeters with surprisingly warm results. Benign load characteristics makes them great for valves.

MISSION 771 £170 Characteristically fast, punchy Mission sound from the Aerogel mid/bass and silk-dome tweeter. (Jul 98)

Billy Vee

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Arcam FMJ P25 3 Ch P/Amp (1Yr G/tee)(999.00)	£599.00	Marantz DV7000 DVD Player (1Yr Gtee) 60% .(599.00) £239.00
B&W 803 Nautilus Spkrs-Rosenut (2Yr G/tee) .(3500.00)	£2590.00	Naim CDS/2 Player (2Yr G/tee)
Elac CL82 Speakers (1Yr G/tee) 50%	£195.00	Naim 72 Preamplifier (2Yr G/tee)(767.00) £399.00
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Linn Classik Movie System (2Yr G/tee)(1995.00)	£1595.00	Naim Supercap (2Yr G/tee)
Linn Kolector Preamp (2Yr G/tee) 50%(495.00)	£245.00	Naim NAP500 Power Amp (2Yr G/tee)(10995.00) £7895.00
Linn LK85 Power Amp (2Yr G/tee)	£295.00	Naim Credo Speakers (2Yr G/tee)(1350.00) £890.00
Linn Kairn Line Preamp (1Yr G/tee) 50%(1400.00)	£799.00	Naim SBL Spkrs-Black S/H (1Yr G/tee) (2362.00) £1095.00
Linn KAN Speakers (2Yr G/tee)	£185.00	ProAc Tablette 2000 Spkrs (2Yr G/tee)(649.00) £449.00
Linn Keosa Speakers (2Yr G/tee) 50%(495.00)	£249.00	Rotel RV985 DVD Player (1YR G/tee) 60% .(625.00) £249.00



|--|--|--|

A reference against which all other loudspeakers are judged, the '63s have superb imaging and genuine transparency.

£3450

 TANNOY AMS8 *
 £2700

 Bold sounding pro active monitor with solid bass, clear midrange and delicious treble.
 (Aug 96)

TANNOY MERCURY m2 * £140 A true audiophile bargain which embarrasses many more expensive boxes. Never mind the price, let your ears decide. (May 97)

MINIDISC PLAYERS

KENWOOD DM-9090 £500 One of the best MD players yet. ATRAC 4.5 gives clean and very musical recordings from this Kenwood. (Jan 98)

SONY MDS-JB930Q £250 Great mid-price machine that adds better build and facilities to the '530's already excellent sonics.

SONY MDS-JA50ES * £1300 This Sony can put the wind up Nakamichi cassette decks when used with better blank MDs. (Apr 98)

SONY MDS-JE555ES

MiniDisc recorder £520 The best sounding MD deck made so far, thanks to awesome build and heroic ATRAC-DSP Type R coding.

SONY MDS-JE510 £300

An impressive sound and unmatched convenience make this MiniDisc player an excellent buy.



Pioneer DVD-717. A well built and solid performer.

DIGITAL RECORDERS

ALESIS MASTERDISK

A groundbreaking hard disc recorder with a built-in CD drive. An amazing bit of kit, and a glimpse of the future. (July 2000)

KENWOOD DMF-9020

An excellent tool for home recording, combines convenience, superb sound and a fair price.(Aug 99)

£500

MARANTZ DR-17 £1100 Probably the best sounding CD recoder on the market. Built like a brick out house with a true audiophile sound. HDCD compatible.(July 2000)

PHILIPS CDR-765 (360 One of the first twin deck recorders/players that boasts high speed dub facility. Playback could be warmer, but still a bargain. (Oct 99)

PIONEER PDR-555RW £480 Excellent mid-priced CD recorder that both plays and records with equal panache. (Oct 99)

SONY TCD-8 DATMAN * £599 Super clean and detailed sound makes this an amazing portable. Not as robust as it should be though.

DVD PLAYERS

DENON DVD-5000 £1600 Monster build, as you'd expect at this price. Facilites and gadgets galore and drop-dead high end looks. A very smooth and sophisticated sound, although not as good as similarly-priced CD players. (Mar 99)

PIONEER DV-717 £700 Well built and a solid performer, with a 'true' 24/96 digital output. Facilities in abundance and a controlled, exciting way with CD replay. Shame it lacks a Dolby Digital decoder!) (Sep 99)

SONY DVP-S725

One of the best buys in the DVD market. Available in a dodgy white case, but the facilities and performance more than make up for this. Excellent with both music and visuals, and a whole host of up to the minute facilities to keep you occupied. (Mar 2000)

£490

100

HEADPHONES

JECKLIN FLOAT MODEL TWO

Wonderful panel-like and open sound from these esoteric-looking headclamps. Do not wear in public unless you like being made a fool of! SENNHEISSER HD-490 250 Good value cans with an exciting and bassy sound. Everything one should look for in headphones at a sensible price.

INTERCONNECTS



Nordost Blue Heaven A simple and effective upgrade

CHORD COMPANY CHAMELEON 2 £90/m One of our favourite favourites, the Chameleons are musical performers with a

smooth yet open sound.

Neutral and transparent, and a steal at forty quid!

NORDOST

BLUE HEAVEN £150/m Some of the fastest and most transparent cable around. A simple and effective upgrade.

VAN DEN HUL

ULTIMATE THE FIRST £260/0.6m Carbon interconnects that help you forget the electronics and concentrate on the music. Miraculous transparency.

LOUDSPEAKER CABLE

CHORD COMPANY

RUMOUR £9.95/m The Rumour is our reference at the price. Tight and tuneful bass mixed with air and space results in a cracking cable for the money.

DNM RESON £6.95/m

This cable has a transparency of sound that's rarely heard at the price. Excellent value for money.

NORDOST

BLUE HEAVEN £375/3m pair This isn't cheap, but it sounds absolutely fab. An open and spacious sound that simply carries music.



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Arcam Alpha 7se CD Player (6Mth G/tee)(399.00)	£199.00	Linn Keilidh Speakers Blk (1Yr G/tee)(775.00)	£299.00
Arcam Alpha 7 Tuner (6Mth G/tee)(279.00)	£149.00	Mission M73 Speakers Maple (1Yr G/tee)(199.00)	£135.00
Arcam Alpha 10P Power Amp (6Mth G/tee)(599.00)		Naim Nait 3 Remote Amplifier (1Yr G/tee)(780.00)	
B&W CDM1 Speakers Blk (1Yr G/tee)(699.00)		Naim NAC72 Preamp (6Mth G/tee)(745.00)	
B&W CM2 Speakers Maple (1Yr G/tee)(550.00)		Naim 82 Preamplifier S/H (1Yr G/tee)(2340.00)	£1195.00
Epos ES11 Spkrs/Stands Blk (6Mth G/tee)(425.00)		Naim Supercap (1Yr G/tee)(2450.00)	
Linn Mimik CD player (1Yr G/tee)		Naim Flatcap P/Supply (1Yr G/tee)	£245.00
Linn LP12/Lingo/Akito (1YR G/tee)		Naim NAP 180 Power Amp S/H(1Yr G/tee) (1220.00)	£829.00
Linn Wakonda Preamp (1Yr G/tee)		Naim NAP 250 Power Amp S/H (1Yr G/tee) (1805.00)	£895.00
Linn Kaim Pro Preamp (1Yr G/tee)(1400.00)		Naim SBL Speakers-Black (1Yr G/tee)(2362.00)	£1095.00
Linn Kaim Phono Preamp (1Yr G/tee)(1700.00)		Pioneer DV909 DVD/Laser Sil (6Mth G/tee) .(899.00)	£269.00
Linn LK100 Power Amp (1Yr G/tee)		Rega Luna Amplifier (6Mth G/tee)(498.00)	£249.00
Linn KAN/2 Spkrs/Stands Blk (6Mth G/tee)(450.00)	£199.00	Rega Ela Spkrs - New style Blk (6Mth G/tee) .(498.00)	£99.00

welcome to world classics

CASSETTE

NAKAMICHI DR-2

A great machine with Nakamichi's legendary heads. The lowest cost 'true' Nakamichi at the time, retailing for $\pounds 600$.

NAKAMICHI CR-7

The last of the great ones, and definitely the best Nakamichi ever (yes, better than a Dragon)

YAMAHA TC-800G

Early classic in serious cassette. Its ski-slope looks got it a cult following once it had ceased to be simply ugly.

CD PLAYERS

MERIDIAN 207

Beautifully-built two-box with pre-amp stage. Very musical although not as refined as modern Bitstream gear. No digital output.

PIONEER PD-91

Built-to-last player with easy upgrade routes for modifiers. Not knockout as it stands but get one cheap and have a go!

CAMBRIDGE CDI

The first two box player with weighted mechanics and even an optional Dropout/error counter. Radical and effective at the time - a classic.

AMPLIFIERS

LEAK POINT ONE, TLI2 & TLI0

Ancestors of hi-fi, consequently expensive nowadays. As with all vintage valve stuff, overhauling is de rigueur before use, using original parts if possible.

LEAK PRE-AMPS

Line of 'good for their time' pre-amps. Use of EF86 pentode valve for high gain rules out ultra performance. Not the highest-fi.

LEAK STEREO 20

Excellent workaday classic valve amp. In good order the 20 will not disgrace itself. Various upgrades are available from specialist repairers.

LEAK TL12+

Plentiful monobloc equivalent of Stereo 20. Reasonably inexpensive and a tweakers' dream. Genuine valve hi-fi on a budget.

NAD 3020

You can't argue with success! NAD's budget transistor integrated gave thousands their first taste of hi-fi and remains great value.

QUAD 33/303 PRE/POWER

Great style and construction, also bullet proof. Warm and wooly sound, but easy going. A good introduction to early transistor audio classics.



Garrard 401 A legendary turntable.

QUAD 22/II PRE/POWER

One of the all-time classic valve amplifiers. Unusual circuit but it works beautifully. 22 pre-amp not up to today's standards.

SUGDEN A21

Seventies transistor integrated has an eminently likeable smoothness and musicality. Limited inputs via DIN sockets.

TECHNICS SE-A5 Mk2

Nice transformer and electronics, shame about the casework. With tweaking, this 150watter can sound sweet.

LOUDSPEAKERS

KLIPSCHORN

Not exactly plentiful or cheap but a splendid beast. For efficiency they have seldom been equalled. Space hungry!



www.hi-fiworld.co.uk

LEAK SANDWICH

Rather warm sounding big infinite baffle but cheap with it. With a reasonably powerful amp can sound quite satisfying.

LOWTHER PM6A

High quality full-range driver; still manufactured. High sensitivity, as fitted to many classic horn designs.

MAGNEPLANAR SMGa

Touch dry in the bass but a technological loudspeaker with genuinely musical abilities.

MISSION 770

Father of the 77 range which continues to this day. Well mannered with a warm sound and a kind load to amplifiers.

QUAD ESL57

Unrivalled. Properly serviced there is nothing like them. Their natural presentation may make them caviar to the general.

YAMAHA NSI000M

Hi-tech favourites of the Japanese and Americans.Viewed more warily in the UK but can give excellent results.

TANNOY GRF & AUTOGRAPH

Folded horn monsters which certainly sound good if you have the space. For Tannoy vintage see HFVV November 1998.

WHARFEDALE SUPER 8 RS DD

Ideal experimenters' driver. High sensitivity ~14,000 Gauss magnet and extended frequency range. Inexpensive too!

TANNOY YORK, LANCASTER

Many similar models of infinite baffle or reflex design. Not the last word in tautness but the drivers work well in modern cabinets.

VINYL

ACOS LUSTRE

Very honest piece of kit, well made and easily adjusted.Vinyl beginners could do very much worse.

ALPHASON HRIDOS

First class arm, up to present-day standards. Buy carefully, though, as there's no service available now.

ARISTON RDII

A one-time king of turntables very similar to the Linn LP12. Now deposed but worth a look at the right price.

LINN AXIS

Uncomplicated, lower-price version of the famous Sondek. Less expensive than some of its stablemates.

GARRARD 301 & 401

Legendary turntables, once fairly plentiful. Excellent back-up available; many different custom plinths available. High quality.

GOLDRING LENCO 88 & 99

Great deck for the kitchen table enthusiast. Garrard fans won't look at 'em but cheap and capable. Servicing available.

HADCOCK 228

Recently out-classed by Hadcock's updated 228 Special Edition but a proper hi-fi arm for all that. Makers still service.

MICHELL FOCUS ONE

20 years and still going strong. Early runner in the 'modern' turntable cycle with a first class arm. Factory servicing available.

SHURE M75

Recent line-contact improvements have left the M75 behind but the wide range of needles make it a handy tool.

SME 3009 IIS

Everlasting classic tone-arm. Spares permanently available from SME. No longer the last word but peanuts second-hand.

THORENS TD124 Best classic deck ever? Judging by the prices they fetch it's possible 78rpm too!



e-mail: infochenicydesigns.co.uk

THORENS TD 1 50

Mid-price deck with a keen following. No real difficulty with servicing - novices may find the suspension system unnerving.

