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JULY 2003

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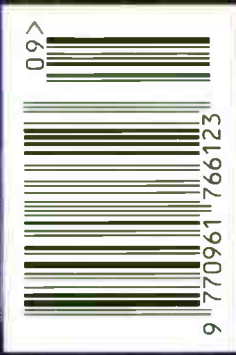
- Quadraphonic rediscovered - analogue 4.0 vs. digital 5.1
- Heart Audio Best 300B valve monoblocks
- Linn Klassik Movie System Di
- T&A DVD1230R audiophile DVD player
- Write On - 16 pages of your questions answered!

COMPUTER AUDIO WORLD

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- Acoustics software reviewed!

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JULY 2003



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Music (and gadget) lovers can revel in the multitude of ways to store and play their (compressed) music, from home or portable hard disk players, hand-held memory card players, or the humble home computer itself.

So why do we fill our adverts (and our shop) with obsolete mechanical machines from a bygone age to spin huge discs at 33.3 and 45rpm with a sharp diamond on the end of a moving arm to read tiny squiggles in the vinyl? How quaint!

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**Brinkmann La Grange inc 10.5
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**Nottingham Analogue Spacedeck
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- * Naim Aro tonearm and Armageddon PSU on demo
- * Rose and Korato preamps on demo
- * At last - the new Michell Engineering Tecnodoc - on demo



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david price

Twenty years ago, the great debate was vinyl versus CD. Ten years back, folk were pondering the relative merits of MD and DCC. Now, we're all wondering if we should replace our ageing Compact Disc player with a – yes, you've guessed it – DVD-Audio or SACD machine.

The reasoning goes that, with the backing of the major music companies, these two new 'advanced resolution' digital formats are bound to catch on, so why not go for it? After all, aren't the new 'super players' supposed to play standard CD well too?

Well - as this month's group test shows - good as the likes of our 'fave rave' Philips DVD9635A SACD player are with 16bit, the latest generation of purpose built Compact Disc machines blow them into the weeds with existing digital discs. Frankly, I was surprised by just how good they are – read our group test and you'll see that we got some serious sounds from a £200 Cambridge Audio player, and approached hi-fi heaven with the latest £600 'or so' Creek and Marantz machines. Value for money in audio is alive and kicking!

Speaking of Cambridge Audio, its new DVD57 is all about getting the best sound per pound - £199 of them, to be precise. This buys you a DVD-Audio spinner that's great fun to listen to, and will even play DVD movies half decently too. The value theme continues with Monitor Audio's new B4 loudspeaker, which is an essential audition – £350 gets you what's effectively a three way design using seriously smooth drive units. The result is a box that fills even quite large rooms with sweet and lyrical sounds.

And now for something completely different – quadrasonic! Bet you thought it was dead and buried? Well in typical Hi-Fi World style, we've exhumed a choice bits of quad kit from way back when Slade was 'toppermost' of the poppermost', with surprising results – if you like digital surround, you'll be amazed by what analogue can do with four speakers and an old matrix decoder. The major downside proved to be a lack of decent quad 'software' titles and some seriously dodgy multichannel mixing. Some things never change...!

David Price

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 quick-fire group listening tests.
- Hi-Fi World's engineering team designs a wide range of products in-house. 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.

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HI-FI WORLD

SUITE G4, ARGO HOUSE
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LONDON, NW6 5LF

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digital players

GROUP TEST 10-21

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Here's a serious sounding CD portable - David Price listens in.

T&A DVD1230 39

Noel Keywood puts this svelte looking slice of German high-end through its paces, but isn't totally won over.



CAMBRIDGE AUDIO DVD57 50

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letters & emails Xtra

WRITE ON

The Hi-Fi World team gets to grips with your hi-fi problems, rants and raves - in depth!

BUYING GUIDE

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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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Transform your computer audio by winning one of five fiendishly clever Xitel Digital Hi-Fi Links in this month's competition!

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Put The Needle



The following dealers have been chosen for their exceptionally high standards in customer service, staff training and demonstration facilities.

We recommend them wholeheartedly

Scotland / Ireland / Wales

- Glasgow - Glasgow Audio 0141 312 4707
- Edinburgh - The Corner 0131 547911
- Edinburgh - Paul Andrews 0131 557 1672
- Aberdeen - Sonoma 01224 387070
- N. Ireland - Kieran 091 (Derry) 02897 1134
- Cardiff - Sonoma 0447 020 847399
- Swansea - Sonoma 01792 485777

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- Hull - Sonoma 0474 482 387131
- Newcastle - Digital Audio 0191 460 0994
- Newcastle - Digital Hwy 0191 288 1900

North West

- Carlisle - The Music Centre 01273 861818
- Doncaster - The High Street 01522 227774
- Leeds - Sonoma 0111 472 87577
- Preston - Sonoma 0797 5291 83 / 7949
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- Nottingham - Sonoma 0115 911 2121
- Nottingham - De La Zebra - Zebra 01533 414128
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- East Sheen - Chorus Hifi 0208 792 7759

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- Reading - S.B. 01493 91825 2584
- Cardiff - South Hifi 01126 221072
- Exeter - Sonoma 01392 218915
- Oxford - Oxford Audio 01865 790079
- Exeter - Audio Systems 01392 837993
- Exeter - Audio 01392 837993
- Exeter - Hifi Music 01392 837993
- Exeter - Audio Systems 01392 837993
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South East

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- Bromley - Audio T 01893 284730
- Hendon - David Owen AV 01462 852548
- Reading - (Fax) Woodstock Audio 01434 389004
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On The Record



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UP TO PAR

Founded in 1981 in San Francisco, Parasound specialised in 'affordable audio and home theatre' components for many years. The company's latest bit of kit is the strikingly styled JC 1 monobloc power amplifier, which provides a hefty 400W of Class A/B power or 25W in pure Class A mode (user-switchable to 10W of Class A when heat dissipation is a concern). Balanced XLR or unbalanced RCA connectors, adjustable turn-on delay and ground lift switch are featured. It also bo



circuity and audiophile componentry, including Nichicon "Gold Tune" filters for the output stage and REL and Nichicon "Muse" capacitors. Vital statistics – in old money – are 17-1/4"x7-5/8"x20", with a net weight: 64lbs. Price is £2,600. For more information, contact:

Tel: +44 (0)1423 359054

www.parasound.com



ISO-TONIC

The IsoTek Mini Sub claims highly effective mains power conditioning and distribution from six individually filtered outlets. Outputs 1 and 2 combine high quality paralleled Evox Rifa capacitor filter circuits with transient suppression, ideal for power-hungry components such as power amplifiers, projectors and powered subwoofers. Outputs 3 and 4 are tailored for source components. High performance series filters compliment a huge purpose-built low frequency choke. Outputs 5 and 6 are similar, but incorporate extra circuitry

especially tailored for digital components. The entire unit is constructed from non-magnetic materials, avoiding any new distortion generated by Eddy currents. It costs £495 from Activ Distribution

Tel: +44 (0)1635 291357

TWICE AS NICE

Details are leaking out of Sony's forthcoming DVD recorder, claimed to be the world's first dual-format home recording machine. Said to be called the RDR-GX7, it will be the only domestic DVD recorder that supports DVD-RW, DVD+RW and DVD-R recording formats, the company has claimed. To date, home DVD recorders – such as Philip's DVDR 890 – only write to recordable discs in either DVD-RW or DVD+RW formats, but not both. Sony's new machine writes both, however, as well as reading CD, CD-R and CD-RW discs. It includes Sony's iLink (IEEE 1394/ FireWire) interface for high-speed file transfers with devices such as digital video cameras. Price is expected to be

around \$800 (£505) from May.

Click on:-

www.sony.com





NEW ACOUSTIC

The Acoustic Transducer Company has just launched a new tasty looking three-way loudspeaker, "capable of outstanding levels of music and soundtrack reproduction". The SCM35 is suitable for amplifiers of 50-300 watts per channel, and is capable of a maximum continuous SPL of 112dB. A soft-domed Neodymium magnet tweeter provides a smooth and detailed response to beyond 20kHz, while the famous ATC super-dome 3" transducer takes care of mid-band duties. An entirely new 8" bass driver has been developed, featuring ATC's short voice coil/long magnetic gap topology. The heavy-duty crossover comprises close tolerance air-core inductors, metallised polypropylene capacitors and ceramic wire wound resistors for minimal distortion at critical cross over points, and is tri-wire ready. Its substantial closed, braced, 35 litre cabinet is available in real cherry wood veneer with other real wood finishes and professional black to special order. Price is £1999.00 per pair. For more information contact

Tel: +44 (0)1285 760561
www.atc.gb.net

TOTAL ECLIPSE

Some fifty years after its inception, Marantz has launched a new premium 'lifestyle' system. The company, which now has 1600 employees in more than 50 countries, says its Eclipse '36 takes its Style Series into audio-visual home entertainment a proper, thanks to its separate PS110 amplifier and a Dv110 DVD/tuner, 50W per channel, Dolby Digital, DTS 5.1 and Pro Logic II decoding, plus a new quick set-up function. Auto Surround mode are included in its feature set. Marantz AV gear sounds sweeter than most, so expect this to be a winner. Watch out for a full review in Hi-Fi World soon.

Tel: +44 (0)1753 680868
www.marantz.com

REAL LIFE

RealNetworks Inc. has announced its acquisition of Listen.com, giving it two of the Internet's leading subscription content services, the market-leading RealOne SuperPass and the award-winning RHAPSODY music service. CEO Rob Glaser said, "RealNetworks has long been a pioneer and leader in digital music, going back to our invention of Internet streaming in 1995 and introduction of RealJukebox in 1999. The opportunity for us to add Listen.com's RHAPSODY, the

best music subscription service, into our family of services was just too compelling to pass up." Listen.com's RHAPSODY pioneered integrating artist guides and customised radio stations within a music subscription service, and its acquisition

enhances RealNetworks' music programming. RealNetworks remains a committed partner of MusicNet, a leading online music company formed by RealNetworks, AOL Time Warner, Bertelsmann, and EMI in 2001.

www.listen.com



DINKY DIGITAL

TEAC's award winning Reference Series 300 mini system now offers the option of a triple-band tuner which includes Digital Radio. Although the T-H300DAB is custom designed for the 300 Series, it can be used with any stereo amplifier as a miniature stand-alone product. Purchased singly with its dedicated remote handset, it costs £219.95, or as part of the Reference 300DAB Option 1 package (comprising A-H300amp, T-



H300DAB Tuner, PD-H300C CD Player) it is £529.95. Option 2 adds the R-H300 cassette deck for £669.95.

Tel: +44 (0)1923 819630
www.teac.co.uk

TRUE STORIES

Over to hi-fi's PR svengali Robert Follis for the following audio anecdote. "Dear David, I wired a Freeview box into my AV system, then I moved the TV and the SCART lead pulled the digibox off the shelf! Then I added a TIVO which needed 3 more SCART connections and things got much worse. Two aspirins, one vodka and three IXOS flexible 611 SCART leads solved the problem. Cheers, Robert." So there you have it... spend from £39.99 on IXOS's new XHT611 and you'll have an ultra-flexible bit of wire that's ideal for "tidy installs" such as that inside Rob's swanky West London designer home. Visit his bijou pad, click on www.ixoscable.com.

Tel: +44 (0)1844 219 004
www.ixoscable.com

MUSIC FOR SALE

The most significant move yet towards selling music on the internet has just been made by EMI, which has made over 90% of its back catalogue - including artists such as Robbie Williams and David Bowie - available for online purchase. Analysts say that it is a symptom of the increasing concern in the music industry that today's teenage music consumers go online to get their music, rather than buy it in 'record shops'. Deals with 20 digital music distributors, such as Freeserve, MSN, MTV and HMV, to offer over 140,000 tracks for download, have been made. This move is an attempt to redress the sharp slump in music sales over the past three years - last year, global music sales fell a further 7.2% to £20bn, according to the International Federation of the Phonographic Industry, the world-wide music trade organisation.

There are a number of reasons for this. Although Napster, the original home of 'free music downloads', has been forced offline, a host of 'peer to peer' (P2P) sites such as Kazaa and Soulseek have taken its place, offering effectively the same service as Napster. Users can search for and swap music directly via the net, at no charge. The IFPI also cites online piracy and CD burning as key reasons for this music sales slump. EMI UK's chief executive, Tony Wadsworth, is reported as saying that the industry needs, "to use all legitimate means... to hamper piracy and make as much music available online as possible."

The EMI deal means that paying consumers will be able to make permanent copies of songs and transfer them to recordable CDs, portable music players and hard drives, as well as purchasing singles online once they hit the radio airwaves. The hope is, now that music buyers are used to going online for their music, they won't mind paying for a simple, easy-to-use system that gives good quality results with no further restrictions on use. Until now EMI and other major labels had placed limitations on the songs available and how they could be copied, causing people to seek illegitimate alternatives. Not all artists have agreed - both the Rolling Stones and The Beatles have so far refused to make their tracks available in this way.



next issue

August's issue is a tuner special. Now you know the best affordable CD spinner around, it's time to upgrade your tuner and we have the answer for you! Also, look out for:

ARCAM'S DV89
Britain's first affordable audiophile DVD-A player?

QUAD 909 POWER AMPLIFIER
A modern 'piece of wire with gain'?

MISSION'S 782SE LOUDSPEAKER
Still commanding the mid-price floor?

LINN'S LATE, LAMENTED KREMLIN TUNER
The best Linn product, ever?

next issue

WEBWATCH DOTMUSIC

Eschewing gimmicks for ease of use can never be a bad thing, but this site's 'sensible-shoes' visuals seem inappropriate for the glitzy world of popular music. Still, its colour coded navigation bars and category and title based searches are a breeze to use, and there's even some strong editorial content too. Subscription packages comprise Unlimited (£9.99 per month for as much music as you can download), Basic (£4.99 for 50 downloads and 500 streams) and Pay As You Go (from 99p per track). Varied as the downloads are, any Napster-weaned music completist will find them lacking in breadth compared to the admittedly illegal peer-to-peer sites. Factor in a curious lack of Mac support, and dotmusic just misses the spot.

www.dotmusic/ondemand



THE CD ISSUE

Right now, all the talk is of the new 'advanced resolution' digital audio formats - SACD and DVD-A. But CD is very much alive and kicking, and remains the world's favourite music carrier by far. We've dedicated this issue to Sony and Philips' venerable 16bit format, to help you choose what to buy. What follows is a comprehensive test of the best 'affordable' players on the market and a look at the alternatives.

It was back in 1983 that Philips' new 'Compact Disc Digital Audio' format reached British shores, at the peak of the high street 'microcomputer' boom. All the talk was of lasers, microprocessors and 'silicon chips', and CD fitted in perfectly. Compared to vinyl, digital discs were a revelation. With poor pressing quality, music buyers were sick of the 'snap, crackle and pop' accompanying every new LP they bought. CD banished all this at a stroke - lasers reading tiny pits in lacquer coated aluminium discs were altogether more reliable than lumps of coal dragging through wiggly plastic grooves!

Still, the new format took a while to catch on. High prices

explain this - Sony's first ever CD player, the CDP-101, originally cost the best part of £800, nearly £2,000 in today's money, and a lot to pay for a format nobody was sure would catch on, and for which only a few software discs were available. Most folk had to wait until prices came down, so manufacturers duly rushed to bring out new machines using the same mechanisms and digital convertors, but in more affordable packages. By 1984, prices were down to the £350 mark. Still, CD players were very much a

'yuppie' fashion accessory for much of the 1980s - regarded by the general public as an exotic indulgence.

Specialist hi-fi buyers were altogether more circumspect. The new machines gave unpredictable results, not least because many high end systems had been built around the ubiquitous Linn Sondek LP12 turntable,

which was still a very warm and soft sounding machine back in 1983. The arrival of CD, with its ruler-flat frequency response and 'chrome plated' upper midband made for an ear-splitting listen back in 1985! The early discs themselves were also poor - stories abounded of old generation master tapes being used, often with the wrong equalisation.

CD's role in life has slowly moved from being an audiophile standard bearer to a universal, high quality music source - a job it performs far more happily. It is now cheap, recordable and highly flexible, finding its way into everything from cars to computers. It forms the vast bulk of most people's existing collections, and carries the vast majority of new music - US market figures show the vast majority (90.5%) of all recorded music sold

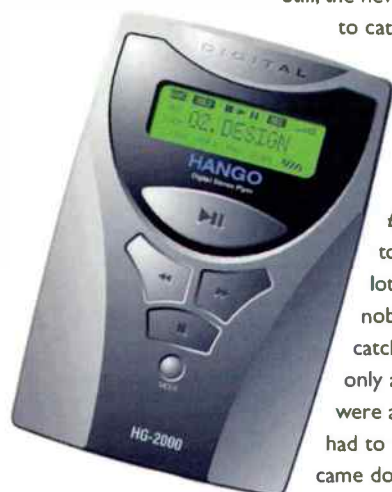


Sony CDP101 - the machine that started it all.



Marantz CD54 - the first affordable early CD.

last year was on CD [source: RIAA], with DVD-Audio releases accounting for just 1.3%. Factor in the new generation of discs with high quality mastering (often with Super Bit Mapping or similar), superior packaging and interactive elements, and 'classic' 16bit digital audio still has real appeal.



Now really hurting CD sales.

IN THE MIX

CD is suffering from the general malaise in the British music industry. Just two years after a record year, when yearly sales of CD albums broke through the £1 billion mark for the first time, the rise of computer audio, CD copying and illegal file sharing has hit corporate bottom lines. UK recorded music sales sagged by an unprecedented 13% in the first three months of this year [source: BPI]. Album sales dropped 4.8%, but prices dropped 9.4%

GAME ON!

As the hi-fi world accepts SACD and DVD-A, is there life still left in the humble sixteen bit CD player? Hi-Fi World weighs up the odds in this month's group test, throwing the very best mid-price CD players we know into mortal combat with one another, and adding a highly rated DVD/SACD player for good measure.



Cambridge Audio CD500



NAD C541i



Creek CD50



Rega Planet



Arcam CD82T



Marantz CD6000 KI Signature



Philips DVD963SA

As the world becomes increasingly aware of 'advanced resolution' DVD-Audio and SACDs, so the sales of conventional Compact Disc players are falling. Indeed, read some of the hi-fi magazines reviewing these new multi-channel marvels, and you'd be forgiven for thinking the end of CD is nigh. After all, they suggest, what's the point in buying into old hat sixteen-bit technology when 24bit, 192kHz digital awaits you – with 5.1 channel surround and DVD playback thrown in?

Well, it ain't necessarily so. Indeed, if we go back to hi-fi basics and reconsider that oft-forgotten rule that 'you can't have something for nothing', then what percentage of the £500 you're proposing to spend on the latest shiny new DVD-A spinner will actually be devoted to two-channel sixteen bit CD replay? The answer is, of course, much less than that of a purpose-built CD player!

The point is that, if you have a

large collection of Compact Discs, then a Compact Disc player will play them best. Playing your CDs on a DVD spinner is all well and good if you're the kind of buyer who gets your audio hardware from a supermarket, but if you're serious about sound then you need the real deal. Many committed audiophiles find the sound of DVD spinners playing CD to be thin, flat and as exciting as a Tuesday afternoon on the Isle of Man.

That's why we're running this group test of machines that many hi-

fi headline writers would have you believe are due to go the way of the dodo.

We've rounded up the very best 'budget audiophile' players for your entertainment – precisely the sort of product that may now be overlooked by casual hi-fi buyers in favour of a DVD spinner. And just for fun, we've thrown a wild card into the mix, in the shape of Philips superb DVD963SA CD/SACD/ DVD-video player – one audio-video product that's good enough to really sock it to the two-channel specialist hi-fi brigade!



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CAMBRIDGE AUDIO CD500 £200



The CD500 is the more expensive of the two specialist Cambridge CD players on sale. It uses higher quality components than its CD300 stable mate.

As far as looks and build go, it's probably safe to say that this wouldn't be the deciding factor in buying the CD500! The chassis isn't the sturdiest or heaviest around and the player's fascia controls have a lightweight and rather dated feel. However, like in some Sony models the jog-like 'shuttle' dial control for skipping tracks is quite a handy addition.

The CD500 uses, like the CD300, an advanced control system designed for Cambridge by Sony. At the core of the system is a very large scale integration (VLSI) circuit that's able to dynamically adjust the focus, tracking and output level of the laser for minimum error correction. This system is shielded by a sort of 'metal can' from the power supplies and other circuitry.

The high quality Delta Sigma DAC is courtesy of Crystal and there are regulated power supplies for both digital and analogue circuits, a high stability clock and numerous dual-mono topologies. Both optical and coaxial digital outputs are fitted. The company claims that the

implementation of proprietary jitter reduction results in a low level of distortion that betters many high-end players.

SOUND QUALITY

Kicking off with the Badly Drawn Boy CD, the Cambridge got right down to the goodies straight away. It was a big sound, with very good detail. Damon Gough's voice was very clear but also forward sounding which some could find a bit wearing over time. Bass was fast and taut and the cymbals at the top-end not too hard sounding, with a touch of smoothness. A good three-dimensional quality to the sound was another trait of the CD500.

Where the Cambridge impressed us most, though, was with classical music. Here, in the Fauré Piano Trio, the CD500 showed great delicacy and a smooth, warm sound to the instruments. Although the violin and cello had, again a slightly forward nature, it made them all the more realistic sounding. The sound of the piano was excellent – very open and rich with plenty of air, space and depth. Overall there was also an impressive height and depth to the

sound stage, which are the traits of far more expensive players. Jony Iliev's vigorous gypsy tunes sounded big and speedy, with good rhythmic attack and a very involving nature. Instruments were clear and neutral and there was good detail. The CD500 managed to give a fast and forward sound that never erred to the rough side of things and made listening very enjoyable.

Although an ugly duckling, the CD500 is a swan with full plumage when it comes to sound. It has a very high standard of playback that makes it a brilliant contender in the price sector – it's the best here in value for money terms, bettering even the NAD. Its ability to create a big and high soundstage, along with a forward, realistic but rich sound is its real endearing feature, and utterly unexpected at the price. If you find the likes of the Rega too thin and sinewy sounding, then you'll love this, and save loads of money too.

Cambridge CD500 £199.95

Audio Partnership
Tel: +44 (0)20 7940 2200
www.cambridgeaudio.co.uk

MEASURED PERFORMANCE

One look at the convolved impulse response of this player shows clearly it has a quite pronounced high frequency roll off. As a result it will sound warmer than the others, or will seemingly display less forward sounding treble. To many it may sound more 'analogue like'. All the same, the upper reponse limit was a high 21.8kHz.

Distortion levels were low on both channels over the full dynamic range of CD, a low -60dB distortion result of 0.35% leading to a very high EIAJ dynamic range value of 111dB - about the best possible.

With out at a normal 2.3V and noise a low -104dB the D500 SE measures very well. It will have a smooth, warm presentation

noticeably diferent to the norm and will stand out sonically as a result.

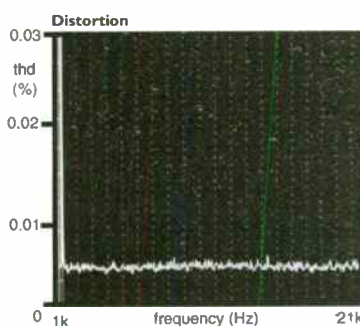
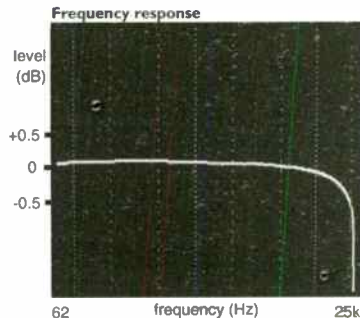
NK

Frequency response 4Hz-21.8Hz

Distortion	left	right
-6dB	0.004	0.004
-30dB	0.006	0.007
-60dB	0.35	036
-90dB dithered	7	6

Separation	left	right
1kHz	111	110
20kHz	76	75

Noise (IEC A)	-104dB
Dynamic range	111dB
Output	2.3V



World Verdict £

Build quality isn't the best around but the CD500 has a detailed and smooth sound well beyond its price point

NAD C541i £330

The C541i is a 'special edition' version of the previous C541 player. Although the company now gives an option of an aluminium front panel on some products, the 541i you see before you sticks to NAD drab grey. In a way, I rather like this – it says 'I'm here to do a job and not look pretty'. The design is simple, ordered and without quirks.

Under the bonnet there is advanced circuitry in the player and use of a high quality conversion process. The toroidal transformer leads to two separate power sections for both the analogue and digital sections and there's also a fully buffered digital output and a low impedance analogue output.

High quality audiophile grade components are used throughout, such as Nichicon Muse capacitors. The 24/96 DAC is a Burr Brown delta-sigma model and there's the inclusion of a HDCD digital filter – a bonus at the lowish price. In line with NAD's take on custom install, there are a number of features included for this market, such as NAD link sockets and trigger signal operation facility.

SOUND QUALITY

In common with practically all the other competitors in this group test, the NAD also had a rich and smooth sound that matched well with a



variety of musical styles and recordings. Badly Drawn Boy's *Everybody's Stalking* had a good tonal balance; bass was firm and fast, midrange vocals clean and open and the cymbals at the top end were sweeter than one would expect at the price. Another great trait of this player is the very fine imaging and depth of soundstage; the drum kit was far back in the mix but no way out of earshot.

With the Fauré Piano Trio, the NAD had a good, firm sound with smooth strings. Although warm, the strings could also sound a bit veiled at times when compared to the group test competitors, covering over some detail. The piano had a good roundness to the bass but the midrange and treble weren't the most open in the test, with the violin sometimes erring on the edgy side in the higher registers.

Jony Iliev's Bulgarian gypsy music sounded a little laid back with the C541i when compared to some others in the test. It had the fluidity of the CD6000KI but lacked some of that player's fullness, although rhythms and overall cohesion was very tight and focussed. At the very complex dynamic climaxes in the disc

the C541i sometimes appeared to bend under the extreme pressure by not being able to glean all of the admittedly very fine detail out of a very muddled picture. This said it can handle big rock music excellently, delivering a dynamic and full on sound when the music demands it.

The NAD is a fine player for the money. It has a lot going on inside that is relayed to the listener by that deep soundstage and competent tonal balance. The only small gripes are with high register instruments and rough recordings which show a bit of edginess at the very top end – admittedly compared to some far more expensive designs! All-in-all, though it's a real class act that outshines its price rivals in every aspect, which includes Marantz's cooking CD6000OSE. The fact that it can be mentioned in the same breath as the likes of the KI is testament to this. Once again then, if you want near group topping sound at half the price, think NAD.

NAD C541i £330

Lenbrook UK Ltd
Tel: +44 (0) 1908 319360
www.lenbrook.co.uk

MEASURED PERFORMANCE

The much recommended NAD C541i has a slightly unusual response in that there is a small lift in output around 10kHz before higher frequencies roll away. This may well add some sheen to the sound, possibly accentuating detail at little. This NAD looks as if it will be a little more forward sounding than those of yore.

Distortion levels in this sample were a bit lower than before, our –30dB analysis now showing a complete absence of distortion and quantisation noise spikes. All the same, at lower levels distortion in this sample began to rise, as before. As a result the player's EIAJ dynamic range figure measured out at 108dB, a few dB down on the best. So the C541i still isn't the most linear, but

then it is no different to the Marantz in this group, so it is in good company. The C541i measures well enough in all respects. **NK**

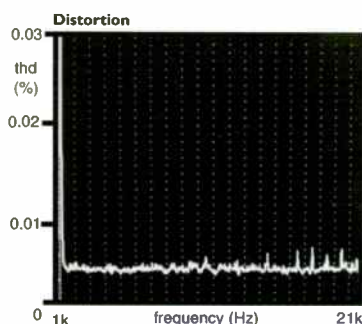
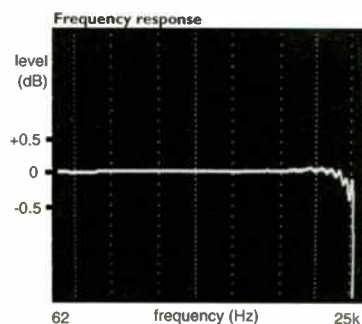
Frequency response 4Hz-21kHz

Distortion	left	right
-6dB	0.006	0.006
-30dB	0.006	0.007
-60dB	0.49	0.48
-90dB dithered	5.7	5.2

Separation	left	right
1kHz	114	115
20kHz	88	89

Noise (IEC A) -98dB

Dynamic range 108dB
Output 2.2V



World Verdict £ 
For a player that hasn't been around long it's already a classic. Great sound and reliability with good facilities. It offers excellent value for money.

REGA PLANET £498

One way of making a mid-price player more attractive is to make it stylish in an 'esoteric audiophile' kind of way. This is Rega's philosophy with the striking looking Planet.

Its top loading Sony mechanism provides that famous audiophile CD rite of raising the lid. The chassis is custom-built for Rega and made of extruded aluminium with a small array of cool symbol shaped operation buttons to the right. The Rega logo to the left cleverly doubles up as the remote sensor. The display window has an attention-grabbing red hue, along with CD text ability, to add to the alternative appeal of a player in this price bracket.

Inside there are improvements on the original Planet. The new DAC is a 24-bit Delta Sigma design based around a custom-made IC40 chip. The Planet uses the same RADS conversion stage as the original Planet, and has an extra power supply for the digital section of the DAC. Rega's own chassis isolation system is employed, and TOSLINK and coaxial digital outputs sit at the back.

SOUND QUALITY

So, it's all well and good looking the part, but how does the Planet measure up in the sonic stakes? It's

very, very interesting and relatively unique sounding among this group. Badly Drawn Boy's Everybody's Stalking first struck as having immaculate detail. Acoustic guitars that accompanied deep in the mix were clear and exact and vocals were very lucid with every word discernible. The nice 'deep' nature of the recording showed up a decent wide and deep sound stage, with the drums kicking away well back into the wall.

This player also has a sound that is tonally thinner than many rivals. It doesn't go for the big, warm and cuddly sound but delivers a leaner and perhaps more audiophile sound. At the price point this trait can often deter from cohesive listening, in that the whole package is lacking in lyricism and warmth.

The next two discs in the form of the excellently recorded Ravel Piano Trio on Hyperion and the high tech demonstration standard recording of mad, bad gypsy Jony Iliev's band showed that the Rega revels in a good recording. And it's all about detail. Whilst the piano trio didn't enthral perhaps musically as well it could have done, it had a

superb grip on the intricacies in the recording. The cello sounded as though it were in the room - all sinewy and woody - and the violin, whilst a bit on the edgy side of the fence, was also very detailed and realistic. The piano had a little less body than found elsewhere, but was very rhythmic, percussive, and as clear as a bell.

The Rega showed what it could do with the Jony Iliev disc. In Badly Drawn Boy's CD, bass was a tad thin.

What you can gather from this is that the Rega loves a top notch acoustic recording that excels in speed and bass depth. Kodo's drums would be a great match. But because of this and the way it sometimes lacks fullness of body with other discs it's a mixed bag - but a pleasant one, and definitely something different. So overall, the Planet is one very interesting customer well worthy of an auditioning ear. It's Compact Disc Captain, but not as we know it!

Rega Planet £498

Rega Research
Tel: +44 (0) 1702 333071

MEASURED PERFORMANCE

This player's frequency response has a pronounced rise in output at high frequencies, our analysis shows. Subjectively it will give the Rega a more incisive sound that with good recordings will usually be OK, but with bad ones may well accentuate problems. With modern loudspeakers that are flat to 20kHz and a mediocre digital recording the end result won't be nice. The Planet needs to be matched with care, which means not with bright sounding amp or metal dome tweeters.

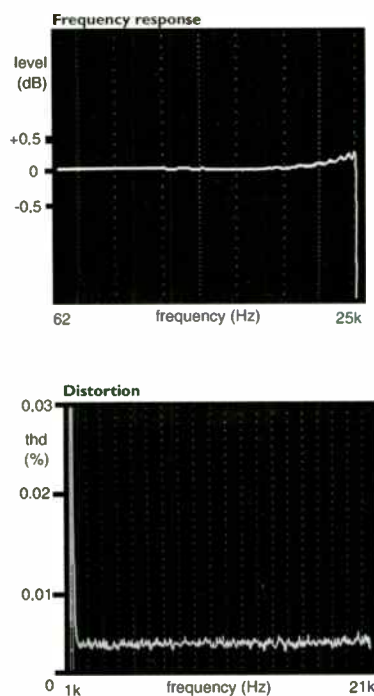
Measurement showed the player's convertors were as linear as the best, with no sign of harmonic distortion or quantisation noise our analysis shows. Dynamic range (EIA) was predictably high as a result, measuring 110dB.

The Planet needs careful system matching to avoid brightness.

NK

Frequency response 4Hz-21.3kHz

Distortion	left	right
-6dB	0.003	0.003
-30dB	0.006	0.007
-60dB	0.35	0.36
-90dB dithered	5	5
Separation	left	right
1kHz	121	120
20kHz	99	98
Noise		121dB
Dynamic range		110dB
Output		2.02V



World Verdict

Esoteric hi-fi at a very un-esoteric price. Cutting edge design and a well detailed sound mean the Rega is competitive but some discs can suffer from a lean sound.

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Peddlers of fine wares, including:

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.
Amplifiers: 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.
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Canary Audio CA 303 - 300B monos - 22 watts - better	£5400	£7400
Canary Audio CA 309 - 300B parallel p.p. - 45 watts - superb	£9500	£13500
Canary Audio CA 300 - single ended monos - valve rect. - 8 watts	£2000	£3500
Jamo Concert 8 - loudspeakers - 2½ years old - maple - spotless	£700	£1365
Townsend Seismic - speaker stands - ugly but wobbly	£450	£695
Tube Technology MAC - mm and mc phono - nearly new	£700	£1400
Audio Innovations Series 1000 - silver circuit - 50 watts class A	£1100	£2500
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Voyd Standard - turntable - Black - perfect - collectable joy	£1000	
Pink Triangle PT TOO Export - black - vgc - great sound	£300	
B&W DM603 S3 - black - vgc - good condition	£350	£600
VPI Aries Scout turntable with JMW9 tonearm - two months old - perfect	£1000	£1350
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high mass Pirate stands - lovely sound - 92 db per watt sensitivity	£700	
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OPENING SALE NOW ON

ARCAM CD82T

£599

The CD82 is a very attractive customer indeed. Not wacky and not too staid, it will look smart and elegant absolutely anywhere. The company's midrange CD players have long been amongst the best around and the CD82T aims to carry on this tradition with a combination of high quality engineering and a range of useful facilities.

Inside the casework we have two Wolfson 24/192 DACs (the cheaper CD72 uses Burr Brown models) in dual mode configuration, with one DAC chip used for the left channel and another for the right. Joining the DACs are high quality Burr Brown op amps in the analogue output stage, and the digital converter module includes a Class 1 crystal oscillator, with clock precision being improved to reduce jitter.

Round the back you'll find both optical and coaxial digital outputs and on the front there's a full range of control buttons and big, clear and green display in the DiVA fashion.

SOUND QUALITY

Badly Drawn Boy's 'Everybody's Stalking' saw the Arcam deliver a sound that was immediately attractive. It's quite a dry and smooth sound but also very well detailed. This isn't a silver spinner that'll grab you by the lapel and shake you around – rather, it is somewhat easy going but very enjoyable nonetheless.



Bass was rounded and tight, with the drum kit focussed in the mix. A deep sound stage, good imaging and smooth treble all contributed to a good audiophile standard of playback. Damon Gough's vocals were smooth and clean and the sometimes rough ride-cymbal was sweet and smooth here.

Moving to chamber music with Fauré's Piano Trio, the CD82T was again quite dry and exact but also well focussed. The cello sounded very smooth and rich and likewise the piano had good body and presence, along with warmth. My only little gripe here was that whilst the listening was enjoyable the Arcam couldn't quite involve me as much as other players due to its slightly laid back nature. Little things such as the violin sounding a tad too smooth detracted from the 'live' feel that this SACD/CD hybrid Hyperion recording has in shed-loads. Still, the overall sound was very lyrical and fluid, which is far preferable to jagged and mechanical!

Jony Iliev's rampaging disc was next on and we were treated to a fat and friendly sound. The acoustic drums had quite a bit of bass resonance but again were well detailed. In this clean and fast music

the Arcam gave more of a forward reading. The clarinets and accordions blasted through the 'speakers like it was a different player to earlier discs, showing real life and vibrancy. The player also gave these instruments a big, full toned sound - very impressive.

The CD82T is in true Arcam spirit, a very reliable player. It won't offend in either looks or sound and will often, with the right recording, excite. It's a well balanced presentation that plays everything in your collection to great effect and has elegant looks to match and fine build as well. Its naturally smooth and laid back sound, with just a touch of dryness to its tonality, makes it hard to criticise. It does so much so well, but shines in no particular area. Some will dislike this player's lack of charisma, others adore its meticulously even handed nature. Whatever your perspective, I'd go so far as to say that this is one of the top three players in the group.

Arcam CD82T £599

Arcam
Tel: +44 (0) 1223 203203
www.arcam.co.uk

MEASURED PERFORMANCE

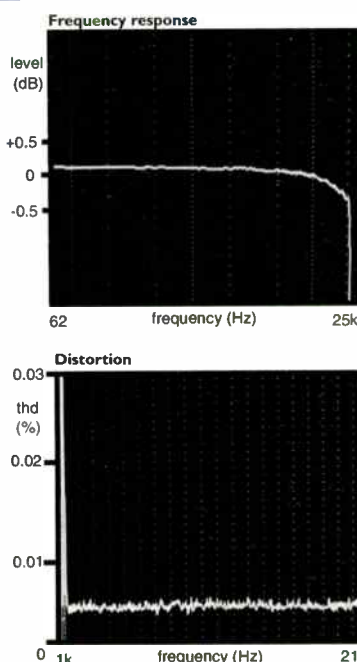
This CD82 measured much like an earlier sample, having a smooth top-end roll off in its response characteristic, as our impulse analysis shows. Arcam consistently engineer in this sort of response, to get a smooth, easy sounding tonal balance.


Distortion levels were very low throughout the player's dynamic range, our analysis at -30dB showing clearly the absence of harmonics or quantisation noise, with measured distortion a low 0.006%.

At lower signal levels distortion remained low, hence the very good EIAJ dynamic range figure of 110dB. With normal output at 2.2V and wide channel separation the CD82

measures well in all areas. **NK**

Frequency response	4Hz-21Hz	
Distortion	left	right
-6dB	0.005	0.005
-30dB	0.006	0.006
-60dB	0.35	036
-90	3.3	3.8
Separation	left	right
1kHz	123	124
20kHz	105	104
Noise (IEC A)	-105dB	
Dynamic range	110dB	
Output	2.2V	



World Verdict 
A very reliable and well built player with a good, solid sound. Smooth and a bit dry but also well detailed. Could be a bit 'staid' for some.

MARANTZ CD6000 KI SIGNATURE £600

Traditionally anything with the KI Signature logo betters its standard stablemates by some way - and this one is no exception...

The 6000 KI includes a dual-differential mode delta sigma DAC which aims to decrease noise levels and give better overall performance. We also see the added bonus of Marantz's HDAM, found in the company's high end products (that's HDAM as in 'Hyper Dynamic Amplifier Module' - Ed), which handles analogue audio output duties. Essentially a high slew rate buffer amplifier, it's a trick replacement for your common-or-garden op amp.

Build is best in the test by far. The front panel is thick metal and the display is a high quality, easy to read dot matrix type. Front panel controls are kept relatively slim but the supplied remote is adequately comprehensive. We have the KI Sig trademark copper plated bottom, and wide use of the material within the acoustically damped casework for best sound.

Also on-board is CD Text, a remote controlled variable output and remote controlled auto music scan. Both optical and coaxial digital outputs sit at the back.



SOUND QUALITY

Marantz's top of the range disc players are smoother than the 'immediate' sound of the lower range products. Badly Drawn Boy had a big and rounded sound that was very easy going yet fully involving. The whole picture was exceptionally rich toned which perhaps a few may find off-putting, but most will find very pleasing to the ear.

Bass was full and powerful, yet tuneful and the midrange smooth and detailed - another plus at this price point. This is a sound that is full and fat. Vocals are excellent - fluid and clean and lyrical.

The Hyperion disc showed that the 6000KI takes to classical music like a duck to water. Strings were silky smooth and warm, without any edge but still detailed and realistic with it. The piano sounded muscular with good definition and the 6000 KI showed the realistic dynamics in the instrument perhaps more than others in the test. There's a great three-dimensional element to the sound, to boot, with good depth and a fine sense of space.

The Jony Iliev's disc was well defined and powerful sounding but seemed at times, due to the rich nature of the sound, just a little too laid back. The acoustic instruments however, had superb timbre and a well detailed presence, the clarinets, for example, hooted away with focus and conviction. There's copious drumming on some of the tracks and this was relayed with superb tonality, although a slight lack of speed was discernible compared to some of the other candidates. However, this player can reproduce the whole spectrum of timbre and colours with acoustic instruments, which is the sign of a truly great machine.

The CD6000KI is one seriously good player. It may be getting on a bit, but still whips all the young ones - Creek notwithstanding - good and proper!

Marantz CD6000 KI Signature £600

Marantz (UK) Ltd.
Tel: +44 (0) 1753 680868
www.marantz.com

MEASURED PERFORMANCE

This player has a predictably flat convolved impulse response, but without any top end peaking or the sort of brick wall fall in output of classic Sonys. There's also just a slight trend up toward low frequencies, enough plateau lift to ensure its bass end delivery gets heard and there is a sense of body in the sound.

Distortion levels were not the lowest of the group but all the same, at -30dB, or normal music level, our analysis clearly shows an absence of harmonics. A measured distortion at this level of just 0.007% is little different to the others.

However, at -60dB with distortion measuring 0.5% or so the Marantz turned in a lower dynamic range value than is common - 106dB. There may be just a little

incision added from this source.

Otherwise the CD6000 KI measured well enough, as we might expect from Marantz and Ken Ishiwata.

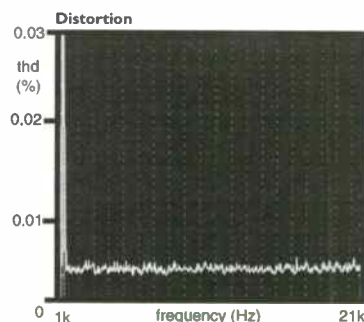
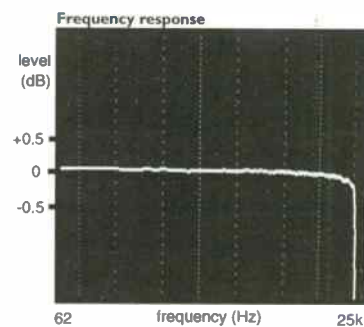
NK

Frequency response 4Hz-21Hz

Distortion	left	right
-6dB	0.005	0.005
-30dB	0.007	0.007
-60dB	0.53	0.5
-90	4.2	4.2

Separation	left	right
1kHz	128	127
20kHz	124	123

Noise (IEC A)	-105dB
Dynamic range	106dB
Output	2.05V



World Verdict

£ A simply excellent all-rounder. Sound is big and powerful yet refined when need be, build quality superlative and it's loaded with facilities. Great with all music and recordings, this is one of Marantz's shining stars.

