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# hi-fi WORLD

NOVEMBER 2003 UK £3.20



CLASSIC AUDIO SUPPLEMENT  
INSIDE THIS ISSUE!

## ARC LIGHT

ROKSAN'S BRILLIANT RADIUS 5



## PURE GLASS! Unison Research S6

### SPECIAL VALVE ISSUE

Musical Fidelity's Tri-Vista 21 DAC  
Dynavox's DynaStation CD player  
top hi-fi designers talk tubes  
Leak Stereo 20 revisited  
hot valve amp supertest  
thermionic theory



NOVEMBER 2003



ORELLE CD100evo \* BEYER DT-990 \* ATC SCM-12

COMPUTER AUDIO CREATIVE LABS SOUNDBLASTER MP3+

MARKET PLACE - 100s OF READER CLASSIFIEDS INSIDE!

COMPETITION - WIN A DENON DV-2900 DVD UNIVERSAL PLAYER!

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es lab  
final lab  
gamut  
graham slee  
hadcock  
incognito  
infinity  
jbl k2  
klimo  
korato

Our old first generation friend, CD, is already looking decidedly like Old Hat. Super Audio CD and DVD Audio are with us, assuming you can find the titles you want (rather than the titles they want you to have) at a record shop near you, or indeed in a record shop anywhere.

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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Nottingham Analogue Horizon inc  
RB250 arm - £528.75



Nottingham Analogue Spacedeck  
(arm & cart extra) - £889.75



Origin Live Resolution (arm & cart  
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Please consult our web site for product details, and how to order.

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- \* Rose and Korato preamps on demo
- \* At last - the new Michell Engineering Tecnodec - on demo

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david price

**F**ifteen years ago, anyone who expressed an interest in valve amplifiers would have been quietly spirited away to the funny farm. After all, tubes were the province of old timers reminiscing to their pub pals about the good old days, and solid-state was where the future lay...

How times change! Even a decade back, if you'd told me that a serious hi-fi magazine would one day devote an entire issue to the charms of the thermionic valve, I'd have eaten my turntable mat.

But here it is - inside this month's *Hi-Fi World* you'll find a wealth of tubular belles which show conclusively that valves are a worthy foil to solid-state. You'll find golden oldies (literally in the case of Leak's seminal Stereo 20 amp on p36), cutting-edge moderns (like Graaf's direct-coupled GM20 amp on p16), and some fascinating combinations of old and new (in Dynavox's DynaStation CD player on p22 and Musical Fidelity's Tri-Vista 21 upsampling DAC on p24).

Tubes have abiding benefits that transistors do not. Poorly designed valve product sounds like poorly designed solid-state - dreadful. But a well conceived valve circuit using proper passive components and suitably skillful output transformers will amaze. You'll be disarmed by the clarity, speed and insight possible. Just read our amplifier supertest on p11, and you'll see what I mean!

And just as one 'old technology' seems to be enjoying a second wind, so another is flourishing. Despite the runaway speed of new digital developments, vinyl is thriving and we're seeing a riot of new 'black plastic' players. Roksan's new Radius 5 turntable is one of the most significant of late, and on p50 you'll find out why it was this month's cover star.

Orelle is another name that hails from far back, and it too has recently reinvented itself. We loved the SA100evo amplifier last month, and this issue showcases the superb CD100evo silver disc spinner on p60. Add LJK Setright on 'how musicians listen to hi-fi', a wealth of leading industry figures on the joys of glass audio and an essential twelve page supplement on classic hi-fi, you'll find this issue positively unputdownable!

*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.

	<b>OUTSTANDING</b>	- Simply the best.
	<b>EXCELLENT</b>	- Extremely capable.
	<b>GOOD</b>	- Worth auditioning.
	<b>MEDIOCRE</b>	- Unremarkable.
	<b>POOR</b>	- Seriously flawed.
	<b>VALUE</b>	- Keenly priced.

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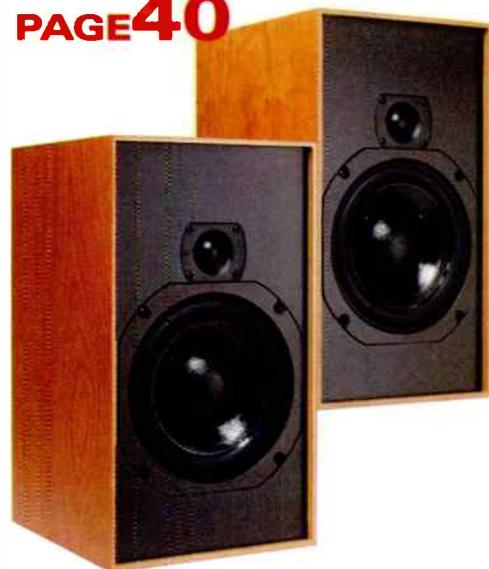
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visit our website for a comprehensive list of all the products we have reviewed over the past 11 years

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# competition

Win a Denon DVD-2900 DVD universal player in this month's great competition!

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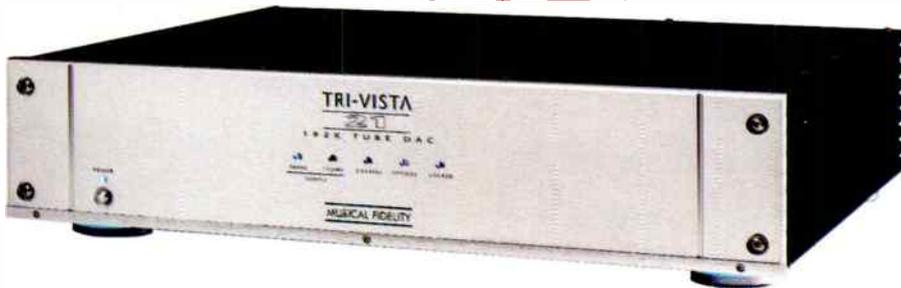
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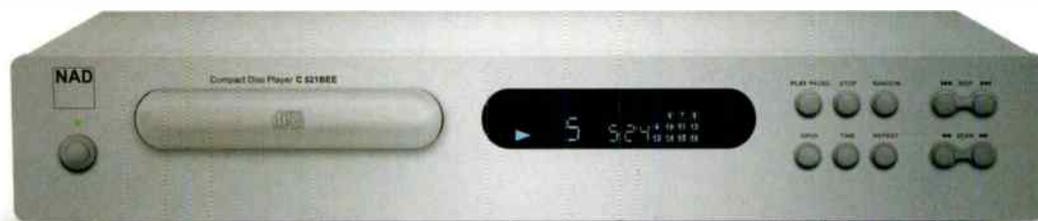
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# news



## SILVER DREAM MACHINES!

NAD's new C521BEE CD player can be purchased in either the company's traditional gunmetal grey finish or a striking new 'silver' Titanium, to match NAD's award-winning low-cost integrated amplifier, the C320BEE, which is also now available in the new finish. The two machines cost £199.95 and £219.95 respectively. Look out for a review in next month's issue, or if you can't wait that long, then call 01908 319360 or click on [www.nadelectronics.com](http://www.nadelectronics.com).

## MERIDIAN'S NEW G-FORCE

Meridian Audio has launched no less than a dozen new G Series products, which are claimed to "define new standards of A/V performance and full-system flexibility". The range includes three basic families of all-new designs: four variations of optical disc CD and CD/DVD player/ transport/ controller - two with extended, preamp-like capabilities; four components including surround processor/ tuner, preamps, and a two-channel receiver; and three power-amplifiers including stereo and multi-channel models. The G Series products cater for those seeking 'analogue' systems using passive loudspeakers, and several arrangements of Meridian's DSP digital loudspeaker models.

Each model boasts stunning new industrial design by the redoubtable Allen Boothroyd, featuring full-width, all-metal construction with Meridian's traditional black-glass accents. The sleek finish, available in pearly silver or all black, is highlighted with an all-new user interface accessed by front panel or remote, rotary volume controls and flexible, customisable key layouts. The new G91 DVD Audio Player Controller (above), at £3,895, forms the heart of a high-performing, efficiently-integrated system, comprising audio/video disc player, stereo digital preamplifier, and AM/FM RDS/ RDBS tuner in a single component. The addition of a pair of Meridian Digital Loudspeakers or active speakers (or a G Series amplifier and passive speakers) completes an extremely effective two-channel A/V set-up. For more details, check out [www.meridian-audio.com](http://www.meridian-audio.com).



## PLANAR PERFORMANCE

Rega has a new upgrade kit for its classic Planar 2 and 3 turntables, which it is now fitting to the very latest P2 and P3 models. The company says that, "the new P3 motor upgrade uses no active electronic trimming devices and combines remarkable cost-effective engineering producing extremely low vibration..."

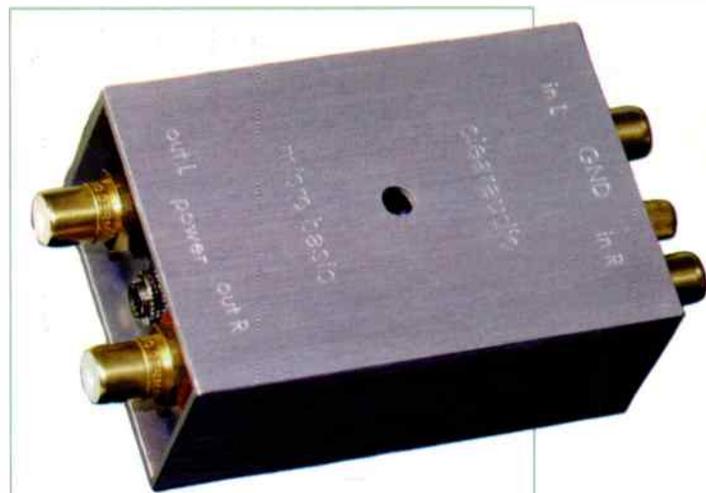
As our new motor assembly has virtually no vibration, it can be directly coupled to the turntable plinth using the latest in adhesive pad technology... (providing) a highly effective drive train from the motor pulley through the drive belt to the sub platter. This process reduces both wow and particularly flutter, resulting in more control accuracy and detail". Go to [www.rega.co.uk](http://www.rega.co.uk) for more information.

## TAG BACK ON TRACK

Following TAG McLaren Audio's 'strategic review' announced on July 28th - which many industry insiders feared would presage the end of the marque - we can report the happy news that the company is to continue manufacturing at its purpose-built Huntingdon facility, although it will now focus on home cinema products and be 'resized' accordingly.

## ART ITALIA

Since 1954, Italian audio specialist VIETA has been making innovative products, with the emphasis very much on style. Its Adagio Prestige model, for example, was exhibited in New York's Museum of Modern Art, as an example of industrial design. Its new Latino 5.1 Home Cinema Speaker System (£499.99) boasts extruded aluminium cabinets, Neodymium magnets, full magnetic shielding and unique VDC (Vieta Dynamic Controller) technology, based on psycho-acoustic studies to optimise the bass response in the amplified subwoofers. The Latino system includes the accessories necessary to hang the small wall satellites, which can also be mounted on the optional Latino Floor stands. Both 'speakers and stands are available in white and aluminium finishes. The satellites measure 140.4x106.8x101.4mm and weigh 874g apiece. For more information, call 01494 723 444 or click on [www.vieta-uk.com](http://www.vieta-uk.com).



## BACK TO BASICS

The Micro Basic is the new baby in the Clearaudio range of phono preamplifiers. Ideally suited to starter systems, it claims "exceptionally high performance for the price". The power supply is kept separate from the chassis to allow high power supply capacity whilst keeping unwanted noise and distortion to a minimum. Hand-selected parts are used, and the circuitry is laid out optimally for high channel separation.

Gain is adjustable by switches on the main circuit board, allowing both Moving Magnet and Moving Coil cartridges to be used. To ensure every cartridge operates at its best, an impedance sensing circuit automatically sets the ideal loading. Measuring just 50x74x30mm and weighing in at 200g, the Micro Basic costs £225. Contact Audio Reference on 01252 702705, or click on [www.audioreference.co.uk](http://www.audioreference.co.uk).

## TWO PURE

PURE's new £159.99 EVOKE-2 is a battery-powered standalone DAB and FM radio. Its maple wood casework surrounds a pearlescent white front with silver grille and control panel with scrolling LCD text display, station selection, tone and volume knobs and button controls for presets, band selection, display settings, power and auto-tuning. EVOKE-2 has integrated stereo full range hi-fi speakers and features a reflex port for enhanced bass performance. An optical digital output for DAB is provided, allowing connection to a hi-fi system with digital input or recording to MiniDisc. Stereo line-out is also available via a 3.5mm socket for analogue output of DAB and FM. Click on [www.puredigital.com](http://www.puredigital.com) for details.



## PIONEERING STUFF

Following in the footsteps of its pricier DV-757i and DV-656 big brothers, Pioneer's new DV-565A DVD player features universal playback capability, supporting DVD-Audio and SACD high resolution audio formats. Another new feature is JPEG PhotoViewer that allows

users to display digital photos from CD on a large screen. Available in silver or classic black, with an ultra-thin design, it spins all popular disc types and content formats including DVD-Audio, DVD-Video, SACD in both stereo and multi-channel format, CD, VideoCD, MP3, CD-R/RW and DVD-R/RW. Check out [www.pioneer.co.uk](http://www.pioneer.co.uk) for details.

## THE NECK STEP



After many years producing conventional head and in-ear phones, Sennheiser has come up with its first ever 'neck band street headphone', the £29.95 PMX 60. It's claimed to be an upgrade to any personal music player, offering "great wearing

comfort with excellent sound and clean modern design". A bass tube gives rich, full bass, in conjunction with the ultra-lightweight diaphragms for fast transients. A 1m highly conductive OFC copper cable is included, along with

the company's usual two year guarantee. Vital statistics are a frequency response of 18-21,000Hz, 24 ohm impedance, less than 0.5% THD and 55g weight. For more info, call 0800 652 5002 or click on [www.sennheiser.co.uk](http://www.sennheiser.co.uk). Whatever next?



## NEW ACT

Wilson-Benesch's A.C.T. SILVER is a stunning high end loudspeaker boasting a wealth of novel construction techniques. Costing £8,400, this Sheffield made box boasts unique welded metal internal architecture, rigid alloy baffles, a carbon fibre monocoque chassis and wood veneers by Rolls Royce dashboard craftsmen! Claimed to be the first loudspeaker to be assembled entirely from metal and carbon composites, the 24 different materials used in its construction are said to provide the ultimate rigid structure. All the structural components used in the new A.C.T. are Carbon Fibre composite and metal 'engineering materials', and the front baffle and internal bracing are also metal. Bespoke options available in any colour or any veneer. For details, call 01142 852 656 or point your browser at [www.wilson-benesch.com](http://www.wilson-benesch.com).

## UNDER COVER

Specialist hi-fi retailer Hi-Fi Corner has launched a bespoke online home hi-fi insurance policy. Managing Director Colin MacKenzie says, "The majority of insurance companies today don't offer cash if your hi-fi or audio visual equipment has been stolen or damaged. Some insurers and loss adjusters receive advice from companies whose main expertise is selling cheap products at very cheap prices. Often a policyholder will be offered a voucher for a high street store where there is little hope of receiving decent replacement equipment. Hi-Fi Corner have therefore launched their own home contents and buildings insurance product, backed by a leading U.K. insurer... Quotes are available without having to go through a vast multitude of screens. By having only an online quotation system it means that premiums can be kept low. Our sister division works with the insurer backing the policy so we are very confident that anyone with decent equipment will not lose out to poor replacement advice". Details can be found at [www.hificorner.co.uk/insurance.htm](http://www.hificorner.co.uk/insurance.htm).

## next issue

### THE BEST OF BRITISH! A celebration of UK hi-fi:

#### NAIM CDS3

Salisbury's most serious CD spinner to date!

#### CAMBRIDGE CD540

The ultimate in affordable digital esoterica?

#### CREEK T50

Like its predecessors, the best budget tuner?

#### MUSICAL FIDELITY kW

Yikes! Can its absolute power corrupt us?

#### EAR 890

Tim de Para's ultimate valve power amp?

## next issue

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Shown here: T562 DVD/CD Player and T752 Surround Sound Receiver.

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World Radio History

# Pure Glass

Valve amplifiers are invariably described as soft, warm or even coloured, but aren't necessarily any of these things. They vary enormously in their sound, covering a wide range of tonalities. One thing's for sure though, a good one calls into question "the transistor sound". In this month's supertest, we've auditioned some of the best ones at their respective price points, and thrown in Sugden's A21a pure Class A transistor integrated for good measure – to see how tubes stack up against the sweetest solid state has to offer. Noel Keywood does the technical stuff, while David Price lends an ear...

**B**ecause valve amplifiers are relatively simple in their circuitry, and there's not so much room for innovation, there are plenty of "back shed" jobs around. Most use poorly designed and constructed output transformers which hamper sound quality.

Old classics can fare poorly against modern designs too and again it's poor transformers that are responsible.

Get past all this to a good design, well executed and you simply find yourself with an amplifier not vastly different from a conventional transistor amp in performance, yet with a substantially different presentation. In a nutshell, you get a supremely smooth, natural sound that resolves the tonality and richness of vocals and instruments in a way that eludes solid-state, along with superb stage depth and openness.

Even amongst good valve amplifiers though, large variations of tonal quality exist. At one extreme lie conventional types using modern power output valves in push-pull configuration to deliver around 40watts per channel. Configured much like designs of the 1950s-60s before transistors arrived, but with modern components that give them a significant advantage, amps like this are sensible workhorses. Americans like their rugged yet linear 6550 output pentode, whilst Brits can still enjoy the KT88, a Kinkless Tetrode, now manufactured in China and Russia. Good designs with valves like these give all the cleanliness of solid-

state, together with the benefits of valves and, most importantly, they deliver plenty of volume with today's loudspeakers.

At the other end of the scale lie SETs, or Single Ended Triode amplifiers. These represent ultimate simplicity and purity. The triode in itself is deeply linear (little distortion, unlike transistors) and single-ended working eliminates the complexity of push-pull. There are big drawbacks, notably low power; most SETs produce 3-9watts. Big single-endeds can produce 18watts or so, but are large, heavy and run hot. All the same, the latter in particular provide a sound that's quite beyond solid-state. Silky smooth, sweet, detailed and vastly atmospheric they're in a world of their own, but only real enthusiasts should consider residency, but we test a good one this month - Unison's S6.

A tiny but interesting category worth a quick mention is based around transmitter power triodes like the 211, 845 or fearsome 212. Using dangerously high voltages they can provide good levels of power and a degree of dynamism that's breathtaking. Reliability and servicing are such a problem these amps are impractical.

Because the output transformer is so difficult to design and – especially – build, there have been plenty of attempts over the years to eliminate it. So called "direct coupled" types often use an output capacitor. True direct coupling is potentially dangerous. A seemingly

good idea, in practice a lot of compromises have to be made to achieve it and sound quality invariably suffers. There are some good solutions though, and we test one this month - the Graaf GM20.

Another common distinction made in valve amplifiers is that between auto-bias and fixed bias. Auto bias is simple, eliminates adjustment and sounds good, especially at high power. Fixed bias gives more power but usually demands bias adjustment using a multi-meter, not the sort of thing most users expect to get involved with. Fixed bias amps overload much like solid-state – suddenly and unpleasantly.

A good valve amp is a wonder, but there are a few things to be considered before buying. Output valves have a lifespan of 3,000 hours or so. They should be replaced in pairs and this can be expensive. A push-pull amp has two pairs - and 300Bs can cost up to £250 apiece! Servicing and repair costs should be checked before buying, because as with some cars they can be steep. Labour, carriage of a heavy item and specialist parts like matched valves or output transformers can add up. All the same, tube heads swear by their amplifiers and there's no doubt that they're a great listen!



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## SUGDEN A21a

## VERDICT ●●●£

Still the most musically convincing solid-state amplifier at the price, but you'll need to build your whole system around it.

SUGDEN A21A £1,049

Sugden Audio  
 C +44 01522 672261  
 www.jetugden.co.uk

**A** solid-stater starting our great tube supertest? Yes! Some feel solid-state working in pure Class A, where the thing runs scorchingly hot – gets very close to a good valve amplifier. The A21a is known to produce tonal colour. So is a specialised solid-stater like this really any match for esoteric valve amps?

The little A21a – heat production apart – is totally conventional and has no fear factor attached to it. Better still, it comes with a phono stage option, a balance control and even a mono button. This doesn't just make sense of old Beatles tracks, with drums at left and vocals right (!), but it can be useful if you feed in a mono source from something like a TV.

There is one little drawback though: the A21a produces just 24watts per channel so it must be used with sensitive loudspeakers and, ideally, they should be 8ohm types. This means big floorstanders like the Revolver R45s we used, or similar.

Long and low, the Sugden is beautifully built by a company that pays little attention to what anyone else is doing. Its simple, milled slab of a front panel is superb and the controls work smoothly. At the rear lie gold plated 4mm binding posts. Long heatsinks either side radiate away the heat; there is no fan, so the amp is silent.



The A21a sounds quite unlike any other amplifier you'll hear. In a sense, it inhabits a nether world between solid-state and valve, and as such explicitly highlights the problems with both (although, it isn't without bugbears itself). Essentially, it's a tremendously clean sounding bit of kit, but that's not clean as in sterile, dry or clinical (which is traditionally what we think of when this epithet is used), but clean as in unsullied. There's so much music trying to get out of this amplifier, in all its full, wide, colourful glory – and mostly, it succeeds. Only the lack of power – which makes partnering to the right loudspeakers essential – holds it back.

The superb 1972 EMI recording of Rachmaninov's Piano Concertos in F sharp minor (op.1, vivace; Vladimir Ashkenazy) on CD shows

this amplifier's supreme hear-through clarity. Although fine detail and depth perspective can't match the very best, there's still an almost 'glass clear' window onto the recorded acoustic with an unsettling lack of mush or clatter. There's a strong and propulsive bass, that's just a tad on the warm side, and a deliciously subtle and finely etched treble – but it's that gorgeously open midband that does it for me. By contrast, even fine, well respected rivals such as Cyrus's 8/PSX-R sounds nasal and congested. Best of all is the aforementioned tonal palette – strings have body and tone, brass has rasp and resonance. It's addictive, and for this one can forgive the Sugden its meagre power output and lack of physicality and impact. Exquisite, and a hard act to follow...

## MEASURED PERFORMANCE

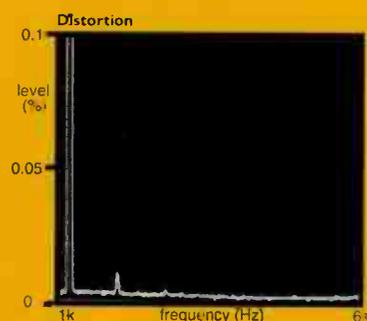
The A21a produces 24watts into 8ohms and 36watts into 4ohms, with signals of music duration. It appears to have current limiting, likely for protection, and will not sustain heavy drive into low loads for long. It isn't an amplifier ideally suited to 4-ohm (nominally 8ohm) loudspeakers, but then it isn't much different from many valve amps in these specs.

Distortion levels were low at around 0.01% in the mid-band at ordinary output levels, rising to 0.03% at high frequencies. Comprising mainly second harmonic, this isn't a problem. Toward high output levels distortion rose somewhat, but providing the amp isn't pushed too hard this will not be consequential.

Frequency response extends downward nicely, but the upper -1dB limit is 31kHz. Still, this is again good enough even for 48kHz sampling rate DVD.

The A21a measures well, but it must be run with sensitive loudspeakers if its strengths are to be heard.  
 NK

Power	24watts
CD/Tuner/acc.	
Frequency response	6Hz-31kHz
Separation	52dB
Noise	-93dB
Distortion	0.01%
Sensitivity	150mV



## UNISON S6

**T**he Unison S6 uses Single Ended operation, which eliminates crossover distortion, so it really is quite a lot different from the norm - and pure Class A.

Unison keep size down to manageable proportions, especially considering that there's no less than 28watts per channel from three EL34s working in parallel per side. The amplifier is monstrously heavy, because the output transformers must contain plenty of iron!

The output valves and input double triodes lie under a neat, hinged grill. On the front panel are a volume control and input selector; the power switch is on the rear. The case is comparatively narrow, but deep.

There are four inputs, all at line level, plus a tape in/out with accompanying monitor switch. Unlike the Soro, if you want to use LP then an external pre-amp will be needed, valve or solid-state. Outputs are provided for 4ohm and 8ohm loudspeakers and, nowadays, even in the UK it is wisest to use the 4ohm tap, since most - if not all - loudspeakers use 4ohm bass units.

The S6 is a sonic step up from the Audionote Soro SE. It's actually a pretty close rival to the Audio Research Vsi55. Whereas the latter is a big, bruising American powerhouse of an amplifier, the S6 is an altogether more finessed and fragile Italian exotic.



The Rachmaninov disc was a revelation. Whereas the Soro gave a different presentation to the A21, the S6 gave a comprehensively superior one. From the opening bar, it's so open and uncoloured - much in the same way as the Sugden, yet more so.

On Mike Oldfield's remastered 'Tubular Bells part 1', for the first time I could explicitly hear the full envelope of the notes from the opening keyboards, not just the attack but the decay too. There was a lot more detail and clarity, taking me right into the recording. While the A21a had a good stab at this, it was ultimately just a little looser and more veiled in the midband, but the S6 seemed relentlessly incisive. It was able to eke out oodles of very subtle detailing, and - importantly - string it together in a brilliantly

cohesive way. Its genius was its ability to show the rhythmic accents of those keyboard parts. Its dynamic prowess was superb too - startling speed allied to real welly made for a very forceful and emotive performance. It has real bass power and punch to match its excellent grip.

The only downside is just a touch of brightness in the midband - and I do mean just a touch. The S6 has a 'well lit' upper mid, although it isn't actually bright or forward as such. The EL34 output valves are probably the cause, since they are known to be a trifle hard. Many will ameliorate this with vinyl and sympathetic 'speakers, so I wasn't particularly troubled by it. Overall though, the S6 is superb and something I for one would love to live with.

## VERDICT ●●●●£

Tremendously musical and lithe sound with real finesse and subtlety too. Fantastic value.

UNISON RESEARCH S6 £1,625

UKD

☎+44 (0) 1753 652669

www.ukit.co.uk

## MEASURED PERFORMANCE

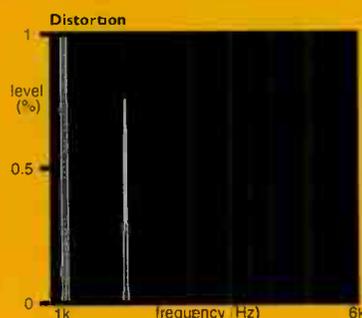
The S6 produces a healthy 28watts from its 8ohm tap and the 4ohm tap manages a very similar 30watts, so secondary coupling efficiencies look good. This is quite a lot of power from a single-ended.

Bandwidth is wide enough for DVD-A and SACD, running from 8Hz up to 54kHz (-1dB). Power bandwidth was good too, the SE delivering 25watts at 40Hz before going into output saturation.

Inevitably, distortion levels were high, ranging from 0.55% at 1watt to 3% at full output, but it was primarily second harmonic and the transfer characteristic changed little with power or frequency.

Sensitivity was high at 230mV and noise and hum both satisfactorily low. The S6 measured well for what it is: a high power single-ended. NK

Power	28watts
CD/Tonicaux	
Frequency response	6Hz-54kHz
Separation	74dB
Noise	-75dB
Distortion	0.55%
Sensitivity	230mV



# AUDIONOTE SORO SE

## VERDICT ●●●£

Satisfyingly smooth and fulsome sound that's best suited to simpler, gentler acoustic music.

AUDIONOTE SORO SE £2,999  
AudioNote UK Ltd  
t: 44 (0) 1273 220511  
www.audiote.co.uk

**T**he Soro SE looks much like any hi-fi amp, but it's a niche product for people who'd normally buy mass market kit for fear of the unusual.

Inside, you'll find the rugged Russian 5881 tetrode, three per channel, to develop a claimed 18watts running in single-ended (SE) output configuration.

The front panel carries all the facilities normally found in a modern amplifier, including balance, but not tone controls. The rear carries four ohm and eight ohm outputs.

For the price of a decent solid-state 'super integrated', the Soro attempts to give you a taste of something altogether more esoteric – and succeeds. Compared to our Sugden solid-state reference – which itself sounds quite exotic compared to, say, Arcam's popular FMJ A32 – the AudioNote is an extremely wild and esoteric experience. It has character and colouration in equal measure. It doesn't attempt to give A21a-style transparency, but rather is all about lavishing warmth and sweetness – that pure, good old fashioned, unreconstructed valve sound – on the listener. Whether that 'sweetness' was actually there in the recording in the first place never really troubles the Soro SE.

The Rachmaninov disc gave an altogether wider and more expansive soundstage than the Sugden. It generally hung just behind



the plane of the 'speakers, and pushed out into the room when required.

Tonally it was pure saccharine with just the smallest slice of lemon in the upper midband. Bass was warm, soft and voluptuous, midrange smooth and hazy and treble syrupy. Christina Aguilera's 'Can't Hold Us Down' showed a very subtle hardness in the upper mid, the Soro falling victim to this disc's acidic sonic balance – I suspect that with vinyl, you'd never hear it.

It was precisely with this sort of uptempo power-pop that the Soro SE performed least well – it still made a nice noise alright, but you could tell that the bass was struggling to keep time with the midband, and the need to kick out serious power to convey those electronic, synthesised bass notes proved troublesome at higher

volumes.

Move across to Jackie Leven's 'Desolation Blues', and suddenly you had one of the more arrestingly atmospheric and moody renditions of the track I'd heard – by contrast, the Sugden seemed all too thin and matter of fact. That's the thing about the Soro SE – it's all about the valve experience. Whatever the music, you get a smooth, silky and sumptuous sound – whether it suits the song or not. As such, with simpler and less dynamic (read: more contemplative and moody) music it's stunningly effective, yet somehow loses the plot when asked to get physical.

By contrast, the Sugden is more consistent, regardless of whether it's Motorhead or Mozart. Where the Soro is coloured, the Sugden has more tonal colour. Buy with this in mind.

## MEASURED PERFORMANCE

The Soro produces a limited 10W per channel. The 500µF top caps a cleaner sine wave close at full output. It needs sensitive loudspeakers if it is to go loud.

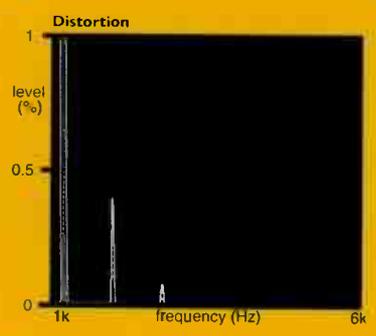
Measured distortion levels were high, but comprised mainly second harmonic. Valve amps get progressively more linear as level decreases though and the Soro was no exception, so providing it is not pushed too hard it should sound clean and clear.

Frequency response through the CD input was a normal enough 7Hz-24kHz and noise low. The amp has a very high input sensitivity of 85mV.

The phono stage needed just 1mV for full output, so it will work with high output moving coils. Equalisation was accurate and there's a fast roll off below 20Hz to suppress warp signals. The Soro will exhibit a little hiss except when used with high output MM cartridges.

The Soro measured well enough in all areas and it has a good valve phono stage. Power output is limited. This is an amplifier for listeners, rather than headphones. NK

Power	10watts
CD/tuner/aux.	
Frequency response	7Hz-24kHz
Separation	60dB
Noise	43dB
Distortion	0.8%
Sensitivity	85mV



# AUDIO RESEARCH VS155

**A**udio Research seek to make best use of standard valve circuits and techniques, aided by modern solid-state control electronics. The VS155 has remote control of volume, for example, and delayed switch-on. The chassis is strongly built and well finished, although it is folded with unwelded seams - an inexpensive and unlovely construction method.

This amp uses three 6N1P input and driver valves and two 6550EH (Electro Harmonix) output tetrode valves per channel, operating in push-pull. The amplifier switches on muted, so it's silent and fear-free at start up. A line of green LEDs on the front panel shows the volume setting and input switching is via relays. The VS155 has no phono stage on-board, it simply possesses an array of line inputs.

The rear panel carries 4ohm and 8ohm loudspeaker outputs. It also has sockets for bias setting with a voltmeter, since this is a fixed-bias amp for maximum power - it's rated at 50watts per channel.

Whereas the S6 is a very Italian design, which is brilliantly fast and lyrical with oodles of passion, the VS155 is an altogether more muscular and formidable contrivance - like the Terminator! It is less subtle, less fluid and less graceful than the smaller, more nimble and fleet footed Unison



Research but what the hell - it rocks! It thunders out vast amounts of power and punch with absolutely no sign of stress - enough to nail you against the back wall. Anyone who thinks valve amplifiers are limp-wristed designer accessories for 'hi-fi hairdressers' will be slapped down by this behemoth. Hell, even Naim owners will like it!

Amazingly though, it's no big, clumsy, club-footed monster and has great depth to match its real steel. The Rachmaninov disc showed this to be almost the most commanding and authoritative of the group. Soundstaging is panoramic, somewhat akin to standing on a mountain top. Images project boldly out into the room and hang back for miles - the result being that the 'speakers largely disappear. Bass is very strong and grippy - although obviously more big-boned than the

Unison Research, it's less subtle and fluid and can sound ever-so-slightly plummy compared to the ultra tight, taut Italian. Still, we're not talking fat splurging dollops of low frequencies, a la Audionote Soro SE here - it's perfectly swift enough to keep time with the midband and make everything great fun.

The midband falls down slightly. Whereas the S6 is tremendously incisive and uncoloured the VS155 is a little less finely etched. Rather, it prefers to deal with the big picture, taking the key themes of 'Tubular Bells' and firing them out of the 'speakers like a pump action shotgun. The major downside of the Audio Research is its treble, which isn't bad but doesn't have the smoothness, sweetness and detail of the Italian. Overall, it's superb in a big hearted, powerful, straight down the line American sort of way.

## VERDICT

Tremendous power allied to a wonderfully musical sound makes for a brilliant listen.

AUDIO RESEARCH VS155 £2,899

ABSOLUTE SOUNDS

☎ +44 (0)20 89 71 39 09

www.absolutesounds.com

## MEASURED PERFORMANCE

Power output from the Audio Research measured 49watts into 4ohms and 45watts into 8ohms, so the 4ohm section is better coupled and best used. The Audio Research is just about a 50wattier and will go loud.

Output was not curtailed by the transformers at 40Hz or 10kHz, a sign of good transformer design.

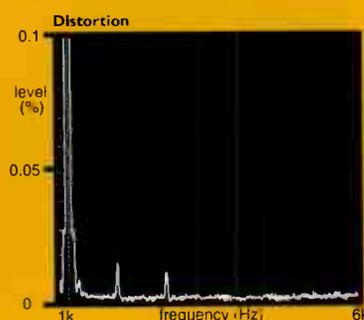
Also of significance was wide frequency response, reaching 70kHz no less, good enough for 24/192 DVD! - with a smooth roll off above this limit.

Distortion was largely second harmonic and levels about as expected. Fixed bias amps overcut less gracefully than auto-bias and this was obvious in the distortion spectrum at high levels and the hard peak clipping that occurs at the limit. The VS155 behaves almost like solid-state here.

Hiss was low and from a critically low 1mV. Input sensitivity was poor at 800mV, not adequate for old times like a Troughline.

The Audio Research was very well engineered, giving almost solid-state measured performance. NK

Power (4ohms)	49watts
CD/tuner/aux	
Frequency response	5Hz-70kHz
Separation	80dB
Noise	-92dB
Distortion	0.014%
Sensitivity	420mV
dc offset	10/8mV



## GRAAF GM 20 OTL

### VERDICT ●●●●●

Stunningly capable product that combines superlative neutrality with fantastic punch.

GRAAF GM20 OTL £3,300

UKD

☎ 44 (0) 1753 652669

www.ukd.co.uk

**G**raaf achieves a standard of finish in its Italian Modena factory (close to Ferrari!) that is remarkable even by the best hi-fi standards. The GM20 is remarkable in other ways too: it's a direct-coupled amplifier with no output transformer or capacitor. Consequently, it has output protection circuits to guard against excessive d.c.

Rated at 20watts per channel from its 6C33C triodes operating in push-pull the Graaf reportedly uses a Circlotron (1955) circuit, around which a small 6dB of feedback is applied to aid loudspeaker matching. Output impedance is high, so Graaf recommends loudspeakers of 8ohms or more are used.

Valve bias and d.c. offset must be adjusted every 1000hrs of use. All valves are inexpensive, but the output 6C33Cs come as run-in, matched pairs from Graaf.

The amp can be run direct from any CD, SACD or DVD player via a passive preamp. It can be mono'd to provide 65watts and better drive 4ohm loudspeakers. There's a balanced input as well as normal (unbalanced) one, and the output is balanced by the nature of the circuit.

From the first bar of 'Tubular Bells' you can hear the incredible insight it has. Fantastically explicit, it throws out masses of detail in a way that leaves even the S6 wanting. If the Unison is a muggy spring



afternoon, then the Graaf is a brilliantly crisp autumn morning – it sounds so much fresher and more tactile than even the S6. Yet, despite its supreme midband clarity, it is even smoother. There's no sense of the S6's slightly chromium plated upper midband – it's almost as if the amplifier itself just dissolves to let the music's inherent tonality shine out.

Christina Aguilera's 'Can't Hold Us Down' was a case in point. It's a forward and somewhat challenging recording, but the Graaf managed to scythe through the glare and hardness and get right into the groove. It was both better focussed and yet less tiring than the Unison.

Amazingly however, it gives almost nothing away to the barrel chested Audio Research in terms of power, having masses of stomp and thump down in the bass. 'Can't Hold

Us Down' is a highly syncopated bit of modern dance music, stopping and starting relentlessly and kicking out vast tracts of low frequency energy. The Graaf made a brilliant fist of it, with tremendous grip allied to amazing articulation. Basslines were wonderfully fluid yet gunned out with breathtaking power.

Up top, its treble is exquisite – way better than the Audio Research and usefully more atmospheric even than the Unison Research. Violins were vibrant, wonderfully separated, full in body and natural in timbre - a breathtaking sound. Orchestras were presented with a scale and force quite unlike other amplifiers.

The GM20 is a stunning product, one that's both charismatic yet disarmingly self-effacing – it succeeds by taking you closer to the music than you'd think possible. Must be heard.

### MEASURED PERFORMANCE

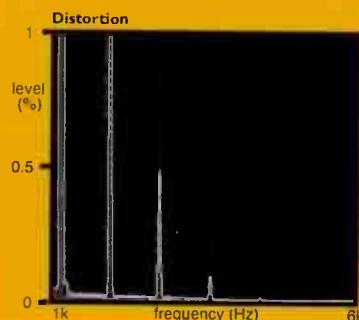
The GM20 has an unusual measured behaviour. There is quite a lot of distortion even at low power, 2.3% at 1watt no less, and although its predominantly second harmonic there's third harmonic too, as our analysis shows (1% full scale). The third harmonic strengthens with level, sharpening up the sound. The amp triangulates near full output of 20watts, due to third harmonic, generating 4% total harmonic distortion.

The GM20 is not a low distortion amp by any means and performance worsens substantially into loads lower than 8ohms. It must be used with 8ohms or, preferably, more. Unfortunately, high impedance loudspeakers are usually insensitive.

Bandwidth was very wide, measuring -1dB at 80kHz and 3Hz. Noise was low and separation wide.

The Graaf produces more distortion than conventional valve amps, especially at low levels where valves are usually very linear. It's a distinguishing feature of the GM20 and one that doubtless will affect its sound. *NK*

Power	20watts
CD/tuner/aux	
Frequency response	3Hz-82kHz
Separation	80dB
Noise	-103dB
Distortion	2.3%
Sensitivity	500mV



# conclusion



**Sugden A21A**



**Unison S6**



**Audio Research**

If anyone tells you that valve amplifiers are necessarily 'warm', 'woolly', 'rose-tinted' or 'coloured', then they obviously haven't heard this little lot. Here is conclusive proof that tubes can sound just as different as transistors – in fact, I'd say the differences between the Audionote Soro and the Graaf GM20 are easily greater than, say, Sugden's A21a and Arcam's FMJ A32. The fact is that whether an amplifier uses valves or not does not prescribe its sound. Rather, it's the fundamental circuit topology, type of tubes, make of types and the quality of the output transformers which determine the sound, and not simply the fact that they glow in the dark and make a clicking noise when you switch them on or off.

All amplifiers – either solid state or tubular – are compromises. Each one is a particular take on the eternal price vs. performance dilemma. In the £1,000 bracket, you have a wealth of choice. There are lots of 'super integrations' from the likes of Cyrus, Naim, Arcam, Myriad et al, and the Sugden A21a is probably the most charismatic. It's not the best all rounder at the price, but given the fact that you have a smallish room and sensitive loudspeakers, and you value transparency and finesse over power and punch, then it's the best you can do. It doesn't sound like any other tranny amp I've heard, but then again it doesn't sound like any valve amp either – so it's a fascinating foil to the likes of Naim's Nait 5 (on the lean and punchy side) and the Audionote Soro SE (on the warm and sweet side).

Indeed, the Audionote Soro SE is essentially a 'my first valve amplifier' – it's a great way in to the world of

glass audio, and has real merit. If you've never heard a tube amp before, but have formed an idea in your mind from anecdotal information, then this is probably the closest you'll get to how you imagine it. Yes, it really is warm (and all the other clichés at the top of the page). Put simple acoustic music on at relatively low levels and users of even very tasty transistor amplifier users will be surprised at its wonderfully beguiling and enveloping sound – they'll think, "hang on – why is this so good?" Put thumping, kicking dance music on and it trips over itself and betrays its budget status, however. The trick is to buy it if it suits your music tastes and system, but leave well alone if not.

Moving to the Unison Research S6, and here you have a reasonably powerful product with exquisite styling and the ability to play any music and make it natural and enjoyable. It's very engaging, lucid and lyrical – yet has plenty of punch and grip in the bass, commanding soundstaging and fine dynamics. It does both the musical stuff and the hi-fi stuff so very well that many will wonder why they should ever spend any more... This, allied to its delicious styling and fine build make it the best value for money in the group by far.

The Audio Research is slightly less accomplished in the midband and treble – there's less incision and finesse – but it still works better overall than the Unison Research thanks to its tremendous power and scale. As I said last month, it's 'valves without tears' – you get much of the excellent liquidity and musicality of the S6, but with wall shaking, flare-flapping levels of power. It will drive



**Graaf GM 20 OTL**



**Audionote Soro**

any modern loudspeaker reasonably loudly, and if you have a decent high sensitivity design (as indeed you should), then it will be the life and soul of your party.

This leaves the Graaf. For me, it is easily the best here. Take the strengths from both the Unison Research and the Audio Research and sum them, then multiply by two. It has tremendous power and articulation, allied to a startlingly clean and clear midband. In a sense, it sounds as stark and 'transparent' as any high resolution transistor design, yet lacks the inevitable 'mush' or 'clang' of solid-state. It is a resounding answer to those who trot out those aforementioned valve clichés – sit them in front of this and their jaws will be on the floor! Factor in a quality of finish that would shame an SME Series V (yes, really) and the look of those incredible 6C3CC triodes glowing away, and it's a stunning thing to behold. Funnily enough, its brilliantly clean and open nature is somewhat reminiscent of Sugden's A21a, albeit on a far grander scale!

# Take The Tube

**Now that you know just how good valves can sound, long time tube aficionado Noel Keywood explains precisely why they're magic at reproducing music – and details his favourite glass bottles...**

**P**ut a power transistor alongside a valve and consider the differences. One is miniature, the other massive. One is very solid, the other has a deep vacuum. One passes current through semi-conducting materials, the other through nothing. So perhaps it's no surprise they should sound so different, since differences could hardly be greater. Valves are an audio amplifying device with no dielectric, very low current density and excellent linearity, so it's no wonder transistors can't compete. In real life of course, people want amplifiers of small size, low price and good reliability and in these areas advantage swings back to solid-state. All the same, valve amps have a big following and good ones demonstrate truly beguiling qualities.

## THE PROS

A liquid sound, spacious, soft and warm are all descriptions you'll find accompanying valves - and there's some truth in all of them. A valve amplifier can provide a sound that is seemingly more natural (i.e. liquid) than solid-state amplifiers, lacking their hardness and graininess. Valve amplifiers also bring a sense of spaciousness to the sound, a stark contrast to the flat one-dimensional frontal imaging that a solid-state amplifier typically produces. Feedback has a lot to do with this. As it is applied, so the sound tightens up and shrinks backward toward the plane of the loudspeakers.

These days the notion of 'zero-feedback' and 'low-feedback' have crept into transistor amplifier terminology as designers wrestle to improve their sound, lessening the sense of flatness and compression that heavy feedback brings. Unfortunately, reducing feedback increases distortion so there's only so much leeway available with transistors. Valve amps have inherently low feedback, even when

there is no output transformer and as a result usually sound dimensional.

Soft and warm? Not necessarily – a good modern design running 6550s or KT88s will sound as lively in its balance as any transistor amp. Historically, output transformers have been a cost burden in commercial amplifiers that limited their quality. They overloaded early at high frequencies and this gave rise to the soft, warm tone. It also made for treble muddle. Unfortunately there are still lots of mediocre output transformers around, since their design and manufacture is difficult, which complicates the task of choosing a good amplifier. Those that are well designed, however, are fully able to reproduce all audio frequencies, up to full output, and they sound neither soft, nor muddled.

And finally I must mention timbral resolution, or the ability to clearly reveal the difference between a violin and a cello! Not only do valve amps reveal tonal colour in instruments and singers, they also bring a tonal palette to music, something transistors swamp. All electronic components contribute to degradation here, giving the valve amp, with its low component count and lack of solid-state devices, an audible advantage.

## THE CONS

Whilst a good valve amplifier can bring a sense of relaxing naturalness to any hi-fi system that's a joy, there remain difficulties. Reliability isn't always so good. Valves can fail and on rare occasion mains transformers and cathode resistors can burn out. They shouldn't of course, but it only takes a batch of wire to have poorly applied insulation, or such like, for a transformer to burn out due to the high continuous load it's under. Most are over-specified these days to avoid such things, but valve reliability can be variable, varying between batches,

manufacturers and even local political problems! It's best to be aware of this before buying, since if one output valve goes 'phut' in a push-pull pair, a matched pair is needed to replace both. This can cost from £20-£300.