TRIO L-07D

Knockout heavyweight from 1980 with stainless bearing and 111b platter! Not a giveaway and beware! - spares scarce.

LEAK TROUGHLINE (ORIGINAL) Interesting ornament but no longer hi-fi.

Limited coverage of 88MHz to 100MHz only.

Arguably the best-sounding tuners ever. Adaptation for stereo easy via phono multiplex socket.

LEAK TROUGHLINE III STEREO

Excellent tuner with indifferent stereo decoding circuit. Best when adapted to use modern outboard decoder.

MARANTZ ST-8

Possibly the ultimate Tardis console, including an oscilloscope for checking the strength of signal. Expensive even now.



Leak Troughline II Mono Arguably the best sounding tuner ever



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Choice hi-fi make it easy for you to fulfill your sonic dreams. Quality hi-fi is not just about expensive brandnames. It's about aspiring to the very best sound, about choosing your ideal system from the widest selection in the country, in a unique no-pressure environment.

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Quarterly Sale	e m s	Original	McCormak Line Drive Audio Research LS3 Musical Fidelity F22 Audible Illusions P3Amc AVI \$2000 MP remote pre	£395.00 £995.00 £995.00 £1,997.00 £695.00 £1,500.00
Kenwood L1000C pre/L1000M Power Amp Exposure VII pre + XII psu Harmon Kardon AVP1 Magnum Dynalab P 200 Pre dpa Enlightenment DAC	Price £Offers £595.00 £175.00 £695.00 £395.00	Retail Price £2,500.00 £1,200.00 £ £1,900.00 £ -	Audible Illusions PJAmc AVI S2000 MP remote pre Krell KSL 2 Pre Cary SLP98L Remote Pre x-dem Boulder 1012 (pre amp/ 24.96 dac/ Phono) Krell KSL + Phono YBA I Aipha Pre mm/mc + psu "new" YBA Passion Pre (inc Phono) Boulder 2010 Pre	<i>£</i> 2,450,00 £3,400,00 <i>£</i> 395,00 £800,00 <i>£</i> 1,750,00 £3,000,00 <i>£</i> 1,750,00 £3,000,00 <i>£</i> 1,795,00 £2,794,00 <i>£</i> 0, Dem £13,000,00 <i>£</i> 1,295,00 £4,900,00 <i>£</i> 3,295,00 £5,595,000
thismonth POWER AMPLIFIERS Graff GM 50/50 Michell Alecto Monoblocks Rowland Model 8 (Silver)	£1,595.00 £1,195.00 £5,995.00	£2,350.00 £2,000.00 £10,000.00	Boulder 2010 Pre Plinius 16L 'new" C.A.T. ultimate reference Pre Amp Ind/Phono "new" Audible Illusions P3A Pre MM/MC mk II "new" Naim 42.5	£PO.A £30,000.00 £On Dem £3,200.00 £On Dem £3,750.00 £On Dem £3,74.00 £150.00 £450.00
PREAMPLIFIERS AVI 2000 MP Plinius 16P (Phono) ATC SCA2 pre	£395.00 £1,995.00 £1,795.00	£800.00 £3,600.00 £2,500.00	ClaraVox Magnifica Martin Logan Request IM Lab Micro, Utopia + Stand	£5,495.00 £14,500.00 £2,995.00 £5,495.00 £2,495.00 £4,349.00 £7,985.00 £4,349.00
LOUDSPEAKERS JM Lab Mini Utopia + Stand Audio Physic Step SLE + Stand B&W Matrix 805 (Walnut)	£2,995.00 £895.00 £295.00	£4,700.00 £1,600.00 £650.00	Wilson 5.1 Revel Ultima Studio Reference 3A Audio Physic Spark Talon Kite Centre & Bracket Soundlab Quantum Ensemble PA1	£5,495,00 £14,500,00 £2,995,00 £5,495,00 £7,995,00 £4,349,00 £7,995,00 £1,960,00 £4,995,00 £8,900,00 £1,750,00 £7,295,00 £1,750,00 £1,755,00 £1,755,00 £1,755,00 £1,755,00 £1,755,00 £1,755,00 £1,750,00
CDPLAYERS & DACS Trichord PD-S 503 Pink Triagle Ordinal Wadia 2000S Transport Mark Levinson 30.6/31.5 YBA CDI Delta (Twin psu) Teac P30 Transport Theta Data Basic III	£295.00 £2250.00 £13.995.00 £13.995.00 £1.495.00 £1.495.00	£500.00 £600.00 £27,450.00 £5,500.00 £2,500.00 £3,000.00	Aurial Acoustic SW 12 Sub Woofer, Maple/remote Mirage M3 si Linn Kabers (Active)	£895.00 £2.000.00 £4,995.00 £10.000.00 £1,995.00 £5.200.00 £1,995.00 £5.200.00 £1,995.00 £5.200.00 £1,195.00 £2.500.00
TURNTABLES, ANALOGUE, VAR Rockport Sirius System 3 Lorricraft record cleaning machine Air Tangent 2B Lyra Beta Tara Labs The One Balanced Im Tara Labs The One 12ft Spk	LOUS £40,000.00 <u>£0n Dem</u> £1,295.00 £525.00 £999.00 £1,995.00	£73,000.00 £1,100.00 £4,000.00 £595.00 £2,250.00 £5,500.00	Rel Q 200 E Rel Q 150 E Audio Physic Luna Sub (wood) Vienna Acoustics Mahler Vienna Acoustics Mozart Vienna Acoustics S.1 Cabasse io 5.1 IM Lab Sib & Cub (5.1 spk sys) Blue Room Minipod (White) Blue Room Minipod (White) Blue Room Minipod Sub SD Acoustics SD1 IM Lab Cobalt 826 B+W DM 602 S2 ATC SCM 20A Audio Physic Avanti III X-dem	Con Dem £6,000.00 Con Dem £1,700.00 Con Dem £3,500.00 Con Dem £2,170.00 Con Dem £859.00 £225.00 £298.99 £625.00 £749.00
AV COMPONENTS Lexicon MC8 Power amplifiers	£On Dem	£5,000.00	Blue Room Minipod Sub SD Acoustics SDI IM Lab Cobalt 826 B+W DM 602 S2 ATC SCM 20A	2625.00 2749.00 2415.00 2448.99 2595.00 21,650.00 200 Dem 21,279.00 2195.00 230.00 2195.00 23,000.00
Chord SPM 1203 (3 Channel) Cary 805 C Monoblocks "new" YBA Passion Monos E.S. Lab DX-S8 Plinius SA50 Mark Levinson 334 Trilogy 958 Monoblocks Plinius 8200P Krell FPB 200 Roksan M1.5 Monoblocks Chord SPM 1200E (Integra system) Krell FPB 600	23,995.00 24,995.00 20,95.00 20,95.00 20,95.00 21,795.00 21,495.00 21,495.00 20,995.00	£5,500.00 £8,250.00 £9,000.00 £2,995.00 £2,700.00 £3,000.00 £3,000.00 £1,550.00	Genetec 205 Active Monitors Audio Physic Virgo III "new" Audio Physic Virgo III "new" Audio Physic Tempo III "new" Naim SBL's Rogers LSSS "new" ATC SCM 10 +stds	201 Dem 21/279.00 2195.00 2330.00 21.995.00 2330.00 21.995.00 2330.00 4.995.00 2330.00 20.0 230.00 20.0 2300.00 20.0 2300.00 20.0 Dem 20.0 Dem 20.0 Dem 20.0 2.200.00 21.955.00 2.200.00 21.955.00 2.200.00 21.255.00 2.200.00 21.255.00 2.200.00 21.255.00 2.200.00 2330.00 2.430.00 2330.00 2.430.00 2.95.00 2.200.00
Roksan M.J.S Monoblocks Chord SPM 1200E (Integra system) Krell FPB 600 Meridian 558 (5-channel)	£2,495.00 £3,995.00 £6,995.00 £1,995.00	£4,600.00 £6,000.00 £12,998.00 £3,500.00	Meridian 500 Transport DCS Delius	£895.00 £1,800.00 £4,900.00 £7,300.00
Plinius SA 102 "new" Audio Research D200 Musical Fidelity PI80 (x 2) Musical Fidelity CRPS Vincent T.A.C. SV 236 Integrated Bryston 4 BSST Michaelson Audio Odyseus Jadis Defy 7 mk III Mark Levinson No 27 Linn Bare Active Card	£On Dem £1,495.00 £395.00 eau	£3,750.00 £3,400.00 £900.00 £1,495.00 £1,500.00 £1,500.00 £1,500.00 £2,350.00 £1,500.00	Audio Synthesis DAX Krell KPS 20i Linn Karik Numerik Helios Stargate "new" Mark Lewinco 39	£1,995.00 £4,000.00 £4,795.00 £9,900.00 £1,595.00 £3,300.00 £2,495.00 £3,500.00 £2,995.00 £1,800.00 £795.00 £1,800.00 £695.00 £1,200.00
ladis Defy 7 mk III Mark Levinson No 27 Linn Bass Active Card Audio Research YT ISOse Monoblocks Gamut D200 "new" Musical Fidelity FIS Audio Innovations S1000 mk III monos Krell Kay S00i Krell FB250M Krell MDA 300 Cary SLA 70 mk II Silver Boulder 500 AE	£1,395.00 £69.00 £7,995.00 £0,995.00 £1,395.00 £1,395.00 £1,395.00	£6,000.00 £120.00 £16,800,00 £3,250.00 £2,500.00 £3,000.00 £3,000.00	Primare V25 CD/DVD	L253.00 L250.00 fOn Dem £2.200.00 fZ50.00 £1.600.00 fZ50.00 £1.300.00 fZ750.00 £1.000.00 fZ750.00 £1.000.00 fZ750.00 £1.000.00 fZ750.00 £1.000.00 fZ750.00 £1.000.00 fZ750.00 £00.00 fZ750.00 £00.00
Cary SLA 70 mk II Silver Boulder 500 AE Krell FPB 300 Linn Klassik CD/Amp silver Boulder 1060 Power "new" Primare 30.1 mk II Integrated YBA Passion Stereo "new" Sunfire 300 Power Amp Plinius 250 mk IV "new"	£3,475.00 £6,450.00 £1,295.00 £3,495.00 £5,995.00 £95.00 £1,350.00 £3,995.00 £3,995.00	£16,500.00 £1,500.00 £5,995.00 £2,400.00		£395.00 £1,600.00 £395.00 £675.00 £15,995.00 £23,498.00 £1,995.00 £4,000.00 £1,995.00 £4,000.00
Plinius 250 mk IV "new" COMPONENTS Lexicon DC2 SIM 2 HT 300 Primage P30 Processor	£0n Dem £1,995.00 £7,500.00 £1,295.00	26,350.00	Wilson Benesch Act 2 arm Michel Gyro SE/SME 309 Ortofon Kontrapunkt a Earmax Pro Benz Micro LP "new"	6 q U e 6 6 95.00 £1,400.00 21,195.00 £1,850.00 2295.00 £500.00 COD Dem £425.00 £1,795.00 £1,795.00 £2400.00 £1,795.00 £2400.00 £1,795.00 £2400.00 £1,795.00 £2400.00 £1,795.00 £2400.00 £1,795.00 £2400.00 £295.00 £770.00
Linn Nassik OVD Audio Refinement Pre 5 "new" Lexicon MCI "new" Lexicon MCI 2 / MCI 2B Loewe Xemix DVD "new"	£On Dem £0n Dem £3,500.00	£2,000.00 £895.00 £5,500.00	Van den mur - Labes & Interconnects Harmonix interconnects SME 309 arm Revox B160 Tuner Decca London Gold (original Garrott Brothers) SME 30/2 A 'new" Moth Record Cleaning m/c Project RPM4/ Ortofon 510 "new" Project RPM4/ arm Ortofon Rohmann Ortofon Kontrapunkt a/b "new"	£1,495.00 £773.00 £1,495.00 £ Priceless £10,495.00 £12,289.00 £395.00 £ £On Dem £325.00 £On Dem £1,050.00
PLASMAS/LCD/PROJECTORS From NEC/Panasonic/Pioneer/Sharp from Electrograph Delphi/Selecc/Sony/Sanyo Panasonic TH-42 PWDS "new"	£4000.00 £4,995.00	1.1	Michell Gyro SE/ RB300 "new" Michell Orbe/QC	<u>LOn Dem</u> <u>£500.00/</u> <u>£750.00</u> <u>£1,100.00</u> <u>£1,495.00</u> <u>£2,200.00</u>
Tube Technology Phrophet pre Tom Evans The Vibe Pre Kreil KRC Graff 13.5 Pre Roksan 2.5 Pre + 1.5 psu Chord DSC 1500E (dac/pre) Arcam Delta 110 pre amp Audio Research LS7 Audio Research LS1	£895.00 <u>fOn Derr</u> £2,495.00 £1,495.00 £1,095.00 £3,995.00 £295.00 £995.00 £895.00	£2,000.00 £2,700.00 £3,000.00 £2,000.00 £6,500.00 £7,50.00 £1,800.00 £2,000.00	Parasound TOTOU (remote tuner) SME Series V Arm "new" Pinku Triangle PT Ext psu Pinius 14 Phono "new" Nackamichi DR "new" Nackamichi DR The Groove "new" Clear Audio Reference Mc phono stage X-demo Rega Planer 3 + Hi Fi News Out Board Power Sup Clear Audio Symphono phono stage X-demo MM/M Lavardin Reference Phono "new"	2795.00 21.600.00 2295.00 2400.00 21.350.00 24.65.00 4095.00 2 400.00 2
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Classic olde worlde FOCUS ON VINYL

It's clear that Michell's Focus One turntable is a classified ad bargain, says Nick Tate.

ooking for a cheap ticket to the wonderful world of viny!? Funds are tight but you don't want to settle for run of the mill Duals or Regas? What

you need is a Michell Focus One, a beautifully styled, fully serviceable, hand-crafted slice of budget exotica. What more could the cash poor vinyl junkie want?