CREEK AUDIO CD50 £699

Much of Creek's output can knock the competition at twice the price into a cocked hat with its superb three-dimensional and resolutely audiophile sound. Now the company has started to creep slightly more to the higher end of the market - no bad move as this is where the new 'budget hi-fi actually starts - and so the spectacle of brushed aluminium faceplates has emerged, along with sleek but functional design and better quality internal components.

The CD50 is designed to match Creek's new 50 and 53 series products. The mechanism is the tried and tested quality Philips CDM-12 model and the CD7 chipset. Creek has added a fair amount of its own stamp in the control circuitry. The internal DAC is a Crystal Semiconductors 24/192 single-bit Delta Sigma version. Added to the Creek style portfolio are the aforementioned 10mm thick front panel and a (slightly) more robust chassis, although the small but perfectly formed dimensions still remain.

A comprehensive arrangement of ten control buttons is found on the fascia but the player is supplied with Creek's new, good quality system remote. As smart as it looks, you can't help feeling the Creek tradition of getting the insides sorted first is still (rightly) the company prerogative. This is no battleship player in the



traditional Japanese mould, for example!

SOUND QUALITY

Although the CD50 differs from earlier players it was a real joy to hear, because differences were for the better. Whilst earlier models were impressively smooth and well balanced, this new model continues in this vein but adds a very impressive sprinkling of speed, accuracy and good old unreconstructed excitement. With Badly Drawn Boy's *Everybody's Stalking*, the sound had a good, deep and rich bass line that was combined with a forward - but in no way harsh - vocal, as well as good emphasis on rhythms. Drums were big and involving and were positioned impressively to the rear, creating a fine depth of stage. Detail was impressive, the metal snare on the drum was discernible and multi layered guitar tracks were clean and crisp. It's a fast and immediate sound - no slouch at all - but one that is married to subtlety and balance.

Moving on to the spiky and superbly recorded CD of the mad, rampaging Bulgarian gypsy music of Jony Iliev's band, the Creek responded with a fantastic sound. The acoustic drums had fine clarity and the detail here was simply excellent. Accordions

breathed and clarinets wailed and wept as the acoustic guitars' accompanying strumming remained clearly audible through the rumpus. This was a very taut and exciting sound with realistic body and substance - 'budget' audiophilia at its best.

Likewise, Fauré's Piano Trio had fine body and exceptional detail, too. The piano, again well back in the sound stage had an organic and realistic presence, with good resonant bass notes and the strings were clear and lyrical. The Creek had a good way with classical music, creating a rich, natural and detailed sound.

The CD50 has supreme clarity, detail and control yet also can be subtle and very musical. In complex passages or big scale pieces it doesn't get its knickers in a twist. Music is relayed exactly as it was out on the disc and nothing is tampered with. And this is with all types of recording and music, although being a true audiophile player it really sings with well recorded discs.

Creek Audio CD50 £699

Creek Audio
Tel: +44 (0) 1442 260 146
www.creekaudio.co.uk

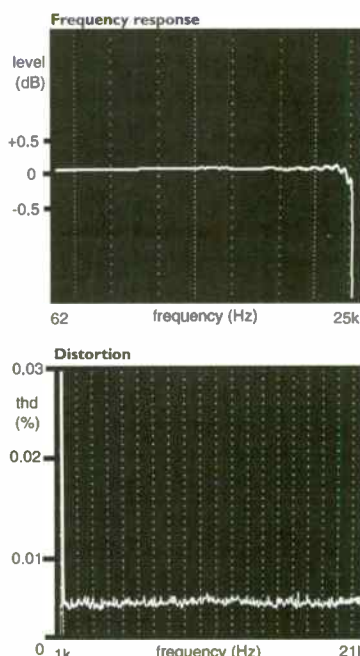
MEASURED PERFORMANCE

The CD50 has a ruler flat frequency response reaching 21.2kHz, our analysis shows. A small amount of filter ripple affects the top end but this doesn't directly affect sound quality. The Creek will be fairly 'obvious' at the top end, much like a Philips player I suspect.

There was little distortion to be measured at any music level. Our analysis shows a -30dB test signal - a typical music level - where there is an absence of harmonics or quantisation noise. Distortion measured a low 0.008% here. Good performance at -60dB resulted in a healthy EIAJ dynamic range value of 110dB being achieved. With low noise, normal output of 2.2V and good channel

separation the CD50 measures well in all areas. **NK**

Frequency response	5Hz-21.2Hz	
Distortion	left	right
-6dB	0.006	0.006
-30dB	0.008	0.007
-60dB	0.38	0.4
-90dB dithered	3	3.2
Separation	left	right
1kHz	116	115
20kHz	110	108
Noise (IEC A)	-104dB	
Dynamic range	110dB	
Output	2.2V	



World Verdict

A superlative sounding player that brings out the best in any disc. Rhythmic, sweet and detailed at the same time as far as sound quality is concerned it's the biz.

PHILIPS DVD963SA £400

The joker is wild! Unlike all the other machines here, this is not a purpose built CD separate, but a DVD video player that also spins SACDs and CDs, and very well too, I might add! We've included it because right now, lots of people are pondering the move to multichannel, and would love to know if there's something affordable out there that will play CDs half decently and spin SACD as well (which this machine most certainly does).

It will play anything you can chuck at it except DVD-Audio discs. It can play the Dolby Digital 5.1 or DTS mix that comes on every DVD-A disc, however, so you're not completely at sea with this. Build is very good for such an affordable player. The layout of the front panel is clean and tidy yet very comprehensive. The Philips (and Sony) DVD/SACD mech is a slow loading and reading a disc though.

A welcome feature is Upsampling - the word upon everyone's lips right now! The 963SA upsamples CD to 24/96 or the default 24/192, which of course doesn't result in DVD-Audio quality but adds refinement to what is already there. Another bonus is the button for switching off the video circuit to further improve the sound from CD and SACD - essential in my humble opinion.



Overall, it's a very attractive looking player, with classy blue LEDs around the front panel buttons and a clean and clear display window. Outputs are aplenty as you'd imagine - both optical and coaxial.

SOUND QUALITY

For the purposes of this group test, we auditioned the Philips as a CD-only machine. Yes, we know SACD will paste CD, but that's not the point - if you want to play all your old discs, you'll need serious CD sound.

Badly Drawn Boy had a well detailed and smooth sound. Bass was good and full but perhaps not the fastest or best focussed in the test. Yet there was a fair amount of detail not picked up on by the 963SA, and this took a little excitement away from the music.

Midrange vocals were okay, but again a little bland and lifeless compared to the best in the test.

At the top end, cymbals were refreshingly sweet and smooth for a DVD player, but again this was at the expense of intricate detailing.

Things turned out a little better with classical in the shape of the

Fauré piano trio, where the player ran close to the likes of Creek's CD50 with its lyricism and involvement. The piano didn't quite deliver the fullness of body that it could have done, but the full range of the instrument was realistically produced, with a nice rich bass register.

Jony Iliev's disc of gypsy music had slightly less attack and involvement than we'd previously encountered with the other players but it was nonetheless smooth and expressive. Detail was fairly good, too but this was mainly due to the slightly dry sound of the player with this disc.

Upsampling or not, the Philips is not as capable as the others here when playing CDs. It is a good Compact Disc spinner considering both its price and feature count, but simply can't keep up with the very high standards here. We honestly did not find it wanting until we compared it carefully with the best.

Philips DVD963SA £400

Philips Consumer Electronics
www.philips.com

MEASURED PERFORMANCE

With CD the DVD963SA has a ruler flat frequency response. With SACD it runs from 2Hz right up to 40kHz within 1dB, reaching -11dB at 100kHz.

Usually, this sort of characteristic with CD makes for a brittle sound. In the 963SA, based on past experience, it is likely to make treble sound 'obvious'.

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

In line with Philips usual performance nowadays the DVD963SA measured very well in all

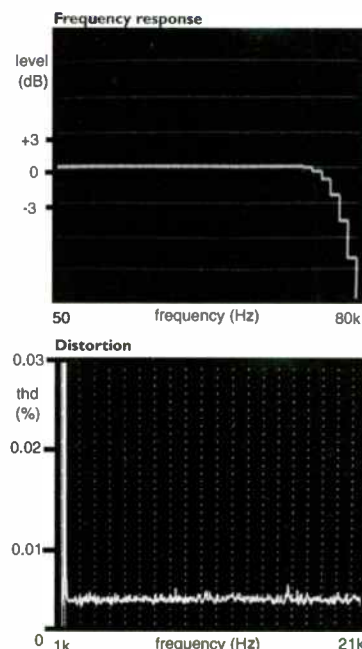
areas, with both CD and SACD. **NK**

Frequency response
CD 4Hz-20.75kHz
SACD 2Hz-40kHz

Distortion	left	right
-6dB	0.006	0.006
-30dB	0.005	0.005
-60dB	0.35	0.33
-90dB	4	4.2

Separation	left	right
1kHz	123	121
20kHz	101	100

Noise (IEC A)	-108dB
Dynamic range	111dB
Output	2.07V



World Verdict

Another good value option. One of the increasing number of DVD players with audiophile credentials, including SACD playback. But don't expect it to quite match the class rivals with CD.

CONCLUSION

All the products here are damn fine players, but the one that really made us want to sit through our CD collection again was Marantz's CD6000KI Signature. A beguiling music maker, the standard of sound it gives for £600 is sensational – there's relatively little difference between this and most machines at twice the price. Spend several hundred pounds more and you'll get a touch more incision, and maybe slightly better bass articulation, but generally this machine does the job superbly. Its characterfully fat, big, warm, valve-like sound is a joy. Factor in the superlative build and finish and it's very hard to think of anything to criticise, aside from the fact that you can get Creek's CD50 for the same money...

You see, the CD50 lacks that last scintilla of the Marantz's warmth and lyricism, but it's oh-so-close and at times punchier and faster too. This is very much the one to go for if your system has a need for speed above tonal colour. It's only a whisker behind the CD6000KI – and in some contexts even pulls ahead – which makes it an absolute corker. It has a beautifully crafted sound that neither swings one way or the other. It simply does everything superbly – detail, warmth, fluidity and depth. The only thing against it is the merely 'adequate' build quality and facility count for your £600.

Next down the list comes Arcam's CD82T, which is so darned competent that you can't fault it, but neither does it thrill, excite or inspire like the Marantz or Creek. It simply makes a great job of playing music in an even-handed and accurate way. It's a testament to Arcam's digital engineering expertise than they can come up with this sort of result time and time again. And it looks and feels dramatically better than the old 'swoopy' styled Alpha range of players of a few years back.

Then comes Cambridge's CD500, which although not the best

sounding is definitely the best value for money. A very full and enjoyable sound by the standards of the group – let alone at the price – plus a clean, precise way with vocals, makes it a superb buy. The downside is its pug-ugly styling and clunky build, but ultimately it's dramatically cheaper than the others here and CD players should be heard and not seen, anyway!

The NAD C541i comes oh-so-close – it sounds virtually as good as the Cambridge, but adds better facilities, more sturdy build and HDCD to the equation. Its sound is ever-so-slightly thinner than the Cambridge, but we're talking whiskers here. The fact that it comes close to the best of the group but for far less money shows that NAD is most definitely still a class act. It's the value for money choice, if you can't quite persuade yourself to live with the poverty-spec Cambridge.

The Rega is an extremely interesting player, and along with the Marantz, possibly the most charismatic and esoteric in the group. Its styling and ergonomics are a joy, and it offers an extremely fluid, analogue sound with well recorded discs. Only its slightly thin, mid-forward tone puts it down the group, but it's most positively not a bad machine. We could very happily live with it, especially if the rest of our system is a little coloured or overly full sounding.

And so to the Philips, which comes last. Amazingly, it still manages to sound better than most sub-£250 CD players, but pushing up into the next bracket of £350-plus makes it an altogether tougher ball game. Against all the others here, it sounded thinner, with less authority and detail. Vocals were insipid compared to the Marantz, Creek or Arcam, for example. We can't emphasise how good it is at the price, however – it's a cracker with SACD and a fine DVD video spinner, and it does CD very well. Even the best value DVD/SACD machine on the block can't compete against specialised sixteen bit CD.



Marantz CD6000 KI Signature



Creek CD50



Arcam CD82T



Cambridge Audio CD500



NAD C541i



Rega Planet



Philips DVD963SA

SNAKES AND LADDERS

That old Compact Disc player of yours isn't sounding so good anymore, so you want a new one – or do you? Perhaps you should buy a DVD-Audio or SACD player instead? Noel Keywood looks at your options, to help clear your way through the audio jungle.

Upgrading CD players used to be easy. Now you have something altogether more complex to wrestle with – 'high

resolution' digital in the shape of DVD-Audio and SACD. These bring all sorts of new possibilities (and pitfalls) to the table, at a stroke turning your simple CD upgrade ladder in a veritable snake pit of difficult

choices. How then are you to make sense of it, and what are the respective strengths and weaknesses of the formats?



COMPACT DISC

The first ever digital music disc for consumers, using a straightforward sixteen bit digital coding scheme called PCM (Pulse Code Modulation) developed in the 1970s. The real wonder of CD was its laser-read, non-contact optical disc media, rather than the digital coding format on it, which was soon shown to be inadequate as a truly

high fidelity music carrier, despite Philips' famous claim of "pure, perfect sound forever"!

FOR

PERFORMANCE: music CDs give the best sound on dedicated CD players.

CONVENIENCE: load the disc, press PLAY and the music starts.

BACKWARD COMPATIBILITY: Most music is released on CD, and will be for years.

PRICE: the world's standard music carrier is now very affordable.

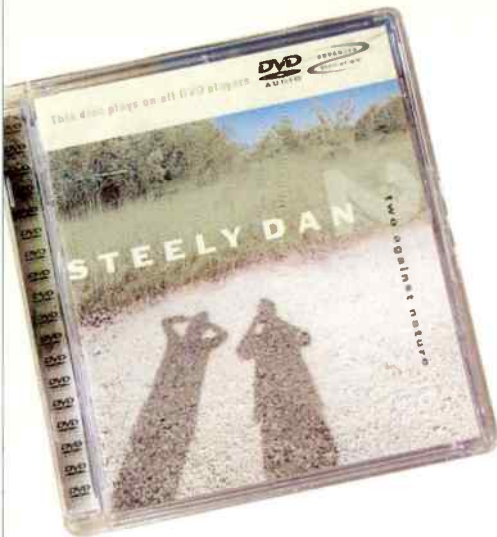
AGAINST

SOUND: significantly better sonics now available from DVD and SACD.

FUTURE: DVD is taking over, as CD sales now go into steady decline.

MODE: CD is stereo only, no 5.1 surround available

FORWARD COMPATIBILITY: will not play any type of DVD disc.



DVD-AUDIO

DVD Audio players will play both DVD-Video discs and DVD-Audio discs, in practice making them more 'universal' than either CD players or DVD video players. DVD-Audio discs forego video content for higher quality audio, usually accompanied by still pictures. Most possess six tracks (three front channels, two rear channels and subwoofer) of 24bit, 96kHz surround-sound, but some also boast a super high resolution (24bit, 192kHz) stereo mix. This is fairly rare at present but should be more widespread in future.

FOR

HARDWARE COST: DVD-A players barely cost more than DVD video or CD machines now.

COMPATIBILITY: all DVD formats are played, including DVD video and CD.

DVD VIDEO

DVD video players can offer fine sound. They offer video accompanied by audio. Because video takes up so much disc space, the audio tracks are usually data-reduced (compressed) digital, most commonly Dolby 5.1 surround-sound which is akin to mp3 or DAB in sonic terms since the amount of compression (10:1) is similar. Compressed digital like this sounds subtly softened and 'insubstantial' or hazy when compared to uncompressed CD, which sounds stronger, harder and more forceful. They can also play two channel 24bit, 96kHz PCM digital audio, but these discs are few and far between.

DVD video players can be set to mix down surround-sound to stereo and most players have stereo outputs, so a DVD video player can be substituted for a CD player in a stereo system. It will deliver stereo sound from video DVDs and play CD too.

The main function of these players is to reproduce video and its accompanying soundtrack, not play CDs with any special ability. So you will spend a few hundred pounds and your CD collection will sound no better – and very possibly worse. You will, however, be able to play music videos and movies, and their Dolby and dts sound tracks can sound quite impressive.



SOUND: superb sound is possible, arguably the best available today.

CONNECTIVITY: digital outputs allow external DACs or processors for better sound with low resolution tracks only.

AGAINST

SOFTWARE COST: DVD-A discs are expensive at £12-£25.

LEGACY AUDIO: poorer CD sound than a purpose designed CD player.

AVAILABILITY: DVD-A discs are rare on the High Street; best bought at specialist on-line retailers.

CONVENIENCE: a TV is needed for menu navigation, menus often complicated.

CONNECTIVITY: with the exception of Pioneer, Meridian and Denon, no external digital processing of high res. is possible.

FEATURES: loudspeaker distance compensation unavailable on high resolution analogue outputs.

FOR

COST: massive sales mean prices are coming down.

SOUND: good quality surround-sound from Dolby or dts digital, or even 24/96.

COMPATIBILITY: will play DVD-Audio discs, but only the low resolution tracks.

UPGRADEABILITY: digital outputs allow external DACs or processors for better sound.



AGAINST

CONVENIENCE: menus must be pre-set or format selected manually via a TV display.

SOUND: bitrate lower than CD when playing Dolby Digital or dts.

LEGACY AUDIO: poorer CD sound than a purpose designed CD player.

INCOMPATIBILITY: why buy one when DVD Audio players now cost the same? No SACD playback.

RELATIVE AND ABSOLUTE SOUNDS

How does a modern CD rate in the great audiophile scheme of things, and how much better are SACD and DVD-Audio. David Price opines...

Compact Disc was touted as being a better sounding format than LP when launched back in 1983, but that has come to be regarded as a fallacy. Audiophiles now agree that it lacks the three-dimensionality, organic sound and sheer musicality of analogue. Put, say, a £5,000 Michell Orbe/SME V/Ortofon Kontrapunkt against Linn's £12,000 Sondek CD12 and you'll find the turntable has oodles more bass power and articulation, a far more open, lyrical and expansive midband and sweeter, silkier and more extended treble.

The new 'advanced resolution' formats, SACD and DVD-Audio, attempt to make up the ground that CD gives. Far higher bitrates give a more accurate representation of the original analogue waveform. This is not to say that either format surpasses vinyl, but it romps ahead of CD nonetheless.

All the same, the theoretical superiority of the new formats don't automatically make for better sound. As always with hi-fi, you get what you pay for, and so a £200 DVD-A player will not surpass a good £600 CD in many respects.

SACD and DVD-A are technologically quite different. SACD, which is theoretically inferior, often gives more amenable results. It sounds smoother and more analogue-like than either CD or DVD, both of which use Pulse Code Modulation (PCM). SACD uses DSD digital, which Sony claim gives superior results to PCM - and it can sound quite beguiling. Musical Fidelity's TriVista SACD player (£4,000), for example, has a strikingly sweet and enchanting sound, not dissimilar to listening to vinyl via a classic Koetsu moving coil cartridge. Even at the budget end, Philips' DV963SA (£400) is impressively smooth, open and lucid.

It's important to remember that DVD-A discs are mastered at either 24/96 or 24/192, but the latter gives a smoother, less clattery and more three-dimensional sound.

SACD

The spiritual successor to CD, SACD uses Sony's DSD (Direct Stream Digital) music archiving format to give six high resolution channels of audio in the usual surround-sound format comprising three front loudspeakers, two rear and a subwoofer. Bandwidth is specified as reaching 100kHz and our measurements confirm this, so SACD is much like 192kHz PCM in this respect (i.e. DVD-A).

However, although SACD offers the equivalent of 20bit resolution up to 20kHz, above this noise rises steeply, limiting dynamic range to around 60dB, smothering any low level music harmonics that might exist. This defeats the purpose of having wide bandwidth and it has drawn criticism as a result. Amplifier and loudspeaker manufacturers are concerned about the wisdom of amplifying this noise and passing it through super-tweeters. DVD-Audio does not have this limitation. Still, SACD sounds good and is easy to use. SACD discs do not

carry either video or stills. Usefully, you do not need a TV to use SACD and SACD players generally play CDs well.

FOR

COMPATIBILITY: plays SACD, CD and often DVD video now.

SOUND: despite the measurements, most audiophiles prefer its smooth, natural, analogue-like sound.

MODE: surround-sound or stereo supported.

CONVENIENCE: no TV required, no fussy menus.

PRICE: only a small cost premium over DVD video or CD players.

AGAINST

COMPATIBILITY: does not play DVD Audio at full resolution

FEATURES: does not routinely provide video, unless specially equipped.

SOFTWARE COST: expensive (£12-£25) discs.

AVAILABILITY: discs are hard to find on the High Street, online is easier.

CONTENT: SACDs are ostensibly back catalogue releases.

CONNECTIVITY: analogue output only of high resolution material, no external digital processing possible.

FEATURES: loudspeaker distance compensation usually unavailable (Philips DVD963SA is an exception).

LEGACY AUDIO: poorer CD sound than a purpose designed CD player.





UNIVERSAL PLAYER

This new type of player demands the use of a special transport mechanism, enabling SACD, DVD-A, DVD video and CD playback. Other formats are also supported, such as VCD (video CD), MP3 CD and sometimes even photo CD.

The first universal player was Pioneer's DV-747 back in 2001, but now a wide range of machines are appearing from Pioneer's popular DV656 (£350) to Linn's new Unidisk 1.1 (£6500). Denon is shortly to release the DVD2900 (£899.99) and Teac, Marantz and Luxman have players coming too. Audiophiles are raising questions about the logic of running DSD through digital convertors designed for the PCM format.

FOR

COMPATIBILITY: DVD video, DVD-Audio, SACD and CD supported, plus more.

SOUND: 24/96, 24/192 and SACD all provide superb sonics

CONNECTIVITY: digital output allows external convertors or processor connection to improve sound of low resolution tracks only.

CONVENIENCE: offers the luxury of buying and playing anything.

AGAINST

CONVENIENCE: a TV is needed for menu navigation, menus often complicated.

CONNECTIVITY: with the exception of Pioneer, Meridian and Denon, no external high resolution digital processing is possible

FEATURES: loudspeaker distance compensation usually unavailable.

LEGACY AUDIO: poorer CD sound than a purpose designed CD player.

THE OBSCURE ALTERNATIVE

Noel Keywood proffers an intriguing way to improve the sound you get from your existing CD 

If you want to hear more from your Compact Discs, turn them into surround-sound! This has nothing to do with trying to get sounds whizzing around the room, so much as greatly improving frontal stereo. But you do need five loudspeakers at least. Oh, and you can use it with LP too!

Buy a surround-sound amplifier or receiver possessing Dolby Pro Logic II and connect your CD player to it via a digital link. Use Pro Logic II to unravel the stereo signal and direct it to the five loudspeakers.

What you get is a clearer and often smoother sounding front sound stage. Vocals in particular can emerge from a sea of apparent muddle to be represented with easy clarity centre-stage. Ambience and out-of-phase information folded into the front channels has been removed to the rear channels where it belongs.

The de-matrixing process of Dolby Pro Logic II literally unravels L/R stereo, which is better viewed as Left-total

and Right-total (Lt & Rt) rather than real L/R. It pulls out L+R of course and puts it into the centre channel, which becomes a real channel rather than a phantom constructed in your head! As a result, most vocals and drums have better centre-stage presence. The left and right loudspeakers now handle true L&R info. and they will sound clearer too. Support harmonies usually go to the rear 'speakers.

Discs I thought sounded muddled and congested were simply carrying too much information – and the wrong information - crammed into the front channels.

A de-matrixing system like this will also sort out LP and give interesting results, if not strictly correct, with old SQ and QS quad discs, since they were matrix encoded. It will also reveal many TV ads as matrixed surround-sound and even have you suspecting some of your CDs are really matrix four channel - and not stereo at all!

HI-FI WORLD'S GREAT COMPETITION GIVEAWAY

WIN A XITEL HI-FI LINK, COURTESY OF THE WEB'S NEWEST ONLINE GADGET SITE WWW.NIFTY-GADGETS.NET!!! THIS MONTH, HI-FI WORLD HAS TEAMED UP WITH NIFTY-GADGETS.NET TO OFFER FIVE LUCKY READERS ONE OF XITEL'S HIGHLY ACCLAIMED HI-FI LINKS!



If you want great sound from your computer, you used to have to go to the trouble of buying and fitting a serious soundcard. Now though, thanks to Australian company Xitel and its Hi-Fi Link, it's possible to get fine sound from any PC or Mac simply by plugging this miniature marvel straight into you computer's USB socket!

A simple, no-nonsense product designed for folk who simply don't want to trust to luck and suffer their computer's (invariably poor) built-in soundcard, it boasts a 20bit DAC and carefully selected componentry for high quality sound. This, plus the fact that it removes the sensitive audio electronics from the electrically noisy environment of a desktop or notebook computer, makes it a far

better performer than all but the best semi-pro aftermarket soundcards.

The Hi-Fi Link means that you'll no longer



need to rely on second-rate soundcards to play Internet radio, streaming audio or MP3s from your computer. It even gives great results with Dolby Digital 5.1 soundtracks (downmixed to stereo) from DVD movies played in your computer's DVD drive.

Normally retailing at £59.99, the easy-to-use, palm-sized Hi-Fi Link is optimised for delivering top-quality digital audio from PCs and Macs, direct to your system. Just plug it into your computer's USB socket at one end, and the supplied 10m studio-quality audio cable with gold plated connectors into your amplifier's auxiliary input at the other, via its 3.5mm stereo mini-jack socket. With no need to open up your computer, make any modifi-

cations or download any drivers, it's a breeze to use! For more information about any Xitel products, log on to www.nifty-gadgets.net.

If you would like to take up nifty-gadgets' great offer, just answer the questions on a postcard together with your name, title, address and telephone number and send it to our address on the left.

The five lucky winners will be notified directly. No entries accepted from anyone connected with the company. Responsibility will not be accepted for any entries lost or delayed. No cash alternative. The winners will be the first correct entries selected after the closing date of 30th June 2003, and will be notified shortly afterwards.

Competition Questions

[1] Which computer part usually handles audio?

- [a] hard disk
- [b] soundcard
- [c] mouse
- [d] keyboard

[2] What does the hi-fi link contain?

- [a] a scanner
- [b] a 20-bit DAC
- [c] an optical coupler
- [d] a bit of cheese

[3] which port does the hi-fi link use?

- [a] printer port
- [b] USB port
- [c] mains socket
- [d] Bristol

[4] What is nifty gadgets' web address?

- [a] nifty.com
- [b] www.nifty-gadgets.net
- [c] nifty online
- [d] nifty net

July Competition
Hi-Fi World Magazine
Unit G4 Argo House
The Park Business Centre
Kilburn Park Road.
London NW6 5LF

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

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

CONGRATULATIONS

...to Mr. Trevor Kelly of Kings Heath, Birmingham the winner of our May 2003 competition. A pair of Tannoy Sensys 1 loudspeakers are on their way to you!

Sevenoaks
SOUND & VISION



Summer Blockbuster Sale 7 June - 12 July

Don't bother going to the cinema
this summer - treat yourself to a hi-fi
or home cinema system from the
Sevenoaks Sale instead...





Free ortofon Cartridge
With selected Turntables - Ask instore for details

PRO-JECT

RPM4 Turntable £349.95

"If you want severe turntable styling on a budget, you need look no further than this. The shape of the main plinth here follows the outline of the record platter and arm to give a cut away look to the deck, and while it looks a bit like a cakestand with the dustcover in place, in use the RPM4 looks much more the business."

The RPM4 soon impresses with the quality feel of its arm and the screw-down clamp to hold and flatten records, and as soon as the stylus settles into the groove it's clear this is a superior player. There's much less surface noise than with the Debut, and the music has much greater scale and power, allied to closer detailing. That lovely organic feel you only seem to get from great vinyl playback is apparent... This is a very grown-up record player for reasonable CD player money: it's well worth exploring."

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



Michell Gyro SE/RB300
£1049.95

Turntables & Tuners

Arcam DIVA T61 Tuner.....	£199.95
Cyrus FM X Tuner.....	£499.95
Denon TU260L MKII Tuner.....	£99.95
Marantz ST4000 Tuner.....	£109.95
Michell Gyro SE/RB300 Turntable.....	£1049.95
Michell TecnoDec Turntable.....	£599.95
Project Debut Phono SB Turntable.....	£169.95
Project Debut II Turntable (Black).....	£119.95
Project Debut II Turntable (Colour).....	£134.95
Pure Evoke 1 DAB Radio.....	£99.95
Pure DRX-701ES DAB Tuner.....	£219.95
Sony ST-D777ES FMDAB Tuner.....	£499.95

STARTER SYSTEM

marantz
CD4000 (Black) CD Player
PM4200 (Black) Amplifier

MISSION
m71i Speakers

List Price £420

£299.95 SAVE £120

Includes audioquest Cable Worth £20 FOC

ROTEL

RCD-02 CD Player **£379.95**
RA-02 Amplifier **£349.95**

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

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 of

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



WHAT Hi-Fi? ★★★★★ August 2002

CD Players

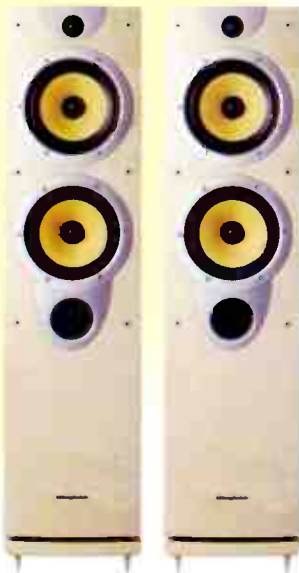
Claim 10% Off RRP On Selected British CD Players
Ask instore for details - *NICWAOO

Arcam DIVA CD62T.....	£369.95
Arcam DIVA CD72T.....	£449.95
Arcam DIVA CD82T.....	£599.95
Arcam DIVA CD93T.....	£949.95
Arcam FMJ CD33T.....	£1299.95
Cyrus CD6.....	£599.95
Cyrus CD8.....	£999.95
Denon DCD485.....	£129.95
Linn Genki.....	£994.95
Linn Ikemi.....	£1949.95
Marantz CD4000.....	£99.95
Marantz CD6000Ki Signature.....	£349.95
Marantz CD17/II M.....	£799.95
Meridian 507.....	£1194.95
Musical Fidelity A308.....	£1999.95
Musical Fidelity Tri-Vista SACD.....	£3994.95
Quad 99 CD-P.....	£999.95
Roksan Caspian.....	£994.95
Rotel RCD1070.....	£494.95
Sony CDPXE570.....	£99.95

Please Note: Some products may not be available at all outlets.
*NICWAOO = Not in conjunction with any other offer. E&OE.

Wharfedale

Pacific Evo 30 Speakers £649.95



"Evolution? This is more like a revolution. Wharfedale's new range is more than just an upgrade of its Pacific series. The changes are radical, but the most obvious transformation is the removal of the original's unattractive tweeter module, which was situated on top of the speaker. The tweeter housing is now sunk into the Evo 30 cabinet, the intention being to improve dispersion and benefit from the improved rigidity of the strongest point of the cabinet.

Listen to the Evo 30s and the sonic changes leap out at you. Sitting on their chunky spikes and situated in free space, the speakers sound wonderful. Low frequencies delve deep and delivery is punchy and fast...

You'll have gathered by now that we love the Evo 30s. They're beautifully made and are great all-rounders."

WHAT Hi-Fi? ★★★★★ March 2003

Free audioquest

Speaker Cable worth £40 with ALL Speakers over £170
*NICWAOO



Also Available
Acoustic Energy
Aegis Evo One
£179.95



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Amplifier Selection

Claim 10% Off RRP On Selected British Amplifiers

Ask instore for details - *NICWA00

Arcam DiVA A65 Plus Amplifier	£369.95
Arcam DiVA A75 Plus Amplifier	£429.95
Arcam DiVA A80 Amplifier	£599.95
Arcam DiVA A85 Amplifier	£799.95
Arcam FMJ A32 Amplifier	£1149.95
Cyrus 6 Amplifier	£599.95
Cyrus 8 Amplifier	£799.95
Denon PMA355 Amplifier	£199.95
Harman Kardon HK670	£299.95
Linn Kolektor Pre Amplifier	£494.95
Linn LK85 Power Amplifier	£494.95
Marantz PM4200 Amplifier	£149.95
Musical Fidelity A3.2 Pre Amplifier	£999.95
Musical Fidelity A3.2 Power Amplifier	£999.95
Musical Fidelity A308 Amplifier	£1999.95
Musical Fidelity Tri-Vista 300 Amplifier	£3954.95
Quad 99 Power Amplifier	£549.95
Roksan Caspian Amplifier	£894.95
Rotel RA-01 Amplifier	£249.95



LAST CHANCE!
LIMITED STOCK AVAILABLE

ARCAM
SOUND & VISION

GRAND SYSTEM £999.95 Save £290

**CD72T CD Player
A75 Plus Amplifier
T61 RDS Tuner**

List Price £1189 • Arcam Grand System not available in conjunction with any other offer.



Free
beyerdynamic)))
DT531 Headphones
Worth £99.99
When you purchase the
Arcam Grand System

ARCAM
Claim £250 Off the Speakers of your choice

When purchased together with any Arcam CD & Arcam Amplifier combination.

Min Spk Value £400 - Offer excludes 'Grand System'

*Not in conjunction with any other offer



MISSION

780SE Speakers £349.95

Free
audioquest®
Speaker Cable
worth £60 with ALL
Speakers over £280
*NICWA00

"The Mission 780s held our Product of the Year title until the pesky Quad 11Ls appeared and knocked them off the winner's rostrum. So how does 'Mission respond? Simple, it designs a 780 Special Edition.

The main aim is to increase detail and resolution throughout the frequencies, and after a 50-hour run-in, this wish seems to have been fulfilled... The revamped Mission 780s are hugely enjoyable: anyone with up to £400 to spend should consider the standmounters. Mission's clever move has paid off."

WHAT HI-FI ***** February 2003



Mission 782SE
£899.95

PURE
DIGITAL

DRX-701ES Digital Tuner £219.95 Save £30



Also Available
B&W 600 Series

"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.

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."

WHAT HI-FI ***** October 2002



WHAT HI-FI
Product
of the year
2002
TUNERS
PURE DRX-701ES

pricing policy

We always try to ensure our prices are highly competitive. In the event you can find the same products and excellent service at a lower price, please bring it to our store managers' attention.

World Radio History



CYRUS
Claim £250 Off the Speakers of your choice
 When purchased together with any Cyrus CD & Cyrus Amplifier combination. Min Spk Value: £400.
 *Not in conjunction with any other offer.



CD8 CD Player £999.95
8 Integrated Amplifier £799.95

Cyrus has been developing high performance hi-fi systems for nearly 20 years. Today their upgradeable, modular product range includes multi-room systems, home cinema and some of the world's finest hi-fi systems. Cyrus products are hand finished, half size die-cast enclosures and include a hidden digital command system that allows simple operation of any size system.

Joining the new Cyrus 8 amplifier is the stunning new high performance, upgradeable CD player, the CD8. Other new models in the 8 series include the AV8 digital AV processor and a new disc player, DVD8, featuring specially tuned video and audio circuitry.

Cyrus 8 Amplifier "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." **WHAT HI-FI? ★★★★★ January 2003**

Also Available
Roksan Caspian Amplifier
£894.95



ROKSAN

Kandy KA1 MKIII Amplifier £544.95

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

Also Available
Musical Fidelity Tri-Vista 300 Amplifier • £3994.95




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." **WHAT HI-FI? ★★★★★ October 2002**

QUAD

Free audioquest.

Speaker Cable worth £60 with ALL Speakers over £280 *NICWA00

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 £1000 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



Acoustic Energy AE1 MKIII
 Prices From £1699.95

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.

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." **WHAT HI-FI? ★★★★★ August 2002**



Speaker Selection

Acoustic Energy Aegis Evo Three	£349.95
B&W CDM 1NT	£749.95
B&W CDM 7NT	£1249.95
B&W DM303	£179.95
B&W DM601 S3	£249.95
B&W DM602 S3	£299.95
KEF Q1	£249.95
KEF Q3	£399.95
KEF XQ1	£999.95
Linn Katan (Cherry/Maple)	£634.95
Linn Ninka (Cherry/Maple)	£1044.95
Mission 780SE	£349.95
Mission 782SE	£899.95
Mission m74i	£299.95
Monitor Audio Bronze B2	£199.95
Monitor Audio Silver S1	£299.95
Monitor Audio Gold Reference 10	£799.95
Monitor Audio Gold Reference 20	£1499.95
Quad 22L	£895.95
Ruark Epilogue II	£344.95
Ruark Etude	£649.95
Wharfedale Diamond 8.3	£199.95
Wharfedale Pacific EVO 30	£649.95

Please Note: Some products may not be available at all outlets.
 *NICWA00 = Not in conjunction with any other offer. E&OE

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MUSICAL FIDELITY A3.2 Series

A3.2 CD Player £999.95
A3.2 Amplifier £979.95

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.



MUSICAL FIDELITY

Claim £350 Off the Speakers of your choice

When purchased together with any MF CD & MF Amplifier combination. Min Spk Value £500
*Not in conjunction with any other offer



MONITOR AUDIO Silver S6 Speakers £599.95

Free audioquest Speaker Cable worth £100 with ALL Speakers over £500
*NICWA00

British loudspeaker manufacturer Monitor Audio has introduced a replacement 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 S6, S8 and S10 floorstanders.



"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 best is 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, they thunder out *Mars* with true conviction.

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."

WHAT HI-FI? ★★★★★ October 2002

Pioneer PDR609 CD-RW Recorder £189.95

"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."

WHAT HI-FI? ★★★★★ August 2001

Recorder Selection

Harman Kardon CD-R30 CD-RW.....	£499.95
Marantz DR6000 CD-RW.....	£269.95
Sony RCDW3 CD-RW.....	£219.95
Yamaha KX393 Cassette Deck.....	£119.95
Yamaha KX580SE Cassette Deck.....	£199.95
Yamaha CDR-HD1300 CD-RW.....	£499.95



WHAT HI-FI? Product of the year 2002
RECORDERS Pioneer PDR-609

pricing policy

We always try to ensure our prices are highly competitive. In the event you can find the same products and excellent service at a lower price, please bring it to our store managers' attention.

World Radio History



Systems
Best Buy £1000 plus



Claim £250 Off

the Speakers of your choice when purchased at the same time as the Linn Classik Music System
Minimum Speaker Value £350

Includes **audioquest** Cable Worth £50 FOC

*Not in conjunction with any other offer



LINN

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."

What Hi-Fi? ★★★★★ Awards 2001



Also Available
Classik Movie System
£1499.95 • SAVE £500

Save £100

ACOUSTICS
REL

Free audioquest Cable

Worth £100 When You Purchase any REL Subwoofer Over £499

*Not in conjunction with any other offer

Strata III Subwoofer (Wood) **£699.95**

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.



Quake (Wood) **£424.95**

"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."

What Hi-Fi? ★★★★★ July 1999



Free audioquest Cables

Worth £500 When You Purchase the AV30R & 100x5 Combination

*Not in conjunction with any other offer



TAG McLaren

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."

What Hi-Fi? ★★★★★ October 2002

Please Note: Some products may not be available at all outlets.
*NICWAOO = Not in conjunction with any other offer. E&OE



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World Radio History



outlets nationwide

- Aberdeen** 491 Union Street **01224 587070**
Bedford 29-31 St Peters Street **01234 272779**
Birmingham Arch 12, Livery Street **0121 233 2977**
Brighton 57 Western Road, Hove **01273 733338**
Bristol 92b White Ladies Road, Clifton **0117 974 3727**
Cambridge 17 Burleigh Street **01223 304770**
Cardiff 104-106 Albany Road **029 2047 2899**
Cheltenham 14 Pitville Street **01242 241171**
Crawley 32 The Boulevard **01293 510777**
Edinburgh 5 The Grassmarket **0131 229 7267**
Exeter 28 Cowick Street **01392 218895**
Glasgow 88 Great Western Road **0141 332 9655**
Guildford 73b North Street **01483 536666**
Hull 1 Savile Row, Savile Street **01482 587171**
Ipswich 12-14 Dogs Head Street **01473 286977**
MOVED Leeds 62 North Street **0113 245 2775** Open Sunday
Leicester 10 Loseby Lane **0116 253 6567**
Lincoln 20-22 Corporation Street **01522 527397**
Liverpool 16 Lord Street **0151 707 8417**
Maidstone 96 Week Street **01622 686366** Open Sunday
Manchester 69 High Street, City Centre **0161 831 7969**
Newcastle 19 Newgate Street **0191 221 2320**
Norwich 29-29a St Giles Street **01603 767605**
Nottingham 597-599 Mansfield Road **0115 911 2121**
Oxford 41 St Clements Street **01865 241773**
Peterborough 36-38 Park Road **01733 897697** Open Sunday
Plymouth 107 Cornwall Street **01752 226011**
NEW Poole Latimer House, 44-46 High Street **01202 671677**
Preston 40-41 Lune Street **01772 825777** Open Sunday
Reading 3-4 Kings Walk Shopping Centre **0118 959 7768**
Sevenoaks 109-113 London Road **01732 459555**
Sheffield 635 Queens Road, Heeley **0114 255 5861** Open Sunday
NEW Solihull 149-151 Stratford Road **0121 733 3727**
Southampton 33 London Road **023 8033 7770**
Swansea 24 Mansel Street **01792 465777** Open Sunday
NEW Swindon 8-9 Commercial Road **01793 610992**
Tunbridge Wells 28-30 St Johns Road **01892 531543**
Witham (Essex) 1 The Grove Centre **01376 501733**
NEW Wolverhampton Burdett House, 29-30 Cleveland St. **01902 312225**

within the M25

- Bromley** 39a East Street **020 8290 1988**
Chelsea 403 Kings Road **020 7352 9466**
Croydon 369-373 London Road **020 8665 1203** Open Sunday
Epsom 12 Upper High Street **01372 720720** Open Sunday
Holborn 144-148 Grays Inn Road **020 7837 7540**
Kingston 43 Fife Road **020 8547 0717** Open Sunday
Southgate 79-81 Chase Side **020 8886 2777**
Swiss Cottage 21 Northways Parade, Finchley Rd **020 7722 9777** Open Sunday
Watford 478 St Albans Road **01923 213533** Open Sunday

Please call to verify hours of business.
 Contact our outlets via E-Mail outlet@sevenoakssoundandvis.on.co.uk

who are sevenoaks?

Founded in 1972, Sevenoaks Sound & Vision is 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 Hi-Fi Separates to Widescreen Plasma Televisions and Projection Systems, all at highly competitive prices.

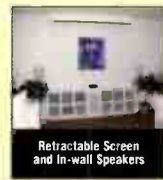
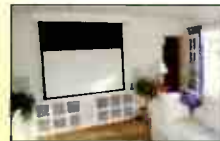
Friendly staff are available in all stores to advise, demonstrate and guide you through the home entertainment jungle.

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. Also, our **Leeds** store has re-located to larger premises.

custom installation

Sevenoaks Sound & Vision's Custom Installation Service enables the integration of a home cinema or hi-fi system into your home as neatly and seamlessly as possible. All electronics can be hidden away, speakers discreetly mounted either in the wall or ceiling and the complete system operated via remote control.