Valves have a lifespan of many thousands of hours, after which they should be replaced. Reckon on 3000hrs for power triodes, around 4000hrs for later pentodes and up to 10,000 for small signal valves. But as designers of experience note, lifespan depends upon how hard a valve is driven. High power output from an amplifier with a specific valve type means the valve is being caned and will have a short life. Even toughies like the 6C33C regulator can exhibit very short life if driven too hard. Whilst this may not matter with inexpensive 5881s, it will matter with 300Bs in push-pull pairs. So acquaint yourself with valve costs!

There are eighteen factories worldwide producing new valves, situated in Russia, America, East Europe and China. New versions are appearing all the time, often better built than ever before. Also, NOS (New Old Stock) is available, meaning unused old stock. What's for sure is that valves are not going out of production; quite the reverse, they are coming back into production, like Western Electric's new KT88 for example (designed in Hammersmith, built in America!). Warehouses and dealers are now common, so availability is rarely a problem and prices are reasonable, having come down steadily over the last decade.

Some amplifiers need bias adjustment. This requires a multi-meter. These days good ones are cheap enough and the owner's handbook should tell you how to twiddle. Also in your toolkit you need to keep fuses of the right rating, since if the fuse is run close to its limits for safety reasons, a few may pop out at switch on before one

holds. Mains fluctuation can be responsible for this. If there are internal fuses, then find out before buying. Failure here could mean return to the dealers and a lot of hassle. Whilst valve amps can and usually do soldier on for years reliably, it's best to be realistic about the fact that they can also get temperamental. Repair isn't difficult though.

### THE ETERNAL DILEMMA

Loudspeaker matching is a grey area. Nowadays, even in the UK loudspeakers commonly use 4ohm bass units, allied to 8ohm tweeters. With these it's best to use a 4ohm output tap. The rule is: run the speaker from an output impedance

lower than the 'speakers' quoted nominal impedance, commonly 6ohms in the UK. Loudspeaker sensitivity needs to be 87dB SPL at least for 40watt amps, rising to over 90dB for 20watts amps. Go for big, sensitive floorstanders, rather than small insensitive bookshelf types and listen carefully before buying, especially to bass quality. Bear in mind that big reflex cabinets are often lightly damped at low frequencies, relying upon the electrical damping applied by a transistor amplifier to pull them in line. With a valve amp bass may get floppy, in which case try using the foam port bung often supplied these days to tighten them up. Bass control depends upon the balance between

electrical to acoustic damping within the loudspeaker. Where it does not, such as with a Quad electrostatic, valve bass is usually more lithe and expressive than solid-state bass.

Finally, don't forget heat and safety. Big power amps will warm the room. Output valves can burn and dangerous voltages exist inside valve amps. Where children or pets roam it's best to use a cover over the valves, or place the amp on a sturdy shelf out of harms way. Valve amplifiers aren't the easiest things to live with. All the same, they bring to any hi-fi system a naturalness of sound that eludes transistors. Anyone wanting to relax in front of their system for hours of endless listening should consider one.

## Name that Tube

But what to choose? Push-pull types, meaning most of them, are traditionally most sensible, giving plenty of power from a manageably large chassis.

Highest power is provided by fixed-bias working, but then bias needs adjustment. A sweeter sound comes from auto-bias (self-bias) and this technique eliminates the need for adjustment too.

More pure are single-ended types, but they usually have little power. However, in our test this month Unison's excellent S6 manages a massive 28watts per channel from single-ended working – impressive.

Then there are the SETs, or Single-Ended Triodes. These invariably use a quality valve like a 300B and are in a world apart for naturalness and smoothness of sound. It's worth listening to a good Single-Ended design before working down to something you can afford, not the other way around. Budget valve amps can be sufficiently mediocre to suggest any benefits aren't worth the hassle. And bear in mind that valves can sound quite different from one another. Here's what to expect:

### EL34

When RCA of America developed the 6L6 beam tetrode power output valve and patented it, European Philips – who had been manufacturing valves as long and illustriously as anyone, had to find an alternative. They came up with the EL34 power pentode, released in 1953. It's a tall,

slim but inexpensive valve very suited to the need of the day, notably high power from a small package.

With good gain and useful anode dissipation, a mono amp could be built using two EL34s in push-pull and one triode/pentode ECF80. It would give around 40watts. This made the EL34 a sensible valve to use in commercial amplifiers. Mullard (owned by Philips) versions are

good, but others less so and cannot be run so hard. The EL34 sounds a little soft and warm, but also a little clanky in the midband. It's a good valve, if not the ultimate.

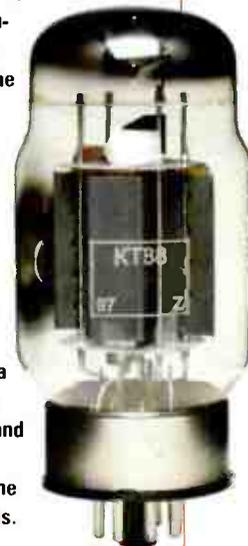
### 6550

This is a stocky beam tetrode, developed by Tung Sol of the U.S. and released December 1954. Designed to give reliable service as an audio power output valve, it has low distortion and is popular in the U.S.A. Even today manufacturers like Audio Research prefer to base their amps on the 6550, because for them reliability and consistency are almost as

important as sheer performance. Sound quality is very good, with a leaning toward dryness. All the same, 6550 amps well designed will have good dynamics and plenty of bottom-end slam. Expect around 40watts from a pair of 6550s in push-pull, using auto-bias.

### KT88

GEC released the stocky looking KT88 in 1957, on the heels of their KT66 and KT77. The 88 is a power beam tetrode for audio use, the K standing for Kinkless, or lack of a distortion producing kink in the valve's performance characteristics. GEC published arrays of circuits around the KT valves and the KT88 is good for 45watts in push-pull configuration, with auto bias, a little less for longer life. With fixed bias it can deliver 55watts or so. Now back in manufacture at various factories around the world, the KT88 gives a super-clean sound that's quite shiny and almost transistor like. It has plenty of bottom end power and comes across as both fast and clean, in a good circuit. It's a fine power valve and a good choice for those who want the best of both worlds.



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World Radio History

### 5881

The 5881 is a rugged Russian beam tetrode designed for audio use. It is listed alongside the seminal RCA 6L6 (released 1936) and is also similar to GEC's KT66 – all are beam tetrodes. However, the 5881 from Sovtek is inexpensive, very well made, reliable and can take a beating. Unlike many 6L6s, it's anodes won't glow until things get really bad! It's a really good general purpose audio power valve that gives a nice, clean sound. Perhaps not distinguished in any area, it nevertheless avoids the clanky colouration of poor EL34s and if accompanied by a decent thermionic supply can distinguish itself. The 5881 is a good choice for anyone wanting a reliable, inexpensive valve amp that delivers excellent results. It will give around 22watts in push-pull, with auto-bias, a little more if pushed hard.



### 300B

First look at the price! 300Bs can be had in matched pairs for £200 or so, individual valves usually coming in around £90. That's a lot of money for one valve, enough even to convince original manufacturers, Western Electric of the USA, to re-open their plant (see [www.western-electric.com](http://www.western-electric.com)), using any original employees still alive today! For a pair of WE300Bs you will pay £450, if you can get them. They are in heavy demand, and it's hardly surprising for this is one of the best audio power triodes available. All the same, £900 just for a set of super-linear output devices is awesome. It's enough to make any transistor manufacturer want to pack it all in, especially in light of the fact that the 300B is historic, appearing in 1938.



Yes, this is one simple valve; it doesn't even have a cathode, so hum is a problem. But triodes are inherently linear, producing little distortion, and this one can deliver power, having 40watts anode dissipation. A pair in push-pull with auto-bias manage around 28watts if not pushed too hard. 300Bs are about the best you can get for creamy smoothness, a liquid delivery and a degree of mid-range insight and timbral resolution able to bring vocals to life. Hum, a high price and often poor support circuits (output transformers, power supplies, etc) all compromise its attractiveness and abilities, so beware. All the same, this is a classic.

### 6C33C

Something of newcomer, the 6C33C is strictly a Soviet valve, neither developed nor manufactured in the West. It is made exclusively in Ulyanovsk and had never been seen until the 1970s when samples started appearing, variously from Russian trawlers in Europe and a MIG 25 fighter that landed in Hokkaido, Japan in 1976. It's a peculiar valve, structured to possess low impedances, so it can work with reasonably low voltages. Inside the bulky envelope lie two triodes strapped in parallel. With an anode dissipation of 60watts it can handle almost double the power of a 6550. As a result this triode is becoming popular. Better still it is inexpensive, being priced at £25 apiece or so. However, close electrode spacings make consistency difficult to maintain and consequently matched pairs are needed for push-pull working, which raises price a little. With a vivid orange glow and short, stocky structure the 6C33C is something of any eye catcher. Although not developed for



audio, it is well suited to this application. Sound quality was solid and well balanced in the GM20, with fabulous detailing.



### 211 & 845

These are transmitter triodes equipped with heavy duty graphite anodes. Best described as providing a sound that makes a Naim cower, they also need thousands of volts in the power supply to work properly and really are too dangerous for domestic use unless precautions are taken. The 211 first appeared in 1919. The 845 is a high power version. In push-pull they deliver 60watts or more, depending upon anode volts. Anode dissipation is actually double a 300B. Absolutely fabulous in sound quality, likely due to the graphite anode, they are at present best dreamt about.



# Ultra-Vox?



**This is the most madcap hi-fi separate we've seen in years - and in specialist audio that's really saying something! Dynavox's DynaStation is a CD player with a difference, says David Price...**

First set eyes upon this delightful creation at the Frankfurt High End show, some six months ago. I couldn't help but go straight up to Dynavox's Ulf Moning and ask – nay, beg – for a review.

"But we haven't got UK distribution yet", he protested. "That's okay," I said, "surely readers can buy direct over the website?" Well, he conceded this, then explained that average hi-fi buyers wouldn't like the "analogue-style sound" this machine produced. "True," I agreed, "so when can Hi-Fi World review it, then?"

Answer came there none, until I got an e-mail from Ulf a few weeks later, and hey presto – here it is, a few months later (who said Germans are efficient?). So, all the way from Birkenau, Germany for the princely sum of 1,490 Euros – just under a thousand quid, the 'totally bonkers' Dynavox DynaStation! Please be upstanding...

Eagle eyed readers will have spotted the tube analogue output stage (two EL34s in triode mode) and the tube rectification courtesy of

a single GZ34 (nothing gets past you!), but what is less obvious to the naked eye is the transport. Don't tell me – it's another CD-ROM, or maybe even a DVD-ROM? Well, stranger than that – this is actually the very same disc spinner that can be found in a Sony PlayStation! How so? Well, the boffins at Dynavox were playing around, souping up their own personal games console with tube output stages and rectification (as you do...), and found that it actually sounded rather good. Thus was born this bit of kit.

The weirdness continues. There's no display – something I for one do not mourn (in fact I rather like it), and yes – the Dynavox boys did tell me it sounds better without one – which is perfectly understandable really. Just ask all those LP12 owners who've disconnected their power LED... Furthermore, because the PlayStation doesn't have a CD-player style row of transport keys – in fact, it's joystick operated – so the DynaStation has a control layout that replicates the games console's logic with natty little miniature switches.

This, in conjunction with the variable output level control – which looks like it's been 'liberated' from a nineteen fifties Cossor tape recorder – gives this CD player a distinctly unusual appearance.

Although it's no oil painting, it's a refreshing antidote to the swanky silver brushed aluminium boxes you'll see at your local dealer – it's a sort of audio 'anti-cool' style statement which really works, in my humble opinion. All visitors to my house during the review period looked straight past the symphony in Perspex and magnesium that is my Michell GyroDec/SME IV, and pointed at the Dynavox as they exclaimed 'what is THAT?' Essentially, the guys loved it and the girls hated it with a passion – which, following my 'hi-fi rule of thumb' automatically means it sounds brilliant. (That's the review done, we don't even need to power it up...)

But it's more than just a dour, grey, utilitarian looking bit of hardware with three glowing bottles – it's (surprisingly) brilliantly tactile to use and almost feels like you're

playing a turntable. The top loading transport has a really big, heavy lid which you have to lift up to change the disc, and then it clunks down again. The switches are undeniably novel on a digital disc spinner. The audio output level control reminds me of my grandfather's workshop. The tubes glow and 'clink' as they warm up and cool down. It's a veritable festival of the senses. Oh, and just like the aforementioned games console, it plays a little tune when you switch it on – can't say that about your CD6000KIS!

**SOUND QUALITY**

Enough of my ranting. You've guessed that I'm rather taken by it, but it is as good as an equivalently priced bit of British kit, such as Meridian's 507 which I had standing by as a reference? Answer: no, but it's very different and so much so that it's almost unfair to compare them. Just like many other Brit rivals, the Meridian is about neutrality, detail, scale, proportion and insight. The Dynavox is most assuredly not – and doesn't claim so to be. Rather, it's about ermm, 'making a nice noise' – a role which it performs with consummate ease. I realise that my last statement may have some of you contemplating the inherent contradictions of the postmodern condition (what – digital with 'designer colouration?'), but what the hell! If BMW Minis – bigger than an old Austin Maxi – can roar through Roman tunnels in the new Italian Job movie, then digital is allowed to sound like analogue, I suppose...! And when I say 'sound like analogue', I really mean sound like the popular (mis)conception of analogue as 'big, fat, warm and woolly'. Analogue is not necessarily any of these of course, but that's another argument for another day.

The Pixies was the first disc to grace the DynaStation. 'Debaser' is

not a famously relaxing track, but it was this time. Essentially, those tubes invest the bass with oodles of warmth and plumpness. Even though – at the time of writing this – the dark nights were drawing in, I suddenly felt a warm breeze wafting aloft (and no, it wasn't the afterglow from the Graaf GM20 I'd just reviewed). This player is seriously coloured. The bass is far too sumptuous, even for The Pixies – but it sounded good, though. Next on was Kate Bush's 'Moving', and again we had a rich, warm sound with real smoothness to Kate's voice. The hi-hats were velvety, and those crashing piano cadences beautifully sonorous. Soundstaging was wide – artificially so in my view – and the whole sound truly vast.

Switching back to the Meridian bought oodles more detail, a far more architectural approach to the recorded acoustic and real air and space in the treble. It was also better at dynamic light and shade, and more capable of communicating the song's accenting and Kate's voice's inflections. It was altogether a more accomplished performer – yet it didn't really sound any nicer, though. See what I mean – the DynaStation simply puts the music through a kind of 'analogue signal processing' (thanks to its tube output stage and rectification), and invests it with breadth, depth and scale that – to be strictly accurate – may not really be there.

The same thing was obvious with a DG pressing of Beethoven's



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'Pastoral Symphony' – it was all larger than life. The DynaStation isn't incisive, and after a while its lack of 'differentiating detail' does rather leave the listener in a state of indifference if they're deliberately listening for nuances within the recording. If however, they're deliberately listening to the music within the recording, then that's another story – it's a great bit of kit for this role, at least. So there you have it – if you want scale allied to warmth and ease, then this is a truly fascinating possibility. If it's accuracy, analysis and articulation you seek, then look elsewhere.

**SPECIFICATIONS**  
drive assembly: Sony PSOne  
tube output stage: 2xEL34 in triode mode  
tube rectification: GZ34  
no display  
no infrared remote  
size: 435x365x150mm  
price: EUR 1,490 (including EUR 125 for Sony PSOne)  
warranty: 24 months return

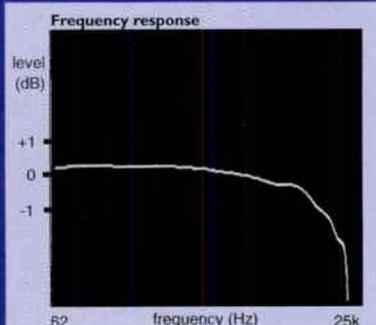
**BUYING:**  
Although Dynavox doesn't have a UK distributor as yet, its products are on sale to UK buyers via the website. Enquiries should be address to Ulf Moning at [Dynastation@musicconnection.de](mailto:Dynastation@musicconnection.de)

**MEASURED PERFORMANCE**

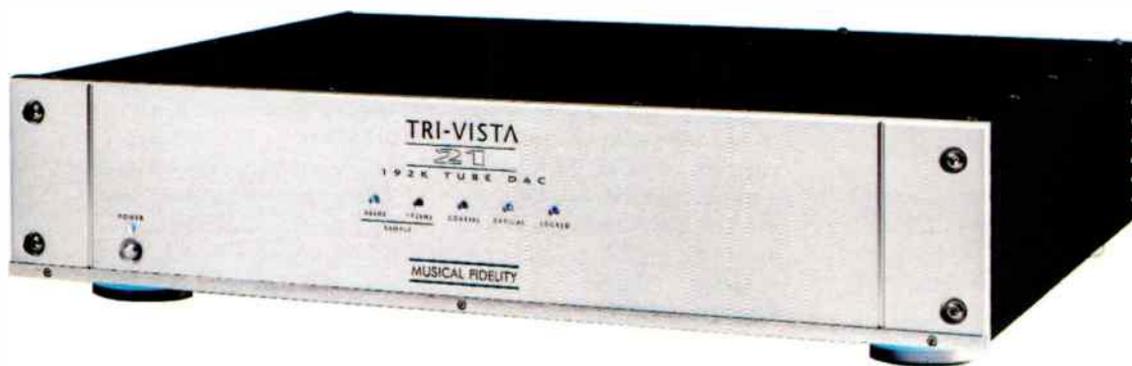
Frequency response rolls down to -30dB at 20kHz, so this player will sound soft or warm. Bass rolls down a little too, likely lightening the sound.	-30dB	0.09	0.08
	-60dB	2.7	2.4
	-90	17	18
Distortion was high, although much of it was second harmonic from the valves. Beneath the second lay higher order components from what looked like a multi-bit convertor. This is not promising, but some listeners like the harder, faster delivery offered by multi-bit.	Separation	left	right
	1kHz	83	83
	20kHz	62	62
Noise was low enough, but EIAJ dynamic range predictably limited.	Noise (IEC A)	-90dB	
Output was a massive 7.5V at maximum.	Dynamic range	91dB	
The Dynastation didn't measure especially well, but it will have a highly distinctive sound. NK	Output	7.5V	

Frequency response 12Hz-10kHz

Distortion	left	right
-6dB	1	1.2



# TRI-VISTA!



**Never one to tread the path of least resistance when there's a problem to be solved, Musical Fidelity's brand new Tri-Vista 21 digital-to-analogue convertor is a highly individual attempt at solving the knotty problem of CD replay. Scott Levy is most impressed...**

**M**usical Fidelity's Tri-Vista range - launched to mark the company's twenty first anniversary - has given us some truly charismatic hi-fi components, the latest of which is the 'Tri-Vista 21 192k upsampling valve DAC', to give it its full name. It bears all the hallmarks of its illustrious brethren; not the least of these being its weight, which is hefty 13.5kg. Inside reside 24bit Delta-Sigma (Bitstream) digital converters in dual differential mode, using 8x oversampling and capable of upsampling to 192kHz. Then there are the trivistor tubes (four of them), glowing away, along with the unit's feet outside. As per the Trivista SACD player that DP reviewed some months ago, the feet start out red, move through to amber and finally glow blue when the unit is fully warmed up. This takes about half an hour - and while it will happily work from cold, it is worth the wait.

As one would expect with a hi-fi separate at this price, it is beautifully built. The solid, brushed aluminium face plate sports only a small power button with a blue LED to tell you it is on, and five further LEDs, all blue, to show sampling rate (96 or 192), input (coaxial or optical) and finally one to show that it is locked onto one of these inputs. The Tri-Vista will

automatically select an input when it detects a signal.

The rear panel sports coaxial and optical inputs, one set of RCA analogue outputs and a digital output should you require it. Another small button, this one black, resides on the DAC's rear to switch between 96k and 192k. There is also some venting on the top of the unit through which you can watch the valves glow, and see some ominously large heat sinks attached directly to the circuit board.

## SOUND

Partnered to my trusty Arcam CD72 acting as transport, the first thing you notice about the Tri-Vista is its huge

soundstage. The music comes from way outside the loudspeakers, and crashes down in a great wall of sound that fills the room effortlessly. Instruments are well placed within this, standing rock-solid with plenty of air between them. This combined with the astonishing amounts of detail that this DAC pulls from a recording, really takes you to the heart of the performance. My entire system, loudspeakers and all, seemed to disappear, the music seemingly appearing magically from thin air. Remarkable stuff!

Whatever I played, the Tri-Vista handled it with ease. Large scale, difficult pieces such as Metallica's





**TRI THESE FOR SIZE**

The tri-vistor tube, also known as a 5703WB subminiature heater-cathode triode, has been dubbed 'Tri-Vista' by Musical Fidelity's Antony Michaelson to echo his 'Nu-Vista' designation of nuvistors. It was developed in the late 1950s by Raytheon as a thermionic valve with unusual resistance to mechanical vibration, impact and temperature extremes. It was designed for long life, and Musical Fidelity estimates at least 100,000 hours, and points out that there hasn't been a single reported tube failure during the design cycle and product life of any Tri-Vista components so far.

'S&M' (a complex mix of Metallica's raw metal and the power of the forty five piece San Francisco orchestra no less!) left the DAC completely unruffled. It simply reached down, took in all the detail it could find and spread it out expansively.

Indeed it thrived on large scale works. With Handel's Messiah, I felt that - if I'd wanted - I could count the voices from the Hallelujah Chorus. This is not to say that the Tri-Vista is only for those who like it loud and proud, however. With softer acoustic pieces, such as the MTV unplugged albums, the Musical Fidelity is able to produce a real sense of intimacy and a beautiful musicality that really allows you to enjoy the music.

Indeed, the Tri-Vista positively drips with detail, and it's precisely this that gives it the uncanny ability to not just play music, but to actually put you at the venue where it's being played. With Pavarotti's 'War Child' album, I believed that I was in an open park in Modena, whereas, with Joan Osborn's 'Early Years' (a collection of live recordings from her early days on the New York club circuit) I felt as if I was in that very venue, where I could almost smell the cigarette smoke!

A popular sentiment amongst the great unwashed is that valve devices are coloured, but this DAC shows little sign of this. Rather, it is unsullied by the inadequacies of your analogue solid-state analogue output stage and as a result lets the listener enjoy the music more, with less stress and strain. Duly, where I had reached for an album to listen to a specific song, I would simply end up listening to the whole album, even songs that I had never been overly fond of, made me smile from ear to ear.

I threw everything I had at this DAC to find something that didn't sound good on it, and opted to find a song I really hated to see what would happen. After much searching I found Extreme's 'More Than Words' and slipped it on. With predictable consistency, the Tri-Vista made it sound really rather good. Detail on

the acoustic guitar was breathtaking, showcasing this converter's superb attack transients and self-effacing lack of coloration. 'Requiem' by The London Boys displayed its fine timing and inherent musicality. Whatever I threw at it - from Metallica to Mendelssohn, Snoop Dog to Shania Twain - it sounded great.

Surely there's something you didn't like about this DAC, you cry? Well if I was being picky, with all those LEDs and the glowing feet, the Tri-Vista gives off a lot of light, which, if you like to listen to music in the dark, could be distracting. I also noticed that when I turned off the DAC, I got a little speaker pop, so it's worth remembering to turn off the amplifier first. To summarise then, Musical Fidelity's new Tri-Vista 21 may seem fairly expensive, but is in fact, a real hi-fi bargain because you can put almost any transport with it, and it will still amaze.

**THE EDITOR SAYS:**

Having adored the Tri-Vista SACD player - one of the best sounding digital disc players I've ever heard - it was with no small degree of interest that I tried this bit of kit. It's essentially the digital and analogue sections of the aforesaid masterpiece, but with a better DAC and upgraded power supply. I could hear the very same smooth and neutral demeanour, vast soundstage and brilliant detailing. It's so musical that it makes the analogue output stages attached to most sub £2,500 CD spinners seem constrained and compressed. When aspirated by a very respectable mid-price machine like Meridian's 507, it delivered much greater scale, dimensionality and a good deal more refinement and poise. But the real trick is when you plug it into a budget machine such as Marantz's CD6000 OSE - the transport of this £300 machine is good enough to exploit much of the Tri-Vista 21's talent and the result is a cracking £1,500 CD spinner. A brilliant argument for staying with stereo!

**VERDICT** ●●●●●

Superbly neutral and expansive sound makes this an excellent upgrade to any mid-price CD player.

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**MEASURED PERFORMANCE**

The Tri-Vista 21 DAC turns in an immaculate set of distortion figures, with no visible harmonics and no quantisation products at higher levels. This resulted in distortion down to 0.005%, even at -30dB. Further down the range, at -60dB the Tri-Vista managed a low 0.33% with CD and 0.02% with 24bit DVD. This helped toward an EIAJ dynamic range figure of 111dB, about the best possible.

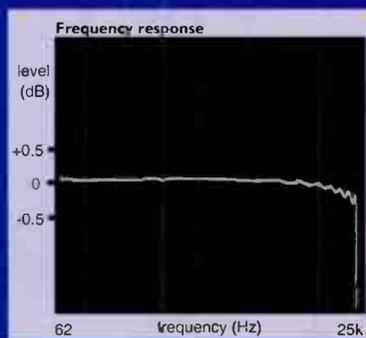
The convertor likely mutes at digital zero, giving -112dB noise with CD or DVD. Channel separation is high. Output was a normal 2.2V.

The CD (i.e. 16bit/44.1kHz) response exhibits just a slight roll off at high frequencies, enough to ensure the player's sound is not sharp. At 96kHz sampling rate with DVD response extended to 45kHz.

With CD and DVD this DAC measures well - it's very linear. NK

Frequency response	
CD	5Hz-21.2kHz
DVD	5Hz-45kHz

Distortion	CD	DVD	
	-6dB	0.005	0.003
	-30dB	0.005	0.003
	-60dB	0.33	0.02
Separation	-90	3.8	0.8
		left	right
	1kHz	122	123
	20kHz	112	113
Noise (IEC A)		-112dB	
Dynamic range (CD)		111dB	
Output	2.17V		



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- [c] SACD
- [d] LP

[2] What 'first' does the DV-2900 boast?

- [a] The first appearance of a brushed aluminium fascia
- [b] The first Approved PAL Progressive Scan player from Japan
- [c] The first use of an optical laser pickup
- [d] The first deployment of a DVD transport

[3] What about the Denon is 'really beyond reproach'?

- [a] Its quality of finish
- [b] Its number of fascia buttons
- [c] The build quality of its feet
- [d] The lustre of its back panel

[4] High praise was DT's 'suitable phrase' for what?

- [a] His own abilities as a writer
- [b] His skills at car control
- [c] His mom's apple pie
- [d] The Denon's performance in general

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

Here's your chance to own what's undoubtedly the best sounding mid-price DVD universal player of the moment! Denon's DV-2900 plays DVD video to a high standard, spins audio CDs with no small degree of skill, and positively shines with SACD and DVD-Audio discs. Last month, Dominic Todd was given the lucky job of listening to it, and here's what he said:

"It would frankly be easier to mention what this machine doesn't do, but here goes anyway! It will play DVD video, SACD and DVD-Audio discs, plus of course plain old CD. Furthermore, it also does DVD-R and MP3 CD playback, and even JPEG discs for showing digital

pictures on TV. Significantly, it is the first Approved PAL Progressive Scan player from Japan. This works in conjunction with a component output to create a more stable picture. The effect is rather like switching from a 50 to 100Hz TV, although the technology is very different. Also included is a built in Dolby Digital/DTS decoder, and every type of connection needed including a SCART for those who must use this compromised connection...

The internals show real promise. It's good to see such a solid chassis for a DVD player, with a quality of finish which really is beyond reproach...

Even in two-channel mode this player had a wonderful sense of depth, but what impressed most was the bass. This had a solidity to it that vinyl owners will be familiar with, but will be a revelation to most CD users. In surround mode, the song became truly captivating, with effects swirling around the listener, encircling them within a web of music. Of course this is the last thing certain types of music really need, but for this particular track, the surround mode worked extremely well indeed. It managed to acquire the fine balance between dynamic prowess and subtlety that only the very finest of CD players can achieve.

I next switched to DVD-Audio...

the most striking element of the sound quality here was the sweetness of string tone... Instruments also had plenty of space around them in which to breathe and allow the listener to admire each performer without compression of sound stage or excessive cross over from other instruments... Because the bass wasn't overblown, the track had cohesion and realism, which, again, showcased the new technology in an impressive light... I'm pleased to report that conventional sixteen bit reproduction wasn't the let down after SACD and DVD-A that I'd feared... The strong, punchy beat was also every bit as full bodied as one would hope for... Indeed, 'high praise' is a suitable phrase for the Denon's performance in general. For straight DVD replay, it easily matched the best from Rotel, Sony and Pioneer price for price... Of course, £850 is a lot of money for one component, yet I can think of few better ways to invest it than Denon's DVD-2900."

If you'd like to win this superb bit of kit, then all you have to do is answer the following four easy questions. Send your entries to: November 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. Peter Summers of Wythenshawe, Manchester, the winner of our September 2003 competition. A Cyrus 6 integrated amplifier is on its way to you!

# Sevenoaks SOUND & VISION



Sevenoaks Sound & Vision stocks a wide range of Hi-Fi separates, DVD players, amplifiers, speakers, plasma screens, LCD televisions and projection systems from all the leading manufacturers.

From starter systems to custom designed multi-room and home cinema installations, our friendly staff are available in all outlets to advise, demonstrate and guide you through the home entertainment jungle. If you're interested in home entertainment and want to avoid the confusion, contact your local Sevenoaks Sound & Vision outlet and **experience more.**

0% interest free option\* is available on most products.

\*Written details on request. Licensed credit brokers. Minimum balance £400. Subject to status.

## CUSTOM INSTALLATION

Are you looking to neatly and seamlessly integrate a Home Cinema or Hi-Fi System into your home? Our Custom Installation experts are fully trained in all areas



and provide a prompt, reliable and professional service. Whether you're looking for lighting control systems, a dedicated home cinema installation with a retractable screen and built-in speakers or an integrated control system, Sevenoaks Sound & Vision has the solution.

## NEW OUTLETS

### • WEYBRIDGE NOW OPEN

The WEYBRIDGE store at 43 CHURCH STREET, is now open. For opening hours and more information, please telephone 01932 828525 or visit our website.

### • STAINES MID-OCTOBER

The new store at 4 THAMES STREET, STAINES, MIDDLESEX, is due to open in mid-October. Please call 01784 460777 to confirm before travelling or visit our website.

### • OPENING SOON

Subject to legal completion, we will be opening a new store in Ealing (North London).

[www.sevenoakssoundandvision.co.uk](http://www.sevenoakssoundandvision.co.uk)



## B&W Bowers & Wilkins 700 Series

The new 700 Series from Bowers & Wilkins offers the perfect upgrade for audiophiles looking for maximum performance and design from their speakers.

They represent everything that's best about B&W: world-beating Nautilus™ 800 technologies delivering matchless sound from contemporary computer-modelled, handcrafted cabinets.

The 700 Series comprises seven speaker models for both

audio and home cinema applications. Two floor-standing models (703 and 704) and one stand-mount model (705) for main speaker duty. Specialist centre (HTM7) and surround (DS7) speakers and two formidable subwoofers (ASW700 and ASW750) complete the line-up.

All models, (except the DS7), are available in a choice of five real wood veneers - Maple, Cherry, Rosenut, Walnut and Black Ash - with main and centre models featuring curved one-piece top and front panels. The DS7 comes in a choice of black or white painted finishes.

B&W 700 SERIES AVAILABLE AT SELECTED SEVENOAKS SOUND & VISION OUTLETS



World Radio History

BEDFORD  
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BRIGHTON  
BRISTOL  
BROMLEY  
CAMBRIDGE  
CARDIFF  
CHELSEA  
CHELTENHAM  
CRAWLEY  
CROYDON  
EDINBURGH  
EPSOM  
EXETER  
GLASGOW  
GUILDFORD  
HOLBORN  
HULL  
IPSWICH  
KINGSTON  
LEICESTER  
LEEDS  
LINCOLN  
LIVERPOOL  
MAIDSTONE  
MANCHESTER  
NEWCASTLE  
NORWICH  
NOTTINGHAM  
OXFORD  
PETERBOROUGH  
PLYMOUTH  
POOLE  
PRESTON  
READING  
SEVENOAKS  
SHEFFIELD  
SOLIHULL  
SOUTHAMPTON  
SOUTHGATE  
STAINES **NEW**  
SWANSEA  
SWINDON  
SWISS COTTAGE  
TUNBRIDGE WELLS  
WATFORD  
WEYBRIDGE **NEW**  
WITHAM (ESSEX)  
WOLVERHAMPTON

PLEASE SEE PAGE 7  
FOR ADDRESS AND TELEPHONE  
NUMBER DETAILS



## HI-FI SEPARATES



WHAT HI-FI?  
Best Buy  
2003

MICHELL GYRO SE  
TURNTABLE / RB300 TONEARM  
£1049.95

## PRO-JECT 1 XPRESSION TURNTABLE (BLACK) £209.95



"Compared with a £200 CD player this deck sounds remarkable: dig out your vinyl and give the Xpression a spin."

WHAT HI-FI?  
Best Buy  
2003

**FREE** ORTOFON CARTRIDGE WITH SELECTED TURNTABLES  
\*PLEASE ASK IN-STORE FOR DETAILS

## ARCAM CD73T CD PLAYER £399.95



WHAT HI-FI?  
SOUND & VISION  
Product  
of the year  
2003  
U.S. HI-FI NEWS AWARDS

## B&W BOWERS & WILKINS

DM602 S3 SPEAKERS

£299.95

The B&W 600 Series has become synonymous with superb value performance in both 2-channel stereo and home cinema. Now, Series 3 continues that tradition, while raising the standards of sound quality at this level by drawing on their vast experience in the high-end sector.

"But the B&W 602 S3 are our winners. They're big and not particularly beautiful, yet if it were our money they're what we would buy. No rival can match the wide ranging dynamics or low frequency performance of these not so compact standmounters. Add all-round sonic excellence and the choice is easy. Give them sufficient space to breathe, then sit back and enjoy the music."

WHAT HI-FI?  
Best Buy  
2002  
SOUND & VISION  
£201 £190



WHAT HI-FI?  
Best Buy  
2003

ROTEL  
RCD-02 CD PLAYER  
£379.95

RA-01 AMPLIFIER (PICTURED)  
£249.95

RA-02 AMPLIFIER  
£349.95

WHAT HI-FI?  
Best Buy  
2002  
SOUND & VISION  
£241 £200

experience more

# experience more

# experience more



**MARANTZ**  
PM7200 AMPLIFIER  
**£329.95 (BLACK)**



**PURE DIGITAL**  
DRX-702ES ANALOGUE/DAB  
TUNER **£329.95**



**MUSICAL FIDELITY A3.2**  
A3.2 CD PLAYER **£999.95**  
A3.2 AMPLIFIER **£979.95**



**FREE INTERCONNECT CABLE\* WORTH £100**  
WHEN ANY MF CD & AMPLIFIER PURCHASED TOGETHER

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### PRICING POLICY

We always try to ensure our prices are highly competitive.

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### FINANCE OPTION\*

Spread the cost of buying.

0% finance option is available on the vast majority of products we stock.

\*Written details on request. Licence credit limit maximum balance £400. Subject to status.

*Please Note:*  
Some products may not be available at all outlets.  
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## QUAD

99 CD-P CD PLAYER/PRE  
**£999.95**

99 POWER AMPLIFIER  
**£549.95**

11L SPEAKERS  
**£379.95**



## MISSION

782 SE SPEAKERS  
**£899.95**

780 SE SPEAKERS  
**£349.95**

### ◀ 782 SE

"Well, with the exception of the alderwood-veneer finish, these floorstanders look identical to the standard model, although there's a new tweeter and crossover design. One of the advantages of the three-way configuration is that each driver deals with only a narrow section of the frequency range, and the designers optimise each unit to perform its respective task. Mission's engineers have excelled in this area: these elegant floorstanders sound beautifully balanced and few rivals under £1000 can match their wonderful levels of clarity. The 'special edition' tag is overused but these talented floorstanders are bona fide sonic stars."



### 780 SE

"The revamped Mission 780s are hugely enjoyable: anyone with up to £400 to spend should consider these standmounters. Mission's clever\* move has paid off."



**FREE SPEAKER CABLE\* WORTH 10%**  
OF THE SPEAKER VALUE WITH ANY MISSION SE SPEAKERS

# Sevenoaks SOUND & VISION

## ROKSAN KANDY ▶

KD-1 MKIII CD PLAYER

£544.95

KA-1 MKIII AMPLIFIER

£544.95



KA-1 MKIII AMPLIFIER 'Roksan has done an impressive job with the Kandy MKIII, creating a powerful and musical amplifier that's a step up from previous models.'



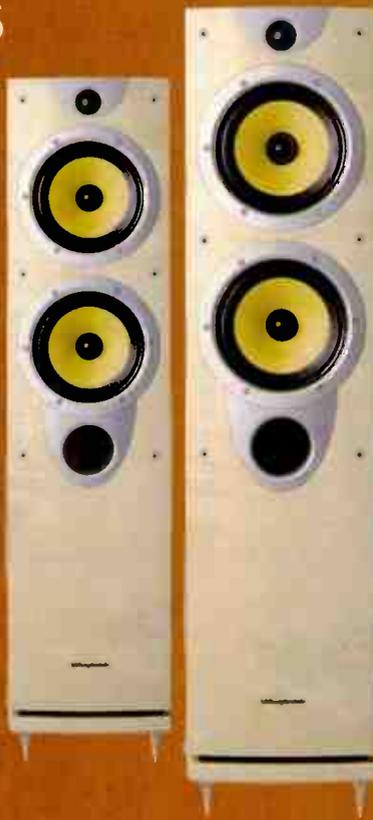
KD-1 MKIII CD PLAYER 'Last year we said the Kandy CD player was very impressive but could be better - and now it is. The MkIII model is an exceptional-sounding all-rounder.'

## WHARFEDALE PACIFIC EVOLUTION 30 SPEAKERS £649.95

"Evolution? This is more like a revolution: Wharfedale's new range is more than an upgrade of its Pacific series.

Listen to the Evolution 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 we love the Evolution 30s. They're beautifully made and great all-rounders."



Please Note:  
Some products may not be available at all outlets.  
Please call before travelling. \*Not in conjunction with any other offer.  
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## CYRUS ELECTRONICS

6 CD PLAYER  
£599.95



8 CD PLAYER  
£999.95



8 AMPLIFIER  
£799.95 (BELOW)

PRE X PRE  
£999.95

MONO X POWER  
£1199.95 (EACH)

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.

The new product range includes the 6 and 8 amplifiers and the stunning new high performance CD players, the CD6 & CD8. Other models include the Pre X and Mono X Pre/Power combination and a new disc player, DVD8, featuring specially tuned video and audio circuitry.

### CYRUS 8 AMPLIFIER

"The 8 is a large step forward from other 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."



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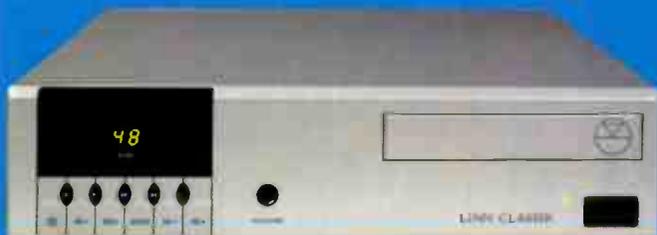
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## LINN CLASSIK ▽ MUSIC SYSTEM (EX SPEAKERS) £999.95



"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."

**CLAIM £200 OFF THE SPEAKERS\* OF YOUR CHOICE**  
WHEN PURCHASED AT THE SAME TIME AS THE LINN CLASSIK MUSIC SYSTEM  
MINIMUM SPEAKER VALUE £350.



## YAMAHA CDR-HD1300 CD-RW/HD RECORDER £529.95



## SONY RCD-W3 CD-RW RECORDER £219.95



## DENON DM31 SYSTEM ▸ UD-M31 CD RECEIVER £229.95 SC-M51 SPEAKERS £69.95

**FREE**  
BEYER  
DT231 GALACTIC  
HEADPHONES\*  
WORTH £44.95  
WHEN YOU PURCHASE A  
D-M31 SYSTEM



## MONITOR AUDIO BRONZE BRONZE B2 SPEAKERS £199.95

"...Their overall performance is faultless... The Bronze B2s sound like pure gold: at £200 they offer superb value for money... Forget "must-listen" - the B2s are 'please-listen' products."



"The D-M30 was exemplary, as its three What Hi-Fi? Sound and Vision Awards clearly show. The D-M31 is even better, making it phenomenal value for money."

OPTIONAL RECORDERS: DMD M31 MINIDISK RECORDER • DRR M31 DVD SETE DECK

# Sevenoaks

## SOUND & VISION



### PRODUCT RANGE

An outstanding selection of products are on display and available for demonstration at all Sevenoaks Sound & Vision stores. However, some products may not be available at all outlets.