In the business for over thirty years, Michell Engineering is reckoned to be Britain's oldest surviving turntable maker. A small specialist company, it has survived thanks to highly innovative products, superbly designed and built. New Michell decks range from the £400 Syncro to the £2000 Orbe, but you can have your own at a fraction of the cost if you peruse 'World's classifieds long enough. The Focus One, Michell's 1970s entry level deck, can be seen going for as little as £50.

A simple belt drive design, the Focus eschews an independent subchassis for a Rega-style one piece plinth with unusual coiled spring isolation feet. The large, torquey motor is mounted on its own decoupled board, and drives a one piece aluminium platter via a long rubber belt. The platter is topped by a beautiful maroon suede mat, which damps resonances well. As with all Michell turntables, the bearing assembly is a highly toleranced precision affair with an easily replaceable ball bearing. This adds up to low levels of rumble and wow and flutter as well as surprisingly good vibration resistance.

The only caveat is motor noise, which can intrude on early decks. The later Focus One 'S' has a modified motor board which eliminates the problem, and is the version buyers should go for. Alternatively, earlier decks can be factory upgraded to 'S' spec for £15.

Perhaps the most interesting aspect of the deck is the Focus arm. A superb design, its innovative thinking has doubtless inspired some of today's superarms. Naim's ARO echoes its unipivot orientation. resonance reducing double skinned arm tube and low centre of gravity counterweight, while SME's Series V has its rigid low mass magnesium headshel, silicon fluid damping and fine VTA and overhang adjustment. Best with lower mass, higher compliance moving magnets, but also said to work well with high compliance coils, the Focus arm is still very able by today's standards.

How does the Focus One sound? Our mint example was procured for £80, and fitted with a Goldring G1042. Best characterised as smooth, detailed and musical, it got to the heart of the music in a typically 'analogue' fashion. Music just ebbed and flowed in a way that made you forget you were listening to hi-fi



at all. Soundstaging was excellent, far better than expected and little short of my reference Orbe/SMEV. Compared to a Rega 3 the Focus was easily better - although slightly inferior in terms of fine detail retrieval and with softer, more rounded frequency extremes, it proved by far the more musical and engaging. The midband was particularly sweet and lucid - thanks to its excellent arm. Using the optional Michell record clamp improved matters further, bringing a tighter, firmer bass and stronger dynamics.

All in all, the Michell Focus One remains an excellent little deck that's just as viable today as it was twenty years ago. Like Aston Martin, Michell offers full factory reconditioning on any of its products regardless of age, which is a eal plus point for the used buyer. But the Focus also boasts limitless possibilities for the 'hands on' vinylphile, with plenty of tweaking potential and a superbly adjustable arm. Spend between £50 and £100 depending on condition, fit a good cartridge (anything from Audio Technica's £25 ATI IOE to Goldring's £130 G1042), and you'll have fine sound, a piece of art and a piece of Britain's hi-fi heritage. Not bad for the price of a Matsui CD player!

TOWER OF Power

David Price remembers Lecson's striking cylindrical AP3 power amp, and its multicoloured AC1 preamp partner.

hile everyone else's preamplifier was a either a dull black box with cheap

looking switches or an aluminium clad behemoth with an array of huge brushed chrome knobs, Lecson's ACI dared to be different. A sleek planar design, its eleven rainbow coloured sliders controlled volume, balance, input selection, tape monitors, bass, treble, headphones, stereo or quadraphonic operation, high and low filters and power on/off.

Inside, things were no less innovative. The five inputs were switched by FETs via reed relays, not to prevent the frequent pops and clicks that many contemporary designs made when changing input, but for longevity. As the tracks on conventional switches - even gold plated ones - invariably oxidise, Lecson decided to do the switching electronically. Likewise, the effects of dirt contamination between the wipers and the tracks of normal potentiometers was reduced by placing the AC1's volume pot in a feedback loop. The preamp's flexible filtering options were also said to be designed for low transient distortion, and the tone controls were automatically by-passed when set to zero.

The AP3 Mk2 was Lecson's top of the range power amplifier, offering a claimed minimum of 100W RMS per side into 8 ohms. Although Boothroyd's industrial design is striking by any standards, its beauty was more than skin deep. Its distinctive metal canister construction was ideal for dissipating heat, as Musical Fidelity's Anthony Michaelson subsequently confirmed with his gargantuan X-A200 monoblocks.

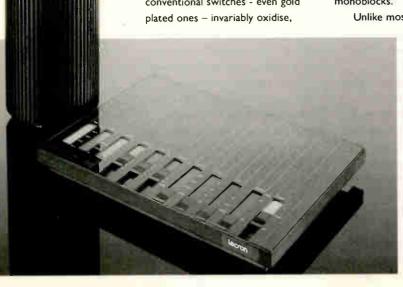
Unlike most mid seventies

transistor amps, the AP3 II was designed to be good at real world music making rather than achieve amazing measured specifications. Whereas contemporary Japanese super amps used shed loads of negative feedback to get massive power levels with infinitesimally low distortion, Lecson took the other route. Instead,

the circuitry was designed to be as linear as possible before negative feedback was applied. This meant overall feedback levels were kept right down, making for a highly natural sound.

To help it along the way, the AP3 got an extremely beefy toroidal power transformer with unusually small smoothing capacitors, plus oversized, fuse-protected 30amp output transistors and an internal thermostatic cooling fan. Together, these meant the amp could handle the full energy of the power supply without blowing, thus obviating the need for sound degrading protection circuits. Yet the output stage was still protected - in the event of a short, the transistor fuses would blow to protect it.

Together the ACI/AP3 II sound surprisingly close to a good modern transistor amplifier. Lively, open, clean and immediately musical, this combo avoids the showy, hi-fi feel of much Japanese transistor exotica, but still manages to do the biz as far as smoothness, detail and neutrality are concerned. While not as tuneful as, say, the latest Naim NAP2SO, it's far sweeter and smoother. Likewise, today's top integrateds like Sonneteer's Alabaster are more transparent and refined, but not much. Indeed for a twenty year old design, there's a remarkable smoothness to the treble and tautness to the bass, plus a natural musicality that will never go out of fashion.



VECTOR ENHANCEMENT

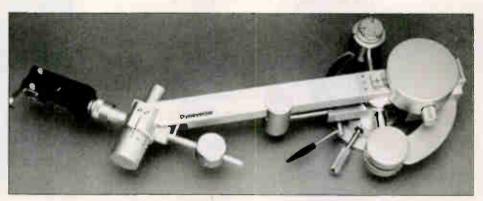
Dynavector's radical DV505 tonearm brought a unique solution to the problems of tonearm design, says David Price.

ooking at the DV505, you can't help thinking it's the work of eccentric genius. The arm's appearance is striking even today, so what people must have made of it in the mid seventies is anyone's guess. With a total length of 335mm and weighing a massive 1.25kg, it was a true giant.

For all its apparent complexity, it's surprisingly easy to mount, with just four screws securing the baseplate.VTA is easily adjustable by means of two knobs, one for sliding the whole arm assembly up and down, the other one for fixing it at a desired position. On an unsuspended deck you can do this even while playing a record. Tracking weight adjustment is dynamic, meaning you level the (sub)arm with a counterweight and adjust it with a spring dial a la SMEV. Cartridge weight range is a massive 23g, and like any drop-dead cool high end design, there's no finger lift!

The DV505's "bi-axis inertia separation" system had as its goal the separation of horizontal and vertical moving masses. The arm was, basically, two sub arms operating lateral and vertical planes individually. Whereas conventional gimbal designs have one arm that moves in both lateral and vertical directions (making the inertia in both planes equal), the DV505 had very high inertia for lateral operation and very low inertia for vertical operation.

It was all about reducing resonance. Conventional tonearms have their vertical and horizontal pivots in close proximity to one another, causing two resonance



sources to vibrate at the same frequency, making the resonance greater and much harder to damp. But by separating one pivot remotely from the other, the DV505's two resonance peaks were smaller, and could thus be damped more accurately.

To this end, Dynavector used an elaborate double damping system using both electro-magnetic and inertia controlled dampers. The former applied eddy currents generated from a conductor moving in a magnetic field, and was claimed to be highly effective at reducing resonances. The second inertiacontrolled dynamic damper was incorporated into the main arm, and consisted of a pair carefully matched springs and weights that oscillated only on the horizontal plane as the arm's main resonance mode occurred.

By locating the shorter, lightweight vertical arm at the top of the horizontal arm, a combination of very high mass and good damping in the horizontal plane, and very low equivalent mass in the vertical plane was achieved. This made for superior information retrieval and better groove tracing on warped records respectively – a combination Dynavector said was almost impossible to achieve simultaneously with conventional arms.

Sound was excellent. At the time of its launch it was undoubtedly the best sounding arm around, providing it was properly partnered and set-up. Extremely clean, smooth and open, it was nevertheless impressively musical and dynamic with rock solid tracking. Moreover, it could be optimised to get the best out of almost any cartridge, and usually did. By modern standards it lacks the Linn Ekos's punch or the SME V's detail, but can certainly teach a good mid-price arm like an Ittok LVIII a thing or two.

The DV505 was discontinued several years back, to be replaced by the DV507. Visually similar, it's a smaller, more sensible evolution of the concept and an even better performer. Dynavector are famous for their superb aftercare and servicing facilities, rather like a Japanese SME. The arm isn't so common in Britain these days, but there are plenty in Germany floating around for about £300-£400, depending on price and condition. If you're after the most exquisitely esoteric tonearm around, the DV505 is your man.

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BROADCAST NEWS

David Price looks at the original near field studio monitor, the BBC LS3/5a loudspeaker.

ack in the early seventies, the BBC needed a monitor speaker compact enough to fit into their outside broadcast vans. After

extensive development work from the Beeb's Research Department what transpired was arguably the most diminutive serious hi-fi speaker the world had yet seen, the LS3/5a.

A two way infinite baffle design squeezing a KEF BI 10 Bextrene mid/bass driver and 19mm mylar dome tweeter into a cabinet just 304x190x160mm, it was remarkably compact. Frequency response was quoted as 70Hz-20kHz (+/- 3dB), but the complex 26 element crossover and 83dB sensitivity meant the LS3/5a wasn't ideal for low power amplifiers. And with a power handling of 25 watts "speech and music" and maximum SPL of 95dB, nor was it ideal for muscle amps - it was a specialist design in the strictest sense.

As the Beeb didn't actually manufacture speakers itself, the LS3/5a was licensed to Rogers, Chartwell, Audiomaster, Spendor and Harbeth to produce. At first the reception was mixed - people were used to far larger designs and just couldn't believe full range 'high fidelity' was available from such tiny boxes. And the sound was rather a shock after the big, wobbly, plumminess of many full size speakers. The LS3/5as had small, rigid, well damped cabinets with little sonic footprint, and sometimes the truth was hard to listen to!

Best characterised as clear, clean and uncoloured, particularly in the mid-band, the LS3/5a sounds amazingly balanced even today. Another

forte is imaging - with a wide, deep and consistent soundstage they're excellent on classical and choral music, where voices and individual instrument groups in the orchestra are faithfully rendered. As the saying goes, it's like a much bigger speaker minus the low bass. And that's the problem - it just can't shift air like big speakers, and really goes to pieces if asked to. Another failing is the treble, which is pleasantly sweet but not the most transparent in the husiness.