Retractable Screen and In-wall Speakers

Our installation experts are fully trained to the highest standards in all areas and provide a prompt, reliable and professional service. Whether you're looking for a multi-room system, a dedicated home cinema installation with a retractable screen and built-in speakers or an integrated control or lighting system, Sevenoaks Sound & Vision has a diverse range of products available to cater for all your requirements.

sevenoaks online

The Sevenoaks Sound & Vision website has news and information on the Sevenoaks group and its 48 outlets nationwide. The website is designed to provide you with answers to the questions you may have when buying new equipment.

There are regularly updated stock clearance lists with hundreds of products on offer and detailed pages to help you locate your nearest outlet.

For impartial advice and information, just click on sevenoakssoundandvision.co.uk

stock clearance

With 48 outlets nationwide, the Sevenoaks Sound & Vision group stock and display a wide range of products. As individual models and product ranges are changed or superseded, the preceding models are made available at a reduced price, for clearance. Visit our Website for an up-to-date list of the clearance stock, listed by outlet, within the Sevenoaks Sound and Vision group.

0% finance option†

Spread the cost of buying. 0% finance option is available on the vast majority of products we stock. †Written details on request. Licensed credit brokers. Minimum balance £400. Subject to status.

pricing policy

Whilst we do not claim always to be the cheapest, we try to ensure our prices are highly competitive. Take into account the expert advice, unrivalled product selection, demonstration facilities and excellent pre, during and after sales service and the lower price might not look such good value.

In the event you can find the same products and excellent service at a lower price, please bring it to our store managers' attention. We will always endeavour to offer you the best deal.

WEIGHT FOR IT

Here's a CD player you can use about town – the remarkably light new Philips AX7201 portable.

Unashamedly a high end design, Philips AX7201's £100 price tag puts it well above the average cheap and cheerful piece of mass produced plastic you see on the high street.

For under £50 you can buy Aiwa's perfectly capable XP-V731. It has ropey build, dodgy ergonomics, but sounds dangerously close to far more expensive designs, such as Sony's sleek D-EJ1000.

Philips new machine is interesting inasmuch as it looks like a concerted effort to out-Japanese the Japanese. This, lest we forget, it takes as a matter of pride, its ability to produce ever-smaller and ever more powerful gadgets and gizmos. It is very much their thing to make music players as small as the format permits, so when Europe's very own consumer electronics giant announced it's own take on the 'less is more' theme, we couldn't resist a look.

At 14.3mm thick, you'd have very little reason to doubt Philips' PR people's claim that it's "about the slimmest model on the market" – until you measure its more expensive Sony rival, which clocks in an almost sub-atomic 13.2mm. Frankly, the extra 1.1mm bulk of the Philips machine isn't an obvious extra encumbrance – indeed you could almost view it as a visibility aid in low light! Speaking as an avowed MiniDisc user (yes, still!), the truly significant dimensional disadvantage lies in its diameter, which for obvious reasons cannot be less than CD's 12.7cm girth. The AX7201 comes in at around 13cm, which is still too big for my top pocket.

It is exquisitely hewn from die-cast magnesium alloy, a unique composite material that allows for a featherweight frame that's both strong, stiff and heat resistant (quite why it needs to be is unclear, however). Inside lurks the latest CD, CD-R and CD-R/W compatible mech, complete with 45 second electronic shock protection and the latest 1 bit DAC. Also inside are a pair of rechargeable gum stick-type ECO-PLUS Ni-MH batteries, and there's a separate twin AA battery pack that plugs in to a socket on the side. Together, they achieve an outstanding 72 hours of playback. On the underside are play/pause, stop, track search and volume controls.

The unit also comes supplied with a remote that offers an LC display, dynamic bass boost switch and CD programme modes such as repeat, programme and shuffle. It plugs into a non-standard 2.5mm socket in the main CD player via its own flying lead, and offers a 3.5mm socket for headphones or line output. It's a shame that there's no 3.5mm socket on the machine itself, as it could offer a direct port to a hi-fi system without having to go via the remote and its (invariably) sonically deleterious flying lead. Likewise, unlike Sony (with its passion for MD portables) no direct digital output is offered – shame.

Anyway, the good news is that this machine sounds as good as it looks and feels – which is very good indeed. It is smooth right across the frequency band, just a little rolled off up top, and with a good degree of musicality. There's a decent degree of detail, depth and image articulation here – allied to a smoother sound than your average £100 cheapo separate would give.

Overall then, this comes heartily recommended. It's easily as good as Sony's 'lifestyle' rival (at nearly twice the price) bar a few niggles, and far better than most price rivals. It's also a great step up (in every way) from the likes of Aiwa's great value XP-V731. It sounds good, looks great and is beautifully screwed (glued?) together. A great argument for taking music out on the move with you.

Philips AX7201 £100

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World Verdict

Great build, fine sound and keen pricing make this high end CD portable superb value for money.

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FOUR PLAY!

Remember Quadraphonic? Not many do, it seems. But look closer and it's a weird and wonderful world of eccentric analogue audio for your pleasure. David Price, Hi-Fi World's very own 'quadfather', investigates...

Ah, quadraphonic! The very name conjures up the worst of nineteen seventies excess. At a time when technology barely enabled decent two-channel stereo, a number of hardware and software manufacturers came together to bring us four channel hi-fi sur-
Quadraphonic - the word upon every audiophile's lips back in 1972

round sound, whether we wanted it or not.

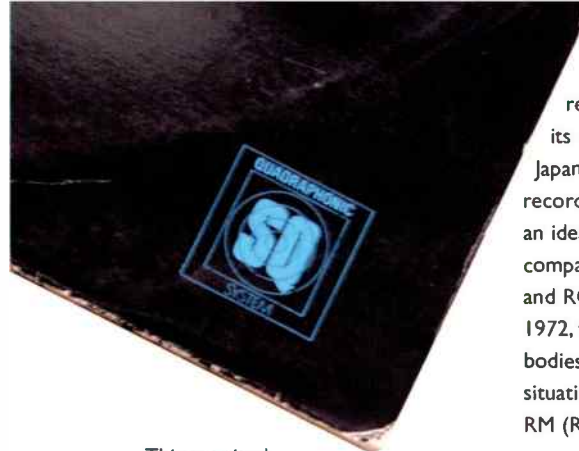
Unfortunately for them, the latter was true. Maybe it was the music buying public's eager adoption of stereo, which by the early seventies was catching on apace, that made the audio and music industries alike believe that if two speakers were better than one, then four were better than two and quad would sell.

Unlike today's digital surround sound, quad was all about music; there were no pictures. The very first domestic quadraphonic recordings weren't vinyl-based at all, but open reel - which was seen by many as the only serious music carrier around. With this in mind, a handful of music companies, such as Vanguard, released 4-channel pre-recorded reel-to-reel tapes as early as 1969. Fully discrete quadraphonic (using

completely separate channels right along the replay chain) wasn't a practical domestic proposition however, as few could afford expensive reel-to-reel tape decks and buy their music on 10.5 inch spools of magnetic tape, so vinyl stepped in to fill the void.

When Peter Scheiber presented a paper to the Audio Engineering Society on how to make two channel recordings matrix to four channel quadraphonic, LP-based quad finally became a reality. CBS Records duly snapped up the rights and spent a couple of years developing the hardware. Then in 1972, SQ (Surround Quadraphonic) was finally launched to a bewildered public. Naturally CBS wanted every other label to pay royalties, which went down like a lead balloon, so arch rival RCA (part owner of JVC) came up with an altogether more elaborate, non-matrixed system called CD-4 (Compatible-Discrete four channel).





This required special records with a much steeper "cut" angle than conventional LPs, to enable a high frequency "carrier" signal. Although an altogether superior system in theory, offering proper 'discrete' surround from vinyl, it became troublesome in practice.

The smaller labels had a choice of either paying royalties to RCA or CBS, or developing yet another system, which they duly did! Just as CBS was making SQ a commercial

Stereo Quadraphonic - the first to market, and it showed!

reality, so Sansui was developing its own matrix system. A smallish Japanese hi-fi specialist with no record manufacturing arm, it proved an ideal partner for other record companies outside the ambit of CBS and RCA. Thus was born QS. In 1972, two Japanese audio industry bodies tried to make sense of the situation, and designated QS as the RM (Regular Matrix) system.

The result of three new systems rolling out in the space of a year was, as you'd expect, sheer confusion. The essential similarities between SQ and QS, and their complete incompatibility with CD-4, were hard to explain to music buyers who'd only just started routinely buying stereo LPs! The fact that SQ and QS matrix decoders could not demodulate CD-4 records to give discrete four-channel surround, yet could 'synthesise' surround sound in much the same way as Dolby Pro Logic II does today, was even harder to explain.

As for CD-4 – suffice to say that the hi-fi magazines of the day had an uphill struggle in explaining it to a perplexed public.

Despite this, the industry made a concerted collective push on both hardware and software. Hundreds of titles appeared, ranging from Hot Butter, Barry Manilow, Cat Stevens, The Temptations and Frank Zappa on CD4, to Billy Joel, John Lennon, Pink Floyd, Santana, Paul Simon, Sly and the Family Stone, Steely Dan on SQ.

Even 45RPM singles got quad releases, the

very first 7" SQ release being Art Garfunkel's *Mary Was an Only Child* on CBS.

Despite their endeavours, in the classic mould of a hi-fi format war, no sooner had the legal wrangles been resolved, the products developed and debugged, advertising money spent and the magazines invested countless column inches on explaining it all, then the whole quadraphonic shebang fell flat on its feet!

Although 'quad' can be viewed as an object lesson in how not to develop a new format and present it to the public, it wasn't a complete waste of time. It's a matter of historical record that the format(s) flopped, but there were still several redeeming factors. First, they did actually sound quite good. Matrix quadraphonic synthesised from stereo could actually be highly impressive, despite the relatively poor separation of early decoders. CD-4, in theory a fully discrete system, was capable of excellent results – although of course it couldn't always achieve them in practice.

CD-4 also brought vinyl some valuable spin-offs. For example, JVC developed its own special virgin vinyl formulation with super low noise and wear characteristics, which went on to be used in many Japanese-pressed stereo LPs – and even Mobile Fidelity Sound Labs' first Original Master Recording series. (Play a standard US pressing of, say, Steely Dan's *Aja* against a Japanese version and you can hear the difference – the latter being dramatically smoother, sweeter and quieter sounding.)

CD-4 also catalysed advances in pick-up cartridge technology - with the carrier running at 28kHz, it was necessary to develop a stylus profile that went deep into the record groove yet didn't wear out the delicately embedded back channel information. The resulting Japanese-developed Shibata stylus both contacted a larger surface area of the record and lessened groove downforces, sparking a wave of extended groove contact cartridges, such as Pickering's 'Stereohedron', Stanton's 'Quadrhedral', Bang & Olufsen's 'Multi-Radial' and Shure's 'Hyperbolic'. The benefits of this stylus tip transformed the next generation of cartridges.

Finally, much of the research work that went into matrix surround sound made today's digital surround possible. It laid the blueprint for what is now proving to be the biggest revolution in recorded music since the introduction of digital audio – digital surround. Although it has taken a circuitous route via 'home cinema' and movie sound, multichannel music is fast becoming the new standard. To play the wealth of two channel music – the vast

YESTERDAY AND TODAY

Here's how the original analogue SQ pressing of Pink Floyd's *Dark Side Of The Moon* compares to the brand new digital multichannel SACD mix!

The amount of surround sound information on LP isn't huge, but very much there nonetheless. The analogue quad mix provides gentle ambient detailing and cues, with the odd strong lunge to the back left or right when the producer demands.

By contrast, the digital 5.1 mix gives far stronger discrete soundstaging, pushing instruments out of the back channels more explicitly. The SACD mix is quite breathtaking at times.

The matrixed analogue LP sounds softer, warmer and more woolly but is actually more beguiling. While the whirling synthesisers and special effects (cash registers in *Money*, for example) are so much more precisely located from SACD, the guitars in *Us and Them* sound more plaintive and powerful on LP, giving greater emotional impact.

Both analogue 4.0 and digital 5.1 proved surprisingly good in practice.





Technics SH400 CD-4 demodulator - festooned with knobs and impossibly fiddly to use - but hey, it was 1975!

majority of most peoples' music collections – matrix decoding is appearing again, albeit in digital format. Dolby Pro-Logic II uses a steering logic, just like the SQ and QS systems before it. In truth, it's not far away from quad systems, inasmuch as it has full range front left and front right plus rear left and rear right. The only real difference between 4.0 and 5.1 are the centre and subwoofer channels - the former can easily be derived from summing the front left and right, and the bass channel isn't needed with full range loudspeakers anyway – it's more of a home cinema thing. In truth, the two systems work surprisingly similarly.

By 1975 it was all over for quadraphonic. Although RCA had poured millions of dollars into CD-4, JVC had single-handedly transformed vinyl pressing technology and the world had gained an important new stylus profile, the public simply didn't want to know. A raft of new 'bolt on' quad formats arrived on the scene to confuse

things still more (i.e. Denon's UD-4, Stereo-4 and Dynaquad). Quadraphonic preamps, decoders and receivers got ever better – the 1976 model year designs were dramatically more musical than those of 1973 – but it was all too late. The equipment hung around in manufacturers catalogues until as late as 1977, where Sony – for example – was still proudly displaying its high end SQ decoder, but the end was nigh for quadraphonic and by 1979 the whole gloriously ill-conceived project had simply disappeared from the face of the earth.



Quadradisc - the only fully discrete four channel vinyl format, and a pain to get working!

QUAD – THE RIVALS

STEREO QUADRAPHONIC

SQ emerged from the CBS Technology Center in April 1971. Rear channel information was cut into the record using an intricate process which added double helical groove modulations, alongside vectored modulations for the front channels. By sensing the phase relationships between the channels, the SQ decoder attempted to send the appropriate signals to the appropriate loudspeaker. This idea of a 'non-symmetrical phase matrix' using phase shift networks to divide up the sounds was a very sophisticated one for 1971. The results weren't spectacular, giving only around 3dB of channel separation between the front and rear speakers – due to the need to retain excellent left-to-right separation at the front. Later 'logic decoders' gave far better results. Any matrix quad system (SQ, QS/RM, EV-4) decoded any matrix-encoded record, but the results weren't always consistent!

QUADRAPHONIC STEREO

Sansui introduced QS in February 1972. Like SQ and EV-4, it could decode any matrixed quad encoded record, and synthesise quad from a stereo source. A very close cousin was RM (Regular Matrix), which is said to be QS but without logic in the decoder. QS was often said to be dramatically better than SQ when synthesising quad from a stereo source, giving up to 20dB front to rear separation and 10dB from left to right. By 1973, Sansui had developed its SQ decoders with logic circuitry and a range of parameter adjustments to give 'Vario-Matrix'. The quad cognoscenti generally agree this works very well, making stereo and matrixed quad discs sound vibrant and engaging.

COMPATIBLE DISCRETE-4 CHANNEL

A discrete four channel surround sound from vinyl, CD-4 pushed record manufacturing technology to the limit! A high frequency carrier signal (a la FM stereo) handled two extra channels of audio in RCA's CD-4 Quadradisc system launched in May 1972. Super-fine grooves were cut into the vinyl to carry signals between 20-45kHz, which the CD-4 demodulator sensed and 'downconverted' to the audio band of around 100Hz-15,000kHz and sent to rear loudspeakers.

The limitations of tonearms of the day created difficulties. Shibata styli needed tracking at less than 2g – routine today but fanciful back then. Mistreatment, dirt and worn styli simply wiped out the HF information. Finally, CD-4's channel separation wasn't obviously better than later matrix decoders, which were far easier to use.

SOUND AFFECTS

Matrixed analogue quadraphonic (i.e. SQ or QS) sounds surprisingly soft, warm and cohesive. Anyone reared on digital surround will be amazed! Quad albums do really offer a sense of surround, with instruments moving around between all four speakers, but there's a quite strong centre image - in part due to SQ's poor separation figures. This isn't a bad thing, however, as it doesn't detract from the overall musical experience and can actually sound quite cohesive. The absence of a front centre channel simply isn't obvious. Ultimately, QS (RM) sounded more vibrant than SQ, but this could be down to the equipment used. Nonetheless, on well-recorded discs, the surround effect was obvious but not intrusive.

CD-4 was probably the most impressive in a 'hi-fi' sense – the back channel information was most explicit – although it didn't gel and cohere as well as QS. Some CD-4 recordings showed crass use of multi channel mixing spreading musicians all over the place needlessly, although the occasional CD-4 cut, such as Harry Nilsson's Nilsson Schmilsson, worked superbly with oodles of detail and clarity. Ultimately, CD-4 gives real sound fields between any combination of channels, which matrix recordings cannot – and it shows.

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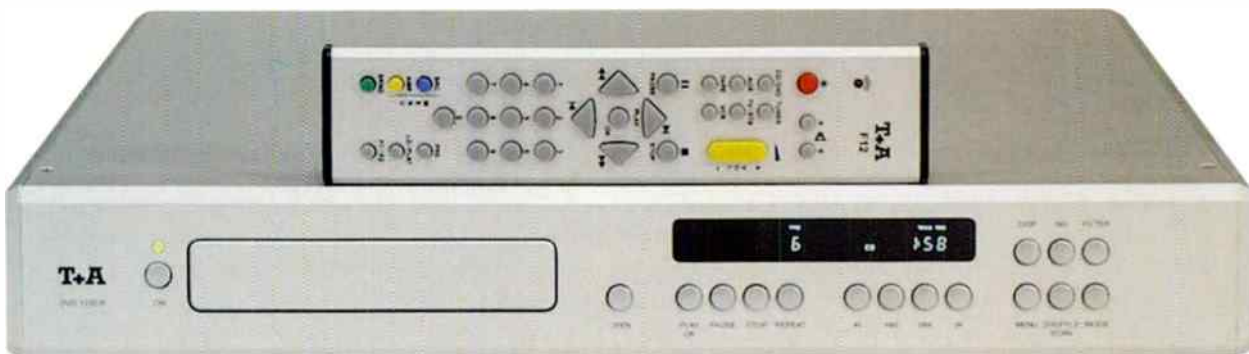
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NEW ADDITION



Although you'd never expect serious sound from just any old mid-price DVD video spinner, you may well from a high end delight such as this. Sporting no fewer than five selectable digital filters, T+A's 1230R has real audiophile pretensions, so how does it stack up? Noel Keywood does the maths...

Want a high quality DVD player that also plays CDs as well - if not better - than your last Compact Disc spinner? Then this is precisely the sort of thing you may be considering. T+A's 1230R would seem to have it all - exquisite build, superb finish, audiophile pretensions and a price tag to match - £1,999!

Not having much experience of T+A products, although aware of their reputation as serious German high-end, I lifted the review machine out of its box carefully and placed it on my equipment rack. With six phono leads in my hand I went to make connection but then realised that this is a video player without on-board decoding, and sans DVD-A or SACD output, so there are precious few sockets on the back and certainly not enough for my handful of leads. You get stereo - and that's it! For surround-sound the player outputs Dolby and DTS digital,

which I channeled into an A/V receiver through an optical digital link. Video is output from a SCART, S-Video or CVBS socket, with accompanying audio from stereo phono sockets (for a TV or suchlike). Another pair of stereo sockets channel high quality audio out to a hi-fi system. In a non-T+A system like mine a small remote control receiver must be plugged into a rear 3.5mm jack socket. This is an extra wire and device which some may object to as unnecessary complication when everyone else manages to incorporate the remote receiver into the main chassis. There are occasions however, when a player is not in view for example, when a distant receiver like this is a benefit, allowing remote control to work around corners, as it were; it depends upon your domestic set up.

There is an on-screen setup menu, Philips style. This gives you some basic video options like Widescreen, expanded widescreen for 4:3 sets or 4:3 (TV). The digital output can be set to Off, PCM or All

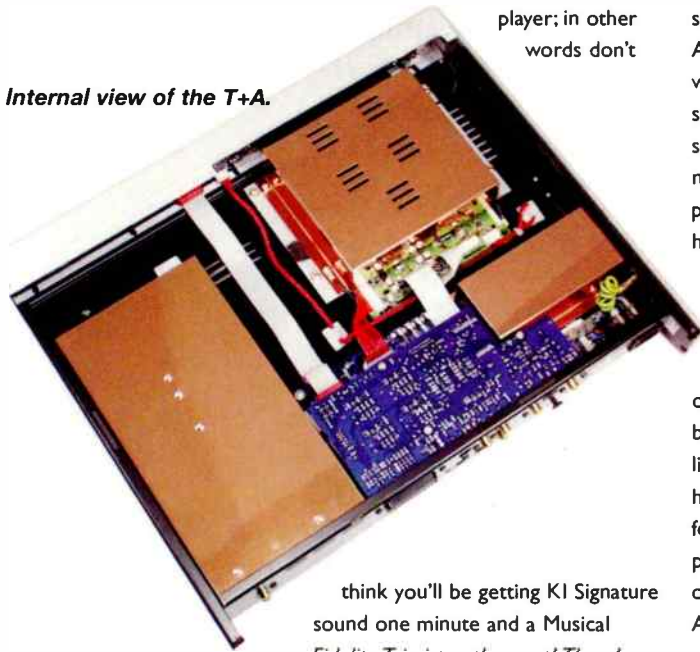
and the analogue output can be set to Pro Logic (i.e. matrixed output) or Stereo. There is also Night Mode (compression applied) and Karaoke. There are no other picture quality settings however, making this a pretty basic set of features by current standards. My sample came set with all German menu text too, although fortunately the Philips control system comes with just about every language possible as an option for on-screen menus.

The 1230R is solidly made and quite heavy as a result. Measuring 443mm wide by 370mm deep it will fit a standard '19in' rack, but not with much to spare. The T+A is both wide and deep. It is fairly shallow though, measuring just 78mm high.

As a video player the 1230R is pretty basic. As a CD player though it is complex. T+A say they use 8x oversampling and a high performance DSP engine to carry out this process with great precision. A number of different digital filter algorithms are used in order to provide no fewer than five different responses. Each

with its own unique set of properties. More detail on this is provided in our Measured Performance section, but in outline because it is difficult to be sure whether optimal frequency domain or time domain behaviour is best, T+A give users an option – or five of them! Sitting behind me as a write lies a venerable Cambridge CD-1, which had an array of filters fitted for much the same purpose, so it has been done before, but not in DSP. What I know from my time with the Cambridge is that you usually alight on one preferred sound and stick with it, although radical filters will at times rescue a bad sounding disc and demand to be used. To this end it was a pity filter selection was unavailable on the remote control; this is a missed opportunity. And these filters do affect sound significantly, although I should note that they don't really alter the basic character of the player; in other words don't

Internal view of the T+A.



think you'll be getting KI Signature sound one minute and a Musical Fidelity Tri-vistor the next! The player retains its essential character, changing its presentation, as it were.

SOUND QUALITY

I was intrigued by this player – at times it could really deliver. One of those times was with Steve Earle's Esmeralda's Hollywood, a tight fast piece of Rock with percussive drums strikes and hissing rim shots, Earle's voice sounding gravelly in the middle of it all. The T+A made this track sound explosive, with transients echoing around the room from ringing cymbals and strummed steel

“ these filters do affect sound quality significantly... but don't alter the basic character of the player.

guitar strings. There was a great sense of damping and control too, making the player sound both vivid and clean at the same time. Mostly, I used the default filter (no number), which was less muted than No4. Whilst the T+A has good bass resolution and a nice amount of heft, overall the player has a somewhat dulled sense of tonality; it really doesn't get out the timbral qualities of instruments too well, so whilst technically it showed admirable clarity and time domain resolution, it lacked some expressiveness I felt. Steve Earle's The Hard Way was vivid enough and very hi-fi, but a little mechanical.

The conspicuous clarity of the 1230R, its fluid dynamics and smoothness gave Celine Dion's I'm Alive a good sense of drive and weight. She sang from a clear sound stage which had a nicely established sense of depth and dimensionality, if not with the well drawn and clearly placed images that the best dedicated hi-fi CD players can manage.

Rachmaninov's Piano Concerto No 2, with Ashkenazy at the ivories, sounded pleasant enough, violins rising and falling as of one, against a nice clear background. The violins did sound a little amorphous though; I couldn't hear into them as such, to get any feeling of individual instruments playing. You couldn't accuse this piece of music of being without feeling, nor Ashkenazy's playing as being anything other than wondrous in its deftness, modulation and sheer sensitivity, but sadly I have to say that whilst the T+A conveyed the general outline in nice enough terms but it didn't get into the performance and reveal just how the playing was so interpretive of the music and the composer's intentions. This isn't a review of the Marantz CD6000 KIS but I have to say the way this player opened up the piece in every sense, dynamically, spatially and in the resolution of the fine nuances of Ashkenazy's playing – his light touch on high keys at just the right moment – was so dramati-

cally revealed by the Marantz as to be breathtaking. I'm reminded this is why we listen to hi-fi!

The 1230R excels in the area you'd expect, that of general cleanliness and control, especially at high frequencies. I found from my days with the Cambridge CD-1 that you soon end up using just two or so filters, usually the best all-rounder and most-damped to eliminate CD nasties in as far as possible, otherwise you spend all your time switching and listening to the filters rather than the music. This player sounded best with either Filter 4 or the brighter default setting. Its dynamics, sense of form, clear timing and lack of muddle with these settings was impressive. However, as Marantz have so ably demonstrated with their KI Signature models, addressing component quality issues in a way most hi-fi manufacturers (outside Japan's high-end) are just not prepared to consider, offers other benefits and, for all its undoubted ability, I felt the T+A 1230R could have done with just a bit more resolution of the timbral properties of instruments and singers to become a bit more lifelike and less mechanical.

To place it within the scheme of things I compared it to both the Creek CDR-50 and Marantz CD6000 KIS. The Creek showed clearly differences in tonality between instruments from a recording; we all know it's a property that exists in real life but digital can suppress this sort of thing without us realising it. It would be difficult to choose between the T+A and the Creek, since they were almost diametrically opposed in sound quality. Creek have lightened up their sound and whilst clean open and revealing in a natural manner the Creek lacked the solid bass punch of the T+A. The Marantz, however, delivers such a vast sound it is almost a raging bull compared to others, with vast dynamics, incredible stage depth, an ultra-wide sound stage and the ability to reproduce everything with a lavish brush that seemingly overwhelms competitors. It's quite an awesome audio performance, that's for sure - and a yardstick for others.

In the DVD 1230R, T+A have undoubtedly produced a very interesting CD player and an accomplished one too. But it isn't



filtering, which have a greater impact upon sound. Their lower prices put the DVD1230R out into a world of its own where it cannot really justify its itself.

competition for the £600 Marantz which, paired with a DVD player of some ability, would set you back no more than £1000 in total – half the asking price for the DVD1230R. So whilst I found the T+A player a

pleasant companion and at times a technically intriguing one, it suffers an onslaught of competition from a wide range of experienced hi-fi manufacturers able to manipulate parameters other than digital

T+A DVD 1230R £1999.99

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MEASURED PERFORMANCE

The various filter responses were interesting, but those in the player didn't correlate with those in the brochure!

As T&A state in their literature, Filter 1 gives a nice smooth, flat response of the sort most commonly found in CD players, as our analysis shows. With this the player's frequency response reaches 21.3kHz but there is some pre and post ringing to an impulse.

Filter 2 reduces this ringing slightly, but at the expense of damping, meaning there's a pronounced rise in treble output of +1.5dB at 15kHz – enough to be clearly audible. In other words the player will sound bright – and it did.

Filter 3 and 4 look identical, as in the brochure, in the frequency domain at least. Both roll off treble quite strongly, measuring -1dB at 12kHz, and this should lead to a warm sound – which it sort-of does. T+A says filter 4 is ideal and in the time domain it produced less noise than 3. Both gave a clean time domain impulse as T+A claim. However, both have worse stop-band suppression than the others.

T+A say Filter 4 is their 'basic (default)' filter but this was another filter operative at switch on. I have called it Filter 5. This gave a large amount of time domain ringing but still sounded good.

One problem with directly comparing these filters is that output level jumps around by 1dB or so, enough to affect judgement. That's why direct A/B comparisons are always dangerous; only lengthy and relaxed listening with change of volume to alter this factor gets out essential differences.

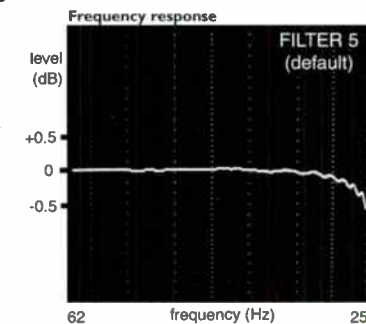
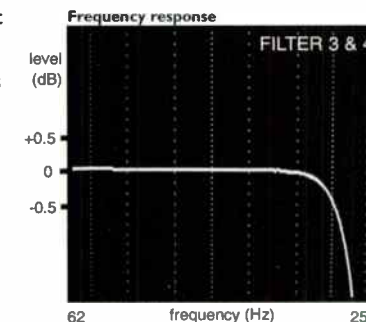
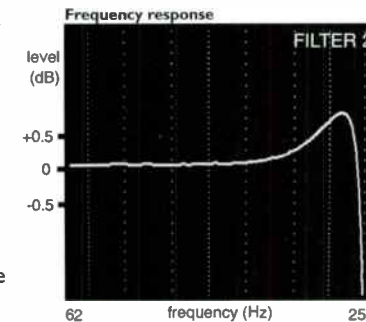
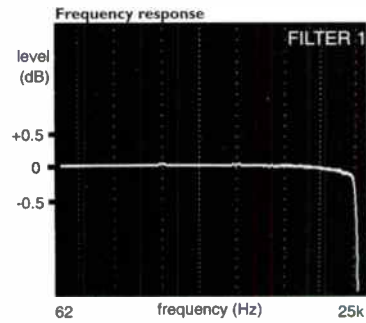
Whether the ear is most sensitive to time or frequency domain effects (or both, one often being the reciprocal of the other) is open to debate, but such response changes are audible. The only point here is that such effects are most readily detected playing music with strong energy above 5kHz, meaning the filters will affect a bright CD most obviously and may be inaudible with some types of music.

These filter settings didn't affect other properties, such as distortion, where the T+A measured well – up with the best. Channel separation was low but still high enough for normal stereo.

The T+A 1230R was interesting to measure. The different filters do measure as T+A state and give some useful options. Somewhere though, the Handbook seems to have got into a Lederhosen twist about all this. At the price, a little more effort needs to be expended here so anyone paying for such features gets them explained clearly. **NK**

Frequency response 5Hz-21.3Hz

Distortion	left	right
-6dB	0.005	0.005
-30dB	0.005	0.005
-60dB	0.33	0.32
-90dB dithered	3	3.1
Separation	left	right
1kHz	68	69
20kHz	43	44
Noise (IEC A)	-113dB	
Dynamic range	111dB	
Output	2.54V	



World Verdict £

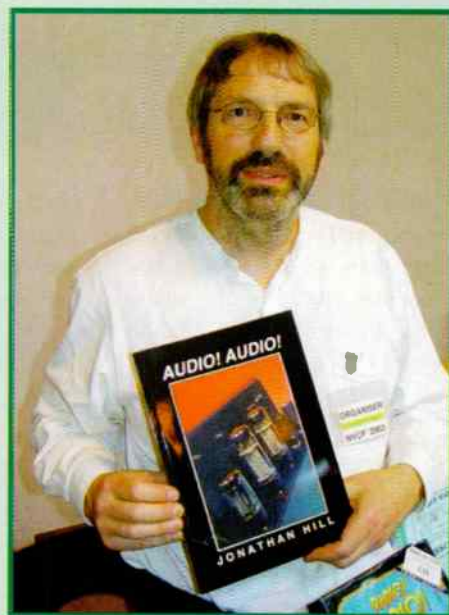
A smooth, clear sounding CD player that also plays DVD video, the DVD1230R is a little expensive in relation to its sound.



A very busy Sunday afternoon at the 2003 NVCF.



John Howes shows off his big wooden ex cinema BTH horn.



Jonathan Hill - Organiser.

FAIR FUN

Haden Boardman spends a day at the National Vintage Communication Fair...

Amazingly now in its twelfth year, the bi annual bash that is the NVCF took part over the May bank holiday weekend. Birmingham is such a sensible location for this kind of event, especially for a northerner like me, it is good to see the larger of the two annual events takes place there. As in previous years, there was a large attendance, with stall-holders and visitors from the north of Scotland to the depths of Cornwall... to Ireland Wales, and the Far East!

For those not in the know, the NVCF covers any and all "communication" media, be it high fidelity equipment, radio sets, gramophones, juke boxes or even television sets and telephones. Under the roof of one of the National Exhibition Centre's many halls, a good few hundred stall holders gather with a monstrously large pile of old equipment to swap trade or simply sell! In the twelve

years the show has been running, I have been lucky enough to attend every show, nine times as a stall holder - and every time has been a joy.

The show has always offered incredibly rich pickings for a wide range of quality audio equipment, and this year's show was no exception. My favourite vintage amp turned up in several places, the classic Radford STA 15 and preamp and there was a good selection of Leaks, although not as many as in past years. Vintage valve amplifiers do seem to be getting a little thin on the ground - there simply was not the quantity compared to last year - and the small amount that did appear were quickly snapped up, even at the hefty prices being charged. There were a couple of really stunning Leak Troughline tuners, plus a decent selection of Garrard 301 and 401 turntables, but SME arms appeared a bit thin on the ground this year, but that is possibly more to do with the fact that yours

truly is desperate to buy one and replace a '3012... but perhaps I managed to miss them all!

As you would expect at a venue like this, there is a real cross section of prices and merchandise. The very rare and very desirable fetch high prices, but with so much kit for sale competing for new ownership there are many bargains to be had, especially for the 1970s grunge audio enthusiast. One stall had more than a dozen big 1970s receivers for sale, some quadraphonic - and nothing was over £50! Or how about a mint Bellini designed Yamaha TC-800G cassette deck for £50? Or two pairs of the slightly potty Grundig Audiorama 5000 speakers.

One stall in particular caught my attention. The particular gentleman had an incredibly early circa 1948/49 Connoisseur turntable, unusual because it only had two speeds of 33 and 78... predating the release of the 45rpm record! To make it an even rarer find, the deck was fitted with



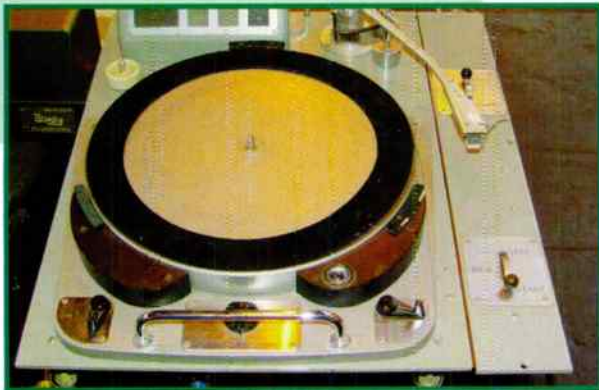
Paul Greenfield of Classique Sounds, with a pair of ultra rare Jordan Watts Flagon ceramic speakers.



Spot the classic items here! JR149s, Leaks, Radfords, Thorens, Yamahas!



This massive pro Studer A80 was being given away for free!



Stunning BBC modified Garrard 301, perfect, it looked almost unused.

two very early Leak pick ups on individual arms, one for "LP" and one for "78". At the side was the icing on the cake; a glorious Connoisseur Ribbon Microphone, again from a similar era, and the cherry on the top a simply stunning ex-BBC Garrard 301... all museum pieces.

There was an amazing glut of high-end 1970s loudspeakers, including ultra rare Tandberg Studio Monitors (with more tweeters than seems strictly necessary), and from the late 1960s a pair of surprisingly good sounding Ferrograph S1 monitors and a set of immaculate Leak 2075s resided behind one stall.

It was a toss up between a set of Grundig Auditorama 5000 loudspeakers and Jordan Watts "Flagon" for the silliest design of the decade on display at the show! For the more tweaky amongst us, there was a cracking array of loudspeaker drive units. I spotted a rare set of full range Goodmans Axiettes in perfect order, RCA HF pressure units,

wooden BTH horns, ALTEC "Voice of the Theatre" speakers, and lots of decent paired-up drive units.

Open reel tape recorders seemed very cheap this year. How about a classic Revox B77 for only £200? Lots of interesting semi pro and pro machines, and not one overpriced. The bargain of the show was a fantastic Studer A80 pro machine, not mint but complete, and the price, well, take it away for free! Admittedly a transit van or large estate required! This machine may not guarantee domestic bliss!

One of my main passions is my audio book library, and with several dedicated booksellers, the NVCF is a veritable goldmine for audio and radio-related books. My collection will never be completed (i.e. every book ever printed on hi-fi!) but it is quite reassuring to see at the NVCF just how many of the books I do now own!

There was also a good selection of vinyl records for sale, some old,

some new, with reasonable prices being charged.

With the radio connections, the show also has a number of vendors selling spare valves, valve sockets, hard to find new old stock (NOS) vintage capacitors and resistors. It really is an amazing medley of stuff. The good thing about the NVCF is the absolute variety of goods on display. From fifty pence to five grand, there is something to suit everyone and every budget. It is a grand day out.

After twelve years as organiser, Jonathan Hill has decided to pass on the organisation of NVCF to the British Vintage Wireless Society. Jonathan assures us he will still be at the NVCF and looks forward to meeting all the "regulars". Without Jonathan's organisation skills the show would never have happened and I for one am truly grateful to him for dedication to the show over the past decade, and wish him well in his future projects.

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letters & emails

Letter of the month

SADNESS, PART I.

After talking to number of people about my problem, someone suggested to write you a letter, so here it is - my sad story. I decided to kiss goodbye to a certain amount of money and upgrade my system.

First on the list were the speakers, so I went through a comprehensive listening session at one dealer in Brussels. I ended up with ProAc Studio 125, as it clearly outperformed anything under 2000 Euro they had in the shop. Confident that I can really hear the difference in a sound, I decided to go for the next part of the system - a CD player. My old one was modified Marantz CD63 so I decided to go for Shanling CD-T100 unheard, hoping that I will get an improvement worth the money difference between the two. And that's where the sad story begins...

At first, I thought I heard an improvement over Marantz so I went on like that for a while without comparison. One day I decided to connect Shanling's solid-state output simultaneously to tuner input of my amp while tube out was connected to CD input, and to do some A-B tests between Tube Out and Solid State Out.

The results of this were devastating - I could not hear any difference whatsoever. I went further and connected Marantz CD63 on AUX and failed to hear a difference between the three. In desperation, I was throwing in HDCDs, upsampling, you name it - nothing. Everything sounded exactly the same with big S. So, the question is, what is wrong with this picture?

I keep reading tests and posts on the internet with people being able to hear when they switch polarity of AC cable. I do have still pretty cheap amp, Harman-Kardon HK620, but I feel that with such an easy load as ProAc Studio 125 I should hear some difference even with this amp in the middle. RCA interconnects are Profi Gold and speaker cables are something called Eagle silver/copper.

I talked to other owners of Shanling and they swore to me that the introduction of CD-T100 made a big



A great looking CD player, with valve and solid-state outputs.

improvement in their systems. Okay, I said to myself, there must be something wrong with my ears, so I invited a hardcore hi-fi addict friend of mine for a listening session. He failed to hear any difference between tubes and transistors as well.

Anyway, don't tell any of this to my wife. I have to play a game of "my goodness, our new CD sounds so good, this is money well spent".

I was thinking of going for Vincent SV236 hybrid amp (another 1000 Euro down the drain), but decided not to invest any more money before I can be sure that I will get something in return. If anyone could tell me what am I doing wrong, it would be highly appreciated.

Nebojsa Zdravkovic

The Shanling CD-T100 is one of the hot discussion products in the industry at the moment. Undoubtedly the Shanling makes a big difference to any system when it comes to looks - it's simply stunning in this department. The sound, too, is detailed and big and we found it to be quite unique sonically. This said, there was a certain amount of distortion that was revealed by our measurements which may be audible to some gold-eared readers.

I've always been a tad sceptical of how much difference a change of digital source really makes, relative to cost. A Wadia 810 will blow an ordinary hi-fi out of the water perhaps, but would the difference be as exaggerated as a £3000 leap in price

of loudspeakers? I personally don't think so. When you read someone raving about how a change of CD player changed their audiophile life, be warned that it may not be the same for you!

This said, the problem I feel lies with your Harman. Although Harman's amps traditionally measure well and are competently engineered they are quite a way off when it comes to audiophile performance. If you had something better I'm sure that you'd be able to tell the difference, however small it may be. You may wish to go for something that has clout and transparency, such as a Musical Fidelity A3 integrated, or perhaps something that has a rounded, lyrical quality such as any of the new Exposure amplifiers, which certainly have more than a touch of the valve about them. Whatever you decide on, I feel confident that a change of amplifier will be your answer. There's plenty to hunt out that's relevant, so enjoy the chase.

SP

That differences between valve output and solid-state are inaudible in your system is likely down to the amplifier, although I also wonder whether you realise that differences are smaller than those between loudspeakers - and qualitatively different too. You may need to listen a bit more carefully, over a period of time, to discern the difference between the outputs of the Shanling. Quick comparative tests, switching

from one to the other, will soon confuse you. The valve output gives a slightly softer, smoother sound which is more spacious. Spend at least an evening relaxing with CDs you know, listening for an hour or so to one output, then a similar period with the other. And use classical music as well as Rock.

I would suggest you keep away from esoteric and expensive hi-fi like hybrid amplifiers until you can detect differences between the Shanling's outputs through the rest of your system. Listen to amplifiers from Creek and Marantz if you can, both of which resolve the nature of a source well, without adding or detracting too much. The Musical Fidelity A3 is also a great choice, as Simon suggests. **NK**

mainly classical and 'World Music', but there is no reason other labels should not use the technique; UHJ is, after all, fully compatible with stereo by design. For ordinary stereo reproduction, one of the great advantages of Ambisonic UHJ recordings is their ability, due in part to there being much smaller direction-related phase errors than in stereo recordings, to give a front sound image that is slightly wider than the outer edges of the loudspeakers, and a more stable one. There have been a few non-classical recordings, too. For example, Tina Turner - *Break Every Rule* (first 6 tracks), though I'm not altogether surprised this album on its own did not recommend Ambisonics to everyone.

The interesting point that a 5.1 channel system can be used to convey an Ambisonically encoded soundfield

delays would cause the soundfield to be improperly generated, as the carefully reconstructed output from all 4, 5, 6, 7 or more speakers would not combine properly to generate the sound field.

The last point is that one does not have to sit at the centre of the speaker array; the soundfield is consistent throughout most of the listening space, thus allowing perspective to be maintained while a listener moves about the room. However, the more speakers are used, reducing the 'nearest-speaker' dominance effect (all too obvious in stereo), the better. A search on the Web will turn up quite a bit of information about Ambisonics - theory and application - so have a look.

**Steve,
Dartford, Kent**

The decoding referred to was that from W,X,Y to a surround layout, not specifically 5.1. If carried out in software this could compensate for 6.1 etc. The seating position alluded to was an 'ideal' one to illustrate a point about the difficulty of placing height speakers. If you have a look at the article you will find it clearly quotes useful sources about Ambisonics on the Internet.

Whilst studios need to build soundscapes progressively by mixing signals, varying only amplitude, Ambisonics may remain a side issue. However, one day entirely artificial Ambisonic soundscapes may well become possible. **NK**

FAVOUR FOR A FAVOUR?