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### TURNTABLES

Michell Gyro SE/RB300	£1049.95
Michell TechnoDec	£599.95
Project Debut Phono SB	£169.95
Project Debut II (Black)	£119.95
Project Debut II (Colours)	£134.95
Project 1 Xpression	£209.95
Project RPM4	£349.95

### TUNERS

Arcam DIVA T61	£249.95
Cyrus FM X	£499.95
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Marantz ST4000	£109.95
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Pure DRX-702ES Analogue/DAB	£329.95

### CD PLAYERS

Arcam DIVA CD73T	£399.95
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
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Linn Ikemi	£2199.95
Marantz CD5400	£149.95
Marantz CD17/II M	£799.95
Meridian 507	£1194.95
Musical Fidelity A3.2	£999.95
Musical Fidelity A308™	£1999.95
Musical Fidelity Tri-Vista SACD	£3994.95
Quad 99 CD-P	£999.95
Roksan Kandy KD1 MKII	£544.95
Roksan Caspian	£994.95
Rotel RCD02	£379.95
Rotel RCD1072	£594.95

### AMPLIFIERS

Arcam DIVA A65 Plus	£369.95
Arcam DIVA A80	£599.95
Arcam DIVA A85	£799.95
Arcam FMJ A32	£1149.95
Cyrus 6	£599.95
Cyrus 8	£799.95
Cyrus Pre X Pre	£999.95
Cyrus Mono X Power (Each)	£1199.95
Denon PMA355	£199.95
Harman Kardon HK670	£299.95
Linn Kolektor Pre	£574.95
Linn LK85 Power	£544.95
Marantz PM4400	£179.95
Marantz PM7200 (Black)	£329.95
Musical Fidelity A3.2	£979.95

Musical Fidelity A3.2 Pre	£999.95
Musical Fidelity A3.2 Power	£999.95
Musical Fidelity A308	£1999.95
Musical Fidelity Tri-Vista 300	£3994.95
Quad 99 Power	£549.95
Roksan Kandy KA1 MKII	£544.95
Roksan Caspian	£894.95
Rotel RA-01	£249.95
Rotel RA-02	£349.95
Rotel RA-1062	£594.95

### SPEAKERS

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Acoustic Energy Aegis Evo Three	£349.95
Acoustic Energy AE1 MKIII (From)	£1699.95
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8&W DM601 S3	£249.95
8&W DM602 S3	£299.95
KEF Q1	£249.95
KEF Q3	£399.95
KEF XQ1	£999.95
Linn Katan	£649.95
Linn Ninia	£1099.95
Mission m31	£129.95
Mission 780SE	£349.95
Mission 782SE	£899.95
Monitor Audio Bronze B2	£199.95
Monitor Audio Silver S1	£299.95
Monitor Audio Silver S6	£599.95
Monitor Audio Gold Reference 10	£799.95
Monitor Audio Gold Reference 20	£1499.95
Quad 11L	£379.95
Quad 22L	£894.95
Ruark Epilogue II	£344.95
Wharfedale Pacific Evolution 30	£649.95

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Pioneer PDR609 CD-RW	£169.95
Sony RCDW3 CD-RW	£219.95
Yamaha KX393 Cassette Deck	£119.95
Yamaha KX580SE Cassette Deck	£199.95
Yamaha CDR-HD1300 CD-RW	£529.95

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Denon DF101 Ex Speakers	£349.95
Denon DM31 Ex Speakers	£229.95
Linn Klassik Music Ex Speakers	£999.95
Onkyo CS210 Ex Speakers	£224.95
Teac Legacy 600 Inc Speakers	£299.95
Teac Reference 300 Ex Speakers	£469.95
Teac Reference 500 Ex Speakers	£599.95

### DVD SYSTEMS

Denon ADV1000 Ex Speakers	£699.95
Linn Klassik Movie Ex Speakers	£1499.95
Linn Klassik Movie Di Ex Speakers	£2999.95
Onkyo DR-S2.2 Ex Speakers	£899.95
Pioneer DV565A/C-501 Ex Speakers	£599.95
Teac Legacy 700/LS-L800 Speakers	£999.95
Yamaha DVX-S100	£599.95
Yamaha DVX-S80 Inc Speakers	£549.95

### DVD PLAYERS & RECORDERS

MAKE & MODEL	REGION 2	MULTI REGION
Arcam DIVA DV88 Plus	£999.95	£999.95
Arcam DIVA DV89	£1299.95	£1299.95
Cyrus DVD8	£1199.95	£1199.95
Denon DVD-2900 Universal	£799.95	£849.95
Denon DVD-A1	£2149.95	£2199.95
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Harman Kardon DVD25	£349.95	£349.95
Marantz DV4300	£269.95	£269.95
Onkyo DV-SP500	£249.95	£249.95
Panasonic DMR-E50 DVD-R	£349.95	£ TBA
Philips DVDR70 DVD + RW	£399.95	£399.95
Philips DVDR75 DVD + RW	£449.95	£449.95
Philips DVD963SA	£329.95	£329.95
Pioneer DV360	£119.95	£139.95
Pioneer DV464	£139.95	£159.95
Pioneer DV565A Universal	£229.95	£249.95
Pioneer DV656A Universal	£299.95	£329.95
Pioneer DV757A Universal	£649.95	£699.95
Sony RDR-GX7 Recorder	£799.95	£ TBA
Tag McLaren DVD32FLR	£2994.95	£2994.95
Toshiba SD330E	£99.95	£119.95
Toshiba SD9500 DVD-Audio	£1599.95	£1599.95
Toshiba RD-XS30 DVD Recorder	£699.95	£749.95
Wharfedale DVD M3	£79.95	£79.95

### A/V AMPLIFIERS

### RECEIVERS & PROCESSORS

Arcam AVR2100 A/V Receiver	£799.95
Arcam AV8/P7	£5499.95
Cyrus AV8 A/V Processor	£1099.95
Denon AVC-A1SR AV Amplifier	£2499.95
Denon AVC-A11SR AV Amplifier	£1599.95
Denon AVR1634 A/V Receiver	£299.95
Denon AVR1834 A/V Receiver	£399.95
Denon AVR2803 A/V Receiver	£599.95
Denon AVR3803 A/V Receiver	£799.95
Harman Kardon AVR2550 A/V Receiver	£399.95
Harman Kardon AVR5550 A/V Receiver	£899.95
Harman Kardon AVR8500 A/V Receiver	£1799.95
Marantz SR4400 A/V Receiver	£349.95
Onkyo TX-SR501E A/V Receiver	£299.95
Onkyo TX-SR601E A/V Receiver	£449.95
Onkyo TX-NR900E A/V Receiver	£1499.95
Pioneer VSX-CB12 A/V Receiver	£449.95
Pioneer VSX-AX31 A/V Receiver	£799.95
Pioneer VSX-AK51 A/V Receiver	£1199.95
Pioneer VSA-AX10i A/V Amplifier	£2499.95
Rotel RSX1065 A/V Receiver	£1799.95
Rotel NSP1066/RMB1075	£1799.95
TAG McLaren AV30R A/V Processor	£1799.95
TAG McLaren AV142R A/V Processor (From)	£5999.95
Yamaha DSP-AX640SE A/V Amplifier	£379.95
Yamaha RX-V440RDS A/V Receiver	£279.95
Yamaha RX-V640RDS A/V Receiver	£449.95

### A/V SPEAKERS

Acoustic Energy Aego 5 Package	£449.95
Acoustic Energy Aego P5 Package	£599.95
Acoustic Energy Aego 3B Package	£899.95
8&W VM1/AS1 Package	£849.95
B&W ASW675 Subwoofer	£649.95
B&W ASW750 Subwoofer	£1199.95
Energy Take 5.1 Package	£399.95
Energy Encore Package	£999.95
Jamo D7 THX Ultra 2 Package (from)	£3249.95
KEF KHT1005	£499.95
KEF KHT2005.2	£799.95
KEF Q7 Package	£2199.95
M&K K5 A/V Speaker Package	£1715.95
M&K K3 A/V Speaker Package	£1894.95
M&K 850/CS35/V850 A/V Speaker Package	£3899.95
Mission FS11A/V Package	£449.95
Mission m70 A/V Package	£479.95
Monitor Audio Bronze B4 Package	£949.95
MJ Acoustics Pw 50 Subwoofer (Black)	£299.95
MJ Acoustics Pre 100 Subwoofer (Black)	£599.95
MJ Acoustics Reference 100 Subwoofer (Black)	£349.95

MJ Acoustics Reference 1 Subwoofer (Black)	£699.95
REL Q150E MKII Subwoofer (Brittex Black)	£499.95
REL Q201E Subwoofer	£724.95
REL Q400E Subwoofer (Brittex Black)	£999.95
REL Quake Subwoofer (Brittex Black)	£349.95
REL Strata III Subwoofer (Wood)	£699.95
REL Storm III Subwoofer (Brittex Black)	£799.95
Ruark Vita 120 Package	£1699.95

### PLASMA

Fujitsu P42HHA10 42"	£3799.95
Hitachi 32PD3000P 32"	£2599.95
Hitachi 42PD3000E 42"	£3299.95
JVC PD-42D30ES 42"	£4999.95
Panasonic Latest Models	£ P OA
Panasonic TH42PW6B 42"	£3299.95
Philips Latest Models	£ P OA
Philips 32PF9665 32"	£2799.95
Pioneer PDP433MXEV 43"	£3299.95
Pioneer PDP433HDE 43"	£3999.95
Pioneer PDP503HDE 50"	£5699.95
Sony KE32TS2 32"	£2999.95
Sony KE42TS2 42"	£3599.95

### LCD

Panasonic TX15LT2 15"	£999.95
Panasonic TX15LV1 15"	£1099.95
Sharp Aquos LC-13B4E 13"	£449.95
Sharp Aquos LC-13E1E 13"	£429.95
Sharp Aquos LC-15B4E 15"	£549.95
Sharp Aquos LC-15E1E 15"	£499.95
Sharp Aquos LC-20B4E 20"	£999.95
Sharp Aquos LC-20E1E 20"	£949.95
Sharp Aquos LC-22SV2E 22"	£1299.95
Sharp Aquos LC-30HV4E 30"	£2799.95
Sharp Aquos LC-37HV4E 37"	£4699.95
Sony KLV17HR15 17"	£899.95

### PROJECTORS

Marantz VP-12S2 DLP	£6999.95
NEC HT1000 DLP	£3999.95
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# "VOX POP"



**Ever wondered what top audio industry insiders think about the great valve debate? David Price talked tubes to a variety of hi-fi luminaries, and here's what they said...**

## **KEN ISHIWATA MARANTZ**

I do own many amplifiers and of course some are tube types. Today's speaker systems are too current hungry, so I tend to use (my own design of) valve pre-amps and transistor power amps. Of course I also use the original Marantz Model 7 sometimes. I can't say valves have particular sonic benefits, since one design can sound so different to another, just like transistors! With good design, valves can create a beautiful atmosphere like a sophisticated lady with little bit of makeup! As for the drawbacks, again it entirely depends on the design – but the main thing is that many tube amps can't drive modern current-hungry loudspeakers.

Valves are especially suited to audiophile applications, because of their noise! If you design well, this noise will create a special atmosphere which transistor amplifiers can never have, plus an emphasised 3D effect! The downside is that the standard of valves you get today just isn't the same as back in the nineteen fifties and sixties. So you must measure each valve and find good specification, matched ones

otherwise you won't get the quality you originally expected!

I love the midband of the original Marantz Model 7 – it is exceptional and I have to say... has a very sexy voice! The Marantz Project T1, which is still available, is extreme provocation! I also adore the original Macintosh 275 Power in combination with the Marantz Model 7 Pre driving JBL Paragon loudspeakers. Ultimately though, my favourite tube amp is the original Marantz Model 7 produced in 1965 and 1966, along with a Mark Levinson Model 20.5 Power - this combination works!"

## **PETER COMEAU MISSION**

"My favourite valve amplifier, which is also the one I currently run, is an EAR 509. I love it because it is accurate and delivers high current for good loudspeaker control. The sonic benefits of valves include the soft way they clip, their musical character and even their dynamics in the right circuit! The downsides are that the harmonic distortion can add extra 'warmth', and valve amplifiers are in practice over reliant on transformer design and build quality.

They have various electrical benefits, including excellent recovery from overload, and the fact that their high voltage power supply design allows easy incorporation of high capacity power 'reservoirs'. Of course, they're problematic inasmuch as they get hot, wear out, are fragile and bulky. Also, the impedance mismatch to speakers requires output transformers which are generally poorly designed and restrict power bandwidth and current output."

## **ALEX GARNER TANNOY**

"I do not use a valve amplifier at present, as I prefer my LFD amplifier which is beautifully neutral and

refined. Back in the late sixties, my first valve amp was just one Quad II power amplifier which I bought as a student. I then built the 'other half' to go stereo using a less well specified Mullard 5/10 design! Then I encountered the 'reason for valves' by discovering an 'Orange' guitar amp made by the late Matt Mathias in Huddersfield. This was an incredibly stable, near open loop design to get the fast attack sound of lead and bass guitar strings. Using 2 of these with 'straight through' equalisation settings gave an incredibly fast sounding sound system.

For fast transients a 'speaker needs a large voltage swing with minimum negative feedback around the amplifier. Good valve designs can provide this. The problems aren't the valves themselves, but the output transformer doing the impedance matching to the speaker. Even if the output transformer is included in the feedback loop the strange hysteresis antics of semi-saturated iron cores play havoc with the stability of the whole amplifier. Of course higher powers are restricted because it is impractical to generate the high voltages required, to provide valves with the large size cathode and anode plates needed to get a sizeable flow of electrons and the sheer size, weight and cost of the output transformer core cross-sections required to ensure unsaturated operation.

Valves are good for audio applications because they're inherently linear voltage amplifying devices over a wide voltage swing. This means minimum feedback is required to linearise the frequency domain response and the sound quality is typically 'light, airy and detailed'. Again, inherent linearity without much feedback means that they perform well in the time domain with minimum phase

behaviour leading to a fast and punchy sound. The trouble is that they have limited power for insensitive speakers. They are fragile and they deteriorate slowly with time as the cathode degenerates in its ability to supply electrons in the required quantities. Again the issue of the quality of the output transformer is paramount in their suitability for audiophile applications and very good output transformers are very difficult to design, and manufacture with consistently good quality sound.

My favourite valve amp is a 500 watt with KT88 paralleled and bridged open loop design by Matt Mathias, which we used for life testing speakers using pink noise for continuous 300 hour periods! No solid state amplifier would survive this punishing treatment until Crown (now Amcron) paved the way commercially, and forced air cooling became common place. The bridged KT88s always sounded so much better though...

My best valve isn't actually an audiophile one, although it can be run with strapped grids to act as one. It's an RF power pentode, the 807 with top cap anode. Nothing can replace the sheer awe and terror that a pair of these can instill in the beholder when sitting with 1000 volts on each anode pumping 120 watts of RF power into a long wire aerial with anodes just glowing a dull red colour and displaying a mild blue hazy fizz around the tops of the valves on humid days!

Ultimately though, the all time classic has got to be the Quad II/22. This, the greatest design by John Collinson in the sixties, was the pinnacle of great sounding, affordable, economically and commercially produced separate pre/power valve amps using point to point wiring without printed circuit boards. The output transformer design was its strength with very carefully controlled core design parameters and secondary winding specifications."

#### **TIM DE PARAVICINI EAR YOSHINO**

"I use my own EAR519 mono-blocks at home. This is the professional version of the EAR509s that we have just re-launched as part of our 25th

anniversary celebrations. Both units were designed as very high quality power amplifiers with outstanding fidelity across the frequency range. This is why they are also used by a number of musicians and recording studios, including The Exchange in London, where they are using EAR519s to drive the cutting head

**” My all time classic has got to be the Quad II/22, the pinnacle of great sounding, affordable separate pre/power valve amps**

**ALEX GARNER, TANNOY**

on their disc-cutting lathe. The studio is a very demanding environment, as they have a real reference to compare with what they hear from their speakers.

Transistors and power MOSFETs just cannot compete with power valves on speed, and valves do not exhibit storage time defects or non-linear drain gate capacitance. Valves don't last for ever, but with careful design, long lifetimes can be achieved. Having said that, transistors only last slightly longer! My favourite tube? It depends on the application. For pre-amps the ubiquitous ECC83, PCC88 and PCF802. For power amp output stages, the PL509/519 and its variants EL509/519. I made this a popular valve more than 25 years ago."

#### **ANTONY MICHAELSON MUSICAL FIDELITY**

"I believe in the sound of tubes, and the fact that I've sold 35,000 X-10Ds, 1,500 X-PREs and 18,000 X-CANs is a testament to this! It's probably more than all other tube amplifier manufacturers put together... However, I also believe in making reliable and affordable products too, which is why we've moved to hybrid designs such as the Trivista 300 integrated I personally use at home. I think tubes sound more human – you can do incredible things with them, but I don't think they suit power amplifiers simply because of the way modern loudspeakers are designed – they're too power hungry. I think any serious hi-fi amplifier needs at least 150W these days – like it or not.

Of course, tubes have many electrical benefits - they're much more tolerant and inherently very

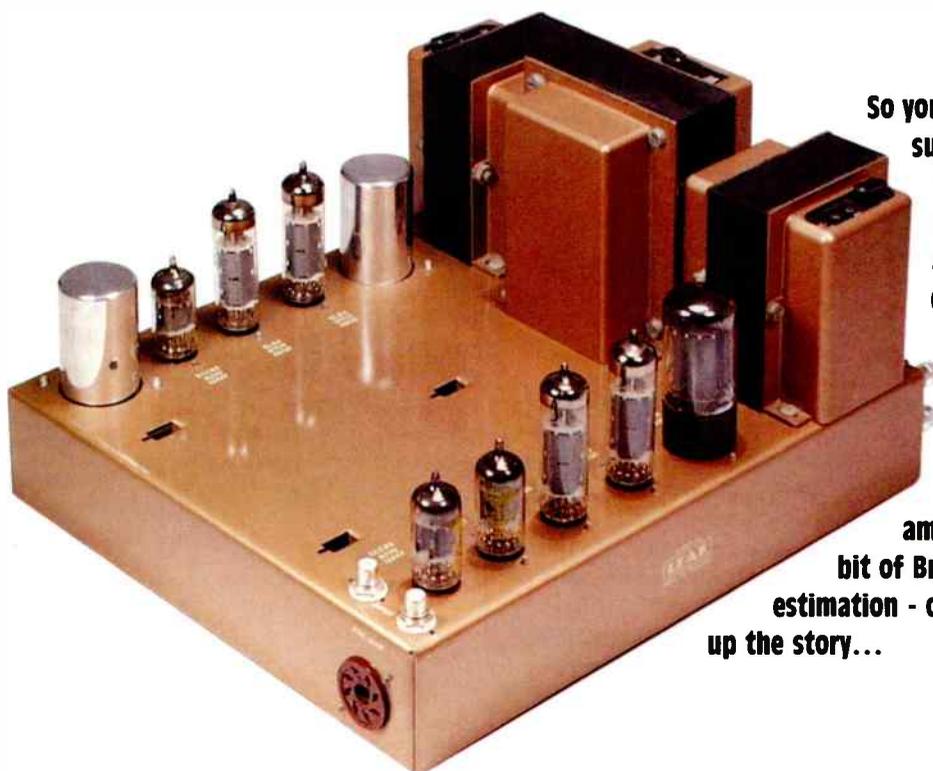
linear, and also enable the use of far simpler circuits with far more direct signal paths. Although you can get reliability from a small signal tube, the trouble is with output tubes which have an unsatisfactory failure rate – often as much as 20%. This is unacceptable, and effectively what killed off one of my earlier companies, Michaelson Austin. There are other problems too – you can't properly get low phase shift, a high damping factor, and there are problems with getting decent output transformers – they're so expensive! Badly designed tube stuff sounds rich and cloying, overblown and blousy – which is the common perception of tubes by the general public. You're also always fighting noise, too.

As for my favourites, I adore our home-grown Radford STA25, but I think the US made Macintosh 275 is the quintessential tube design – it has everything really, it's astonishing in its linearity and neutrality – it's as good as tubes can get!"

*Marantz's design guru Ken Ishiwata describes the sound of valves as like, "a sophisticated lady with a little makeup"...*



# Leak Surprise!



**So you've read our tube supertest and marvelled at some seriously mouth-watering modern valve amps, but what of the classics? Noel Keywood has played with a few in his time, so who better than to try Classique Sounds' rebuilt Leak Stereo 20 power amplifier? Did this seminal bit of British kit go up in his estimation - or up in smoke? He takes up the story...**

**J**ust the smallest interest in valve amps will surely lead you to the old classics, and all that surrounds them. Much like running an old Land Rover, you're faced with basics that are either completely unacceptable for reasons of safety and convenience, or delightful for their old(e) world(e) charm. But with vintage valve amplifiers, you may also be intrigued by tales of superb sound quality, as well as high second-hand prices.

Here's a look at a popular oldie, the Leak Stereo 20 power amplifier. There are plenty washing around, especially now people realise they have value and shouldn't be consigned to the skip. But just how valuable is an amplifier like this? And does it stand up to modern day valve and solid-state designs?

A lot of people, especially those who have been there and done that, are sceptical. Old buffers will nod their heads sagely and warn you away. Well, I switched on to a flash and a loud bang with this one, which blew two 13A fuses and tripped a fast circuit breaker, so perhaps they do have a point! Or perhaps not?

In truth, a lot has changed since

this model, launched by Leak in 1958 from their West London factory, was the latest and the greatest – especially loudspeakers. Nowadays you can buy a large, high technology loudspeaker sensitive enough to shake a room from a few watts. I use Revolver's R45 with valve amps – and it can turn a mouse into monster. Driving a loudspeaker like this, an old classic with limited output will be given new freedom to express itself. It's one good reason an old valve amp can sound better now than it did in its time.

At the input end of things you can get an array of preamps nowadays, passive, valve and solid-state to feed a valve amp like this with a pristine input signal, from CD, DVD, radio or whatever. Its abilities, such as they may be, are better revealed by a good, clean source signal. And because all silver disc spinners produce 2V maximum and most valve amps need half this there are no matching problems.

Finally, you can also get virtually all the components needed for repair and their quality will be superior to the originals. Replacing old with new, you soon start to become acquainted with changes they make to the

sound, especially in clarity. Put all this together and you can, if you wish, end up with an old classic of astounding performance, at a great price.

The trouble is, if you replace old parts with new then the amplifier ceases to be a true original. This is renovation, not restoration, and arguments soon break out amongst the cognoscenti, or cantankerous old gits, about ruining the nation's heritage and all that. I mean, would you really install Ikea furniture in Windsor Castle? Perhaps not. I wince at the sight of modern electrolytics clad in garish blue plastic in place of the old, bare alloy originals, sitting in an old classic. It's not exactly sensitive renovation. But often the latter are beyond redemption and must be replaced if you want to use the amplifier seriously rather than look at it.

To maintain value, however, you should restore rather than renovate, which means finding new old parts, or serviceable old parts. This can be fun and there are many sources, including repair shops, vintage hi-fi fairs, internet traders and auctions like eBay. Having obtained old parts you will then need to ensure they

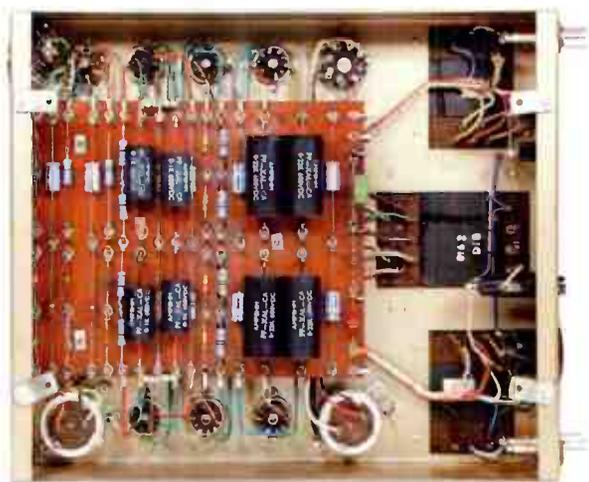
work properly, meaning some knowledge of leakage currents and a means of measurement. Maplins and suchlike carry appropriate test equipment.

The issue of restoration against renovation raises a dilemma. If you want to use an old amp then it may be best to replace old with new, but if you want to sell it then you should ideally replace like with like. Most people will end up somewhere in between I suspect and it's probably best to try and use visually similar modern parts in as far as possible. Finding and fitting them is a challenge that can alternatively be left to experts with knowledge and experience in the field.

### THE CLASSIQUE PACKAGE

So what did I get with my Classique Sounds rebuilt Stereo 20? I got a chassis in good physical condition, free from rust and damage. It came packed in a confectionery box, cushioned by newspapers, with the valves wrapped in plastic bags! Not an auspicious start perhaps, but not untypical. The bottom cover was missing, exposing 334V of HT on the Stereo 20 – and again this is not uncommon. For safety and completeness you need the cover, something to bear in mind when buying. It would be difficult to replicate Leak's original, but perforated plate or even expanded zinc mesh can be cut and fitted. Rubber feet were needed on mine to raise it up and let air flow beneath.

Unwrapping the valves revealed a complete set of original Mullards, the best you can get. Mullard became an offshoot of Philips and produced excellent valves. This Stereo 20 even had an original Mullard GZ34 rectifier; modern manufacture GZ34s aren't half as good, but then, the



Stereo 20 doesn't demand much from its single GZ34. With no fewer than eighteen valve manufacturing plants worldwide doing nice business making new versions of old valves there's no shortage of supply nowadays, and new valves of the sort used by this amplifier are inexpensive. A GZ34 costs approximately £15 and new EL84s cost £20 or so as matched pairs.

However, new old stock (NOS) as fitted, especially Mullards, can be expensive – reckon on £50 for a GZ34 and anything for matched EL84s, if you can find them - and this amp had two pairs. They add to the value of the amplifier, of course, and sound good too. So the valve complement on this amp was about the best.

Most of the original components had been replaced, but not those that show, including the two power supply electrolytic capacitors, rated at 32uF+32uF (350V min.) each. These looked original. The output transformers have 4ohm, 8ohm and 16ohm taps on top, selected by moving a small bridging plug. There

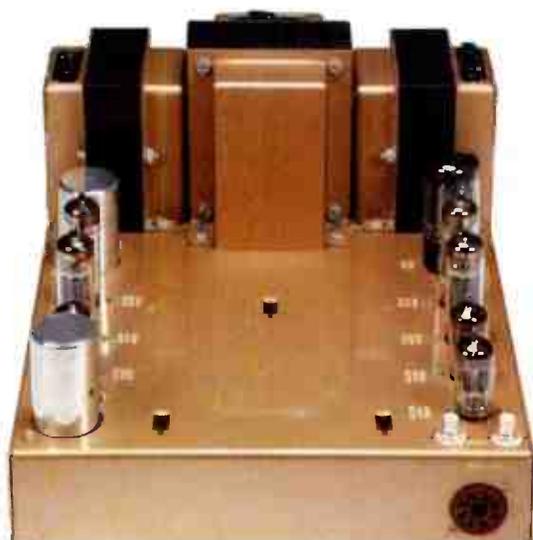
were modern, sturdy, gold plated input phono sockets in place of the old ones. Similarly, the output sockets had been swapped for modern 4mm posts that accepted bare wire or 4mm plugs. It was a sensitively wrought conversion with excellent soldering - if a need for cleaning to remove splatter - that made the most of the amplifier.

### SAY A LITTLE PRAYER...

I plugged in the valves, then the mains lead, noting that the insulation of the inner wires were exposed leading into the Bulgin plug, which does not meet wiring regulations. If something was to result from this an insurance company wouldn't be much interested. Bulgins are fiddly to wire and people tend to cut the outer insulation back to make the process easier. I was soon to rectify all this though.

The amp was placed on a fireproof marble slab and hastily connected to the mains. I always offer up a little prayer at this point because it isn't uncommon to hear intense fizzing and crackling sounds, accompanied by smoke and a nasty smell. The wise and experienced carry out a range of checks with a meter to ensure there are no primary or secondary shorts, that the chassis is grounded for safety and then bring the thing up on a Variac with a meter monitoring the HT line. I assumed this amp had been run and checked so plugged in and was met by a flash and a bang. The wires in the Bulgin plug were weak and positive had parted company with the screw post and said hello to earth.

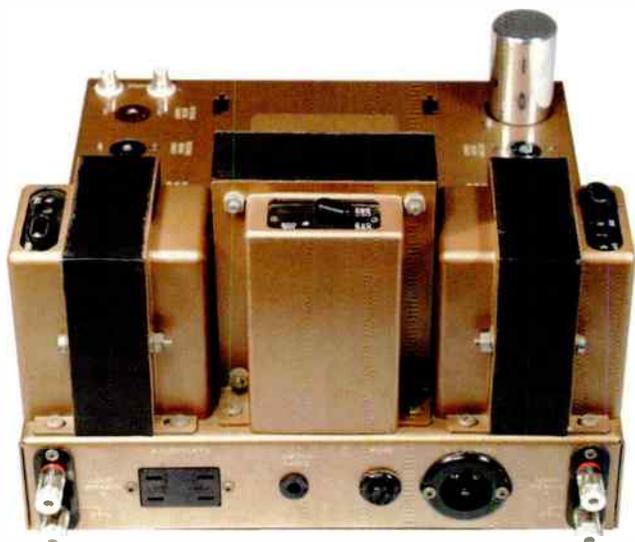
Luckily this did not affect the amp itself, but it did expose the fact that a cheap blue mains plug attached to the other end of the lead had been fitted with a 13A fuse no less – a very bad idea with old kit like this





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(the amp's own fuse was correct at 1A). It underlines the need for care in all areas, and shows just how old classics can be a little bit dangerous if you're not careful. I put in a 3A fuse and the Stereo 20 then lit up perfectly and we were away!

### SOUNDING OUT

This amplifier is a twin channel version of Leak's TL12, a 12watt mono power amplifier first released in 1948 no less. With the coming of stereo Leak brought out the Stereo 20 and it's still a popular amplifier with enthusiasts today. With 10watts per channel from a pair of EL84s working in push-pull the 20 is no powerhouse by current standards, but the upside is the HT isn't fear-inducing at a modest 330V, and all parts are inexpensive and obtainable as a direct result of low volts. So the Stereo 20 is a good practical choice. It has an octal input socket that also carries power out to an accompanying Leak preamplifier. This will be redundant in most cases, but if you do have a pre-amp then at least preserve it. Sound quality is usually a bit messy to say the least, mainly due to component quality. I don't advise use of a solid-state preamp if you can avoid it; use a passive volume control (from QED or Creek) of good quality or a valve preamp. It's worth using a specialist Alps or (ideally) a Panasonic pot at this level, not a cheapo. In this area the world has moved on greatly; super-fi components, mostly from Japan where they understand such things, should be used, since the Stereo 20 will clearly reveal the improvements they bring.

The Mullard EL84 output pentode may not be a powerhouse but it has a great reputation for sounding sweet, unlike the EL34. It's

well deserved too and this is another reason the Stereo 20 is popular. Mine sounded glorious straight away, manifestly displaying every property valve amps are prized for. It was wonderfully smooth sounding, enormously spacious, silky to the ear in every respect and perfectly forthcoming even in bass delivery. But then, the Revolver R45 delivers big bass from a couple of watts (4ohms) and its tweeter isn't backward in coming forward. This sort of balance suits old classics in my view, unless you want the old sound. If so, then you could well try large Ruarks, but their treble is forthright too, or warmer sounding Castles, which are extremely revealing. Otherwise there are Lowthers and similar, but then don't expect extended bass. Do not use small loudspeakers, because they are insensitive.

An unrecognised benefit of amplifiers like the Stereo 20 is the valve rectified power supply. This

accounts for much of the silkiness. It doesn't have a smoothing choke, just a 100ohm resistor, but it all works nicely.

Running an old classic is a satisfying experience, there's no doubt. Perhaps it is only for those with an appreciation of such things; not everyone thinks there's merit in yesteryear, but at the same time it's best not to underestimate the degree of interest either. It has improved availability no end, of the amps themselves and of components too. Where ten years ago new valves and high voltage electrolytics were virtually extinct, now they've again become almost commonplace, making sensitive renovations like this possible. Make no mistake, this Stereo 20 offers an entirely different take on music to a solid-state amplifier and it's nothing other than very satisfying to listen to.

Well worth a try if you interested in using a superb classic, because you get not just old world charm, but superb sound quality too. And, the way things are going, you might be able sell it after many years for a profit – not something you could do with a modern amplifier. Although not cheap, this amp is still a bargain.

**VERDICT** ●●●●● £

This superbly capable classic can show the moderns a thing or two, but we weren't totally happy with some aspects of the rebuild...

**LEAK STEREO 20 CLASSIQUE SOUNDS REBUILD** £600

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 Email: [Classique\\_sounds@yahoo.co.uk](mailto:Classique_sounds@yahoo.co.uk)

**THE EDITOR SAYS:**  
 You'd be amazed how up to date a well fettled Leak Stereo 20 can sound – they're not from the Quad II school of syrupy coloration and gutless power delivery. Match a '20 to any sensibly sensitive loudspeaker and you'll get a truly fast and involving sound, that's smooth and even with real tonal colour, yet decently lean and tight too. They're a brilliant 'starter classic' if you're into old skool tube amps, but don't want to get too radical. This Classique Sounds rebuild had one or two rough edges, but it proved staggeringly good at the price after we'd got it going. To put it into context, it's easily up there with the Unison Research S6 in the group test, albeit with considerably less power and somewhat more utilitarian aesthetics...DP

### MEASURED PERFORMANCE

The Stereo 20 was unusual in producing predominantly third harmonic distortion under nearly all conditions, usually a sign of a so-so output transformer with excessive leakage inductance or distributed capacitance. Levels were reasonably low at 0.22% rising to 0.6% near full output, more at high frequencies. All the same, the waveform looked clean and clipping was gentle and symmetric.

Power measured 12watts from both the 4ohm and 8ohm taps, so they are equally well coupled.

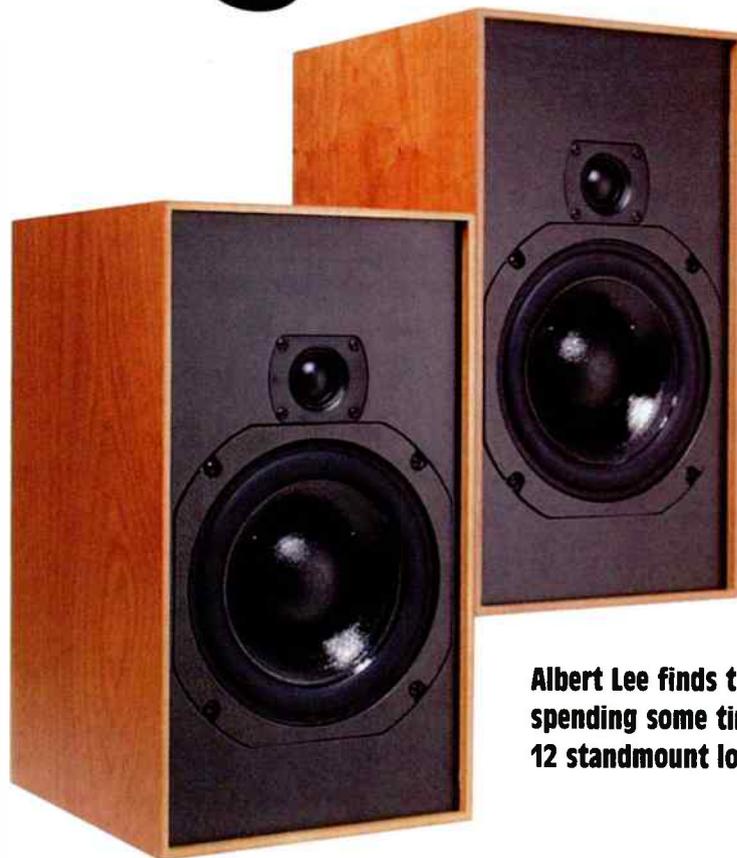
This power amp is very sensitive, needing just 140mV for full output. Bandwidth was wide and power bandwidth also uncurtailed, with full output at 40Hz and 10kHz.

The Stereo 20 measures neatly enough, especially considering its age.

NK

Power	12watts
CD/tuner/aux.	
Frequency response	6Hz-25kHz
Separation	66dB
Noise	-87dB
Distortion	0.22%
Sensitivity	140mV

# Twelfth Night



**Albert Lee finds that ATC's time has come, after spending some time with the charismatic SCM 12 standmount loudspeakers...**

**B**illy Woodman founded ATC in 1974 with the intention of building the very best loudspeakers available. He started by building and supplying drive units to manufacturers, and after a few years began supplying studio monitors built to exemplary standards. Indeed, at the second Cunard Hi-Fi show I visited his room and was stunned at the dynamic range of the system. Since then, the company has acquired an enviable reputation due to hard work and an extremely professional approach and engineering excellence.

The ATC SCM12s you see here are intended to be used as near field monitors. They measure 220mm wide 255mm deep by 390mm high. The model designation gives us the internal volume of 12 litres. The

SCM12 weighs in at an impressive 15 kilos, which is extremely heavy for such a small box. The cabinet is manufactured from medium density fibreboard and sports two pairs of high quality 4mm terminals on the rear panel - one for the bass/midrange driver and one for the tweeter - and are joined by removable gold plated strips. This type of arrangement allows for bi wiring or bi-amping.

The cabinet is covered on all sides with well-matched veneer except for the baffle, which is finished in a flat black surface. The drive units are recessed into the baffle. Inside the loudspeaker there is a balance veneer to stop cabinet flexure, especially on highly modulated signals. The rear of the baffle has been sculpted around the bass driver, to try to obviate any air

pressure build up which would interfere with bass-unit linearity. The bass/midrange driver has a diameter of 150mm, and is fitted with a large 75mm soft centre dome to enable a much better midrange performance. The material used is again unusual, as it is a heavily doped polyester cloth. The magnet is massively built and is 177mm in diameter using a short voice coil in a long magnet gap to enable the unit to respond faithfully to the input.

The spider has also had the research and development team's attention - producing an unusual solution to the problem of returning the drive unit to rest without distorting the cone assembly. The loudspeaker has a die-cast chassis. It is the same bass driver as used in the rather larger (and more expensive) SCM20.

The treble unit is a 1-inch soft dome type. The crossover is mounted on the rear panel and is populated with high-grade components. The loudspeaker grilles are of the push fit type and are covered in a tasteful blue open weave material with the ATC logo adorning the bottom left. The grille panels also have the same sculpting around the inside of the opening (to try to avoid diffraction) as the baffle has.

The SCM12 has a claimed frequency response of 80-12000 Hertz, within 2dB. This loudspeaker is capable of accepting 300watts RMS and has a quoted efficiency of 85dB per watt [see our own measured performance - Ed]. The impedance response is said to be a very stable 6.8 ohms, meaning it should be an extremely easy load for an amplifier to drive.

This loudspeaker can be used in the single wire, bi-wire or as a bi-amped passive loudspeaker. The ATC SCM12 is an elegant loudspeaker tastefully presented. It is built to a very high standard of finish and engineering. After a phone call to ATC I discovered that there is no difference between studio monitors and domestic versions save for the finish and termination! Professional cabinets are painted black and have any type of connectors the client requires.

### SOUND QUALITY

Very rarely do pieces of equipment perform well straight from the box, but this is one such product! I always check and test any component before introducing them into my hi-fi system. The loudspeakers were sited atop 24inch hardwood stands approximately 108 inches apart. The stands were sited on top of paving slabs and were mass loaded to stop the stand from moving when the loudspeaker was moving whilst in use! Experimentation was the order of the day to find the "sweet spot". Having duly found the place where the loudspeaker performed at its best in my living room (17 inches from the rear wall with a heavy toe in) serious listening began.

The first source to be chosen was the tuner, so I could hear live speech from the BBC - always a stern test for a loudspeaker's mettle. Radio 4 was dialled in at news time, and I was delighted to hear the Beeb's typical acoustic signature. The news reader's voice was brilliantly clear and distinct, with very little trace of chestiness. A good start, so I progressed to silver discs. First on

### THE FAR SIDE

Few albums can rival the success of Pink Floyd's 'Dark Side of the Moon', so it was no surprise it was recently remixed into 5.1 surround sound and reissued on SACD. For the job, producer and engineer James Guthrie - who has worked with the band for more than two decades - was enlisted. Although he happily accepted the assignment, Guthrie says the decision was not made without a bit of trepidation. "This was a very difficult mix. Not from a musical point of view, because the record really lends itself to a three-dimensional treatment, but from the point of view that everyone knows the original mix so well. It is indelibly printed on our minds."

His Das Boot studio, located in his North California home, was used - and ATC loudspeakers were entrusted to monitoring duties. Guthrie says, "I can't say enough about them. I have five of the SCM 150s and a down-firing 15" sub-woofer here at my place. The entire line - including the 9" model... has imaging unlike anything else I've ever heard. The dispersion characteristic is fantastic, and the phase coherency is fabulous. ATC speakers are so easy to mix on. The mid-range is instantly relatable - it's so easy to equalize through them and know exactly where you are in the frequency spectrum. And there's no hype to ATC speakers. Mix on them and you can go outside, play the mix on any system, and have no surprises."

the CD player was Beethoven's violin concerto with Hilary Hahn as the soloist. What sprung out of the speakers was not what I expected. The stereo image was enormous, with vast swathes of depth and width that seemed to make my listening room twelve to eighteen feet wider than it really is. The string section had an impact I have only heard at live concerts.

Next on was some classic rock music courtesy of Frank Zappa. I found ATC's imaging precision to be quite superb - it was as if I was hearing Evelyn the modified dog for the very first time. Drive from the bass guitar was accentuated by the slap of the kick drum, showcasing the SCM12's superb attack transients. The dry sound of Frank's voice sounded so real I had to check where I was, once again confirming the 'speaker's fine neutrality. Over the next three or four days I played every type of music I possess, and

found them to have the ability to transport the listener to the location where the music was recorded. At the price, they're very hard to fault - with possibly a slightly dry tonality being the only quibble for domestic users, but then again this is just what you need for monitoring activities - the task for which these boxes were evidently designed.

Overall then, the skill of the SCM 12 is its combination of transparency and transient attack, which is rarely found until you progress to much larger monitors. It's able to open the listening window very wide, to enable one to fully understand the emotional impact that the composer intended. I listened to every signal source in my system and was consistently impressed at the even-handed way these loudspeakers presented the signal. After our extensive group test of standmounting 'speakers last month, here's another design to put at the top of your shortlist.

### VERDICT ●●●●£

Enthrallingly fast, clean and detailed sound makes these one of the very best standmounters at the price.

ATC SCM 12 £995  
ATC Loudspeakers  
+011-44-1285-760561  
www.atc.gb.net

### MEASURED PERFORMANCE

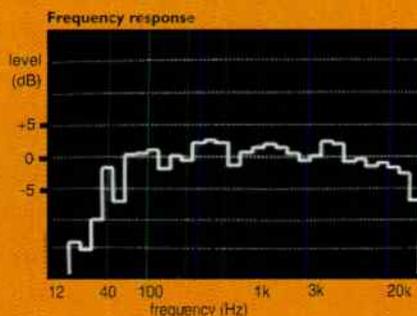
The SCM12 manages a reasonably even response trend across the audio band, reaching 16kHz before output starts to roll down. There's a little unevenness from local resonances which indicates colouration, but accuracy is good enough and there's no treble peaking - always a good sign.

The sealed enclosure (no port) reaches down to 40Hz, matching modern reflex designs - quite an achievement. Bass Fatness is good; the SCM12 should produce very good quality bass.

As a load the speaker again looks good, offering an overall impedance of 6ohms, without too much reactance. Inevitably, with good bass from such a small box

sensitivity is low at 83dB SPL from one watt input, so the SCM12 needs at least 60watts to get moving.

The SCM12 is an interesting compact loudspeaker, smooth but likely good for Rock at power. NK



# mail

Visit our website at [www.hi-fiworld.co.uk](http://www.hi-fiworld.co.uk) or send your emails to [letters@hi-fiworld.co.uk](mailto:letters@hi-fiworld.co.uk). Letter of the month wins a pair of Precious Metals Interconnects and one year FREE subscription to HI-FI World.



## Letter of the Month

### CLASSIC OMISSIONS

Thanks for your fascinating list of 'World Classics' hi-fi equipment. However when I read it, I realised you had left out my entire system. How dare you! You asked to be told about what you have overlooked, so here goes:

[a] Turntable: The CJ6 I, made by one of the nicest people in hi-fi, Colin Walker, rates a mention as an intriguing effort at making an almost high-end turntable at a mid-range price. The CJ6 I got lost in the collapse of the turntable market when CD arrived in the early 1980s but it was a very interesting design, looking surprisingly similar to many of today's high-end exotics. Walker got rid of the resonance and cost problems of plinths by stripping the assembly down to its bare essentials and making as much as possible out of wood and non-resonant materials. The entire works are enclosed inside a circular wooden drum the same diameter as an LP. Inside is a high quality Airpax motor and a proper (wooden) suspended subchassis supporting a solid non-resonant turntable of Tufnol with a thin felt mat. The whole thing works well and sounds good. One weakness was that most of the production samples ran slightly slow, because of slightly undersized motor pulleys. I paid a machinist £30 to produce a fractionally larger replacement pulley and it was money well spent.

[b] Tonearm: Through the late 1970s, one of the best value tonearms was the Mayware Formula Four MkIII, a reasonably priced and well-sorted damped jeweled unipivot design with none of the awkward quirks that afflicted so many others. It combined low mass with quite good rigidity. I have a Mark V, which developed the design with increased rigidity and damping. (Unipivots are well worth looking for second-hand as, unlike gimbal designs, they have almost nothing to go wrong, or out of adjustment.

[c] Integrated Amplifiers: You mention the Rogers Cadet but not its big brother, the HG88 Mk II, which is a bit more powerful and capable. Its 8 watts per channel seem to go very far and it is a very satisfactory, listenable 'real world' amplifier. I still remember the experience of rescuing it from a friend's rubbish dump, getting it fixed and then listening amazed as it proceeded to completely outperform my then newly-purchased 'best buy' Arcam Alpha amplifier!

[3] Loudspeakers: When I found that your list of World Classics didn't include the BBC LS3/5A, I began to wonder if I was missing the point somewhere. Mine are Wilmslow Audio kit copies, with a subwoofer to help. Whatever you might think of the rest of my list, surely we can agree that the LS3s are classics? Another interesting (though not ultimately as capable)

loudspeaker which I have is the Keith Monks Elf. This was an early 1970s budget design from the company which produced titanium-coned speakers and mercury contact unipivot arms and it features a high efficiency directly-driven main driver, with no crossover apart from a capacitor to protect the pair of (paper-coned) tweeters. These work well with valve amplifiers, especially when fed by another significant device you don't mention - Rega's radical fixed stylus RB100 moving magnet pickup cartridge: the slightly rising response of the speakers balances the strong bass and drooping response of the pickup nicely. Apart from that, you're doing a grand job, so keep up the good work.

**A. Bealo**  
**Leeds**

Thanks so much for your very well reasoned nominations - hopefully the LS3/5a piece last month will have been some compensation - and I'm sure they'll make their way into World Classics on a monthly basis sometime soon! Could agree more with most of your selections, but I have to say that Rega's RB100 wasn't as great in practice as it was in theory - mine sounded obviously less musical than the original Supex SD100E-derived Rega R100, which was a lovely sounding pick-up. **DP**



**BBC LS3/5a**  
**welcome - World**  
**Classics awaits**  
**you!**

## THE CULT OF LINN DEALERS

My system comprises a Linn Sondek LP12/Akito/Lingo/Denon DL110/Project phono box SE/ Sound Organisation Table, Cyrus 2 (passive pre)/PSX, JPW AP3/ JPW high mass stands, Chord Odyssey/VdH 103b interconnects.

As a regular reader of your magazine and indeed other parts of the hi-fi press, I would like to think that over the last twenty years I have seen many trends come and go. The most pleasing by far for me personally has been the vinyl revival which started about the time I ditched my trusty Thorens for an LP12. This brought with it an inherent set of problems - namely buying into the cult of Linn. I didn't find this helpful, to be honest - only confusing. Everyone I spoke to had a different spin on how to improve an aging LP12! Linn dealers sounded like they were reading from a script and quite frankly some of their suggestions e.g. fit a Trampolinn base didn't seem in tune with the design philosophy of the deck. Why fit soft feet to a deck that is designed to transmit energy away from the stylus?

Other dealers claimed the LP12 was trying to make a "silk purse out of a sow's ear" (this idea seems to be virulent with ex-Linn dealers) and that Linn had made all these bolt-ons but in fact the best solution was not to invest any money in the LP12, and instead spend two grand (interest free credit, you understand) on whatever their high-end deck was! There was always a reason for doing this - be it a unique bearing or the lack of wood in the deck's construction... I think it had more to do with the small business manager at Barclays and meeting the loan repayments...

Having talked to many dealers, the only one I have found who seemed open minded about what the customer wants was Phil March from Phonography in Ringwood Dorset. Phil genuinely didn't seem to have an axe to grind - instead he seemed to want to help solve my problem even if that meant sending me elsewhere for a product he didn't stock. He appeared to have no agenda and didn't talk about my deck as though it were inferior but instead realised that I liked my LP12. As a result I waited and brought a second-hand Lingo from Phil and this has improved my deck no end.

This brings me to the question of what to do with my Akito tonearm. I want to upgrade this next as I feel it is the next weak link in the chain. I also have two friends who have Akito series one's that have sticky bearings. My Akito seems fine at present but because Linn won't service the arm or offer any form of after-sales on first generation Akitos, saying that it is too cheap (is anything

over £200 cheap?) I would be left in an untenable situation if it did decide to pack up. This has led me to the often asked question: would I be better off putting an Origin Live modded 250 on my deck or a second hand Ittok or ARO. My cartridge is a cheap but good Denon 110L running into a project Phono box SE.

The reason I ask this question about the Rega mod is that every dealer I have posed this question to has said that it is a lot of hype and that either the modifications damage the long-term viability of the arm or that they make it analytical and soulless (or perhaps they don't have an OL dealership). As a customer I really cannot be sure that, hand-on-heart, the dealer is not more concerned about what he or she has in their stockrooms. I think some dealers need to rethink a little why some people go to a specialist in the first place. I for one will be traveling nearly 80 miles to buy my equipment from now on.

Finally I know and acknowledge that there are good dealers out there and it may be my experience or the fact that I own one of the most controversial products in the annals of hi-fi history that has led me to this point of utter confusion, but with hopefully an unbiased eye can you please end my fruitless quest and tell me the truth.

**Paul Scott  
Somerset**

Oh boy - don't get me started on dealers! I hear so many complaints that I sometimes find myself losing the will to live! I have to say though, that all the specialist hi-fi dealers I've used (with the exception of just one, which shall remain nameless), have been excellent. They're all Linn dealers, and know their onions - if you see what I mean...

Anyway, without wishing to get involved in that particular viper's den/hornet's nest (etc.), all I can say is that:

[a] a standard RB300 is fairly close (90%) to an Ittok LVII in an LP12 (providing it's been installed properly)

[b] an OL modded RB250 is dramatically better than a standard RB300 (adding, rather than subtracting, tonal colour) and

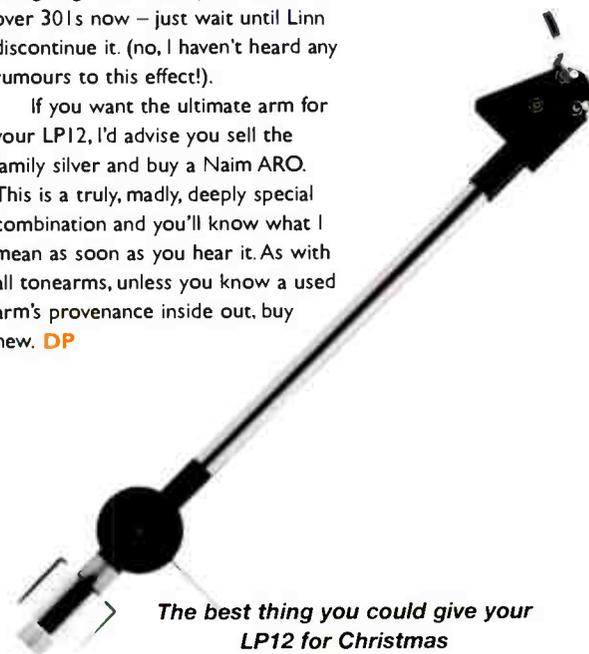
[c] Akitos aren't bad, but are a long way behind the standard RB300 in every way except the 'swing' thing that all Linn products do well.