The BBC revised the crossover in 1988, and the speaker was no longer specified at 15 ohms - quoted impedance became nominally 11. Subsequently biwiring was introduced, and the LS3/5a became the speaker it is today, with a quoted power handling of 80 watts. And in 1995 Rogers introduced a matching stand-type subwoofer, the £549 ABIs. With an extra BI10 kicking in below 120Hz, they transformed the LS3/5a into a far more useable loudspeaker. Not only do they go deeper, they'll also go louder and sound a lot less constrained when asked to boogie. Although not an ideal rock speaker, the LS3/5a/AB1s make a very respectable job of it.



variants of the LS3/5a have surfaced, most interesting of which was the [R149. Designed by Jim Rogers, one of the great and the good in the BBC's Research Department, it uses the same drivers as the LS3/5a in a cylindrical aluminum housing. Aside from looking radical, the cylindrical enclosure is more rigid and holds fewer standing waves, making for an arguably better sound. But the most successful LS3/5a spin-off is Harbeth's HL-P3ES. Although departing from the original in many ways, they're very much the LS3/5a in a modern setting - with a smoother, cleaner, tighter and more detailed sound.

The great thing about LS3/5as is that they're readily available secondhand, and their owners rarely use them as party speakers! Go for as new a model as you can, preferably with the phase two biwirable crossovers. A pair of brand new Rogers LS3/5as costs £699 (in walnut, black ash or teak), so pay between £100 and £500 secondhand, depending on age and condition. As for the different brands of LS3/5a, this is a veritable snake pit of controversy, but if they didn't all sound practically the same, the Beeb would not be amused.

Throughout its long life, several

SALE OF LAST CENTURY

Digital Compact Cassette was proof positive that Philips could screw up like the rest of them. But this makes for incredible second-hand bargains now, like this Marantz DD-82, says David Price...

remember the scene well. Tokyo 1991, Tower Records, Shibuya. At one end of the huge shop floor lurked two strange new hi-fi oddities. One was a Sony MZ-1, which

was a tiny (by the standards of the day), black MiniDisc portable. The other was a massive Technics DCC recorder, about the size of a 1970s video and complete with 'tasteful' wooden side cheeks. There was a crowd of people around the MiniDisc machine, but the DCC sat awkwardly beside it completely unnoticed. This scene was rich with signification – who in the shiny, new high tech 1990s wanted another big, fat, dumpy looking tape based format?

The tragedy was that after the crowd cleared, I sauntered over to try the two formats out. The Sony MiniDisc was playing some god-awful Michael Bolton disc, and the sound was appalling. Laced with digital nasties - weird, phasey effects, 'breathing', odd digital artefacts even allowing for the questionable programme material, it was virtually unlistenable. The Technics DCC by comparison sounded superb - I remember being amazed by its clarity, evenness of tone and musicality. Even as a regular DAT user (I carried around my Sony TC-D3 DATman everywhere I went, using it as a walkman), I was surprised how good this datacompressed format sounded. Only when you wanted to change track or post-edit your recordings did it



become a total pain.

No, here was nothing wrong with DCC's sonics. Even today, the DD-82 you see here sounds incredibly open and smooth - you don't hear any compressed audio nasties - and in some respects actually seems warmer and more satisfying than uncompressed DAT. Later machines like this had a wide, 18 bit Bitstream and some very respectable digital and audio circuitry inside As I found when I reviewed this machine's cheaper Philips cousin - the DCC951 - in early 1995, if you put these into REC mode with no tape in, they'll act as off board DACs and actually sound better than some more expensive, purpose built designs. You can thank a nicely implemented Philips SAA7350 Bitstream chip for that, plus Ken's myriad tweaks, ranging from trick opamps in the analogue output stage to the ubiquitous copper screws!

The DD-82 is a big old beast (420x132x344mm, WxHxD), and weighs a lot more than your average MiniDisc recorder (8.2kg!). Place it against a modern MD machine – say a Sony MDS-JB940QS – and it's an ergonomic disaster area. With buttons scattered randomly all over the place, huge 16 segment bar graph display and an oppressive black fascia it's very nineties mucho macho. Round the back, there's a choice of coaxial or optical digital inputs plus line in (running through a fine sounding A-D converter) and fixed and variable analogue outs. Otherwise, that's your lot – the magic of this machine is in the listening, not the beholding.

If you have enough hours in the day to endure DCC's fussy whirring and tedious track search antics, and want something that makes great recordings cheaply, there's simply nothing better. Because DCC went the way of the Dodo, causing Philips to flush away (probably) more money than the EU manages to squander in a decade, it's a terminally unfashionable format. This in turn means that you can pick DCCs up in the classifieds for next to nothing - and yes, you can still buy the tapes. This one cost £50 including 10 DCCs to buy new five years ago it could have added up to over £700 - can't say fairer than that!

NEVER Bettered?

Musical Fidelity's A1 integrated amplifier was a 24 carat classic. David Price takes up the story.

elling for just under £250 in 1985, the Musical Fidelity A1 was pitched just slightly above Naim's original NAIT and Mission's

Cyrus 2 – which were both formidable opponents. It had several aces up its sleeve however – first it looked incredible. A delicious combination of semi circles and hard, eighties-style straight lines, there was something very 'Bauhaus' about its aesthetics. The (then) stylish black casework allied to rather risqué powder blue silk screened fascia legends made it all the more striking.

Next was its build. That casework was a joy to behold - the perfect combination of form and function, the heavy grooving on the cast aluminium top plate was the unit's only form of heat sinking. Reaching temperatures of between 55-60 degrees Celsius, some said it could have done with a little more help. Inside, a 160VA toroidal transformer puffed and wheezed through four 10,000uF reservoir caps. An ALPS volume pot hooked up to a line amplifier with unusually high 200mV sensitivity ensured the amp would get enough signal in, because its third 'ace' - the pure class A power amp section - was going to

need it. While Musical Fidelity claimed 20W RMS per channel – itself nothing to get excited about – many people found the true figure was nearer 8W a side.

Being a little challenged in the output department meant that Musical Fidelity had to sell it to those with particularly sensitive loudspeakers, with relatively benign load characteristics. The problem was that this was 1985 - when such speakers were about as fashionable as a mid-seventies supergroup. By this time, most audiophiles aspired to big, butch (heavily class B biased) transistor amps, and tiny power sapping mini-monitors (Acoustic Energy AE-Is, anyone?) The AI was not of that ilk, and found itself being marginalised by many reviewers as 'bonkers', 'tweaky' or - to put it mildly - a 'niche product'.

Many potential customers soon found themselves being put off the A1 by a tirade of knocking copy in certain magazines, and a rapidly deteriorating reputation for reliability. In truth, the amp was designed to run flat out with almost no leeway for cooling problems. If it didn't get the careful placement it demanded (with at least 50mm behind it and 250mm above it), things were liable to go bang. It wasn't this

> simple though, as dealers reported that some batches were far worse than others – with a terrible rate of

attrition. The fact that switching the Al on before you'd connected it to a pair of loudspeakers could cause the output stage to throw in the towel didn't help, either.

Properly placed and matched to sympathetic loudspeaker loads, a good specimen of an A1 sounds superb. Basically it's very soft and warm, but with oodles of musicality and tactility. It had tonal colour in spades, too - the AI told you better than all its rivals whether recordings were done on Denon PCM recorders or ye olde Ampex reel to reel tape. The fun factor was there in abundance, and you got the sense that you were listening to music rather than hi-fi. Where it failed, it covered its tracks beautifully although treble was veiled, it was also deliciously sweet, while the bass was hopelessly loose but pleasantly sumptuous too!

For such an unreliable, hard to match, difficult to get the best from, integrated amp (usually such perils are reserved for high end products, after all!) it sold incredibly well. Musical Fidelity say they shifted nearly 200,000 units before it got the chop in the early nineties. To put it another way, if you put all of them end-to-end, the line would stretch for fifty miles! These days, Darwinian natural selection has taken its course, and the ones still surviving today are likely to be as reliable as any other amp of its age. (Of course, a new set of power supply caps wouldn't go amiss). A good one will set you back under £200, which is a bargain for such a rare and charismatic beast as always, go for boxed, 'one careful owner' specimens.

MUSICAL FIDELITY AT INTEGRATED CLASS A AMPLIFIER

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NEW ACOUSTIC DIMENSION

David Price recounts the tale of the world's first budget audiophile amplifier, the NAD 3020.

auying a decent budget amp back in the late seventies wasn't easy. The market was swamped by brushed aluminium fronted

Japanese designs plastered with tone controls and power meters. As so little of the purchase price went towards the audio circuitry, the sound these things made was at best bland and inoffensive, and at worst downright painful.

Sensing the need for something different, a young British company stepped in with the NAD 3020. An unfashionably compact design, it put out a modest 20W per side and had none of the bells and whistles of its oriental rivals. Worse still, its plasticky front panel was finished in dour dark grey – hardly the height of fashion at the time. Just as well then that on its launch in summer 1979 it sold for a mere £59.95.

So unprepossessing was it that the 3020 could easily have disappeared, never to be seen again. But to those who heard it, it was obviously special. Inside was a cracking circuit design with an extremely generous power supply. Round the back was a rear panel of novel horizontal construction, complete with phono socketry for 'PRE OUT', 'NORMAL IN' and 'LAB IN' -'LAB' bypassing the 'NORMAL' input's subsonic and ultrasonic filtering. There was also a switch marked 'SOFT CLIPPING', a NAD innovation which let the amp run at full power without endangering its loudspeakers.

On audition the 3020 was quite unlike anything near the price. One of those epochal products that comes along from nowhere and

shakes down the market, it sounded like a high power, high quality, high priced integrated. No mean feat for any amplifier, but for less than sixty quid it was nigh on unbelievable. Although undeniably coloured - with a fat, sumptuous bass, a warm bloom across the midband and an artificially silky treble - it was surprisingly dynamic and punchy. This meant that given a cheap turntable and middling budget speakers to work with, its musicality and warmth could shine through, yet it seemed to hide the front end's limitations. Used with a top quality source it did the opposite, and made the most of the turntable's power and detail.

The NAD's big-hearted sound was thanks in part to its excellent real world speaker driving ability, which totally belied its modest 20W (into 80hms) rated power. Its beefy power supply could really pump current when needed – a fact borne out by measurements which showed it quadrupling its output power into 20hms. Tales of it out-punching various Japanese 100W super amps abounded, and some reviewers even tried it with nightmare loads like Linn Isobariks with some success!

For several years it swept the board, stealing sales from all over the place and picking up every award in the business. Despite several price rises and the arrival of some talented

competitors, the punters stayed keen. Then came the 'A' version featuring a switchable MM/MC facility. Although done on the cheap, the NAD's phono stage was such that it sounded surprisingly good even with high end coils. Finally the 3020B arrived in 1985 with a speaker impedance selector and improved binding posts. Also introduced was the cheaper 3120, a 3020B minus tone controls and power meter. Curiously for a 'minimalist' amplifier, it retained the loudness button - reputedly an oversight at the factory!

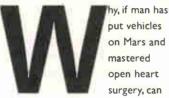
After the arrival of the bigger 3130 in 1985 – billed as the 3020's true successor – things were never the same. The subsequent 3020i was a cheaper and shoddier affair that lacked the warmth and punch of previous models. Of all 3020 derivatives, the very earliest ones are reputed to sound best, but whether this is just hi-fi folklore is anyone's guess.

Why buy a NAD 3020 now? As well as being amazingly cheap second-hand and still relatively common, they're also highly versatile. The split pre-power facility is a godsend for tweakers and bi-ampers, and even means you can just use the amp purely as a phono stage. For audiophiles with only £50 to spend, there's no better used buy.



POWER Rangers

David Price celebrates Japan's best kept speaker secret, Yamaha's NS1000M.



he not design an accurate loudspeaker? Even at the best of times, modern speakers are seriously compromised devices, and the prospect of getting one to work properly from 20Hz to 20kHz still remains fairly distant.

Given that moving coil drivers have all sorts of colourations to sully

them, and that electrostatics only work effectively over a limited frequency range, engineers have to employ clever tricks to get the best from them. Back in the early seventies, Yamaha decided the answer was Beryllium domes, and the NS1000 was born.

Using this expensive metal, Yamaha came up with treble and midrange drivers with extremely low levels of distortion, excellent dispersion

and phase coherence. In fact, mated together by a complex crossover

network, they behaved much as an electrostatic panel, but with more extended highs and better power handling. Matched with a fast, light, rigid paper coned 300mm bass unit, the combination was

The first NS1000s went on sale in 1975, built like the proverbial brick powder room and with HF and mid range trim pots built into the front baffles. At over £400, their price reflected their high tech engineering and superb 32kg per box build. They were quite unlike anything people had ever heard – best described as sounding like a Quad ESL with a ribbon super-tweeter and a subwoofer to handle the lows!

In Japan and the States they were rapturously received, with recording studios and broadcast companies throwing their money at Yamaha. Quite simply, there was no other speaker to touch the NS1000's combination of transparency, speed and power handling. But over here, reactions were mixed. Reviewers used to soft, bland Bextrene coned BBC monitors found them forward and fatiguing, and prone to harshness and fizz.

The problem was that the Yamahas were utterly unforgiving of the amps that drove them. With high sensitivity and a relatively easy load, most Japanese audiophiles were using them with muscular valve amps with a warm, smooth sound. In Britain the fashion was for big punchy transistor power amps such as Naim's NAP250, which without soft Bextrene or polypropylene coned speakers to hide behind, could sound – yes, that's right – forward, fatiguing and fizzy!