I have been an avid reader for a number of years. I particularly appreciate your commitment to vintage hi-fi, and I applaud David Price's willingness to test old Japanese gear. This is a refreshing approach, and a challenge to the "Quad, Leak and Tannoy is best" approach of many in the vintage hi-fi scene.

A few suggestions for your "Olde Worlde" section. Firstly, it would be a great resource for readers if some of the reviews of vintage gear could be condensed into a Buyers Guide, or if the "World Classics" section could be expanded to include this information.

Secondly, could we have a feature on Goodmans drivers from the 50s / 60s? I use a pair of Goodmans Axiom 301s, which although fat and warm, are also absurdly sensitive - my 3W single-ended amplifier can drive them to levels which "disturb the peace" in our neighbourhood! Many Goodmans drivers are fetching hefty prices on eBay



Musical Fidelity A3 – sweetness and light.

AMBISONICS

I was pleasantly surprised to read a couple of pieces about Ambisonics in *Hi-Fi World* (May 2003). I've been a great fan of Ambisonics for over a decade and a half, as it always seemed to me to be the only available method for true surround sound that both correctly encodes the original soundfield (or allowed a multi-track recording to be used for constructing a synthetic equivalent), and re-created it in the home to give realistic, musical and stable soundfields. I have lived in the hope Ambisonics would find its place in time, and give a better choice of recordings to buy. It's just a great pity it was not promoted well, and has languished somewhat since its invention. The pieces in *Hi-Fi World* help raise the profile of Ambisonics again, but they need one or two important corrections.

Ambisonic music recordings are indeed relatively few and far between, but virtually all Nimbus Records CDs are in Ambisonic UHJ format, and other small labels produce some. Nimbus range of material is a bit limited -

was put across slightly wrong. The 5.1 channels can be used without an Ambisonic decoder, but these channels carry de-coded speaker feeds, not encoded ones. This would allow the soundfield to be re-created without an Ambisonic decoder in the home, but would restrict the speaker layout to a rectangle of a certain shape, or some other standardised pattern. The advantage of using a decoder, UHJ or 'B-Format' (full W, X, Y - front-back, left-right, up-down), is that this allows adjustments to be made for different speaker layouts before the speaker feeds are generated, and apparent seating position in the listening space (like seating rows in a concert hall).

As for use of delays in speaker signals, usually the speakers lie on the arc of an imaginary circle, so this allows for a range of rectangular layouts, catered for in Ambisonic decoders. Delays are not used for this adjustment which is done before the speaker feeds are generated. Small delays to feeds are used to compensate for speakers which cannot be placed on the arc. Large

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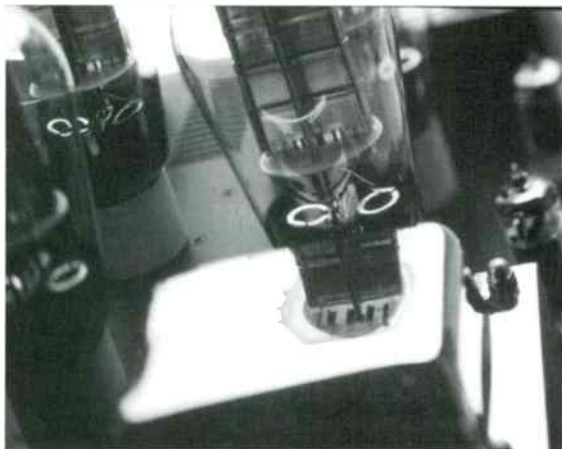
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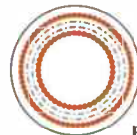
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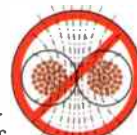
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at the moment - it would be interesting to review some of these lovely old 'speakers.

Thirdly, it would be great to see a feature on the Japanese hi-fi company Luxman. They have made some very special valve and solid state amplifiers, as well as a number of direct drive turntables that are worthy of note.

Now that I have finished telling you what to do, you can return the favour! I have a vintage set-up comprising the aforementioned Goodmans 'speakers (Axiom 301s, Goodmans tweeters) and SE amplifier, as well as a Thorens TD-124 mkIII SME 3012 with a home-brew, tweaked phono stage. Like many, I bought the Thorens second hand fitted with a Shure V15 II cartridge, which provided a number of years of great service before I had to finally put it to rest. I have since been using an Ortofon OM-30 which although detailed enough, seems quite thin and generally does not really live up to the grandeur of the old V15.

I come to my question: what modern cartridge would suit my Thorens 124 / SME 3012 combination? I realise that given the dated arm it is probably pointless spending lots of money. What do you recommend?

Dinesh Wadiwel
Sydney, Australia.

Ideally, with the low mass SME3012 you should use a high compliance cartridge – and there aren't so many around these days. However, a Goldring 1042 will work well enough, tracking at about 1.6gms. Alternatively, you may well be able to buy a V15 VxMR which Shure claim can track down to 1gm. This is a great cartridge, one of the best modern MMs in my experience. **NK**

K KLAS

I've bought a pair of Cerwin Vega (VS150) series 'speakers which are 400W each. The problem is that I need a powerful amplifier which will run these monsters! I'm always playing vinyl, so a phono stage is very important. I've been advised to buy mono amps to run these speakers to get the best sound out of them. Will a good valve amp do the business? The music I play is heavy stuff - dub/ reggae music, so please help a confused chap who doesn't know which amplifier will bring joy to my sound!
"K"

The spec. says from 5 watts minimum, 400 watts maximum. Cerwin Vegas are very efficient, but for reasons known to themselves – I suspect to appeal to their perceived audience who have spent too long with their heads stuck in bass bins – they like to quote enormous maximum power figures. The power handling of a loudspeaker tells you only at what level it will either mechanically disintegrate or – more likely – burn out and the 400 watt figure is of academic interest. Having three drivers and a huge 15in bass unit (!) doubtless the VS150 will absorb 400W peaks, but the real feature of interest is its quoted sensitivity figure of 102dB at 1 metre from just one watt! This is enormous sensitivity and having measured CVs in the past I know it is likely true. Large speakers like this do tend to be sensitive, which means they go very loud with little power.

A 40 watt valve amp should do the business all right with these 'speakers so you could choose any 40watt valve amp. I would shameless-

ly recommend our own KEL80 monoblock power amp kits that give 80watts apiece, which at £649 a pair will give you all the pumping dub bass you crave. And we have a valve pre-amp and valve phono stage too. Have fun. **NK**



The VS150s are great for head-bangers. They go LOUD and have BASS.

SUB SPEAK

I have inherited a pair of KEF C-75 loudspeakers. Like many readers, this makes it my second - or is it third - pair of spare 'speakers! That's prosperity! I also have a good Quad 303 amplifier lying idle. I have just upgraded to a 5.1 set-up, but still need a good subwoofer. So I wonder if I can make a subwoofer from one (or both) of the C-75s, by omitting the internal KEF crossover and by using an active (Maplin?) crossover, together with the 303 power amp? Or would you advise a more modern power amplifier?

Bep Peters
Rotterdam, Holland

Yes, you could do something like this but without acoustically dimensioning the enclosure to the bass units, using their Thiele-Small parameters, the outcome is unlikely to be very successful. At best you'll just get a booming sound I suspect. If you have a 33 preamp then the Quads are museum pieces worth preserving, or perhaps selling.

A lot of subwoofers are pretty poor, booming badly around 40Hz. Only the REL range offer real sub-bass down to 10Hz or so, with real control over output so you get decent quality. There is quite a lot to the art of producing well controlled subsonics so I would tend to avoid casual DIY if you are serious. **NK**



A real old classic, SME's 12in arm, that looks great today.

ON THE SLOPE

Read with interest May's mag but was rather surprised by David Price's comments on the Yamaha TC800 cassette. Although the styling of this machine was somewhat unique, with the exception of perhaps Aiwa's similar looking model, you could never say it produced great recordings. I recently had one in my workshop and found that the mechanism was not up to the high standards set at the time by the likes of Akai or Sharp for example. The cassette hubs bend on the chassis, the idler assemblies are weak and generally poorly made. Compare this with an Akai of a similar age and you will find that the latter is easier to repair and will sonically out perform the Yam! The Yamaha is rather a mess internally, and the slide controls do no one any favours - and why would you ever want a pitch control?

The best machine of its time was probably from the Akai GX series because of its incredible glass crystal head which gave it a longevity in producing tapes that most other decks just couldn't match. A year in the life of an Aiwa would generally see its head worn out and it ending in the bin. Indeed, a well set up GX38 or 325 or even the GXC730 would still be my choice as I know that they will produce something predictable! If you want a peak led then the Akai CS707 had one for +7db and I used one of these with the better GX38 head for 20 years producing recordings of live music and copies for the car.

Of course, you didn't raise the issue of incompatibility due to the changes in equalisation that occurred mid 80s which means that all old cassette decks sound pretty bad with all recent pre recorded tapes. Most old cassette decks really are not worth repairing as spares are generally unavailable, even for 5 year old machines, and the results can be less than worthwhile. Add to this the cost and man hours involved and you have to consider a pretty up market cassette before it becomes a viable option. Naks, the top of the range Pioneers, Akai GX95D or GX325D, etc are worth it. Otherwise save your cash!

Dave Tutt

I think you'll find the likes of the Akai followed on just a little later than the Yamaha, but I take your point - it was no Nakamichi Tri-Tracer. My point was really that the TC-800GL offered fine sound (by the admittedly middling standards of the day), brilliant design and ergonomics, and flexibility too (how

many other high end decks do you know that could be used with batteries?) I'd agree that most cassette decks are just trouble waiting to happen, but not all. Expect another exclusive Hi-Fi World exposition some time soon! **DP**

HOW MUCH?

I was wondering if you could help me? I have a pair of mint Leak TL112+ amplifiers and a reasonably good modern pre amp to go with them. I inherited them from my father a couple of years back and have recently made the reluctant decision to sell them due to financial difficulties. The only problem is that I don't know how much they're worth! when we bought them we also bought a pair of Leak 2075 speakers off the same guy and I think the total price was around the 700 mark, although I get the impression that the amps were worth somewhere near 500? I don't really have a clue, so any help would be much appreciated!

Robin Horn
BinwoB@hotmail.com

A pair of Leak TL112+ amplifiers in nice original condition will sell for round about the £350 - £400 mark at best, less if not in very nice cosmetic condition. You could always try for £500 and take offers! **HB**

ALL CHANGE!

As a reader of many years I have always followed the letters page with particular interest. I thought I'd drop you a line and seek your advice on my current system which has evolved over many years to reach its current state. The line-up is: Thorens TD160B / SME3009 / Linn K5, Arcam Alpha One CD, Scan SC2000 DVD, Pioneer F91 tuner, Acoustic Solutions SPI10 DAB tuner, LG AC959NI Video & PACE freeview, Yamaha KX200 cassette, NAD PPI phono stage, Rotel RC970BX preamp, QUAD 405-1 power and Acoustic Energy Aegis Evo3 floorstanders.

Primary sources are CD and radio with occasional vinyl playback and video/DVD audio playback. Generally, the sound is enjoyable but perhaps lacking some sophistication. However, despite some good kit (?) this setup just doesn't make me want to listen for hours on end. I really like the speakers and, having bought them last year, would be loath to change them. The SPI10 DAB is most impressive for the price and, on first listening, it makes the F91 almost redundant. I generally listen to BBC radio (4, 7 and occasionally 1)

and never use MW and LW. Should I be a true early adopter and dump analogue now?

I know that the 405 is old but it's still going strong; I've rehoused it with a chunkier power supply and I'm about to make various mods which will bring it up to 405-II spec and a little bit beyond. This should live up to the sound a little; I also have the option to build another 405-II which could also be put in to service. Would there be any great benefit in bi-amping the EVO3s? Or running the Quads in bridged mode (180W per channel seems a bit extreme for domestic use!). The preamp is nice and simple but lacking in inputs and r/c which would be a nice luxury. Maybe there should be a radical change on the amp front? I like pre-power amps but would an integrated be the way to go?

The vinyl side of things could probably be improved as well. I've rebuilt the deck with Linn springs, mat, K5 and an MDF base with Sorbothane isolating feet. I'm not sure that the arm bearings are all that great so not really sure what to do next. What would this compare to in today's market?

The Alpha One still sounds okay, but I imagine that things have moved on since 1996 when I bought this machine - I wondered about something like the Philips DVD963SA? Music tastes are varied - from lighter classical to the likes of Massive Attack, Steve Winwood, Robert Palmer, Macy Gray, etc. Any suggestions appreciated - perhaps a £500 nominal budget with part exchange of spare kit on top of this?

Ben Bristow
London

Wow - what a lot of gear you've got! Frankly, you've amassed a lot of middling stuff which could usefully be distilled down to just a few choice bits of new kit. The good news is that you can probably get nearly £1,000 if you sell it all and start again. With a budget of £1,500 for example, your vinyl front end could be improved with a Michell TecnoDec/TecnoArm (with an Audio Technica AT110E to tide you over), your Scan and Arcam replaced by the Philips DVD963SA and your pre-power transformed by a Cyrus 8 integrated.

When funds permit, get some serious cable (like Chord Company's Odyssey II), a Cyrus PSX-R and the latest Trichord Dino phono stage. This would give you a far tighter and more incisive sound, that offers bags

more detail and real smoothness. You'll be thinking about the music you're playing, rather than what bit you need to solder into your Quads next... It would also look good too, and the pictures you'll get from the Philips (compared to your Scan DVD) will amaze... **DP**

Quad quietly confided to me a long time ago that, indeed, the capacitors inside the 405 could usefully be changed to something better. This was their first admission that passive components do affect sound quality and it explains why the original 405 was a bit dismal sound quality wise. As David notes, you have a lot of so-so items, like the 405s, and could do with refining many areas, in the way David suggests. I worry only that you think DAB betters VHF/FM – it may just be that your F91 needs a decent aerial. **NK**

Sansui (what happened to them?) QS system was used by Pye records but the Sony/CBS SQ system saw the most discs as it was adopted by EMI who for a short time issued most new classical LPs in "compatible stereo / quadraphonic" format. There were though some complaints that when played in normal stereo there was some blurring of the stereo image. I have a few but have never heard them played quadraphonically.

As for your comment that stereo was in 1965 "instruments being panned all over the place", I must totally disagree. The best ever engineered classical recordings ever made were already taped by 1965 and as early as 1954 RCA in the USA and Decca in Switzerland were making analogue stereo orchestral recordings which in many respects have a greater presence, immediacy, impact and stereo imaging than most digital masters made today,

coming from all four corners of the room and wondered why I had bothered. However, modern surround-sound systems are a world away from Quadraphonics, not the least because they use multiple discrete channels from a well developed digital source. Today's surround-sound systems are impressive when done properly, by which I mean using decent hi-fi loudspeakers, rather than A/V mini speakers coupled to an awful subwoofer. However, Quadraphony seventies style did raise some interesting issues about how surround-sound should be recorded and replayed (see our next letter) that are alive today and just as relevant.

You do need a TV to view the menus from a DVD-Audio player, but televisions are available at very reasonable prices from your local warehouse, although you will need a car to get there. To avoid all this faffing around you could alternatively try SACD which does not require television. Only one button has to be pressed – and you've got to admit, this is easier than winding up the gramophone, assuming that is, electricity has reached your area. **NK**

Just to add that, if you place a DVD-A disc in the tray and hit the play button on any of the latest DVD-A machines, it should auto-play without the need for any TV-based menu. Not all DVD-A titles offer this – some earlier titles didn't – but any new release should give you this facility without having to buy a telly! **DP**



Tidy things up with one modern quality amplifier like the Cyrus 8.

REMEMBERING QUAD

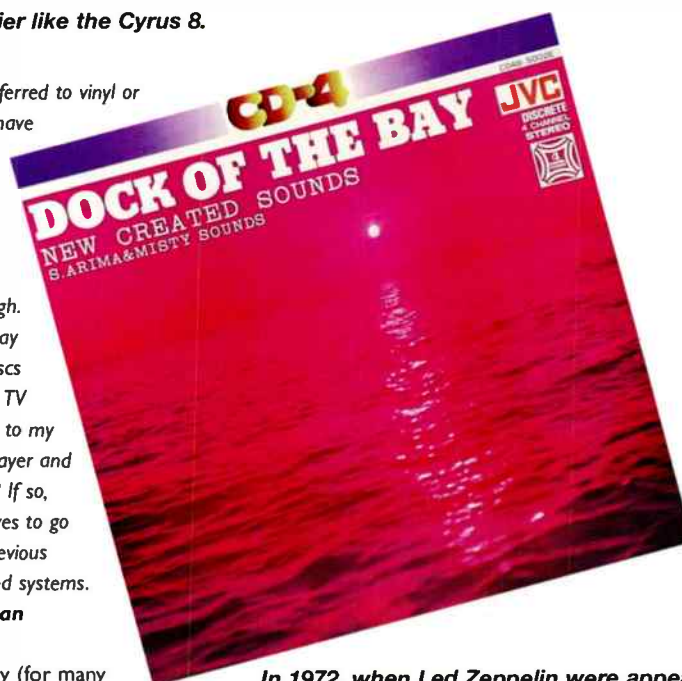
Interesting as I found your piece on surround, are all you guys at World Towers too young to remember the industry's "been there, done that" about thirty years ago, and there have been at least five systems of "surround-sound" prior to the present DVD and SACD systems? They were of course all completely non-compatible and the public's interest was virtually zero. And as for 2 channel because that was what the LP could handle, with JVC's CD-4 'discrete' system the old vinyl disc did accommodate 4 channels using a carrier frequency system which took the response of the LP up to almost 50kHz (a special cartridge was of course required). Records for this system were issued by JVC & RCA. Meanwhile the "matrix encoded" systems took the 4 channels down to 2 on the LP. The

whether transferred to vinyl or on CD - and have in many respects never been surpassed.

One question though. If I want to play DVD-Audio discs must I have a TV set connected to my DVD-Audio player and audio system? If so, DVD-A deserves to go the way of previous surround-sound systems.

Nick Coleman

Unfortunately (for many reasons!) I was there at the time, listened to the whale noises



In 1972, when Led Zeppelin were appearing in stereo on the Atlantic label, S. Arima and his Misty Sounds were released in CD-4 quadraphonic by JVC.

CAMBRIDGE EDUCATION



True to form, Cambridge Audio has entered the 'advanced resolution' digital market with a bang, as the new DVD 57 DVD-Audio player offers apparently excellent value at a piffling £199.95. David Price listens in, and looks at the Cambridge Audio story so far...

The name goes back to 1968, when a team of young engineers set out to make products offering superb sound at a keen price, using the (then) recently introduced solid-state transistor technology. Warp forward thirty five years, and today's Cambridge Audio is an altogether different beast, owned by Richer Sounds' Audio Partnership and manufacturing its products in China. Yet few would argue that its original credo has changed. The company has recently produced several corking sounding CD players (such as the CD4SE) and come up with a brilliant value Digital Radio tuner in the shape of the DAB300. It now hopes that the DVD57 you see before you will repeat the formula, but with shiny, new 'advanced resolution digital audio'.

Pricing a digital disc spinner that plays CD, DVD-Audio and DVD video alike at a mere £199.95 is a bold, almost audacious move. It's true that there are a handful of Japanese DVD-A spinners (like Toshiba's £300 SD520E) which (although not

originally priced this low) have been discounted dramatically, but the DVD57 sells for less still. To me at least, this looks like a declaration of intent from Audio Partnership that they won't give anything away in terms of 'value for money' in the new DVD market. They seem keen (in the extreme) to repeat the 'bargain basement audiophile' formula once more.

The new 50 series of DVD players comprises three machines, all housed in an identical 420x266x45mm enclosure complete with brushed aluminium front panel. The entry level DVD52 (£120) is the baby of the range, being a conventional DVD player, while the DVD54 adds progressive scan video to the feature list for an additional £30. The top of the range DVD57 adds DVD-A playback to the specification. All these low, low prices are claimed to be the result of working closely with chipset manufacturers, plus (I imagine) economies of scale - the company unsurprisingly expects to shift lots of these boxes!

At the heart of the '57 is a Crystal Semiconductors CS4360 six

channel audio DAC. This gives the usual 16/44 CD playback, plus 24/96 from standard DVDs, 24/96 with MLP from DVD-A and the full 24/192 that DVD-Audio is (sometimes) capable of. The player is also an extremely well specified DVD video player, thanks to its six 54MHz/12bit video DACs, which support both NTSC and PAL progressive scan. Whereas conventional DVDs create the picture by drawing half the screen lines every frame (one for even-numbered lines and one for odd numbered lines) and interlacing them 20-30 times per second, progressive scan DVD players scan from top-to-bottom in one pass. This gives 50 full screen lines per second, which makes for far better resolution and lower flicker.

The machine is a sleek looking bit of kit, considering its 'poverty pricing'. An obvious move away from the existing D series CD players, whose styling isn't so much functional as austere, its visual feel is fresh, modern and crisp. The 'trademark' raised corporate logo is retained, but looks altogether more integrated with the soft, slim lines of

the front panel, complete with a swage running about one third of the way up the fascia. At under £200, you're not going to get Krell construction quality, so the case's light (2.5kg) weight is no surprise. It doesn't feel expensive - as you'd expect - but nor does it feel as flimsy as the likes of the aforementioned Toshiba.

Round the back lie RCA phono sockets for 5.1 channel analogue audio outs, plus a stereo pair for downmixed 2 channel stereo. There's also a choice of coaxial and optical digital outputs, plus composite, S-video, SCART and component video outs.

SOUND QUALITY

When reviewing something like this, it's important to remember the context and not give a misleading impression. Because it is also a DVD player, in hi-fi terms it should really be compared to a CD player selling for under £100 - which should put it on the very edge of the term 'hi-fi'. The fact that the DVD57 is so very much better than this makes it worthy of respect - I was certainly pleasantly surprised by its sonics. Still, its CD performance is dramatically down on its D500SE CD player stablemate, as you'd expect. The same isn't so true when you feed the DVD57 a DVD-Audio disc, however...

First, a word about setting up. This machine has a pronounced treble peak above 10kHz, with a lift of nearly +1dB up top. The result is that it sounds forward with DVD-Audio discs, which is itself already a bright sounding format (in my opinion). To wit, I found that a little sympathetic tweaking worked wonders, after which, I got fine results via my reference system comprising MFAudio passive pre-amplifier, Pioneer SPEC2 power amplifier and Perigee FK-1L ribbon loudspeakers. The Cambridge Audio was placed on an Audiophile Furniture Base SP01 isolation platform, which really smoothed out the sound and took down the treble

(subjectively, at least), and I lavished an expensive pair of LFD SpiroLink 3 interconnects on it, which calmed things still further. Finally, the simple expedient of leaving it on all the time, nicely warmed through, really helped.

I started off with a CD pressing of 4hero's *Escape That*, whereupon the DVD57 proved itself to be able enough at the price. The sound was very bubbly and bouncy, with oodles of speed and drive. Attack transients were excellent, and the machine sped through the song with heady abandon. Despite its bright tone, female voices were actually quite smooth, which suggests low distortion, and there was a decent degree of depth too. Bass was light, tight and very fast on its feet. Midband was brightly lit, explicit and reasonably well detailed, treble a tad rough and ready.

Compared to the D500SE CD player, the DVD57 sounds lightweight and perfunctory in sixteen bit mode. Its treble is splashy and lacking in atmosphere, its midband two-dimensional and bass light. In a sense, this is an unfair comparison, because the D500SE is a bespoke 'budget audiophile' separate, whereas the DVD57 does not pretend so to be. The rich, creamy tonality of the D500SE was missed most, however - proof that while well engineered DVD-based budget players can do the CD business, they don't do it with any real degree of élan.

In DVD video mode, the DVD57 was very impressive - its pictures are as good as many £350 machines, and it does Dolby Digital soundtracks as good as any entry level Sony or Pioneer, but for noticeably less money. Its vision is stable and flicker-free, with reasonably good colour definition and no nasties on image edges. It's light years ahead of any of those cheapo £200 machines you could buy in supermarkets a couple of years back. As such, the Cambridge makes a great case for itself as a 'first serious DVD player'.

As a DVD-A player, how then does it sound? Well, by the standards

CAMBRIDGE HISTORY LESSON

The company originally started in 1968, and soon became synonymous with highly characterful sounding transistor amplification. The likes of the P40, P50 and P110 established the company as a key 'audiophile' brand, although the patchy build and 'variable' reliability didn't do much for the reputation of the UK PLC during the onslaught of Japanese competition. Still, products like the R50 transmission-line loudspeakers and T55 stereo FM tuner confirmed its status as an innovative designer of fine sounding hi-fi.

The nineteen eighties was no less an impressive decade for the company, thanks to the Stan Curtis-designed Cambridge Audio CD1. In the mid eighties, when silver disc had a very poor reputation amongst specialist audiophiles for sound quality, this machine proved a revelation. It brought radical 'two-box' design to the market for the first time, writing the blueprint for all high-end digital disc spinners to follow. The Philips CD104-based transport boasted clever beam suspension, and the player offered novel switchable digital filters. This, plus an optional error counter module which showed - shockingly - how many corrected and uncorrected errors the transport encountered, made for a CD player like no other, then or now.

The nineteen nineties saw the company being relaunched under the auspices of Richer Sounds' Audio Partnership, and a product range pitched in more affordable climes thanks to low-cost manufacturing in China. The result was a range of anachronistic CD spinners and DACs, some of which, such as the CD4SE, offered truly superb sound. The DACMagic DAC packed an incredibly good quality convertor, complete with HDCD decoding and XLR analogue outputs, into a cheap sub £100 package. Now, the DVD57 looks set to continue the trend with DVD.

of its price rivals, superb. Compared to Toshiba's SD520E (admittedly a few quid more expensive), it's a charismatic performer with an intrinsically musical nature. Donald Fagen's *New Frontier* was great fun; superb attack transients and a surprisingly firm, taut and athletic bass made it well up to capturing the song's full glory. I got a real sense of the players' superb musicianship, fine syncopation and instinctive feel for one another, not to mention the brilliant production by Walker Becker. That walking bassline, powerful rock drumming, plaintive, minor-key keyboard work and those wonderfully jazzy guitar licks were there in sharp relief. I kept getting the feeling that thanks to DVD-A, a new level of fidelity is now available to buyers on a budget. It wasn't all 'shock and awe' however. Hi-hat



BARGAIN BULBS



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.

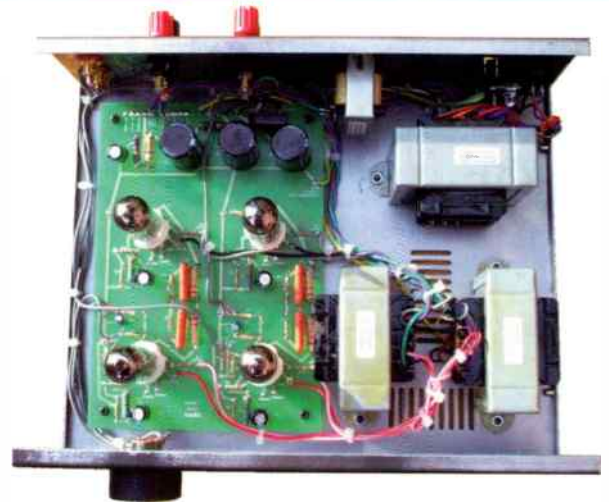
We chose the ECL82, a triode/output pentode. This tube is readily available and has a good sound. In push-pull mode it delivers 8Watts. Realistically you need a speaker of around 89dB or above. This is possible at a budget price - try the smaller Triangle models, or a Tannoy mX3 or even one of the older 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

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

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

FOUR YOUR INFORMATION

If you're looking for 'the mother of all second-hand bargains', then Cambridge Audio's CD4SE has got to be a great contender. Back in 1998, John Westlake (ex-Pink Triangle, and designer of the seminal Da Capo digital-to-analogue convertor), was asked to 'breathe on' the decent but not terribly special budget CD player that was the CD4. This £150 machine was one of the cheapest 'real hi-fi' CD separates on the market at the time, and regarded as something of a bargain, if not a particularly inspiring listen.

The middling Sanyo-based mechanism (complete with its sluggardly track access) was replaced by the (then) budget state-of-the-art Philips CDM12 transport, as seen in a number of far more expensive CD spinners, such as Cyrus's £600 dAD3. All the supplied servo-electronics were re-laid on a new board, for ease of manufacture and improved supply regulation. The cooking Philips TDA1305 DAC was replaced by the (then) brand new Crystal CS4327, which also went on to feature in a range of more expensive kit. A high oversampling / Bitstream-style converter, it was claimed to offer something close to 20-bit performance. Better still, these were run in dual differential mode in a bid to improve dynamic range and reduce odd-order distortion. Finally, Cambridge Audio's own banana-yellow Pacific audio interconnect was lavished on the analogue audio signal paths!

The result was an absolutely corking sounding CD player, at or anywhere near the price. Every magazine that reviewed this product felt the need to wax lyrical – and with good reason. Here was an incredibly mature machine that was both svelte and smooth yet beguiling and engaging – in equal high measure. The player didn't have the warmest tonality – with 'light bass' and a rolled off top end, it could sound a tad thin – but was brilliantly musical and seemed to make every disc it played sing like a canary. Tight, poised, lithe, dynamic, dramatic and daring – here was a machine that got everyone who heard it excited. The fact that it cost just £200 was incredible – only its below par ergonomics, finish and styling (even at this low, low price point) testified to it being build down to a price. Now selling for under £75, few previously owned CD spinners are such a copper-bottomed bargain.

cymbals were disappointingly splashy, although it at least they weren't fuzzy like CD.

Neil Young's Heart of Gold (at 24bit, 192kHz) actually coaxed some grumbling bass out of the Cambridge, showing that given a smooth seventies analogue recording, it can sound far bigger, better bodied and weightier than any similarly priced sixteen bit machine. That

famously nasal voice was surprisingly smooth, and the harmonica was bright and metallic but not as grating as I'd previously feared. Interestingly, the DVD57 even proved well able to summon up a deep and capacious stereo soundstage at this high resolution. Young's voice hung surprisingly far back in the mix, yet was crystal clear and precisely located in space – another trick

sixteen bit can't do. Acoustic piano had a beautifully full-bodied tone, rich and resonant in a way that CD simply can't manage either. At maximum resolution, drums and cymbals became far smoother, the DVD57 displaying a fine degree of finesse for something that sounded so splashy at lower resolution. Old Man was a joy, in no small part due to the vibrant, full bodied sound of Young's acoustic guitar. The plodding bass line sounded as fruity as any self respecting early seventies tube bass amp should.

So there you have it. As a DVD video player the Cambridge Audio DVD57 is impressive, but as a CD player is a tad forward and thin – albeit plenty of fun. It is only when you feed it a DVD-Audio disc that things get special. While never losing its forward, eager nature, it's capable of surprisingly fine sound with 24/96 discs, and positively shines with 24/192. Properly fettled and matched to an appropriately smooth budget system, this machine will give you a tremendous bang for your buck. As with many Cambridge Audio classics, it offers blistering value for money.

Cambridge DVD57 £199.95

Audio Partnership

Tel: +44 (0)20 7940 2200

www.cambridgeaudio.co.uk

MEASURED PERFORMANCE

With CD, frequency response reached a high 21.9kHz, largely because this player has a pronounced rise in treble output above 10kHz. A maximum lift of nearly +1dB is enough to be audible with bright sounding CDs, which may become a little fierce. Generally though this sort of effect adds some 'spitch' to sibilants.

Distortion was low enough all the same and in practice the Cambridge will sound clean enough as a result. Although there was less channel separation than usual it was still sufficient and noise was very low. With normal output and good measured (EIA) dynamic range, the DVD57 works well as a CD player.

With 24/96 DVD distortion levels fell considerably and

bandwidth reached 48kHz.

The DVD57 measured well considering its price. It is a bargain.

NK

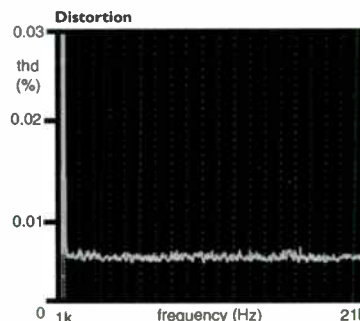
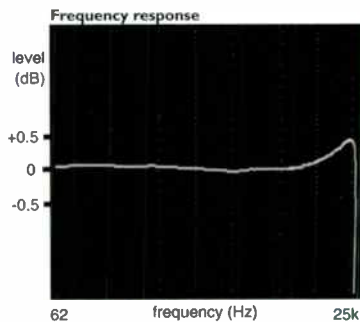
Frequency response 4Hz - 21.9Hz

Distortion	left	right
-6dB	0.003	0.0035
-30dB	0.006	0.006
-60dB	0.54	0.5
-90dB dithered	4.5	4

Separation	left	right
1kHz	87	88
20kHz	60	61

Noise (IEC A) -117dB
Dynamic range 105dB

Output 2.2V



World Verdict £
Quite how Cambridge Audio has squeezed such performance into this diminutive bargain-basement player is anybody's guess. Fast, furious and fun.

HEART

There's more to Heart Audio's Beat monoblock valve power amplifiers than their cunning, punning name – thinks Hi-Fi World's resident tube-meister Gary Devon.

These days, there's a wide variety of output valves to choose from when specifying an output stage. Apart from the NOS (new old stock) types around, various manufacturers across the globe have taken it upon themselves to recreate classic designs from the past. Considering single-ended triodes, there are the big boys like the 211 and 845 which are relatively easy to manufacture and give large power outputs, but require high voltage power supplies and large output transformers. This greatly raises the cost of the finished product unless severe, possibly unacceptable compromises are made in the design. And they produce prodigious quantities of heat, great during a northern European winter but awful in the summer or if you happen to live nearer the equator.

At the other end of the scale are valves like the 205, 45 and 2A3. Power supplies and output transformers for these are easier to design, but their three watts or less output power is too little for most loudspeakers.

This leaves the middle power triodes like the 300B, whose 10 odd watts of output power is sufficient for a wide range of speakers, and associated power supplies and transformers are reasonably sized and priced. This largely explains its wide use in today's single-ended triode amps, such as Heart Audio's Beat monoblocks you see before you.

Rather than the common formed steel or aluminium chassis construction, the Beats are constructed from milled billet side bars with thick, what appears to be stainless



steel top and bottom plates which are solidly bolted on. The power transformer, smoothing choke and output transformer are mounted to the upper plate and topped off with chromed caps, giving the amps a traditional look but with a modern edge. Inside they are completely hard wired using a thick gauge common earth busbar, and the quality of workmanship inside reflects that on the outside. Speaker and input connectors are WBT by the look of them.

Internal componentry is of good quality using Philips (now BC Components) electrolytic capacitors and a Jensen paper-in-oil coupling cap. The valve lineup comprises a Russian 5U4 equivalent rectifier, a Russian 6SL7 equivalent pre/driver valve and what is at the moment one of the best 300Bs available, the Mesh Plate from Taiwan.

Using a valve rectifier (the 5U4) to convert AC from the power transformer into the DC required for the audio circuitry increases cost considerably. The power transformer needs to supply extra voltage and current to make up for the lower efficiency of valve rectification and there also needs to be an extra filament winding to supply the beastie. However valve rectification is considered the last word in purity

when it comes to valve amplifiers. It delivers a far more refined and relaxed sound compared to solid-state rectification and is considered necessary for purists. I presume that the high impedance, high gain 6SL7 is being used in SRPP (Shunt Regulated Push Pull) mode or something similar (maybe a cathode follower) to drive the 300B. This allows one stage to provide all the gain, although with less bandwidth and out-and-out grunt of a driver stage using a valve like the 6SN7 or 5687.

It was apparent that the amps were somewhat insensitive, a result of the single gain stage. Not that this would be a problem with a preamp of sufficient output, and in fact it will probably be a benefit if you are using very high sensitivity speakers such as horns, but I think that passive preamps are out!

I started with some violin, as single-ended triodes tend to excel with this material. Firstly, something really pretty, Bach's concertos 1 and 2 by Milstein. The amps demonstrated their poise and delicacy with this deceptively complex music; it wafted from the speakers and floated around the room like dandelion seeds on a summer's afternoon. High frequencies were sweet and refined and the mid was exquisitely detailed.

Staying with the prettiness theme, I listened to Tchaikovsky's concerto by Milstein and then by Ferras. The

BEAT

Russian's portrayal was characteristically refined and shimmering, with an underlying authority, the Frenchman's was more youthful in character possessing a more vibrant tone, the beats adeptly wove the recordings into a dainty lacework of sound.

I also listened to Dvorak's interpretation of the Czech folk tales "The Water Goblin" and "The noon Witch" conducted by Zdedek Chalabala, music that is actually quite light in nature belying the somewhat sinister and frightening nature of the stories - Czech children must experience dreadful nightmares! Here the orchestra was well portrayed in terms of front to rear depth and positioning of the instruments in space, there was however, a lack of mass to the sound due to a light bass. Similarly with Debussy's "La Mer" one could imagine the winds of a storm smashing the sea into white foam on the rocks, and even the cold, driving rain, but the thunder didn't shake the earth. Again, with Scriabin's "Poem of Ecstasy" conducted by Dimitri Mitropoulos, the Beats created a sense of power and drama in a spiritual rather than visceral sense.

With raucous rock tracks like

Killing Joke's 'Slipstream or Intravenous' from the Extremities, Dirt and Various Repressed Emotions album, the little amps went louder than I expected, even driving the Quads. In fact, it was enough to bring about a visit from my neighbour at one point (2a.m. - oops, sorry!) However the sound was a tad too polite. It wasn't so much a case of loudness as I have stated, but a rounding of the sound due to roll-offs at extreme high and low frequencies, and a compression of macro dynamics. Although the stereo image and presentation of a rock band is usually a complete contrivance, it's still nice to feel the vocalist breathe in your face. The Beats didn't really want to play at this, and seemed to retreat into their shell.

With simpler acoustic music such as The Mediaeval Baebes, for example, the Beats came out of hiding and worked their magic again, demonstrating some synergy between them and the Heart CD6000. The attack, sustain, decay envelope of the dulcimer's struck strings was superbly defined. The girls' voices had a three dimensional quality with excellent delineation between singers. Frequency extremes



weren't as well portrayed as the midrange, but that didn't detract too much from the performance - I think if you are listening to frequencies, you are missing the music.

I really liked the Heart Beats (geddit?), for they are very pretty to look at as well as to listen to. Silky, sweet and beguiling with a light and happy tone, when playing classical music or other well recorded acoustic music they excel with exquisite poise and balance. But just as you wouldn't ask a ballerina to lay bricks, don't expect them to kick out dance music or heavy metal.

Heart Audio Beat Monoblock £1,999

Real Hi-Fi
Tel: +44 (0)870 9096777
www.realhi-fi.com

MEASURED PERFORMANCE

The 300B triode valve in single-ended connection produces around 8watts and this is exactly what the Heart achieved. As expected, overload was smooth and the harmonic structure of distortion stayed nicely steady as this occurred, as it should with a good valve amp. The high frequency performance was little different to that in the midband, as is the case with a good, low feedback amplifier. The only unusual feature of the Heart is that at all levels and frequencies third harmonic distortion dominated, not second harmonic, as our analysis shows. This may give a slightly more

incisive sound or a little sheen in comparison to rivals, but since Single-Ended Triodes (SETs) sound super easy and smooth in any case this will usually pass unnoticed.

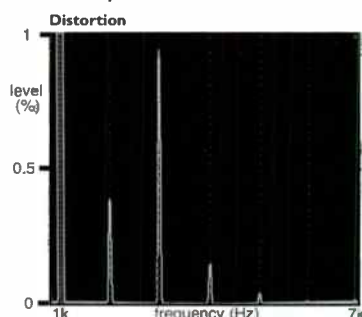
Bandwidth was good, stretching from 20Hz up to 25kHz (-1dB) at low power. Full output was managed at 10kHz, but at 40Hz maximum power dropped to just 4watts. This will limit oomph.

Sensitivity was low so a pre-amp is needed.

The Hearts measure neatly and in line with what is expected from a 300B SET.

NK

Power	8watts
CD/tuner/aux.	
Frequency response	20Hz-25kHz
Noise	-94dB
Distortion	0.04%
Sensitivity	1.5V



World Verdict

Wonderfully sweet and seductive performers, these will delight tube lovers who value musicality over sheer physical drive.

METAL MACHINE MUSIC

Sporting the company's bespoke Metal Matrix Polymer mid/bass drivers and Gold Dome C-CAM tweeters, Monitor Audio's B4 sure packs a lot punch for a budget loudspeaker, says David Price.

The late (and great) MA352 was less sophisticated a beast than the loudspeaker you see here. The B4 proves that to succeed with 'speakers, you can't stand still. The B4s get a pair of MA's MMP Mk2 6.5"

mid/bass drivers, developed from the company's original Metal Matrix Polymer cone material using a high-pressure injection moulding process to achieve different thickness at critical points of the cone geometry. Unlike the doped paper or plastic cones used in many rival loudspeakers, it is stiff - but being metallised polypropylene rather than metal alone, is less prone to sounding 'shouty' (Acoustic Energy AE1 Mk 1s, take a bow!) It's 'two and a half way' design - the lower unit han-

dles bass only, down to a claimed 36Hz (see our measurements), while upper unit handles upper bass and midband right up to the 2.6kHz crossover point, whereupon the latest evolution of MA's C-CAM gold dome tweeter takes over.

The crossover sports high grade polypropylene film crossover capacitors and low distortion laminated core and air-core inductors. The 850x185x255mm cabinet boasts 'rigid construction' with multiple bracing positioned at critical resonance nodes. Interestingly, two bass ports are used, a small front baffle mounted affair and a larger rear port. This twin port system is claimed to enable maximum airflow at low frequencies, as well as reducing air pressure that can lead to bass compression effects. The rear port can be blocked with a foam bung to tailor the bass response, and both are coated with a rubbery substance which presumably is supposed to improve airflow? The instruction manual mentions that the cabs can be mass loaded, and also used with a plinth for a firmer support.

While the B4 looks very nice, and feels pretty substantial for the price, there were a couple of things on the review B4s that didn't impress.

First, the floor mounted spikes didn't secure into the bases of the cabinets particularly easily. I'm not overly worried about this as if I were buying a pair then I'd specify the

optional plinths, which would presumably circumvent this anyway, as well as providing a nice broad 'footprint' to support the speakers.

Second, the drive units themselves weren't bolted very tightly to the front baffle. I gave them all an extra turn or two and was rewarded with excellent results.

I kicked off the listening with Zero 7's Simple Things, a brilliant slice of ambient/trip hop from a few summers ago. There's strong bass on this, but the MAs proved well able to handle it even at very high levels - after I'd got them properly sited. The rear ports can sound a little boomy unless you pull the speakers well out into the room, or better still, stick foam bungs in them! For £350 loudspeakers, they sound very 'couth' indeed. There's no sense of having your senses assaulted, no feeling of needing to tread carefully with them because of their humble origins. They plugged straight into my reference system and after the prerequisite period of running in, stepped manfully into the space left by Perigee's sublime (£5,000!) FK-1Ls.

Bass is warm and full. So much so that it's quite reminiscent of 1970s loudspeakers. It really doesn't sound like so many anaemic modern boxes - you can tell large amounts of air are being moved by the B4's big, sumptuous sound. The downside is that it can be overpowering and woolly, which is where the aforementioned fettling comes in - after I'd got them clamped to my floor



properly, things tightened up no end and there was a new sense of tunefulness to the sound.