So... yes - put an OL modded RB250 in your LP12 and get the arm wiring done while you're at it. Get your LP12 Cirkus'd (if it isn't already thus modified) at the same time, and you'll not have to buy an additional arm board. Then, when funds permit,

get rid of your Denon DL110L for a Dynavector DV-20XH or better...

A properly fettled LP12 (Cirkus'd, with a decent arm/cartridge) is still a very nice deck indeed, and a deeply satisfying listen. I don't think it's the best around anymore (if it ever was), but it's rather unfashionable - I'm sure the tide will turn and people will be eulogizing over LP12s just like we do over 301s now - just wait until Linn discontinue it. (no, I haven't heard any rumours to this effect!).

If you want the ultimate arm for your LP12, I'd advise you sell the family silver and buy a Naim ARO. This is a truly, madly, deeply special combination and you'll know what I mean as soon as you hear it. As with all tonearms, unless you know a used arm's provenance inside out, buy new. **DP**



The best thing you could give your LP12 for Christmas

## THE MAN WITHOUT SHADOW...

"Every day our cause becomes clearer and our people get smarter". Propaganda's 'Secret Wish', eh? I like the cut of your jib, sir! I had been thinking that I must have been the only person to buy that album, apart from Anne Nightingale, who used to play 'Duel' on her Sunday night show. This is an album that I have loved from the day I bought it back in 1985, still love playing today, and will play to youngsters without apology. It sums up what the '80s meant to me: Sharply styled, refreshingly astringent and definitely monochrome. All things that the bloated '70s were not, and would shortly be changed by acid house and the second summer of love. In fact I have a holy trinity of albums from that period, the other two being 'Stella' by Yello and 'Songs From The Big Chair' by Tears For Fears. They are all very much of their time, probably due to the Sony PCM recorder, yet oddly timeless and IMHO all will stand critical analysis.

In case you were unaware, the CD version of 'A Secret Wish' differs from the LP. There is an extra track, the fine 'Frozen Faces' which in no way sounds like a bolt on extra. The track 'Jewel' is expanded up to six minutes and is all the better for it. Going back to the LP and you can hear that the two minutes

or so are edited highlights from a longer version. 'Dream Within A Dream' is a subtly different mix, neither better nor worse than the LP, I think. Finally 'Dr Mabuse', 'Strength To Dream' and 'The Last Word' are bundled together into a frankly overlong version of Dr Mabuse. Perhaps this was lifted from the remix album?

I scored quite an impressive five albums out of twelve in your 'World Music' feature: Crusaders, Thomas Dolby, Kate Bush, Freeez and Propaganda. Is your copy of 'The Kick Inside' an import? My 1978 copy is the usual 'Kate tied to a kite with an oriental backdrop' which I assume is the UK version. Frankly, I prefer yours! Kate looks lovely. I remember not long after you started writing for 'World, you used 'Date Stamp' by ABC as a review track. Excellent choice, I thought, but brave to admit it! In the early '90s anything '80s was really not cool at all! Since then I have been surprised at the amount of stuff you talk about that I have. The 4Hero disc, for example. I had not long bought my Meridian 508.24 CD player on the strength of its' rendition of this disc when you featured it in your column!

In case you need any ideas for future articles, how about one on 'Car Hi-Fi that isn't for Kids'. I often think about how I could put a decent setup into my Triumph TR7 that is completely invisible, to retain the standard look but more importantly would be thief proof as there is absolutely no point in locking it! I was thinking about using an iPod as the source as it's removable. After that I'm stuck though. NXT panels were gong to be The Next Big Thing in car hi-fi - where are they? My wife would argue that I would be better occupied trying to get it to hang onto its' oil and water, but I can still dream! As I keep telling her, the parts falling off this car are of finest British quality!

I am a long term Hi-Fi World reader (10 years) and use KLPP1 and K5881 Mk1 amplification with the aforementioned Meridian and an Orbe SE\OL RB300\Reson Rica sources into Jamo Concert 8 speakers, which K5881 drives with contemptuous ease. What an amp!

Finally, may I add my best wishes and good luck in your editorial position. If you've not heard 'Stella', I think you will enjoy it. "For those heed the call of the machine, we salute you..."

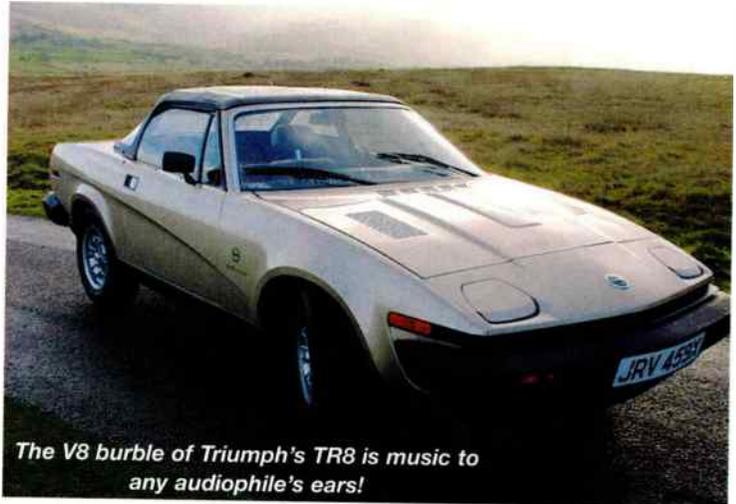
**Keith Stickels**  
**Yeovil**

A Propaganda-loving Triumph TR7 owner who likes 4hero and uses a KLP-P1/K5881 and Michell Orbe? Who prefers the Japanese pressing of 'A Kick Inside' to the UK one

(yes, it is a nice pic, isn't it!)? Who likes 'Date Stamp' by ABC? I think I've just met my double...! All I need is an iPod and we could be twins...!

Thanks for the letter Keith – obviously a man of quality and distinction (like wot I am), and don't forget to change your oil every 3,000 miles – but enough of Triumphs, this is a hi-fi mag! Now, I'm off to try and find 'Stella' on vinyl – will report back with my findings.

**DP**



The V8 burble of Triumph's TR8 is music to any audiophile's ears!

### THE DRUGS DON'T WORK...

It was 1973 and I was walking past a record shop in Barking. It caught my eye in the shop window. It looked different. I went in and the list of instruments intrigued me: Harpsichord, harmonium, bironne, spoons (is not one of those a curry?) I bought it. Declined the offer from my gran to play it on her wind up gramophone, "it's got very sharp needles". Try to explain microgroove technology to a Victorian.

At home I plugged in my Connoisseur BDI, SME, M75ED and Amstrad amps... The sound was certainly different; all bongs, tinkling and wailing, "they're taking the p\*ss", I thought. Even 25 years later I occasionally get it out to amuse my friends and keep away the neighbour's cat. "What are they on?", we would ask.

Well I went and played it again and this time we started to listen. We could (almost) understand what the h\*ck was going on. It was too much in one session. I decided that it needed a little more thought and application of spirit. For years I've been telling my bemused friends that when I could understand what they were doing, then I would have reached that place that I had been seeking since buying a glass platter for my BDI. I dare not play it again. If I did then the game would be over, the hobby finished. All I would have left would be the enjoyment and privilege of hearing the finest musicianship every day.

My system comprises a Garrard

401 in hand made ply and sand filled plinth, glass platter (£3.50 from glazier), record clamp, Rega RB300 modified by Mission and Origin Live, SME Fluid Damper (what a difference it makes!), Martin Bastin's excellent power supply, Goldring 1042, NAIM: NA IX0, NAC 72, HI CAP, 2x NAP 140s, Naim speaker cable, Wilmslow Audio's V2 'speakers REL Stadium 2, Technics SL-P477A, Cambridge Audio DAB300 (cheaper than having a 'twig' fitted and more choice), Chord Chameleon and

QED phonos.

Your advice please. Yes I know that a better system will let me into every facet of the musicianship but the thing is, I have heard 'better' – well, more expensive systems - and apart from a slightly different perspective on the music, I have not heard any system that is more satisfying to listen to. I heard a Naim CD system, £20K worth. Mine matched it and exceeded it in some areas. I agree with Martin Bastin, the chap who services Garrards: "Visiting hi-fi shows saves you an awful lot of money". One can stand outside and judge if it sounds any good. The point is: is it really worth spending any more than bi-amping a small monitor, or active crossover from Naim, fed by a quality source? I have never heard better than my Garrard. My CD player, however, is as good as any £400 player I've heard. But what would you recommend? I like the organic sound of the Meridian, Naim kicks butt and the Cyrus is detailed. I am in no rush to change it. My next cartridge will probably be the V15 and I want to upgrade my RB300 to full external wiring. Thoughts please?

**Ray Spink**

Hmmm...well, you've obviously got an extremely well sorted system, and are getting ten tenths out of it... so chucking money at various things isn't necessarily going to reap huge rewards. Your deck is one of the very best ever made – just make

sure it's fully up to scratch (bearing etc.), and then fit the aforementioned Shure V15xMR. Then, I'd go for a pair of Naim NAP135s. If you like the Naim sound, and you obviously do, then these are the ultimate. After this, it wouldn't hurt to audition a pair of Classique Sounds' rebuilt Quad ESL57s, to see what you're missing. If you come away still happy with your V2s, then leave it at that – if not, go for the Quads. This done, you'll have something that can 'take you there' and back, without the need for 'chemical psycho-acoustic enhancement', if you see what I mean... **DP**

Crikey – that's an interesting system Ray. Putting a Garrard 401 with Naims is a great idea; both are tightly timed and have real kick. It isn't something that would occur to either the Naim or Garrard camp though.

For CD the Marantz CD6000 KI Signature is hard to beat. It too is bright and kicky, but a required listen all the same. Otherwise, you may just want to start considering DVD-A and SACD played in stereo mixdown. Good recordings can be impressive and there are going to be many more universal players arriving. Keep your current player for CD.

On the loudspeaker front, if you are happy with the Wilmslows make sure the cabs are massy and rigid. Use 25mm MDF and internal bracing if need be. Adding mass with a bottom sand chamber also helps. I now use a small, light foldup porters 'sack truck' that cost just £35, to move heavy speakers about. When I went to the Malaysia A/V Show recently every exhibitor had exactly the same model for their heavy products, so it's a popular idea and facilitates the use of heavy items.

Finally, make sure you get the crossovers out of the speaker and into an aluminium or plastic case on the floor. Ideally it should be close to the amplifier and connected via bi-wire to the drivers, which simply connect direct to the rear terminal panel. This relatively simple re-configuration makes a big difference to any loudspeaker. **NK**

### BACK TO LIFE, BACK TO REALITY?

*Over the years, in a variety of systems, I have never managed to get a consistency of 'sound' from both CD and LP sources. Like many others, I guess, I have just learned to live with the strengths and weaknesses of each. As I continue to purchase CDs at a compulsive rate, I have focused my recent hi-fi acquisitions on doing them*

*justice. Indeed, the recent purchase of the wonderful Naim CDX2-XPS2 CD combo has had me enjoying recorded music like never before. Now, here's your challenge!*

*I need you to recommend a vinyl system that will deliver the same qualities as the CD player. Not easy, I know, especially as my maximum budget is around a thousand pounds and any money from sales of surplus equipment. Feel free to include, or sell, any of the following machines currently cluttering my living room: Garrard 301 (Bastin plinth), Thorens TD125, SME3009, Cartridge Man Music Maker, EAR 834P.*

*The rest of the system is ATC gear, with the CA2 pre-amp having the MM/MC option. I listen to rock, jazz, classical, blues, 'world' ... actually, my brother describes my 'taste' in music as being 'catholic to the point of indiscriminating'. Although I have hundreds of LPs (mainly acquired in the 70s and 80s), they rarely see the light of day. If you could bring them back to life, I'd be very grateful!*

**Peter Ratcliffe**

Easy – but you'll have to sell lots of your bits and pieces! Buy a Michell GyroDec SE with HR power supply and an SME Series IV tonearm, into which you should put an Ortofon MC15 Super 2. The Michell is a very clean, open and neutral deck – with just an ever-so-slightly mechanical sound. The SME Series IV is not the most musical arm in the world, but has a stunningly detailed, incisive and architectural sound with killer bass and ultra fine treble. The Ortofon is the only thing you'll be able to afford after the aforementioned (!), but does have clean and smooth sound with lots of detail – ideally you should go straight to a Kontrapunkt B.

Together, you'll find this vinyl source will sound far, far, closer in character to your CDX2-XPS2 than you'd imagine possible – massively dynamic, powerful and commanding and a real music maker. In fact, if you add a Trichord Delphini MC phono stage, then you'll realise that it actually outperforms CD in that format's traditional areas of strength (i.e. image solidity, tightness, composure). **DP**

Hmmm. I would be tempted to keep the 301 on the Bastin plinth and fit an OL modded Rega arm, then use the Trichord Delphini phono stage with an Ortofon MC10 Supreme. This will give a very fast, tight sound with good detail. For a bit more smoothness go to an MC20 Supreme. **NK**



### ARCHIVING ANALOGUE

*I've started to look into the possibilities of transferring my collection of CDs to a PC for convenience. However, I do not want to compromise on the quality. I'm not too sure on the best way to go. My system currently consists of a Chord CPA2200 preamp with an SPM600 power amplifier, Wilson Benesch Arc loudspeakers and a Marantz CD17 KI. There are various uncompressed music formats, what's best? Is there a recommended 'jukebox'?*

*As for the PC side, would you recommend buying a professional quality sound card and feeding the analogue into the Chord or using a digital out to a high quality DAC then to the Chord?*

*As for the specification of the PC, I guess it would be quite simple - Pentium / AMD 2Gig or above. How about memory - the more the better? The new generation of hard drives spin at a much higher rate, would that be preferable? Your help and advice would very much be appreciated.*

**Bradley McEwan**

Hi Bradley – you need to save your recordings in WAV format – this is pure, uncompressed 16bit, 44kHz PCM a la Red Book CD. The easiest thing to do is to buy the biggest, fastest PC you can afford, and fit a Terratec AudioSystem EVX 24/96 soundcard (£149). This boasts the latest 24bit, 96kHz oversampling chipset (for which a signal to noise ratio of over 100dB (A-D) and 110dB (D-A) is quoted) and importantly, it doesn't use any unnecessary sample rate conversion when recording at 16/44. (Many soundcards either work at a nominal 48kHz sampling rate thanks to it being the traditional 'pro audio' frequency - thanks to DAT! - or route all digital signals via their built in sample rate converter whether or not it's required).

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As far as software is concerned, then ideally buy Syntrillium's Cool Edit 2000 (or better still Cool Edit Pro), but if you want to save money then Steinberg's Clean will do. With this you'll get a decent sound recording program (WaveLab) bundled for free, which is much cheaper than Cool Edit. Take the (analogue) tape output from your preamp into the card, and the digital output from the card into your DAC for optimum sound. Use good quality CD-R blanks when burning to CD-R, ideally with a dedicated CD burner (and not a DVD-R burner that also does CDs). **DP**

I built an AMD based PC some years ago and found a lot of music software wouldn't work with it. Things may have changed, or they may not. Nobody declares non-compatibility until you've bought the software and scanned the dreaded READ ME document. I even found a severe problem with a USB root driver for an HP printer. I went back to Pentium. My advice is: keep it vanilla. Get a Pentium and mount it on an A-Open or Gigabyte board. My new 7200rpm IBM Hitachi IDE is sad. SCSI is preferred for music and generally gives smooth data delivery as the disc controller is on the SCSI board. Check out the new serial disc drives or consider a RAID array from a RAID controller. **NK**



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### STUFF THE STANTON!

I felt the need to put pen to paper after reading your very fine vinyl-packed September 2003 issue on a topic that first troubled me a little in the July 2002 issue as well. A few years ago it seemed a natural progression for someone like me who has spent years buying, selling, repairing, collecting and drooling over all sorts of turntables to indulge in a spot of DJ-ing - getting paid to spend an

evening mucking around with vinyl seemed like too good an opportunity to miss! Before David Price throws this in the bin, I should maybe say that I'm not of the "I am very talented because I can do a bit of scratchin' n' mixin' " school - more your sort of cheesy wedding DJ who just plays the 80s stuff that gets people dancing when they're half drunk! Anyway, to get to the point, the issue that concerns me regards Albert Lee's review of the Sony PS-DJ9000 turntable and also appeared in the article on replacing the arm on the Technics SL1200/1210 last year.

Now, I have no doubt that the Sony is nowhere near as good as an SL 1210 but at least give it a fighting chance by bolting something decent into the headshell instead of the 'orrible Stanton 500 that always seems to come fitted into DJ turntables! This is a truly unpleasant device that is very definitely best junked ASAP as it brings to the party splashy and harsh treble, precious little bass and, most surprisingly of all, a distinct lack of boogie - somewhat essential for a DJ cartridge I'd have thought!

David Price did the same thing last year to test the SL1210 with newly-fitted Rega RB250. I read this at the time with a Roger Moore-style raised eyebrow as I have never been a huge fan of the Rega and don't think the SL1210's arm is all that bad, but any belief I had in the review of the finished article went out of the window with the picture of it being tested with a Stanton! I am currently using Ortofon OM Pro-S's in my 1210's and even have one temporarily bolted into the Audio Technica AT-1130 on my 301 whilst I save up the pennies to replace my beloved AT-OC9 which is recently deceased! So go on, give an Ortofon a try next time you're givin' it some large on the wheels of steel - you might be surprised!

**Adam Smith**

Hi Adam - rest assured that we did not exclusively use the aforementioned 'orrible Stanton 500A in the listening! We always run a range of cartridges in all arms and/or turntables we review, simply because it makes sense so to do. To use a motoring analogy - taking a Ferrari Enzo for a test drive with East European-sourced remould tyres would hardly give it a fair chance now, would it! Every time you've spotted a Stanton, it's been for photographic purposes only! And before all you 681 fans write in, I think the Stanton brand is most worthy - it's just the 500A I (we) don't like. Anything that sounds best tracking at 5g isn't much cop in my

book...! I hope everyone got the message - which is that [a] the SL1200 is the deck to have if you're into DJing, and [b] its own arm is rubbish and benefits from a Rega upgrade and [c] avoid all cheapo DJ decks like the plague - they're not even close to the Technics, which itself isn't as good as a Rega P3. **DP**

### TWICE AS NICE

Could you please offer some upgrade advice, with a view to providing a smoother, less grating listen? My budget is £3000 approximately. I have two systems, both situated in the same room: First is my real hi-fi - an Arcam Delta 170.3 Transport, Audiolab 8000 DAC, Audiolab 8000A amplifier, Epos ES11 'speakers, mounted on an Ash Design stand, the speakers on Cyrus stands (glass top and base) with Linn cables.

My AV System, firing the length of the room, consists of: Toshiba 57" Rear Pro TV, Sony 725 DVD player, Sony 940 amp Mission 780s, Mission 780C, Mission 780Ds, Rel Q100. In addition, I own a Sony SCDXE670 SACD Player wired to both the Audiolab (2 channel), and the Sony (multi-channel). The problem with the hi-fi system is that it occasionally grates on my ear, becoming very tiring to listen to. I'm happy with the bass and the mid-band (very expressive), it's the top end which lets the system down - suffering an overly bright balance especially at 'high-ish' volumes. Are the glass stands a factor (considering we also have laminate flooring - all those hard angular surfaces)? Can it be counteracted? I am open to any suggestions. I will consider used as well as new equipment. Would supertweeters be any help? I'm also rather keen on the Shanling Audio CD-T100. Would that be a worthwhile upgrade and are the other components up to speed?

**Sid Murphy  
Liverpool**

Hi Sid - well, methinks it's the combination of your Audiolab DAC and amp, together with the ES11's metal dome tweeters that are causing your woes. None of the above are famously smooth and sweet, and altogether they're probably a tad 'transistory', if you see what I mean? With three g's in your pocket, you have plenty of choice. The first, and most sensible thing would be to go for a Sugden A21a amplifier and the aforementioned Shanling Audio CD-T100, which would be a very neat solution. You'd then have the money to audition the likes of Castle's Conway to add real warmth.

The other option is to take a walk on the wild side and go for one single dramatic upgrade, which is what I'd personally do. Given that your speakers are already pretty capable and your CD player isn't too far off the pace either, the addition of an Audio Research Vsi55 valve integrated would be most interesting. Essentially, you'd get a dramatically bigger and more powerful sound, with loads more sweetness and grace to boot. The drop-dead gorgeous good looks and handy remote control wouldn't hurt, either. I've been living with one for two months now, and will miss it dearly when it goes. It's a seminal product, and one that would transform your system – all considerations of supertweeters and stands would go out of the window when you hear this charismatic performer that offers that elusive combination of smoothness and true grit! DP

And how about a modern pattern rug or similar to add just a bit of treble absorption, plus a bit of colour, to the room? I know hard, wood floors look nice and are

*Junction - good show - but why bother to listen when the rest of the evening is so awful? And as for DAB - this is the biggest let down of all time and a complete sell-out by the BBC.*

**Laurence Lewis**

Methinks Laurence won't be sipping sherry around Greg Dyke's Christmas fireplace... DP

Now, Laurence, please tell us what you like and why – especially on DAB. I find your criticism interesting, but you gave me nowhere to go. NK

**TWEAK TIPS**

*Congratulations on being the thinking man's hi-fi magazine - love it! Here are my tips for the temporarily financially embarrassed (like me) who nevertheless readily accept the importance of interconnects and equipment supports. [1] Manufacturers' standard-issue skinny interconnects can easily be bettered by buying nice fat purpose-made cable and gold-plated phono plugs from Maplins, together with silver solder for gluing them together. They sound better than get-you-going ones (but I'd love to compare them with five-*

*very fine file and 1 or wet-and-dry paper. I also polish the insides of the holes into which the bare wire ends fit with a very fine round file, sometimes called a rat-tail file.*

*Finally, anticipating the return of relative wealth, a question, if I may? Is there some easily affordable, superseded pre and power amp combination, preferably without tone controls but with 3 or 4 inputs including phono, and about 100 WPC (watts per channel, not female police persons), which sounds better than a late-model A&R A60? The A60 still sounds fine, but more dynamics would be welcome...*

**Keith Aburrow**

Thanks for that Keith... your hints are duly noted. As for cheapo pre-powers, Linn's LK-1/280 is terminally unfashionable, but should just about better an A60, and not cost the earth. Personally, I'd go for a Naim 42.5/110 (or similar) in the old 1970s style black and silver cases – at around £250 these combos are cheap, simply by virtue of their lack of scarcity – there are loads around. They sound truly punchy and powerful, although the absolute power output is well below your desired 100W. DP

**IN DEFENCE OF DECCA**

*In the September 2003 edition on vinyl replay, you mention 'the long-lost Decca'. Well, these cartridges are very far from being 'long lost! The Deccas still have a very strong following, myself included. My valve system has a Garrard 301 with a Decca Professional arm and SH4E ffs head and my solid-state system has a Thorens TD150 again with a Decca Professional/SH4E. I also have several ffs MkIIIs and MkIIIs and I even had a special 78 rpm stereo head built for me, so I can eliminate surface noise from 78s, (but that's another story). J. Wright Audio of Bridgenorth offers an excellent service in rebuilding Deccas, and I have seen an American website talking about re-manufacturing them.*

*So, what is all the fuss about? The Decca is neither moving-magnet nor moving-coil, but variable reluctance. The 'secret' of the Decca is that the lateral coil is as close to the groove as is physically possible, with the shank of the diamond stylus inside the coil, eliminating any cantilever. As a result, Decca cartridges have an immediacy, clarity and reality which cantilever designs do not seem to come near, but there is a downside: the later models with 1/2" fixings were very fussy about the arm they were mounted in, and could mistrack severely. This gave them the bad reputation for record damage*



**Audio Research integrated – a tubular titan**

wonderfully functional; I've toiled to replace a couple myself. But a brightly patterned rug adds colour and usefully damps reflections. It also gives a warmer ambience of course. NK

**THIRD CLASS!**

*In response to your article on Radio 3 in the August edition, here's my two cents: Radio 3 has become boring and predictable. Very few plays. No science. No social content. No literary programmes or features. Nothing to grip the imagination. Poor sound balances on broadcast concerts. Has become all day record review. Late*

*star ready-mades).*

*[2] Equipment feet: hardware shops sell almost hemispherical rubber "washers" for some kind of water tap. They're about 22 mm in diameter and 10 mm high, and although not cones, must be better than the little feet fitted to some kit, at least an initial listen suggests so.*

*[3] Maplins also sell various shapes and sizes of ferrite ring, including hinged, clip-on ones, for removing FRI from cables – these are well worth trying. Maplins are becoming more audiophile as time goes by!*

*[4] I find it worthwhile to flatten and clean the prongs of mains plugs, which are sometimes slightly ridged, with a*

which is alluded to in your article. The earlier ffs heads had their own arms that were dynamically matched to the heads. Although regarded as 'agricultural' by today's standards, they work - all my ffs pickups fly through tracking tests with no problems.

If anyone wants to get into the Decca sound, a Standard arm with a broken MKII head can be found at the fairs for about £30, a Professional with a MKIV head for around £80. It costs roughly £100 for a complete rebuild, so for less than £200, you can have a full-spec Decca pick-up and experience the Decca sound. A possible issue is that ffs heads do not seem to match well to modern pre-amps: there can be a substantial HF loss. Deccas really come to life with a dedicated RIAA pre-amp based on the shunt-voltage feedback principle, as used by Leak, GEC, Mullard, etc. in the good ol' days. Shunt-voltage feedback places the cartridge itself in the feedback loop. If anyone wants a simple solid-state shunt-voltage RIAA circuit to play with (non-commercially, of course), they can email me at ffs@vitasonic.demon.co.uk. The output is ruler-flat from 20c/s to 20000c/s with MkII, MKIII, H4E and SH4E heads using Shure, Decca and HFS75 test records with a Bruel & Kjaer spectrum analyser.

Finally, there is one piece of advice I would pass on to anyone mixing and matching cartridges to arms: get a test record! It is essential that the cartridge does not mistrack under any circumstances, as this can cause severe damage to records. The only way to be sure that a cartridge is tracking properly is by using a test record. The most useful test record is the old Howland-West HFS75, which can be found in perfect condition at the record fairs for as little as a quid. The HFS75 has both lateral and vertical tracking test bands. As a professional audio engineer, I have found that expensive arm/cartridge combinations that tracked clean laterally could suffer from vicious vertical mistracking. Often, tracking pressure needs to be increased towards - or even a little beyond - the manufacturer's recommended weight to ensure secure vertical tracking. Obviously, it is far preferable to track a little heavier than to mistrack and cause damage.

**Martin Lawrence**  
Birmingham

### HI-FI WORLD: THE VERDICT

I have to say that I liked the magazine a lot in its early stages, when Noel and Dominic were doing the DIY stuff. However, I realise it's a very specialist niche market, and there probably aren't the readers to cater for now in that sort of thing. '\*\*\*\* Hi-Fi' is abysmal and 'Hi-Fi \*\*\*\*\*' is going down the same line -

the dumbed down editorial and 'sexy' pornographic pictures of things with kilo pound price tags... so its a difficult place to fit in!

As for your scribes, I think Andy Grove is a very clever guy...you have a good one there! Get him to write books...he has loads to offer! You can tell him that! A pity about losing Eric Braithwaite - he was an excellent writer...I had a very similar system to his! I assume Dominic Baker went to work for a speaker manufacturer? It's always good to look back on things, and the retro stuff by yourself is good, too. Just in case you're wondering what some readers would like...here's my wish list: reviewers equipment, perhaps more technical articles by Andy Grove and Noel Keywood, maybe manufacturers visits to factories and interviews and a lower price - only kidding! If I maybe so bold, could I ask what hi-fi you have at the moment?

**Ian**

Hi Ian - the other magazines all serve different purposes inside the big hi-fi tent! You're right about the Grove-meister, he's a serious tube man who's designed some brilliant amplifiers for Quad, Leak, Audio Note and World Audio Design to name but a few.

Dominic Baker now designs loudspeakers for JM Labs, hardly surprising because when I joined the mag. in 1994, DB was notionally the editor, but always downstairs designing/measuring loudspeakers!

We've lost touch with Eric, but I too loved his gentle, lyrical writing style - although I have to say that sometimes Noel and I used to have to read and re-read his copy, struggling to find what he actually thought of the product!

You'll notice that Noel is doing more technical pieces these days - something I think he does superbly.

As for lower prices... Hi-Fi World has a heck of a lot of editorial, and that costs money - I'm sure readers wouldn't like us to drop the price and chop half of it! Still, it would make my life easier, I suppose... **DP**

The "what hi-fi do you have" is understandably of great interest to most readers Ian; it's a question that comes up repeatedly. Unfortunately, it's better to do what we say than do what we do! Quantities of product move through our hands, so there's always something different in the living room, and likely another room too. Few reviewers have one fixed system and, if they did, I would worry quite frankly. We have to take a

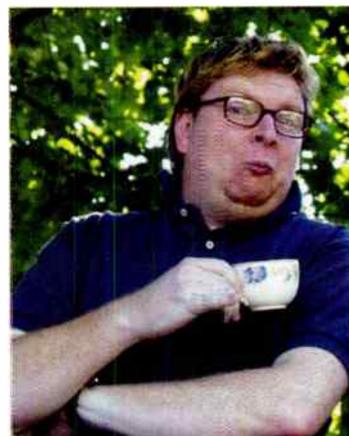
broad view, not a narrow one conditioned by exposure to and belief in just a few products. I listen to what is being reviewed, not what I would listen to! If I was to retire tomorrow (ha!) I would probably have a Garrard 401 on a Martin Bastin plinth with SMEIV, plus Ortofon Kontrapunkt. This would feed our own Phono II phono stage (I use a KLPP1) and a couple of our big single-ended 300B amps (all designed by Andy Grove). Loudspeakers would be by my own or those moded Quad ESL-57s perhaps. And in another room I would definitely have a surround-sound system. How best to do surround-sound with valves is something swimming around in my cranium at this moment! **NK**

### THAT'S TELLING THE POPE-MEISTER!

I suppose anyone who makes a statement is there to be corrected, and Simon Pope, in his review of *Retro*, by New Order (September) claims that Peter Hook was, "the world's first ever lead bassist". Those of us with longer memories can recall the time when two members of *The Shadows*, Jet Harris and Tony Meehan, split from the band, and had success with at least two singles, I think they were called *Diamonds* and *Scarlet O'Hara*. Both tracks followed the same formula, with Jet Harris playing the lead, and Tony Meehan playing a drum solo in the middle. The crucial point is that Jet Harris was a bassist, and his leads were played on a bass. I'm not going to fall into the same trap as SP, and claim that Jet Harris was the world's first lead bassist, I wouldn't be surprised if someone can come up with an earlier one, but he certainly preceded Peter Hook. There's nothing new under the sun. Thanks for the only hi-fi mag that's worth reading.

**Mark Elliott**  
St Austell

Please forgive me - I was born in 1968. **SP**



**Simon Pope**  
- too young to know!



# Arc Light

**Albert Lee takes a shine to Roksan's new Radius 5 turntable - and especially its Nima unipivot arm.**

It's all too easy for us vinyl junkies to take those 'two ounces of black plastic with a hole in the middle' for granted. We do not remember the effort engineers have put into making this medium possible. When did we last marvel at the mechanical ingenuity of the process, and the sheer naturalness of the reproduction? Audiophiles demand engineering excellence – only this lets us experience the tangible emotional force between performers, composers and their audiences.

Roksan Audio is one such company famed for this. Formed in 1985, its commitment to high quality reproduction is legendary. The first product was the Xerxes turntable, which was a milestone in vinyl reproduction - at the time when the Linn Sondek was the deck to have, it burst upon the scene and upset the proverbial apple cart by its pitch stability was superb, bringing incredible definition to transients and showing the mid-Sondek up as not

quite worthy of the purple prose lavished on it by many hi-fi hacks.

The new £750 Radius 5 continues the theme; available in both acrylic and timber plinth finishes it's compact at 400x350x150mm and weighs in at 7kg. It sports an acrylic platter, and main bearing spindle that's precision machined from stainless steel. The main bearing housing is solid brass, and case hardened steel is used for the main bearing ball. The motor pulley is machined from aluminium alloy, and is powered by a 24-pole AC synchronous motor giving both 33.33 and 45rpm speeds.

The motor board is coupled to the turntable support via three spikes, positioned to enable motor noise to drain into the support system. Interestingly, the standard Nima pick up arm is a wide-tubed unipivot design with a bearing yoke and headshell fashioned from acrylic. Its effective length is 240mm and has an effective mass of 10g. The internal arm wire is made of a very flexible

printed circuit board and has no less than three earth lines along with the normal signal lines.

## GOING LIVE

Unpacking this unit was a breeze, and made all the easier by an extremely well penned user manual. Assembly was very simple, and levelling the record deck was made very easy by the inclusion of three height-adjustable spiked feet.

The Nima pick up arm was a simple task to set up, possibly due to a misspent youth ritually taking record players to pieces and putting them back together again. Mounting my chosen Roksan Chorus pick up cartridge was aided by the accurate alignment gauge, although care must be taken to read the instruction manual very carefully, as it's very easy to rip the cantilever out of the cartridge when attempting to mount it into the one-piece headshell/arm assembly!

It is vitally important to be confident with this arm even though

it seems to sway all over the place in classic unipivot style. A complete set of tools is included in the case, along with (unusually) a pair of stylus scales. Roksan has even got the scale right, as it is set in micro-Newtons and not in the usual grams. The conversion is approximately 10 mn to 1 gram. Assembly of the Roksan took approximately thirty five minutes. Now let battle commence!

At first the Radius 5 was disappointing. Bass was extremely boomy with a lot of splashy mid range. It was obvious the turntable was suffering from an attack of structure borne feedback. So I decided to build a wall-mounted turntable shelf. The reviewing process was halted for two days while I designed the new support system, using a frame into which I could drop spiked platforms, which would support the equipment. Finally, we were ready to begin listening again!

The difference was staggering. Suddenly bass was clean and extended, while midband and treble had a smooth, sweet, warm balance. The Roksan was finally able to acquit itself with aplomb – with the deck properly sited at last, it was capable of extracting oodles of inner groove detail. Stage depth proved very good, with width and height of the highest order. James Brown's music was presented with an almost visceral feel. Single instruments were displayed with force and drive, making John Williams' rendition of Bach's Suite No.3 for unaccompanied violoncello (on Delyse ECB3149, deleted many years ago but a very fine piece of work) a very rewarding experience. The acoustic of the room was plainly obvious. His classical guitar had richness, which a lot of budget/mid-price decks simply omit.

Changing styles of music did not make this turntable stumble. Frankie Goes to Hollywood's 'Two Tribes' was suitably expansive - the stereo image extended out into a vast a semi-circle in front of me. Although 'Clever' Trevor Horn's production was a little bright for my taste, I have rarely heard this 12" single played with so much punch in the bass, and with the instruments so explicit etched into my listening space.

I then changed the cartridge to an Ortofon

MC15 Super 2 in a bid to isolate its tonality – was this rich sound due to the Roksan Corus? The answer was no - the MC15 seemed to have a vice-like grip of the music, but with a slightly ragged treble presentation, although the imaging hadn't lost any of its scale. Next, a Decca C4E cartridge went in – these are extremely difficult to track in most arms, but the Nima arm had no such problems. This rare transducer is capable of tremendous musicality in the right carrier, and I'd just found it – no thirty year-old cartridge should sound this good! Its vivacity and control, along with superb stereo imaging made the walls of my living room melt away.

In a bid to nail down precisely why I was getting such great results from a turntable affordable by many mere mortals, I set about eliminating the possibilities. The Nima arm was duly whipped out, and in its place the venerable (and venerated) Origin Live modified Rega RB250 was mounted, with the Roksan Corus duly re-installed. The stereo image shrunk by a few feet in width, and along with a small foreshortening of image depth the height of the image was affected as well. After auditioning many types of music, I can't help but feel that at last we have a rival for the OL RB250.

Overall then, here's a seriously capable mid-price turntable with a naturally warm and engaging sound.

**THE EDITOR SAYS:**

With more substitutions than Sven Goran Erikson's England playing a friendly against the second Liechtenstein eleven, AL finally got to bottom of why the Radius 5 is so good – the Nima unipivot tonearm. The deck itself is excellent; oh-so-close to Michell's TecnoDec, albeit with a less detailed and analytical sound (not a bad thing in a budget system).

The Nima arm has a brilliantly organic and cohesive sound which invests this already capable deck with a far greater musicality than you'd expect even at this price. The result is that – in conjunction with a nicely warm and 'big' sounding cartridge like the aforementioned Roksan Corus or Goldring G1042, you get a vast, panoramic sound. Contrast this to the Michell school of sound reproduction, in which things are so tidy, ordered and detailed and you can see that the new Roksan deck will win many friends. It's not ultimately as incisive as the TecnoDec, but it's a less cerebral and more endearing listen.

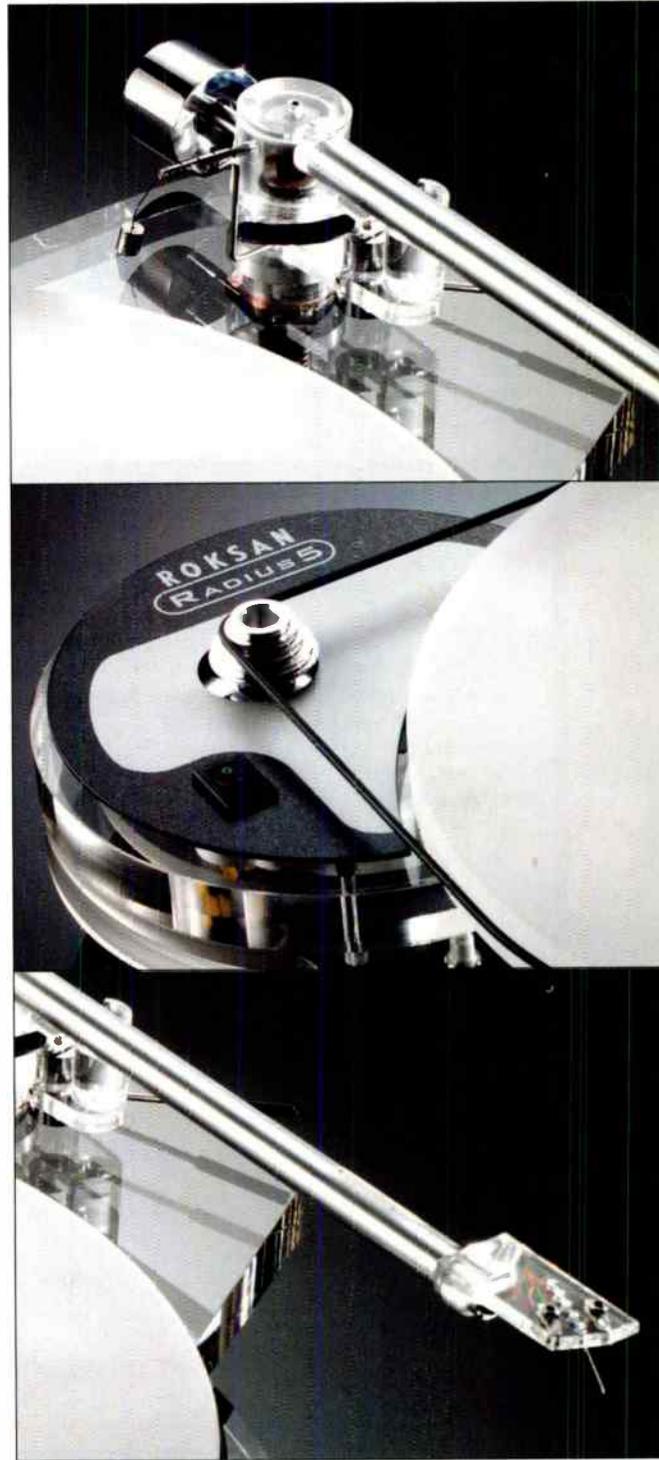
As for the Nima unipivot – see how it does in our forthcoming superarm supertest... DP

Its bass is particularly generous – grippy but tonally fulsome in the way the Garrard 401 is (albeit not to the same extent), while its midband is wide and deep and tall, yet smooth and sweet. There's very little to criticise, save the fact that it can't scavenge the last nth degree of low level detail and treble air that the best of the rest – Michell's TecnoDec – can. Also, it really does need a good support – much like its other price rivals. As for its bundled Nima arm, suffice to say that this is a brilliant budget arm that simply sounds far better than it has a right to at the price.

**VERDICT** ●●●●£

Great turntable displaying real thought behind its design. The bundled Nima unipivot tonearm raises its game still further, making it superlative value for money.

**ROKSAN RADIUS 5** £749.95  
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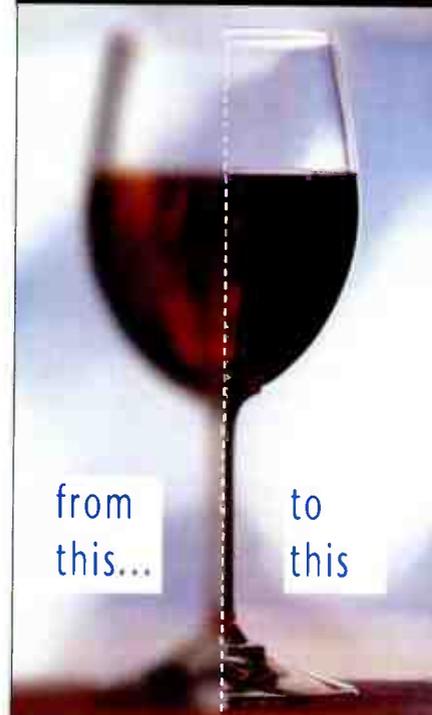
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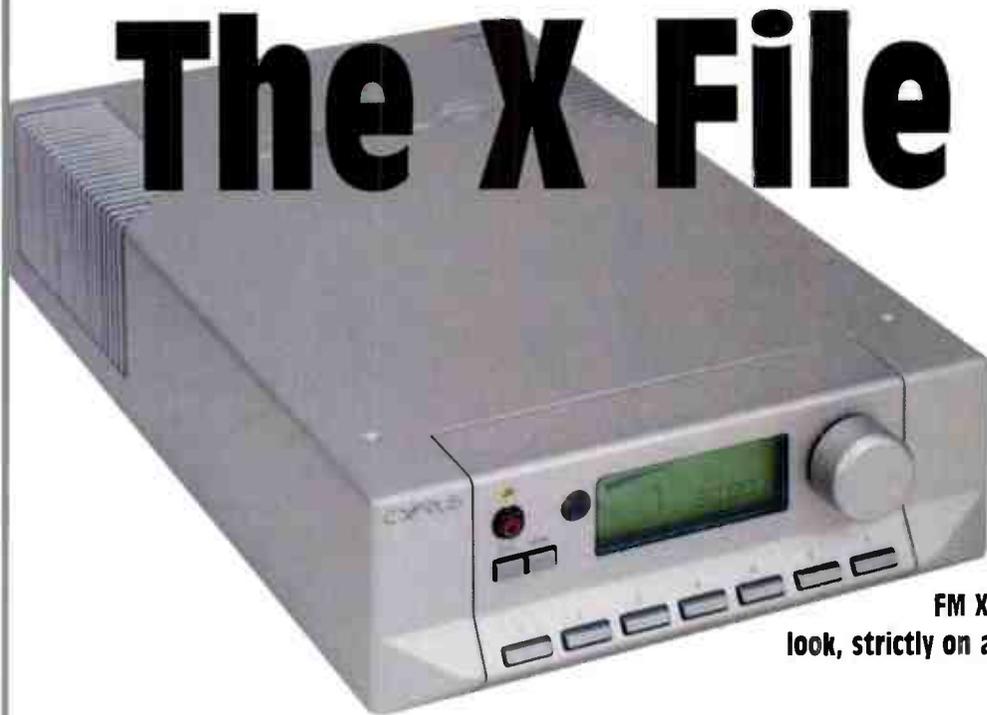
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# The X File



The secret's out – Cyrus has a brand new tuner to match its acclaimed range of separates, in the shape of the new

FM X. Chris Parker takes a look, strictly on a need-to-know basis...

In these Digital Radio-obsessed days, anyone who launches a new analogue tuner is showing a good degree of faith – and to offer it without even the basic convenience of remote control is tantamount to zealotry! Even Naim – a company whose tuners aren't exactly feature packed - comes with the couch potato's best friend. Yet the Cyrus doesn't include one as standard – for that privilege you'll have to use the system remote supplied with the matching amplifier...

Indeed, the £500 FM X is something of a minimalist zone - the amount of presets available from the front panel (and remember there's no remote) runs to a grand total of seven. Hmmm – even my car stereo has more! Also, you'll find no RDS (also like the aforementioned NAT05). Oh, and as you can probably glean from the name, there's no AM band. But do you know any audiophile that seriously listens to AM broadcasts through a proper hi-fi? Me neither.

Now the lean bits are out of the way, it's time to focus on the meatier portions, of which there are actually plenty. It's very, very easy to use which is always welcome with a tuner – you really don't want to muck around too much when it comes to listening to the radio, in my humble experience. As for features, there's the rotary knob. In this case it's simply used for manual station tuning – how unreconstructed! The clear, backlit LCD display features the frequency in the bottom right of the window, the preset in a large numeral to the left and - like a beautiful arcing monochrome

rainbow of radio waves (steady on, Chris! – Ed.) - the signal strength meter and tuning 'lock' arched above. Press the fine tuning button and this arc of blocks separates. If the gap is in the middle and both sides of equal length, then you're bang on target!