In 1978 the NS1000s gained slightly smaller, more rigid cabinets, black paint and an 'M' suffix. Rereviewed by the UK press, they were decried as harsh - with the exception of Practical Hi-Fi, whose reviewer used them with the (then seriously unfashionable) Quad II and gave them a big thumbs up. Funny, that.

In truth, the NS1000Ms are one of the most transparent sounding speakers ever made, with dazzlingly fast transients, superb soundstaging and great clarity and detail. But they also have a JBL-like capacity to inject life, drama and scale into everything they touch - a formidable combination of virtues! Partner them with valves or Class A tranny power amps, turn the mid range trim pot down to -3dB (they do have a slight mid-forward balance, but this assuages it), site them on sturdy low level stands (Atacama BD200s are perfect) and you'll struggle to find a speaker that's as much fun.

Although Yamaha discontinued the NS1000M from the UK in 1995, in Japan it lives on as the NS1000X. With the M's fabled mid and treble units plus an improved carbon fibre woofer, it's a formidable beastie. But top dog is the anniversary edition NS10000, big enough to make the 1000 look like a Wharfedale Diamond!

Because the last NS1000Ms cost over £1500, these are not cheap speakers second-hand - pay between £400 and £800 depending on age and condition. Look for 'one careful owner' and avoid examples that sound fizzy – it's a sign of a distressed Beryllium driver just about to die. Replacements are readily available from Yamaha Electronics [01923 233166] but expensive. Happy headbanging!

Thanks to Yamaha's David Hunt for assistance in preparation of this article.



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FOUR WARNED!



Haden Boardman serves notice on one of Pioneer's long forgotten receivers, the quadraphonic QX-747.

ndustry comes up with great new idea, disagrees about how to implement it, launches several rival formats, spends millions hyping them and

watches the whole shebang flop. Sound familiar? Welcome to the wacky world of quadraphonic sound nineteen seventies style, great mate! The machine you see before you serves as a telling reminder. It's actually very good, but largely irrelevant too. That's why you don't see many around any more. People are suspicious of the format and have simply opted not to collect them.

Pioneer's QX 747 was the middle model of three quadraphonic receivers launched in the latter part of 1970s. The smaller QX 646 offered an anaemic 10W RMS per channel (all four speakers driven) but like its brethren, decoded all the "regular matrix" (Sansui QS) as well as SQ (CBS) and the discreet CD-4 (RCA) variants. The 747 boasted a more useable 25W however, while the monster 949 pushed out an eardrum busting 4x44W! Usefully, all three models could be 'hard switched' into two channel mode, which gave higher output for stereo channel use. Both the 747 and 949 are quoted as having a power bandwidth of 7Hz to 40KHz, hinting that in real-terms a little more power may be available than the power ratings suggest

Hook this thing up in straight stereo and you'll hear a fairly

competent receiver The sound is smooth with surprising authority and - frankly - as good as any modern two channel amp under £200. Compared to a more modern amp, you could accuse it of being a little lazy sounding, the treble not quite as detailed, but these big old receivers are still better than you might first imagine. The phono stage is very good - it had to be to cope with CD-4 recordings; sadly no moving coil, but hey, not like they had room to fit it anywhere! The radio section of the 747 is very fine. With a period quadraphonic disc, surround soundstaging is great and the dynamics surprise.

Finding any quadraphonic amp is hard, but as is common to all these units now pushing past twenty five years old, getting hold of spare parts is hard. Picneer is much better than most - amazingly dial bulbs are still available - but the great majority of switches and mechanical parts are not. On the example featured here, the tape monitor switch was badly worn, and the front two channels would occasionally drift off! These

units are incredibly well made, not quite bomb proof, but certainly getting in the brick outhouse class. The oiled walnut case and anodised aluminium fascia are gorgeous. The only silly gimmick on the amp is the output power indicator 'scope', a truly useless set of lights which indicate in an 'X' configuration, the output power to the four loudspeakers. Thankfully this light show can be faded down because someone at Pioneer had the good sense to fit a dimmer switch underneath the unit!

Pioneer's quadraphonic amps have long been sought after by four channel enthusiasts, but you're unlikely to find them in dealers as most of them don't understand the bewildering array of formats and different models (surely not - Ed). You're actually far more likely to find one at a car boot sale or junk shop, possibly just for a few quid. If paying good money, do make sure all switches and buttons function; you will have a hell of a job to sort out a badly worn unit. Quadraphonic is fun (say it!), but limited to a few secondhand records and amplifiers. It is not for everyone, but I can't help admiring the quality of Pioneer's QX-747. If you want sensible four channel sound, this is a great starting place.



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AMERICAN Rock

David Price remembers Marantz's classic nineteen seventies tuner heavyweight, the St-8.

arantz's top tuner was a perfect exemplar. Housed in a huge wooden sleeve of wal-

nut veneer and garnished with champagne gold aluminium, it was a typically gauche American exercise in bad taste, and all the better for it. A vast tuning dial spanned the front panel, under which the company's trademark 'gyro' tuning wheel sat. Best of all though was the mini TV screen to the left, which on closer inspection was actually a real, working, oscilloscope!

Mad seventies techno silliness? Very probably. After all, a Leak Troughline managed to emit very nice noises without one. But closer inspection revealed that it wasn't just a gimmick, and actually did various useful things. Signal strength, tuning accuracy, multipath, modulation level and even frequency response were all available for the user's perusal at the touch of a button.

Switching on the St-8 brought to mind Oxford Street at Christmas time. The tuning scale and frequency markings would suddenly be awash in azure blue light, while the tuning pointer and indicator lights glowed red. And then of course, there was the 'scope, which beamed electric blue. Jean Michel Jarre at Docklands had nothing on this.

Controls running along the lower fascia selected narrow or wide bandwidth, 'hi-blend' (a noise reducer that works by blending the two stereo channels together at high frequencies), the test tone and muting level. Then there were the scope controls. Press the 'tuning' button and it displayed a short vertical trace which had to be lined up with the central vertical guide line. Switched to 'multipath' the trace became a horizontal line, the flatter the better. Modulation level was displayed by the width of the line, full volume being shown by the widest possible line. Finally, selecting 'audio' displayed the program content, with left channel signals giving a vertical deflection and right a horizontal one.

This was all clever stuff, but the Marantz's true star quality was its sound. If you're used to modern digital synthesiser tuners, then this big lump will be a revelation. Along with a handful of seminal late seventies Japanese designs, the Marantz gives a window to the based digital designs.

Properly aligned, its IF strip and decoder gave a ruler flat response on both channels, superb pilot tone suppression, extremely low distortion and superb crosstalk figures. The usual FM nasties like hiss and hum were banished, and the unit was amazingly sensitive for a late seventies design, requiring the use of only a modest aerial for decent stereo performance.

Back in the days before digital recording and signal processing, when all studio output came from either live broadcasts or the end of studio turntable (invariably a Garrard 401 or Technics SP10), the Marantz must have sounded a treat. With a rich. warm feed from the studios and not so much compression going on, conditions were ideal. Yet the St-8 makes an impressive job of things even now, introducing very little of its own character while flattering the compressed, digitised, hard-disk recorded output of modern music stations.

These days, oscilloscope packing Marantz tuners are rare creatures, so prices are high. Even in 1980 a new St-8 would set you back ukp3S0, half as much again as a Linn LP12, so don't expect to pay peanuts for one now. Factor in their relative scarcity, that wacky period styling and awesome build quality, and you're talking well over five hundred notes for a well preserved specimen, and that's if you can find one. But should you strike it lucky, everything from the cricket scores to live Radio Three outside broadcasts will never sound the same again. Or look the same for that matter



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LEADING (W)EDGE DESIGN

David Price looks at an exquisite piece of 1970s hi-fi, the Yamaha TC800GL cassette deck.

o cassette deck has ever been an oil painting, but early examples of the breed were particularly nasty to look

at. Seventies top-loaders, with their controls scattered hapnazardly were fussy and unergonomic to use, while front loaders looked brash and imposing. As for the machines' mechanics, forget it. Crude and clunky, they only served to confirm cassette's status as very much the poor relation of open reel. But in 1974 Yamaha changed all that by setting out to design a machine that combined Compact Cassette's strengths of convenience, size and flexibility, with open reel levels of sound quality. Until then, you had to choose one or the other. To do this they contracted Mario Bellini, responsible for some striking examples of Italian industrial design both as a freelancer and with the typewriter company Olivetti. The stunning TC-800GL was the result, nicknamed the 'ski-slope' thanks to its sharply raked wedge profile - a style regarded very much as 'edge-design' in the seventies. Like Bertone's Fiat X1/9, Harris Mann's Triumph TR7 or Guigaro's Lotus Esprit SI, the Yamaha looked strikingly futuristic and quite unlike its drab, gawky competitors. But the TC800GL wasn't just a case of a radical set of clothes hiding a bog standard cassette deck, because everything from the peak level meters to the power switch was designed for maximum effectiveness and ease of use. For the casing, Bellini eschewed the then popular fake wood in favour of a tough, durable plastic covered in finely applied dark

charcoal neoprene. Almost like suede to the touch, the finish instantly endeared itself to the user, making the deck less 'machine-like'. The transport's lightly pressured piano key controls were very slick in an era before cassette decks had solenoid operation, while its array of sliders for line and mic inputs, playback level and pitch were intuitive to use. Although sparsely turned out, the deck was packed with (then) unusual touches to simplify operation, including automatic tape switching, timer recording, memory stop, and superb meters reinforced by green and red LED peak indicators to ease recording.

All phono socketry was underneath the deck making it easier to hide unsightly cables, and there was an integral hinged stand, offering top loading or angled operation, making the deck easy to reach from any angle. Under the stand was a battery compartment, making the deck portable for location recordings, to the side a 12V DC input should the user wish to power it from a car battery. The packaging was inspirational, with an array of unique facilities together with a beautiful, functional face. Competitors pleaded the usual excuse that 'things which look good invariably don't sound it', but the Yamaha's performance said it all. Fitted with a good Permalloy head and a precision servo controlled transport the TC-800GL measured superbly by 1975 standards. With chrome tape

Yamaha quoted an impressive 15 kHz at -3dB frequency response, and an excellent 0.06 WRMS wow and flutter figure. Even today, a well preserved example is capable of sparkling highs, deep bass, and great image stability - quite an achievement for a twenty two year old design.

The bad news is that TC-800s are a pretty rare phenomenon these days, but they do still pop up from time to time. Expect to pay between £100 and £250, depending on condition. It's better to go for a pricier mint example rather than an old nail, as spares are getting scarce. Still, most major bits are still available and Yamaha UK has an excellent service department which could refurbish the deck, at a price. Best to covet your TC-800, use it gently and enjoy those stunning good looks many believe that nothing has since come close.



LATERAL THINKING

David Price looks at Technics' turntables-with-a-twist, the SL range of parallel trackers.

oor old Technics didn't have an easy time of it here when they launched their first parallel tracker, the SLIO, back in 1979. The

British high end scene had little or no time for Japanese products, and even less for decks with integral arms and cartridges.As for fully automated turntables that were actually designed with convenience and ease of use in mind - well, forget it!

To add insult to injury, this particular 'all singing, all dancing', all-inone affair cost no less than £300, more expensive even than a Linn Sondek! The poor old British press was puzzled - after all, weren't fully auto direct drives the province of people upgrading from music centres, rather than the holier-than-thou high end?

In truth, the SLIO was a remarkable feat of industrial design. Just 31.Scm square and 8.8cm high, it was barely bigger than an LP record,



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but packed a heady engineering punch. Direct driven by a quality quartz referenced motor, the well damped platter was complemented by a record clamp built into the turntable lid. Also fitted was a parallel tracking tonearm running on high quality, well adjusted gimbals, and powered by two electric motors that offered transverse and up/down cueing at the touch of a button.

As if this wasn't enough, the arm carried a version of Technics' top EPC-30SMC moving coil cartridge firmly bolted in place. So well set up was the whole caboodle that its fine elliptical stylus (affixed to a boron cantilever) tracked confidently at a mere 1.2Sg! Mounted in the base of the unit was defeatable head amplifier that brought cartridge output up to MM levels. Despite its size the SL was not insubstantial, thanks to its double skinned die-cast alloy construction. In use it was a gem. Internal sensors detected record size and set the speed and arm cueing position accordingly, as well as shutting down the tonearm should the lid be opened. Indeed, so ergonomically right was the Technics that it was a milestone in user convenience, several years before Compact Disc advanced the art still further.

Still, the SLIO's killer punch was its sound. Although not up to the standards of a top turntable/arm combination, it was still a remarkably good listen. In the past, magazines had rightly pointed out that proper hi-fi and ease of use were mutually incompatible - but the Technics changed all that. The sound was very sweet and open, with loads of detail, lots of rhythmic zip and a nicely fluid,

musical disposition.