Moving up the spectrum, the midband was surprisingly detailed, yet tonally warm and smooth. In a way, they reminded me of Mission's seminal 752 in this respect – there's grip and incision here, but also smoothness and a big, expansive nature. Don't expect a forward, shrill and analytical sound from these metal mothers!

Treble was the biggest surprise for me. Despite being a metal dome – which aren't generally famous for their smoothness – this one proved exceptionally well behaved.

In a phrase, the B4s are big smoothies - but not loose and overblown with it. There's a good deal of insight, as Pat Metheny's *Bright Size Life* proved, on ECM Records. The close miked guitars proved beguilingly musical, yet rich and sweet in tone. Against this was the cymbal work, panning right across the soundstage, showcasing the B4s' exceptional smoothness. There's definitely the 'alive' feeling you get from metal domes (thanks to the excellent attack transients), but there was very little – if any – tizz. I could sense that they've been rolled off a touch up top, so they do lack extension and sparkle, but the overall quality of the tweeters themselves is absolutely superb at the price. They integrate brilliantly with the mid/bass unit too – with everything from snare drums to female vocals having a surprisingly smooth, seamless nature. Allied to a deep and full bass,

the overall effect was most impressive for £350!

Interestingly, the Monitor Audios image pretty well out of the box, too. They're not from the pin-point precision school of loudspeaker design, but create a large, widescreen, panoramic soundfield that fills rooms effortlessly, projecting forwards and behind the plane of the speakers. They're much like proper three-way in this respect – you don't get the sense of the music being 'squeezed out' of a couple of small apertures, as you do with most two-way designs. Speaking personally, I'm a big fan of three-ways, and don't subscribe to the 'less is more' school of thought in this respect. The B4s drove my listening room with a gusto that totally belied their budget status.

Rod Stewart's *You Wear it Well* showed that the MAs could boogie with the best of them. To their credit, the B4s avoided the temptation to add some boom-boom-boom to the track's lightweight bass – rather, the song got its swing from these speakers' fine grip and innate musicality. I was most surprised by the fine tonal quality of the fiddles, too – no grating or rough stuff from an instrument that can knock some far more expensive speakers off the scent. The MA's warm, big-hearted nature really suited folksy, acoustic rock, but could they handle the real deal? AC/DC's *Highway to Hell* was duly placed on the turntable and the loud pedal pushed...! The opening riff and drum work caused a chill wind in my listening room - confirming that the reflex ports

MAKING MOVIES

Monitor Audio also does a B4 AV package, comprising the B4s (£350) at the front, Bronze Centre loudspeaker (£130) in the middle and stand-mounting B2s (£200pr) at the rear, plus the ASW100 active sub-woofer (£300) for £950 all in.

aren't simply handy hiding places for things you'd like to keep out of sight – and then the song kicked in a proper. These speakers' smoothness remained, but they're pretty tight and grippy too – with the result that a seriously good time was had.

I have to say that I'm impressed. In absolute terms, they're a tad dynamically compressed – but less so than practically any other £350 'speaker I've heard. And while they lack lightning-fast transients, they could never be called pedestrian. Only the slightly wayward bass is where they flounder against the best of the rest, but this can be mostly ameliorated by careful placement and bunging the rear bass ports. The fact remains that, from Bach's *Brandenburg Concerto No.5* to ZZ Top's *Gimme All Your Lovin'*, the B4s sound consistently musically engaging and fun. Give them a decent front end and they really get into the groove. They can drive largish rooms to highish levels and rattle floorboards – yet they're surprisingly smooth and couch too. Superb.

Monitor Audio B4 £350

Monitor Audio
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www.monitoraudio.co.uk

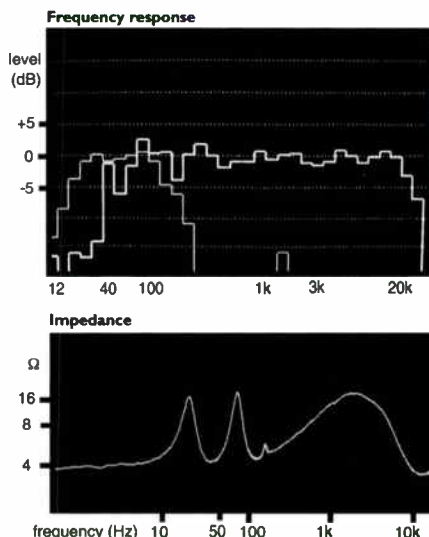
MEASURED PERFORMANCE

The MA B4 had a surprisingly flat frequency response, in contrast to the peaky nature of prior MAs. The noise test signal sounded unusually smooth and cohesive and the measured result reflects this perfectly, showing a loudspeaker flat from 40Hz up to 12kHz, with a slow roll off above this frequency to -6dB down at 20kHz. The largish dome tweeter doesn't go high, but the trade off here is that it does go low, integrating well with the metal bass/midrange unit, on and off axis. Nicely damped bass from an effective porting system should give the B4 depth coupled with a good sense of control. Port output

reaches down low to 20Hz or so.

Sensitivity was healthy at 87dB, from a system that measured out at 6ohms impedance. The bass unit is a 4ohm device, like most nowadays. The tweeter looks to be 4ohms too, the usual rise in voice coil reactance lifting overall impedance up from this low value. All the same, the B4 is a reasonable load.

The B4 is neatly engineered to give well balanced results and an accurate presentation. It should sound good. **NK**



World Verdict Clever engineering intelligently applied makes for a wonderfully expansive, big-hearted loudspeaker at an unexpectedly low price.

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Hi-Fi World 2003 on Illustrious Tonearm



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Paul Szabady, Stereo Times 2003 on Encounter Tonearm

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ONE, BETTER



After Linn's original Classik two channel CD receiver came the Classik Movie System 5.1 DVD version. Now, the new Di version has technology from new Unidisk 1.1 digital disc spinner. Could this be the best sounding 'one box' hi-fi system ever made, asks David Price?

Three years ago, Linn launched the first Classik, a one-box CD/tuner/ amplifier retailing for £995. It sounded better than the budget separates it was competing directly with and went down a storm.

The Classik Movie System followed a year later, with 5.1 channel surround sound and a built-in DVD spinner for an additional £1,000. Although pricey, it maintained the 'value for money' theme of Linn's new Classik marque.

The series has now expanded to a range of Classiks, including the new Classik Movie System Di reviewed here. At £3,000 it is a 'not inconsiderable' £1,000 more expensive than the original CMS, and £2,000 more than the original CD system.

Linn argues that the mods are so significant that it warrants the considerable extra. It says that some of the technology from its forthcoming flagship Unidisk 1.1 disc player is used in the DVD/CD section, along with a new AM/FM tuner, uprated multi-channel power amplification and the facility for multi-room distributed audio.

Greater overall flexibility, plus surround sound decoding from external digital and analogue sources is also claimed. All well and good, but I still think it's a lot of dosh, and rather takes the edge of the 'keen

value for money' theme that the original Classik Music System established...

There's no denying this machine's fine packaging. It is certainly not in the mould of Japanese lifestyle systems, but nor does it feel like a £3,000 bit of kit, unless you're a believer in that old adage 'less is more'. The fascia eschews buttons, displays and flashing lights for a Spartan list of all the buttons you'll need. It's a pretty light machine, but this is down to the tiny surface-mount componentry and switch mode power supply, rather than flimsy construction quality. The left mounted controls take care of disc transport, source and volume selection, and the right handle DVD menu, set-up and track selection options. The blue fluorescent alphanumeric display is a classy affair, and is a good complement to the on-screen display which handles the crisp, easy-to-use set-up menus. This feels like the small, chic and sleek machine it is – but then so it should at this price! For those who seek a colourful life, there's a range of hues to choose from, including silver, black, Koral Blue and Baltik Green.

SOUND QUALITY

The Classik CMS Di will of course spend much of its time playing DVD movies in Dolby Digital 5.1 surround sound. However, as far as I'm

concerned, it lives or dies by how it plays good old fashioned Compact Disc. To be brutally frank, a £500 Denon 'lifestyle' system will play movies decently enough, but its 'legacy audio' capability will be only adequate. The Classik, to warrant its stratospheric price tag, has to do this dramatically better. Fortunately for both Linn and its customers, it does.

I kicked off the listening with 808 State's Pacific 707, an 'old skool' slice of techno music from way back in 1989. It's a multi-layered and muddy affair, and frankly comes over very poorly with most CD spinners under £1,000. The track's myriad instruments – mostly electronic – seem to get buried in one big grey gloom. Only when you get into serious CD spinner territory (or analogue of Rega Planar 2 ability or higher), do things unfold to reveal an intriguing mix of sounds from here, there and everywhere.

The CMS Di cut through it like a hot knife through butter. Rather than the fuzzy mess than every other one-box system I've ever heard has made of this song, here we had a mass of sounds playing together independently, cohesively and beguilingly. That big, fat Moog bass sounded just so, modulating up and down the scale with carefree insouciance, showing off the Linn's brilliantly musical nature.

Moving to the midband, and



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there was a multi-layered mix from which masses of fine detailing came out. Electric bird warbles, synthesised rim-shots, wonderfully warm and expansive Roland JP4 synth pads could be heard. Up top, that classic TR707 drum machine hi-hats looped along, sounding even smoother and sweeter than they should. Impressive stuff – for a DVD player!

Moving to more conventionally recorded music in the shape of Herbie Mann's rendition of that old jazz standard, Summertime, and the Linn showed itself to be a seriously couch and cultivated performer. Spacious, with a great sense of depth perspective and fine image articulation, it displayed a fine command of the recording's 'technical' aspects, but once again impressed with its musicality above all else. Tonally surprisingly rich for a Linn, it made Verve's Bittersweet Symphony both deliciously fluid and fulsome. Vocals had real emotional impact; the Classik is able to cut through the mix, no matter how complex, and bring you what's buried deep down in the disc. It really is a spectacularly good CD player considering its status as an all-in-one system – I've heard worse from many so-called serious audiophile sixteen bitters.

You will not be surprised to

learn that it made a great fist of movie soundtracks. Jimi Hendrix's All Along the Watchtower, from Withnail and I, was a joy. This track needs no introduction, but often loses its emotional impact with lesser machines. The Linn, however, let all of its dramatic, epic soundstaging shine through; tight, taut bass, soaring guitar histrionics, wonderfully louche and laid back hi-hat and snare drum work all counterpointing the visuals brilliantly. Its surround soundstaging was superb, with crisp, cutting dialogue to match Richard E. Grant's on-screen barbs.

Action movies are where it flounders, simply because put against your average £3,000 AV system, it lacks sheer brute force and firepower. Sound effects – sadly - rely more on muscle than finesse for impact, and here it simply can't compete with Japanese multichannel powerhouses with literally kilowatts at their disposal. As a result, explosions, earthquakes, gunshots and the like aren't carried as well. Its pictures are excellent nonetheless, but this new Di version is a whopping fifty percent more expensive than the original, and at three grand it is only good in absolute terms. You get crisp, stable and well defined video, but it doesn't

offer the breathtaking definition and colour depth that a good £1,500 DVD video machine is capable of. Put against equivalently priced separates and once again the Classik struggles to match their performance. Another quibble

is the tuner, which sounds clean enough but can be a tad tonally forward.

The new Classik Di is a beautifully designed and built product, one that's superb with music and a seriously good movie machine to boot. It improves noticeably – but not staggeringly – on the original. But the trouble is that I just don't think it offers the value for money of either of its two previous incarnations. It's probably the best performing one-box multichannel machine on the market, but at £3,000 so it jolly well should be!

- SPECIFICATIONS**
- DVD/CD/CD-R/CD-RW/VCD/SVCD/MP3 compatible
 - Dolby Digital, Dolby ProLogic II, Dolby ProLogic, dts, Stereo, StereoSub decoding
 - 24-bit DAC
 - Composite, S-Video and component outputs
 - 1 set of 5.1 loudspeaker outputs
 - 2 SCARTs
 - 1 pair RCA phono analogue tape outputs
 - 1 set 5.1 RCA phono multichannel analogue audio outputs
 - 2 optical digital inputs, optical digital output
 - Linn multi-room input/outputs
 - Dimensions: 80x320x325mm
 - Weight: 5kg

Linn Classik Movie System Di £2,995

Linn Products Ltd.

Tel: +44 (0)500 888909

www.classik.com

MEASURED PERFORMANCE

The Classik delivers 40watts per channel into 8ohms and 72watts into 4ohms. Its five channels can deliver 350watts total, enough to produce healthy sound levels in a room.

This sample, like an earlier one, lacked subsonic extension to the main channel response, output falling away below 22Hz – unusual for a modern amplifier. However, providing a subwoofer is used this will go unnoticed. The upper response limit was a sensible 50kHz (-1dB).

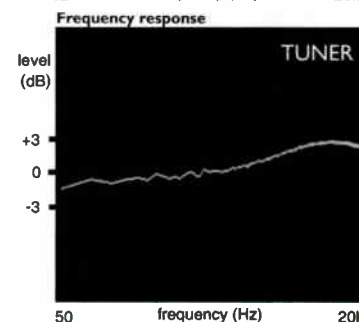
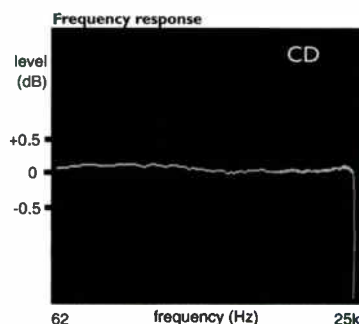
Although distortion levels look a bit higher than normal at 0.1% or so (10kHz), the Classik produces only second harmonic – undetectable at these levels. It will sound clean and smooth – and certainly not bright or hard.

Playing CD, the DVD player has noticeable plateau lift in output below 1kHz – enough to give its sound subtle added warmth and body. The VHF/FM tuner has a treble lift of +3dB at 10kHz, again as in the earlier sample, and will sound bright as a result, quite unlike the CD player.

The Classik is a small A/V unit that measures well enough.

NK

Power	40watts
Frequency response	22Hz-50kHz
Separation	78dB
Noise	92dB
Distortion	0.04%
Sensitivity	mV
dc offset	1mV



World Verdict

Superb ergonomics and performance from this one-box beauty, but now offers questionable value for money.



DEMONSTRATION ROOM AT 12A SPRING GARDENS, NEWPORT PAGNELL, MILTON KEYNES,
BUCKS MK16 0EE BY APPOINTMENT ONLY - CALL FOR DETAILS ON 01908 218836

KECL82 VALVE AMPLIFIER KIT

The Kecl82 is our 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 sections 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 steel 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 its 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)

NEW KIT

£195



KIT6550 VALVE INTEGRATED AMPLIFIER KIT & KAT6550 VALVE POWER AMPLIFIER KIT

£615



**Kit6550
upgrade kit now
available £130**

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 truly 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

£580



**KaT6550
upgrade kit now
available £120**

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".

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) x 270mm(d) x 150mm(h).

£298



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 x 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)

£570



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)	£205.00
Pre-amplifier (PRE-II)	£215.00
Phono Stage (PHONO-II)	£110.00
Moving coil step-up transformer	£77.00
Passive pre-amplifier (PAS-II)	£235.00



KAT34 VALVE POWER AMPLIFIER KIT & KIT34 VALVE INTEGRATED AMPLIFIER KIT

£480



**KAT34
upgrade kit now
available £120**

KAT34 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 x 5U4), using a heavy duty choke 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

£515



**KIT34
upgrade kit now
available £130**

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 - 390mm(w) x 360mm(d) x 210mm(h)

300B PSU MONOBLOC KIT

Our Parallel Single Ended amplifiers offer ultimate sound quality. Each monobloc has two of the beautifully 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 £895.00 (UK price) excluding valves. Each monobloc weighs 23kgs., external dimensions with valves: 25cm(w) x 38cm(d) x 22cm(h) per monobloc.

**300B PSU
upgrade kit now
available £150**

**£895
A pair**



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) x 30cm(l) x 8cm (h) weight 4kg.

£195



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1 x 100K Alps blue Potentiometer
2 x 1000uF, 16V Black Gate
4 x 100uF, 50V Black Gate
4 x 0.22uF, 400V Jensen paper in oil

£100

KiT34 Upgrade kit

1 x 100K Alps blue Potentiometer
2 x 1000uF, 16V Black Gate
4 x 100uF, 50V Black Gate
4 x 0.22uF, 630V Jensen paper in oil

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KIT34/KAT34/KIT6550/KAT6550 choke
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Output transformers

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

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

KIT88/KAT88 E/I push-pull output transformer
80mm(w)x95mm(l)x100mm(h), Primary-secondary 10K - 8ohms, max o/p-40watts, max current-160mA valves-KT88, 6550, EL34

KIT34/KAT34 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 8ohm, max output 34watts, max current 150mA, valves EL34, 6L6, 6CA7

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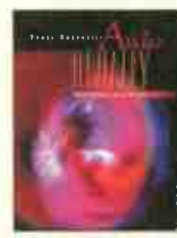
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Like most critical listeners, I find someone blowing a trumpet behind my left earhole disconcerting. When disciples of surround-sound say we simply have to get used to this – and then we will appreciate it – I cringe. The real benefits of surround-sound to an audio enthusiast aren't trivialities like this. From a pure hi-fi point of view surround-sound holds more, much more, than such distractions.

Surround-sound may seem like a new toy for a new millennium, but simply listening to a powerful system reminds me of the qualities I first heard from bi-amped and tri-amped Naim amps with Linn Isobariks, which harks back to the 1980s. Once a signal is split like this and the strands amplified separately, the outcome is less apparent muddle, sharper focus and just generally tighter and more vividly reproduced transients. A tri-amped Isobarik really was something to behold in many respects. It had enormous time-domain definition (i.e. 'good timing') and punch and of course there have been and still are many examples of this approach. A good surround-system exhibits similar properties – with six amplifying channels, the sense of separation between instruments in a good recording is superb. With two rear channels and three front channels, plus a deep bass channel, it is hardly surprising that such a multi-channel system should possess a good sense of clarity and focus.

Another similarity is the heightened sense of ease you get from the loudspeakers when many drivers are being used to generate sound. If a surround-sound system has 60W, that's no less than 300W total being delivered into five loudspeakers, and let's say another 100W goes through the subwoofer.

An arrangement like this delivers enormous acoustic levels without strain, and I notice that with movies in particular, where all channels are fully utilised, the sudden changes in sound pressure level that sometimes occur border on frightening. Surround-sound gives astonishing dynamic contrasts if asked to do so.

But I also notice other effects

” Much as I love stereo, good surround-sound is more dramatic. It really is higher fidelity

just as important to real high fidelity. Our ears and brain are tuned and adapted to distinguish sounds from all round, with great acuity. The "cocktail party" effect, described by researcher Colin Cherry back in 1953, where we are able to home in on someone's conversation whilst excluding all others, is a good illustration of this. Hearing research experiments have shown that when fed a mono signal we can't spatially separate sounds to the degree possible with stereo and often hear only confusion. Mono contains no directional information and robs us of our ability to use "attentional selectivity" with various signal processing schemes to pick out and concentrate on sounds.

Stereo was a great leap forward because suddenly it allowed us to localise sounds, but it still remains imperfect. For a start, conventional two-speaker stereo puts an identical signal through both loudspeakers to produce a central image. This is a phantom image we actually construct in our heads; in effect the brain sums the signal from the ears and says "it's dead ahead, matey". The unspoken about limitations of this system become obvious when you move

your head, or sit off-centre. Suddenly, the image slips left or right into one 'speaker or the other.

Another problem is that depth information doesn't exist, so any room reverb picked up by microphones are folded into the frontal signal. We may well be able to get a sense of depth from this, but it is both weak and confused compared with the real thing properly reproduced in a surround-sound system.

You can see from all this why a surround-sound system has a centre front loudspeaker. It gives us stable images across a wide seating position and it also inserts a real source where, commonly, there would be a real source – like a vocalist. Stereo

might create a good illusion, but three frontal channels better fulfil our need for a clear, stable frontal sound stage. The rear channels can carry ambient information, real or contrived, to give the sound stage depth. All of this usefully improves our ability to spatially resolve the position of an image, bringing improved clarity to complex performances.

You might see from what I am saying that I view surround-sound as greatly improved stereo; it is stereo without frontal image ambiguity in effect. The frontal sound stage is clearer, lacking muddle, better defined and more stable. Most surround-sound music is mixed this way, with backing vocals and ambience from the rear. Having someone blow a trumpet at you from behind is one of the few drawbacks of surround-sound! That's more down to the producer, though.

Bizarre effects apart, sound from all round has much to offer any real audiophile. Much as I love what two-channel achieves, good surround-sound is more dynamic, covers a wider frequency range, suffers less distortion and is more dramatic. It really is higher fidelity. ●

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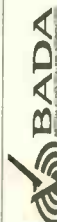
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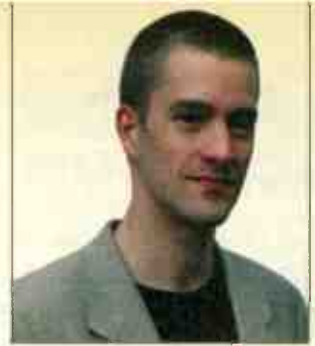
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It wasn't so long ago when I was writing of MiniDisc's continual dominance of the portable recordable market. Even though there had been some impressive MP3 solid state recorders on the market for some time, they hadn't really caught the attention of the hi-fi buying public. At least, not outside of the computer shop. I remember the hi-fi store I work for selling the Samsung Yepp, a couple of years ago, with hardly a flutter of interest.

Well, after the quietest season for MiniDisc since its early days, I think that the tables may finally be beginning to turn. Don't get me wrong - MD is still a popular format, at least in portable form, yet it really isn't "flying out the door" as it used to. It seems that even Sony isn't putting quite the effort into the format that they once were. I've noticed less advertising of late, and there hasn't been another new feature, that was so crucial in keeping the buzz, since NetMD of a year ago. It is true that the latest bunch of players and recorders now feature a digital output more regularly. Yet a digital output is of dubious use for an MD player (with SCMS copyright protection), and hardly the latest thing in any case.

So, with sales of portable MiniDisc faltering, there must be a rival format benefiting? Yes and no. I don't think that MD portable buyers are now switching wholesale to solid state type recorders. That said, there are certainly some impressive machines on the market at the moment. Apple's iPod must have taken sales away from Sony's top MD portables, and Limit's new LMP3, at the lower end of the market, shows what can be done these days for less than a hundred quid. 128Mb, self-charging, plug 'n'record, and a unit size smaller

than a box of matches really isn't that bad for £99.95. No doubt, you'll get double that memory for half the price next year, as well!

Having listened to the little Limit I wasn't especially impressed by its sound quality, yet MD was never that great either. Get yourself some decent little headphones from Sennheiser or Koss and, unless

Well, after the quietest season for MiniDisc since its early days, I think that the tables may finally be beginning to turn.

you're being really critical, you should be quite happy with the sound of MP3 on the move. Here's the crucial point though. Although I've not seen any research on this area I wonder how many people are actually listening to the music as they wander about the country, and how many just have the sound as a distraction?

It's rather like music systems in cars. I'd hazard a guess that the majority of ICE is tuned into the radio rather than CD, tape, MiniDisc or MP3. If this is the case with the car travelling public, then why not the train and bus traveller and jogger? Well, historically, I don't think many people have tended to listen to radio on the move, outside of the car, for a variety of reasons. Patchy reception, lack of stations and poor choice of portable tuners have all played their role. These days however, each of these issues is being tackled. DAB portables are already on sale, and promise a better reception, just as soon as all the transmitters are operational at least. A wider range of stations is already available and, as I've written before, pulling in new customers.

The range of portable tuners on sale is rather more intriguing in that the traditional portable is facing opposition from the most unlikely quarter.

Whilst I don't think that, with the exception of DAB, there are any more portable tuners on sale than before, there's a surprising amount of mobile phones on sale with built in FM tuners. Before you collapse to the ground in a heap of giggles, just bear in mind what I've said earlier about most people just wanting some form of background music. If they can get tolerable radio reception from their mobile phones, and remember they're used to the signal cutting out through tunnels anyway, then why should they bother with a portable MD or MP3 player whilst on the move?

This is just the beginning let's not forget. With the new range of 3G phones even more entertainment on the move will be at hand. The cost of a net radio station streaming through the phone may be rather pricey at present, but this is bound to change. The ability to store millions of bits on the 'phones could also render the portable solid-state units redundant before they've even really got a foothold on the market. Let's face it, even as an audiophile on the move I, like most, realise that I'm never going to get close to hi-fi nirvana so will content myself with pretty much any form of entertainment, plugged up to some decent headphones.

As many a hi-fi pundit has said for years, the only manufacturers who can really feel safe are those making such headphones, 'speakers and amplifiers, i.e. the products that remain necessary whatever the format. To the rest of the manufacturers, I really don't envy their task in keeping pace. Now, where did I put my classic Sony Walkman Professional? ●



This month's quadraphonic extravaganza was one of the most fun - yet frustrating - projects I've worked on for many a month.

It was a leap into the unknown for me, as I was a mere five years old when the four channel format was launched, and thus even more unsuspecting than most people it was presented to!

I'm intrigued to think how hi-fi buyers reacted to quad when it was launched – presumably it was sold along the lines of the 'white heat of the technological revolution', or 'this year's big thing' that every serious audiophile simply had to have? If so, then the public singularly failed to bite, because the great quad explosion (if that is not to dignify it too much!) turned out to be less of a bang than a whimper.

Having myself got into the weird and wonderful world of hi-fi in the early eighties – some ten years after the fact – the impression I'd always got of quad was of it being a stupid audio joke. Now, after a good few months' research and countless hours spent fiddling around with it, I've come to believe it to be a glorious failure.

I am still deeply impressed by how good the system sounded (and that's SQ, QS and CD-4) when we finally managed to get it going. Our initial attempt involved Noel and I (mostly Noel!) fiddling with various CD-4 demodulator boxes (thanks 'Big Bad Bob!'), in a desperate bid to feed the multichannel analogue inputs of a Marantz SR6300 with a four channel analogue output. We faced dodgy phono socketry, dry solder joints, iffy internal wiring, noisy

potentiometers and baffling front panel control knobs, and lost. We could get signals from some, but not others. Some worked at the front and not the back, others couldn't get a CD-4 carrier from Noel's Garrard, in which we had installed a brand new Audio Technica AT20 CD-4 cartridge. The

“ Classic hi-fi is all well and good, but just like old cars the damn things rarely work as intended and you invariably spend more hours 'under the bonnet' than 'behind the wheel'.

whole shebang was perched precariously on top of his equipment rack just to get it close to the decoder, which itself had to be beside a modern surround-sound set up it was feeding. The Garrard was just waiting to crash down on top of him as he prodded around the back! Well, it was all in the name of scientific enquiry...

Our first stab was largely abortive, so it wasn't until I paid a visit to another friend that we cracked it and actually got discrete four channel analogue, not to mention matrixed stereo, from vinyl. After all this kerfuffle, I was beginning to lose all hope, truly expecting a profoundly anticlimactic listen. Classic hi-fi is all well and good, but just like old cars the damn things rarely work as intended and you invariably spend more hours 'under the bonnet' than 'behind the wheel'. Imagine my surprise then, when this, the first analogue surround system I'd a proper proved a deeply impressive listen!

Perhaps it was the fact that the only time I'd previously heard multichannel was via digital, but I simply was not prepared for the big, wide, powerful and spacious sound I got from Pink Floyd's Dark Side of the Moon on SQ LP. I suspect that this kind of fidelity was never possible back in the seventies, simply because they did not have the benefit of Michell GyroDec turntables, SME V tonearms and Van den Hul interconnects, not to mention clean transistor power amps and high tech loudspeakers, that we were using. Suffice to say, it wasn't quite as tight as the digital surround 5.1 SACD, and had far less explicit multichannel soundstaging, but the experience of four channel analogue was deeply impressive and – I'd say – significantly more musical than the digital disc. I can still remember feeling impressed by the mixing on SACD, but moved by the music from LP.

It all makes me wonder how good quad would sound if modern phono stage design practices were used to produce a new demodulator/decoder today? Your average 1971 phono preamp wasn't up to very much, but a modern version with short signal paths and audiophile passive componentry feeding a rewired CD-4/SQ/QS box would be dynamite! I'd heard that some 'eccentric' individuals were using restored decoders to matrix their stereo LPs, but had dismissed them as being one Mars Bar short of a picnic. The frightening thing is – now I'm not so sure! Is this a new way forward for analogue, I ask myself, especially as now we're all gearing up for digital multichannel anyway? You may scoff, but hearing properly done analogue surround sound might make you smile for another reason... ●

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HOME CHROME

Gale's 401 loudspeaker will look delicious in anyone's house, but does it sound as good as it looks? Haden Boardman reports...

There are very few big 1970s speakers that I really rate, but the Gale 401 is one of them. There is just some kind of purity to the black and chrome finish. Only the speaker's girth hints at the era it was born in. It is not that the thing is huge at 330x270x610mm, but that it lies on its "side", unlike more modern loudspeakers. Gale also offered matching tubular chrome stands, aesthetically very pleasing, acoustically a bit of a disaster!

Basically a four drive unit, three way speaker system, the 401 used a Celestion HF2000 tweeter crossed over at 5,000Hz to a Peerless midrange unit, and further crossover at 475Hz to the twin bass units. The HF2000 is no longer available, but they are pretty hardy, and Peerless do offer equivalent bass and midrange drive units... so keeping these guys going is a lot easier than you may think.

On the serviceability side, the chrome end caps have to be persuaded off, to access the drive units. This is easier said than done, as you do not wish to damage the stunning chrome plating, and would like your finger nails to survive intact! Once one of the chrome end caps has been persuaded free, the grille rolls away nice and easily, although some later models do feature a grille cloth manufactured from plastic rather than cloth, which means both end caps have to come off. Doh!

By modern standards, the 401 really does stack up well. It is remarkably clean, fast and open

sounding. It needs a reasonable amplifier to get it going, and behaves as a four ohm load. As cute as the original stands are, the speaker benefits from being more securely located on a good, solid stand. It's pretty darn heavy, so a solid, substantial stand should be the order of the day. In common with most 1970s upmarket speakers, level controls are fitted for the midrange and treble units, which would be better by-passed. Also fitted are safety fuses, which may explain why most of 401's you see are in perfect working order!

Placed in a more modern system, comprising a Quad 909 power amp, Marantz CD12, Chord cable and Russ Andrews power blocks, this speaker sounds very much ahead of its time. It is frankly much cleaner and more open than any similar vintage KEF Reference speaker, much better than the Celestion Ditton models. And boy, are the Gales capable of playing loud!

Vocals are open and articulate, while bass is incredibly tight and extended; clearly these beasts draw some current from the power amp. Switching power amps to an old Musical Fidelity A370 proved just how much power they like to have! The '370 is a real monstrosity of a thing, a kind of British Krell, without the pretence, but the Gales lapped it up. The weight offered by what is still a modest sized box was amazing. Best sound was had with the speakers on their sides, with the tweeters inwards (i.e the left hand speaker was rotated clock wise 90 degree, and the right hand speaker anti

clockwise) on solid 45 cm stands. One word about the rare wooden version; rumour has it that they do not actually sound as good, the different cabinet construction affecting the sound for the worse. They are no oil painting to look at either!

The Gale was a popular speaker, and sold as much on style than sound; so keep your eyes open on local classified papers for the odd real bargain. When new, they cost £175 each plus VAT, or roughly the same as a pair of Quad Electrostatics (£400)! Second-hand, it is difficult to value. A nice set will sell for around £250 to £450, more if really nice, and matching chrome stands sell for about £50, not a lot for a speaker still capable of rivalling some serious new models past the £1000 mark! Do remember the Gale's need a big amp, anything from 50- 200 watts will be fine depending on size of room.



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A reference guide to Britain's manufacturers and distributors

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SOUNDBYTES - OLD SOUNDS, NEW STYLES

In a concerted bid to breathe new life into its ailing MiniDisc format, Sony has come up with a range of cracking, internet-compatible MD portables. The MZ-N510 Net MiniDisc Walkman features 32x faster music transfer from MP3 to MD's ATRAC 3, 56 hour battery life from its rechargeable battery and a new stick-type remote control. Looks good to us – watch this space for a review! Meanwhile, click on www.sony.co.uk for more information.



FIRED UP

Dolby Laboratories and Texas Instruments Incorporated have announced a prototype device that allows consumers to easily connect FireWire (IEEE 1394) equipped PCs to home cinema systems. The converter allows Dolby Digital and PCM audio to be transferred from a network of IEEE 1394 devices to the S/PDIF connection commonly found on today's home audio equipment. This allows music and gaming enthusiasts to play back popular stereo and multichannel 5.1 computer music files, such as MP3, AAC, and WMA, through their home cinema systems from their PCs.

Consisting of an IEEE 1394 connector at one end and a coaxial S/PDIF connector at the other, it requires no additional wires if power is available from the 1394 cable, though a DC connector is available on the device for an external power supply, if needed. IEEE 1394, also known as Firewire and iLink, was designed to be a universal connection between electronic devices, including camcorders, personal computers, digital televisions, A/V receivers, DVD players, printers, and so on. Different types of digital signals can be carried on 1394 cables, including video, audio, MIDI, device control commands, and computer data. Bob Moses, president of Island Digital Media Group said, "We look forward to working with OEMs to bring it to the marketplace"

SIMPLY YEARS AHEAD?

We hear through the grapevine of a new recordable hard disk-based MP3 portable from Philips. The new HDD100 sports a built-in mic which lets you record direct to its 15GB HDD, but unlike its Creative Nomad Jukebox rival doesn't require an external powered microphone or a line input from other audio devices. It's also said to be much smaller and lighter at just 167 grams. The machine supports USB 2.0, which allows users to transfer audio files between the player and a personal computer about 40 times faster than USB 1.1 ports found in older computers. It also sports other frills such as a remote control and a software-based navigational interface. Although not yet released, expect it soon...

IN STORAGE

Verbatim is currently the only firm in the world that designs, develops and manufactures high performance CD-R, CD-RW, DVD-R and DVD-RW media. No surprise, then, to hear that it has cut recording time with a new 4x DVD-R disc. Having broken the DVD+R speed barrier earlier this year, Verbatim has done it again with the new 4x DVD-R. Lest we forget, DVD-R is the format supported by the DVD Forum, with over two hundred member companies. Bringing 4x speed to this popular format will allow users to reduce recording time by almost 50 percent - speeds up to 5.54 MB/s are possible, meaning that a 4.7GB disc can be written in just 15 minutes! Verbatim's 4x DVD-R media is now available in jewelcases of either five or ten packs. A fully printable disc surface is also available.

Verbatim has launched its first MP3 portable, the mpFreedom. Capable of playing 8cm CD/CD-R/CD-RW media, it measures a snug 93x102x28mm and weighs less than 161g. It supports ID3 tags, variable and fixed bit rates of between 32kbps and 320kbps, and is supplied with a comprehensive range of accessories including headphones and earphones, in-line remote control, a carry case, batteries, manual, software and blank media, plus MP3 and WMA creation software. One thousand seconds (!) of Extra Shock Protection and twenty five hours of playback time (using standard alkaline batteries) are claimed. Expect it retail around £100. Check out www.verbatim.com for more information.



INTERFACE THIS

Tascam's new US-122 brings portable, easy to use, professional recording capabilities for Mac and Windows laptop or desktop recording/production systems. The tiny USB audio / MIDI interface controller is powered entirely via its USB data connection, yet provides two XLR phantom powered mic inputs, two 1/4 inch balanced line / guitar level inputs, high quality mic pre-amp circuitry and 24 bit AD and DA conversion. Discrete level control is provided for both left and right input channels, stereo line level monitor outputs and the headphone output. Requiring no power supply or batteries, the US-122 provides an interesting alternative to your computer's built in soundcard, and allows audio and MIDI data to be processed at the same time, and simultaneous recording and playback, via a single USB connection. At 925g and 145x62x98mm, it's very portable, too. Check out www.tascam.co.uk or phone 01923 438880 for more information.

HOME IMPROVEMENT

Are the acoustics of your room ruining the sound of your system? Here's one way to find out - and even design a new room if you are really serious. Noel Keywood gets the measure of Cara, a room acoustics programme that promises much.

"Analyse and optimise your room acoustics at home" it says, a tantalising promise indeed. It's one that brings a wry smile to my face because like all such computer programmes, room acoustics analysis isn't easy to understand and nor is it amenable to computer analysis. The devil is in the detail, they say, and there's some devilish detail in this programme all right. But at the end of the day CARA, short for Computer Aided Room Acoustics, fulfils its promise in many ways, if not all, and – astonishingly - costs just £30.

Cara hails from Germany and can be found on the Net at www.cara.de. It is a two part programme. CaraCad is a three-dimensional drawing package where you lay out the room to be analysed. This room includes three-dimensional objects, meaning furniture, and even people, because they absorb sound too. After the room has been designed in terms of shape, construction and finish, as well as furnishings and content, then another programme, CaraCalc is brought into use to analyse its acoustic properties. This is where Cara starts to flex its muscle, but it is also where the amount of information processed and displayed becomes overwhelming and even confusing.

A strength of the programme is that it attempts to overcome this difficulty by offering two further features: loudspeaker positioning and

auralisation. Both are a great aid to making sense of what is happening, as well as getting a useful end result from hours of diligent toil. Yes, this isn't a programme for anyone other than the interested and dedicated, but as such packages go it wasn't difficult to master – and it is both entertaining and educational.

Cara can be used to analyse the performance of a room, it can be used to design a room, it will optimise the position of your loudspeakers in a room, it will predict whether changes to furniture are an improvement or not, it will tell you what is wrong about your room, and it will even let you listen to your room's affect upon music! You can store all the results, print them, e-mail them and what have you. Loudspeaker generalised models are provided, as well as specific commercial loudspeakers, mostly German.

You need a PC to run the programme, plus Windows 95/98/ME/NT or 2000. I installed into Windows XP and encountered no problems either in installation or use. The programme never hung, nor present any other difficulty. It was stable and effective. You need a sound card and small sound system for the Auralization function and, ideally, a

3D graphics card to render and rotate the model of a room, as well as the 3D images of a sound field.

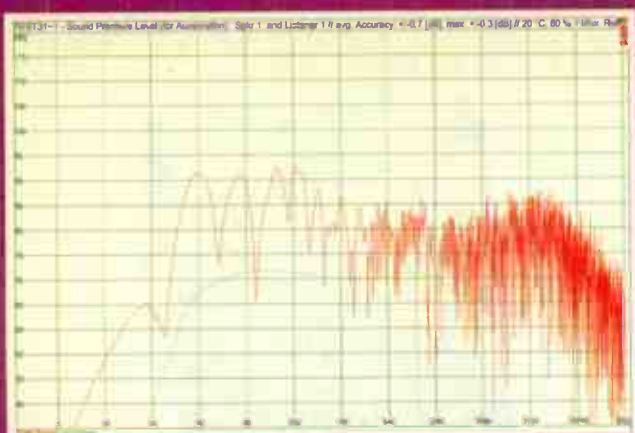
Since processing can take from minutes to many hours, according to the complexities of a room, the number of reflections computed and the number of loudspeakers, it's best to have a decent processor, preferably a Pentium IV with maths co-processor.

However, vast amounts of information and vast amounts of processing yield highly complex results that are difficult to interpret, rather than anything meaningful. For much of the time I found myself using the basics of Cara and processing times were tolerably short, a minute or two at most.

Our review CARA, Version 2.1, came with a Fast Track training CD. It has no fewer than 14 lessons on-board, most of 12MB or so, but one is a massive 40MB so not surprisingly Cara recommend 128MB of memory and advise users to be patient whilst the lessons load.

Knowing the complexities of room acoustics, as well as 3D CAD/CAM, I didn't go near the main programme until I had ploughed through most of this. The English commentary is clear and concise, but you are told only how to manipulate





Cara's analysis of the low frequency behaviour of a 16ft cubed room. Clearly shown is the first half-wavelength mode at 38Hz and the full wavelength mode at 76Hz. The room is very peaky and will boom a lot, as it would in practice. This Auralization graph from Cara shows clearly dominant room modes.

the programme, not how to interpret its results.

The three-dimensional drawing programme, CaraCad, was surprisingly easy to use, compared to graphics software like Macromedia Freehand and Adobe Illustrator. It constructs a room and furnishes it. All surfaces have to be specified to establish the amount of absorption and reflectivity they exhibit. With plaster on brick, a brick wall is first specified and plaster added as a surface finish. I checked this and found that adding, for example, carpet to brick walls alters the room's frequency dependent and time constants, and these can be directly accessed as the room is being specified, a useful feature and an informative one. However, I have internal stud walls and this form of construction isn't mentioned, even though such a wall will absorb and damp bass to some appreciable degree.

The programme can cope with some complexity though, including bay windows with a shelf. It just so happens this is what I have in my lounge, plus a full height, full length heavy curtain to minimise its effects, and CaraCad coped with this situation effectively, showing quite clearly that the curtain alone had the effect of optimising the room's reverberation times across the frequency range. This correlated well with my experience; I generally close this curtain when listening, finding it makes for a clean sound that is easy to assimilate, mainly for lack of confusing reflections from the window.

I also have sound diffusion panels and this, again, Cara cannot cope with, so I used bookcases instead. However, diffusion panels are rare and not easy to model I imagine. The programme has a Materials

Editor so new materials can be added, but this is for experts.

CaraCalc analyses room time constants, showing absorption coefficient against frequency and reverb times against frequency, calculated alternatively using Eyring, Sabine and Kuttruff equations. It places ideal limits on the graphs, explains what error exists if there is one, gives a likely cause and suggests improvements! All this is accessible even before a room design has been completed and I found it sensible in every area, making some interesting and quite obscure observations about building construction.

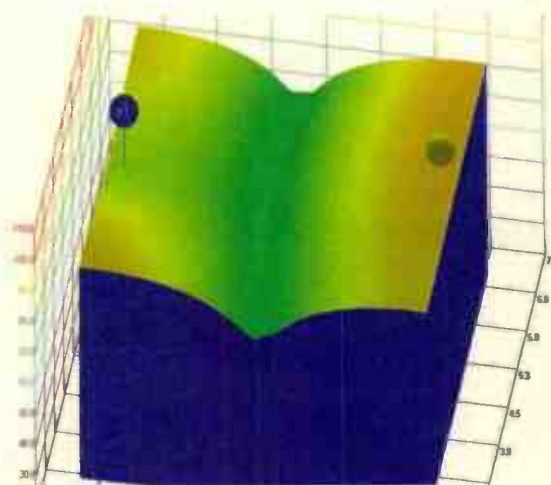
For example, long low frequency reverb times were likely due to massive walls that absorb no energy. These calculations were immediate and in themselves very useful I found. Without going into any further complexity – and there is plenty of it – this Acoustic Ambiance (their spelling, not mine!) function was worth the asking price. It does not require loudspeakers to be placed into the room, whereas all subsequent calculations do.

Once the room has been designed and furnished, using either your own design furniture or pre-designed from a standard selection, loudspeakers and listener can be placed. The point here is that the position of both affects the sound that arrives at the human ear. And position means in three dimensions, so height is important. To this end listener or loudspeaker height can be adjusted independently at any time.