Other features include – as with all Cyrus products – the worthy option of hooking up a PSX-R power supply (£350) for what is invariably improved performance, and MC Bus connection for synchronisation with other Cyrus products. Overall, as far as facilities and usability is concerned, the FM X is functional and simple, if a little bare in the features department. It's incredibly easy to use, however.

Sonically, it is everything you'd expect from a decent stereo tuner.

Voices on Radio 4 were natural and very clear, and the background was impressively quiet. There was little chestiness in spoken voices but there was also a little thinness discernable which perhaps doesn't make the FM X the most full-bodied option on the market. This was also confirmed when switching over to Radio 3 where their nightly 'drive time' show features both interviews and live music. The live

music was very well detailed in the traditional Cyrus fashion but again the piano lacked a bit of body and warmth. Commercial pop stations actually had a decent sound to them, the dry nature of the Cyrus adding some well needed neutrality.

The FM X is undoubtedly a dry but concise sounding tuner, but this matches it sonically with the rest of the Cyrus range of products, which have always erred this side of the audio fence. As far as facilities and features go, it is a bit lacking at the price; there is some very strong competition out there. But if you own a Cyrus system it is undoubtedly the obvious choice. Or if you want some extra insight to balance a warm system, again it's a good choice.

## VERDICT

Great for Cyrus users, but its dry and precise sound can't match the best of the rest at the price. Worthy, nonetheless.

**CYRUS FM X** £500  
Cyrus Electronics Ltd  
☎ +44 (0) 1480 4355 77  
www.cyrusaudio.com

## MEASURED PERFORMANCE

The audio response of the FMX was flat from 4Hz to 15kHz within 1dB before rolling down into a deep 19kHz pilot tone filter. Pilot and sub-carrier rejection were good.

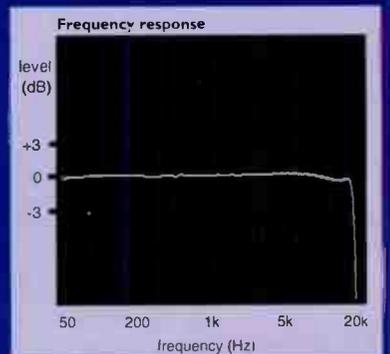
Channel separation remained wide across the audio band, measuring -45dB or so. Distortion was low on sum and difference channels, but not on left and right, measuring 0.2% at 50% mod. However, this was second harmonic only.

Sensitivity and alternate channel selectivity were high. Noise was average at -74dB, stereo IEC A wtd, with pilot tone rejected.

The FM X measures well, although it doesn't quite match the best. It will sound clean and detailed. NK

Frequency response (-1dB) 5Hz-15kHz  
Stereo separation -45dB

Distortion (50% mod.)	0.2%
Hiss (CCIR)	-74dB
Signal for minimum hiss	1mV
Selectivity (at 0.4MHz)	>80dB
Sensitivity	
mono	2µV
stereo	32µV
signal strength meter:	11-850(µV)





# Is it live, ...or is it hi-fi?

**One of the most implausible things about hi-fi is the fact that many professional musicians don't feel the need for a serious sound system - despite hearing live music on a daily basis at work! In fact, some are notorious for using particularly poor bits of kit. So, our own accomplished clarinettist and audio aficionado, LJK Setright, attempts to reason why...**

It was the letter from reader Alan Froy that started me on this train of thought. He was disturbed by the rather ropey equipment that seems to suffice many active musicians when they set themselves to listen rather than to do - and he correctly, if rather vaguely, remembered that I had been one of them myself, once upon a time. It was not as a flautist, as he thought, but as a clarinettist and singer that I added some sorely-needed semi-professional earnings to my sorry stipend as a fledgling lawyer; it was not even the money that mattered, so much as the urgent need to do something creative, and I loved every bar of it - or at least all the bars that I managed to count.

They were heady days, playing and singing under some of the best batons, and with some of the best practitioners, in the business. You might not recognise all the names, though if I jumble up a few of them - Klemperer, Beecham, Archie Jacob, Hindemith, Gilbert Vinter, Martindale Sidwell, Giuliani,

Schwarzkopf, Montgomery Baird, Bernard Walton - a few bells might ring in your memory.

Being a clarinettist puts one right in the middle of the orchestra. It might stretch sixty feet across the width of the platform, and thirty from front to back, and Heaven help

**” Performers do not want stereo or imaging, they can only function well when everything seems to come from a point source just above the music desk.**

the poor blighter at one extremity listening for a cue from another player stranded on the far side, and getting it a fifteenth of a second too late. Performers really do not want stereo or imaging, they can only function well when everything seems

to come from a point source just above the music desk. Being in the middle of it all really can make a difference: as an adolescent I disliked Brahms, but when I first heard it from the middle, rehearsing the Tragic Overture, I suddenly loved it and have done ever since.

Some of the vocal groups in which I picked up the odd fiver would crowd together as close as possible, so that the music should issue from us as nearly as possible from a single point. From some points of view, stereo seemed for a long time to be making the best of a bad job. Maybe it still is.

Permanently stuck in my mind is the recollection of my first visit to a pukka hi-fi dealer (the Sound Organisation, at their original warehouse premises near Southwark Cathedral) who demonstrated a few things. He noted that instead of sitting back in the settee conventionally provided, I went and stood exactly between the speakers, with my back to the wall: I suppose that I was listening to the



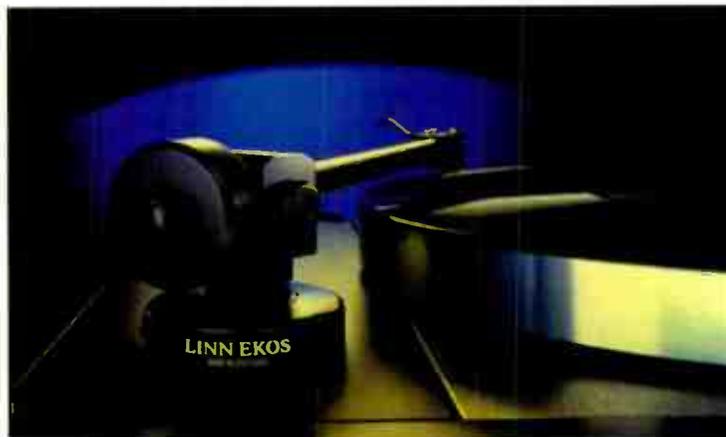
room rather than to the speakers, but he deduced that I was or had been a practising musician because this is apparently what they, and only they, do.

Feedback from the room is what a player has to rely on for judgement of what and how he is doing. That is how some halls get their reputations for good acoustics, even when the audience fails to get the benefit. Feedback in the Royal Festival Hall used to be poor: it was impossible to know how loud or quiet to be. The Usher Hall in Edinburgh was marvellous in this respect. Doing Gerontius, after minimal rehearsal, in Canterbury Cathedral was a weird, curiously remote and not yet mystic, experience: in that vast echo-chamber one could not, as so often one does, rely on one's ears. The conductor had to be watched with ferocious concentration, otherwise one was simply lost in space.

As an example of misunderstanding, the City Hall in Birmingham was ballyhooed to the skies by the musicians who first performed there, because the feedback was good, and everybody thought that they must be right because they were Musicians. In fact the sound for the audience was hideously jumbled in all but a few seats, and even there the steel railings that stopped us falling out of the circle into the stalls resonated furiously. I found one ringing a true B natural, others off a bit: I was sitting in a vast nest of tubular bells! As a rule I try in most halls for a seat in the front row of the circle, and at all costs avoid seats under it, where (as in the Barbican, which not only looks like a 'bus station but sometimes sounds like one) there is no bass to be heard.

No wonder that some musicians do not worry about their home hi-fi. There are exceptions: a trumpeter whose name I have forgotten had some very splendid apparatus indeed, including some huge horn speakers in the corners of his listening-room. On the whole, though, it is a matter of knowing the music inside-out already, and listening only to the performance. In this case the fine separation of detail, faithful presentation of attack (hurrah for analogue!), and honest revelation of phrasing, are what matter. It does not have to be exciting, or lush, or even musical: it has to be correct.

Even then, you might wonder why. Once when I was due to sing with the Philharmonia in the second half of a



concert, I sat up in an empty box and listened to the first half, in which they were playing Ravel's *Daphnis et Chloë* – under Giulini, I think, though it may have been Abbado – and it was the most miraculously exciting

terribly wrong, rushed upstairs to my music room, and came down clutching the miniature score. The entire bass line was inaudible. The next day I took the set back to the dealer, and insisted that he rip out

**“ My system is pretty correct, but one still has to make inferences every time one listens, and it is dreadfully difficult when one does not know what to infer...**

the existing 'speakers and put in something better. Bemused, he did, and it worked, but after so many years I guess that it was still pretty horrible.

Nothing is ever perfect. It follows that when I listen

to new or unfamiliar music at home, I have to suspend a lot of judgements. My system is pretty correct, but one still has to make inferences, every time one listens, and it is dreadfully difficult when one does not know what to infer.

performance of all the many I had or have since heard. During the interval I whizzed down to the Green Room and found my pals in the clarinet section, and dear old Archie Jacob, perhaps the best second clarinetist in the world (he played on old Barrett-system instruments, unseen elsewhere since the days of military bands before the war), explained it: Well, you see, he took it a little slower than usual, and so just for a change we had time to play all the notes! If you have ever seen the score, with so many demisemiquavers that it would surely be quicker to print the occasional white bits on black paper, you will have seen what he meant. Sometimes I have heard most of it twice in the Royal Albert Hall, but I have never heard all of it even once through hi-fi of any sort.

It is at such times that stereo can be a real help. I have never felt any need for more than that basic separation; the complexities of imagery have never seemed in any way relevant, but I have noted that the need for that sort of stage-setting seems often more acutely felt by listeners primarily interested in jazz. This strikes me as curious, for there is so little duplication of effort in any jazz ensemble that even stereo might be dispensed with, while the full swing band (given decent arrangements) is so clearly stratified that mono listening might be a definite advantage.

One knows what should be going on, and if any of it be missing it may be inferred, consciously or unconsciously. Sometimes the lacunae are simply too great: in the early 1960s I bought my first television set and settled down to watch and hear a performance of the Berlioz *Symphonie Fantastique*. Aghast, I realised that something was

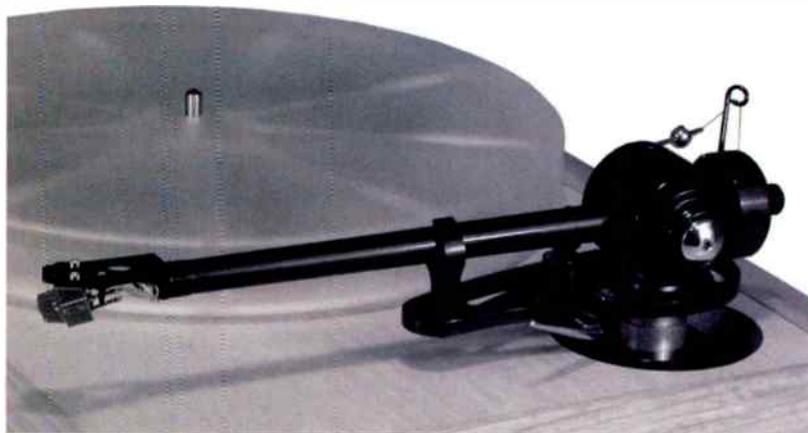
Maybe the trouble is that many musicians have simply been deafened by sitting in a big orchestra? The commercial need to fill oversized auditoria is nowadays so severe that orchestral instruments (and, to a worse degree, pianos) are being made to sound louder than ever. You have never heard such a racket unless you have been on the inside!

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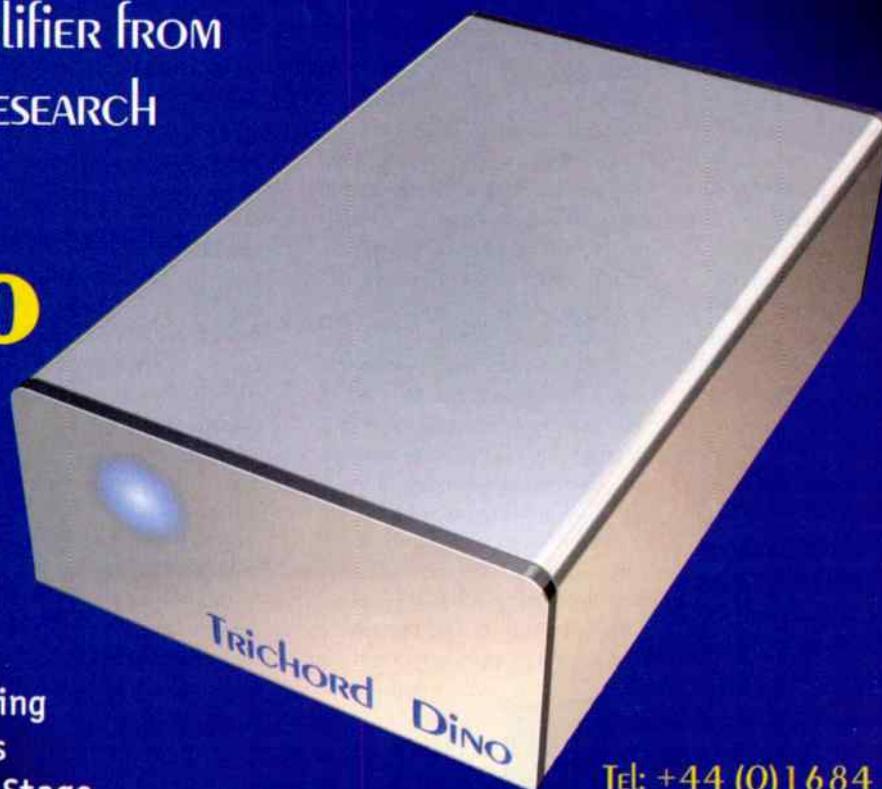
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# Elektro Dynamik

Here's a German headphone with a seriously exciting sound. David Price plugs in Beyer Dynamic's new DT990...



**S**peaking personally, I love headphones. And as a seasoned traveller who's spent many years outside the UK, I have had to. For long periods, a Sony TCD-3 DAT portable hooked up to a pair of high end Sennheisers was my only 'real' way to listen to music, along with – latterly – the arrival of the original Musical Fidelity X-CAN headphone amplifier.

The problem is that, despite having nothing but respect for high end Sennheisers (the budget ones too, although I can't say I'm enamoured by the company's mid price fare), after a while you don't half yearn for something a little more 'alive'. The HD600s that I use on a regular basis are superb – and have a very engaging mid-band, but there's always that slight tinge of Teutonic – how can I put it? – sterility. Like German cities, they're a little too clean for their own good. I don't half wish they'd 'loosen their top button a bit', if you see what I mean?

This becomes all the more obvious when you listen to Beyer Dynamic's DT990. These are also German of course, from the company that produced the first ever stereo dynamic headphone – the DT48. However, they possess a sound which although not comprehensively better than the HD600, is certainly an interesting alternative. The new DT990 high-fidelity headphone is based largely on Beyer's hugely successful DT990pro, which is used in countless professional recording studios the world over.

In the flesh, they're a very nice bit of kit. Whereas the Sennheisers are immaculately built and finished – if a tad austere like a mid-range Mercedes Benz car – the Beyers are more opulent yet slightly more fragile feeling. The ear pads – finished in a very 'nineteen seventies' velour

sit more loosely on my (big) head, whereas the Sennheisers give you the impression that you've been strapped in tight for the bumpy ride ahead. The Sennheisers give the impression that if you dropped them out of a third floor window, they'd not even come off with a scratch, but the Beyers don't feel so robust – they're still better than, say, high-end Sonys in this respect though.

The worst point about the DT990s is the poor cable – yes, it's an old curly-wurly 1m affair that expands to 3m (allegedly). However, as soon as it starts stretching, it exerts a pull on one of the ear pads – stupid! The result is that for comfortable listening (and it is very comfortable when not pulling on your ear), you have to locate your headphone amp less than 1m away. This I duly did – using a new (and superb) Musical Fidelity X-CAN v3 in conjunction with a Meridian S07 CD player.

They sound great – if not quite peerless. The first impression is of a very big, full, inviting character, which contrasts quite markedly to the rather sterile, matter-of-fact Sennheiser HD600s. Bass is obviously more sumptuous, although less rigidly controlled. Midband lacks the near-electrostatic like character of the Sennheisers – it's clean and open alright, it's just that it doesn't have that last, nth degree of clinical precision. Still, there's a hell of a lot of detail. The image placement is obviously inferior, although the DT990 actually sounds more expansive.

This is because, despite its less studied, architectural nature – which isn't as good as imparting precisely where an instrument is in the mix – there's a far more spacious and airy treble. As with loudspeakers, more treble extension has a 'trickle down effect' to the midband, and invariably makes it feel less constrained. This is

precisely what happens with Beyers – the midband is actually looser and less deliciously forensic than the Sennheisers, yet it sounds more atmospheric all the same – thanks to the treble.

What of the treble? Well, Sennheiser lovers would call it 'over explicit and somewhat coloured', but it does have more ambience and a silky patina that makes it more pleasant to behold.

Appropriately enough for this 'clash of the Teutons', I used Kraftwerk's brilliant new 'Tour de France Soundtracks' on CD to pin down the differences between the HD600 and the DT990. The Sennheisers can be best described as rigorous interrogators of their source – much like Quad ESL57 they simply convey what's on the disc, minus a touch of treble extension and bass push. The Beyers add air, space, breadth and depth, plus a warmer bass – but the midband feels obviously less connected to what's really going on – as if there's a layer between the artist and the listener. They're less locked into the groove of the music, and less determined to eke out what's going on in the production. Does this make them the inferior listen? No, it does not – just different, like BMW and Mercedes.

## VERDICT ●●●●£

Large and expansive sound allied to an airy treble and full bass makes them a worthy rival to Sennheiser's HD600.

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## QUOTED SPECIFICATIONS

<b>Transducer type:</b>	Dynamic
<b>Operating principle:</b>	Open
<b>Frequency response:</b>	5-35,000Hz
<b>Nominal impedance:</b>	250 ohms
<b>Nominal SPL:</b>	96dB
<b>THD:</b>	<0.2%
<b>Power handling capacity:</b>	100mW
<b>Sound coupling to the ear:</b>	Circumaural
<b>Average pressure on ear:</b>	2.8N
<b>Weight without cable:</b>	250g

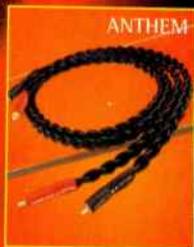
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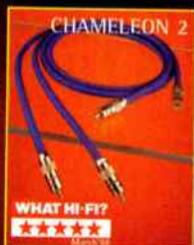
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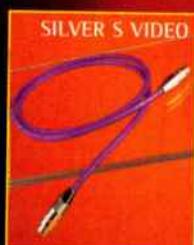
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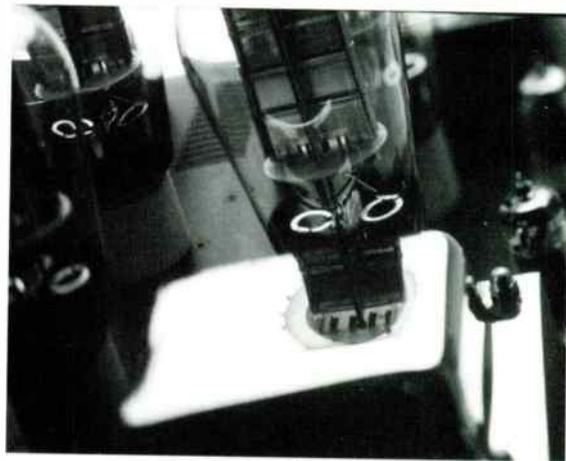


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# Glowing Praise

David Price enjoys Musical Fidelity's brand new tube-aspirated X-CAN v3 headphone amplifier...

**R**ather than offering the colouration (and I mean this in its correct, negative sense) of traditional valve amplifiers, MF's tube and NuVista creations have had the transparency and detail to match the best solid-state products, allied to just a soupçon of that 'je ne sais quoi' that thermionic valves deliver. The result is a very tight, clean and fast sound, but without the grain you get from many solid-state designs – the best of both worlds, in other words. This is pretty much what I felt about the original X-CAN. It was far tighter and faster than you'd expect from anything with a glowing glass bottle within, yet offered just the tiniest of 'tubular palliatives' – the result was something with all the speed and grip of its (fine) Creek OBH-11 rival, but just the slightest (yet most welcome) valve sweetness and liquidity.

The new X-CAN v3 claims less distortion, wider bandwidth, lower noise and better stereo separation than its already usefully improved v2 incarnation. It also provides better load driving ability, due to the lower output impedance. More obvious is the new casework, which has been squared off and enlarged, and given a front panel and dial machined from solid aluminium. Whatever you think about the move from the mini 'tubes' to oblong casings, the improvement to the volume control is undeniable – it's far nicer to use, and invests the unit with a sense of it being budget esoterica (rather than just 'budget'). Unfortunately, however, the price has gone up a lot since the days of the original X-CAN – the new v3 will now set you back £249.

This is excused somewhat by the fact that the new v3 is appreciably better than the v2 – more so, indeed, than the v2 was compared to the v1. It takes Musical Fidelity's headphone amp into altogether more earnest audiophile territory, by



adding a good deal more bass power and grip, midband speed and grip, and just a touch more treble air and space. The X-CAN v1 was already a very capable device, but the v3 is so good as to be largely irrelevant to the sound you get from your headphones – as the problems with your cans become ruthlessly exposed.

I used my much-loved (and well worn) pair of Sennheiser HD600s, and Beyer Dynamic's DT990 – two very gifted performers with their own individual ways of doing things. Not only did the X-CAN v3 spotlight the differences between the two in sharp relief, but it showed nonchalant disdain – almost as if to say, 'bring on something better'!

4hero's 'Cosmic Tree', complete with its powerful Moog basslines and athletic acoustic drumming, showed the Musical Fidelity box to be unremittingly powerful and big booted – I heard the Sennheisers pummel out bass like never before, but with dizzying speed and grip. Impressive as it was, it seemed just a touch uptight, so I switched to the DT990s, only to find a fuller and more breathy bottom end.

Moving up to the midband, the snares had tremendous 'thwack' through the HD600s, with brilliant attack transients and a metronomic

sense of timing. Treble sounded more open than with my v1 (just a bit brighter, too), but a move to the DT990s confirmed it was far more atmospheric than even the HD600s could convey.

The great thing about the X-CAN v3 is its bottomless pit of power, allied to fantastic smoothness and supreme incision. It is tube aspirated, but does not sound it – but nor does it sound like a transistor design either. The new version brings real depth and breadth to the soundstaging, which wasn't quite as impressive as it could have been in previous incarnations. It's also punchier and more dynamic too, while remaining smooth and even right up the frequency band. The upper mid is still just a tad brightly lit, but the extra bass push makes it less obvious. Indeed, given that it's highly likely to be used with clinical sounding German headphones (HD600s take a bow), fine as they are, I'd have liked just a touch more colour(ation) – but it's churlish to complain when all this box is doing is dissolving out of the picture, only to show the faults of the ancillaries in sharp relief! In truth, it is superb – head and shoulders above Creek's OBH-11 and not far behind Sugden's (more expensive) HeadMaster.

## VERDICT ●●●●£

Powerful and sweet sonics make this an essential upgrade for even the best of headphones.

**MUSICAL FIDELITY**  
X-CAN . £249.00

Musical Fidelity  
☎ +44 (0) 208 900 2866  
www.musical-fidelity.co.uk

# It's-A-



**Orelle's back with a vengeance. After its cracking new integrated amplifier we reviewed last month, we can happily report that the matching CD100evo silver disc spinner is also a peach. Dominic Todd can resist anything but temptation...**

If you've not heard of Orelle, or aren't quite sure of just where you know them from, then you won't be the first! They are a typical example of the once thriving British hi-fi 'cottage industry'. Unlike so many others however, they've grown into a fully fledged 'small scale' manufacturer. Still, they don't exactly release products every other month a la Musical Fidelity. The last Orelles I remember were some very fine two box CD players from the mid-nineties, and if I'm not mistaken, the last player we reviewed from them was the CD100e way back in March 1997.

Six and a half years later the world has moved on but here again we have the Orelle CD100e! This time, though, the e stands for evo (as in evolution, geddit?), and the player has certainly evolved in terms of aesthetics. The chunky bare aluminium casing and front panel is very vogue, and the curved side panels certainly make it stand out from the crowd. In light of the excellent basic finish it comes as something of a disappointment to find rather plasticky buttons and a mechanism that sounds like a radio controlled car revving up, as it's switched on.

Still, the internal electronics show a great deal of thought. It's pleasing to see that Orelle have stuck to multi-bit technology with their latest

model. Furthermore, the separate DAC board has its own power supply. The rest of the player is powered by a substantial toroidal transformer, and there's plenty of quality componentry and design about, from the Aerovox capacitors and discrete audio output, to the damping panels used to quell resonance from the lid. I did rather feel that offering digital outputs as an option is rather cheeky, and that not having them really doesn't affect the sound quality, yet a switchable display is a nice touch.

## SOUND AFFECTS

Beautifully engineered it may be, but Orelle can't afford to be complacent when there's some serious competition around this price from the likes of Cyrus, Arcam, Exposure, and, not forgetting, the super value Marantz CD6000KI. First disc to hit the draw was Roysopp's 'In Space'. This ambient music really suited the machine well. It sounded most transparent, with a well integrated and coherent balance. The bass response didn't quite have the authority and weight of my own two-box reference, but it was at least taut and had a fair depth to it. Subtle details in the treble were well resolved without sounding splashy, in the manner of some older multi-bit players. Generally it was an involving listen with only a lack of serious

weight counting against it.

Carol Kidd's 'Bidin' my time' showed off the CD100's fine soundstaging. Vocals were dead central, and gave a pleasing insight into Kidd's timbre. Likewise, the piano's presence and place couldn't be faulted. The only concern again focused around the bass, with the double bass lacking in body, although not timing, which kept the piece moving at the foot tapping pace required of it. The delicate brush of percussion had a lightness of touch that was once thought to be the preserve of single-bit players alone. Yet, there were times when the overall balance was perhaps a tad too delicate. It was as though the Evo was tiptoeing its way through the music when it perhaps should have instead been stamping a little more authority on it.

Good soundstaging was another forte of the Orelle's shown with Tom Wait's 'Better Off Without a Wife'. The throaty vocals lost little in reproduction, and the live atmosphere was well captured. There was enough background audience banter resolved without it becoming distracting as some more analytical players might do. You probably won't be surprised to hear that it was the upright bass that lacked presence, and this rather undermined the song, as Wait's husky vocals weren't quite offset enough. Still, it didn't spoil the

# Dishy Evo!

Orelle



performance and it was generally reproduced in a beguiling manner.

To see how the CD100 performed with classical music, the next disc tried was Rimsky-Korsakov's 'The Story of the Kalendar Prince'. It was pleasing to find that the Orelle's balance didn't really change here and that it wasn't averse to classical music as previous Orelles have been. The timbral quality from the solo violin and clarinet were as good as could be hoped for from this price of player, and the brass section had a wonderfully powerful and raspy nature that really engaged the listeners attention. In the light of this, a touch more decay from the percussion would have further improved the balance, although this is perhaps asking a little too much of a player of this standard. Less surprising was the lack of authority given to the lower string sections, although this wasn't as much of an annoyance as it had been with previous types of music.

The delicate finger work from plucked strings was nice and transparent, and the player had enough dynamic spirit to make the listener wince when the music demanded it. Yet this wasn't always necessarily for the right reasons. Whilst the CD100's powerful, dynamic sound generally impressed, when the orchestra became particularly busy, the sound did tend to harden rather like the less well sorted multi-biters of old. I will give the Orelle the benefit of the doubt here, however, as this is a particularly

tough and perhaps even rough piece, and the hardening characteristic didn't crop up anywhere else. That having been said, a little extra time in choosing an interconnect with smooth top end balance would be time particularly well spent in the Orelle's case. Otherwise, a slightly rougher treble than one would expect from a modern CD player could spoil the listening experience. Over all I'd happily exchange some rivals syrupy blandness for the Orelle's rougher yet more engaging qualities.

Just as with other models in Orelle's recent range, the CD100evo is beautifully built and makes many other models from greatly esteemed manufacturers look dull. The lack of a digital output as standard is disappointing but everything else, including a switchable display, is standard. The sound quality is in many ways a reflection of the rest of the machine, i.e. generally well honed with just an odd, surprising flaw. Any multi-bit fan will immediately feel at home with the Orelle, and enjoy the type of powerful mid-range presence, decent timing and fine integration that the best multi-bit machines are so good at.

Those more used to

smoother single bit players may just find the Orelle a little too rough around the edges. Either way, the CD100 could certainly do with greater authority in the bottom end, but then I guess if this was the case, no one would ever sell any two box players. For those left wanting with the current choice of single bit CD players, or if you have a system which you feel could do with a bit more of an edge, then I'd heartily recommend the Orelle. Even if it sounds a bit too forward for your liking, it may be well be worth an audition: Just make sure you chose your cables carefully. This is a very welcome return from Orelle and well worth a listen.

## VERDICT ●●●●

Extremely engaging and musical sound, but maybe a tad too bracing for some tastes. Superb aesthetics complete an attractive package.

**ORELLE CD100EVO** £1,200  
Tel: +44 (0) 20 8991 9200  
[www.orelle.freeserve.co.uk](http://www.orelle.freeserve.co.uk)

## MEASURED PERFORMANCE

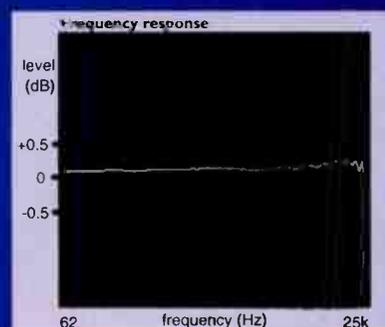
The CD100 Evo has a notable lift in output toward high frequencies, enough to give its sound a little sheen or brightness. This effect will also enhance detail.

Distortion levels were a little higher than usual at 0.02% at -30dB measuring all harmonics to 20kHz, whilst at -60dB the figure was 0.57%, when 0.33% is possible. This brought the EIAJ dynamic figure down to 106dB, where 110dB is possible.

With an output of 2.13V the CD100 Evo is normal enough.

This player measures a little below the best, but the shortfall isn't great. It will likely sound bright and detailed. NK

-30dB	0.02	0.02
-60dB	0.57	0.55
-90	032	33
Separation	left	right
1kHz	95	96
20kHz	83	83
Noise (IEC A)	-107dB	
Dynamic range	106dB	
Output	2.13V	
Frequency response	4Hz-21.4Hz	
Distortion	left	right
-6dB	0.018	0.016



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# noel keywood

**W**hen I listened to the Graaf GM20 this month I could feel my hand sliding toward my wallet. It's a spectacular amplifier in almost every sense, more so than solid-state designs - yet very much like them too. Which is both good and bad. This makes the GM20 something of an enigma.

It's a fascinating amplifier that raises a lot of issues, unlike most hi-fi products which are, in the great sea of time, just 'product'. The Graaf is in different, ground breaking territory. It's one of the few truly direct coupled valve amps available today. Eliminating the output transformer makes it a ground breaking product, although the Futterman had come before.

The idea of direct coupling valves to the outside world is fine when you're dreaming of perfection and how to achieve it, but a little less than fine when you delve into the practical difficulties and possible consequences of something going wrong. Many moons ago, faced with the need to make an output transformer for an amp using high power 211 transmitter triodes Andy Grove and I paid a visit to a new transformer supplier, one that could handle our requirements. It wasn't quite what I had expected. These people made power transformers - you know, those giant things that stand 4ft high and have big ceramic insulator sticking out of the top, like rhinoceros horns. Trouble is, they do more damage.

I looked around and quaked. Really high voltages - kilovolts - are not something I should be getting involved with, I thought. People who know have whispered to me "you don't walk away"! Alive, that is. It brought home to me the fact that we were dealing with something a little - er - serious.

Now the Graaf, bless its output triodes, isn't in this league. It's gorgeous looking 6C33C output valves need around 400volts. That still isn't what I'd like to put through a pair of loudspeakers should anything go wrong, and thankfully Graaf think so too and wisely fit protection circuits to prevent this happening.

**“ The audio world desperately needs an all-new thermionic device! ”**

By using a clever circuit arrangement known as a Circlotron (see <http://circlotron.tripod.com>), together with low impedance output valves, the GM20 manages to achieve true, direct coupling of the output stage to the loudspeaker. Since the output transformer is an inordinately complex and potentially obstructive device when it comes to sound quality, and since true direct coupled valve amps were virtually unknown until the low impedance 6C33C came in to land, the GM20 was an amplifier I had to hear. It was a revelation in many ways.

In just about every area you can imagine, except stage depth, the GM20 was spectacular. It put density into singers and instruments and had enormous detail retrieval, most obvious in its incredibly fine but extremely energetic treble. Bring this into the mid-band and I suspect it contributed to a fine sense of insight. Treble was the sweetest and most vibrant I have heard and down at the low frequency end, bass was just solid and fast.

The only big reservation I had was that the sound stage lacked depth, and this was a disappointment. There wasn't the sense of openness I expect to hear from valves, especially

single-endeds which are almost holographic.

This would seem to suggest output transformers are responsible for stage depth and, also, that the effect is artificial. Direct coupling, as used in transistor amps, as well as the valve GM20, lacks this quality. But it isn't a very convincing argument.

Others who know better than me protest that the 6C33C is a regulator valve never designed for audio and, like the PL509, pressed into service in a hi-fi amplifier it's inadequacies start to show. This amplifier produces a lot of distortion (2%) even at low levels, whereas a conventional valve amp produces twenty times less at around 0.1%.

Other factors may well be holding the GM20 back. Conventional solid-state power supplies aren't the best idea when you graduate to high transparency output stages. They pulse the incoming mains and produce dirty waveforms. A good valve amp power supply, with valve rectifiers, gets closer to perfection. Had the GM20 been fitted with a supply like this, and had it been a bit more linear it may well have sounded near perfect.

What a pity there are few alternatives to the 6C33C valve, especially affordable ones in good supply. The audio world desperately needs an all-new thermionic device!

All the same, this is a fascinating amplifier. It offers the basic presentational abilities of solid-state, but with a greatly expanded tonal palette and profound detailing. Images had a size that surprised me too; it also has scale.

My hand nearly made it to my wallet but, like Peter Sellers in *Dr Strangelove*, I managed to wrestle it off. Then I found a 212 in the loft and realised that perhaps, just perhaps, one day I might possess a truly perfect hi-fi amplifier. ●

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

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 it's humble price it delivers a full and rich sound with great detail and good depth." Kecl82 weighs 9kg. External dimensions are 30cm(w)x23.5cm(d)x11cm(h)

**NEW KIT****KECL82 VALVE AMPLIFIER KIT****£195**

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 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".

**KIT6550 VALVE INTEGRATED AMPLIFIER KIT****£615****KAT6550 VALVE POWER AMPLIFIER KIT****£580**

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 banana 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).

**KEL84 VALVE INTEGRATED AMPLIFIER KIT****£298**

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 65N7 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)

**2A3 PSE INTEGRATED AMPLIFIER KIT****£570**

# PROBABLY THE BEST DIY KITS IN THE WORLD



World Audio  
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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



## SERIES II MODULAR PRE-AMP KIT



KIT34 is a 32 watt stereo valve integrated amplifier, featuring a pair of EL34s, in push-pull mode, per channel, plus an ECF80 pentode/triode as input/phase splitter. The power supply is valve rectified (2 x SU4), 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 controllable from the front. Simon Pope says, "This integrated brings 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)

## KAT34 VALVE POWER AMPLIFIER KIT

£480

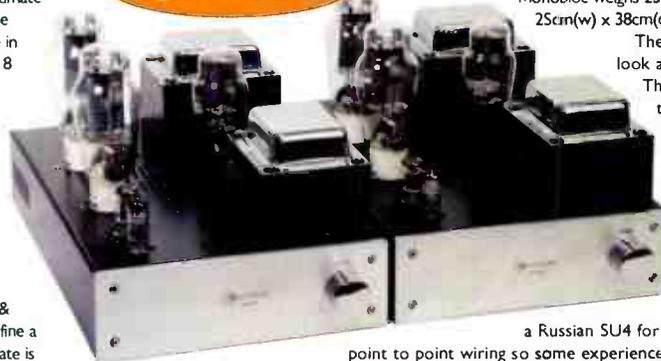
## KIT34 VALVE INTEGRATED AMPLIFIER KIT

£515

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 SU4 rectifier valve in the power supply, in combination with a 10H choke, giving an extremely quiet supply. Both mains and output transformers use 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 SU4s 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

### NEW KIT



monobloc weighs 23kgs., external dimensions with valves: 25cm(w) x 38cm(d) x 22cm(h) per monobloc.

The 300B PP monobloc shares the same look and chassis as the 300B PSE monobloc. The 300B PP kit has been created for those who prefer a bit more dynamics and drive to their valve sound. With a pair of 300Bs in push-pull configuration providing 26 watts output, these beauties will drive most modern loudspeakers to perfection. Andy Grove's design is totally feedbackless, using a 6AU6 pentode as the input valve and a 5687 as the phase splitter; the power supply uses

a Russian SU4 for rectification. The kit is constructed by point to point wiring so some experience is required. 300B PSE owners do have the option to buy the conversion kit for £250.00 to turn their monoblocs to push-pull status. Each monobloc weighs 23kg.

## 300B PSE MONOBLOC KIT

£895

## 300B PP MONOBLOC KIT NEW

£895

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.



## HD83 VALVE HEADPHONE AMPLIFIER KIT

£195

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

**Kel84 Upgrade kit**

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****KiT6550 Upgrade kit**

1 x 100K Alps blue Potentiometer  
2 x 2200uF, 16V Black Gate  
4 x 100uF, 100V Black Gate  
4 x 0.22uF, 630V Jensen paper  
in oil

**£130****KaT6550 Upgrade kit**

2 x 2200uF, 16V Black Gate  
4 x 100uF, 100V Black Gate  
4 x 0.22uF, 630V Jensen paper  
in oil

**£120****KiT34 Upgrade kit**

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**Mains transformers & Chokes****KIT6550/KAT6550 mains transformers**

2 inch stack, 130mm(h)x120mm(w)x135mm(l) drop through fitting with zinc cap. Secondaries: 0V-240V 300mA, 3.15V-5V, 6A, 3.15V-0V-3.15V, 9A. Suitable for 120V & 240Vac operation

**KEL84 mains transformer**

1.5 inch stack, 90mm(h)x 80mm(w)x 95mm(d) drop through fitting with zinc cap. Secondaries: 0V-240V 300mA, 3.15V-5V, 5.5A, suitable for 120/240V operation

**KIT88/KAT88 mains toroidal transformer**

120mm dia. x 60mm(h). Secondaries: 195V-0V-95V, 450mA/0V-27V, 100mA/3.15V-0V-3.15V, 9A, suitable for 120/240V operation

**KIT34/KAT34/KIT6550/KAT6550 choke**

1.25 inch stack, 65mm(h)x105mm(w) with fitting holes x 60mm(d), clamp fitting, 2.5 H, 350mA

**300B PSE mains E/I transformer**

130mm(h) x 95mm(w) x 115mm(d).  
drop through fitting with zinc cap.  
Secondaries: 380V-0V-380V, 180mA/150-0V-150V, 25mA/0V-5V, 1.2A/0V-5V, 1.2A/0V-5V, 3A/3.15V-0V-3.15V, 0.4A suitable for 120/240V operation

**KEL80 mains toroidal transformer (encapsulated)**

130mm dia. x 65mm(h). Secondaries: 195V-0V, 95V, 390mA/0V-27V, 100mA/3.15V-0V-3.15V, 7.5A, suitable for 120/240V operation

**HD83 mains toroidal transformer**

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

**PSU-II mains toroidal transformer**

80mm dia. x 35mm(h). Secondaries: 0V-270V, 60mA/0V-10V, 2A, suitable for 120/240V operation

**TRANS1 mains toroidal transformer**

95mm dia. x 50mm(h). Secondaries: 0V-370V, 150mA/0V-6.3V, 3.5A 300B E/I choke 65mm(h) x 70mm(d) x 80mm(w) open frame fitting, 10H, 180mA.

**KEL84 E/I choke**

0.5 inch stack, 40mm(h)x 35mm(d)x 70mm(w) clamp fitting, 1H, 250mA

**PSU-II E/I**

40mm(h) x 35mm(d) x 70mm (w) clamp fitting, 15H, 20mA

**KIT34/KAT34 mains transformer**

2.5 inch stack, 120mm(h)x115mm(w)x95mm(d), drop through fitting with zinc cap. Secondaries 365V - 0V - 365V, 300mA/0V - 5V, 6A/3.15V - 0V - 3.15V, 7.5A. Suitable for 120/240V operation.

**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 Oh - 8 ohms, 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 63mm(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

**HD83 E/I single ended output transformer**

40mm(w)x50mm(l) x55mm(h). Primary-secondary 4K - 4 x 64ohms windings, max o/p-1 watts, max current-25mA valves-ECL83 etc

**Pre-II E/I driver transformer**

80mm(w)x60mm(l) x65mm(h). 6:1 step down transformer, max current-10mA valves-6922 etc pre-amp stage

**300B PSE E/I parallel single ended output transformer**

130mm(h) x 95mm(w) x 115mm(d). drop through fitting with zinc cap. Primary 1K5 Secondary 8R, output .

**Printed circuit boards**

Kel84 Printed Circuit Board 280mm(w) x 135mm(l) x 1.6mm(d).

0/KaT88 Printed Circuit Board 140mm(w) x 310mm(l) x 2.4mm(d).

Kel34 Printed Circuit Board 140mm(w) x 310mm(l) x 2.4mm(d).

80 Printed Circuit Board (a pair) 120mm(w) x 215mm(l) x 2.4mm(d).

HD83 Printed Circuit Board 140mm(w) x 160mm(l) x 1.6mm(d).

PSU-II Printed Circuit Board 105mm(w) x 130mm(l) x 1.6mm(d).

PRE-II Printed Circuit Board 105mm(w) x 130mm(l) x 1.6mm(d).

PHONO-II Printed Circuit Board 105mm(w) x 130mm(l) x 1.6mm(d).