The SLIO was a huge success, and for a while world demand far outstripped supply. A year or so later, Technics introduced the SL7, a rationalised SLIO that was substantially cheaper and easier to produce. Featuring a beefed up microprocessor, improved control circuitry, a different motor and a P202 moving magnet cartridge, it retained the '10's diminutive dimensions but offered slightly better sound for just £200. From this, the SLQ1 and SLD1 sprang, cheaper still but stretched to the standard 'rack' width of 430mm. The QI sported a quartz referenced motor to the 'DI's standard direct drive affair, while the cartridges were an EPS22ES and a P23E respectively both good moving magnet designs. Finally, the SLIO spawned the megaexpensive SLIS, which for £400 offered complex track selection facilities and Technics' classic EPC 20SIIL cartridge. Although a moving magnet, it was generally preferred to the SLI0's coil and made for a fine sound.

Of all the Technics parallel trackers, the SL7 is reckoned to be the one to have, thanks to its relatively simple construction, superb build and excellent sound. Second-hand there are still quite a few of them around, and prices are pretty reasonable - pay between £80 and £150 for a mint SL7, SLI0 or SLIS, or around £50 for the cheaper SLQ1 or D1. Parts are still available, and Ortofon still do a range of fine P-mount cartridges to fit. For analogue addicts who could do with putting their feet up once in a while, a Technics SL-series might be just the ticket.





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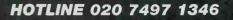
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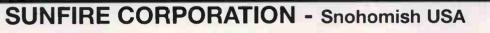
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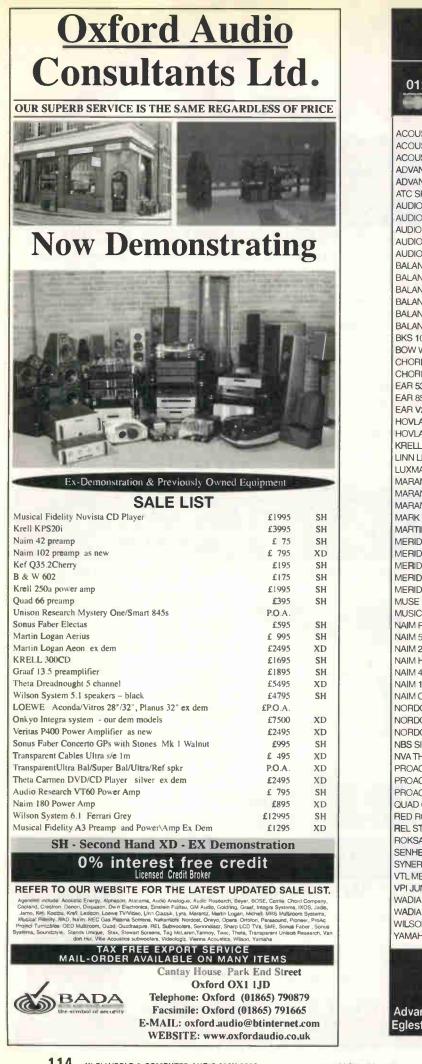


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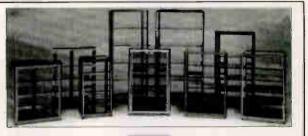
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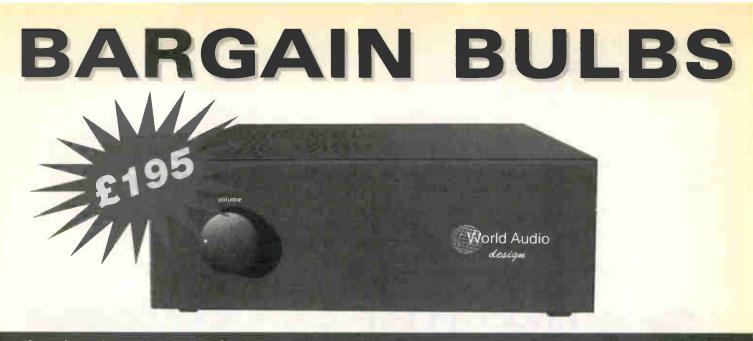
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If you've always thought of valve amps as temperamental and expensive beasts, think again. World Audio Design's latest kit is designed with the budget conscious beginner in mind.

The Kecl82 was created from a brief that demanded simplicity, ease of build and a super low cost. In order to achieve a reasonable power output we went for a push-pull amplifier.

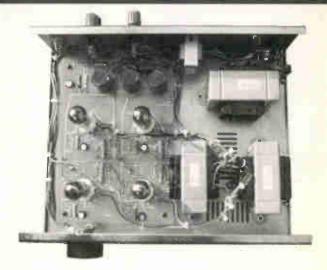
We chose the ECL82, a triode/output pentode. This tube is readily available and has a good sound. In push-pull mode it delivers 8Watts. Realistically you need a speaker of around 89dB or above. This is possible at a budget price - try the smaller Triangle models, or a Tannoy mX3 or even one of the older Missions like the 773e, or if you like building your own speakers, try the Adire Audio HE10.1, as reviewed in HFW October 2002 issue.

You will see that the front has only a volume control, and it is fed by one pair of phono sockets. A selector and tape/source switch were not used in this amplifier as they are tricky to wire up, and the aim was to make it easy to build. In fact, in many ways the Kecl82 would be great powering a second system, using a CD player as a source, and will definitely give you a taster of what valves can offer. Measuring 30cm wide, 23.5cm deep and 11cm height with feet, it is entirely self-enclosed. The valves are visible through the four upper circular vent holes (one directly above each valve). We have kept the look simple with the minimalist front panel holding the volume potentiometer. The two-part chassis is constructed from 1.6mm mild steel with a durable black powder-coat finish. The whole unit is very sturdy, weighing in at 9kgs.

The signal input is in the form of a pair of gold plated RCA phono sockets that sit at the rear of the chassis. The speaker sockets accept 4mm banana plugs as well as bare wire. The mains switch is positioned at the rear of the amplifier, on the right hand corner for easy access. Mains power is received via an IEC lead. The Kecl82 is based on a printed circuit board (PCB). The PCB is easy to follow with all component names, locations and orientations shown clearly. The amplifier requires no set up, you just turn it on. The kit will come with comprehensive instructions taking you through the build step-b-step.

SOUND QUALITY BY SIMON POPE

Purity is the key to this amplifier's design and sound. Because there's very little to get in the way of the signal what you get is an exceptionally sweet and simple sound that also has a superbly wholesome roundness to it. A high quality recording of Mahler's Das Lied Von Der Erde on Reference Recordings showed that the Kecl82 faithfully reproduced all the depth and space of a full symphonic orchestra without any problems. Violins were smooth and sweet, as was percussion (which virtually sparkled) and the woodwind section was especially impressive, with a spacious and airy sound.



A run through Miles Davis's Kind Of Blue saw the little integrated delivering a detailed and precise sound that highlighted the warmth of Coltrane's tenor sax and the rich, deep sound of the upright bass. Rock and Pop records such as Radiohead's 'Lucky' demonstrated that the valves inside the amp, whilst small, are quite robust sounding, with commendable clout and bass depth for a humble budget 8VV valve amp. This is a great introduction to the sonic art of the valve amp and a big upgrade for anybody with a mid-price solid-state amp that wishes to swap over to something more musically engaging, for a price that's virtually as cheap as chips!

MEASURED PERFORMANCE

Frequency response power output sensitivity hum +/-3dB I5Hz - 75kHz 8 watts into an 8 ohm load 850mV (suitable for CD) 0.5mV

The Kecl82 amplifier kit is available from World Audio Design Tel/fax: 00 44 (0) 1908 218836 or order on-line at www.worldaudiodesign.co.uk

> Kecl82 amplifier kit (UK price) £195.00 (Inc. vat & carriage)

Kecl82 amplifier kit (EU price) £195.00 (Inc. vat, exc. carriage)

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Meridian 205 100W mono power amps X 2 Ex con		Marantz PM66SE KI signature integrated amplifier	£ 199
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Norse Ecosse (electrocompaniet) class A amp.Rare Oxford Acoustics Mistrale Integrated amplifier.	£ 150	Audiolab 8000C pre-amplifier Boxed instructions Audio Innovations \$ 300 int class A valve amplifier	£ 299
Linn LK1 pre-amp and remote. Good condition.		Linn 1 K2 power amplifier. Good condition	£ 299
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AVI \$2000 MI int amp & remote, Cost £999, Mint		NVA A60 stereo power amplifier. Good condition Linn LK100 power amplifier. Excellent condition.	£ 295 £ 395
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Aream Zeta 1.Pro logic Cinema amp. Cost £999.00			£ 75
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Transcriptors Hydraulic reference/Decca arm.Mint	£ 800	Project 1 record deck, Excellent condition, Boxed	£ 95
Dual C505-2 turntable. Mint condition. Boxed	£ 89	Garrard 301 401 chassis in various condition from	£ 125
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	SPE.	AKERS	
Roksan ROK-ONE speakers, Black, Mint, Boxed.			£ 95
Mordaunt short MS 3.10 in black. Ex condition.	£ 40	JPW active subwoofer. Mint,boxed instructions	£ 160
Jamo Concert 8 speakers ex cond with Jamo stands			
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		warranty.Hear what ESL57s should sound like From £	
		recon treble units.All new electromes.12m warranty	£1199
Mission 773 floor standers, Mint/boxed, Half price	£ 199	Castle Pembroke, Good condition Super sound	£ 9()
Kef C20 Bookshelf monitor speakers in black		Magneplaner MG 1.4 , Boxed with £400 oak stands	£ 999
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Rega Planet CD player. Boxed/remote, Excellent.	£ 299	Rotel 950 CD player. Ex cond. Boxed.	£ 100
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		t £95.00. (excludes valves. Rarely ne stock) £175.00 Ex review Hifi world	
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		bargain) Hifi World, Jan 1999	
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99.99% pure silver conductor	s. Qı	ality gold plated RCA phono p	lugs.
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7 day money back guarantee if not be NEW. 1.0MM 99.99% Pure silver	wïre	@£15m. 0.5mm pure silver wire @ £	6.00m
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HEBURN 2012 CPU UP U	MARANTZ CDA 94 dar excellent		350	PROAC RESPONSE 2, black. I've had some good sounds out of these		750	THRESHOLD CAS 2 100 watt
million (1)	NERIDIAN 200 unwaded with trichord die pute	put board and psu, bnc and aes/ebu sockets fitted	450	OUAD ESL 63 speakers, black 32000 senal numbers with stands		1200	YAMAHA F2200 professional se
International control Contro Control <thcontrol< td="" th<=""><td>MERIDIAN 203 dar</td><td></td><td>150</td><td>ROGERS LS3/6 no gnille cloths, early labc monitor forerunner of the bcl</td><td></td><td></td><td>with grab handles and vu met</td></thcontrol<>	MERIDIAN 203 dar		150	ROGERS LS3/6 no gnille cloths, early labc monitor forerunner of the bcl			with grab handles and vu met
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Millor GL Mill, Mill Mill, Mill Rubber, Carlow K, Millor K, Mil	MERIDIAN 200 CAPPE DODED WID RETIDE			SMELL IS light car, plant pol mans on top			A&R LEGEND with LINN BASIK
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a. If a grant and any and a large print, some hand any and a large print of a large p	NAKAMICHI DRAGON CD AND DAC, boxed anod	her awesome set. I was loath to see the last one go		THIEL 2.3 cherry, mint based	1500	1950	GOLDBUG MR BRIAR just rebu
INTEL MARCE (1000), date with 11 bit sim 100	so I've got another to play with I keep trying	others but keep coming back to this its musical		TOTEM ANIC munt boxed cherry floorstanders		600	CENTRON DUCHOCTACE & LIC
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All Didd II DD 55 well power mer vol (VC PAPPPS) Source State (Sec) Source State	z-systems rdq-1, DIGITAL EQ, USE FOR SYSTEM	CORRECTION, STRONGLY RECOMMENDED	1750	NAGANICHI BIGODE 3 heads dual capstan ruce machine		300	NOTTINGHAM ANALOGUE THE
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390	TALK ELECTRONIDS HURMCARE 3P/TORNADO 3P pre/power_boxed with remote 2000 TECHINKS 1000 PRE/POWER variaal battery pre-etc	800 500
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450	GARARD 401 in APHELION PLINTH cherry with new origin five silver arm and goldring 1042 cartri GOLDRUG MB RAUA just reliable by San den Hull board	ndge 1000
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each 250	TC viper Im who phonos TC power lead	50 50
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Jamo Concert Eight loudspeakers. American cherry veneer. Unmarked, boxed, S/H £1400) £795

Densen Baoo preamplifier. Black anodised aluminium case with chrome controls. Remote controllable with Densen "Gizmo" handset (not included). S/H, boxed, unmarked (£1000) £650