Up to twenty loudspeaker arrangements are catered for, from

stereo up to 8.1 surround-sound and PA. Mono isn't on offer, but single speaker excitation can be selected. When experimenting with sound in a room it's useful to use a single speaker to see its basic modal properties more clearly. Also, both speaker and listener need to be placed either at nodes or anti-nodes to see what is happening in any particular plane, bearing in mind this programme plots three at once. There are lots of points to bear in mind here. For example, a side loudspeaker will not, plotted alone, reveal rear-wall interference (comb filtering) whilst a front one will. A room response using all five loudspeakers of a surround system will yield very complex behaviour and whilst their summation at the listening position will give a result that should be true for all five working simultaneously, if you want to know how accurately the centre front (say) reproduces vocals then you should analyse this speaker alone.

Although I have talked about five loudspeakers, in fact the programme handles the subwoofer as well. My only gripe is that if you want to look solely at low frequency modal behaviour (room boom) it isn't easy to do so. The band limiting adjustment function on our sample



Cara's three-dimensional view of the 16ft cube room's first half-wavelength mode. The listener is at position L1 and the loudspeaker is at B1. Sound pressure is highest at either side of the room and lowest in the middle.

was greyed out and I could find no way to activate it.

Having selected the loudspeaker arrangement the loudspeakers themselves must be specified. You can

choose either generic types, specific models (mainly German) or specify your own. This last option was unnecessarily detailed, even asking for impedance. In truth, the sort of information really needed – a polar radiation pattern – is not available, nor predictable from the info requested. Here, I had some doubts about Cara; some of its complexity seems gratuitous. I used generic models, noting their response, which was quite accurately portrayed. It just isn't worth going to the nth degree of detail in any area when specifying something like a loudspeaker, when just moving your head can radically change what you hear in a room. Cara illustrates this in its analyses of various listener positions.

Having placed loudspeakers and listener on the floor plan of a room everything can be checked by switching to a 3D view that can be rotated! Here you get to see your own room, real or imaginary. It can be saved to disc of course with, say, curtains open and curtains closed, for future reference. Both loudspeakers are placed within a box defining the limits of possible positioning. Results can be plotted for either loudspeaker and for more than one listener.

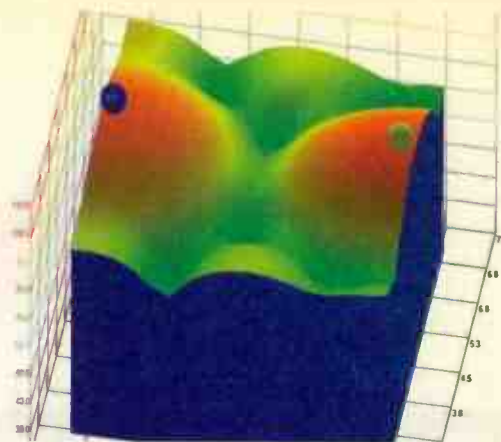
With everything in place CaraCalc is started to provide analyses in addition to those already discussed. Under a 'Calculations' drop down menu there are four sections: Positional Optimisation, Sound field, Special Calculations and Auralization.

The first will carry out successive calculations to find the best loudspeaker position and move

each loudspeaker accordingly. In practice hundreds of calculation need to be run in a complex situation, but this takes 10-15 minutes or so. Graphs can be plotted of the before and after response and they show Cara manages to achieve useful improvements in response flatness.

If this isn't impressive enough the programme can be asked to calculate the total sound field in a room and show it in colour 3D. The plots at each frequency can be run as a loop and it all looks very impressive, but here I wondered about the real value of what was happening. This gives the impression of a sequence of events, when in fact once the sound field has stabilised, they are simultaneous. Moreover, at high frequencies the field is so complex it is largely meaningless to casual inspection, unless large problems exist. Even at low frequencies, to see the basic modal behaviour of a room it is necessary to place the loudspeaker and listener on one node alone, otherwise the 3D representation is inordinately complex and difficult to interpret. I constructed theoretical rooms (16ft cubed for example) to view this information more clearly.

Computing the data needed for such a 3D image is time consuming, especially if the maximum Reflection Order of 5 is set. However, again I am not sure either this information, or the propagation of a Dirac Pulse will be of much value to most users. The Dirac pulse should propagate spherically, whereas it appears to be modelled as a plane wave, but this is a minor detail. A time domain analysis such as this can show the shadowing affect a large object may have and



At 80Hz the modal pattern of the room becomes three-dimensionally more complex with both half-wavelength and full wavelength standing waves appearing, as well as more complex radial modes.

placing a bookcase in the centre of a room showed the package can resolve and display this sort of effect clearly. It may well identify a flutter echo, but it would take a fairly skilled user to be able to identify such a thing. The user information provides no guidance on such matters; you either understand what is on display, or they are just pretty moving pictures.

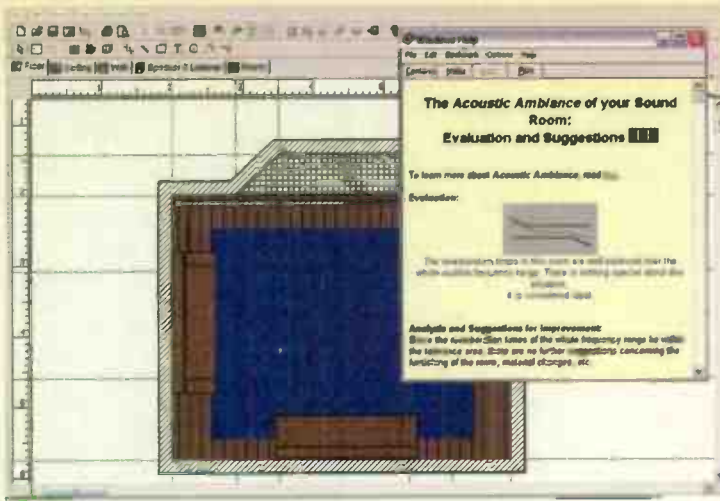
The Special Calculations menu is more accessible and useful, as well as being fast in calculation. It provides 2D graphs of frequency response at the listening position and these can be saved, compared on screen or in printed form. By changing the listening position and/or the loudspeakers Cara clearly shows just how much the room affects what you hear, both in the frequency domain as a response plot and in the time domain as an energy decay plot that can show effects like echoes.

Always of concern and interest is a room's basic low frequency modal behaviour determined by length, width and height resonant modes and Cara plots these quite well I found, the only problem being they are not identified as such, so you must do a few calculations yourself to see which peaks relate to these dimensions.

Finally comes the Auralization function of Cara and it really is the icing on the cake. It will calculate and save the transfer function of a room then, using a special player, music excerpts can be played back with or without the sound of the room imposed. This way you can actually



Reflections from a rear wall interfere with direct sound from a loudspeaker, resulting in reinforcement and cancellation producing a comb filter response. Cara clearly shows this effect and how well any rear surface treatment will likely reduce it.



Cara's floor view of a lounge with bay window, accompanied by its 'Acoustic Ambiance' analysis and comments.

hear what effect a room is having. Since the music comes from a .wav file you can transfer music from CD in order to use familiar excerpts. Of course, you can object that any music played like this will have the sound of two rooms imposed upon it, plus the sound of the computer's replay system, in which case headphones should be used. Again though, it's an interesting function and does make obvious what certain gross effects might be having upon the sound.

The million dollar question I have purposely left until last is: does it work? And the depressing answer for those who wrote this impressive piece of software is: sort of. That's not so much a criticism of Cara as an observation about the likely accuracy of any programme that attempts the near-impossible. As I noted earlier I felt it made the right decision about decay times. On listening position response accuracy Cara also managed to identify the basic modes of my own lounge, which is not rocket science, but much past this what it predicted did not relate well to measurement.

This is partly due to the accuracy with which anyone can possibly input correct absorption and reflection data. For example, I have two large, heavy settees that absorb and damp down bass strongly, more so than the two settees from Cara's own library I suspect. Since the acoustic performance of settees isn't a widely researched subject we'll never be any the wiser about this, but it likely accounts for my lounge having around +5dB overall room gain at low frequencies, where Cara predicts +10dB. Overall response variation shown by Cara is a large 10dB or so around a flat balance, whilst my room

is actually far smoother, with 3dB or so variation, but has gently falling treble at the listening position, with one loudspeaker working. This is as expected, since it has a lot of floor and wall absorption, plus diffusion panels behind the listening position and at critical reflection points to control listening conditions. Cara's modelling of this just wasn't accurate enough and any such programme will always struggle to model reality accurately.

Once more than two loudspeakers are used in a room it is almost forced to perform well, at least in an averaged sense. With five surround sound loudspeakers diversity of their positioning relative to the listener will ensure pretty even overall results from Cara, as it does from pink noise measurement in reality. But if any one loudspeaker is badly positioned – let's say the centre speaker – then vocals from that speaker may be badly coloured. This underlines the need to use simple single-speaker analysis, which Cara has. A system result with multiple loudspeakers will most likely be misleadingly good. Matters like this are not explained adequately; a PDF manual discussing such basic issues is needed to get the best from this programme.

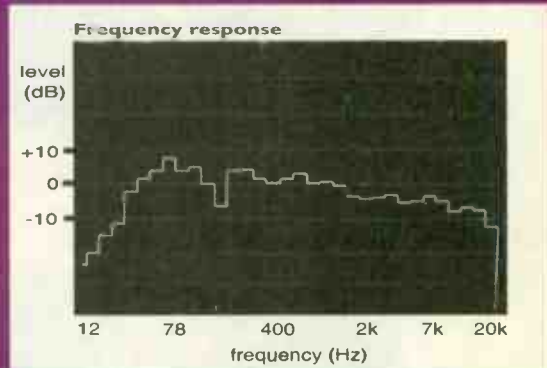
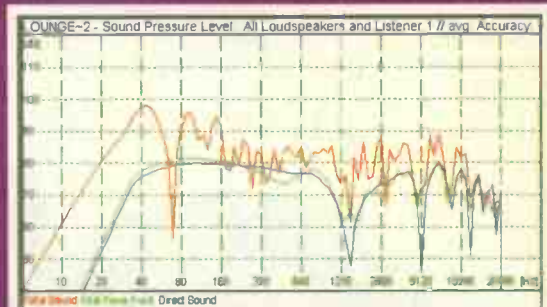
This is a fascinating and powerful programme. It is also informative and good fun too. At the end of the day what it predicts may or may not truly represent a real-life situation, according to the accuracy of data entry – and this is almost impossible to get right. All the same, by careful use and experiment you can still achieve a lot with a programme like this and I can't quite believe it is on offer at £29.95. I would have guessed

OTHER VIEWS

Acoustics modelling took to the computer some time ago, but with limited success. Professor Y. Lamm of the School of Acoustics Engineering at Salford University listed some professional programmes: ODEON <http://www.dat.dtu.dk/-odeon>; CATT at <http://netg.se/-catt> and EASE at <http://www.ada-acousticdesign.de>.

CATT in particular explains its workings and you can download a demo programme for free.

a price way above this. Cara is a programme well worth having in my view. However, I would recommend it is used in conjunction with a book like Acoustics and Psychoacoustics by David Howard and James Angus, which can explain the many issues involved, in order to get the best from it. Then Cara does provide useful guidance on the best way to optimise the sound quality of your room.



Cara's analysis of my lounge (top) gets basic modal frequencies right, but amplitudes are high by a factor of x2.. The room has around 5dB bass lift ('room gain'), a small additional peak at 63Hz and a suckout at 160Hz (loudspeaker rear wall reflection) measurement shows (bottom). Cara does not clearly predict this, nor does it predict the smooth but steady fall in high frequency information.

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welcome to world favourites

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*** £400
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.
- 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 S500** £1000
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 TRANSPORT £6999
Cutting-edge design and technology combine to make this one very desirable product. The only problem is the fantasy hi-fi price. (Sep 98)

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 conscious who want the best. (Feb 95)

DACS

CAMBRIDGE AUDIO DACMAGIC 3* £99
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 £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 TARANTELLA £680
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)

PROJECT 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)

TONERMS

HADCOCK 242 SE £649
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)

NAIM ARO* £975
Truly endearing and charismatic performer - wonderfully engaging mid-band makes up for softened frequency extremes

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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Digital

BOW ZZ 8 Cd Player 12S Bus (ex-d, mint)	£4,995	£3,495
Gryphon Adagio (3 months old, s/h, mint)	£4,300	£3,250
Neukomm Reference CD Player (ex-d, mint)	£2,250	£950

Amplifiers

Art Audio Diavolo monoblocks 300B chrome/gold (ex-d, mint)	£5,995	£3,995
Ayre Accoustics K1 (phono) Preamp (ex-d, mint)	£7,995	£3,250
BOW ZZ 1 Integrated (ex-d, mint)	£2,795	£1,995
Gryphon Callisto 2200 Int Amplifier (s/h, mint, with phono)	£5,790	£4,150
Mark Levinson No. 335, 250 wpc (s/h, mint)	£8,495	£4,950
Mark Levinson No. 335 (New, sealed box)	£8,495	£5,495
Musical Fidelity A1000 (s/h, mint)	£1,399	£595
Neukomm Ref Amplifier 150 wpc (ex-d, mint)	£2,500	£950
PassLabs X-2 Pre-amp (New)	£2,550	£1,250
PassLabs Aleph-5 (s/h, mint)	£3,350	£1,750
Proceed Pre-amp (Fully Balanced, s/h, mint)	£1,995	£795
Unison Research 845 Absolute (s/h, mint, very rare, beautiful and sonically without an equal)	£19,995	£8,500

Loudspeakers

Audiostatic Wing Electrostatics (ex-d, slight mark)	£5,000	£2,495
Avalon Arcus (cherry finish, mint, s/h)	£7,800	£4,650
Proac Future 2 (ex-d, mint, birds eye maple)	£11,450	£5,995
Wilson Audio 6.1 (ex-d, mint)	£20,000	£9,995
Zingali Overture Reference 1S (Ex-D, mint, old style grills)	£1,990	£1,550
Zingali Overture Reference 4S (Ex-D, slight damage on one corner of one speaker)	£4,750	£2,950

Analogue

Nakamichi Dragon Tape Deck (mint)	£1195
SME Model 10 + IV Arm + Audio	
Note ANVx + VDH Frog Mark 2 (s/h, mint)	£5,658 £4,000

List no 84. For an updated and comprehensive list of equipment and audio cables, please visit www.audiosalon.co.uk

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Prices shown are those at the time of the review



Project Phono Box. Provides an inexpensive introduction to all that vinyl has to offer.

SME 3009SII £309
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 second-hand. (Jan 93)

SME 309 £689
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 AT-110E £30
Great starter cartridge that's refined, detailed and musical beyond its price. Best value MM under £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
Better 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-up-and-go. High output version works a treat with valve phono stages too.

MUSIC MAKER £575
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)

ORTOFON MC 7500 £2000
Conclusive proof that there's hope for the world. It's a long time ago now but this high-priced favourite still earns its niche - CD lovers would die if they heard it. (May 94)

ORTOFON MC 15 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 £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)

PROJECT 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 Atessa PSU the Artaxerxes X MM/MC stage still shines. Great stage depth, neutrality and tonal colour. (Oct 97)

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The Full Naim Range, inc CDS3 on dem 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

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 £350
A 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-1 * £1000
Almost valve-like in its smoothness, the line-level Pre-1 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 grooved tube. (Aug 98)

NAIM NAPI80 £1060
Partnered with a NAC82, this has classic Naim control, and a superbly rhythmic presentation.

TUNERS

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 ST17 £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-S750* £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 I 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 * £495
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)

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Arcam A85 Amplifier (1Yr G/tee)	(799.00)	£599.00	Marantz RC5000 Prog remote (1Yr G/tee) . . .	(299.00)	£195.00
Arcam DT26 DAB Tuner (2Yr G/tee)	(999.00)	£659.00	Marantz DV7000 DVD Player (1Yr Gtee) 60%	(599.00)	£229.00
Arcam FMJ CD23 CD Player (1Yr G/tee)	(1199.00)	£785.00	Naim CDS/2 Player (2Yr G/tee)	(6256.00)	£4595.00
Arcam FMJ DV27 DVD Player (2Yr/Gtee)	(1599.00)	£1150.00	Naim 52 Preamplifier (2Yr G/tee)	(3850.00)	£2795.00
Celestion Compact A Spkrs R/nut (1Yr G/tee) .	(600.00)	£325.00	Naim XPS2 Power Supply (2Yr G/tee)	(2300.00)	£1895.00
K.E.F. Q5 Speakers-Cherry (2Yr G/tee)	(599.00)	£419.00	Naim Naxo 2/4 Crossover (2Yr G/tee)	(893.00)	£469.00
K.E.F. PSW 3000 SubWoofer (2Yr G/tee)	(599.00)	£475.00	Naim Credo Speakers (2Yr G/tee)	(1350.00)	£890.00
Linn Classik K CD system (2Yr G/tee)	(999.00)	£749.00	ProAc Response 1.5 Spkrs-Ch (2Yr G/tee)	(1800.00)	£1095.00
Linn Classik Movie System (2Yr G/tee)	(1995.00)	£1595.00	Rotel RV985 DVD Player (1YR G/tee) 60%	(625.00)	£229.00
Linn LK85 Power Amp (2Yr G/tee)	(495.00)	£295.00	Rega Planet 2000 CD Silver (1Yr G/tee) . . .	(498.00)	£369.00
Linn Klout Power Amp-As New (5Yr G/tee) . .	(2400.00)	£1600.00	Rega Brio 2000 Amp Silver (1Yr G/tee) . . .	(298.00)	£219.00
Linn KAN Speakers (2Yr G/tee)	(325.00)	£185.00	Rega Mira 2000 Amp Silver (1Yr G/tee) . . .	(498.00)	£365.00
Lexicon MC1 Processor (2Yr G/tee)	(5500.00)	£2795.00	Sugden Bijou Ampmaster (2Yr G/tee)	(689.00)	£495.00

QUAD ESL 63 * £3450
A reference against which all other loudspeakers are judged, the '63s have superb imaging and genuine transparency.

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 £1400
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 £500
An excellent tool for home recording, combines convenience, superb sound and a fair price. (Aug 99)

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. Facilities 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 £490
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)

HEADPHONES

JECKLIN FLOAT MODEL TWO £99
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 £50
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.

DNM RESON £40/m
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 Diva CD72 Player (6Mth G/tee)	(399.00)	£259.00	Marantz DV890 DVD Player (1Yr G/tee) . . .	(399.00)	£149.00
Arcam A22/P75 Dave AV Amp (1Yr G/tee) (2849.00)		£1495.00	Naim NAC 32.5+SNAPS Pre/Supply (6Mth G/tee) N/A		£145.00
Arcam Alpha 8 Tuner (6Mth G/tee)	(399.00)	£169.00	Naim 42/90 Pre-Power amp (6Mth G/tee)	(700.00)	£350.00
Arcam Alpha 7 Tuner (6Mth G/tee)	(279.00)	£149.00	Naim NAC72 Preamp (6Mth G/tee)	(745.00)	£245.00
Epos ES11 Spks in Stands (6Mth G/tee)	(469.00)	£195.00	Naim NAP 90 Power Amp (6Mth G/tee)	(495.00)	£275.00
Linn Karik 3 C D Player (6Mth G/tee)	(1850.00)	£650.00	Naim Hi-Cap Power Supply (1Yr G/tee)	(799.00)	£395.00
Linn Numerik D A Converter (6Mth G/tee)	(1100.00)	£529.00	Naim PSX Power Supply-CDX (1Yr G/tee)	(2100.00)	£1695.00
Linn Kolektor Preamp (1Yr G/tee)	(495.00)	£369.00	Naim NAP 135 Power Amps (1Yr G/tee)	(3200.00)	£1600.00
Linn Wakonda Preamp (1Yr G/tee)	(845.00)	£489.00	Naim SBL Speakers-Black (1Yr G/tee)	(2362.00)	£1095.00
Linn Kaim Pro Preamp (1Yr G/tee)	(1400.00)	£599.00	Pioneer PDR609 CD Recorder (6Mth G/tee) (249.00)		£169.00
Linn Kaim Phono Preamp (1Yr G/tee)	(1700.00)	£799.00	Pioneer DV909 DVD/Laser Sil (6Mth G/tee)	(899.00)	£269.00
Linn LK100 Power Amp (1Yr G/tee)	(695.00)	£349.00	Rega Luna Amplifier (6Mth G/tee)	(498.00)	£249.00
Linn KAN/2 Spkrs/Stands Blk (6Mth G/tee)	(450.00)	£199.00	Spendor S3 Speakers (1Yr G/tee)	(600.00)	£449.00

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 £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 CD1

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, TL12 & TL10

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!




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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 NS1000M

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 HFW 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 HRI00S

First class arm, up to present-day standards. Buy carefully, though, as there's no service available now.

ARISTON RD11

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!

THORENSTD150

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 11lb 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.

LEAK TROUGHLINE II & III MONO

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

beyer dynamic



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CARTRIDGE SELECTION		STYLUS	REPLACEMENT STYLUS
Goldring 1000	£76	£2 EX	£52
1012 GX	£95	£76 GEX	£67
1012 GX	£124	£100 GEX	£86
1047	£143	£114 GEX	£100
Prima LH	£133	£109 GEX	
Prima	£232	£190 GEX	
GEX - Exchange price for a Goldring Any make model of cartridge accepted			
Audio Technica AT 96 E	£23		£15
AT 110 E	£28		£16
AT OC 9 ML	£330	£280 EX	
Ortofon DL 110	£79		
DL 160	£95		
Prestige Black	£40		
Prestige Gold	£110	£73	
Ortofon S10 MC II	£34		£22
MC 15 Super II	£130	£110 EX	
MC 25 FL	£227	£193 EX	
MC 11 Supreme	£304	£258 EX	
MC 20 Supreme	£382	£323 EX	
MC 30 Supreme	£452	£385 EX	
Karmakount B	£643	£548 EX	
Reishimin	£837	£742 EX	
Shure M57 KE	£98		£58
V 15 V XMR	£304	£204	
Shure Blue Point Special	£265	£237 EX	
EX - Exchange price for MC from above companies			
REPLACEMENT STYLUS			
Swiss Quality Diamond Stylus			
AD3	XLH Mk III		£14.00
Alpa	AM 5, AN 60		£12.00
	AM2, AN 70		£14.00
Dual	DN 145 E, DN 145 E		£12.00
Goldring	G800		£14.00
JVC	DT 55, DT 60		£12.00
National	EPS 24 CS, P 30 D, P 30 D		£12.00
Ortofon	FF 15 E II, VMS 20 E II, OM 27		£18.00
Pioneer	PN 210, PN 220, PN 240		£12.00
Shure	N 75 C, SC 35 C		£13.00
	N 75 ED T2, N 75 EJ T2		£14.00
	N 95 ED, N 95 EJ, N 75 J (PH)		£18.00
	VN 35 E		£18.00
	N 95 HE, N 97 HE, VN 36 HE		£25.00
Sony	ND 142 G, ND 155 G, CN2		£12.00
	ND 143 G, ND 150 G, ND 200 G		£14.00
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Plinius 16P (Phono)	£1,995.00	£3,600.00
ATC SCA2 pre	£1,795.00	£2,500.00
Tom Evans The Vibe Pre	£On Dem	£2,700.00
Krell KRC	£2,495.00	£6,949.00
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Audio Research LS1	£895.00	£2,000.00
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Audio Research LS3	£995.00	£1,997.00
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Cary SLP98L Remote Pre x-dem	£1,795.00	£2,794.00
Boulder 1012 (pre amp/ 24.96 dac/ Phono)	£On Dem	£13,000.00
YBA Passion Pre (inc Phono)	£3,995.00	£5,995.00
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Plinius 16L new	£On Dem	£3,200.00
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write on

You've been writing on so much that we've given you an additional section this month. But don't miss letters & emails on page 44 onwards...



FEEL THE WIDTH

My query is about the SACD / DVD-A formats. If the majority of amps and 'speakers cannot output above, say, 28kHz and many less than this, reading past reviews, how is it that such amazing results are claimed for them? It would appear pointless to spend money on these discs if our equipment cannot reproduce what's on them! i.e. up to 25% of it's bandwidth. I suspect I'm missing something here, can you explain what?

John O'Connell

'Twas always a funny old business, bandwidth. And it is the source of much misunderstanding, disagreement, obfuscation and confusion – and that's just inside the hi-fi business! Let me gleefully explain.

To clarify your specific point, both SACD and DVD-A have bandwidths to 100kHz (analogue bandwidth). The human ear reaches 18kHz or thereabouts at best so, as you say, it would appear that the upper limit of CD, 21kHz, was more than enough for our hearing abilities and that DVD-A and SACD are technological overkill. However, such a stink was raised over the significant aural failings of CD, as well as its measurable failings (distortion) that the industry eventually accepted it had to do better, when the (storage) technology allowed. Also, bear in mind studios run high speed, 1 in analogue tape recorders that clearly show what sort of subjective quality is offered by wider bandwidth and low distortion and they have been aware that CD could be bettered.

Now we have these new improved Frisbees amplifier manufacturers and – especially – loudspeaker manufacturers are bringing out compatible products, able to reproduce this extra bandwidth. Amplifiers can easily be made to reach 100kHz. Loudspeakers are another proposition altogether; super-tweeters can get to 45kHz or so at present and they're appearing on Tannoy and KEF loudspeakers.

We don't know why we need a bandwidth much greater than that of

the human ear. There are many views and theories. The best discussion I have encountered is at <http://www.silcom.com/~aludwig/> (Art Ludwig's Sound Page) on the Internet. Go to Music and Human Hearing.

The hi-fi industry is dominated by engineers (rather than audiologists) and their common view is that by increasing bandwidth filter problems (phase, ripple, etc) are pushed upwards and beyond audibility. My measurements of modern DVDs clearly show that there are music harmonics above 20kHz. To reproduce them properly and fully we do need to get at least to 48kHz as offered by a 96kHz sampling rate. This is, after all, little more than one octave above the 21kHz limit of CD. So there's a reasonably good argument for 96kHz sampling rate; perhaps 192kHz sampling rate PCM is overkill – who knows? It gives us two octaves more than CD, reaching at least 80kHz in the analogue domain. If the harmonics of well recorded musical instruments reach 30kHz or more (and they do) then you could say we need to be able to reproduce music cleanly to 40kHz at least and make sure all filter effects lie in higher frequency ranges. Whatever the arguments, there's nothing quite like listening first and making a judgement afterwards and engineers who have done this assure me 192kHz digital is

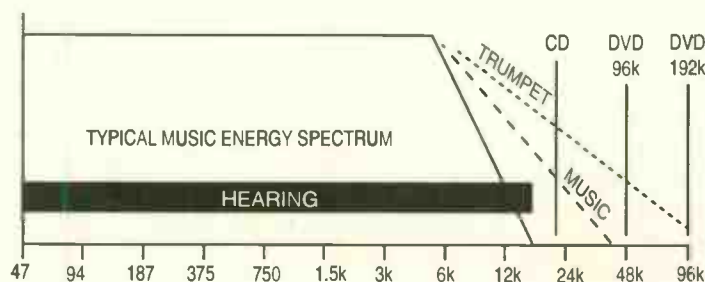
way better than 96kHz (sample rate). With Cirrus Logic - current leaders in digital audio processing - announcing new 192kHz A/Ds and D/As designed specifically for high quality audio work, and with many others such as Crystal and Analogue



24/192 - never mind the quality, feel the bandwidth!

Devices all competing desperately there's no shortage of action in this busy segment of electronics, so affordable equipment will be coming through steadily.

The new Frisbees don't however, offer, just wider bandwidth. They also have 24bit dynamic range and this is a vast improvement upon 16bit. It eliminates distortion, even on low level signals. At present many recordings going onto DVD-A and SACD



Musical instruments produce fundamentals up to 5kHz or so, above which lie harmonics of steadily declining energy, as shown here. However, modern music DVDs possess MUSIC harmonic energy to 48kHz our measurements show, and James Boyk (California Institute of Technology) measures trumpet and cymbal crash harmonic energy to over 100kHz. Our ears hear to 18kHz max, but there's evidence to suggest we can sense higher.

are from 24bit/48kHz masters and even these sound much cleaner and more dynamic than the 16bit/44.1kHz code used for CD, so better sound quality comes about because of lower distortion and wider dynamic range, in addition to wider bandwidth.

Finally, as we now gather experience of these new systems it does



Dual CS5000 – a simple, modern solution for 78rpm.

show they offer improved sound quality. There's quite widespread agreement - and surprise - that wider bandwidth adds more air to the treble, but also seems to increase the sense of low level detailing a system provides - and even tightens up bass!

Personally, I am totally convinced about what's on offer and, literally - buy it! There's a lot of variability on both DVD and SACD but good recordings are very good and well worth having. If you are interested, a Pioneer DV656A plays both formats, providing full bandwidth, and costs just £400. Set the audio output mode to 2ch. for stereo and the player mixes down multi-channel to provide stereo out. Alternatively, most discs have a stereo mix on them, where the studio has performed the mix-down, and this can be selected instead. You will certainly notice the extra dynamic range of both DVD-A and SACD. With wideband recordings and wideband loudspeakers you will also hear the other qualities I have described above. It's well worth it in my view, with reasonable disc prices of, say, £12 or thereabouts.

NK

DESPERATELY SEEKING DUAL

I have been searching for a turntable to transfer some old recordings from 78rpm discs to CD. I remembered that Dual once offered a model with the 78rpm speed. After searching the internet I found your review of the Dual CS5000 turntable which, surprisingly, was done as recently as 2002. You say

in the review that you can buy a mint boxed model for around £125. Can you tell me where I can get one? Any information would be greatly appreciated.

Bob Martin

If there's nothing in Hi-Fi World's classifieds, or in the dealer ads at the back of the mag (and it's always worth phoning around even if they're not currently advertising any), then check out Exchange and Mart and the local free ads papers, etc. Car boot sales, junk shops and audio fairs may all have rich pickings, too. eBay is sometimes worthwhile, but there's a lot of overpriced sub-standard stuff on it too, not to mention dodgy buyers and sellers, plus dealers masquerading as private sellers, in my experience. The best alternative is to buy a new Rega P2, specified with a 78rpm spindle - this shouldn't be much more expensive than a second-hand Dual, and won't sound any worse either. And see our Thorens TD190 review on P56. **DP**

DEAR DAVID...

Congratulations on becoming editor of Hi-Fi World. This should mean little extra

work in practice, as you were already writing most of the magazine! I'd like to offer three comments:

First, I am hoping that the inclusion of twelve pages of reviews of equipment from the past in the May 2003 edition is a one-off. It can be interesting to read a bit of hi-fi history, but I buy magazines - and so probably do most people - to find out about current developments. There might be a market for a separate publication dedicated to hi-fi of the past.

Secondly, when features about former items of equipment appear, it would be very interesting to have them reviewed blind in comparison with current equipment. I know that Hi-Fi World is proud of not employing what it calls 'quick-fire group listening tests', but what I'm thinking of is a more considered comparison - and you have enough contributors to be able to do it. This might shed some light on whether sound reproduction is advancing as fast as the reviews of new equipment in the various magazines suggest.

Thirdly, while most reviewers in Hi-Fi World usually include some comment on how a piece of equipment sounds with classical music, you rarely do. I'm sure I'm not the only reader who would be pleased to read about how equipment sounds with the sort of music I like.

**Tony Williams
Basingstoke**

Hi Tony - Classic Olde Worlde was a response to requests from many readers, and went down a storm. Obviously, we're not going to do this every month as it would limit the amount of new kit, DIY, etc. we can cover, but expect one every now and again. I appreciate your sentiments, and will be endeavouring to 'cross-reference' old and new kit far more closely in coming issues - you may be pleasantly surprised about what we have in store!

I always use classical music for my listening tests, as it's a great way to assess a product's tonality, but lack of space often means I leave it out of the final written review. We are now addressing this by running three page reviews on some key bits of kit, and at last we have a bit of 'leg room' to stretch out in, so to speak, with our observations.

Thank you, and everyone else, who has taken the time and trouble to write in with ideas - this is your mag and I'm delighted to be in the position to be able to give more of it back to you! **DP**

Articles on hi-fi from the past are surprisingly popular. Many find current technology perplexing, which I can understand, so there seems to be a split in preferences here. We try to cater for all tastes, being equally interested in bringing the latest in developments like Blu-Ray, whilst also looking back.

I find the past puts the present in context and this was brought home to me again when

reading about early Quadraphonic. It was then that people started to question how we should be arranging four channels, as a review of Quadraphony by J.G. Woodward, in *The Phonograph and Sound Recording after one-Hundred Years*, published in 1977 by the Audio Engineering Society, reminded me. This also talks about the idea of Matrixing four channels, yet all this lies alongside articles on Vinyl Compounds!

I fished an old JVC CD-4 demodulator out of my loft to put together a Quadraphonic system so we could make comparisons for this issue and its 1970s electronics sounded horrid to me. I was reminded just how grey, flat and coarse much old kit from this period sounded. I believe we are moving ahead, albeit slowly in some areas such as amplifiers, and even here it may be component quality that is improving as much as anything else. Yet at the same time there have been some classics barely matched even today. You can't say audio isn't a varied and fascinating subject. NK

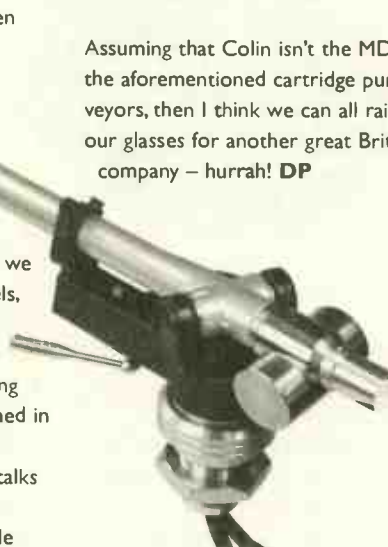
CHANTING THE MANTRA

It is nice to report on a friendly and forthright company that puts its customers first. I purchased a Goldring 1042 cartridge in November 2002 and was impressed that it took only three days from placing my order for the cartridge to be delivered to my home. However, last week (7th March 2003) I played a new vinyl LP on my deck to discover that, half way through side one the cartridge started tracking terribly and the sound was very muffled. I examined the stylus and found most of the diamond tip was missing. I subsequently telephoned MANTRA who advised me to box up the whole cartridge and post it back to them for examination. Exactly one week later I

received, free of charge, a brand new stylus fitted to the cartridge body with a complimentary letter from Martin Nichols of MANTRA. Ten out of Ten to them I say. I will certainly use them again when I upgrade to MC and would wholeheartedly recommend them to all your readers. Their prices are also very competitive.

Colin Topps
Lancashire

Assuming that Colin isn't the MD of the aforementioned cartridge purveyors, then I think we can all raise our glasses for another great British company – hurrah! **DP**



Michell TecnoArm – an elegant vinyl solution.

BUYING BLIND

My system comprises a Michell Mycrol Rega RB3001 Audio Technica AT OC3 vinyl source, Rotel 980 pre-power and KEF 10412 'speakers, which I love. I would like to get a new cartridge for the Michell, but find it hard to audition cartridges at specialist hi-fi shops, since few stock them and those that do may not be willing to set up listening sessions. In other words, most probably I will have to buy a cartridge on the basis of reviews and this, as has been mentioned time and again, is not a good idea. So I would like your help with the following points:

I want a warmer, less clinical cartridge than the AT OC3 I have now. I prefer a valve type of sound (and for that reason may replace my present preamp and amplifier with a valve one in the near future, but that is another story) with lots of presence. For the most part, I listen to classical music and jazz. I am considering the Ortofon MC 25 FL, the entry level Dynavectors, Goldring Elite and the Sumiko Blue Point Special. I do not want to spend more

than £250 and I would like to be able to save some money by exchanging my present cartridge and getting some discount on the price of whatever cartridge I get. Any suggestions?

What problems would I have installing any of the above cartridges (or whichever one you recommend) in my Rega 300? I believe that if the height of the arm has to be modified, this requires special shims, which means getting those shims (I assume from Michell) and installing them. I suspect this may be a fiddly job. Are there any noticeable advantages to be obtained from having the Rega RB300 modified? I know there are mods (Origin Live?) that include a different counterweight, rewiring, etc. Any special template, etc., I should get for setting up a new cartridge?

Sebastian P. Lopez
London SW6

At under £300, the Dynavector DV20X-H is the one to have. I've lived with the Ortofon MC25FL, and it's a fine cartridge, but it does have a rather analytical and mechanical nature which isn't a million miles away from your AT-OC3. The Kontrapunkt B, at twice the price, is different – it's a truly soulful Ortofon that boogies – but you're then into Lyra Lydian territory, where things become altogether more competitive still. With this in mind, the DV20X-H is a great 'line in the sand' to draw; given your budget there's no better.



Shure V15 VxMR, a great sounding modern MM cartridge.

Indeed, I am currently using one in a Michell TecnoDec/TecnoArm, driving a £5,000 pair of Perigee FK-1L ribbons and it really does not sound out of its depth! More money will buy you more detail and incision, but it still has a brilliantly musical nature and a nice, warm, fruity tonality, whereas all the other rivals you mention do not. At the time of writing, I've heard there's a new one just around the corner – so this should be even better!

The DV cartridge will present no problems going into a Rega arm on your Mycro. As you already have a Michell, you may like to contact them (tel: 0208 953 0771) for information on the TecnoArm counterweight kit, which should be available separately by the time you read this. I have not yet been able to A-B the Michell Rega mods with the OL Rega mods, but suffice to say the Michell counterweight looks altogether more elegant. Still, sending your arm off to OL will yield superb results for around £80, and you won't have to do-it-yourself, unlike the Michell kit. The arm tweaks, plus the DV20X-H, will make for a great sounding vinyl source. Ultimately, when you've saved some cash, next stop would be a GyroDec SE (complete with new DC motor), which would take things to a higher level still – into the realms of super-fi! **DP**

If you want a valve sound, and if you want to hear just how astonishing valves can sound – get a valve phono stage. I gave up on solid-state in this role many



The World Audio Design Pre II all-valve phono stage is the way to go if you want to hear LP sound- ing really wonderful.

years ago and these days run one of our own KLPP1 all-valve phono pre-amps. The sense of clarity, the sheer liquidity of the sound and the spaciousness are superb. These days we offer the Phono II modular pre-amp which works from PSU-II modular power unit and there is little to touch them. Also, both can be progressively tweaked using special components to get a resolution of tonal colour and general clarity just not available otherwise.

As David says, the cheaper Ortofons are a bit dry and mechanical. An Ortofon MC30 Supreme is smooth though, if you can stretch your budget. Another cartridge little mentioned but one of the best I have

heard is the Shure V15 VxMR. This is also smooth sounding – and within your budget. It has incredible punch and is wonderfully dynamic, much like a Decca London – but without all the problems! **NK**



Sennheiser – as far as in-ear phones are concerned, nobody does it better.

TRAIN OF THOUGHT

I particularly like the "Olde Worlde" section, ah yes the memories... and so to business. **HELP!** I have made some expensive mistakes with "upgrading" my system and I am hoping that you'll be able to put me back on track to musical happiness. Up until last year I had a system comprising a Rega Planet CD, Rega Mira amplifier (original, pre-2000 models) and Royd Sorcerer speakers on Kudos S50 stands.

Interconnects were van den Hul, speaker cables QED Silver Anniversary.

I'd got a bit frustrated with the sound – it seemed rather flat, woolly and lacking in detail with a somewhat overblown bass. Don't ask me why I suddenly became dissatisfied – 'upgraditis' and reading too many magazines probably – but after two years with the Rega kit I decided it was time for a change. So I auditioned same Linn products (Genki/Kolektor/LK85) with my Royds

and was blown away. Here was the punch and detail I'd been looking for, dynamic and with nice, taut bass. So I splashed the plastic and walked away a happy man – or so I thought.

Well here I am, twelve months on, and I find myself in a similar situation. What once seemed tight, driving and exciting is now strident, fatiguing and often plain boring. Singers have no soul, instruments are homogenised, music no longer holds the appeal it once did and the TV often goes on in preference to the hi-fi (no, I don't think it's just me getting older – my wife says the same and she's no hi-fi buff).

So, time for action. I'm assuming that it's the Linn electronics which are causing the problem, as all the reviews I've read seem to indicate that these are Linn traits. The problem is I don't have much cash available, so I'm basically limited to what I can raise for the Linns second-hand (about £1100, I reckon). Okay, so in theory this is a backward step but then in theory my last purchase should have been a major upgrade and I've come to the conclusion that spending more does not necessarily guarantee a better sound.

As I see it the best thing would be to ditch the Linn kit and go for something a bit smoother and warmer. Maybe a Rega Planet/Mira (new versions), Arcam A75+/CD72T or Roksan Kandy CD/amp would give me the sound I'm looking for? I once used a Marantz CD63SE/Audiolab 8000A with the Royds which worked pretty well until I started chasing high-end mirages; how would a modern equivalent, say CD6000KI CD and TAG McLaren 60i, compare to the pairings mentioned above?

I won't be bothering about multi-channel or SACD/DVD-A until the technology has matured. Most of the music I listen to is vocal-based pop/rock (Stereophonics, Eagles, Beautiful South,



Beatles) and female singer songwriters such as Thea Gilmore and Alison Moyet. When funds allow I'll also be looking to upgrade the speakers, but the immediate priority is to make my system interesting and pleasant to listen to again. Thank you in advance for your help.

Paul Merrick
Dudley, West Midlands

Don't buy a TAG McLaren 60i! The company makes some awesome high-end surround sound stuff, but this particular amp is not one of its hot spots! You're doing it again – throwing out random train-of-thought ideas in the hope they'll all gel.

Wrong! What you've identified is the 'upgrade process' that we all go for. We start with something good, get bored, hear something that sounds altogether more impressive, splash out loads in haste and then repent at leisure. I'm not criticising – let me give you a personal example: I've been into old Triumph sports cars for years, then I went out and bought a new MGF after a quick test drive. Yes, it went round corners faster and was superficially quicker, but after a couple of days when the novelty had worn off, I realised it just didn't have what I personally valued in a car - character. Result: I'm now thousands poorer but back in a Triumph! My point is that if you don't manage to nail down exactly what you want in something – be it a car, bicycle, sofa, hi-fi, kitchen, etc., then you're bound to make expensive mistakes – and boy, doesn't hi-fi have the potential for that!

To wit, get out on the road and audition like crazy. Hear valves and vinyl, CD and solid-state, and every combination thereof. When you've decided which 'generic' sound you like, you're in far better state to decide to buy. Did you see our system building feature in the May issue? If not, phone 0207 625 3134 and get a back issue – this will give you some serious pointers.