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### amplifier kits description

amplifier kits description	order No.	qty	uk (inc vat & carriage)	overseas (exc. vat & carriage)
Kec182 valve amplifier kit (with valves)(available 01/12/02)	Kec182 (with valves)	<input type="checkbox"/>	£195.00	£170.00
2A3 PSE valve integrated amplifier kit (with valves)	2A3 PSE (with valves)	<input type="checkbox"/>	£570.00	£485.00
2A3 PSE valve integrated amplifier kit (without valves)	2A3 PSE (without valves)	<input type="checkbox"/>	£470.00	£400.00
KaT6550 valve power amplifier kit (with valves)	KaT6550 (with valves)	<input type="checkbox"/>	£580.00	£495.00
KaT6550 valve power amplifier kit (without valves)	KaT6550 (without valves)	<input type="checkbox"/>	£450.00	£380.00
KIT6550 valve integrated amplifier kit (with valves)	KIT6550 (with valves)	<input type="checkbox"/>	£615.00	£525.00
KIT6550 valve integrated amplifier kit (without valves)	KIT6550 (without valves)	<input type="checkbox"/>	£485.00	£415.00
KAT34 valve power amplifier kit (with valves)	KAT34 (with valves)	<input type="checkbox"/>	£480.00	£410.00
KAT34 valve power amplifier kit (without valves)	KAT34 (without valves)	<input type="checkbox"/>	£415.00	£354.00
KIT34 valve integrated amplifier kit (with valves)	KIT34 (with valves)	<input type="checkbox"/>	£515.00	£440.00
KIT34 valve integrated amplifier kit (without valves)	KIT34 (without valves)	<input type="checkbox"/>	£450.00	£385.00
Kel84 valve integrated amplifier kit (with valves)	Kel84 (with valves)	<input type="checkbox"/>	£298.00	£255.00
Kel84 valve integrated amplifier kit (without valves)	Kel84 (without valves)	<input type="checkbox"/>	£268.00	£230.00
PSU II power supply unit module	PSU - II	<input type="checkbox"/>	£205.00	£175.00
PRE II pre-amplifier module	PRE - II	<input type="checkbox"/>	£215.00	£185.00
PHONO - II phono stage module (with valves)	PHONO II	<input type="checkbox"/>	£110.00	£95.00
PAS II passive pre-amplifier module with 10K or 50K attenuator (pls specify)	PAS II	<input type="checkbox"/>	£235.00	£200.00
Moving Coil step up transformers	MC - step up (pair)	<input type="checkbox"/>	£80.00	£68.00
HD83 Valve Headphone amplifier kit (with valves)	HD83 (with valves)	<input type="checkbox"/>	£195.00	£167.00
300B PSE Valve Monobloc amplifier kit (with valves) - a pair	300B PSE (with valves)	<input type="checkbox"/>	£1197.00	£1020.00
300B PSE Valve Monobloc amplifier kit (without valves) - a pair	300B PSE (no valves)	<input type="checkbox"/>	£895.00	£765.00
300B PP Valve Monobloc amplifier kit (with valves) - a pair	300B PP (with valves)	<input type="checkbox"/>	£1197.00	£1020.00
300B PP Valve Monobloc amplifier kit (without valves) - a pair	300B PP (no valves)	<input type="checkbox"/>	£895.00	£765.00
300B PP conversion pack( converts a 300B PSE to 300B PP)	300B PP (conversion pack)	<input type="checkbox"/>	£250.00	£215.00

### parts description

parts description	order No.	qty	uk (inc vat & carriage)	overseas (exc. vat & carriage)
2A3 PSE mains transformer	2A3 PSE mains T	<input type="checkbox"/>	£115.00	£98.00
KIT/KaT6550 mains transformer	6550 mains T	<input type="checkbox"/>	£120.00	£105.00
KIT34 mains transformer	KIT34 - mains T	<input type="checkbox"/>	£100.00	£85.00
Kel84 E/I mains transformer	Kel84 - mains T	<input type="checkbox"/>	£60.00	£47.00
HD83 mains toroidal transformer	HD83 - mains T	<input type="checkbox"/>	£40.00	£34.00
PSU-II mains toroidal transformer	PSU-II - mains T	<input type="checkbox"/>	£40.00	£34.00
300B PSE E/I mains transformer	300B - mains T (each)	<input type="checkbox"/>	£115.00	£98.00
KIT34 E/I chokeKIT6550 E/I UL	KIT34 - choke	<input type="checkbox"/>	£40.00	£34.00
Kel84 E/I choke	Kel84 - choke	<input type="checkbox"/>	£20.00	£17.00
KIT6550 choke	KIT6550 choke	<input type="checkbox"/>	£40.00	£34.00
300B PSE choke	300B - choke	<input type="checkbox"/>	£40.00	£34.00
2A3 PSE choke	2A3 PSE choke	<input type="checkbox"/>	£40.00	£34.00
PSU-II E/I choke	PSU-choke	<input type="checkbox"/>	£20.00	£17.00
KIT6550 E/I UL push pull output transformer (4 ohm? or 8ohm?)	6550 - O/P T (pair)	<input type="checkbox"/>	£130.00	£112.00
KIT34 E/I UL push pull output transformer (4ohm? or 8ohm?)	34 - O/P T (pair)	<input type="checkbox"/>	£130.00	£112.00
Kel84 E/I push-pull output transformer (4 ohm? or 8ohm?)	Kel84 - O/P T (pair)	<input type="checkbox"/>	£90.00	£78.00
2A3 PSE parallel single ended output transformer	2A3 PSE O/P T (pair)	<input type="checkbox"/>	£130.00	£112.00
HD83 E/I single ended output transformer	HD83 - O/P T(pair)	<input type="checkbox"/>	£100.00	£86.00
Pre-II E/I driver transformer	PRE-II - driver T(pair)	<input type="checkbox"/>	£80.00	£68.00
300B PSE E/I output transformer(4 ohm? or 8ohm?)	300B PSE - O/P T (each)	<input type="checkbox"/>	£110.00	£94.00
300B PP E/I output transformer(6 ohm)	300B PP - O/P T (each)	<input type="checkbox"/>	£110.00	£94.00
Kel84 Printed Circuit board	Kel84 - PCB	<input type="checkbox"/>	£30.00	£25.50
Kel34 Printed Circuit Board	Kel34 - PCB	<input type="checkbox"/>	£12.00	£11.40
Kel80 Printed Circuit Board	Kel80 - PCB(pair)	<input type="checkbox"/>	£52.00	£44.65
HD83 Printed Circuit Board	HD83 - PCB	<input type="checkbox"/>	£20.00	£17.00
PSU-II Printed Circuit Board	PSU-II - PCB	<input type="checkbox"/>	£20.00	£17.00
PRE-II Printed Circuit Board	PRE-II - PCB	<input type="checkbox"/>	£20.00	£17.00
PHONO-II Printed Circuit Board	PHONO-II - PCB	<input type="checkbox"/>	£20.00	£17.00
Tag board 2 x 16 connections (hard wiring)	TAG	<input type="checkbox"/>	£4.00	£3.00
Alps blue audio grade 50K dual log potentiometer	ALPS - 50K	<input type="checkbox"/>	£14.00	£12.00
Alps blue audio grade 100K dual log potentiometer	ALPS - 100K	<input type="checkbox"/>	£14.00	£12.00
Stepped attenuator with resistor pack 10K of 50K (pls specify)	Attenuator + resistor pack	<input type="checkbox"/>	£75.00	£65.00
LCR 22.5uF 440Vdc polypropylene capacitors	LCR - 22.5U	<input type="checkbox"/>	£10.00	£8.50
Jensen 0.47uF 630Vdc paper in oil capacitor	JEN - 0.47U 630V	<input type="checkbox"/>	£20.00	£17.00
Jensen 0.22uF 630Vdc paper in oil capacitor	JEN - 0.22U 630V	<input type="checkbox"/>	£16.00	£14.00
Jensen 0.22uF, 400V paper in oil capacitor	JEN - 0.22U, 400V	<input type="checkbox"/>	£12.00	£10.20
650V safety gloves (a pair)	SAFETY GLOVES	<input type="checkbox"/>	£20.00	£17.00
2A3 PSE/6550/34 cage	2A3 PSE/34/6550 cage	<input type="checkbox"/>	£80.00	£68.00
2 metre of adhesive copper foil (EMI Shield) 25.4mm width	Copper Foil (2 metre)	<input type="checkbox"/>	£12.00	£10.50

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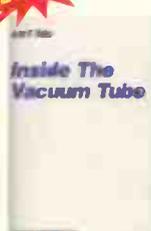


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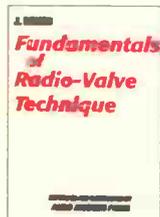
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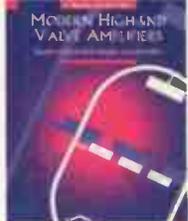
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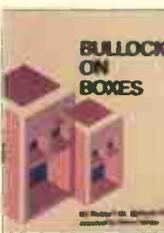
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## KEYED IN

Philips new range of 'key rings' combine USB data storage with either MP3 audio or digital camera functions. Made from magnesium, they're no bigger than a pack of chewing gum, weigh 35g and some are available with a neck strap that houses all the controls, so can be worn and operated around the neck. All the key rings have been designed for maximum ease of data transfer. They plug straight into any PC's USB port without the need for cables, drivers or any other additional software. This allows CD music or pictures to be downloaded and uploaded to a PC quickly and simply. An added advantage of this instant compatibility is that the Philips key ring products also double as compact external drives for PCs. They are ideal for transferring data between computers, carrying out quick back up of important files, or storing personal information. The £119 KEY006 offers 128 MB of flash memory capacity, which is enough for four hours of WMA music files or two hours of MP3 audio. All the controls are integrated into the neck strap, which means the controls are always within convenient reach. The £99 KEY004 has the same neck strap remote control but with 64 MB of flash memory. The £99 KEY005 and £79 KEY003 have 128 MB and 64 MB of flash memory respectively and include a handy five-key in-cord remote control which allows the player to remain in a pocket or bag while accessing its functions. All models run on rechargeable batteries that can be charged via the USB and provide 6.5 hours of playback. An additional clip for AAA batteries allows extended use. Check out [www.thingstodoyourthing.com](http://www.thingstodoyourthing.com).



## SOUNDING OUT

Apple's new Soundtrack is an innovative, royalty-free music production tool. Previously available only with Final Cut Pro 4, it is now available as a standalone product for £249. It includes more than 4,000 royalty-free, professionally-recorded audio loops and sound effects, giving creative professionals a powerful and easy-to-use tool to create high-quality music scores, and scales to meet the needs of audio producers or DJs who start their projects in Soundtrack and then migrate to a digital audio workstation for the rest of their work. Regardless of the musical key or tempo in which the loop was originally recorded, Soundtrack will match the audio loops and sound effects within a composition in real-time, making the project sound harmonious instantly. A powerful search engine gives

users the means to quickly locate desired sounds by instrument, genre or mood, working with a new open audio format called 'Apple

Loops' or any AIFF, WAV, and Acid format audio files. It ships with over 30 professional, high-quality audio plug-ins from Apple and Emagic. Plug-ins like Platinum Verb, SpectralGate, Multiband Compressor and AutoFilter, enable users to combine effects with individual tracks to create sophisticated audio. You can find more information at [www.apple.com/uk/soundtrack](http://www.apple.com/uk/soundtrack).



## BIG

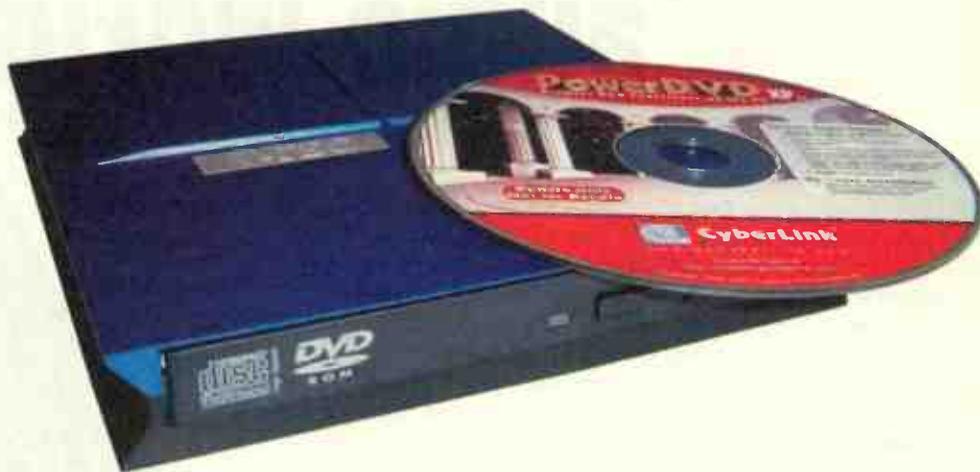
Guinness World Records has awarded Archos's AV380 the award of 'the Worlds Highest Capacity Multimedia Jukebox'. The unit is the highest capacity of the AV300 Series, offering 80GB of storage space on its internal hard drive. Created by Archos (France), the AV380 can store and play MP3 music tracks as well as MPEG4 video files, and all other file types just like a spare backup drive. Around 1,000,000 JPEG format photographs can be stored, or 160 hours of MPEG4 video, or no less than 64 days-worth (i.e. 2000 CDs) of MP3 music files! Battery life is only a mere 4 hours on video replay or 8 hours on audio play, however! Price is a hefty £759.99. Check out [www.archos.com](http://www.archos.com) for more details.

## PIONEER PLUS!

Pioneer Multimedia Europe has announced a range of DVD/CD writers which work with both DVD+R/RW and DVD-R/RW discs. Along with the new DVR-K12D internal and DVR-SK12D external (with USB II or IEEE 1394 interfaces) DVD/CD writers, the DVR-S606 is a high capacity optical storage system that enables users to write a wide variety of files to DVD for storage or playback in other DVD devices. Typical DVD applications include the authoring, editing and storing of video files, developing digital music catalogues, building image libraries and backing up data. In common with all current Pioneer DVD writers, the DVR-S606 is compatible with +R/RW discs - a move that directly responds to consumers' requests that DVD writers should handle various formats. The DVR-S606 supports high-speed writing of 4x with DVD-R discs, 2x with DVD-RW4, 4x with +R5, and 2.4x with +RW. It also enables 16x writing speed for CD-R and 10x for CD-RW.



# Slimline Tonic?



Here's a new DVD-ROM/CD-R drive that's as small as it could possibly be. David Price tries VTEC Industry Europe's new V-DISK USB SLIMLINE COMBO...

Should perchance you have not heard of VTEC, they're a small UK based operation specialising in computer storage products, all of which espouse that old adage, 'less is more'. You'll find a range of compact designs, including an external hard disk drive and this, the V-DISK external optical disc writer, complete with DVD-ROM capability.

Why would you want such a product? Well, there are a lot of older computers around which don't come bundled with DVD-ROMs, and so here's an easy way to play your favourite movie discs without having to wield a screwdriver in anger. This is particularly useful for notebook users, many of which still don't come with DVD read/playback as standard. The V-DISK, then, is a handy way of killing two birds with one stone and bringing (16x12x24 speed) CD-R burning and (12x) DVD reading capability in one small package.

And small it is... At only 150mm wide, 145mm long and just 22mm tall, it's highly portable. The 375g weight means it's no chore to cart around, and there's even a little velvet carrying case for it, similar to the sort of thing you get with Sony MiniDisc portables – very nice too.

This drive will work with both Mac and PC platforms, using its USB 2.0 port for speedy data transfer – although it is, of course, backwardly compatible with all USB 1.1 machines (albeit at a slower speed), meaning it

will work with virtually every PC from around 1996. The manufacturer specifies a Pentium II or higher processor (and compatibles), and says that it runs under Windows 98SE, ME, 2000 or XP operating systems, as well as Mac G3, G4, iBook or later systems, equipped with USB2.0 or USB1.1 ports and using Mac OS 8.6 through to 9.X operating systems. The drive itself has a 2MB buffer with JustLink buffer underrun protection.

The package comprises the V-DISK, a 5v mains power supply, the USB 2.0 cable and aforementioned carry bag, and a blank CD-R. There's also a copy of Nero (hurrah!), PowerDVD and a driver disk, plus a reasonably well written multilingual manual. My system, which uses Windows XP, did not require this – the drivers automatically installed – although earlier versions of Windows will need to do a ye olde driver install routine. Urgh!

The unit is well made, and the disc drawer clicks in and out with satisfying precision, although I can't say it's the sexiest bit of computer kit I've seen. My biggest gripe in use was simply that you need to plug it into a mains adaptor – isn't it possible to phantom power it from the USB socket? Thus aspirated, the V-TEC would be ever so much more easy to use. Still, the power supply is a good quality unit, with a robust cable, and doesn't give the impression that it's going to fall to pieces within weeks – unlike Sony's

Digital Relay I tested a couple of years back, for example...

In use, the V-DISK performed well. Nero reported it was indeed capable of 24x CD read speeds, and had no trouble writing to and from it. I found it burned perfectly good sounding CD-R disc copies (purely for my own use, of course, officer...). There was very little discernable difference between the source disc and the copies, save a little softening of the bass and smoothing of the treble – par for the course with a decent optical disc writer. It was reliable too, showing no nasties during the test period.

All in all, it's a fine bit of kit – but at a price, which is the clincher! If you can find it retailing for considerably less than VTEC's quoted £169 plus VAT (and I suspect you should be able to – just look in Micro Mart or do a web search), then it is decent value – if not, then close but no cigar...

#### SPECIFICATIONS:

- USB 2.0 specification compliant Interface (Backward Compatible to USB 1.1)
- 8X speed DVD ROM
- 24X-12X-24X speed CD-R/RW
- Headphone and lineout jack
- JustLink technology to prevent recording buffer underrun error
- Nero recording software. 2MB buffer memory
- CD Text
- Overburn capable

VTEC V-DISK USB SLIMLINE  
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# Go for it!

David Price tries out Imaton's new FlashGO! 2.0 universal hi-speed memory card reader/writer...

**D**igital audio portables are a weird and wonderful breed – there's a welter of different types and specifications. Some come with flash memory built in, others rely exclusively on removable memory cards, others have both. More confusingly still, the type of flash memory cards they use varies from manufacturer to manufacturer. Confused? Me too!

One of the most frustrating things about many of them is that, to download music files, you have to go via the bundled 'music manager' or 'MP3 jukebox' software. This can be effortlessly easy to use, but usually isn't. The result is that you often have to faff around with the machine connected to your PC, wading through all manner of arcane 'Windows Explorer'-style menus, in a bid to squirt music down to your portable machine. Wouldn't it be nice to bypass all this bundled software malarkey and write to your MP3's memory card direct? Enter Imaton's new FlashGO! 2.0.

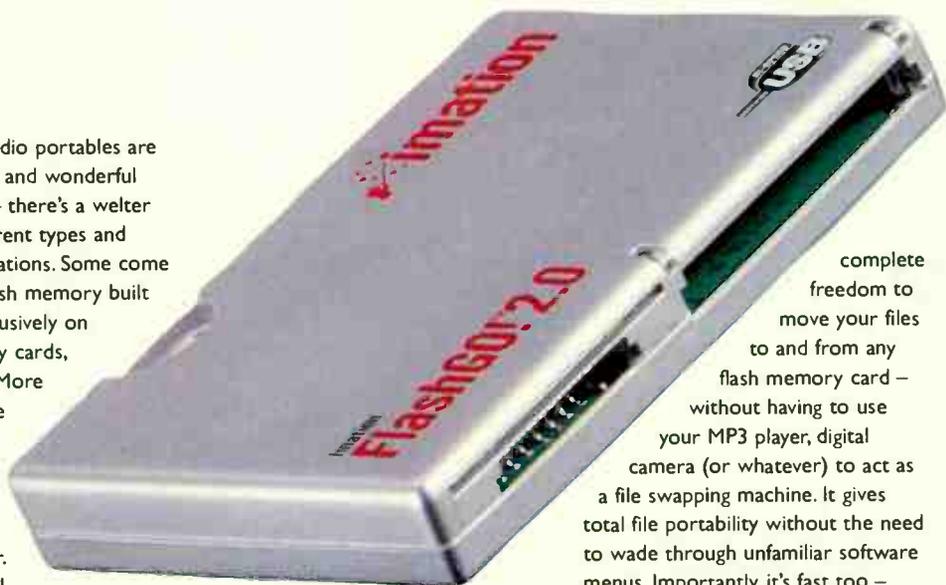
This compact device is not only ideal for reading and writing music files (be it MP3, WMA, ACC, OGG, or whatever), but digital photographs too. It's a multi-slot, flash memory card reader/writer that is able to transfer data 40 times faster than earlier USB 1.1 types (assuming you've got USB 2.0 compatibility – see box). It supports six flash memory card formats, including Compact Flash (Type I and II), Smart Media, Multimedia Card, Secure Digital and Memory Stick and IBM's Microdrive. Being multi-slot, the device also enables users to transfer data from one memory card format to another.

At 63mm wide, 96mm long and

13mm high, it's small and portable and is made from robust but light silver painted plastic. Although an extension USB-to-USB cable is supplied, the unit itself has a captive cable that plugs straight into the computer's USB socket. An external power supply is not required as FlashGO! uses USB bus power supply.

The USB port provides easy plug and play convenience for most of the current operating systems, including Windows 98, 98SE, ME 2000, Windows XP, Mac OS 8.6, OS 9.0 and OS X 10.1. It comes with a CD containing drivers for all systems requiring a driver installation before use, although my computer – running Windows XP – required no installation whatsoever, meaning I really did simply plug it in and go. This done, you simply call up Windows Explorer or your My Computer icon, and hey presto – you have four new 'Removable Disk' icons. Assuming you plug an appropriate flash memory card into the relevant slot on the FlashGO!, you can then drag and drop files of any description across from one 'Removable Disk' drive to the other, or to and from your hard drive, or any combination thereof.

Essentially then, it gives you



complete freedom to move your files to and from any flash memory card – without having to use your MP3 player, digital camera (or whatever) to act as a file swapping machine. It gives total file portability without the need to wade through unfamiliar software menus. Importantly, it's fast too – providing your system has USB 2.0 compatibility. If so, file transfer feels faster than any hard drive (as you'd expect), and if not, then it's still tolerable even with big 128MB memory cards.

At just under £70 it's a fiendishly handy little device if you're a regular digital portable music player user – or a digital camera user for that matter. Recommended.

**IMITATION FLASHGO! 2.0 £70**  
www.imaton.com/uk

#### WHAT IS USB 2.0?

This connection system is the newest incarnation of the Universal Serial Bus, launched some six years ago, offering the ability to plug in devices without having to power down and reboot the computer. USB 2.0 has a maximum data transfer rate of up to 60MB per second, which is forty times faster than USB 1.1 – this is equivalent to transferring a full-length CD in twelve seconds! USB 2.0 is backwards compatible with the older 1.1 system – so all USB equipped computers can use it, but only at the older system's lower data transfer speeds.

#### SPECIFICATIONS

- Four-slot device supports seven card formats:
  - CompactFlash (Type I and II)
  - Smart Media
  - Multimedia Card
  - Secure Digital
  - Memory Stick
  - IBM's Microdrive
  - USB 2.0 compatible
  - Backwards compatible with USB 1.1
  - hot swappable
- Windows 98, 98SE, ME, 2000, & XP  
Macintosh © OS 8.6 through OS X

# Go Forth and Create



Creative Labs has been turning its collective corporate gaze in the direction of mobile and notebook PCs of late. The first result was the superb TravelSound portable loudspeakers out last year, and now it's the turn of the SoundBlaster MP3+ soundcard... David Price listens in.

**W**ell, it took a good long time, but at last we have a small, portable soundcard from Creative Labs, in the shape of the SB MP3+. Funny – you'd think they'd have been first to market with such a thing – but it was New Zealand's Xitel that beat them with its range of tiny USB connected and powered Hi-Fi Link products. Anyhow, it's finally here – and very impressive it is too...

Whereas Xitel's Pro Hi-Fi Link (and its Digital and Analogue predecessors) are designed with one specific application in mind (and succeed so well precisely for this reason), Creative's SB MP3+ attempts to offer an incredibly wide range of features and functions. The company simply doesn't know the meaning of economy – at least in the design sense – meaning that it comes with great connectivity and more software code than your average Windows operating system. In a way, it's great to have everything from an MP3 jukebox to a CD burner included, but the fact that it takes many minutes to install (it almost seems like loading Windows itself!) and has

the average two year PC groaning under the extra load is less welcome – especially if you've already got Nero and Cool Edit already! Urrghhh....

Anyway, without wishing to turn this review into something of Tolstoy-esque proportions, I shall now take a brief run through the card's feature set and attempt the shortest dalliance with some of its bundled software... Are you sitting comfortably?

About the size of a mid-nineties cassette Walkman, albeit a lot lighter, the baby Blaster will set you back around £40 (less, given the inevitable discounting). It's finished superbly (considering its painted plastic body), and boasts gold plated RCA phono ins and outs along the size, allied to TOSLINK digital ins and outs, complete with neat little 'hinged doors' that stop foreign bodies getting inside whilst out on the road. On the opposite side are 3.5mm jacks (again gold plated) for headphones (complete with volume thumbwheel) and microphone. In the centre is the obligatory blue LED, which denotes an audio signal going in and/or out of the card. There's also a small switch to select all-digital, or

analogue and digital operation. A removable clip enables the Sound Blaster MP3+ to be mounted on the back of a notebook display. It hooks up via a USB 1.1 lead, which also carries the power (160mA), so there's no need for fiddly mains adaptors – a great plus point.

Inside, you'll find – just like the previous line of Sound Blaster Live! Cards – the venerable EMU 10K1 sound processor which works up to 16bit, 48kHz resolution. It now has a subwoofer/ centre output though, and comes with Dolby Digital and DTS pass-through capability via its optical digital output. This means that if you play a suitably encoded movie disc in your PC's DVD-ROM drive, and run an optical cable from the SB MP3+ to a Dolby Digital processor (or AV receiver), then you're totally surrounded!

Essentially then, it's a paired-down Creative Labs Live! Platinum 5.1 minus the Live!Drive. It boasts 64 DirectSound streams, 32 DirectSound 3D streams, EAX 1.0 and 2.0, A3D 1.0, Legacy game audio support with SoundBlaster™ 16 headphone, 64 voice hardware polyphony with E-mu's patented 8-point interpolation technology;



SoundFont technology for user-definable wave-table sample sets; includes 2MB, 4MB and 8MB sets and support for digital and Direct Input game devices (but no gameport acceleration). All very nice, but what is missing is any detectable software support for AAC – ho hum...

And so to the software. The Sound Blaster MP3+ comes with Creative MediaSource, a powerful application that enables users to create MP3 tracks from CDs and other sources with real-time audio clean-up, fine-tune audio content, manage their music libraries and burn their own custom CDs. Indeed it's a fully fledged 'MP3 Jukebox' (as they used to say) in its own right. There's a massive range of recording options - you can record from either the analogue or digital inputs in MP3 (including VBR, via the Fraunhofer codec supplied), WMA or WAV format up to 16bit, 48kHz resolution, or rip from your internal CD drive.

Then there are the multifarious plug-ins and pop-up applications, such as CD burning, Creative Graphic Equalizer and support for EAX acoustic effects and CMSS, which create virtual surround sound on stereo headphones and speakers. Creative Device Control is a glorified Windows Volume Control, which mysteriously disappears from your toolbar after the former has been installed. Creative Speaker Settings gives complete control of a 5.1 multimedia system, Creative WaveStudio attempts to do the business of Steinberg's WaveLab or Syntrillium's Cool Edit – and mostly fails, and there's a handy Creative Diagnostics application which tells you why you can't get any sound from your SB MP3+, should the situation ever arise – perish the thought... There's even a rather natty MiniDisc manager, which works in conjunction with NetMD equipped machines – neat, as the Americans would say...

### ON THE MOVE

Pulling it out of its box, and you're greeted with the Sound Blaster

MP3+ itself, plus a stereo coaxial to minijack adapter, USB cable, Quick Start leaflet, User Guide (on CD) and the Creative Software CD containing the aforementioned applications. There are also drivers for Windows 98SE, Me, 2000 and XP.

The unit installed easily enough with Windows XP (may the olden days of setting interrupts and IRQs never return...), but the software CD took seemingly an eternity to load, and I hear my 1.3GHz Pentium notebook creak under the strain. You can, of course, just load the SoundBlaster control software (rather than Media Source and its associated applications), but it still seems like far too much. Bring back driver disks on floppies, say I!

How then does it sound? Well, for £35 or less (let's forget the manufacturer's recommended price) it's superb. It's miles better than the average bundled soundcard for sure, with lots more detail and clarity and a far wider soundstage. There's a sense of air and space, and of overall natural musicality, that the frigid, clinical and thin sounding entry level cards lack. Compared to my reference (for computer audio) Cambridge DACMagic 3, it wasn't half bad – the Cambridge displayed a fuller, richer bass, and better treble extension with slightly better depth and dimensionality, but there wasn't too much in it. The built in analogue to digital convertors aren't bad either, although we're not exactly talking studio grade stuff here – if you're going to do serious analogue archiving, I'd suggest you buy a Terratec AudioSystem EWX 24/96 and nothing less!

There are criticisms, of course, but frankly the sub £40 price nullifies them at a stroke. That EMU 10K1 converts everything into 16bit, 48kHz before processing, regardless of whether it started at 44.1kHz (i.e. from a CD player), so doesn't do bit-for-bit recording – an audiophile black mark. It's way behind the aforementioned Terratec in playback too (obviously, it's not comparing like with like, though), and not quite up to Xitel's more expensive Hi-Fi Links sonically, either – lacking the latter's

smoothness, finesse and incision. Overall though, you've got to admit that it's brilliant value for money, and an extremely handy product. If you need a jack of all trades in a small package, this is the one, but if you want a purpose dedicated off-board DAC for music or movie use then buy the Xitel.



#### SYSTEM REQUIREMENTS:

Intel Pentium II 350MHz, AMD K6 450MHz  
64MB RAM for Windows 98 SE  
128MB RAM for Windows Me, 2000 & XP  
340MB of free hard disk space  
Available USB port  
Headphones or amplified speakers  
CD/DVD-ROM drive required for software installation.

#### SPECIFICATIONS

Line In (Gold-plated, RCA pair)  
Mic In (Gold-plated, 1/8)  
Optical S/PDIF In  
Audio Outputs:  
Line Out (Gold-plated, RCA pair)  
Line/Headphone Out (Gold-plated, 1/8)  
Optical S/PDIF Out  
USB Connector:  
1x Type 'B' port (upstream), bus-powered  
Analog headphone volume control  
Analog/Digital output selector  
Power LED  
Up to 16 bit/48kHz playback and recording  
Bit true recording via SPDIF input  
GM compatible software synthesizer for midi playback  
Easy to use features for enhanced CD, WMA and MP3 playback.  
Rip-Convert CDs to MP3/WMA  
Manage-Organise your music collection  
Playback-Easy to use controls  
Burn CDs-Create your own custom CDs  
Smart Volume Management-Automatically match volume levels across tracks  
Time Scaling-Speed up or Slow down playback  
Bass Boost-Enhance the bass in your music  
10 Band Equalizer-Advanced tone control  
Audio Clean-Up-Remove unwanted noise from old recordings  
CMSS 3D-Virtual 5.1 surround sound with stereo speakers or headphones  
EAX Effects-Add acoustic effects like concert hall to your music.

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# dominic todd

I heard the strangest thing on the radio today. It said that the record industry was pleased by an unexpected rise in the number of CD albums sold this year. Of course it was a shock to hear the record industry to be pleased by anything. Usually they constantly complain of piracy, from compact cassette to downloads, take ever larger shares of total profit and keep stum when times are exceptionally good.

Recently, times haven't been exceptionally good for the music industry, yet they probably haven't been quite as bad as we may have been led to believe. Whatever, it won't be just the music industry that was surprised by the growth of CD sales this year.

Of course the reason sales of CD albums (as opposed to singles) are still strong is probably primarily due to the fact that for the first time in decades we are now being charged a reasonable price. Competition on the internet and high street has brought prices down to below £20 quite often - effectively their lowest ever. In my memory CDs have always been over a tenner, even £15, so taking inflation into account - that's quite a fall in real terms.

Another reason for CD's resilience now is that it really has no competition on the high street. Vinyl is definitely still a specialist format, the once conquering Compact Cassette now being relegated to a shelf at the back of the store that used to house pre-recorded MiniDisc and DCCs!

Yet it's far from being entirely rosy for the format. Sales of CD singles are still pretty depressed. In fact, so depressed that there are those beginning to doubt the validity of charts based upon sales of such singles. Of course there is a very

good reason for falling sales of the CD single. The primary audience for music singles is the teenage market. This is precisely the market who will object the most to having to pay £3-£4 for a single. Don't forget this is probably also the most likely market to take advantage of music downloads that cost from nothing to about £1. With this in mind it's

“ So much for the software you might think, but how's the hardware facing up?

hardly surprising that CD single sales have fallen.

Logically, therefore, one would have expected CD album sales to suffer from the same phenomenon of downloading as singles. Yet this isn't the case. Cost, quite clearly, is a major factor. The average cost of a song on an album is around £1. That's two or three times cheaper than the single, and around the same as a bona fide download off the internet. There's also something tangible and collectable about a Compact Disc, that a file marked 'music' on your computer simply can't match up to.

So much for the software you might think, but how's the hardware facing up? Well, during the stinging heat of the summer I was surprised to find that my local Apple store had sold out of every single I-Pod they had, with the unsurprising exception of a dog-eared 10GB model.

Furthermore, they claimed there was a world wide shortage. Working in retail, this can be a common ploy to fuel consumer interest, but in this case I believed them. The I-Pod really is the fist portable hard drive unit that has truly excited the public. It has set something of a precedence

here, and no doubt competitors will soon try and match the Apple's combination of style, convenience and, dare I say it, sound quality. Yet the I-Pod isn't cheap, especially if you want more than a handful of Gig. In fact, it's key market has to be the very audience who are supposed to be buying more CD albums; the big spenders in their twenties and

thirties. What appears to be happening, then, is that although sales of hard drive portable units finally appear to be taking off, they are not being used for solely copying from the net. It appears that customers are recording their CDs on to their computers, and then on to the portable. Odd as it may

sound, having spoken to a few chums with I-Pods, it appears that this is exactly what they are doing, as they still have a use for CD on their main hi-fi system, which still has nothing to do with the computer. So it looks as though that age old issue of computer and audio integration is still hampering the computer music industry as much as it's aiding the pre-recorded music industry as a whole.

The same sales success is not being enjoyed by the likes of the separate CD players. Although sales haven't hit quite the lows that some had predicted, they are far from their best. Prices haven't really come down for several years now and this is no longer a price sensitive market, unlike DVD. Yet the combination of fewer youngsters even bothering with hi-fi separates, and ever improving DVD players, has really put the pressure on.

It's hard to see how this will really change in the future, as DVD players from Cambridge's DVD57 to Denon's DVD2900 show just how good the Versatile one can be with music. CD sales may not in future be the barometer of the music market. ●

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# David Price



**D**o you remember the first time? How was it for you? Speaking personally, my initiation into the weird and wonderful world of thermionic valve amplifiers came when I joined this august journal as an editorial assistant, some ten years ago. With hindsight, it was remarkable that it took me the nearly fifteen years of audiophilia to experience the magic of tubes – and it wasn't for the lack of trying.

Having received my 'audio education' in the late nineteen seventies and right throughout the eighties – assiduously reading every hi-fi magazine I could get my hands on and calling in on as many dealers as I could find – I can honestly say I can't remember reading a review of a (contemporary) tube amp, let alone seeing one in any of the dealers around Oxford where I grew up.

Can you believe it? Over a decade and a half of audio addiction, and not so much as a glance at a glass bottle! It sounds ridiculous now – there's so much tube equipment around that we've just dedicated this entire issue to this noble pursuit. But growing up in the seventies and eighties, when tubes were seen as redundant, obsolete, obscure and anachronistic, all the serious bits of hi-fi kit were solid-state. The UK hi-fi press, lest we forget, was going through something of an obsession with Linn and Naim back then. As a fan of those marques, I have no problem with that, but the mags preached this credo to the exclusion of all else – including anything with hot, glowing bottles inside.

As such, I – as a keen audio amateur – one who'd done his very best to hear as much as he could over many years – had still never heard a valve amplifier when he arrived at this magazine! Of course, this state of affairs didn't last long...

**“ Can you believe it? Over a decade and a half of audio addiction, and not so much as a glance at a glass bottle!**

With the opportunity to try a whole new (old) world of audio, my first few months on World were a veritable voyage of discovery. They proved a real ear opener, as I realised that – even though I'd had no prior thermionic experience – I'd already been pre-programmed with a set of assumptions about glass audio from the magazines I'd read and the dealers I'd spoken to. I'd thought that valve amplifiers were [a] unreliable, [b] dangerous, [c] hopelessly low powered and [d] ridiculously soft and syrupy sounding. Wrong, wrong, wrong and wrong.

This was when our resident tube-meister, Andy Grove, was actually resident in the office every day and not at the other end of a modem, and he proved a rich source of knowledge. The first thing that this amazing electronics whiz – who was later to go on to design stuff for Quad, Leak, Audionote et al (let alone most of World Audio Design's stuff) taught me was that transistors have as many problems and pitfalls as tubes (if not more). Then I learned that not all tubes are

created equal. It sounds like stating the blooming obvious now, but growing up in an age where dealers I spoke to used to routinely say things like "all valve amps are crap", this came as a revelation. I learnt how different tubes have different sonic (as well as electrical) characteristics, and how the way in which they're implemented can create wildly different results.

Perhaps it was fitting that the first tubular belle I set ears on World Towers was the World Audio Design 300B. A big, feedback-free push-pull affair using those exquisite glass bottles, it produced a staggering sound which I can remember to this day. It was the antithesis of everything I'd been told by other people. Its stunningly authoritative nature, with oodles of power and blistering attack transients was not what I'd expected. As peeled myself off the back of my chair (much like that old Pete Murphy Memorex ad!), it suddenly struck me that I'd been missing something all these years...

Without wishing to blow our own trumpet, I have to say that this magazine – under Noel's stewardship – has done much to re-popularise valve amplification. Of course, other mags have had notable tube champions too, but upon the launch of Hi-Fi World, Mr Keywood nailed his flag well and truly to the mast. Some thirteen years on, we now have countless specialists producing affordable valve designs and even one British company – Musical Fidelity – selling many tens of thousands of tube aspirated products. In the final month of 2003, at last it seems that valves are back with a vengeance...



# world classics

In this heavily revised section, you'll find the great and the good from audio's glorious past. Most are seminal designs which have earned their place in hi-fi history, but you'll also see some oddities which aren't classic as such, but are great used buys. The year of introduction is given, alongside the original UK launch price. Think we've overlooked something? Then write in and let us know!

## DIGITAL

**CAMBRIDGE AUDIO CD11986** [£1500]  
Inspired Stan Curtis redesign of Philips CD104, complete with switchable digital filter. Lean but tight and musical performer.

**CAMBRIDGE AUDIO CD 4SE** 1998 [£200]  
A touch soft in the treble and tonally light, but outstanding in every other respect.

**LINN KARIK III** 1995 [£1775]  
The final Karik was a gem. Superb transport gives a brilliantly tight, grippy dynamic sound, albeit tonally dry.

**MARANTZ CD73** 1983 [£700]  
A riot of gold brushed aluminium and LEDs, this distinctive machine squeezed every last ounce from its 14x4 DAC -super musical

**MARANTZ SA-1** 2000 [£5,000]  
The greatest argument for SACD. This sublime Ken Ishiwata design is utterly musically convincing with both CD and SACD, beating most audiophile CD splinters hands down.



**MERIDIAN MCD** 1984 [£600]  
The first British 'audiophile' machine was a sweeter, more detailed Philips CD100. 14x4 never sounded so good, until the MCD Pro arrived a year later.



**MERIDIAN 207** 1988 [£995]  
Beautifully-built two-box with pre-amp stage. Very musical although not as refined as modern Bitstream gear. No digital output.

**NAIM CDS** 1990 [£ N/A]  
Classic Philips 16x4 chipset with serious attention to power supplies equals grin-inducing sonics.

**SONY CDP-101** 1982 [£800]  
The first Japanese CD spinner was powerful and involving. Brilliant transport more than compensated for 16x2 DAC, and you even got remote control!

**SONY CDP-R1/DAS-R1** 1987 [£3,000]  
Sony's first two boxer was right first time. Tonally lean, but probably the most detailed and architectural sounding machine of the eighties.

## COMPACT DISC TRANSPORTS

**ESOTERIC P0** 1997 [£8,000]  
The best CD drive bar none; TEAC's Tokyo boys pushed the boat out in style. Brilliantly incisive, ridiculously over engineered.

**KENWOOD 9010** 1986 [£600]  
The first discrete Jap transport was beautifully done and responds well to re-clocking even today.

**TEAC VRDS-T1** 1994 [£600]  
Warm and expansive sound made this a mild price hit. Well built, with a slick mech.

## DACs

**CAMBRIDGE AUDIO DACMAGIC** 1995 [£99]  
Good value upgrade for budget CD players with extensive facilities and detailed sonics.

**DCS ELGAR** 1997 [£8500]  
Extremely open and natural performer, albeit extremely pricey - superb.

**DPA LITTLE BIT 3** 1996 [£299]  
Rich, clean, rhythmic and punchy sound transforms budget CD players.

**PINK TRIANGLE DACAPO 1993** [£ N/A]  
Exquisite; the warmest and most lyrical 16bit digital audio we have ever heard. Clever plug-in digital filter modules really worked!

**QED DIGIT** 1991 [£90]  
Budget bitstream performer with tweaks aplenty. Positron PSU upgrade makes it smooth, but now past it.

## TURNTABLES

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

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

**GARRARD 301/401** 1953 [£19]  
Heavy metal - tremendously strong and articulate with only a veiled treble to let it down. In many respects, better than the seventies 'superdecks' that succeeded it.

**GOLDRING LENCO 88/89** 1963 [£15.65]  
Simple, well engineered middleweight with soft, sweet sound and reasonable tonearms. Good spares and servicing support even today from specialists.

**LINN AXIS** 1987 [£253]  
Simplified cut-price version of the Sondek complete with LVX arm. Elegant and decently performing mid-price package. Later version with Akito tonearm better.

**LINN SONDEK LP12** 1973 [£86]  
For many, the Brit superdeck; constant mods meant that early ones sound warmer and more lyrical than modern versions. Beguilingly musical but now off the pace.



**MARANTZ TT1000** 1978 [£ N/A]  
Beautiful seventies high end belt drive with sweet and clean sound. Rare in Europe, but big in Japan.

**MICHELL GYRODEC** 1981 [£599]  
Thanks to its stunning visuals, this bold design wasn't accorded the respect it deserved until recently. Early examples sound cold and mechanical, but now right on the pace. Clean, solid and architectural sound.

**REGA PLANAR 3** 1978 [£79]  
Brilliantly simple but clean and musical performer, complete with Acos-derived S-shape tonearm. 1983 saw the arrival of the RB300, which added detail at the expense of warmth. Superb budget buy.

**ROKSAN XERXES** 1984 [£550]  
Supposedly the first to 'better' the LP12. Super tight and clean sound, with excellent transients. Less musical than the Sondek, but more neutral. Sagging plinth top-plates make them a dubious used buy.

**TECHNICS SP10** 1973 [£400]  
Seminal Japanese engineering. Sonics depend on plinths, but a well mounted SP10/II will give any modern a hard time, especially in respect of bass power and midband accuracy.

**THORENS TD124** 1959 [£ N/A]  
The template for virtually every 1970s 'superdeck', this iconic design was the only real competition for Garrard's 301. It was sweeter and more lyrical, yet lighter and less impactful in the bass.

**TOWNSHEND ROCK 1979** [£ N/A]  
The product of academic research by the Cranfield Institute, this novel machine has an extremely clean and fluid sound. Substantially modified through the years, and capable of superb results even today.

**TRIO LO-7D** 1978 [£600]  
The best 'all-in-one' turntable package ever made, Trio/Kenwood threw their 'engineering best practice' book at this one with startling results. Clean, powerful and three-dimensional sound, ultimately limited by the tonearm.