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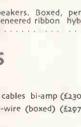
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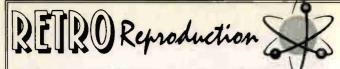
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JDSPEAKERS			SUPRA EFF-ISL 2.5 FT PAIR NEW/PACKAGED		
SON SYSTEM 5.1 PIANO BLACK	MINT/CRATED		AUDIOQUEST LAPIS 5 METRE PAIR AUDIOQUEST EMERALO 1 METRE PAIR		
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ELL C MK-IV VERY RARE/GOOD		£450 £1250	AUDIOQUEST RUBY 2 X 1 METRE PAIRS (MINT)	£6	
STUDIO MONITOR TRANSMISSION LINE WAS (£2500)		£1250	AUDIOQUEST RUBY 2 X 0.5 METRE PAIRS (MINT)	£5	50 1
DS ES-11 C/W STANOS		£375	AUDIOQUEST OIAMONO 2 X 2 METRE PAIRS (MINT)	£55	
NAUDIO AUDIENCE 80 (CHERRYWOOO FINISH)	AS/NEW		CABLE TALK MONITOR-3 4 X 1 METRE PAIRS (AS NEW PACKED)	TB	AI
KSAN OJAN 3X & OJAN 3S SUBWOOFER SYSTEM (ROSEWOOO) RARE/SUPERB	MINT/BOXED		DIGITAL		
PROFFESSIONAL MONITOR VII		RING	DISITAL LARGE SELECTION OF DIGITAL CABLES COAX/TOSLINK & AES/EBU.	PLEAS	SE
PHION XENON (CHERRYWOOD FINISH) EX DEM. PHION NEON MK† EX.DEMO	MINT/BOXED	£1450 £695	SHOE DEEDTION OF DIDITAL CADELO CORVITUELIAN & ALG/EDU.	, LEAG	
PHION NEON MK1 EX.DEMO PHION HELIUM 1	MINT/BOXED				
	RANO NEW/BOXED		MOST EQUIPMENT STOCKED IS ONE OWNER MIN		
	RANO NEW/BOXED		SIMILAR QUALITY VINTAGE AND MODERN EQUIPMENT REQU		
NNOY ARUNOEL 15'3839 HIGH POWER DRIVERS 95 DB SENSITIVE VERY RARE	MINT	£1500	CASH PURCHASE.THIS IS A SELECTION OF STOCK FOR A F	ULL GURNENT LI	3

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Private Ads

Special Internet offer see page 130 for details

KRELL KMA 200 Monoblocks. Excellent condition, few in the UK. Massive heavy amps, difficult to lift one. Very clear and transparent without being clinical. Drive any load, £1995. Tel: 01803 214 200 (May(I)

QUAD 989 loudspeakers, mint condition, very little use, boxes and feet etc., £3000 Tel: 01302 360939 (Doncaster) (May(I)

MUSICAL FIDELITY A300CR power amplifier, 225w mint condition, six months old, still under warranty, MF Nuvista M3 circuit boxed was £2200 need £1350 ono. Tel: Tony on 07974 269044 (Kent, SE) (May (I)

LUXMAN WL717 FM/tuner with wooden sleeve mint condition £50. Exposure loudspeaker cable 4 x 3 metres biwire/ bi amp usage £25. van den Hul CS122 loudspeaker cable 4 x 7.5 feet lengths £70. Tel: 01509 215230 ask for Mike (May(I)

ALBARRY AP4 with M408 monoblocs £495 no offers. Sony TCK-611 3 heads 3 motors Dolby-S £95. Pioneer F-93 tuner £275. All excellent condition. Tel: 01904 763157 or 07960 615375. Buyer collects (York). (May(I)

QUAD 66 Series CD tuner pre amp 306 power amp 66 controller Sony MD plus extras £750 ovno. Tel: 01772 769259 or Email: stevedixon@freenet.co.uk (May(I)

HORNING ONE floorstanding loudspeakers WDH 31 x 34 x 110cm. Lowther based 3 way design adjustable feet to tailor bass response, suits valves, light wood, gloss finish. Clean rhythmic sound excellent condition £950. Tel: 01273 727476 (May(I)

UNIQUE CYMBOL CDP12 HDCD Onix OA21 amplifier, Precious Metals cables and interconnect, Mordaunt Short bi-wire speakers, Apollo stand, good condition, boxed, sell as system £1500 ono. Tel: Richard 07790 907261 (Newbury) (May(I) WANTED TURNTABLES tonearms and other analogue items. All makes from Linn to SME to Sriston to NVA etc. Also looking for items by Griffin, Quad, magazines, books and accessories etc. Tel: 01455 613489 (May(I)

MARK LEVINSON 31

Reference CD transport excellent condition £3950 (£9950). Conrad-Johnson Premier 14 pre-amp excellent condition two spare sets nosvalves £1900 (£4500) Tel: evenings 01202 393348 or Email: peterloki@powernet.co.uk (May (I)

WANTED: PAIR of LS3/5a loudspeakers in good condition. Rogers, Spendor or similar. Tel: 01394 388399 or Email: drjh@btinternet.com (Jun(I)

CHORD DAC 64 mint boxed 9 mths old £1200. Tel: Steve 07803 856389 mobile, London (May(I)

CLEARLIGHT RDC Aspekt rack. Four shelves. Beech/grey. Superb. (£649). Bargain at £325. Rogers LS3/5A loudspeakers under four years old. Cosseted. £320. Tel: 01752 773369 (May(I)

EPOS ESII speakers £200. Sansui T-80 tuner £50. Precious Metals AES/EBU interconnect I.5m £40. Tel: 01636 830944 or 07979 536753 (May(I)

BRAND NEW R.E.L. Strata III sub-woofer in walnut veneer. Stunning bass engine. Cable upgraded to Soniclink AST 200. Upgrade forces sale, £575. Brand new Pro-ject RPM6 turntable c/w Ortofon MC25FL and Michell Iso phonostage, £700. Tel: Paul 01536 763737 or 01536 764039 (May(I)

ROGERS MG88 Mk II good condition £110. Tandbers studio monitor speakers, superb build quality and sound £175. 1956, 1959 Hi-Fi Yearbooks, offers invited. Hadcock Export armtube boxed £25. Tel: 01472 590714 Mobile: 07976 904381 (May(I) ARCAM FMJ 22 amplifier 4 months old, silver 100 wpch remote, boxed, mint (£1000) £749 Tel: 0115 960 3934 (Nottingham) (May(I)

CYRUS 7 amp and PSX-R power supply, black, nearly three years old, excellent condition £650 ono. Tel: 0161 286 7832 or 07941 743312 (May(I)

MUSICAL FIDELITY 3B, Studio-T, pre/power combination £400, Nytech 102 pre-amp tuner £75. Thorens 150/2 £100, Rega 2 £125. Tel: 01934 838881 or Email: rn.hill@talk21.com (North Somerset) (May(I)

ARCAM 9 integrated ex clearance November 02, unused, boxed as new £350. Tel: 020 8244 8112 (London) (May(I)

ONE PAIR Quad II's

monoblocks, resprayed, GEC valves, in beautiful condition, sounds excellent £600 ovno. Please contact Tuko 020 8766 7106 or 07941 573614 (May(I)

NOTTINGHAM ANA-LOGUE Mentor turntable & arm, tremendous, effectively as new, £1950 ono (cost £3400). Tel/Fax : day 0113 2843232, eve 0113 284 3770 (Leeds). Email: nigel.goodal11@btinternet.co m (May(I)

TECHNICS SL7 linear tracking t/table, little used, £100. B&W DM3 floorstanders, £50. Hi-Fi Yearbooks 1968 to 1979 offers. Hi-Fi Answers, Audiophile Complete 1972-1994 offers. Buyer collects. Tel: 01702 527983 (May(I)

ARD70 £875. Micromega Stage 2 £250. Onix amp/tuner/pwr £450. Meridian 200 trans £350. DPA pre/pwr £650. Teac VRDS 25 £750. Trichord Pulsemaster/supply £650. Tannoy NFM II £595. Counterpoint SA12 £595. Calipers (new) £1695. Tel: 07966 267404 or Email: coom@btinternet.com (May (I) DNM 3 BOX pre £695. Revox 710 £450. Sugden AU51 £795. Attessa 3 box CD £795. Monitor Maio £595. M/Mega Stage 6/DAC £675. Marantz CD94/DAC £850. SCDI £2250. Nuvista pwr £2295. Sonus Concertinos £475 (new). Tel: 07966 267404or Email: coom@btinternet.com (May(I)

NAIM 72 preamplifier mint condition original packaging and manual £275. Tel: 020 8643 4260 (Sutton) (May(I)

BLACK DIAMOND racing cones Mk3. Three sets of 3. Mk4 eight sets of 3. £20 per set. Tel: 01249 821288 (May(I)

LINN KEILIDH in walnut with Ku Stone stands mint condition £300, no offers. Tel: 0115 939 3175 evenings (Nottingham) (May(I)

TRICHORD DELPHINI Mk2 Pro-Ac Response 2.5, Orbe D.C/V.C, Thorens TD-166BC, RB300. Denon DL110, SME IV, Teac T-1, Audio Alchemy V.20 – V.3.0, Thorens 125, RB300, Michell Mycro goldring cartridge. Tel: 0117 955 6555 or 07979 514450 (May(I)

ARCAM ALPHA 10 integrated amplifier (100W/channel) £370. Matching 10P power amplifier (100W) £270. Together £590. Mint condiiton, boxed. Tel: 01661 871010 (May(I)

STAX LAMBDA Nova Signature headphones £120. Tel: Josh 01865 274932 (work) or 01865 557058 (home) (May(I)

MERIDIAN 501.2 pre amp with MSR mint £350. Meridian 505 monobloc power amps £900 pair/ vgc. Tel: Phill 01263 738334 (day) 01603 866437 (eve) (Norwich) (May(I)

CELESTION SL6000 subwoofers in mint condition £800 ovno. Tel: 07937 063335 (May(I)

MARANTZ CD17 KI CD player in champagne colour. Great build and terrific sound. As new £545. Tel: 01403 711 778 (May(I)

MAY 2003 HI-FI WORLD & COMPUTER AUDIO

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Listener Magazine

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"the best sounding deck here (group comparison test of 8 leading turntables)...sounds fantastic." What Hi-Fi?

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FOR MORE INFORMATION SEE WEBSITE OR CONTACT Origin Live, Unit 5, 362b Spring Road, Sholing, Southampton, SO19 2PB, U.K. Tel: 023 80578877 / 80363249 Fax: 02380 578877 e-mail: originlive@originlive.com

http://www.originlive.com

classifieds

TOWNSEND GLASTON-BURY speakers £550. Rock turntable Rega arm £450. Philips CD101 £100. Wanted: SME V arm must be mint and boxed. Tel: 01661 852874 evenings or Email: alcav@yahoo.com (May(I)

FOR SALE Linn Klyde re-tipable cartridge, Ittok LVII arm, bargain at only £200. Tel: Baz on 07887 557076 (May(I)

SELL MUSIC Fidelity AX-1 amplifier boxed mint offers over £250. Sony CDXC500R head unit plus mini disc boot changer offers over £175. Tel: 01604 811222 after 6pm (May(I)

A.V.I. SCM 10 loudspeakers black ash mint boxed excellent sound £450. Tel: Dave 01502 518938 (May(I)

AUDIOLAB 8000S amplifier £300, immaculate, boxed, with Tandy phono stage. Economic carriage available if required. Tel: 01691 659 604 (May(I)

THORENS TCD 2000, TDA 2000 £600. Sennheiser headphones HE60, HEV70 £450. Perspective turntable, MC30, offers. Tel: 0131 538 3773 (May(I)

TEAC P30 CD transport as new £1450. Tel: Richard 020 8607 9334 (May(I)

ROKSAN LI.5 Pre-amp, Artaxerxes phono amplifier and DSI.5 power supply for sale. Excellent condition, offers circa £1600. Also Roksan Caspian CD player £400. Tel: 07970 798 099 (May(I)

WILSON BENESCH 'The Circle' turntable with ACT 0.5 tonearm, excellent condition £1250. Tel: 07970 798 099 (May(I)

KRELL STUDIO DAC, boxed, offers? LFD Mistral phono stage £185. TCI Constrictor mains leads (3x 1m available) £55 each. Audionote AN-VX interconnects, various. Wanted: AVI tuner. Tel: Dave 07941 923 881 (Sussex) (May(I)

MERIDIAN 557 power amp, good condition £925. Tel: Philip 07836 633 554 or 020 7912 9410 (Ealing) (May(I)

WANTED ROTEL Michi RHT 10 F.M. tuner. Tel: 01344 886324 (May(I) KRELL KPS25sc brand new/unused with all original packaging and accessories, very latest specification and cosmetics (not ar upgraded unit) £9,345 obo (£25,000), Tel: Andrew 07767 478 056 (London) (May(I)