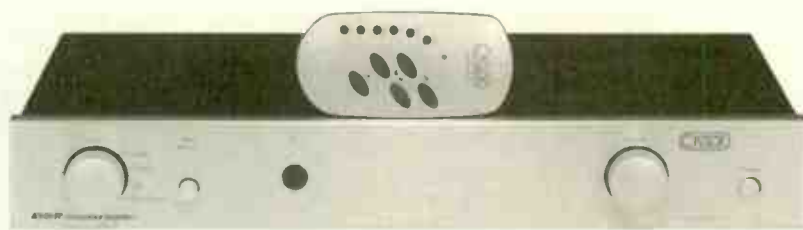
To cut a long story short, I'd say it's your Linn amps that are causing the bulk of the boredom – Linn do some stunning stuff, but I've never been a fan of their amplification, as a rule. If you want kick-ass transistor power, then it's Naim or bust. If you want warmth and lucidity, a Sugden A21a is the ultimate budget buy. A happy compromise is Cyrus's 8/PSX-R, which you could just about afford. This is a truly tight, taut, gutsy amp that is far more open, and warmer and sweeter too, than your Linns. I'd

say it would make a great heart for your system, and would drive the Royds boldly (which you obviously like). Having sold your Linn kit, you'd have little or no change, but fear not. If you can't find an old Cyrus dAD3 CD player going for a song (£250?) second-hand, then a used Marantz CD63KI Signature (£150 or less?) would do nicely. You wouldn't be there, but you'd have relaunched yourself in the right direction with gusto. **DP**

I would gently suggest you listen to the Creek A50i for a smooth, natural

the penultimate track by Keith Jarrett. I was growing to appreciate his piano playing (despite my tranny amp's shortcomings), when I heard a couple of loud clicks and a rumble, and then, with one deftly timed note, the music lifted a level and sent me with it! The experience was a strange mixture of surface noise and rare musical elation! Duly, I have four questions for people to think about:

[1] Can someone please sort out Radio 3's record decks! This might help the DJs and listeners alike to appreciate them more. I'm sure John Peel wouldn't stand for this kind of rumble!



Creek's new A50i gives a smooth, cohesive sound free from grain and greyness.

and easy sound. In fact, all Creek products are thoroughly enjoyable in this respect and have gained a good following as a result. These days Arcam's amps have become very easy going and fluid sounding too, and don't forget Cyrus with their new Cyrus 6. As David says, avoid the TAG McLaren 60i which is both bright and tiring - and the Audiolab 8000 is just out of date (tonally grey). **NK**

BEAT THIS!

I've just bought a Creative Labs Muvo MP3 player and wonder what inner-ear phones you could recommend? The ones that come with it are a bit naff. I'm after something with some bass. When you consider I bought it to listen to music on my bike, which is rather loud, it's got to be good. I've been recommended Sennheiser's MX500. What do you think?

Gavin Monroe

I wonder who recommended them to you? Whoever it was, they're obviously a genius. Couldn't have put it better myself – they're the ones to have for £20 if it's in-ear you're after. Serious sound, the audiophile's choice. **DP**

UP THE JUNCTION

I recently listened to Radio 3's Late Junction (Thursday, April 10th) on my recently repaired Troughline, only to hear

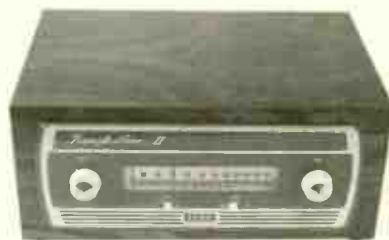
[2] Does anyone else find they choose between CD and vinyl first before choice of music?

[3] How long do you think it will be before 'high resolution' becomes high enough resolution to compete with vinyl?

[4] Is there a perceived market for a modern kit DAC with a valve output stage, utilising a more modern processor than that of a few years ago? It seems many a year since I've seen any DACs at sensible prices, due to the flux the technology is in, no doubt.

John Appleyard

Hants



Nothing like a Leak Troughline to hear what is happening.

Even in the so-called 'golden age of vinyl', back in the seventies, I can still remember hearing horribly worn out singles being played on the Radio One Top Forty... so maybe it's a case of plus c'est la change, plus c'est la meme chose! Certainly though, you'd expect Radio 3 to get its quality right. Methinks the LP in question

came from the Beeb's central record library, and had been previously played to grim death by someone wearing sideburns, a kipper tie and crushed velvet flares back in the late seventies. Or maybe there was some "Fluff" on the needle, so to speak! Me personally, I just play music – but I do tend to enjoy it far more via vinyl – warts and all. I'm of the opinion that until Blue Ray and a new 32bit, 384kHz oversampling digital system, plus about twenty years of digital convertor development, vinyl won't be bettered. Even when it is, I suspect there will be a Digital Signal Processor to bring back that hallowed vinyl sound! You may laugh, but any musos familiar with Vintage Keys (et al) – synthesiser/sampler boxes with digital samples of analogue keyboards – will know it's already happening in other areas! A valve based 24bit, 192kHz DAC – brilliant idea! Manufacturers, get your fingers out of your ears! **DP**

STATE OF CONFUSION

For some years now I've been wallowing in the music playing abilities of my Marantz CD63 Signature CD player, Sonneteer Champion amplifier and a pair of thirty year old Tannoy Chatsworth Dual-Concentrics (stop laughing at the back please!). Then it happened - I heard a demonstration of a pair of J.M.Labs Cobalt 816s driven by the Naim NAC 112 - NAP150 pre-power combination with a Naim CD5 at the helm. I was blown away. Wallowing does not cover it, total and complete immersion is what happened. What have Naim done to their amplifiers? I used to steer well clear of anything with the word Naim on it but not any more. You still get the music offered to you in no uncertain terms, but instead of "Oh, COP AN EAR FULL OF THIS!", it's "hello, cop an ear full of this please?", if you get my drift...

The upshot is that I have bought a pair of Cobalt 916s with the intention of buying the Naim combination at a later date. They work surprisingly well with the Champion though, so I'm pretty happy at the moment.

Then I thought - what about valves? I know Naim and valves in the same sentence are chalk and cheese and all that, but please stay with me. I've heard some very nice sounding valve based systems, and have had just as much trouble dragging myself away from them as I did the Cobalt, Naim setup. I can swing both ways, if you get my meaning, at least as far as hi-fi is concerned! The Cobalts start very quickly and stop even

quicker, go loud and soft when required instantly, corner as if on rails and the treble, although a little forward, is probably the best I've heard in a long time, bar the ELAC Jet tweeter. The speakers just sound all of a piece, nothing like separate drive units at all, so I was wondering about tubes? Maybe something from your range of amplifiers? Thanks for staying the distance, your thoughts would be appreciated... Oh - and a CD player that might go well with valves. Thank you very much.
Ray Fordham.

poise, yet awesomely fast attack transients and a fair bit of grunt too. I suggest you give WAD's Nick Lucas a buzz (number at the front of the mag). Me personally, I'd take both! As for that CD player – it's got to be Heart Audio's CD6000OSE! **DP**

It's not the case that valve amps are inherently slow or even soft sounding. This is largely determined by output transformers which, if they load a valve properly, allow it to swing full output at high frequencies, giving a fundamental tonal balance little different to solid-state. Trouble is, in prac-



Here's a thermionic equivalent to a Naim amplifier: a parallel twin 211, single-ended amp with a couple of transmitter rectifier valves (at left) in the power supply. Each monoblock produced 40 watts. They had a dramatic sound, with speed and real punch. They were dramatic to switch on as well, a strong thrum from the vast mains transformer resonating through the chassis. With an HT of 1300V and peak voltages of over 2200V just a few layers of insulation away from the loudspeaker secondary, this amplifier bordered on frightening. We designed and built it in 1994 as a one-off for a customer in Hong Kong. It showed us just what valves can do - if you've got the nerve.

Hmmm – interesting. You're quite right to say that Naim has come up with a far more user-friendly range of amplifier of late, but has managed to hang on to its quintessentially seat-of-the-pants style of music making. I have to say that if you like this kind of sound, then frankly you'll not find better elsewhere... so go see your Naim dealer.

Valves, as a rule, cannot be mentioned in the same paragraph – let alone sentence – as Naim kit. But I've been using a World Audio Design K5881 for some years now and of all the WAD stuff, this is one you'd probably like best. It's no warm-and-woolly Leak or Quad affair – it drives my Yamaha NS1000M loudspeakers with aplomb (and many transistor amplifiers can't!) and is lightning fast and furious, yet still retains the tonal colour of a good tube amp. This aside, a 300B would be the other choice – even more subtlety and

tice if distributed capacitance or leakage inductance are not well controlled by good design and careful winding and sectionalising, you commonly end up with a soft sound. World Audio Design amps don't suffer this, due to the quality of our own output transformers, wound by an expert company in Cambridge (definitely no names!).

Given good transformers, then the valve itself has most affect upon the sound and some are quite solid and fast - notably the KT88. It gives a presentation similar to solid-state, but without the grain, poor resolution of tonal colour and flatness of imaging.

I have heard a valve equivalent to a Naim - it was something we designed many years ago, using graphite anode 211s. The sound was extraordinary, but so were the anode volts. Consequently, I don't think Naim have much to worry about from this quarter. **NK**

YEAH BABY!

I'm just getting into hi-fi and was delighted to notice your retro section, since I'm trying to find the balance between style and function. Primarily I'm wanting to create a smooth and enjoyable sound, but also look the part, as I really like the late 70s and early 80s look of hi-fi. To this end I've managed to purchase an odd array of separates that mainly include a Marantz PM520DC integrated amp, Rogers LS7t speakers, Marantz CD-73 CD player and B&O Beocenter 4600 (for getting a turntable feed to my amp), using CableTalk 3.1 speaker cable. The style of music I normally listen to is varied, but acoustic sets are my main thing. I was wanting to know if the items I have are any good, and if there's anything you'd suggest changing to improve on what I have, bearing in mind that my budget is tight so I'm ideally looking for second-hand equipment.

David Oxtoby

It's true! Great fun can be had with early 1980s hi-fi kit! Without doubt, the weakest part of your system would be the amplifier. Try and track down the rare Rogers A100 or A75 amplifier; a great underrated piece of kit that would blow the humble Marantz in to the weeds. And it has that all-important slightly "cookie" British look to it on the cosmetics! After that, find an old Meridian MCD, source some decent cabling and mains leads, and you are on your way! **HB**



Rogers' A100 amp makes a great heart for any classic system

THE WRITE STUFF

I am a happy owner of an old Sugden A28 integrated amplifier. I bought it already used thirteen years ago and still use it (associated with Philips CD723 modified and HECO ASTRON 500 loudspeakers). It seems to be the very first Series (#0514). Unfortunately I have not the smallest documentation / information about it. Is there anybody who could tell me something?

Antoine Ramondou
France

Sugden's little A28 had quite a long production run, introduced in 1980 and discontinued in 1996. Originally designed to fit under the A48 model, there were three main variants, the original A28, the A28/II and the A28B. All models are biased in Class AB operation, but the early models are run with very high Class "A" bias, the first 12 watts! So if your amp runs very hot, you are lucky! Like all Sugden stuff, the A28 is a great little amp, and will still see off some substantially more expensive kit. **HB**

CONNOISSEUR QUERY

I am seeking any information you might have regarding the Sugden Connoisseur Craftsman record deck. I bought it second hand about twenty years ago and as I recall it came with only a one week guarantee. However, it still rumbles along and is in regular daily use, albeit somewhat the worse for wear these days. The motor is suspended inside the body by three rubber bungs, which I have stuck back together with Superglue a number of times when one or more has perished. Sadly they are now beyond repair and I believe it is unlikely that replacements can be found. Consequently the motor is now suspended by three strands of gardening wire. I have no idea how old it is but would guess it was probably manufactured sometime during the 1970s. Inside the body, screwed to the top, is an old tobacco tin, still with a

removable lid, inside which are housed some adjoining wiring. It is a quite remarkable old thing and still sounds pretty good. Do you know anything about this particular model? I have tried a limited web search but to date have not found anything referring to this particular model of turntable. I would be extremely grateful for any information about the history or anything else concerning this fine old hi-fi separate.

Tim Vine

A.R. Sugden & Co. (Engineers) Ltd, were originally based in Brighouse, Yorkshire. The Connoisseur Craftsman range was introduced

towards the end of the 1960s, and had been a bit of a change of direction compared to the earlier, heavier, decks to hold the "Connoisseur" name tag, which had been Garrard 301/401 rivals. One of the first to demonstrate a stereo record system back in the early 1950s, Sugden (nothing at all to do with J.E. Sugden down the road in Cleckheaton) had also manufactured valve amplifiers based on classic Mullard circuits, and built a few very large loudspeaker systems.

By the end of the 1970s all the various Craftsman models became the latest discount line at the electrical store Comet. Although factory plinth systems existed, the vast majority of the decks were sold in kit form, from under a tenner! All suffer from the "elastic bands" support system under the motor collapsing with age. The main bearing is not too bad, but the whole thing is a bit ham fisted. Saving grace was the optional little SUA2 pick up arm, with its gimbal bearings...

A.R. Sugden Ltd quietly disappeared about 1980 and getting hold of any parts is near impossible, although do check with Technical & General (Tel: 01892 654534) **HB**

THORENS DELIGHT

Imagine my delight, while plying through a world of information regarding the Thorens TD-150 on the World Wide Web, to find Haden Boardman's extremely informative October 1998 article regarding two of my most beloved turntables! Unfortunately, my venerable TD-160 BC with a Grace 707 Mk II arm and Grace F9L was stolen from my former abode a few years ago, but I was very pleased to discover my father's old TD-150 AB - yes, dreadful arm and all - while rooting through the basement recently.

Fortunately for me, the wiring in the arm has given up the ghost, so a replacement of this arm is necessary.

I will be acquiring another Grace 707 Mk II in the very near future, but after dismantling the table and cleaning it up have discovered that the armboard is so warped as to render it unusable. In Mr. Boardman's article it is mentioned that a company called Technical And General offers ready-cut boards for Thorens turntables and a telephone number is supplied, but I am curious as to whether T&G has moved into the modern age and maintain a website?

I live in the USA and would rather not get involved in what could possibly be a rather lengthy overseas call. If you

could assist me by supplying me with an internet contact for this company, I would be eternally grateful. Also, if you happen to know where I could get two replacement woofers for my Rogers Studio 1a's, I would be grateful far beyond eternity!

David J. McConnell
Chicago, IL, USA

Technical and General can be found at PO Box 53, Crowborough, East Sussex, TN6 2BY Tel: 01892 654534, sorry but they only exist in the "real" world! Try Alexander Graham Bell's amazing invention.

For replacement bass units for Studio 1a's, well that is even more difficult... as far as I am aware, there is no longer any kind of spare parts operation for the "old" Rogers speakers. If any reader can offer further help on Rogers parts, please let us know. **HB**

Leak. Both use classic KEF B110 and T27, but the JR model is a tad more efficient. Some of the old Richard Allen stuff can be great, but frankly a lot are not that good.

You do not give a budget, so it is difficult to be specific here; general advice would be to avoid any speaker which is known as a difficult, current hungry load. A surprisingly large amount of modern loudspeakers work remarkably well with the Leak, (most of the Castle / ProAC range are ideally suited) and there is a massive back catalogue of second hand stuff to go at! By the way, the Counterpoint preamp has very high output, do attenuate the input to the Leak, or else the levels of hiss and noise will be quite high.

I presume you are using vinyl as your source. If not, then frankly you will get better results running your CD player via a passive preamplifier such as the one made by Creek. **HB**

still not clear on.

Apparently, the new Quad 22Ls will be too bass heavy for my 3.5m square listening room but the ESL63s will fit my requirements, even close to a wall. I'm confident I would be happy with the sound but I am worried they might be wasted with my existing amps driving them. I am thinking of linking my two amps and an AV receiver. The man at Quad thought the amp plus AV receiver was the best way to go for home cinema use and he also thought adding a subwoofer would be a good idea, to enhance the bass for my music requirements. I mentioned the REL Quake but he suggested at least the Strata. Apparently, I would not need a centre speaker with the Quads so I could spend the saving on the bigger sub. There would also be a saving on speaker cable, the ESLs apparently having minimal requirements in this respect.

Having been convinced that bi-wiring with good quality cables was a prerequisite of good quality hi-fi, this came as a pleasant surprise but what are your thoughts on this?

Now, in respect of AV receivers, the Quad man strongly recommended the Denon AV3802. He proceeded to explain the advantages of how this particular receiver could be connected up, which is where he completely lost me. He mentioned something about a phantom centre channel but other than that I can't help. Can you throw any further light on this with your expert knowledge, please?

Steve Sellars



Every Thorens needs Technical and General!

TOP TWENTY

I own a Leak Stereo 20 valve amplifier which is run in conjunction with a Counterpoint SA-7 pre-amp. I am wondering what speakers would be a good match for this combination? I have just been given an old pair of Richard Allan 8 ohm/20 watt speakers but have been told that a pair of Rogers LS3/5a or Quad ESL 57s would be an ideal match. Or would a more modern pair of speakers be a better bet? I would be interested in your opinion in this matter. I listen mostly to acoustic music in a modestly sized house. I have no particular preference towards buying either new or refurbished speakers.

Andy Heaton
Shropshire

In stock form, a Leak Stereo 20 does get a little unstable when driving the Quad Electrostatics. LS3/5as are a good match, but the Jim Rogers JRI49 are a much better bet with the

'STATIC ELECTRICITY

My hi-fi consists of a 25 year old Pioneer SA-9100 amp and Technics SL-1100 turntable, and a recent Audiolab 8000A as an alternative to the Pioneer. To replace my defunct Avasond speakers I was considering Quad 22Ls or ProAc Response 125s or even the D15s for music, plus matching centres and KEF KHT2005 or Mission M5ds rears, for home cinema. I have been offered some 10 year old Quad ESL 63s. I want high quality music with good, deep bass. A good friend has been advised he should ask £1,800 for his ESL 63s. I was uncertain they would be suitable for incorporating into a home cinema setup so I rang Quad. I was very pleasantly surprised by the level of help and advice they gave me. Unfortunately, I was given so much information that I found it difficult to take it all in over the phone. Which is where you come in and I am hoping you can reinforce what I remember and clear up a couple of points I'm

What a plot we weave, Steve! Let's start with the ESL-63, a truly terrific loudspeaker, but one requiring high quality amplification to drive it. I am not totally convinced that either your Audiolab or Pioneer amplification is really up to the task... I would agree that the Quad 22s are too bass heavy, where the '63s would not swamp the room, but it would still be far from an ideal situation. As for incorporating these into a high quality surround system, now this gets really complex! In an ideal surround set up, all speakers should be of equal quality, in other words a pair of ESL63s should also be used for rears...

Using "another" loudspeaker will compromise the surround, with the result that the sound will "flop" between the various loudspeakers rather than attempting to give a half decent surround effect. If surround sound is important to you, it is a pre-

requisite the speakers match, be it ProAC, Mission, KEF or Quad; they do not mix up well.

If your main listening will be in two channel mode, then the purchase of the ESL63s will need to be backed up with suitable amplification / source which is liable to cost another couple of grand each component. The ESL63s demand the highest standards, and you must be prepared to suitably invest.

Removing the electrostatics from the equations, Denon's new AVR3803, replacement for the 3802, Sony's '333ES & '555ES, Harman / Kardon 5500, plus Arcam's AVR-200 are all very good sounding surround amps at just under the thousand pounds mark. All will do "phantom" centre (literally you do not have a centre speaker, the centre channel signal is divided in to the front main left & right channels) and perform various other tricks we neither need, nor want to think about! The ProAC speakers could be a very good choice along with the Arcam amp, or consider the AVR-3803 with KEF Q3 or Q5 floorstanders, with matching Q9C centre channel and small Q8S rear satellites; they all use the same high quality Uni-Q driver.

As for the ".1" channel, well my personal rule with a subwoofer is that it must match the quality of the main loudspeakers; you ideally need a REL "Studio" to run with the ESL63s. A REL Quake or Q150 would be fine with the KEFs. Whatever is spent on main front speakers needs to be spent on a sub.

It really is a question of budget and priority here. If the electrostatics are going to be purchased, then the advice given by Quad is sound. Spend the bulk of your budget on a good amplifier to drive them, and compromise on the home theatre front using phantom centre channel and "another" pair of rear 'speakers.

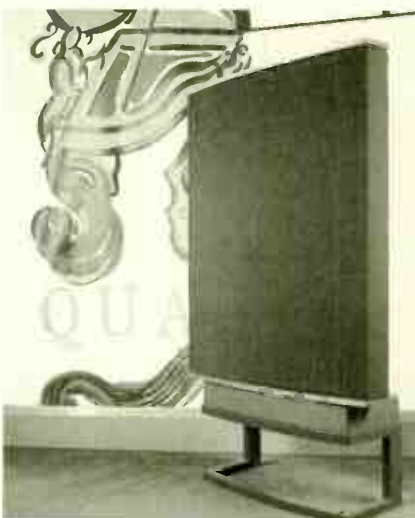
Another option would be to keep the two separate. Why not run the Arcam AVR-200 into a full pack of KEF 2005 surround speakers for A/V and leave the two-channel system separate? Trying to mix very high quality stereo with surround works out very costly and complicated... you may have worked that one out for yourself!

Going for the KEF or ProAC speakers and a decent surround amp, would be a definite improvement over your existing system.

Bi-wiring is a question of budget and loudspeakers. Personally, I would

rather go for a higher grade of cable than bi-wire; but it really does depend on the components you finally choose; the cables will alter the sound of your system, and can be used to fine tune the final system balance. **HB**

As Haden says, you are in a tizzy. Also, you are about to suffer. As a long term user of ESL-63s (beaten to death by reviewing and now in the loft!) I can assure you they are not meant for 11.5ft square rooms - Heaven forbid! I did, in the past, take time to gently question Peter Walker (founder of Quad) as to why he positioned ESLs the way he did, because he always got a great sound from them. He explained that the rear radiation was best 'lost' down a room and, at shows especially, I noticed that this was the way Quads were placed - with plenty of space behind. You will not be able to get this in your room, which is quite frankly too small for ESL-63s. They need space, and preferably a long, narrow room with the panels placed at right angles to the walls, one third the way up. A typical suburban through room (two rooms knocked into one) of about 12ft x 20ft is ideal. **NK**



Serious speakers like these need more than an Audiolab to drive them

BETTER SIXTEEN BIT?

I read Noel Keywood's review of the Philips DVD-963SA in the current issue with great interest. I'm finally in a position now where I can upgrade my Rotel 940BX CD player and having not looked at the hi-fi press for some time I was unaware of the option of buying a universal, or near universal, DVD/SACD player, and was consequently thinking along the lines of a Marantz CD6000K1.

Despite Noel's favourable response the question not addressed by his review is how does the Philips' CD replay sound quality compare with CD-only players in a similar price bracket? Given that the Philips is available on the Internet for as little as £308 and the Marantz CD6000K1 costs around £300 at Richer Sounds, how do these machines compare on CD sound alone?

Tim Keenan
Trinity College, Dublin

Well, you've come to the right place, Tim. Hopefully this month's group test should shed a little light on this particular subject! My own opinion is that right now, pound-for-pound, the best CD players play CD noticeably better than the best DVD-A / SACD players. This is only to be expected, considering all the extra video circuitry, etc., inside the latter. Suffice to say that my old 1989 Sony CDP-X77ES CD player (a high-end £1200 one-box Bitstream machine) sounds far more powerful, engaging and authoritative than the new £4,000 Musical Fidelity NuVista SACD player. This latter machine is based on the legendary Marantz SA-1, and is absolutely superb with SACD and very, very good with CD too.

If an old high-end CD player can whip a new high-end SACD - when playing CD - then I think you shouldn't rush into throwing away your old CD machine. I'd advise readers to keep two machines, and have the best of both worlds. **DP**

A Marantz CD6000K1 sounds exactly as David describes, "more powerful, engaging and authoritative" than the Philips DV963SA. However, whilst the Philips sounds a bit soft at the bottom end and perhaps acceptably bright in balance, I might say, it also digs out a lot of ambience, as Philips claim.

The over-sampling scheme does work, giving identifiable benefit. Ideally, it should get K1 treat-

ment, but I doubt very much whether Philips will ever go down the Black Turnip - no, sorry, Tulip - route again. I would not in all honesty rate the Philips above the Marantz playing CD alone, but it pulls way ahead on sound quality with SACD, and there's the small matter that it plays video DVDs well too. As high resolution machines go it plays CDs better than most, if not as well as the best CD only players. **NK**



Classic 16bit – forget DVD spinners, this is the real deal

DISC DILEMMA

Fourteen years ago I lashed out money I couldn't afford on a decent system, comprising Manticore Mantra turntable, Cambridge P40 amplifier and Celestion DL4 loudspeakers plus a Marantz CD52 silver disc player. They have served me well, until now - the volume control on the amplifier is shot. A few years ago I took the unit to a branch of well known discount hi-fi retailer to investigate and rectify. I found the £35 fee was excessive for merely blowing the dust off the amplifier, and suitably disillusioned by the failed attempt I have lived with the problem to this day.

My dilemma is whether to try to find a hi-fi specialist who can offer a credible repair service? In doing so, I risk throwing good money after bad, especially if the defective components are obsolete. Or do I bite the bullet and buy a new amplifier? I would consider a budget of around £250-300. Would I get something much better than my P40 given that the technology has moved on? I am not averse to buying "last years model" at a significant discount if I can gain significantly in terms of quality for the same money. However I am realistic. A browse through recent hi-fi literature has focussed my attention to the Rotel RA-01. Thoughts? If a new amplifier is your recommendation can you advise what would be the best fit for my existing set up?

I have a considerable amount of vinyl which I still wish to play, and my CD collection is also significant and will continue to grow. Neither medium is predominant. What are the pros and cons of moving coil and magnet? If my budget would constrain the quality of the Manticore and the Marantz, what do you think I should be spending? I am loathed to spend too much at the moment because my DL4s are up on the wall, away from the more reckless members of my household. My Manticore is still fitted with the cartridge it was supplied with – an Audio Technica AT95E I think. Is it worth

upgrading? Can I even get a replacement stylus for it?

**Ian Downie,
Aberdeenshire.**

Save your money and go for one of the new breed of affordable integrat-eds, such as the £599 Cyrus's 6, which is admittedly above your budget but well worth the premium over anything you can get for £300. You'll find that transistor amplifiers have got a lot better since the mid-eighties, being smoother and more incisive, as well as better built. Until you can afford a decent phono stage such as Trichord's new Dino, you can use the Cambridge P40 as a phono stage – plug your deck into the P40, select phono and run interconnects from its Tape Out sockets into one of the Cyrus's Aux inputs. Personally, I don't rate the Rotel too highly - the Cyrus would bring more power and a warmer sweeter sound, one that's also dynamically punchier and more involving.

Your Manticore deck is capable of very good sound indeed, far better than most CD players at any price if properly fettled. To wit, you should give it a decent cartridge when funds permit. I'd suggest Goldring's G1042, which is truly powerful and engaging. It's expensive at £120, but the next (admittedly superior) option is the £200 Dynavector DX10X4. You can get replacement styli for the AT95E, but if you can't afford the Goldring and still need a new needle, I'd buy an Audio Technica AT110E instead – it's only £10 more expensive than a replacement AT95E stylus and is an altogether smoother and more musical performer. Pull off the stylus guard (it resonates) and superglue the stylus section to the cartridge body and you'll have a fine performer that will last you a year or two, until you can afford the Goldring.

Assuming you have a Rega RB300 tonearm, get the counter-

weight modified by Origin Live. With the Goldring or DV, this will give you a truly superb source.

Finally, your flaccid sounding Celestion DL4s will have to go – they were the best budget box in 1985, but frankly that's not saying much. Think along Mission 782SE lines, again when funds permit. Good luck! **DP**

Cambridge P40 eh? This is something of a classic; I once had a P50 and regret losing it (well, it blew up, as they did!). Personally I would get the P40 fixed, then either sell it or store it. Those amps had around 0.3% treble distortion and it was audible I found. Try a Creek or a Cyrus, or an Arcam. They are all a very pleasant listen. **NK**

BATTLESHIP BRUISER

My Dad and I have clubbed together our best 'bits' to make (at our level at least) a mega system which sits on a concrete support in our music room. The bits briefly consist of a heavily modified spiked Heybrook TT2 turntable, Origin Live DC Motor upgrade, stub modified OL250 arm, Grado Prestige Gold cartridge and Creek phono stage. Pioneer PD-91 CD player, Rotel RA-1060 integrated and RB-1070 power amp (bi-amped), Rogers LS7t speakers sitting on custom steel stands with Kimber mains and signal cable all round.

The system to our ears on vinyl sounds better than we could have ever hoped for, the problem being the old battleship CD player which sounds boring. The vinyl front-end absolutely leaves it for dead. Can we at least improve it without breaking the bank? I've read in *World Classics* that it's a "built to last player with easy upgrade routes for modifiers". We don't mind tinkering so can you point us in the right direction? Is it worth adding an outboard DAC? If so, could you recommend one for around £300? Has our heavyweight battleship fought its last battle or can it go on fighting? Your views are most welcome.

**Robert Stevenson,
Chesterfield**

Your vinyl system sounds superb, Robert, so it's a tall order finding something digital to compete. Personally, I'd get a Trichord Clock 4 modification done (to which your PD-91 should respond superbly), and start scouring the classifieds for a Pink Triangle Da Capo DAC – in my opinion this was the most analogue

sounding offboard DAC ever made, and is a future classic. They're pricey at £400-ish, but they'll give you tonal colour and depth perspective like you wouldn't believe – so much so that your vinyl section will have to fight hard to keep up. **DP**

over the part of the audio band where maximum power transfer is needed they are 4ohms. Also, using a higher than specified load (e.g. 6ohms on a 4ohm tap) does not raise distortion, even though it does reduce maximum power output a little.

to the sound created. Could this be due to cartridge wear, as I bought it in 1995? In the future I hope to aspire to a Michell GyroDec SE. With my other equipment would this work and provide me with even more exciting playback, and what cartridge would be best then?

Alan Walker
Stourport on Severn



Philips new DVD963SA is a great sounding SACD and DVD video player that also does a good job with CD.

Hi Alan – that edginess is your stylus re-cutting your record grooves, so a new pickup is in order pronto. Just as I recommended to Ian (above), the Dynavector DV10X4 is the one to have in the sub £200 price bracket. The MC15 Super II is bland and over-analytical in my opinion. It was great eight years back, but times have changed – John Major is no longer Prime Minister and Take That have now split up! The MS Pageants are awesome blasts from the past, but I really think they're due for the chop soon. Mission 782SEs are efficient enough to get decent levels out of your ageing Ion, and should work beautifully with the Gyro and Michell. Wondrous tonal colouring, true

TAKING THE TUBES

I am at the moment perplexed, as I wish to move into the wonderful world of valve amplification and am considering purchasing a World Audio Design KEL84. My dilemma is that I don't know if it will drive my speakers, which are Mission 773Es. Would 15 watts be suitable to drive them? I don't particularly wish for them to produce ear splitting volume levels but enough to drown out polite conversation would be nice (in a 30 by 15 foot room).

The power output isn't the only issue I am confused about, as the 773's are quoted at being 6 ohm impedance and yet you can get the amps rigged for 4 or 8 ohm only. Which one would I choose and are there any benefits or downfalls - feeding 6 ohm speakers with an amp rigged for a 4 ohm impedance would surely reduce the output further?

Also is there any need for special placement of the amp within a rack due to the high temperature valve amps run at, and is there a minimum distance from the top of the amp to the shelf above to avoid incinerating my tuner and CD player?

Please advise me to the best of your knowledge and also possibly suggest any alternatives for a maximum of £350. Many thanks and keep up the good work!

J.S. Angus

Whilst 15watts would drive them, you'll be competing with conversation rather than drowning it out. I would suggest more like 40watts from 6550s might be a better idea, especially in such a large room.

On the matter of impedance, these days it is best to use a 4ohm tap to drive 6ohm speakers, since

Using a lower than specified load increases distortion as well as reducing maximum power, so if in doubt always use a tap value lower than the load. Leave at least a few inches above the amp for hot air to escape.

NK



The 6550 beam tetrode gives plenty of tube power.

HOOKED ON CLASSICAL

Thank you so much for a h-fi magazine that still extols the virtues of vinyl! I am a committed classical and opera lover, but continue to wonder whether I can improve my system, which is a Project 6.1 turntable with Denon DL110MC cartridge, Ion Obelisk 2 amp and Mordaunt Short Pageant II speakers bought in 1974. I have recently upgraded my interconnect to Chord Calypso, but wonder if a better cartridge such as an Ortofon MC15 Super would provide a real improvement? What would you suggest up to £200? I also find that at reasonable volume there is a slight edginess

depth perspective, "walk around" soundstaging and dramatic dynamic contrasts are but a credit card away – so start saving! **DP**

WOOD YOU COUNTENANCE IT?

I know a fellow who is selling an old pair of Yamaha NS-250E loudspeakers for £40.00. I have heard these hooked up to his system, which is all modern Sony stuff and to my amazement they sound quite nice. They look quite strange with that giant woofer and tiny horn tweeter in the corner. The cabinets are a little scratched but that would be

expected for I assume these are quite old. Is there any information you can possibly give me about these antiques. I know £40 won't break the bank but it could go towards something else. I'm just looking for a nice sounding, smallish loudspeaker with wooden cabinets. Any help would be greatly appreciated.
M Holt

Well, if it's 'nice sounding' and wooden cabs you're after, then look no further than the classic designs of the 1970s. Usually three-way designs with Bextrene or doped paper bass and mid drivers, plus soft dome tweeters - and acres of depleted rainforest used each side - they tend to sound smooth and warm and 'big'. Don't expect forensic detail retrieval, holographic imaging or stunning speed or attack though - nobody seemed to care about that back then! The Yamahas sound just the job at £40, but up to £100 or so more will buy you any number of Brit classics, from Celestion Ditton 15XRs or even 66s, to KEF 104ABs, Spondor BC1s or Mission 770s. When buying old 'speakers, always make sure you get a listen, and look out for buzzing drive units and perished cone surrounds.
DP

ON THE RECORD – EASILY!

Can you help? I need a simple Program for getting my old LPs onto CD. I find that Clean Plus and Wavelab Lite and Wave Repair are too complicated and require a depth of understanding that I do not want to acquire. I just want record to hard disk, clean everything, then record to CD. No options. Preferably auto sound levels because it is never clear how to set up. (The sample sounds on the Clean CD are OK but what do I do with them?) Is

there anything out there? I do not want to become a techie. I just want to listen to some music.

Brian Ellis

Hi Brian – methinks Roxio's Easy CD Creator is the package for you – you can save the intricate joys of Cool Edit Pro and Nero for

another day! **DP**

DAZED AND CONFUSED

I'm a bit stuck and I am in dire need of some good "sound" advice. I bought about 5 years ago the best stereo I could for my money, investing in Technics A600 mk3 amplifier and SL-PG490 CD player with a pair of Mission 701s. This system has suited me well enough, but the amplifier recently stopped working and I am confused as to whether to replace just the amp, or go the whole hog and do the CD player too. The other option is to invest in the Denon DM31-s but I don't know if it will power my speakers all that well.

I have to say in comparison to other (better) systems, my setup sounds rather unexciting and I feel I am wasting the speakers a little on pretty naff equipment. I have a bit more money to spend than I did originally, so I could probably go to around £800 at a push. Please help a rather dazed and confused chap, and point me in the right direction.

Russell Kirkham, Buckinghamshire.

The CD player in particular is sleep inducing, but the Technics amp is no great shakes. I know what you mean about the sound; it summarises the smooth, inoffensive but bland sound of so many Technics products. They don't offend, but they don't excite either. I would suggest to try a Marantz CD6000 KIS, which has a kick-ass sound – tight, clean, detailed and punchy. However, this and the Missions I would tend to choose a smoothie amp (but not bland!) like a Creek A50 or a Cyrus 6. Both have the sort of neutral clarity needed to fully reveal without modification or enhancement, the abilities of the player. **NK**

LEAK REVIVAL

Can you please put me in touch with someone who can guide me in getting a Leak amplifier to fire up safely? I have just been given an FM Trough Line 3, Varislope 2 Stereo preamp and a Stereo 20 power amp, and I don't know where to start with it all! It was given to me by a friend who kept it in the garden shed for 15 years, and I suspect that just cleaning and switching it on is not a good idea! I'd like to visibly show off the valve technology, and drive CD-based jazz and classical music through my Celestion Ditton 25s. The transformers don't seem to have leaked, there's about

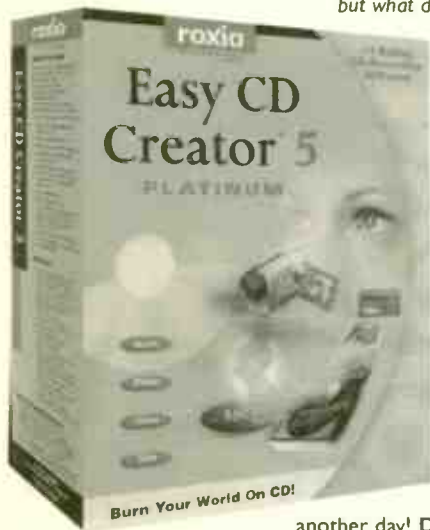
2% rust on the exterior grey paintwork, the ECC83 valves and GZ32 (not GZ34!) are by Mullard and the EL84s are a mixed bunch, two unmarked and two by Brimar. My possible plan of action is:

- 1) Open up cases, look for obvious damage, fix.
- 2) Connect with test speakers, switch on & test.
- 3) Take advice on performing basic renovation through replacement of aged components (caps and valves?) and perhaps resetting biases/ gains. This may be a stupid plan - I'm just guessing!

George Robinson

If you want to renovate the equipment yourself you will need a service manual and these are available on the Internet. I would dust it down, do visual checks, check for short circuits (i.e. biggies like an HT line shorted down!) then bring it up slowly on a Variac. If the voltages do come up then I would give capacitors time to re-form before applying full volts. After this it is a case of watching out for cherry red anodes and smoking resistors, although quite frankly it really is best to check cathode resistors and input grids first to ensure excessive current isn't being drawn through the output valves since this may burn out the output trannies.