## Choice hi-fi

you choose

Choice hi-fi make it easy for you to fulfill your sonic dreams. Quality hi-fi is not just about expensive brandnames. It's about aspiring to the very best sound, about choosing your ideal system from the widest selection in the country, in a unique no-pressure environment.

your choice

- Acoustic Energy
- Advantage
- ATC
- Audible Illusions
- Audio Physic
- B.A.T
- Boulder
- Bryston
- Cary
- C.A.T.
- Chord
- Clear Audio
- Denon
- DNM
- Egglaston Works
- Electrograph Delphi
- Genelec
- Gryphon
- Graham
- Imerge
- J M Lab
- Krell
- Lexicon
- Linn
- Loewe
- Lutron
- Lyra
- Mark Levinson
- Michell Eng.
- Musical Fidelity
- Naim
- NEC
- Nordost
- Oracle
- Ortofon
- Plinius
- P.M.C.
- Primare
- Project
- Quadraspire
- REL
- Rockport
- Roksan
- Rotel
- Ruark
- Seleco
- SME
- Straight Wire
- Sugden
- Tara Labs
- Teac
- Totem
- Transfiguration
- Trichord
- Trilogy
- Van den Hul
- VPI
- Wilson Audio
- Wilson Research
- YBA

H I - F I

HOME CINEMA

MULTIROOM INSTALL

BUY / SELL

### Quarterly Sale items

	Our Price	Original Retail Price
Exposure VII pre + XII psu	£450.00	£1,200.00
Magnum Dynalab P 200 Pre	£695.00	£1,900.00
dpa Enlightenment DAC	£295.00	£ -
Kenwood LI1000C Pre	£295.00	£895.00
Kenwood LI1000M Power	£395.00	£1,295.00
Michaelson Audio Odysseus	£495.00	£1,500.00
Sunfire 300 Power Amp (110 volts)	£695.00	£2,400.00
Arcam Delta 110 pre amp	£295.00	£750.00
McCormak Line Drive	£395.00	£995.00
Audio Refinement Pre 5 "new"	£395.00	£895.00

### New this month

	Our Price	Original Retail Price
<b>POWER AMPLIFIERS</b>		
Roksan L2/S1 Pre/ Power	£995.00	£2,500.00
<b>PRE AMPLIFIERS</b>		
Conrad Johnson PV10	£495.00	£1,200.00
<b>LOUDSPEAKERS</b>		
SD Acoustics SD1	£495.00	£1,650.00
Audio Plan Contrast 3	£995.00	£3,200.00
B & W Nautilus 800	£7,995.00	£16,000.00
<b>CD PLAYERS &amp; DACS</b>		
Linn CD12	£On Dem	£12,000.00
Linn UNIDISK I.1	£On Dem	£6,500.00
Linn Karik/ Numerik	£1,395.00	£3,300.00
Teac VRDS7	£395.00	£ -
Pink Triangle Da Capo 1307	£695.00	£1,400.00
Micromega Micro Drive/ dac	£995.00	£ -
<b>TURNTABLES, ANALOGUE, VARIOUS</b>		
Michell Orbe/VC/ RB300	£On Dem	£2,350.00
Nakamichi CR3	£495.00	£ -
Nakamichi CR4	£595.00	£ -
<b>AV COMPONENTS</b>		
Lexicon MCI	£1,995.00	£5,500.00

### Power amplifiers

Krell KAV 250A	£1,795.00	£3,650.00
Bel Canto Evo 4	£On Dem	£3,895.00
Krell KSA 80B	£1,395.00	£3,600.00
Roksan Caspian Integrated	£On Dem	£895.00
Roksan Caspian Power	£On Dem	£645.00
Quad 33/ 303	£295.00	£ -
Krell FPB 600c	£6,500.00	£14,000.00
Krell FPB 700cx	£11,995.00	£15,000.00
Krell FPB 400 cx	£9,600.00	£12,000.00
Naim Nait 3	£475.00	£608.00
Rowland Model 12 (4 chassis)	£8,995.00	£14,500.00
Michell Alecto Monoblocks	£995.00	£2,000.00
Cary 805 C Monoblocks "new"	£4,995.00	£8,250.00
E.S. Lab DX-S8	£On Dem	£2,995.00
Plinius 8200P	£On Dem	£1,550.00
Krell FPB 200	£3,995.00	£8,000.00
Krell FPB 600	£5,995.00	£12,998.00
Plinius SA 102 "new"	£On Dem	£3,750.00
Musical Fidelity P180	£395.00	£900.00
Musical Fidelity CRPS	£395.00	£900.00
Bryston 4 BSST	£On Dem	£2,350.00
Jadis Defy 7 mk III	£2,750.00	£6,000.00
Linn Bass Active Card	£69.00	£120.00
Gamut D200 "new"	£On Dem	£3,250.00
Musical Fidelity F15	£995.00	£2,500.00
Audio Innovations S1000 mk III monos	£995.00	£3,000.00
Krell MDA 300	£4,995.00	£12,000.00
Cary SLA 70 mk II Silver	£1,295.00	£2,250.00
Boulder 500 AE	£3,495.00	£5,500.00
Linn Klassik CD/Amp silver	£895.00	£1,030.00
Boulder 1060 Power "new"	£On Dem	£16,500.00
Primare 30.1 mk II Integrated	£1,350.00	£1,500.00
YBA Passion Stereo "new"	£3,995.00	£5,995.00
Plinius 250 mk IV "new"	£On Dem	£6,350.00

### AV components

<b>AV COMPONENTS</b>		
Lexicon MC8 Processor	£On Dem	£5,000.00
Lexicon RT10 DVD Player	£On Dem	£2,300.00
Lexicon DC2	£1,995.00	£3,500.00
SIM 2 HT 300	£7,500.00	£9,000.00
Primare P30 Processor	£1,295.00	£2,000.00
Linn Klassik DVD	£On Dem	£2,000.00
Lexicon MC12 / MC12B	£On Dem	£8100.00/ £8900.00
Loewe Xemix DVD "new"	£On Dem	£495.00

### PLASMAS/LCD/PROJECTORS

From NEC/ Panasonic/Pioneer/Sharp from Electrograph Delphi/Seleco/Sony/Sanyo Panasonic TH-42 PWD5 "new"	£4000.00	POA
	£4,995.00	POA

### Pre amplifiers

Meridian 201 Pre	£195.00	£900.00
Audio Research LS25 mk II	£4,250.00	£5,995.00
YBA 2a Line	£1,295.00	£1,995.00
Tom Evans The Vibe Pre	£On Dem	£2,700.00
Krell KRC	£2,495.00	£6,949.00
Chord DSC I600E (dac/pre)	£3,250.00	£6,500.00
Audio Research LS7	£895.00	£1,800.00

Audio Research LS1	£795.00	£2,000.00
Audio Research LS3	£895.00	£1,997.00
Musical Fidelity F22	£695.00	£1,500.00
AVI S2000 MP remote pre	£395.00	£800.00
Cary SLP98L Remote Pre x-dem	£1,495.00	£2,794.00
Boulder 1012 (pre amp/ 24.96 dac/ Phono)	£On Dem	£13,000.00
YBA Passion Pre (inc Phono)	£3,995.00	£5,595.00
Boulder 2010 Pre	£POA	£30,000.00
Plinius 16L "new"	£On Dem	£3,200.00
C.A.T.ultimate reference Pre Amp Inc/Phono "new"	£On Dem	£5,750.00

### Quality speakers

Martin Logan SL3	£1,795.00	£3,400.00
Dynaudio Audience 50	£395.00	£577.00
JM Lab Nova Utopia	£On Dem	£19,999.00
Heybrook Sextet (new drivers)	£495.00	£1,200.00
Revel Ultima Studio	£7,495.00	£13,000.00
ATC SCM 10 Passive Black	£495.00	£1,100.00
JM Lab Alto Utopia BE	£On Dem	£9,999.00
Wilson Witt mk I	£3,750.00	£9,000.00
JM Lab Utopia	£9,995.00	£18,000.00
B&W Matrix 805 (Walnut)	£295.00	£650.00
ClaraVox Magnifica	£3995.00 *	£14,500.00
JM Lab Micro Utopia + Stand	£2,195.00	£4,349.00
Reference 3A	£1,750.00	£2,250.00
Audio Physic Spark	£1,150.00	£1,795.00
Talon Kite Centre & Bracket	£795.00	£1,750.00
Ensemble PA1	£895.00	£2,000.00
Audio Physic Caldera	£4,995.00	£10,000.00
Aerial Acoustic SW12 Sub Woofer, Maple/remote	£2,995.00	£5,200.00
Mirage M3 si	£1,295.00	£4,100.00
Linn Kabers (Active)	£995.00	£2,500.00
Rel Q 200 E	£On Dem	£650.00
Rel Q 150 E	£On Dem	£500.00
Audio Physic Luna Sub (wood)	£On Dem	£1,799.00
Audio Physic Yara	£On Dem	£999.00
Vienna Acoustics Mahler	£On Dem	£6,000.00
Vienna Acoustics Mozart	£On Dem	£1,700.00
Vienna Acoustics 5.1	£On Dem	£3,500.00
Cabasse io 5.1	£On Dem	£2,170.00
JM Lab Sib & Cub (5.1 spk sys)	£On Dem	£859.00
Blue Room Minipod (White)	£225.00	£298.99
Blue Room Minipod + Sub (Blue)	£625.00	£749.00
Blue Room Minipod Sub	£415.00	£468.99
Genelec 205 Active Monitors	£On Dem	£750.00
Audio Physic Virgo III "new"	£On Dem	£4,000.00
Audio Physic Tempo III "new"	£On Dem	£2,000.00
Naim SBL's	£995.00	£2,225.00
Rogers LS55 "new"	£260.00	£430.00

### CDplayers DACS

Chord SPM 1600E Dac/ Pre	£3,250.00	£6,500.00
Krell KPS 25sc 24/96	£11,995.00	£23,498.00
Roksan Caspian CD	£On Dem	£995.00
Theta Data Pro Basic IIIa	£1,795.00	£3,495.00
Theta DS Pro Prime II a	£995.00	£1,800.00
Trichord PD-S 503	£295.00	£500.00
Pink Triangle Ordinal	£295.00	£600.00
YBA CD I Delta (Twin psu)	£3,995.00	£5,500.00
Audio Synthesis DAX	£1,995.00	£4,000.00
Mark Levinson 39	£2,995.00	£5,000.00
Marantz 17 Ki Sig (Black & Gold)	£695.00	£1,200.00
Myryad MDV 200 DVD	£750.00	£995.00
YBA CD 3 Delta	£On Dem	£2,200.00
Audiomeca Damnation CD Transport	£750.00	£1,600.00
Primare V20 DVD/CD	£750.00	£1,000.00
Audio Aero 32/192 Capitole CD (Ver. 4)	£On Dem	£4,500.00
Primare V25 CD/DVD	£On Dem	£1,000.00
Theta Pro Geny	£595.00	£1,295.00
Boulder 2020 dac	£P.O.A.	£24,000.00
Theta Data II Transport AT + link	£1,995.00	£4,000.00
YBA CD Integre "new"	£On Dem	£1,195.00

### Turntables & analogue

Project RPM 6 "new"	£On Dem	£500.00
Project RPM9/ arm/ 25FL (Ex Dem)	£695.00	£1,350.00
VPI TNT mk IV/ Rockport 6000/ Flywheel/ VPI Stand/ Clearaudio	£8,500.00	£16,000.00
Accurate/ Pump etc. "new"	£On Dem	£850.00
Roksan Radius (Acrylic) "new"	£On Dem	£950.00
Roksan Caspian Phono se	£850.00	£1,050.00
Ortofon Rohman (2 hrs)	£895.00	£2,000.00
Tara Lab Decade 8ft pair	£On Dem	£1,100.00
Lorriraft record cleaning machine	£999.00	£2,250.00
Tara Labs The One Balanced Im	£On Dem	£425.00
Earmax Pro	£450.00	£995.00
Revox B160 Tuner	£1,495.00	£ -
Decca London Gold (original Garrott Brothers)	£10,495.00	£12,289.00
SME 30/2 A "new"	£395.00	£ -
Moth Record Cleaning m/c	£245.00	£325.00
Project RPM4/ Ortofon 510 "new"	£On Dem	£1,050.00
Ortofon Rohmann	£On Dem	£500.00/ £750.00
Ortofon Kontrapunkt a/b "new"	£On Dem	£1,100.00
Michell Gyro SE/ RB300 "new"	£795.00	£ -
Audio Synthesis Phono Eq mm/mc	£795.00	£1,600.00
Gryphon Phono Pre-Amp (dual mono) Head Amp	£1,350.00	£1,650.00
SME Series V Arm "new"	£495.00	£ -
Pink Triangle PT Ext psu	£On Dem	£2,750.00
Plinius 14 Phono "new"	£195.00	£400.00
Nackamichi DR 3	£On Dem	£1,795.00
Tom Evans - The Groove "new"	£1,695.00	£2,065.00
Clear Audio Reference Mc phono stage X-demo	£320.00	£423.00
Rega Planer 3 + Hi Fi News Out Board Power Supply	£640.00	£740.00
Clear Audio Symphonic phono stage X-demo MM/MC	£On Dem	£2,500.00
Lavardin Reference Phono "new"		

\* Reduced this month

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**TO NEARMS**

**ACOS LUSTRE GST-1 1975 [£46]**  
The archetypal S-shaped seventies arm; good, propulsive and involving sound in its day, but ragged and undynamic now.

**AUDIOTECHNICA AT1120 1978 [£75]**  
Fine finish can't compensate for this ultra low mass arm's limited sonics - a good starter arm if you've only got a few quid to spend.

**ALPHASON HR100S 1981 [£150]**  
First class arm, practically up to present-day standards. Buy carefully, though, as there is no service available now. Totally under priced when new, exceptional.

**GRACE G707 1974 [£58]**  
This early Japanese example of the tonearm art has a smooth, lyrical sound. Imported by Linn, fitted to early LP12s. Sonically way off the pace now, though.

**HADCOCK GH228 1976 [£46]**  
Evergreen unipivot with lovely sweet, fluid sound - although bass and dynamics are limited. Excellent service backup.

**LINN ITTOK LVII 1978 [£253]**  
Arguably the first 'superarm'; Japanese design to Linn specs made for a muscular, rhythmic sound with real dynamics. Now off the pace, but the final LVIII version worth seeking out.

**NAIM ARO 1986 [£875]**  
Truly endearing and charismatic performer - wonderfully engaging mid-band makes up for softened frequency extremes.

**REGA RB300 1983 [£88]**  
Inspired budget esoterica. Detailed, tight, neutral sound but tonally grey sounding in absolute terms. Responds well to tweaking, and its cheaper RB250 brother better still.

**SME 3009 1959 [£18]**  
Once state of the art, but long since bettered. Musical enough, but weak at frequency extremes and veiled in the midband. Legendary serviceability has made it a cult, used prices unjustifiably high.

**SME SERIES III 1979 [£113]**  
Clever variable mass design complete with Titanium Nitride tube tried to be all things to all men, and failed. Charming nonetheless, with a warm and inoffensive sound.

**TECHNICS EPA-501 1979 [£ N/A]**  
Popular partner for late seventies Technics motor units. Nice build and Titanium Nitride tube can't compensate for middling sound.

**INTEGRATED AMPLIFIERS**

**A&R A60 1977 [£115]**  
Sweet and musical feature-packed integrated; the Audiobal 8000A used its blueprint to great effect.

**AUDIOLAB 8000A 1985 [£495]**  
Smooth integrated with clean MM/MC phono stage and huge feature count. Extremely reliable, too. Post '93 versions a top used buy.

**CREEK CAS4040 1983 [£150]**  
More musical than any budget amp before it; CAS4140 loses tone controls, gains grip.

**MCINTOSH MA6800 1995 [£3735]**  
Effortlessly sweet, strong and powerful with seminal styling to match.

**MISSION CYRUS 2 1984 [£299]**  
Classic eighties minimalism combines arresting styling with clean, open, lively sound. Further upgradeable with PSX power supply.

**MUSICAL FIDELITY A1 1985 [£350]**  
Beguiling Class A integrated with exquisite styling. Questionable reliability.

**MYST TMA3 1983 [£300]**  
Madcap eighties minimalism, but a strong and tight performer all the same.

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



**NAIM NAIT 1984 [£350]**  
Superb rhythms and dynamics make it truly musical, but tonally monochromatic. Fine

phono stage, very low power.  
**ROGERS CADET III 1965 [£34]**  
Sweet sounding valve integrated, uses ECL86 output valves, even has a half useable phono stage, sweet, warm a good introduction to valves

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

**SUGDEN A21 1969 [£ N/A]**  
Class A transistor integrated with an eminently likeable smoothness and musicality. Limited inputs via DIN sockets.

**PREAMPLIFIERS**

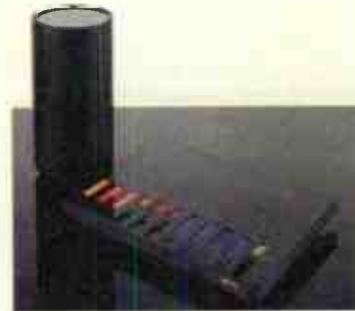
**AUDIOLAB 8000C 1991 [£499]**  
Tonally grey but fine phono input and great facilities make it an excellent general purpose tool.

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

**LEAK POINT ONE STEREO 1958 [£ N/A]**

Good for their time, but way off the pace these days. Use of EF86 pentode valve for high gain rules out ultra performance. Not the highest-fi!

**LICSON AC-1 1973 [£ N/A]**  
Amazing styling courtesy of Allan Boothroyd can't disguise its rather cloudy sound, but a design classic nonetheless.



**LINN LK-1 1986 [£499]**  
A brave attempt by the Glasgow boys to bring remote controlled user-friendliness to hair-shirt audiophile hi-fi. Didn't quite work, but not half bad for under £100.

**Billy Vee**  
SOUND SYSTEMS

248 Lub High Rd., London SE13 5PL (10am to 6.30pm Closed Thurs & Sun)

**Linn Summer Promotion!**

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Web: www.billyvee.co.uk email: sales@billyvee.co.uk E&OE

**A final opportunity!**  
Time is running out to take advantage of the fantastic Linn Summer promotion of generous trade-in allowances against the new KISTO and UNDISA 1.1 for selected source and control products. Please contact Ian Ridge for details.  
(Offer closes 30/9/03)



Now is a great time to upgrade your system! From now until September we are offering a special trade-in value for: Mimik, Genki, Karik, Ikemi and AV5103 owners.



We have added extra value to the Linn guaranteed trade-in making this a very special summer promotion indeed. Call sales to find out more and book your audition now!



Also this summer, we are offering the CLASSIK Movie Di as part of a complete A/V package promotion. For further information on this fantastic offer please contact Ian Ridge on either of the above sales numbers.

**NAIM NAC32.5** 1978 [£ N/A]  
The Salisbury company came of age with this, their classic high end pre. Brilliantly fast and incisive sound that's a joy with vinyl but a tad forward for digital.

**QUAD 22** 1958 [£25]  
The partner to the much vaunted Quad II monoblocs - cloudy and vague sound means it's for anacrophiles only.

**QUAD 33** 1968 [£43]  
Better than the 22, but Quad's first tranny pre isn't outstanding. Responds well to tweaking/ rebuilding though...

**POWER AMPLIFIERS**

**LEAK POINT ONE, TL10, TL12.1** 1949 [£28]



Early classics that are getting expensive. Overhauling is de rigeur before use, using original parts if possible. Surprisingly crisp and musical sound, that's far more modern than Quad IIs. Deeply impressive when in fine fettle.

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

**LECSON API** 1973 [£ N/A]  
Madcap cylindrical styling alluded to its 'tower of power' pretensions, but it wasn't. Poor build, but decently clean sounding when working.

**MARANTZ MODEL 9** 1997 [£8000]  
Authentic reproduction monoblocs still more than cut the sonic mustard. Highly expensive and highly sought after.

**MICHELL ALECTO** 1997 [£1989]  
Crisp, clean and beautifully controlled with gorgeous styling. Partnered with the £1650 Orca this sounds delicious!

**MUSICAL FIDELITY XA200** 1996 [£1000PR]  
200W of sweet smooth transistor stomp in a grooved tube! Under-rated oddity.

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

**QUAD 303** 1968 [£55]  
Bullet proof build, but woolly sound. Off the pace, but endearing nonetheless. Some pipe smoking slipper wearers swear by them!

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

**PHONO STAGES**

**CREEK OBH-8 SE** 1996 [£180]  
Punchy, rhythmic character with oodles of detail makes this a great budget audiophile classic. Partner with a Goldring GI042 for an unbeatable budget combination.

**LINN LINNK** 1984 [£149]  
Naim-designed MC phono stage built to partner the original Naim NAIT - yes, really! Fine sound, although off the pace these days.

**MICHELL ISO** 1988 [£ N/A]  
This Tom Evans-designed black box started the trend for high performance offboard phono stages. Charismatic, musical and punchy - if lacking in finesse.

**TUNERS**

**CREEK CAS3140** 1985 [£199]  
Excellent detail, separation and dynamics - brilliantly musical at the price. T40 continued the theme...



**MARANTZ ST-8** 1978 [£353]  
Marantz's finest radio moment. Warm, organic sound plus an oscilloscope for checking the signal strength and multipath.

**NAD 4040** 1979 [£79]  
Tremendously smooth and natural sound allied to low prices and good availability make this budget analogue esoterica. Needs a good antenna to work properly, however.

**LEAK TROUGHLINE** 1956 [£25]  
Series I an interesting ornament but limited to 88-100MHz only. II and III are arguably the best-sounding tuners ever. Adaptation for stereo easy via phono multiplex socket. Fed by a modern outboard decoder they're deliciously lucid with true dimensionality.



**NAD 4140** 1995 [£199]  
Brilliant affordable digital tuner has a smooth, detailed musical sound plus sensible real-world facilities.

**NAIM NAT03** 1993 [£595]  
The warm, atmospheric sound is further proof of Naims proficiency with tuners.

**PIONEER TX-9500** 1976 [£295]  
Another of the serious classic solid-staters. Boasts the usual high end Jap package of fine sound, brilliant sensitivity and superb build.

**YAMAHA CT7000** 1977 [£444]  
Reputedly the best of the classic Jap analogues, this combines sleek ergonomics, high sensitivity and an explicit, detailed sound.

**ANALOGUE RECORDERS**

**AIWA XD-009** 1989 [£600]  
Aiwa's Nak beater didn't, but it wasn't half bad nonetheless. Massive spec even included a 16x4 DAC!

**NAKAMICHI CR-7E** 1987 [£800]  
The very best sounding Nakamichi ever - but lacks the visual drama of a Dragon.

**REVOX A77** 1968 [£145]  
The first domestic open reel that the pros used at home. Superbly made, but sonically off the pace these days. B77 better, but couldn't match the Japanese.

**SONY WM-D6C** 1985 [£290]  
Single capstan transport on a par with a Swiss watch, single rec/replay head better than most Naks. Result: sublime.

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Arcam FMJ CD23 Player (1Yr G/tee) . . . . .	(1199.00)	£699.00	Linn 5103 AV Processor Sil VFD (1Yr G/tee) .(3250.00)	£1749.00
Arcam FMJ DV27 Player (12Mth G/tee) . . . . .	(1599.00)	£1199.00	Linn LK100 Power Amp (1Yr G/tee) . . . . .	(695.00) £349.00
Arcam Alpha 7 Tuner (6Mth G/tee) . . . . .	(279.00)	£149.00	Naim NACD5 CD Player (1Yr G/tee) . . . . .	(1125.00) £785.00
B&W CDMC Centre Speaker (6Mth G/tee) . . . . .	(299.00)	£175.00	Naim NAT-02 Tuner (1Yr G/tee) . . . . .	(1029.00) £799.00
Denon TU260L Tuner (6Mth G/tee) . . . . .	(139.00)	£95.00	Naim NAP 150 Power Amp (6Mth G/tee) . . . . .	(799.00) £525.00
Linn Karik 2 C D Player (6Mth G/tee) . . . . .	(1850.00)	£625.00	Naim CDX CD Player (1Yr G/tee) . . . . .	(2470.00) £1750.00
Linn Karik 3 CD Player (6Mth G/tee) . . . . .	(1850.00)	£750.00	Naim CDS Head Unit (1Yr G/tee) . . . . .	(4165.00) £3295.00
Linn Numerik D A Converter (6Mth G/tee) . . . . .	(1100.00)	£429.00	Naim Flatcap 2 Power Supply (1Yr G/tee) . . . . .	(499.00) £375.00
Linn Majik Amplifier - Phono (6Mth G/tee) . . . . .	(849.00)	£449.00	Naim PSX Power Supply-CDX (1Yr G/tee) . . . . .	(2100.00) £1695.00
Linn Kolektor Preamp (1Yr G/tee) . . . . .	(495.00)	£369.00	Pioneer DV909 DVD/Laser Sil (6Mth G/tee) .(899.00)	£199.00
Linn Kaim Pro Preamp (1Yr G/tee) . . . . .	(1400.00)	£599.00	Ruark Talisman Speakers (6Mth G/tee) . . . . .	(499.00) £189.00
Linn Kaim Phono Preamp (1Yr G/tee) . . . . .	(1700.00)	£799.00	Spendor S3 Speakers (1Yr G/tee) . . . . .	(600.00) £399.00
Linn 5103 AV Processor Sil LCD (1Yr G/tee) .(3250.00)		£1299.00	TAG DV32R DVD Player (1 Yr G/tee) . . . . .	(4295.00) £2395.00

**PIONEER CTF-950** 1978 [£400]  
Not up to modern standards sonically, but a great symbol of the cassette deck art nonetheless.



**YAMAHA TC-800GL** 1977 [£179]  
Early classic with ski-slope styling courtesy of Mario Bellini. Middling sonics: by modern standards, but cool nonetheless!



**DIGITAL RECORDERS**

**KENWOOD DM-9090** 1997 [£500]  
Serious and sophisticated sound thanks to well implemented ATRAC 4.5; surprisingly musical MD recorder.

**MARANTZ DR-17** 1999 [£1100]  
Probably the best sounding CD recorder made; built like a brick outhouse with a true audiophile sound and HDCD compatibility.

**PIONEER PDR-555RW** 1999 [£480]  
For a moment, this was the CD recorder to have. Clean and detailed.

**SONY TCD-8 DATMAN** 1996 [£599]  
Super clean sound makes this an amazing portable, but fragile.

**SONY MDS-JE555ES** 2000 [£900]  
The best sounding MD deck ever, thanks to awesome build and heroic ATRAC-DSP Type R coding.

**LOUDSPEAKERS**

**JR 149** 1977 [£120]  
Infamous cylindrical speaker that was ignored for decades but now back in fashion! Based on classic KEF T27 / B110 combo as seen in the BBC LS3/5a. Doesn't play loud, needs a powerful transistor amplifier, but rewards with fine clarity in imaging.

**LEAK SANDWICH** 1961 [£39 EACH]  
Warm sounding infinite baffle that, with a reasonably powerful amplifier can sound quite satisfying.

**LOWTHER PM6A** 1957 [£18 EACH]  
This seminal full-range driver is still manufactured. High sensitivity, as fitted to many classic horn designs.

**MAGNEPLANAR SMGA198X** [£800]  
Technological loudspeaker with genuinely musical abilities; fast, smooth, open, dry.

**MISSION 752** 1995 [£495]  
Cracking Henry Azima-designed floor-standers combined HDA drive units and metal dome tweeters with surprisingly warm results. Benign load characteristics makes them great for valves.



**MISSION 770** 1980 [£375]  
Back in its day, it was an innovative product and one of the first of the polypropylene designs. Warm, smooth, clean and powerful sound.

**MISSION X-SPACE** 1999 [£499]  
The first mass production sub and sat system using NXT panels is a sure-fire future classic - not flawless, but a tantalisingly unboxy sound nevertheless!



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

**QUAD ESL63** 1980 [£1200]  
An update of the ESL57, with stiffer cabinets. Until the 989, the best of the Quad electrostatics.

**YAMAHA NS1000** 1977 [£532]  
High tech Beryllium midband and tweeter domes and brutish 12" woofers in massive sealed mirror image cabs equals stunning transients, speed and wallop allied to superb transparency and ultra low distortion. Partner carefully!



**TANNOY WESTMINSTER** 1985 [£4500]  
Folded horn monsters which certainly sound good if you have the space. Not the last word in tautness but can drive large rooms and image like few others.

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Arcam DT26 DAB Tuner (2Yr G/tee) . . . . .	(999.00)	<b>£599.00</b>	Marantz DV7000 DVD Player (1Yr Gtee) . . . . .	(599.00)	<b>£169.00</b>
Arcam CD62t CD Player (2Yr/Gtee) . . . . .	(369.00)	<b>£269.00</b>	Naim NAT-05 Tuner (1Yr/Gtee) . . . . .	(785.00)	<b>£599.00</b>
Arcam CD72t CD Player (2Yr/Gtee) . . . . .	(449.00)	<b>£329.00</b>	Naim NAP 150 Power Amplifier (2Yr G/tee) . . . . .	(795.00)	<b>£595.00</b>
Arcam A85 Amplifier (2Yr/Gtee) . . . . .	(799.00)	<b>£549.00</b>	Naim Credo Speakers (2Yr G/tee) . . . . .	(1350.00)	<b>£849.00</b>
B&W CM2 Speakers (2Yr/Gtee) . . . . .	(550.00)	<b>£369.00</b>	PMC TB2 Speakers (2Yr/Gtee) . . . . .	(700.00)	<b>£495.00</b>
B&W CM4 Speaker (2Yr/Gtee) . . . . .	(895.00)	<b>£579.00</b>	PMC DB1 Speakers (2Yr/Gtee) . . . . .	(555.00)	<b>£375.00</b>
Celestion Compact A Spkrs R/nut (2Yr G/tee) . . . . .	(600.00)	<b>£219.00</b>	Rega Mira 2000 Amp Silver (1Yr G/tee) . . . . .	(498.00)	<b>£365.00</b>
KEF Q1 Speakers - Maple (2Yr/Gtee) . . . . .	(249.00)	<b>£175.00</b>	Sugden Bijou Ampmaster (2Yr G/tee) . . . . .	(689.00)	<b>£495.00</b>
K.E.F. Q3 Speakers-Cherry (2Yr G/tee) . . . . .	(399.00)	<b>£229.00</b>	Sugden Masterclass Preamp (2Yr/Gtee) . . . . .	(2100.00)	<b>£1250.00</b>
Linn Klassik Movie System (2Yr G/tee) . . . . .	(1995.00)	<b>£1195.00</b>	Sugden Masterclass Power Amp (2Yr/Gtee) . . . . .	(3150.00)	<b>£1895.00</b>
Mission M51 Speakers - Rosenut (2Yr G/tee) . . . . .	(299.00)	<b>£209.00</b>	Spendor S3 Speakers Maple (2Yr G/tee) . . . . .	(600.00)	<b>£399.00</b>
Mission M52 Speakers - Maple (2Yr G/tee) . . . . .	(449.00)	<b>£295.00</b>	TAG AV30 A.V. Proc - Silver (2Yr G/tee) . . . . .	(1800.00)	<b>£1089.00</b>
Mission M53 Speakers - Beech (2Yr G/tee) . . . . .	(549.00)	<b>£369.00</b>	TAG DVD32FLR DVD Player (1Yr/Gtee) . . . . .	(2999.00)	<b>£1899.00</b>

# World standards

These are the best products we've heard that are currently on sale in the UK, complete with the date they were originally launched and their current retail prices. Watch out for regular updates...!

## TURNTABLES

**AN TT I/ARM ONE/IQ1 1998 £725**  
Redesigned Systemdek IIX now off the pace, but the arm and cartridge are both star performers.

**LINN LP12/ LINGO 1973 £2100**  
The quintessential belt drive superdeck offers a beguilingly musical midband at the expense of lumpy bass and nebulous imaging. Latest Lingo brings a new lease of life, with even more punch and polish.

**MICHELL TECNODEC 2003 £575**  
Superb introduction to Michell turntables on a budget. Top quality build and elegant design make it the class of the mid-price field right now.

**MICHELL GYRODEC SE 2002 £870**  
Its beauty is more than skin deep - superbly build and finish allied to clever design equals class leading performance. Latest DC motor with 'Never Connected' PSU make it all the more unassailable.

**MICHELL ORBE SE 2002 £1916**  
Cost-no-object evolution of the Gyro adds massy acrylic platter and two-stage Isolation. Fantastically capable all rounder with commanding, powerful, detailed sound that gets the best from almost any arm and cartridge.



**PRO-JECT DEBUT II PHONO SB 2002 £170**  
Fuss-free all in one starter turntable, complete with built in phono stage. Not a star performer, but a fine midi system upgrade all the same.

**REGA P3 2000 £298**  
Great entry level audiophile deck with fine bundled tonearm. Tweakable, and responds well to careful siting on a Base platform.

**REGA P25 2001 £619**  
Until the TecnoDec, the best mid-price turntable package. Fine build and elegant styling. Clean, open sound but limited at frequency extremes in absolute terms.

**SME MODEL 10A 1995 £3333**  
Exquisitely engineered deck and arm combo, but dry and clinical sounding compared to rivals. Accomplished performer with classical music, nonetheless.

**TECHNICS SL1200/III 1973 £395**

Slick build makes it a respectable performer, although the cheapo arm limits it - fit a Rega RB250 and it's suddenly a serious mid-price machine.

## TO NEARMS

**HADCOCK 242 SE 2000 £649**  
Latest of a long line of unipivots, with added mass, revised geometry and better finish. Musical like few others at or near the price, but poor frequency extremes.

**LINN EKOS 1987 £1700**  
Subtle mods over the years, including revised bearings and the recent new wiring has kept it a serious contender in the superarm stakes. Lacks the SME's slam, the OL's clarity or the ARO's emotion, but has a feisty musicality all of its own.

**MICHELL TECNOARM 2003 £346**  
John Michell's brilliant reworking of Rega's classic adds a classy counterweight and end stub, plus Cardas cable. The result is a near transparent sound with plenty of power and poise.

**NAIM ARO 1987 £1425**  
Charismatic unipivot is poor at frequency extremes but sublime in the midband; truly emotive and insightful.

**ORIGIN LIVE SILVER 2502001 £625**  
This fully developed and expertly fettled Rega boasts a superbly even, transparent and tuneful sound. Gives away only a small degree of finesse and dimensionality to top arms.

**ORIGIN LIVE ILLUSTRIOUS 2002 £1570**  
A modern superarm with battleship build. Extremely strong, even and open sound in the mould of the late, lamented Zeta, plus fine tonal colouring. Exquisite.

**REGA RB250 1984 £112**  
Sold through Moth Marketing, this is capable far beyond its price point, with a tight, lean and detailed sound. Responds brilliantly to Origin Live counterweight modification, and well to rewiring.

**SME 309 1989 £767**  
Entry level SME complete with cost-cut aluminium armtube and detachable headshell. Tight, neutral sound with good tonality, but lacks the IV's pace and precision.

**SME SERIES IV 1988 £1127**  
Offers nine tenths of the SME V's magic at just over half price. Exquisitely built and finished, and a design classic. Faces stiff competition these days, but lovely nevertheless.

**SME SERIES V 1987 £1614**  
The so-called Best Pickup Arm in the World isn't, but comes close. Vice-like bass with incredible weight, ultra clear midband and treble. Does everything except beguile the listener.

## CARTRIDGES

**AUDIO TECHNICA AT110 1984 £29**  
Great starter cartridge that's refined, detailed and musical beyond its price.

**DYNAVECTOR DV10X5 2003 £250**  
A distant descendent of the classic Ultimo 10X, this has warmth and sweetness in spades, allied to a punchy bass. Beats G1042 comfortably.

**DYNAVECTOR DV20X-H 2003 £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.

**GOLDRING G1042 1994 £135**  
One of the best MMs going, with sweet and extended treble and punchy, muscular bass.

**LYRIA LYDIAN BETA 1998 £600**  
An altogether more beguiling listen than the MC30S, although not quite as incisive. Superb all rounder, nonetheless.

**LYRA PARNASSUS DCT 1997 £1895**  
Jonathan Carr's masterpiece is a brilliantly lyrical and fluid performer, with a deliciously sweet tone and immense subtlety and polish.

**ORTOFON MC25FL 1994 £285**  
Strong budget MC with a cleaner and more detailed sound than the Dynavector; more sterile and less emotive, however.

**ORTOFON MC30 SUPR' 1995 £550**  
Beautifully clean and detailed device with real finesse, albeit a tad mechanical sounding.

**ORTOFON KONTRA' B 1999 £720**  
Surprisingly articulate performer by Ortofon standards. All the brand's usual polish and detail allied to real vim. Loves making music!



**SHURE V15XMR 1994 £350**  
The most musical MM yet made - brilliantly dynamic and punchy in the classic Shure mould, yet refined and tidy too.

**SUMIKO BPS 1995 £250**  
Charismatic performer with rhythm aplenty, but in other respects way off the pace - lacks smoothness and sophistication of the DV10X5.

**DIGITAL DISC PLAYERS****ARCAM DIVA CD82T** 2002 £600

Oodles of finesse, but not the most gripping performer at the price. A fine all rounder in the classic Arcam mould.

**CAMBRIDGE AUDIO****DVD57** 2003 £200

Crisp, lively DVD-A sound makes this superb value for money, but 16bit playback is way behind similarly priced CD spinners.

**CREEK CD50** 2003 £699

Lyrical and musically engaging mid-price machine, but lacks its Marantz rival's tonal exuberance

**CYRUS CD8** 2003 £1000

Highly incisive, engaging, grippy and dynamic sound, but needs careful matching to smooth ancillaries. Optional PSX-R adds bass and dimensionality.

**DENON DVD-A1** 2002 £2500

Middling CD performance, but a genuinely strong DVD-A sound with masses of space and detail. Excellent pictures, too!

**LINN GENKI** 1999 £995

Undeniably fast, lithe, musical and fun - but some won't take to its dry, wry character. Works best in all-Linn systems, where it really rises to the challenge!

**LINN IKEMI** 1999 £1950

Has the brilliant focus and clarity of the previous Karik III with a dose more tonal richness and polish. More grip and poise than most at any price - still superb!

**MARANTZ CD6000KI** 2001 £500

Brilliantly warm and voluptuous sound will endear it to vinylphiles and tube lovers alike. Musical, colourful, polished and powerful like none others at or near its price.

**MARANTZ CD17 II** 2002 £800

Of-often-overlooked middleweight boasts a truly beguiling sound with lots of tonal flavour. Sits awkwardly between the £600 and £1000 price points, where some brilliant value buys reside, though.

**MARANTZ DV8300** 2002 £1500

An extremely well designed universal player, offering a beguilingly natural sound whatever you feed it.

**MERIDIAN 507** 2003 £1195

Quintessentially Meridian mid-price machine; smooth, warm, expansive and seductively musical. The best all rounder at this competitive price point.

**MUSICAL FIDELITY****TRIVISTA** 2002 £4000

When playing SACDs, the sweetest, most lucid and lyrical digital disc spinner we've heard. Old school stereo, pure DSD design. CD sound is up in the £1000 class, too! Future classic.

**NAD C5411** 2002 £330

Highly musical and articulate budget machine in the classic NAD mould. Second only to Cambridge's CD500SE in the value stakes.

**NAIM CDS** 2001 £1195

Taut and grippy like no others at the price, but lacks the warmth of the Marantz CD6000KI at half the price. To wit, it's a very focussed product, best used in Naim systems.

**NAIM CDX2-XPS2** 2003 £4950

A fine high end machine, but add an XPS2 and it becomes one of the most charismatically engaging 16bit machines we've ever heard. Plays music with such passion!

**NAIM CDS3** 2003 £7050

The most polished Naim CD to date; tremendously capable and musical, but lacks the Rotweiler quality of the cheaper CDX2-XPS2.

**PHILIPS DVD963SA** 2003 £400

Creamy CD sound allied to superb SACD and DVD video playback makes this brilliant value for money.

**REGA PLANET** 2002 £498

Rhythmic and beguiling performer, although lacks the warmth of tone needed to better its Marantz rival. Superb ergonomics and design, nonetheless.

**REGA JUPITER** 2002 £1000

A Planet on steroids, this machine adds depth and breadth to its baby brothers already impressive sound. Good, but facing stiff competition.

**DIGITAL RECORDERS****PIONEER PDR-609** 2001 £200

Brilliant value CD recorder that makes excellent recordings from its digital inputs. Half decent digital converters, too.

**PHILIPS DVDR880** 2003 £370

Poor CD audio playback, but makes great DVD video recordings and boasts fine ergonomics. Top AV value.

**SONY RCD-W3** 2002 £250

Usual superb Sony ergonomics make for no-nonsense budget buy. Fine direct digital copies, but analogue input poor. Middling sonics, but there's a digital output!

**YAMAHA CDR-HD1300E** 2002 £600

HD means MD-style ease of editing, but compromises recording quality ever-so slightly. Add decent CD replay and it's a fine all rounder nonetheless - top value.

**ONKYO MB-S1** 2001 £1100

An interesting machine complete with MP3 functionality, but high price, fussy ergonomics and over-smooth sound make it mediocre value against the Yamaha.

**PHONO STAGES****CREEK OBH-21SE** 2003 £250

Musically enjoyable yet highly refined for the price - a superb buy. Gives the Dino a real hard time.

**EAR 834P** 1993 £400

Classic tube design with a deliciously warm and expansive sound - shame about the loose bass and veiled treble!

**LINN LINTO** 2000 £900

A musical and incisive performer, with more speed than the Delphini at the expense of detail and tonal colour.

**MUSICAL FIDELITY X-LP** 1999 £149

Clarity and detail allied to decent smoothness make it a solid first phonostage. MM/MC.

**QED DISCSAVER** 1995 £35

Rhythmic, bouncy sound via battery, although it's bright and forward. Great value, but £100 more on the X-LP is well worth it!

**TRICHORD DINO** 2002 £299

Great all rounder with switchable MM/MC. Fast, fluid and smooth like no others at the price.

**TRICHORD DELPHINI** 2003 £995

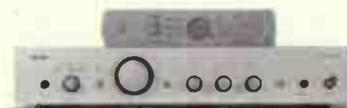
The very latest 'Never Connected' variant is easily the best, bringing velvety smoothness to an already refined and engaging performer. Neutral to a fault - some will mourn the passing of the charismatic ISO.

**AMPLIFIERS****ARCAM DIVA A65 PLUS** 2002 £370

Classic budget Arcam fare - decently sweet and open with sensible facilities and plenty of power.

**ARCAM FMJ A32** 2001 £1150

For those who value serious power and labyrinthine facilities over outright clarity or grip. A very impressive all rounder with an unusually muscular power amp at this price.

**AUDIO ANALOGUE****PUCINNI** 1999 £495

Brilliant value mid-pricer is a real step up from budget designs. Smooth, fluid, natural sound with adequate power and no nasties. Fine phono stage too!

**AUDIO NOTE OTO SE** 2000 £1199

This baby tuber is beautifully sweet and creamy, but lacks solid-state's clarity, detail and incision. Low, low power means speaker choice critical.

**AUDIO NOTE SORO SE** 2000 £1699

Wonderfully out-of-the-box sounding tube middleweight is all about sweetness and fluidity. Limited power and loose bass, but little the worse for it.

**CYRUS 6** 2003 £600

Cracking do-it-all mid price design, bringing svelte sound, good connectivity and upgradeability and stunning style and build.

**CYRUS 8** 2003 £800

Unusually warm and lyrical for a solid-stater, with decent power and punch. PSX-R adds dynamics, detail and dimensionality.

**MERIDIAN 551** 1994 £895

Evergreen middleweight is a serious performer even now. Tonally a tad dry, it's still very smooth and svelte with bags of power, detail and grip. Class act.

**MUSICAL FIDELITY****A308** 2002 £2400

Impressive monster integrated. Vast power delivered with clarity, even-handedness and finesse. Musical, with real tonal colour. Separate pre-power version better still, but less good value.

**NAD C320** 2002 £220

Not the giant killer that the 3020 once was, but a very strong budget design. A great starting point; forms a fine system with NAD's partnering C541i CD player.

**NAIM NAIT 5** 2001 £845

A fast and thrilling listen, thanks to taut and articulate bass and midband. Surprisingly polished for a budget Naim amp, both sonically and ergonomically.

**SUGDEN A21A** 1993 £1020

The most musical amplifier at the price, bar none. Delicious Class A sound is smooth, sweet and wonderfully transparent with true tonal colour. Low power, so match carefully.

**PREAMPLIFIERS****CREEK OBH-12** 2000 £220

Brilliant value budget passive, giving little away in sonics to far more expensive designs. Connectivity and build aren't great, but what do you expect at this price?

**MF AUDIO PASSIVE PRE** 2003 £1010

Novel and effective pre with switchable gain via a transformer, and balanced operation. Open and incisive sound, yet makes most active rivals sound edgy by comparison.

**NAIM NAC112** 2002 £660

Affordable admission ticket to the Salisbury high end experience. Detailed and dynamic, if tonally rather lacklustre.

**POWER AMPLIFIERS****LINN LK140** 2000 £800

Dry and grey sounding, but decently dynamic and musically engaging all the same. A worthy worker in a budget Linn system.

**NAIM NAP150** 2002 £795

Driven by a decent source and a NAC112, this gives highly enjoyable results - providing you like the Naim sound! Taut, fast and feisty despite its relative lack of power.

**MARANTZ SM-17** 2001 £700

Useful budget power amp with plenty of clean transistor power. Not the most transparent, but sweet and clean all the same. Fine build completes a great value package.

**MUSICAL FIDELITY****A308 CR** 2003 £2400

Superb transistor behemoth, worth partnering with any high end CD player or preamp. Oodles of grunt served up with poise and purpose.

**QUAD 909** 2001 £900

The latest current-dumper has a smooth and expansive character with enough wallop to drive most loads. Not the most musical, but super value all the same. Lovely build, finish and Quad's legendary service are nice.

**LOUDSPEAKERS****B&W CDM1 NT** 2002 £750

Fine clarity and imaging allied to pleasing warmth and great rhythmic cohesion make these standmounters an essential audition.

**CASTLE CONWAY 3** 2003 £930

Superbly smooth and crisp performers, with a big hearted musical sound. Ultimately coloured though, with a slow, plummy bass.

**CYRUS CLS70** 2001 £800

Charismatic performer with a fast, tight and open midband, but lacks cohesion and scale.

**EPOS ELS-3** 2003 £200

Plenty of brio and a decent degree of refinement makes this budget baby a fine value contender.

**KEF Q1** 2003 £250

Highly polished and articulate standmounters at the price, but demand good ancillaries for best results.

**KLIPSCH HERESY II** 1997 £1100

An outstanding high sensitivity loudspeaker with midrange and treble horns coupled with infinite baffle 12" bass driver. Effortless, fast and accurate.

**LINN NINKA** 2001 £995

Major on rhythms and dynamics, making them an involving listen. Reasonably refined, too - but tonally disappointing.

**MISSION 782SE** 2003 £900

Bright and tight design capable of brilliant speed and grip, at the expense of warmth. Demands high quality, high powered ancillaries.

**MONITOR AUDIO B4** 2003 £350

An unusually smooth and lucid performer at the price, and its 3-way design means it drives rooms well. Fine engineering, but build and finish so-so.

**MORDAUNT SHORT 914** 2002 £300

Warm, detailed and articulate performer, but a touch loose in the bass and veiled up top. Fine partner for budget valve amps.

**NAIM ALLAE** 2002 £1990

Taut and grippy like few others, this speaker majors on transient speed. Surprisingly smooth for a Naim box, with nicely etched treble. As always, tonally dry.

**TDK S-80** 2002 £90

Ingenious NXT multimedia sub/sat system has a wonderfully even and open sound - like baby electrostatics.

**QUAD ESL-988** 2001 £3400

Wonderfully neutral and self-effacing with sublime imaging and projection. Treble lacks extension, bass lacks weight - although the pricier 989 answers the latter resoundingly.

**PERIGEE FK-1L** 2002 £5000

Charismatic Aussie ribbon design with deliciously open mid and treble, allied to fine bass weight. The right room and ancillaries essential. Engaging, musical and powerful sound. Superb.

**W'DALE DIAMOND 8.1** 2001 £120

Still the best baby budget standmounters around. Tight and grippy thanks to Kevlar drivers, but invariably limited in the frequency extremes.

**HEADPHONES****JECKLIN FLOAT TWO** 1998 £99

Wonderful panel-like sound from these esoteric-looking headclamps.

**SENNHEISER MX-500** 1999 £19

Our unqualified recommendation for those seeking a serious sounding pair of in-ear phones. Smooth, detailed and musical.

**SENNHEISER PX-100** 2002 £29

Cracking pair of lightweight open back cans ideal for personals, but good enough for real hi-fi use. Superb build allied to a smooth and engaging performance make them the spiritual successor to the HD400s.

**SENNHEISER HD-590** 1998 £199

The company's best real-world cans to date. Open and smooth with plenty of detail. Brightly lit midband makes them an ideal partner for a valve headphone amp.

**INTERCONNECTS****CHORD CO. CHAMELEON 2** £90/M

One of our favourites, these are musical performers with a smooth yet open sound.

**DNM RESON** £40/M

Neutral and transparent - a steal!

**NORDOST BLUE HEAVEN** £150/M

Some of the fastest and most transparent cable around.

**VDH ULTIMATE THE FIRST** £260/0.6M

Carbon interconnects that help you forget the electronics and concentrate on the music. Miraculous transparency. Tight and tuneful bass mixed with air and space results in a cracking cable for the money.

# classic olde worlde

## Armed & Dangerous



David Price examines Rega's budget giant killer, the RB300 tonearm.

**U**ntil August 1983, the best budget tonearm in the world was the Rega R200. An S-shaped, Japanese sourced variant of the mid-price Lustre GST-1, it gave excellent results for its £46 selling price. But then along came an arm with such an amazing price/performance ratio, that the poor S-shaped Rega was never bothered with again. The RB300 had arrived.

Radically different to almost anything before, it practically rewrote the book. With a tapered, one piece aluminium cast arm tube with no joins between the headshell and pivot, it was the ultimate exponent of Linn's 'maximum rigidity' rule. The bearing gimbal was a substantial casting employing a threaded stem and locknut, and the bearings themselves were excellent quality – the same as those now fitted to Linn's Ekos. Friction was extremely low, and the arm could track the very best cartridges. Even the counterweight was radical, machined from dense tungsten alloy for the smallest possible diameter, and hence the lowest moment of inertia.

The new £90 arm was a stunner, matching or bettering expensive super-arms of the time in a number of ways. Its biggest strength was its neutrality, especially in the mid-band, which made Linn's Ittok (at £253) seem coloured. Still, its bass wasn't the best in the business, and nor was its treble the most extended. Installed on a Michell Orbe turntable, the standard RB300 is an impressive but

not flawless performer. Compared to a reference SMEV, bass is light and lumpy and can sometimes sound semi-detached. Mid band is uncoloured with impressive detail rendition, decent imaging and good rhythms and dynamics, although there's definitely room for improvement. Treble is also accomplished, but ultimately a bit coarse and rolled off, losing a lot of air and space compared to the SME.

With the tracking force spring disabled the standard arm gains clarity in the midband and treble, but it isn't until surgery is performed that it begins to sing. A silver Litz rewired Rega RB300 gains ease and fluidity as well as a smoother, more spacious treble. Most interesting though is Origin Live's counterweight modification. Compared to a standard RB300, the OL/RB300 gains deeper, more extended bass with improved grip. Midband is clearer and more detailed, and treble more open and sweet. But most significant are rhythms and dynamics, which become superb – the Rega loses its cold frigidly and becomes extremely fluid.

The OL/RB300 can't match the SME's bass power, dynamics, treble extension or archaeological detail digging ability, but is pleasantly warmer and softer. Treble's good too, but again not as clinically detailed as the SME's. Unlike the Series V, it isn't showy or pushy though. From being a fine budget tonearm, the counterweight mod takes the RB300 up to play with the big boys – quite something!

As analogue addicts know, there's

no 'best' super arm – some like the clinical precision of the SME sound, some the swing of the Linn Ekos, others the cohesion and naturalness of the ARO. But whatever your preference, you'll be gobsmacked at how good the humble RB300 can be made to sound.

### RB300 TWEAKING

#### [1] ARM WIRING

The biggest problem is the internal wiring rather than the arm lead itself, which can be replaced by silver Litz to good effect, but changing the arm to preamp lead will also help slightly. Also, try a separate earth lead, rather than the standard arrangement where it's earthed down one of the signal return leads.

#### [2] TRACKING FORCE ADJUSTMENT

The RB300, unlike its cheaper RB250 brother, has a carefully designed coil spring to apply a minus force of 3g when set to 0. Unfortunately, this degrades the sound by transmitting resonances from the arm base into the armtube. If you remove the spring, or disable it by setting the adjuster to 3g (i.e. so it isn't applying any force) and set the tracking weight by the counterweight and a stylus balance, you'll get more clarity and focus to the sound.