KRELL 700cx in absolutely mint condition including custom Mana stand £8,495 obo (£15,000) and brand new/unused Krell CAST interconnect 10m (35ft) £495 obo (£1000), Tel: Andrew 07767 478 C56 (Lomdon) (May(I)

NAIM 32.5 Pre-amp with 72 boards, serviced, £185. Naim 250 amp, serviced. £650. Audio Alcomy Digital Decoding Engine with Power Station Three, mint, boxed, cost £540, accept £170. Wanted: Naim 135 monoblocks. Tel: 01302 865 282 (May(I)

ABSOLUTE BARGAIN. Carfrae Little Big Horn Loudspeakers, 14 months old, very latest model, DX4 drive units and full remote control bass satelites (£9000) £4800. Buyer collects. Audion Golden Night gold plated monoblocks (£4000) £1800. Special Croft Vitale valve preamp (£800) £399. Musical Fidelity T-1 tuner (£300) £120. Mission Mechanic tonearm, latest 3-point fixing (£999) £320. Most packaging, manuals, reviews, all mint. Tel: 01943 466 381 (May(I)

SUGDEN A21A Poweramp, eight months old £450 ono. Rothwell Indus passive preamp, superb £350 ono. Creek. P42 poweramp £135. Technics SL10 record deck £350 ono. Quad FM2 serviced £95. Leak Troughline £90. Tel: 0 || 202 48 || 386 (May(I)

LINN LK 100, mint £250, LK280 Spark, boxed, mint,£250, Nakamichi PA7 Reference power amp, Krell like build and sound £395, Wanted: Luxman integrated amp, Kef reference speakers.Tel: 003531 2954076 (May(I)

ATC SCM7 speakers, as new £350. Teac MD-H500i MiniDisc £175. Rotel RB971 Mk2 poweramp £100. Cyrus 3 DMP £175. JM Labs Elektro 905 £750. Tel: 01952 502 097 (Telford) (May(I) CYRUS 5 upgraded to 7, hardly used, like brand new, boxed with instructions £350. Tel: 0776 1986 983 (Birmingham) (May(I)

MICRO MEGA Stage 3 CD player, boxed, vgc, postage arranged at £10. £250. Tel: 0161 747 5189 (May(I)

LINN LP12, Lingo, Cirkus, Ittok £500. DPA TI/PDM1 3-box bargain £350. Sennheiser HD590 + Rega headphone amp £100. Sony TCK 611-S Cassette £75. Stands Unique 100 CD rack, black £50. Tel: 01489 880 561 (May(I)

WANTED: MARANTZ 3 Head portable recorder PMD 222 CP 430-330 W.H.Y. Tel: 01924 826 741 mornings or leave message. (May(I)

ELAC CL310i Jet loudspeakers with wall mounting brackets. Excellent condition with box, £495 (£800). Tel: 0116 271 5439 (May(I)

QUAD ESL's, pair £400. CR Developments Romulus integrated valve amp. 35wpc £700. Arcam Delta 70.3 Trichord Clocked £150. Garrard 401 £130. Try offers. Tel: Doug 01480 214 640 or 07836 388 279.

PATHOS TWIN Towers pure Class A hybrid integrated amplifier with remote control £2350 (£3250). Audio Research SP16 pre-amp with phono stage and remote control £1650 (£2499). Quad 11L speakers, maple £185. All mint with boxes and manuals. Tel: 01202 767 873 (Poole) (May(I)

TARGET 4 Tier equipment rack £80. The Sound Organisation turntable rack £40. Kef PSVV2000/HTS 2001 Sub/Sat speakers £250. NHT 1.3A speakers £160. Sony CDP 715E CD player £100. Tel: 020 8531 5979 (Jun(I)

LINN IKEMI (one year) £1300. Meridian 588 CD (two months) £1800. Bryston 7BST monoblocks £2250. Dynaudio three way floorstanders Zenon Three natural ash. All mint, boxed. Tel: 01635 299 244 or 07831 809 346 (May(I)

QUAD 44 pre, 303 power amplifier, manuals, excellent condition, £285. LS3/5a 28" stands by Partington, silver, as new £149. Tel: 0141 337 2744 (May(I) REGA PLANAR 3 with MPII Boron cartridge. 3 years old £175. Quad 606 rebuilt by Russ Andrews with Kimber cable, split foil capacitors etc. Boxed £350. Tel: 01752 518 868 (Plymouth) (May(I)

MARTIN LOGAN CLS 112 electrostatics. Immaculate condition, little use, boxes, manuals, demonstration available £2750 ono. Tel: 01925 656 990 (May(I)

ROTEL RB981 poweramp, 2 x 130w, 1 x 360w bridged, mint, £150. Rotel RB991 THX poweramp, 2 x 200w, mint, £300. Marantz CD 63 KI Sig, mint £100. Tel: 07754 976 443 (May(I)

NOTTINGHAM ANALOGUE Parallel Tracker £250 (new £1500). Rata RP70 cartridge, new, £30. N/A turntable belt. Tel: 02476 327 948 (Nuneaton) (May(I)

PROCEED AVP A/V processor £2500, mint condition. Teac VRDS TI + Micromega Microdac £500. Im pairs of VDH 'The First' £95. 'The Second' £75. Tel: 01538 399 347 or 07773 374 508 (May(I)

MARANTZ CD17 KI Signature (new £1100) £500 or near offer. Moth 30 phono pre amplifier (new £173) £70. Tel: 020 352 1066 (May(I)

NAIM NAC 82 preamp, mint, boxed, remote £1550. Tel: 01792 703 139 (day), 07866 447 430 (mobile) (May(I)

FACTORY BUILT Stardac 24/96 converter. Accepts 44/48/88/96 sources. Huge 3D soundstage. Wonderful sound, boxed £300. vdH 102111 i/cs, new, boxed £40. Buyer collects or plus postage. No offers. Tel: 0151 608 4481 (Wirral) (May(I)

CROFT 3 OTLs Monoblocks and spare set of valves, 60 watts per channel, £1200. Croft CD only pre-amplifier, much better than a passive, asking £250. Mint condition. Tel: 01323 747 956 or Email: Bluenote41@aol.com (May(I)

dcS DELIUS DAC - less than two years and in excellent condition with the latest software. New £6,500 best offer near £3,750. Email: sergesonti@yahoo.com or call 07974 353 885. (May(I)

WANTED ROTEL Michi RHT 10 F.M. tuner. Tel: 01344 886324 (May(I)

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HERTFORDSHIRE/NORTH LONDON Audio/Record Fair. Sunday 13th April 2003. 11.00 to 4.00. At Cuffley Hall, Maynard

Place, Cuffley, Herts. S minutes from M25 Junction 25. Tel: 07944 909 209 for details (May(I)

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WOODSIDE ELECTRONICS offer a repair service for Radford, Woodside and Quad II valve amplification. Transformers manufactured to original specification for these products as well as bespoke designs. Tel: 01758 741 026 or Email: m.davis@virgin.net Web:

http://freespace.virgin.net/m.davis (Jul(I)

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REVOX PR99 MkIII £1200, B77 MkI £550, B126 ASC £450, B760 £750, PR99 Mk II £900, A722 £200, Studer A810 £700, B67 VU £450, A807 £950, A80 VU RC Mk II £950, A710 £S50, EMT 950 £1200. Tel: 01246 275479 or Email: j.i.tipping@amserve.net (May(I)

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www.woodlandelectronics.co.uk Tel/Fax: 020 7349 9675, Mobile: 07958 607 613. Hi-End/Audiophile equipments. Quality speakers, home cinema, cables, Swiss-phono connectors, Ortofon MCs. Electrical, Audio video connectors, lighting. Surveillance equipments, tools, replacement speaker units etc. (May(I) MUSICAL FIDELITY XLP-S, Phono Stage £150. Quad II L's Original Maple finish, sealed box, cancelled order (£380) £340. Krell KAV 300i Amp, mint as new. (£2300) £1300. Telephone Jules on 01792 280061, Email: info@sounddrjuleshifi.co.uk Web: www.sounddrjuleshifi.co.uk (May(I)

AUDIO RESEARCH Classic 150 Mono Blocks, black, excellent condition, new valves, boxed, (£12000) £3600. Audiolab Transport and DAC, Mint condition C/W manual and box £990 ono. AudioTechnica OC9 cartridge brand new £270. Telephone Jules on 01792 280061, Email: info@sounddrjuleshifi.co.uk Web: www.sounddrjuleshifi.co.uk (May(I)

ELAC CL310i 'Jet' speakers, c/w matching stands,silver 2 months old, mint and boxed. (£1000) £750. Theta DaVid acclaimed CD/DVD multi region transport, 2 years, mint, inc transformer. (£4,600) £2200. Telephone Jules 01792 280061, Email: info@sounddrjuleshifi.co.uk Web: www.sounddrjuleshifi.co.uk (May(I)

NAIM 52 pre amp, Supercap P/S , Naim Nap500 amp, 1.5 years new, (£16000) £10,000. Quad ESL63's, black ,c/w Quadropod stands, immaculate. (£4000) £1400 ono. Telephone Jules on 01792 280061, Email: sales@sounddrjuleshifi.co.uk Web: www.sounddrjuleshifi.co.uk (May(I)

NAIM NAC 32.5 pre, with phono stage, mint condition £275. Linn Karik, mint, (£1850) £950. Rotel RT 830 AL tuner £60. Telephone Jules on 01792 280061, Email: info@sounddrjuleshifi.co.uk Web: www.sounddrjuleshifi.co.uk (May(I)

AMAZING CABLES! Unlock your system's full potential. Handbuilt silver interconnects from £85, solid silver speaker cables from £220, £5 p & p. Fantastic performance, money back guarantee. Details: 0115 982 5772 after 7pm or Email: bob@skydivers.co.uk (Sep(I)

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tunes@tomtomaudio.com with requirements. Wanted good condition Naim gear, cash waiting, will collect. (May(¹)

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KRELL KAV 300i integrated amp £1295.00, Krell KAV 300CD CD player £1495.00, Martin Logan Aerius I loudspeakers £995.00, Transparent Musicwave plus speaker cable £295 00. Demo available plus full 5 month money back guarantee. Call tom tom audio on 07971 202 742 or E-mail tunes@tomtomaudio.com (May(I)

NEW VALVE Amps; powers £260; matching preamp £190; other valve related goodies at www.audioclassics.co.uk or telephone 01942 257525 for more information. Dealer enquiries welcome. (Oct(I)

EX DEM Valve Amps; all immaculate boxed condition. EAR V20 (£2,798); EAR 834P Signature (£589); Croft Vitale (MC) (£500) all free delivery! www.audioclassics.co.uk or telephone 01942 257525. (May(I)

KLIPSCHORNS pro set of corner horns, not veneered, perfect sound £1,175, Tel: 01942 257525. (May(I)

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UNISON RESEARCH

The new Unico integrated amplifier from Unison Research has an impeccable pedigree. Triode valves give natural purity of sound and effortless listening pleasure. With styling of understated elegance and 80 watts of power, Unico offers an unbeatable package. As top reviewer Ken Kessler put it (Hi Fi News, July 2002): " No integrated I ve used in recent memory delivers so much at this price". Unico has the look, build quality and sound of pure luxury –at a real world price. Supplied complete with radiowave remote control. The matching Unico CD-Player is now available, with 24-bit/192k upsampling, valve output stage and a sound which will convince you that CD replay has final-

*Unico Remote (line) £775, (line + phono) £825, Unico CD-player £1095

TRIANGLE Loudspeakers that love music

Five stars for sound and five stars for value. Triangle are regular winners of top accolades from the world's most prestigious reviewers. As What Hi Fi recently put it "Rarely have we come across loudspeakers that are so lively and communicative...they turn in a sparkling performance that makes others seem bland in comparison". Listen for yourself. You'll be amazed.

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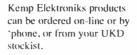


Zerius 202

*£705/pair

KEMP ELECTRONIKS Clean Mains - the professional way

KE's range of products is designed to clean up all types of mains pollution problems. From the full system conditioner KE Power Source (8-way/3.8kW) to the Noise Suppressor plug and a range of fully shielded Mains cables, there is a KE product that will solve every problem, and make your audio or AV system perform better. The AC Mains cords are supplied in a variety of lengths and current ratings and offer excellent value. KE Power strips are supplied in 4-way, 6-way and 8-way versions.



* KE Power Source, £795, KE-SNS Plug, £75, KE Mains cords, from £36, KE Power-Strips, from £285

PATHOS ACOUSTICS *The Unorthodox Approach*



After almost two years of design and perfection, the stunning new Logos integrated amplifier is finally here. For the lucky few who will own one, it has been worth the wait. Logos is an object of rare *bellezza* - a swan in a world of ugly ducklings. A future classic. Hi Fi News were deeply impressed and summed up their review thus: "If you're considering an integrated amp up to £4000, listen to the Logos after everything else. Then spend the £1500 you saved on a decent wristwatch worthy of a Logos owner".

*Pathos Acoustics Logos, 110 Watts/channel. £2495

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