If the amps do run then all the working voltages need to be checked to ensure they are correct. If components need replacing you must decide whether you want the amps restored, in which case original old (NOS) parts should be used, or simply renovated, in which case new parts can be used. All-original amps are worth more, but we are not talking big bucks. If all this sounds too much or you don't have the knowledge, time or test equipment (and don't fancy getting an electric shock) then you may be best off getting a quote from an expert like Graham Tricker at GT Audio. **NK**



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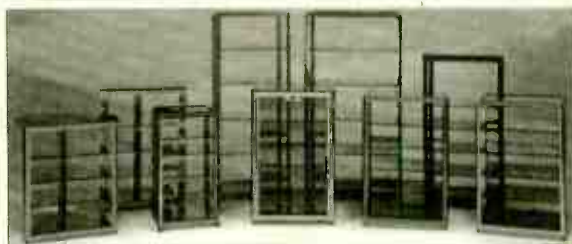
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MUSICAL IMAGES

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ARCAM T61 Silver Tuner	NEW £250	£180
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DENON AVR2802 Gold AV Receiver	EX/DEMO £650	£550
DENON DVD2800 Black DVD Player	EX/DEMO £750	£600
DENON DVD2800 DVD Player	S/H £750	£450
HARMON KARDON AVR4500 AV Receiver	NEW £650	£375
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HARMON KARDON HK3370 Receiver	EX/DEMO £250	£150
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MERIDIAN DSP5500HC Centre Speaker	EX/DEMO £3,750	£2,500
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Hi-Fi World, Nov 97 (structural modification on RB250)

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COUNTERPOINT CD 11/10 transport/cd 20 BT	1250	EPOS ESTI black	6000	350	NAM MAC 628/NAP 1400 mint boxed old style	550
DAVIDEN CD PLAYER base 400 with gema remote	8000	HALES CONCEPT S 5 based, tweaked crossovers	2000	2000	NAM 523 MK phono boards available s type or k type	50 pair
KRELL KP2500 transport	23500	HEYBROOK SURETYS mk1 upgraded with mk2 board	1250	500	NEW A20 I class A integrated amp	500
KRELL KP2550 CD PLAYER, mint boxed	10000	HETRODOX QUARTETS with matching stands, bar oak trim	800	250	PHILIPS 200 watts per channel monoblocks	1500 600 pair
LECTOR cd player mint boxed as new, valve output	1000	IMPULSE HT little horn loaded floor standers REDUCED	750	375	PINK TRIANGLE PIP cable pre amp board	750
LEVIN GORE (not 3) recently serviced	1500	KEF 01 BOXED PHANT with q30 subwoofer	3650	1900	PINK TRIANGLE PIP TWO preamp, mm and mc, one box version, boxed black	1500
MARANTZ CD94 mk1 cd player excellent	850	KEF REF 102 black, boxed	800	300	PLINUS 8100 integrated amp, line level	850
MARANTZ CD94 mk2 excellent	150	KEF REF 104 original model	3650	1900	QUAD 34/306 with manual excellent	425
MEASURIN 203 dac	150	KEF REF 4.2 rosewood, excellent	3650	1900	QUAD 44/474/405 all excellent boxed, old colour	200
MERIDIAN 500 transport mk2, boxed	1245	KEF REF 4.2 rosewood, excellent	3650	1900	QUAD 405 MK1 100 watts of power	180
MERIDIAN 208 cd/pre based with remote	550	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	SM AUDIO CELESTE integrated amp, with phono	1500
MERIDIAN 2007 2.83 TRANSPORT/CD COMBO	800	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	SONY TA F240 black integrated amp	80
MERIDIAN 6GA ONLY TWO transport, boxed	800	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	SONY ESPRIMO TA 88 preamp, mint boxed lovely	350
MUSICAL FIDELITY 6.624 cd player 24 bit	350	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	TALA ELECTRONICS HURON/CAE 3P/10W/AD30 3P	2000
NAAHANCH DRAGON CD AND DAC, board another awesome set. I was loath to see the last one go so I've got another to play with. I keep trying others but keep coming back to this its musical life level has better bass than this one is a tweeter	8500	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	TECHNICS 1000 PRE/POWER, virtual battery pre	500
PHILIP TRIANGLE CD/DAK dac with 18 bit filter	1500	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	THE SHIELD CAS 2 100 watt per channel model power amp, boxed	500
PHILIP TRIANGLE CD/DAK dac with 18 bit filter	1500	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	YAMAHA F2200 professional series power amp 200 watts per channel big and heavy with grab handles and v meters	350
PS AUDIO LAMBDA transport, with triaxial dock 3	2500	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	TURNTABLES, ARMS, CARTRIDGES	
QUAD 66 cd player	1450	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	AAR LEGEND with LHM SAGA	150
SHANLING CD 1100 crazy valve cd player, BT STOCK	2500	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	AUDIO INNOVATIONS 800 MK transducer	100
SHANLING CD 1200 as above but SACD player IN STOCK	2500	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	CONRAD JOHNSON PRE/AMP MK HEAD AMP (revision) steps up mc to mm	400
SONY T77 SACD	1500	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	DYNAVECTOR 300L moving coil, boxed	1000
STAK TALENT DAC champagne finish	1400	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	FIDELITY RESEARCH P66 12" arm	900
SUGDEN as1 DAC, and tweeter	1500	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	GARBARO 401 in APHELION PLINTH chery with new origin line silver arm and golding 1042 cartridge 1000	1000
TEAK YN510 cd player excellent	800	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	GRANAM SLEE FROM LEAD TO FIT LINE/SPE, suitable mc cartridges	500
TEAK 11/7-D1 transport (dock 2) and dac	2500	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	GOLDING PH BRISA new battery pre	400
THEA DAC 11A upgraded to 3 dac	2500	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	GRYPHON PHONO/STAGE & HEAD AMP double dual mono with 4 power supplies, amplifiers from mc to mm level gold finish, with impedance matching plugs and owners manual & boxes/ even has volume control	1750
THEA GEN v in stock 6000 2500	2500	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	HADCOCK GARZE silver wired, 2 years old, boxed with set up etc	350
TRICHORD transport with pulkar one dac and psu	800	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	HOMER PRO ARM LEAD TO FIT LINE/SPE, suitable mc cartridges	850
WADIA 3200 transport/32 DAC	3550	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	KOETUS 1000 cassette deck, 1000	400
2-systems rdp-1, DIGITAL EQ, USE FOR SYSTEM CONNECTION, STRONGLY RECOMMENDED		KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	KOETUS AMP/black, 31100a mk2, new unboxed, boxed	700
VALVE AMPS					LFD MK1 phono stage	1000
AIR TIGHT ATN2 80 watt power amp, mint boxed, new valve	2000	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	LHM LP12 valhalla MODIFIED NEGA ARM	400
AUDIBLE ILLUSIONS MODULUS 3 pre amp with gold mc monoblocks	2500	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	LHM LP12 stratos with valhalla and bakid old but excellent condition	400
AUDIO INNOVATIONS 200 power amp 12 watts	200	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	LHM TRONKA desicc cover (in soon)	300 boxed
AUDIO RESEARCH YTH130 monoblocks	3000	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	LUDHAM pd300 WITH SPE III arm, vacuum shutdown etc, line booster	400
AUDIO RESEARCH Y1140 monoblocks boxed	4000	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	MICHEL GYROD/CEC with pre/amp & olive mod r250	700
AUDIO RESEARCH SP15, two box pre, with phono	9000	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	MICHEL ORBE UPGRADED GYRO/CEC, new bearing & platter, CD PSU, incognito and counterweight modified	1500
AUDIO RESEARCH LS1 pre line valve pre	3000	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	REGA arm and nottingham analogue base 3	1500
AUDIO RESEARCH LS2 line level pre	1000	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	MOFI (page 4) in stock no mc	150
AUDIO RESEARCH LS7 boxed line level pre	1320	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	MOFI PHONO/STAGE mm/mc	150
AUDIO RESEARCH LS8 mk1 line pre, black front, boxed	900	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	NAM ARO, boxed, slots cut into headrail for cartridge alignment	600
AUDIO RESEARCH LS8 mk2 line pre, black front, boxed	1100	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	NOTTINGHAM ANALOGUE CARBON FIBRE ARM latest version	300
AUDIO RESEARCH SP15, two box pre, with remote, silver front	3500	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	NOTTINGHAM ANALOGUE THE FOOT 12" arm	1000
AUDIO RESEARCH LS32 remote control upgrade (depending on behalf of customer)	5000	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	ORION LIFE ARMS IN STOCK decent trade mc given	400
AUDIO RESEARCH REFERENCE PHONO, black front, mint boxed	7000	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	ORTOFON ROHAMH rebulk by van den HULL	350/500
AUDION STIRLING phono stage	700	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	ORTOFON T20 transformer	175
AUDIOPH APOLLOS, single ended lid edition	800	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	PINK TRIANGLE LPT/ab 300 no lid	250
BEARD P50 great amp 50 watts	1500	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	PROJECT 6 basic turntable/arm	200
BEARD g15 mk2 POWER AMP	1500	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	REGA PLANAR 3 with r200, oldish	150
BEARD BSA100 integrated amp serviced, buyer collects	1500	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	REGA PLANET with gear 207 arm	100
BORDER PATROL 300B amp/mk1	2500	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	REGA COUNTERWEIGHT MODIFICATION KIT in brass	50
CONCORDANT EXCELSON, pre with phono and valve psu	1500	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	REGA RB250 ORIGIN LIFE counterweight/interal & external wiring mod	275
CONCORDANT QUAD II MONOBLOCKS	2000	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	REGA RB 300 incognito rewire and origin counterweight mod	250
CONRAD JOHNSON P96 pre with phono board	1000	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	REVOLEUR black with arm and all cartridge boxed	100
CONRAD JOHNSON P114L board	1000	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	ROCKPOINT SABLE 2, with upgrade/ly Rodipol arm, Chroma motor controller and custom acrylic cover (in soon)	5000 +-+
CONRAD JOHNSON P114 3 months old remote, boxed	2400	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	SACW we 407 tonearm, loose edge bearings, detach headshell, boxed	600
CONRAD JOHNSON P114 3 months old remote, boxed	2400	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	SAEC we 407 tonearm, loose edge bearings, detach headshell, boxed	600
CONRAD JOHNSON PREMIER 7B 2 box pre	11000	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	SHOM TORRE series 7, mint boxed with arm, rare chance	7250
CONRAD JOHNSON PREMIER 6 revision mc step up	400	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	TECHNICS SL1300 turntable, direct drive, girth control etc	150
CROFT SUPERHERO with mc step transformers built in	3000	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	THOMAS TO 145 with arm, clear v15 II	80
CROFT SUPERHERO A mk2 black valve preamp	300	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	TRONM MC STEP UP TRANSFORMER	200
CROFT CHARISMA 1 phono preamp	2050	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	VAN DEN HULL MK2 high output, 2.5mm vlt light horn	600
CROFT EPOCH ELITE mahogany front, boxed	600	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	VOLD VALDI with helius arm (audiometer wired) boxed	600
CROFT 3 OIL	700	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	VOYO the voyd with rel bearing and platters, split phase psu	1300
CROFT APPARTION OIL	1200	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	VPI TRAVELS RECORD cleaning machine new/rev dem	450/470
EAR 802 valve pre with mm phono	2200	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	VPI HW 97 arm special resg mount version	650
EAR 802 pre with mc phono	2500	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	VPI SCOUT turntable with JMW 97 arm amazing value, forget the gyrodec	1350 NEW
GAMMA SPACE REFERENCE, 3000 integrated amp	5000	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	AUDIOQUEST FOREST 4 x 2.5m WBT	90
LEAK STEREO 20 rebulk	350	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	VAN DEN HULL Clearwater 3H bowtie bananas	145
LEAK T125+ MONOBLOCKS rebulk	500 pair	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	AUDIO SYNTHESIS 200 digital interconnect 1m pair	40
LUDHAM amp, much modified, 6550 output	2000 +	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	AUDIONOTE AN SP 3m bananas	1000
MELOS 333 two box pre line great dynamics,boxed	3000	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	INBODIST SILVER DAWN Digital Interconnect 0.5m	450
QUAD IS special anniversary edition gold plated set with certificate and boxes etc	4000	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	TCI super 1m vlt phono cables	50
QUAD IS special anniversary edition gold plated set with certificate and boxes etc	4000	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	TCI power lead	50
SHANLING MONOBLOCKS now in stock, groovy with remote control volume, 50 watts	2000	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	XLO big, thick speaker cable type 42 3m pair, cost loads new	200
SOME FRONTIERS SF5 3, 40 watts rather good power amp recommended	995	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	COGAN HALL Interconnect full range spk cable 4m, some bends	300
TRILOGY 901 pre/amp, high output good to drive quad IIs	2000	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	EMPORNIUM our own cable, silver plated interconnects with gold phono plugs	35 pair
UNISON SIMPLY 4 integrated amp, boxed	1250	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	EMPORNIUM also do phono	35
UNISON RESEARCH FEATHER ONE/POWER 3S pre/power/eyes wood on these too! boxed	1250	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	EMPORNIUM 4 PIN DIN TO 4 PIN DIN for quad	35
WELBORNE LABS APOLLO 2 20 watt single ended w/52b	2800	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	EMPORNIUM 4 PIN DIN TO 4 PIN DIN for quad	35
LOUDSPEAKERS					EMPORNIUM 4 PIN DIN TO 4 PIN DIN for quad	35
ALTEC voice of the Theatre - ring for details		KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	EMPORNIUM 4 PIN DIN TO 4 PIN DIN for quad	35
ARCATOS speakers rosewood boxed	350	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	EMPORNIUM 4 PIN DIN TO 4 PIN DIN for quad	35
AUDIO CLASSICS type c efficient mini-monitors, excellent with valves	1500	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	EMPORNIUM 4 PIN DIN TO 4 PIN DIN for quad	35
AUDIO NOTE AM-3 light oak, boxed	1650	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	EMPORNIUM 4 PIN DIN TO 4 PIN DIN for quad	35
TRANSISTOR AMPS					EMPORNIUM 4 PIN DIN TO 4 PIN DIN for quad	35
ALCHEMIST GENESIS monoblocks, baby ford like thing	2000	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	EMPORNIUM 4 PIN DIN TO 4 PIN DIN for quad	35
ARCAM ALPHA 10 integrated amp remote, boxed	800	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	EMPORNIUM 4 PIN DIN TO 4 PIN DIN for quad	35
ARCAM ALPHA 9 integrated amp, beautiful, nouveau	1500	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	EMPORNIUM 4 PIN DIN TO 4 PIN DIN for quad	35
ARCAM 9C pre/9p power remote control	300	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	EMPORNIUM 4 PIN DIN TO 4 PIN DIN for quad	35
ARCAM 8P power amp	150	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	EMPORNIUM 4 PIN DIN TO 4 PIN DIN for quad	35
AUDIO ANALOGUE DOMIZETTI power amp	300	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	EMPORNIUM 4 PIN DIN TO 4 PIN DIN for quad	35
AUDICOR 8000A black	350	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	EMPORNIUM 4 PIN DIN TO 4 PIN DIN for quad	35
AUDIO CHAMPION hybrid, vlt/mixer hybrid	1500	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	EMPORNIUM 4 PIN DIN TO 4 PIN DIN for quad	35
AUDIO RESEARCH D130 transistor power amp, great bass and full sound, 2 years old	2000	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	EMPORNIUM 4 PIN DIN TO 4 PIN DIN for quad	35
AURA EVOLUTION amp black, with phono stage, matching tuner also available	200	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	EMPORNIUM 4 PIN DIN TO 4 PIN DIN for quad	35
BOSE power amp, 250 watts mega loud	500	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	EMPORNIUM 4 PIN DIN TO 4 PIN DIN for quad	35
COURTESY OF THE SA100 100 watt valve/mosfet hybrid	600	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	EMPORNIUM 4 PIN DIN TO 4 PIN DIN for quad	35
CROWN D70 stereo power amp	1100	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	EMPORNIUM 4 PIN DIN TO 4 PIN DIN for quad	35
CROWN D750 stereo power amp	1500	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	EMPORNIUM 4 PIN DIN TO 4 PIN DIN for quad	35
CYRUS ONE excellent board	1000	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	EMPORNIUM 4 PIN DIN TO 4 PIN DIN for quad	35
DWM preamp, metal case but with series 3 boards primus psu, line level only	1000	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	EMPORNIUM 4 PIN DIN TO 4 PIN DIN for quad	35
EC AUDIO FINESTRA preamp, TOM EVANS, mm/mc	1000	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	EMPORNIUM 4 PIN DIN TO 4 PIN DIN for quad	35
ELECTROCOMPANIE EWB 100 power amp,boxed	2000	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	EMPORNIUM 4 PIN DIN TO 4 PIN DIN for quad	35
ELECTROCOMPANIE EWB 120 power amp,boxed	2000	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	EMPORNIUM 4 PIN DIN TO 4 PIN DIN for quad	35
ELECTROCOMPANIE 4.5 line pre balanced, remote, boxed	1000	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	EMPORNIUM 4 PIN DIN TO 4 PIN DIN for quad	35
ELECTROCOMPANIE 4.7 pre POWER with tone controls, 200 WATTS	1100	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	EMPORNIUM 4 PIN DIN TO 4 PIN DIN for quad	35
HARLEN DM110/220 pre POWER with tone controls, 200 WATTS	3000	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	EMPORNIUM 4 PIN DIN TO 4 PIN DIN for quad	35
KRELL KP 2500C, mint monoblocks, smooth would you believe it	1800	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	EMPORNIUM 4 PIN DIN TO 4 PIN DIN for quad	35
LEAK PCL and psu, moving coil phono stage	1000	KLIPSCH CORNWALLS base slightly smaller 1 scale	350	200	EMPORNIUM 4 PIN DIN TO 4 PIN DIN for quad	

cartridges

- denon
- dnm
- goldring
- lyra
- ortofon
- sumiko

cables

- chord company
- dnm
- lfd
- nordost
- qed
- trichord
- van den hul

headphones

- beyer
- ergo
- grado
- sennheiser
- stax

stands

- frameworks
- sound org'n
- something solid
- soundstyle
- stands unique

accessories

- creek
- densen demagic
- goldring
- kontak
- micell
- milty
- moth
- nordost
- pixall
- qed
- rms
- shure
- trichord
- zerostat

hardware

- atc
- audio physic
- densen
- epos
- harbeth
- in-focus
- lexicon
- micell
- naim
- nordost
- primare
- red rose
- sme
- sugden
- trichord

Second hand & ex dem deals

Dynaudio 42 loudspeakers in (simulated) cherry. Absolutely as new in the box with warranty card and manuals. Not even run in yet (£450) £300



Monitor Audio Studio 20 SE loudspeakers. Boxed, unmarked in cherry veneer. S/H from one local owner who has had them from new for the last three years. (£1300) £750



QLN Signature loudspeakers. New old stock. The boxes have been opened simply to check the contents. High quality, chunky, Scandinavian stand-mounts in unusual asymmetrical cabinets finished in maple veneer. Originally £1200 ish £695

Red Rose "rosebud" loudspeakers. Boxed, perfect, ex demonstration. Light wood veneered ribbon hybrid compact stand - mounts (£3000) silly price to clear . . . £750

Densen B200 preamplifier. Black anodised aluminium case with chrome controls. Remote controllable with Densen "Gizmo" handset (not included). S/H, boxed, unmarked (£1000) £600



EAR V20 integrated valve amplifier. Supplied by Signals new about 18 months ago. Perfect condition, boxed, manual etc. S/H (£2985) £1795

Lexicon MC1 7.1 music / film processor. Rebuilt and warranted for 12 months by the Lexicon importer. Boxed, as new with DTS AC3 etc. £5500 £1500

Primare A30.1 integrated amplifier. S/H a few weeks old, exchanged due to a compatibility issue with a REL sub. (£1500) £1150

Nordost cables

Red Dawn Rev1 loudspeaker cable 4m pair single wire. Used, in good condition (£969) £560
 Red Dawn balanced interconnect 3m pair ditto (£724) . . . £435
 Superflat (gold) bi-wire 2.5m pair. New (£180.95) . . . £135
 Superflat (gold) bi-wire 7m pair. Used (£369.95) . . . £220



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NEW TITLES ON DIVERSE RECORDS:

RICHARD THOMPSON - THE OLD KIT BAG £21.90 (MAY)
 RON SEXMITH COBBLESTONE RUNWAY - £16.90 (JUNE)
OTHER NEW ARRIVALS FOR MAY/JUNE:

Bluetones	Luxembourg	£12.90
Blur	Trunk Tank	£18.90
Cave In	Antenna	£15.90
Cinematic Orchestra	Man With A Movie Camera	£TBC
Dandy Warhols	Welcome To The Monkey House	£15.90
Daniel Banois	Shine	£14.90
Daniel Magg	Facets (Compost Records)	£12.90
Dirty Three	She Has No Strings Attached	£12.90
Erik Trufazz	Walk Of The Giant Turtle	£15.90
Four Tet	Rounds	£13.90
Goldtrapp	Black Cherry	£12.90
Jayhawks	Hairy Day Music	£16.90
Lou Reed	NYC Man. (Ultimate Collection)	£TBC
Lucinia Williams	World Without Tears	£16.90
Madonna	American Life	£19.90
Nightmares On Wax	Another Late Night Tales	£TBC
Opeth	Damnation	£9.90
Radionead	Hail To The Thief	£TBC
Sadies	Stories Often Told	£10.90
Sigur Ros	()	£15.90
Sparkenorse	It's A Wonderful Life	£14.90
Stereophonics	You Gotta Get There To Come Back	£TBC
Tindersticks	Waiting For The Moon	£TBC
White Stripes	Elephant 2LP	£13.90

REISSUE OF THE MONTH:

Bob Dylan "Rolling Thunder Revue"(Bootleg Series Vol 5)
 3 LP Box Set from Classic Records - call for details

OTHER FORTHCOMING REISSUES:

Bert Jansch	Birthday Blues	£13.90
Charles Mingus	Mingus Mingus Mingus	£19.90
Ella Fitzgerald	Clap Hands Here Comes Charlie	£26.90
Frank Sinatra	The Voice (Classic Records)	£26.90
Jefferson Airplane	Volunteers (Speakers Corner)	£19.90
Kinks	Face To Face/Lola	£13.90
Nina Simone	Sings The Blues (Sp Corner)	£19.90
Pharoah Sanders	Journey To The One	£19.90
Smashing Pumpkins	Siamese Dream	£15.90
T Rex	Electric Warrior	£TBC
The Who	Who's Next 3LP set	£17.90
The Wicker Man	OST Stereo (Simply Vinyl)	£18.90
Yes	The Yes Album	£TBC

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NEW, EX-DEM AND CLEARANCE ITEMS

	RRP	SALE	
Acoustic Energy AE1 MKII	£995.00	£499.00	D
Arcam Alpha 10	£799.00	£519.00	D
Arcam FMJ P25 power amp	£750.00	£489.00	N
Arcam FMJ CD23 Cd player	£1099.00	£699.00	N
Arcam FMJ A22/Dave AC3 - DTS amp	£1849.00	£1,199.00	N
Arcam FMJ A22	£1,100.00	£769.00	D
Arcam FMJ P35 power amp	£830.00	£539.00	N
Cyrus SL Amp	£400.00	£199.00	D
Cyrus AV Master Processor	—	£195.00	D
Krell KAV 500i Int. Amp.	£5,498.00	£2,495.00	D
Linn Kaber	£1,995.00	£695.00	D
Meridian M33 Active speakers	£1,495.00	£995.00	N+D
Neate Mystique	£735.00	£499.00	D
Neate Elite	£1,200.00	£779.00	D
ProAc 3.8	£3,990.00	£2,299.00	D
Rotel RX965RDS A/V receiver	£950.00	£595.00	D
Mission 781	£399.00	£219.00	D
Mission 773 SE	£399.00	£239.00	N+D
Mission 78AS subwoofer	£699.00	£449.00	N
Mission 783	£995.00	£649.00	D
Vienna Acoustics Beethoven	£2,500.00	£1,795.00	D
Vienna Acoustics Mozart	£1,500.00	£1,195.00	D
Vienna Acoustics Hayden rosewood	£750.00	£569.00	D
Vienna Acoustics Mahler	£6,000	£4495.00	D

MUSICAL FIDELITY SPECIAL OFFERS

A3 CD	£799.00	£499.00	D+N
A3 pre amp	£999.00	£559.00	D+N
Musical Fidelity XP100 BARGAIN!!!!	£799.00	£549.00	N

D = EX DEMONSTRATION, N = NEW, S/H = SECOND HAND

Hi-Fi Multiroom and home cinema

ACOUSTIC ENERGY ARCAM ASH DESIGN AUDIO
 RESEARCH CELESTION COPELAND CYRUS
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 LOGAN MERIDIAN MICHELL MISSION MONITOR
 AUDIO MUSICAL FIDELITY NEAT ACOUSTICS
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REGA	ELA FLOORSTANDERS BLACK	500	200	PRE-OWNED
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LINN	AV2150 LOUDSPEAKERS	2000	1200	PRE-OWNED
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CHORD	SPM600 POWER AMP	2050	1600	EX DEM
CHORD	CPA2200 PRE AMP	2740	2200	EX DEM
CHORD	SPM1900 5 CHANNEL POWER	4210	3400	EX DEM
JBL	T12K SPEAKERS AND STANDS	1900	1350	EX DEM
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PARASOUND	HCA2205 5 CHANNEL POWER	2500	2000	EX DEM
RUARK	EQUINOX SPKRS AND STANDS	2200	1000	PRE-OWNED
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ROTEL	RSP966 AV PROCESSOR	799	500	EX DEM
KEF	TDM34DS THX DIPOLARS	700	475	EX DEM
LINN	NEXUS LOUSPEAKERES		175	PRE-OWNED
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MYRIAD	MA240 POWER AMP	995	749	

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BARGAIN BULBS



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.

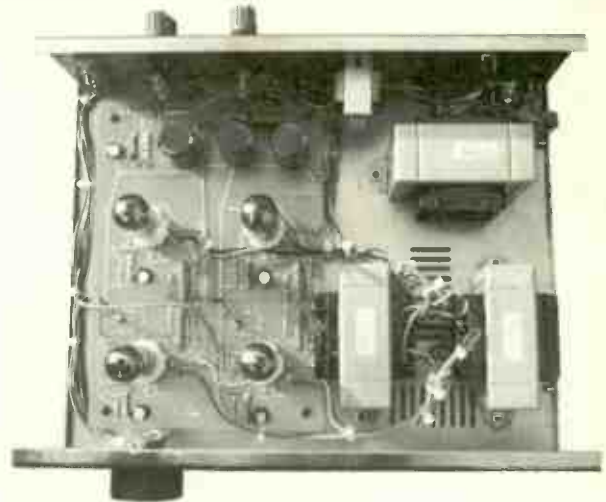
We chose the ECL82, a triode/output pentode. This tube is readily available and has a good sound. In push-pull mode it delivers 8Watts. Realistically you need a speaker of around 89dB or above. This is possible at a budget price - try the smaller Triangle models, or a Tannoy mX3 or even one of the older 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-by-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

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

**Kecl82 amplifier kit (Overseas price) £170.00
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Audioquest Python V/Connects 1m		Electrocompaniet AW250R Power	£2800.00
Normally £399 NOW ONLY	£295.00	Epos ES30's Rosewood, Inc. 4m	
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Bryston 4B ST Power, Silver	£1395.00	Marantz DR700 CD Recorder	£150.00
Chord Anthem 1m V/Connect	£220.00	Marantz SR5200 AV Surround Receiver Amp	£325.00
Chord Chameleon 1 V/Connects From	£60.00	Musical Fidelity Nu Vista Speaker Cables 5m Pair	£220.00
Chord Chorus V/Connects From	£125.00	Naim 180 Power	£650.00
Chord Siren V/Connects From	£55.00	Naim Nait 3 with 92 Pre. Boards fitted	£375.00
Chord Solid 1m V/Connect	£100.00	Pink Triangle Cardinal & DaCapo with 1307 &	
Chord Signature 1m V/Connect	£410.00	24 Bit Filters, Serviced	£1500.00
C.R. Developments Kalypso Valve Int. Amp	£295.00	Sonic Link Vermillion Interconnect 1m	£100.00
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MARANTZ CD7 Limited Edition CD player mint condition £2650. Mark Levinson 380 pre-amp mint condition £3000. Tel: 01843 584030 (Jul)

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LINN KARIK CD player, mint, boxed £600. Musical Fidelity P180 power amplifier and CRPS power supply, 80 watts, boxed, £450. Carriage can be arranged economically within UK. Tel: 01691 659604 (Jul)

DYNAUDIO CRAFT loudspeakers cherry veneer on Something Solid stands. Boxed and in excellent condition. Superb speaker. £1480 ono. Tel: Rob 01384 396657 (West Mids) (Jul)

QUAD 34, FM4, 306. Vgc grey, phono, in Quad Mount £500. Thorens TD 150 vgc, SME 3009 arm fixed head £150. Tel: 01341 422111 (Gwynedd) (Jul)

QUAD 63s ESL £975. Quad II's monoblocks (KT. GEC's) £575. Densen pre £300. Rega Planet £180. Icon valve amp £400. Gale speakers 301's £85. Extinct? Marantz PM8 amplifier, big, awesome sound. Tel: 07710 781983 (Jul)

ANALYSIS EPSILON ribbon panel speakers good condition, boxed £3500 new, £800 ono. Marantz CD 80 with Pandora conditioner, perfect condition £160. Tel: 01634 323683 or 07901 893982 (Jul)

AR. A85 fitted phono MM/MC module plus ARP85 superb bi-amping pair approx 18 months old £850. Original price £1450. Will not split. Tel: 01526 320513 (Lincs) (Jul)

NAIM 02 tuner boxed green style excellent condition £750. Also Naim CD1 player excellent £750. Tel: 01623 458628 or Email: glenn@witchend.co.uk (Jul)

PURE DRX70IES digital tuner £250 new, will sell for £150, mint. Tel: Nick 0116 224 9282 (Leicester) (Jul)

AUDIO NOTE M1 phono pre-amp mint boxed £375. Audio Synthesis Passion passive pre-amp, mint, £375. Epos ES14 speakers, mint, boxed, plus stands £275. Tel: Tom 020 8986 1762 (Jul)

WANTED IMF SACM speakers in any condition also pair of Wharfedale Airedale speakers or the bass units. Also wanted late model Ditton 66 for cash. Tel: 020 7480 7964 home, 07932 063335 mobile or Email: amw@london606.fsnet.co.uk (Jul)

LOWTHER ACOUSTAS PM6 drive units. Nice condition £275. Thorens TD150 turntable, belt drive with Thorens arm. Cover damaged £35. Willingly demonstrate. Tel: 01709 555403 (Jul)

ATC SIA2 - 150 amp £1350. ATC SCM 10 speakers £425. Together £1700. Dynaudio Contour 1.3 Mark 2 speakers + stands £675. Copland CSA 14 amp £400. Sony STSB 920 tuner £85. Tel: 0121 246 0486 (Jul)

TAG McLAREN 100x5R amplifier, black, £2150. Celestion 'A-Series' compact loudspeakers, rosewood finish £125. Chord Company Codac digital cable, 3.8m, £20. All in excellent condition, with original packaging. Tel: 01489 570990 (Jul)

REGA ELICIT amplifier boxed, excellent condition £270. NAD 412 tuner excellent condition with box £60. Seismic Sink £40. Tel: 01639 766452 or Email: d.okeeffe@ntlworld.com (Jul)

FOR SALE Musical Fidelity Nu Vista amplifier and CD player £2250 each or £4000 pair immaculate, genuine reason for sale. Tel: 01977 620558 (Jul)

MARTIN LOGAN Aerius electrostatic loudspeakers, all black superb sound quality, excellent condition £950. Quad 34 and 405/II £200. Tel: 01934 844916 or Email: sachachou@aol.com (Weston-Super-Mare) (Jul)

WANTED Sanyo Plus P55 power amplifier working or not working, NAD C270 amplifier, NAD 533, Goldring Elektra turntable, REL acoustics Q400 subwoofer Tel: 028 9075 4920 Fax: 028 9075 5299 (Jul)

MISSION 753 black ash fair condition boxed £250. Sound Organisation record racks black finish £50 pair. Tel: 01869 240078 (Jul)

ATC SCM 10 loudspeakers black ash mint boxed excellent sound £400. Tel: Dave 01502 518938 (Jul)

REGA ELA speakers, rosewood, mint condition, manuals, boxed, £295. Also Rega Radio, mint, manuals, boxed, £150. Will demonstrate. Tel: 01273 556458, Mobile: 07971 131324 (Jul)

NAIM NAC 42.4 pre, NAP 110 monoblocks, power supply, all extensively upgraded by Avondale. Linn LP12, Mission/Basik Plus arms, AT10 cartridge. Castle Severn I speakers, painted cream, Silver Sounds 12/2 speaker cables, 4x4 metres, all excellent/must go. Reasonable offers please. Tel: 01872 271280 Cornwall (Jul)

NAIM CD2, boxed with manual, mint condition £700 ono. Monitor Audio, Studio 20SE's, cherry, boxes with manual £700 ono. Tel: 07733 174990 (Jul)

TALK ELECTRONICS Hurricane 3 line preamp, Tornado 3 100w power amp. Remote, manuals, boxed, excellent condition, (£1600) £695. Tel: 01604 709541 (Northampton) (Jul)

LFD MISTRAL phono amp Hi-Fi World favourite, black, 13 months old, mint £210. Mission C one £90. Rotel RA930 AX amp £45. Ortofon MC 20 Supreme £20. Wanted: Shackman 220 amplifier Tel: 0161 291 9331 (Jul)

SUBWOOFER INFINITY Modulus 250 watt internal amplifier new 12 inch driver Japan black finish very heavy buyer collects £185. Tel: 01553 617642 or Email: ghatcher@doctors.org.uk (Jul)

MANLEY 300B neo-classic monoblocks in stainless steel, switchable SE/PP and adjustable feedback. Fitted NOS/JJ 300B tubes and excellent condition/boxed £3500 (new £7000) Tel: 020 8879 0364 (answerphone) (Jul)

ORTOFON ROHMANN moving coil cartridge £275. Tel: Andrew 01623 752036 (day), 0115 964 1033 (night) (Jul)

MERIDIAN 565 AC-3 surround sound decoder wanted Tel: 01642 559078 ask for Peter (Jul)

MERIDIAN 601 computerised pre amp £775. 602 CD and 606 DAC complete £900. M1 black ash active floor standers 225w each £775. Inclusive of all leads, interconns and remotes, all recently serviced, mint and boxed. Tel: 0771 007 4046 mobile, 020 8959 3611 day. (Aug)

EZO SYSTEM CD/FOG, Pre/Facenord power Ams/Facenord 200w, Piega speakers with ribbon tweeters £3100 ono. Tel: John anytime 01885 410517 (Jul)

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RUARK CRUSADER II floor-standing speakers finished in walnut. Boxed and in very good condition. £545 ono. Tel: Mark 01840 261 030 or E-mail: mark.j.pike@ntlworld.com (Jul/I)

NAIM HI-FI System Sale, CD2 CD player, NAC 82 pre-amp, Hi-Cap power supply, NAP 250 power amp, SBL loudspeakers (cherry), QLN Projekt equipment rack (cherry). Complete system purchased new from Grahams HI-FI in December 1997. Mint condition, very low usage, boxed with manuals. Sell complete for £5900. Tel: Mark 01708 224 319 (Essex) or 07813 332301 (mobile) (Jul/I)

WANTED: Any DA30, D030, DA100, PP3/250, PX4, PP5/400, PX25 valves and amps: RGD 1046; Dynatron L59; Soundsale; Decca. Also Armstrong, Leak, Pye, Quad, Rogers, Tannoy amps and speakers. Any Audio interesting valve. KT66, GZ34, KT77 etc. Tel: 020 8343 0533 or 07901 976 441 or Email: cbobino@aol.com (Jul/I)

FOR SALE: Quad ESL57 electrostatics in good working order, black grilles. Tel: 01908 372 284 or Email: mrs.langley@virgin.net (Jul/I)

FOR SALE Pair of ATC-SCM50ASL (Black), <30hrs play, excellent condition, will deliver in UK, £4000. Tel: 07974 330242 or Email: jknapper@cityairexpress.com (Sep/I)

MICHELL ISO/HERA phono stage £450. Audioquest Quartz interconnects 2x 0.5m, 1x 0.7m £100. Tel: 07711 855 599 (Jul/I)

INTERCONNECTS DIGITAL speaker and mains cables from Kondo Yamamura Nordost Transparent JPS Shunyata Synergistic Research Silver Sound All top quality mint items. Tel: 01923 826 830 (Jul/I)

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AVI 2000 MP pre-amp MC/MM input remote control, motor volume, excellent quality performance, mint with box and manual, £380 ono. Tel: 01928 725 877 (Chester) (Jul/I)

GRAPHITELINE STAND mounted speakers, rare classics, ex condition £200 ono. Marantz 63 KI CD, perfect condition £150. Manuals etc. Hi-Fi Magazines 1993-2003 offers. Selection of interconnects and QED speaker cable offers. REL Sub Q50 £200. Tel: 0774 766 4742 (Jul/I)

LINN LP12 (black boxed) Trampolin, Ittok, K18, Lingo, Intek, £2100 new, £550 ono. Nakamichi CR-3E £100. Tel: 020 7015 1026 (week daytime) mobile 07810 765 269 or Email: mlockyer@arrowt.co.uk (Jul/I)

WANTED: URGENTLY, Heathkit Cotswold speakers. Tel: 01689 870 463 (Jul/I)

JM LAB Micro Utopia speakers superb with valves or transistor 90dB £1750. 'Editors Choice' Black Gate DAX Decade DAC - digital pre-amp £1450 inc free transport! Tel: Mike 01224 572 370 (Jul/I)

NXT PANELS (2) + Sub, Wharfedale PP1S (picture frame) system. As new, perfect £80. Tandberg TR220 receiver (tuner-amp) good condition, £120. Tel: 01341 422 111 (Gwynedd) (Jul/I)

ARCAM ALPHA 8 integrated amp £115. Arcam Alpha 8 CD £145. Tel: 01728 747735 or Email: tonymelson@btconnect.com (Jul/I)

MARANTZ PM17 KI integrated amplifier £550. Nakamichi DR3 cassette deck £150. New Sumiko Blue Point Special MC cartridge £190. Mission DAD 5 and DAC 5 CD player £150. All boxed. Tel: 01484 307 096 (Jul/I)

CHORD ANTHEM interconnect, 1 metre length. Improve your system with this amazingly musical and detailed cable. New £300, sell £200, just run in. Phono to phono. Tel: 01639 710 113 (Jul/I)

AUDIOLAB 8000M mono power amps (pair), Audiolab 8000C pre-amp, excellent condition, fully boxed with manuals, £795. Tel: 020 8658 3806 after 8pm (Jul/I)

SONY XA20ES CDisc player £200 ovno. Arcam Alpha 9C preamp £380. 2x Arcam 8 power amps £250. Pair Tannoy R2 loudspeakers £200. Aiwa Cassette deck ADF910 remote £200. Pr Acoustic Energy AE120SE £300. Tel: 01752 813 500 (Jul/I)

SONUS FABER Electa Amator II w/ironwood stands £2200 (£3200) mint. Sonus Faber Gravis B1 subwoofer, less than 1 year old £750 ono. Townshend Isolda DCT 3m bi-wire speaker cables £600 (£800). Tel: Chris 020 8543 5531 evenings (Jul/I)

TEAC T1 Transport Clock 3 modified by Trichord, mint, boxed £375. Musical Fidelity A324 192k upsampling DAC, 11 months old, mint, cost £800, accept £450. Audio Alchemy Digital Decoding Engine with Power Station Three, mint, boxed £145. Tel: 01302 865 282 (Jul/I)

BOWERS & WILKINS P2H loudspeakers using the famous Fane 601 plasma tweeter, good condition £300. Sony Elcaset tapes, new old stock SLH 60's and 90's £3.75 each, call for details. 01869 325 844, 07974 312 355 or Email: justy@jkh.demon.co.uk (Jul/I)

JM LAB Mezzo Utopia loudspeakers. Superb high end sound. Brand new, still in box, genuine reason for sale, cost 8k, can deliver, £4495. Offers considered. Tel: 01772 493 999, mobile 0776 422 8526 (Jul/I)

KIMBER AGDL solid silver digital cable 0.5m £99 incl. P&P. NAD C350 amplifier £185. Soundstyle XS310 AV rack £199 Atacama Staticstage's £30 each. Tel: 07786 853301 or Email: danielhassany@nw44sz.freereserve.co.uk (Brighton) (Jul/I)

LFD MISTRAL phono amp, Hi-Fi World favourite, black, 13 months old, mint £210. Mission C One £90. Rotel RA 930AX amp £45. Ortofon MC 20 Supreme £20. Wanted: Shackman 220 amplifier. Tel: 0161 291 9331 (Jul/I)

LINN SONDEK LP12 original unmodified. Basik LVX M/C cartridge, spare head and cartridge. All good condition. Buyer collects, £400 ono. Tel: 01625 874631 (Jul)

UNISON RESEARCH Simply Four integrated valve amplifier, excellent condition, packaging, manuals £600. Rega Planar 3 without tonearm excellent condition £50. Tel: 020 7794 6676 (Jul/I)

LINN KARIK CD player, mint, boxed £600. Musical Fidelity P180 power amplifier and CRPS power supply, 80 watts, boxed, £450. Carriage can be arranged economically within UK. Tel: 01691 659604 (Jul/I)

DYNAUDIO CRAFTT loudspeakers cherry veneer on Something Solid stands. Boxed and in excellent condition. Superb speaker. £1480 ono. Tel: Rob 01384 396657 (West Mids) (Jul/I)

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Common Ground Magazine

"...if you are thinking of upgrading your system.....the Origin Live DC-motor kit should be high on your list for consideration" TNT Audio

Whatever your current turntable, the results in upgrading to the Origin Live DC motor and power supply are simply astounding. Designed as a drop in replacement for almost all turntables, the Origin Live upgrade kit offers vast improvements to all versions of Linn turntables, as well as Ariston, Rega, Systemdeck, Roksan, Rock, Oracle, Thorens, Well Tempered etc. With only a 12 Volt power supply and a full set of illustrated instructions our upgrade is both easy and safe to install. The upgrade is also offered with a full money back guarantee if you are not satisfied. The kit consisting of a high grade dc motor, soldered regulator board and power supply is only £262. This provides an extremely cost effective route to truly high end audio and is significantly superior in performance to other power supply upgrades costing 4 times the price. A larger purpose built transformer is also available as an optional extra at £175.

Turbocharging your Rega arm

"Nothing less than total dynamite" Hi-Fi World



If you are the proud owner of any rega tonerarm, you are now in the enviable position to transform it's performance into the league of super arms with modifications offered by Origin Live - the Origin live structural modification at £75 will enable your Rega to perform at a level exceeding that of arms costing over £1200. High performance rewiring with high grade litz cable is also offered at an additional £70 and external rewiring is £70 this further increases the performance.

"I have to say the Rega modifications turn this humble arm into a real Giant killer. Gone is the rather grey, sterile sound of the cooking Rega. Instead, tonal colour is fresh, dynamics have great speed and impact, and the sound stage is huge."
Hi-Fi World, Nov 97 (structural modification on RB250)

What Hi-Fi? gave this modification 5/5

Structural Modification - £75
Internal Rewiring - £70
External Rewiring - £70

For arm modifications we normally return your arm in 2 - 3 days.

Origin Live Ultra Turntables Build & setup in an hour



Modern



Classic

"...this Vinyl front end had my jaw heading towards the floor with the solidity and transparency of the music it was making....with all these goodies in place the Standard would give turntables at the £1200 -1400 mark a hard time...
...Overall a deeply impressive deck.....brilliant value for money ...component quality is superb and the build process is a doddle."
Hi-Fi World

"the best sounding deck here (group comparison test of 8 leading turntables)...sounds fantastic."
What Hi-Fi?

"One of the most enjoyable and musically involving turntables I have ever heard ...Regardless of make or reputation"
Audiophile

Now you can own a professionally built, high performance turntable at a fraction of the normal cost. Origin Live turntable kits are supplied in 3 different specifications:

1. A standard kit of parts to enable you to build your own plinth at £282
2. The complete standard kit offered with a non-suspended pre-drilled & finished plinth at £349
3. The complete ultra kit comes in two options. The Ultra Kit Classic offering a truly high end suspended sub-chassis turntable with beautifully finished solid wood plinth. The Ultra Kit modern offers the performance of the Ultra Kit Classic combined with the modern day skeletal styling of our sensational resolution turntable. Both options available at £538.00

All kits are supplied with well illustrated instructions and are easier to assemble than many of today's pre-built turntables.

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>

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Special Internet offer see page 130 for details

WORTHING AUDIO True Sound Series Crossoverless monitors 96dB efficiency, single 8" driver, perfect for low powered tube (S.E.T.) and solid state. Audionote OTOSE, integrated line amplifier, boxed, latest version, £875. Amphion Argon loudspeakers £599. Musica Collins loudspeakers by Bernard Thiel & Partners (German) £1000. Audionote AN-ESEC lacquered finish + stands £5000. (RRP £13,600). Tel: Worthing Audio 01903 212 133 or 07900 918 882 (Jul/I)

SILVER ARROW 4N-Pure flat silver foil air interconnects and speaker cables with Bocchino phono plugs. H-CAT P12 Zero distortion pre amplifier from America on permanent dem. Tel: Worthing Audio 01903 212 133 or 07900 918 882 (Jul/I)

EAR PRODUCTS on permanent demonstration, from the wonderful 869 to the rest of the range. Kora Explora 60 watt hybrid £450. Dynaudio Contours 1.3's Mk2 £699. Restek Consens fully remote and balanced £1100. Restek Challenger £600. Omega speaker systems TS1R £1199. H-Cat P12 £2499. Kora Equinox pre-amplifier MM £995. Kora Hermes 96-192 valve DAC £1199. Tel: Worthing Audio 01903 212 133 or 07900 918 882 (Jul/I)

HERTFORDSHIRE/NORTH LONDON Audio/Record Fair. Sunday 10th August 2003. 11.00 to 4.00. 9.30am early entry £10. At Cuffley Hall, Maynard Place, Cuffley, Herts. 5 minutes from M25 Junction 25. Tel: 07944 909 209 for details (Jul/I)

TERRY - CAN I have my stuff back!!! Tel: 07944 909 209 (Jul/I)

AUDIOPUBLIC, 78 Otley Road, Headingley, Leeds, 0113 217 7294. Yorkshire's newest Hi-Fi retailer, representing Naim, Rega, Creek, Totem, Quadraspire, Dynavector, Roksan, Teac and more. Used LP12's, Lingo's, Linto's stocked. Call for advice. Tel: 0113 217 7294 (Jul/I)

VINTAGE WIRELESS COMPANY LONDON
Website: www.vintagewirelesslondon.co.uk
Buy-Sell-Exchange. Vintage wireless and classical audio. Repairs, spares, restoration, modification to all valve equipment. Quad II, Leaks etc, shipped worldwide, best prices, call us at 17 Bell Street, London, NW1 5BY. Tel: 020 7258 3448 Fax 020 7258 3449 Email: vwirelesslondon@aol.com (Oct/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)

HIFI HUT in Harrogate offer the following quality brands: Bryston, Creek, Custom Design, Harman Kardon, Neat, PMC, Quad, REL, Wharfedale. Phone for details, directions, 01423 810 990 or 07736 392 852. www.hi-fihut.com (Aug/I)

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)

AMAZING CABLES! Unlock your system's full potential. Handbuilt silver hybrid interconnects from £85, solid silver speaker cables from £220. £5 p&p. Fantastic performance, refund guarantee. Details: 0115 982 5772 after 7pm, Email: Bob@skydivers.co.uk (Sep/I)

TOM TOM Audio - Specialists in Naim Audio, supply top condition pre-loved and ex-demo Naim equipment with full 12 month money back guarantee. Demonstration facilities. Can deliver, stock list at: www.tomtomaudio.com Call 07971 202 742 or 01727 893 928 or Email: tunes@tomtomaudio.com with requirements. Wanted: mint Naim gear, cash waiting, will collect (Jul/I)

MUSICAL FIDELITY Nu-Vista Ltd edition Pre & M300 power, mint, boxed etc (£5000) £3600 Krell KAV 300i Amp, mint as new. (£2300) £1250. Telephone Jules on 01792 280061, Email: info@sounddrjuleshifi.co.uk Web: www.sounddrjuleshifi.co.uk (Jul/I)

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NAIM NAC 32.5 pre, with phono stage, mint condition £275. Linn Karik, mint, (£1850) £650. Rotel RT 830 AL tuner £60. Telephone Jules on 01792 280061, Email: info@sounddrjuleshifi.co.uk Web: www.sounddrjuleshifi.co.uk (Jul/I)

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QUALITY HI-FI always wanted Linn, Naim, Rega, Quad etc will take entire systems. Contact: Midlands Audio 07974 769249 or Email: flat.earthsociety@ntlworld.com (Jul/I)

SEE NEW FARADAY Emperor loudspeakers at www.faradaysound.co.uk Low density ceramic cabinets. 'A sonic revelation'. The ultimate hi-fi is probably within your budget. Some ex-demo and kit form available. (Aug/I)

SINGLE ENDED 100w monobloc amps, handcrafted audio excellence designed to drive your speakers to high levels at an affordable price 50w/ch stereo version available. Details: 01243 532464 (Jul/I)

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