#### [3] COUNTERWEIGHT

As counterweights are easily the highest moving mass on a tonearm, it's vital they're properly decoupled from the armtube. Unfortunately the RB300's isn't, relying on a floppy rubber ring between the end stub and counterweight. Origin Live [01703 442183] offer a £75 'structural modification' which involves removing the rear end stub (normally just screwed into the back of the armtube) and replacing it with a new one torqued onto the arm by a high tensile bolt. A heavier (RB250-type) counterweight is then drilled and threaded with an Allen bolt, which can then be screwed into the rear stub rigidly. This decouples the counterweight from the armtube, meaning it doesn't muddy the sound. Although this is major surgery – OL say just bolting the counterweight onto a standard end stub isn't enough, and can degrade the sound – it's easily the most worthwhile RB300 mod.

# Retro Grade



**The phrase 'traditional values in a modern setting' best describes AMC's remarkable CVT3030 valve amplifier, says David Price.**

**O**ne glance at Hi-Fi World's classifieds will remind you of the countless now obsolete companies, set up to manufacture a myriad of great – and not so great – products for hungry audiophiles in the seventies and eighties. From Lecson and Ariston to Nytech and Inca Tech, there have been many glorious failures, the brands vanishing long before the quality is forgotten.

By the nineties however, hi-fi had become a more stable and less fly-by-night industry. All the more surprising then, that AMC should go the way of the dodo too. In hindsight, its £750 CVT3030 integrated valve amplifier was a cracking product that deserved to succeed more than most. The truth is that its concept was probably just a little too ahead of its time.

If NAD had ever made a tube amp, then this would have been it. Designed by Peter Bath (who worked for Dolby, AR and indeed NAD), and manufactured by IEEE in Taipei (makers of Cambridge Audio, Luxman, Proton and indeed NAD products), it shared considerable DNA with the ubiquitous 3020. While the technical design was different, the concept was remarkably similar – an innovative, beautifully built, plainly styled, no-nonsense integrated amplifier with focus very much on sonics. This time though, valves were used to deliver the sonic goods.

In 1992, tubes were about as trendy as nineteen seventies fashion.

Despite the efforts of – among others – this magazine, the joys of the thermionic valve weren't as universally recognised back then as now. Many were mystified then when the CVT3030 appeared on the scene. It looked like a transistor amplifier, worked like a transistor amplifier (in terms of its reliability, low noise and user-friendliness) but certainly didn't sound like one!

Its construction was a sublime mix of the old and the new. The boxy, dark grey 430x115x285mm case housed a sturdy metal chassis, explaining its considerable 12kg weight. Beautifully laid out inside, it featured separate pre and power amp sections. The latter was split into discrete left and right sides, each running two fixed bias EL34s complete with their own thermostatically controlled silent running cooling fans, plus 7 high voltage MOSFETs. Each output transformer was a large, generously specified affair with both 4 and 8ohm taps, while extensive attention was given to power supplies.

Despite its sparse aesthetics, the AMC was as generously specified as many early nineties midi systems. A phono stage was provided (and very good it was too), along with inputs for Phono, Tape, DAT, CD, Tuner, Video and Aux. A switchable Tape Monitor, Source Direct switch, headphone socket and even Bass and Treble controls were provided. Round the back, there was no less than three high quality gold plated speaker binding posts per channel.

The result was a convincing musical performer which sounded quite unlike any of its price rivals. Its warm, big hearted nature made the most of music from any source. Bass is strong (if a little loose) with a very fluid and supple feel, midband lacks the clarity of its transistor rivals, but is very smooth and even handed without the slightest hint of an edge. Treble is sweet and silky, but still spacious and detailed. The result is an amplifier which drives most modern loudspeakers as effortlessly as any solid-stater, yet invests the music with a delightfully natural, organic sound.

Of course, the AMC's sonics weren't perfect. Although nowhere near as coloured as the Quad IIs or Leak TL12s of yore, it certainly isn't as neutral as its (then) contemporary rivals like Cyrus's 3/PSX-R or Exposure's XX. Dyed-in-the-grain tube aficionados won't like it either, because it lacks the languid, rose tinted presentation of the likes of Leak's Stereo 20. In truth, it should be judged as an attempt to bring some of the musicality of valves together with the user-friendliness of solid-state – and on those terms at least, it succeeds admirably. Although something rare these days, there are more CVT3030s around than you'd think. Look hard and you can pick one up for as little as £250, although you should expect to add another £100 to that for a mint, boxed example. Even at this price though, you've got yourself a timeless bargain.

# Radford, Perfect

Haden Boardman looks back to Radford's late, great Series III STA15 and 25 valve amplifiers.

**A**s vintage valve amplifiers go, it has to be said the Radford is just about one of the most modern. While most makers were looking earnestly at the world of transistors, Arthur Radford, from his Bristol base, still carried on the thermionic flame well in to the nineteen seventies; the last of the Radford valve line being the strange "hybrid" TT range, featuring transistors driving output valves... weird!

Some of the early stuff is okay, but thin on the ground, and frankly not that spectacular. For most however, the crowing glory of Radford's amplifier output was the classic 1964 series III. There were four models - the ultra rare MA15 and MA25, along with the much more common STA15 and STA25. Based on a similar chassis design, the only real difference between a '15 and a '25 is the power supply. Valve line up for all models features an EF86 pentode front end, ECF82 triode/pentode phase splitter, and EL34 output valves. Twenty five models feature solid state rectification and negative grid bias (the user has to periodically check that 2 volts are present on the test terminals on the back of the chassis), while the '15s uses standard cathode bias, and a GZ34 valve rectifier.

Build for both is very similar; two central printed circuit boards, one for each channel, hold all passive components, with the valves located separately on the chassis. The '25 has an additional power supply board to hold the solid-state bridge rectifying diodes. Under the large central cover you will find the larger power supply components and the excellent quality

output transformers. Connections to the unit are via mediocre phono sockets (easy to replace) for the input, and normal 4mm binding posts for the 'speakers'. In addition all models have an "octal" socket to supply the matching SC22 stereo pre amplifier with power (do look out for the rare SC22P which boasts an on-board power supply), but do be careful with your leads here - Radford chose sensibly not to send the audio signal through the umbilical cord, but sadly did choose to send 240V AC mains through to the preamp to turn the power amp on and off and provide the preamp with AC outlets to drive ancillary equipment, such as the matching Radford FMT2 transistor tuner!

Sonically the classic series III is amazing given that the youngest examples are now pushing thirty four years old. They lack the kind of "mush" you can experience from a stock Leak, or Rogers valve amp, and offer a link from the 1950s to the late 1970s valve resurgence. A Radford has the soft centre of a classic Quad II, but the impact and drive of a later TVA/Beard P50 - and Radfords do not blow up! The imaging is almost holographic, and just a slight softening of impact and weight gives the amplifier's age away. That said, with digital sources, is that such a bad thing? For me the '15 has an edge of sweetness the 25 cannot quite match, while the 25 has a degree of bass slam and impact that the 15 misses out on!

Radford specified military spec components in these beasts, including early metal film resistors. However,



like any other vintage valve amplifier, most of the capacitors are now beginning to fail, so it's worth getting them all replaced. Expect to pay around £800 for even the most dog eared example, but don't shell out more than about £100 for a preamp. The mono blocks are so rare that you might as well forget it! Even at these prices however, it is hard to fault them. On the whole reliable, with no real Achilles heal, it's a safe, solid vintage amplifier which can be used everyday with modern loudspeakers.

# Tannoy's Greatest Hits

**Haden Boardman traces the history of Tannoy dual concentric loudspeakers and gives a potted guide to cabinets up to 1974.**

**T**here is but a handful of names that are truly synonymous with hi-fi, those that were there at our industry's birth, - founder members if you like. One of those is Tannoy. The company was set up in 1932 by Guy R. Fountain.

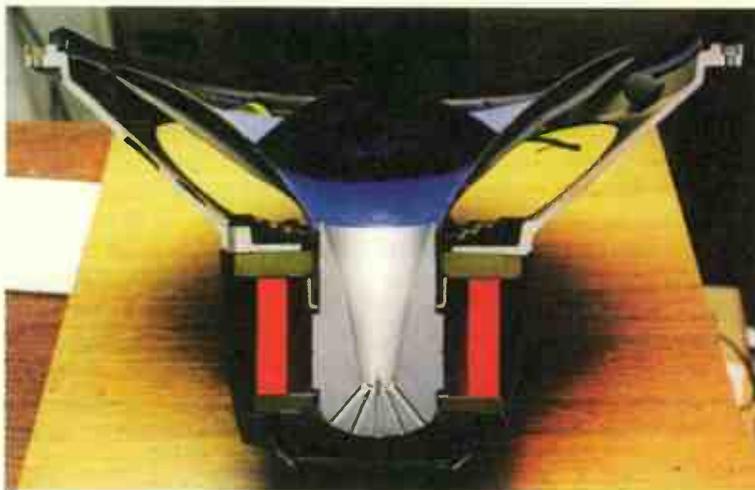
From a hi-fi point of view, it's the Dual Concentric unit, introduced in 1946, that made the company's name. The combination of a high-frequency pressure unit firing through the centre of a large bass cone wasn't exactly a brand new idea, nor is it a device unique to Tannoy; Altec's famous 604 operates on a similar principle. What marks the Tannoy unit out is its refinement, which left the rest of the field sounding coarse, crude and industrial by comparison.

The sound emanating from the Dual Concentric is in near-perfect phase, no matter what axis you listen on. No other multi-way loudspeaker manages this very important point so well; the Tannoy Dual Concentric is a genuine point-source driver.

## COLOURFUL HISTORY

Early units made from the late Forties and on through most of the Fifties have been nick-named Silvers. This refers to the colour of the magnet cover (or, more accurately the cover on the magnet and pressure unit). These variants came in 12in. and 15in. chassis sizes, had separate crossovers and are now very rare indeed. Power handling is low by modern standards at 15-25watts, and impedance high at 150ohms. A version of this unit was made for Pye and their HF25 loudspeaker.

Later refinements saw a change



from Silver to Red, which brought with it a new cone surround and a hammerite-red magnet cover. I personally have not noticed any sonic difference between these two eras of Tannoys, but that doesn't stop the earlier Silvers fetching higher prices! Still, you are rather more likely to come across a pair of Golds, made from the late Sixties up to 1974, or the unpopular HPD series (High Performance Dual).

There is little that separates the Golds and earlier units sonically, but again, myth and legend dictate that the Silvers and Red are somehow superior. In my experience, the Golds need to be driven harder than their ancestors to get them to perform, but this is pretty marginal, and could just reflect the state of the particular drivers I was listening to.

Notable changes for the Gold included a change to 8 ohms for the impedance (to help transistors out) and user-adjustable HF Energy and Roll Off controls. Power handling also rose to 30watts for the 12in. and 50watts for the 15in. By the way,

the first Golds do not have crossover controls and their plastic magnet cover is actually pink.

Introduced with the Golds was the little IIIILZ unit. Although barely smaller than a 12in. Monitor Gold, it could be used in a much lower volume cabinet and gave sound quality just as good as its two big brothers. Strangely, this unit has a slightly larger HF diaphragm, perhaps in an attempt to reduce distortion.

## PUTTING ON WEIGHT

By 1974, Tannoy were struggling to produce a high-power unit. 70% of the world's recording studios used Tannoys for monitoring at that time, but the growth in electronic music and transistor power amplifiers led Tannoy to rework the range and introduce the HPDs. Basically, they made the cone heavier by adding 'petals' to its rear.

Tannoy said this was done to cut down on cone flex, but it handily shaved a dB or two off the efficiency figures and increased power handling for a 15in. to 80watts. Sadly, in

common with some of the late Golds, Tannoy decided to move from a plastic-impregnated fibre surround to a purely synthetic-foam one as well; after 25 years, you can imagine the rotten state these are going to be in, unless you're very lucky.

HPDs are pretty good but they sound a bit lifeless in comparison to their predecessors. All Tannoys up to and including the HPDs used Alnico ring magnets (common to both treble and bass drivers), while later units relied on ceramic.

If you've got a set of drivers, there's a bewildering variety of cabinets to bolt them into. At the top of the range is the Guy R. Fountain Autograph, at the bottom the

bookshelf IILZ. It has to be said that attempts to shrink the cabinets of later models didn't work too well - both the 12in. and 15in. need massive enclosures to function correctly, and in these days of stereo, not many people would put up with a pair of such huge loudspeakers in their front room.

Other than the models listed above, there were several 'professional' cabinet makers who constructed their own versions of Tannoy's enclosures, the most well-known being Lockwood. Most of these non-Tannoys tend to be bigger and ugly, but sound fine.

Sound-wise all of these loudspeakers possess a big, clear

sound. If you had to split hairs, then you might say the high treble can be a little 'tizzy', and the cabinets have a massive effect on the sound (just remember, the bigger the better!)

I have not mentioned tweaks on old Tannoys. As far as the units and crossovers are concerned, they should be left alone. However, it is worth bypassing the level controls on Golds and HPDs, as these do dull the sound. Some people rebuild the crossover with new components, but be very careful here as you will reduce the value of your Tannoys. The best tweak for smaller enclosures is a larger enclosure! Chatsworth and Lancaster owners in particular take note.

## BOXED IN

What follows is a potted guide to cabinets up to 1974. Solid metal badges usually indicate Silver or Red units, plastic badges Golds (except for those in GRF and Autograph cabinets, which always had metal badges). Corner unit width is quoted at the widest point, and depth is front to corner-back.

### IILZ.



15in. (h) by 23in. (w) by 9 5/8in. (d). Invariably loaded with Monitor Golds. Great little infinite-baffle speaker, 99.9% of the time in Teak. Sounds best close to walls on substantial 24in. stands. Pay around £200 for a good, clean pair.

### LANCASTER.



Two versions, corner - 33in. (h) by 24in. (w) by 16 1/2in. (d) - and rec-

tangular 33in. (h) by 21 1/2in. (w) by 12 1/2in. (d). Takes both 12in. and 15in. units, 95% Golds. 12in. is a reflex enclosure, 15in. an infinite baffle. Good sound, but the poorest of the lot, and the most common! 15in. rectangular sounds very compressed, with one-note bass; prefers small rooms with a 12in. Prices for the 15in. Tannoys did go mad at one point; thankfully they have come down quite a bit in recent times. Pay £200-£300 with 12in., and up to £500 for 15in. (slightly more for Reds). Rare as single cabinets, usually paired up. Cabinets are worthless really - these prices are mostly for the units themselves.

### CHATSWORTH.



Two versions, corner - 39 in. (h) by 19in. (w) by 12in. (d) - and rectangular. Takes 12in. units and you'll find Reds, Golds and the odd Silver. Built



late Fifties to late Sixties. Corner unit works better than rectangular on small stands about 10in. to 12in. high. Early models have little wooden legs, later versions a small plinth. Very good infinite-baffle loudspeaker. Pay £200-£300 for a pair, depending on Red or Gold drivers. Singles, £75-£100.

### CANTERBURY.

37in. (h) by 25in. (w) by 17in. (d). Larger dual-port reflex corner unit, lovely Fifties radiogram look! Silvers or Reds normally fitted. These are rare but beautiful loudspeakers. Superb sound - open, dynamic, glorious. Budget on £250 for a single, twice that for a pair (hard to pair up though).



**G.R.F.**

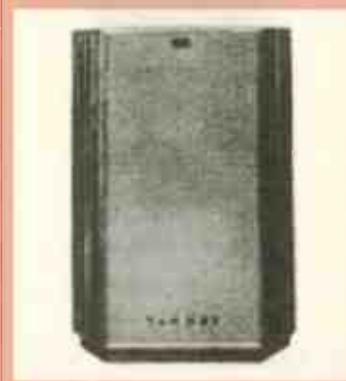


46in. (h) by 40in. (w) by 23 1/2in. (d) Quasi-horn for corners, which will handle Silvers, Reds or Golds. Simply awesome. I once owned a pair but had to sell them to buy a house! I should have rented instead. Effortless bass, just glorious. Not as rare as you would think, either. £1200 to £2000.0 will buy a pair.

**G.R.F. Rectangular.**

42 1/2in. (h) by 23 1/2in. (w) by 19 1/2 (d) Liable to be Gold drivers. Compromised version of the above, but still excellent. Rare, but commands same price as above.

**G.R.F. Autograph.**



58 1/2in. (h) by 43in. (w) by 26 1/2 (d) Silvers, Reds or Golds. Goes beyond the G.R.F. by having a larger overall bass horn and a horn in front of the main unit as well. More efficient, more of everything. The only set I ever heard was in Japan, with matching ultra-rare GRF amplifiers. I was very jealous! 'Rare' is not quite the right word for either amps or 'speakers! Simply priceless, Tannoy did not make many of these brutes.



**LANDSDOWN.**



32in. (h) by 36in. (w) by 17(d) Silver or Red drivers. Oddity; large, imposing thing that doesn't sit well in a room, and the unit is positioned too low. Very, very rare - leave them for the collectors. First model Tannoy

designed trying to avoid the use of a corner, but this back-fired. Worth about as much as a Lancaster in my opinion.

**YORK.**



Early version: 45 1/2in. (h) by 32in. (w) by 22 1/2in. (d) Red, Silver or Gold. Large dual-port reflex corner enclosure designed for 15in. drivers. Big brother to the Canterbury. Totally superb. This is pretty much the ideal enclosure for 15inchers. Hard to find, so you will pay £800 up for a pair.

**YORK**

Late version Rectangular, single-port reflex with Golds. Looks like a bigger Lancaster, has a great sound. In demand, so £500 to £800 is the going rate.

# ONE CAREFUL OWNER

Some spares are still available from Tannoy, and considering the immense cost of the units new, they are quite reasonable. Bass cones blow before the HF pressure units do, and getting an original cone for a Silver or Red is now impossible. Later Golds and all HPDs suffer from surround rot, so tread with great care here; you can be certain the cone will need to be replaced. The later magnet covers on Golds are plastic and easily broken too. Beware missing magnet covers, as it can make it difficult for the uninitiated to tell one driver from another and doesn't do their value any favours.

Tannoy have survived the past 67 years and an American take-over, a management buy-out and the relocation of the entire factory from West Norwood, London to Glasgow. The reputation the company has world-wide is astounding, especially in the Far East where Tannoy is 'the' cult 'speaker system. Throughout the late Seventies and on into the present day, outfits exist who have done nothing but ship older Tannoys across to Japan. This had forced prices up, but thanks to the current strong pound, now is the time to buy yourself a pair of Tannoys and enjoy!



# Power King

**Albert Lee salutes one of the unsung heroes of the pro-audio scene, the mighty Crown DC300A power amplifier.**

**L**ike Leak tuners, Decca cartridges, Mayware pick up arms, IAS loudspeakers and Garrard turntables, here's a classic audio product which is genuinely built to last.

Crown's gargantuan DC300A is an exceptional product that can still be found in recording studios, radio stations and cinemas – where many thousands have been used over the years. They were also available as hi-fi amplifiers, but never caught on due to their price and professional orientation. It's a testament to their quality, and the respect they command within the pro audio industry, that service is still available by the manufacturers in this country.

Have a tricky loudspeaker, or need serious sound pressure levels? The Crown obliges – and more importantly – does so without fuss or failure. It puts out a whopping 190 watts RMS into 8 ohms or 340 watts RMS into 4ohms, and offers massive current output with negligible phase distortion and complete stability into loads of 2 ohms and above. It will even drive heavily reactive loads without shutting down. Truly an incredible piece of audio engineering, it weighs in at a hefty 22kg, thanks in no small part to the massive transformer in the centre in an enormously heatsinked assembly!

It sounds superb – but there's a caveat, which is mentioned in the operating manual. You have to endure a wait of fifteen minutes after powering up before using it. If not, then you're rewarded with over prominent bass and midband and treble with little image width or stage depth. But after the warm up



period has elapsed, this amplifier is the model of transparency!

Bass is muscular and precise, and there's a deliciously crisp and untiring midrange and smooth treble. Then there's the image placement, which is spectacular. Listening to the Count Basie orchestra with Frank Sinatra, the sound is stunningly alive. James Brown has an almost visceral feel, with real impact and drive. You can, for example, effortlessly tell the difference between string basses and percussion. Instrument and image location is stunningly realistic. Stereo separation is extremely good, which is probably due to the power supply. It is, after all, a 1kW transformer with 48 Joules of energy storage in the power supply capacitors. This enables the amplifier to instantly respond to transient information, which is faithfully reproduced. The sense of timing and rhythm are almost beyond belief.

There's a catch, however. DC 300A amplifiers require 1.75 volts RMS of signal input, so most modern pre-amplifiers may not produce enough signal to drive them unless they have been modified! They also

need very good ventilation, because if they get too hot (or become faulty) they will shut down. Crown did build a matching pre-amplifier called the IC150 - again it was built for quality reproduction, although its turntable input is nothing special. The resulting sound of this combination is exemplary.

The average price is around £200 for well-used examples of the DC300A, and up to £350 for partially rebuilt units. The IC150 preamplifier is relatively rare, but prices start at around £120-175. If like me you want an amplifier that will last virtually forever, then buy one - but beware! As with all second-hand audio gear, it's absolutely essential that you listen to it before parting with cash to ensure its working properly. And always ask for a receipt with the vendor's name and address on it.

#### SERVICE

For more information, check out the official Crown website ([www.crownaudio.com](http://www.crownaudio.com)) where you will find a user guide and service manual which can be freely downloaded. For service in this country contact MAJ Electronic, Unit 1, Dawley Trading Estate, Stallings Lane, Kingswinford, West Midlands, DY6 7HU.

# Straight Talking

**Naim's ARO tonearm hit the hi-fi world like a bolt from the blue... David Price reminds us all why analogue rules, okay?**

It is 1988 and the best tonearm in the world is the Linn Ekos, if you believe one half of Britain's hi-fi press, that is. If you don't, it's the SME Series V. Either way, both arms are ostensibly very eighties - the SME is a technological tour de force with a super-analytical sound, while the Linn has the big, bouncy, powerful character of its Ittok precursor, only more so.

Either way, back in the days of Maggie Thatcher, red braces, Golf GTis and dodgy shoulder pads, there seemed little room in the world for a pickup arm with the far more nineteen seventies qualities of gentle, beguiling musicality and woolly frequency extremes. With this in mind, it is to Naim Audio's eternal credit that they launched the ARO when they did. Even more so if you remember how at the time every major UK manufacturer was falling over itself to launch its first silver disc spinner.

Everything about the ARO was so damn stylish. From its deliciously defiant name (Analogue Rules Okay), which raised two fingers to the format everyone feared would soon kill vinyl, to its stark engineering minimalism. Forget adjustable geometry, damping troughs and the rest of it, here was a pickup designed to work with only a handful of cartridges. Even better was the three point fixing, drilled expressly for Linn's Troika MC, from the very company who made the ARO's closest rival!

Best of all was the fact that Naim's new baby was a unipivot. At the time, this orientation was about as fashionable as an orange Austin Allegro with furry dice. The term

conjured up memories of old blokes tinkering with ancient Thorens 150s, trying to get their V15s to track Perry

Como records better... In the thrusting world of Bros and Curiosity Killed the Cat, this was hardly street cred! Indeed Naim had previously argued that unipivots 'could never work', but on launching the ARO said they'd finally 'found a way to make one properly' and argued that 'a properly designed unipivot arm has many qualities that place it above conventional gimbal bearing arms'. It certainly raised some eyebrows.

Naim's way of doing unipivots 'properly' involved very high construction quality, with a beautifully finished arm tube and light alloy headshell, top class jewelled unipivot bearing and high precision counterweight. To the delight of manual cueers everywhere (this writer included) there wasn't an oil damped lift/lower device to be seen, while the bias was an olde worlde thread and weight.

Then, of course, there was the absence of lateral tracking alignment slots in the headshell - with just three Troika shaped holes taking their place - and zilch in the way of calibrated tracking force adjustment. All this doubtless caused SME Series V fans to argue how crude the ARO was, but anyone who's ever experimented with tonearms will know how dramatically cueing devices, wobbly headshell mountings and bias

and tracking force springs can degrade the sound!

Yet the real joy of the ARO wasn't how it subverted established design conventions, but how it sounded. Make no mistake, it's a coloured performer alright - you can hear it softening low bass and high treble, privileging the upper midband and sitting on overall dynamics - but it's also incredibly musically engaging. Whereas the SME has cosmic frequency extremes and the Linn Ekos fantastic bravado, the ARO shines in its wonderfully fluid rhythmic abilities. Put simply, it's supremely good at conveying 'micro dynamics' - the tiny nuances of inflection and rhythmic accents of a musical performance. This makes for an almost hypnotically engaging listen that just draws you into the music on an extremely emotional level. Funnily enough, this talent seems to work equally well on whatever music you care to play - from The Cranberries to Kraftwerk, it's always a compelling listen.

Although designed expressly for the Sondek, the ARO actually works in a number of modern decks, including Michells for which mounting plates can be made to order. It also aligns with a number of modern cartridges (including, for example, various Ortofons and Regas) - check with your cartridge supplier for mounting geometry data.

Properly set up in a decent deck the ARO is still something special, and second only to very few in the foot tapping department. Thanks to its excellent build it's a durable piece of kit and a fine second-hand buy for around £500 - if you can find one. Unsurprisingly, most Naim ARO owners simply never feel the need to upgrade!



# Yes Kan Do

David Price looks at a great second-hand speaker bargain, Linn's diminutive Kan standmounter.

Until 1980 the only mini-monitor worth having was the BBC LS3/5a. With its superb clarity it was great on classical music, but like all BBC designs it just didn't boogie. A shame, because many rock fans hankered after a mini speaker that could really kick, but had so far been denied. Linn responded with the Kan, so called because it "can do what other small speakers can't", in the words of the Glaswegian company's PR-speak.

With very similar (12" by 7.5" by 6.5") dimensions and the same ubiquitous KEF B110 Bextrene mid/bass unit, many people assumed the two would sound practically the same. This couldn't have been further from the truth - unlike the LS3/5a, the Kan used a superb Scanspeak tweeter and different crossovers and internal construction.

Because of their low 86dB sensitivity and unfriendly (6ohm nominal) load, Linn recommended Kans be used with nothing other than top Linn-Naim systems. Magazines preached that anything 'less' than a Naim NAPI60 was tantamount to slaughter of the first born child. Although this overstated the case, the Kan really didn't suffer fools gladly.

Rammed hard against rear walls and driven by the then rather soft and beguiling Sondek, things gelled superbly. The Naims' low end grunt allied to the Sondek's smooth treble countered the Kans' characteristic forwardness perfectly, and the music flooded forth. Particularly strong on rhythms, the Kans could stop-start faster than just about every other moving coil speaker around, making for superb transients and genuinely musical, foot tapping sound.

The downside was the bass - ermm, there wasn't any. Bass guitars disappeared from pop songs, jazz no longer had double basses, while great

church organs sounded more like Stylophones - despite Linn's claimed 70Hz to 20kHz (+-3dB), there was precious little action under 120Hz, truth be told. Still, you could sort-of get round this with careful siting, high grade front ends with plenty of grunt, and telling yourself you didn't like low frequencies anyway.

A couple of years later, Linn introduced the Kan II stand, a far more sturdy open frame type with top spikes which let the Kan work even more of its rhythmic magic. A series of speaker modifications followed, including a new tweeter. However, most mods were subtle in effect, and only served to give the speaker added mystique - people spoke in terms of Kans having good vintages, like fine wines.

In 1989 the Kan II followed, with the biggest mods to date. Although the enclosure dimensions were retained, the II cabinetry was substantially reworked for extra stiffness. Front baffle thickness was increased, and it was welded into position with ultra-strong adhesives. The tweeter end of the baffle was raised for improved dispersion, while the crossover was redesigned and made biwirable.

The result was an altogether more civilised sounding loudspeaker, with a more even frequency balance and fewer unwanted colorations. Kan purists were divided as to whether the II was better however - as it lost some of the original's punch - but this was all very much a matter of personal taste. Ultimately the Kan II was a superior 'real world' design, and even worked well with CD.

The very last Kan IIs featured Linn's Ku-Stone inserts, but weren't around for long. By 1994 the cost of the drivers was getting too high to



make the Kan a viable commercial proposition, and Linn introduced the Tukan. Although a nice little speaker, it's a far more middle of the road design - lively and musical but without the steel of its predecessors.

The good news is that for the price of cheap entry-level standmounters you can get a good pair of Kans second-hand. Pay between £120 and £250 depending on age, condition and whether stands are included. Make sure they come with the original box, and if Kan IIs the biwire link key too. Set them up close the wall, use a rich sounding cartridge in your turntable - forget about Linns or Audio Technicas - and sit up and enjoy the action!

# Six-Appeal

Nick Tate looks at Celestion's controversial eighties classic, the SL6 loudspeaker.

**U**ntil the early eighties Celestion were regarded as a conservative company, rather pipe and slippers and Gin and Tonic. Like Quad, they'd lived off the success of a popular range through the seventies without much need to change. But the Ditton range was fading, and the need was for an exciting new design to get buyers back.

Enter the 1981 SL6, born of advanced laser interferometry techniques pioneered by Graham Bank, who'd done much of the ground work for his previous employer Wharfedale. This technique meant engineers could accurately plot the behaviour of a speaker cone and its breakup modes three dimensionally. Duly, designers could tune out distortion and coloration far more accurately than before. What Celestion arrived at was a copper dome tweeter designed to act as much like a pure piston at audio frequencies as possible, and a one piece mid/bass driver with no glue joints between the surround, cone and dust cap.

It was an instant hit with most of the hi-fi press, with its metal dome tweeter a particular revelation. Although Yamaha had done something similar five years previous with the NS1000's titanium unit, Celestion became widely regarded as starting the trend for metal domes. The SL6S followed several years later, this time with a lighter aluminium design plus a thinner braced cabinet, and got equally enthusiastic reviews from certain sections of the press.

Certainly, the SL6 was different to what had come before. Seventies speakers had generally been big multi driver boom-boxes with wobbly cabinetry and proprietary drive units, making for a coloured and usually rhythmically slow sound. By contrast



the new Celestion was extremely clean and clear, as well as being quick off the mark and good at imaging. How could it fail?

Well, arguably, that clever metal dome tweeter that inspired so many other eighties designs was the SL6's undoing. True, it did behave well at most frequencies, but there was a very nasty break-up mode at 19kHz. Celestion rightly spotted this, but their way round it was a sharp notch filter that kicked in just below the trouble started. But this wasn't without problems, and apart from the need for lots of sound-degrading crossover components, it meant much of the signal's HF content went AWOL.

The result was a rather dull sounding speaker. Reviewers called it 'nasal' and 'congested', as well as accusing it of lacking sparkle - true enough, and proof that it polarised critical opinion. The problem with assessing speakers is that what sounds good isn't necessarily accurate, and in Celestion's quest for neutrality, many believed they'd

engineered out the life. The jury's still out, even today. Many classical fans swear by these speakers, praising their 'electrostatic-like clarity and imaging', others point out that the SL6s can't play a tune to save their life.

Suffice to say that they're an acquired taste, but if you already have it there are plenty of second-hand SL6s around at very reasonable prices - pay between £150 and £250. Later derivatives such as the SL600 with its Aerolam cabinetry (an aluminum honeycomb construction) are rarer and more expensive, but take the family sound further - from dry and neutral to extremely dry and more neutral.

Match with powerful transistor amps like Quad's warm-but-muscular 606, 606/2 or 707 - 84 dB sensitivity means Single Ended Triodes are out! So, if you like that BBC 'monitor' sound, never stray from classical and don't much care about frequency extremes, a well preserved pair of SL6s could be the used bargain of the century for you.

# Second Coming



**David Price thinks Linn's Axis turntable is a sharp used buy.**

**B**illed as 'Son of Sondek', as Linn's second ever turntable design the Axis always had much to live up to. Launched in 1987 when Compact Disc was finally taking hold, it was Linn's attempt to lure silver disc purchasers back to vinyl. This meant it had to outperform decent CD players, be easy to set up and use, and look good. By any yardstick it succeeded on all three counts.

Its problem was its big brother, which was still held in a kind of reverential awe at that time. Why, said magazine reviewers, bother with an Axis when The Best Turntable In The World was "only" £300 more? This aside, the Axis was a fine piece of kit with many interesting features – some of which actually improved on its much hyped bigger brother.

For example, its intelligent active power supply not only gave Linnies push-button 45rpm for the first time, but varied the power going into the motor depending on the load. Clever stuff – so clever that it subsequently appeared on Linn's top Lingo PSU three years later.

The other trick was its novel, non-adjustable rubber suspension system, which meant the Axis worked straight out of the box. Unfortunately, for those schooled in the Cult of Linn, this was most uncool, depriving the Axis of a

number of Flat Earth brownie points.

Elsewhere, the Axis borrowed a lot from its bigger brother, with the same – albeit less highly specified – bearing, aluminium platter and felt mat. The plinth was a cheaper affair than the LPI2 but handsome nonetheless, which together with the brushed satin black top plate looked far fresher and more contemporary than the Sondek.

The original Axis came complete with an LVX+ plus arm for £299 – a modest sum considering the armless Valhalla LPI2 cost over twice that. Unfortunately, being a distant relative of the ADC ALTI, the LVX wasn't up to much, being just about capable of tracking a mid-price MM. The Akito which replaced it in 1989 was an altogether sturdier design, but still no match for Rega's giant killing RB300.

Strictly speaking, the Axis was never the best sounding turntable in its price range – the Manticore Mantra lay claim to that mantle – but it was a damn good second. Properly set up with a decent cartridge it still sounds surprisingly good by today's standards. Curiously, its presentation is much closer to Roksan's Xerxes than its big brother, being tight, lean and punchy, with no trace of that bass bloom and 'woody' lower mid coloration that characterises the

LPI2. Speed stability is very good, as are dynamics, and it still has that quintessentially Linn rhythmic bounce. True, it isn't really in the super-deck league, but it's still a significant step up from a Rega 3.

Drawbacks? PSU problems have been known, with stories of mains surges spontaneously starting the motor and cooking the active power supply – the answer being to unplug the deck when not in use. Also, the rubber suspension sometimes goes out of alignment, making it hard to level the deck. Overall though, the Axis is a good design built well.

It's also a great second-hand buy, particularly if you're that strange brand of vinyl-junkie who actually wants to listen to music rather than tweak your turntable. Pay between £150 and £250, go for a one owner example with the original box and chuck the K9 (which it'll inevitably come with) for a Goldring GI042.

Tweakwise, the news isn't so good. True, you could fit an Ittok or an Ekos, but you'd be a fool to try – the Axis just isn't up to it. Early LVX fitted decks would benefit from the later Akito arm, but it really isn't worth losing sleep over, especially considering Linn's rather optimistic pricing of the latest Akito II! No, turntable fettlers look elsewhere, the Axis is happiest simply playing music, something it does rather well, and with the absolute minimum of fuss.

# PM-Attention

Nick Tate looks at one of Marantz's lost second-hand classics, the PM-94 integrated amplifier.



**B**eing born in 1988 made life terribly hard for Marantz's flagship PM94 integrated amplifier. For this was the height of the Linn-Naim Flat Earth hegemony that dominated Britain's high-end scene, and most magazines and dealers just didn't want to know about Japanese esoterica, regardless of how good it sounded. A great shame, because it meant one of the best integrations ever to come out of Japan was all but ignored.

More than just another big black box, the PM94 was a huge 25kg integrated that sold for the princely sum of £1000. It was packed with some very original thinking, much of which went on to become common practice during the nineties. Unfortunately, being festooned with inputs, tone controls and tape dubbing facilities was little short of heresy in those days, so no one bothered to look for its star qualities under that very conventional skin.

First was its use of MOSFET output devices. Although many amps use them nowadays with great success, back in the late eighties they were about as fashionable as admitting you liked ABBA - memories were still fresh in people's minds of the very mediocre sounding first generation MOSFET amps. But used properly, as the PM94 proved, these clever new transistors had far

lower distortion and a wider bandwidth, resulting in a cleaner, smoother, more valve-like sound. The PM also boasted Marantz's unusual 'Quarter-A' system, in which lower level signals up to a quarter of the maximum power output were handled in pure Class A. When called upon to pump higher levels, the amp switched into Class AB, resulting in a not inconsiderable 140W per channel. The system was surprisingly effective in practice, and not, as many assumed, just another Japanese-style sales gimmick.

Another ace the PM94 played was its very carefully specified, high grade componentry chosen through in-depth listening rather than by accountants, which was still the common practice at the time. Critical signal capacitors were damped copper styrol types, while the main power caps were damped with ceramic powder to eliminate microphony. To reduce sound-degrading eddy currents, the chassis - in true Ken Ishiwata style - was all copper, along with most of the power transistor and case screws. And just for good measure the transformer was a huge centrally mounted toroid, larger than many British specialist integrated amps in their own right! Finally, rather than just chucking in a proprietary IC phono stage or even doing a quick discrete transistor jobbie, Marantz

specified a superb quality LC-OFC wound transformer - a lovely touch!

So rather than being a steroidally enhanced version of your average gadget festooned Jap amp, the PM94 was a very finely fettled beastie indeed. Providing the Source Direct mode was used to bypass its numerous unnecessary bells and whistles, it sounded gorgeous. At normal listening levels it was an extremely sweet, clean, clear performer with an uncanny ability to let music flood forth from your speakers. But pressed into action with a clockwise twist of its beer-can-sized volume control, the velvet fist turned into an iron battering ram able to make mincemeat of the most inefficient loudspeakers. And even when forced out of its natural Class A operation, the big Marantz displayed as much grace, space and pace as a TWR Jaguar.

Such superb engineering means all the PM94s that found their way into the UK should still be running sweet as a nut even today. And if you factor Marantz's excellent after sales service into the equation, there's a lot to be said for acquiring a used PM94. Unfortunately, the amp is already something of a cult, meaning it isn't as cheap as most of its rivals of a similar vintage - look to pay between £400 and £450 for a top example. But even at this price, it's still one hell of an amp.

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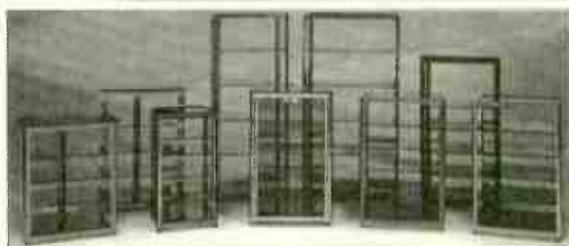
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AUDIO ALCHEMY V3 DAC + PSU	£900	£429
AUDIO MECHA Kreatura Trans	£1500	£439
AUDIO MECHA Damnation Tran + Upgrade	£1250	£439
COPLAND CDA288		£999
EXPOSURE CD Player	£999	£629
KENWOOD DP7090 CD Player	£399	£129
KENWOOD DP-X9010 Trans	£400	£199
KRELL KPS 25 CD/Pre	£24,998	£12,996
LINN Karik CD	£1850	£1098
MARANTZ CD80 / Trichord upgrade		£450
MERIDIAN 203 DAC	£499	£228
MERIDIAN 207 CD Player/Pre-amp	£700	£299
MERIDIAN 506 CD	£895	£576
MERIDIAN 507 CD	£1195	£948
MERIDIAN 508 CD	£1500	£798
MERIDIAN 562 Digital Controller		£450
MICROMEGA DAC 1	£750	£320
MICROMEGA Micro-DAC	£499	£149
MUSICAL FIDELITY Nu-Vista 3D CD/Pre	£3000	£2198
NAIM CDI	£1999	£948
NAIM CD5		£700
NAKAMICHI 7 disc CD player	£400	£129
ORELLE DA10T Trans	£900	£349
PERPETUAL TECHNOLOGY		
Upsampling DAC	£695	£496
PROCEED PDT3/PDP3 Trans/DAC	£3999	£1800
QED Reference DAC		£299
QUAD 66	£695	£280
REGA Planet	£500	£350
ROKSAN kandy CD Player	£500	£199
ROTEL RCD99 CD Player	£799	£399
TEAC VRDS 10 (CD Player)	£699	£450
THETA DATA Basic Trans	£2400	£749
THETA PEARL CD Trans	£1400	£898
THETA DS Pro Basic 1111A DAC	£3500	£1698
THORENS TDC2000(Trans) + TOA2000(DAC)		
	£2000	£1198
WADIA 860CD	£6995	£4998

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ARCAM Alpha 10	£995	£496
AUDIO RESEARCH LS9	£1600	£898
BAT VK40	£4950	£1498
BRYSTON 7B Pro Monoblocks	£5000	£2498
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CONRAD JOHNSON PV 10AL Pre	£1600	£849
CONRAD JOHNSON PV 10 Pre	£1400	£670
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TESSERAC Pre	£1500	£798

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AUDIO INNOVATIONS 800 Mk11	£1500	£748
AUDION Silver Knight 300B Mono's	£2250	£1390
AUDIONOTE M2 Pre	£1000	£600
AUDIO PRISM Debut (Red Rose)	£2800	£1700
AUDIO PRISM Mantissa (Red Rose)	£3000	£1800
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AUDIO RESEARCH LS2B Mk2 pre	£3000	£1500
AUDIO RESEARCH LS38	£1300	£696
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CARY CAD300SE monoblocks (As new)	£5000	£3998
CLASSE CA200 + DR6	£7700	£3500
CONRAD JOHNSON Prem 8 Monos	£16,000	£9750
CR DEVELOPMENTS Carmelo (Pre)	£900	£428
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JADIS JA50 Monoblocks (Current models)	£5890	£4446
JADIS Dely 7 Power		£2698
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<b>AUDIO RESEARCH</b> VT100/3 Pwr EX-DEM	£6400	£5126	<b>NAGRA</b> VPA Monoblocks EX-DEM	£9350	£7246
<b>AUDIO RESEARCH</b> VT200/2 Pwr EX-DEM	£11982	£9586	<b>NAIM</b> NAC 102 Pre EX-DEM	£1210	£964
<b>AUDIO RESEARCH</b> LS25 Mk2 EX-DEM	£5795	£4636	<b>NAIM</b> NAC 82 Pre EX-DEM	£2500	£1994
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<b>GRAAF</b> 13.5 BII Pre EX-DEM	£3950	£2746	<b>NAIM</b> Credo EX-DEM	£1425	£994
<b>GRAAF</b> GM20 OTL EX-DEM	£2950	£2356	<b>OPERA</b> SP1 (Cherry) EX-DEM	£525	£426
<b>HARBETH</b> Compact 7ES EX-DEM	£1299	£996	<b>PANASONIC</b> 42PWD4 Plasma + Bracket EX-DEM	£2244	£2244
<b>HARBETH</b> HLP-3ES EX-DEM	£799	£596	<b>PATHOS</b> Twin Towers EX-DEM	£3250	£2596
<b>KRELL</b> KPS28 CD Player EX-DEM	£8998	£6746	<b>PATHOS</b> Logos EX-DEM	£3250	£2596
<b>KRELL</b> KAV300i EX-DEM	£3965	£3168	<b>PIONEER</b> DVR7000 DVD Recorder EX-DEM	£1299	£896
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<b>LINN</b> ThemeScene SS Projector EX-DEM	£3500	£2794	<b>PROAC</b> Response 2.5 (Li Oak) EX-DEM	£2700	£2148
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<b>McINTOSH</b> MC352 Power Amp FINAL	£5095	£2996	<b>REGA</b> ELA EX-DEM	£750	£418
<b>McINTOSH</b> MC7108 BChnl Pwr Amp FINAL	£2549	£1496	<b>REGA</b> Jupiter EX-DEM	£1000	£658
<b>McINTOSH</b> MCD751 CD Trans FINAL	£2549	£1496	<b>REGA</b> Exons (Pre) EX-DEM	£1000	£638
<b>McINTOSH</b> MX135 AV Central Centre FINAL	£7990	£3996	<b>REGA</b> Exons (Manoblocks) EX-DEM	£750	£498
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<b>McINTOSH</b> CS36 Centre Speaker v	£2495	£1626	<b>SONUS FABER</b> Concertina EX-DEM	£599	£529
<b>McINTOSH</b> PS112 Active Sub 12" 400w EX-D	£1998	£1296	<b>SPENDOR</b> S8 Cherry - Slight cabinet damage	£1700	£1346
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<b>MICHELL</b> Delphini Phono LPSU EX-DEM	£895	£738	<b>WILSON</b> Cub (Gloss) EX-DEM	£6890	£3996
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Eupen GNLM 05/2.5 (CSA 2.5) shown with Maringo IEC 320 will be fitted at extra cost.

### GNLM 05/04

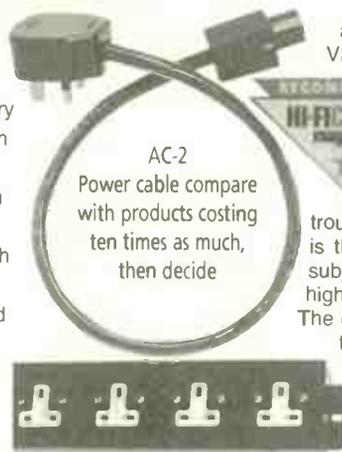
£58 for 1.0m, £72 for 1.5m, £86 for 2.0m. Also available of the reel.

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 AUDIO RESEARCH SP-14 PRE C/W PHONO STAGE (£4000)  
 AUDIO RESEARCH LS-2 PRE AMP (MULLARD REVALVE)  
 AUDIO RESEARCH BAL-1 BALANCED/SE CONVERTER  
 CDNRAD JOHNSON PREMIER 14 REMOTE CONTROL PRE AMP  
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 VINTAGE RADIO RESTORATION ADUR MONOBLOCKS  
 GRANT G200 AMS LTD EDITION 200 WATT MONOBLOCKS & G100P PRE AMP  
 LUMLEY REFERENCE LR-120 MONOBLOCKS (TRIDDE SWITCHABLE) REVALVED  
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 UNISON RESEARCH CSP PRE AMP WITH PHONO STAGE  
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 LUMLEY REFERENCE PP-40 PRE & ST-40 POWER AMPS (CHROME)  
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 PIONEER M-90 POWER AMP WITH VOLUME CONTROL/3 INPUTS  
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 ACCUPHASE DP-80 TRANSPORT  
 ESOTERIC TEAC P-1 TRANSPORT  
 AUDIO SYNTHESIS TRANSEND TRANSPORT CDX AES/EBU AT&T  
 MARANTZ CDA-94 TRANSPORT (AUDIO SYN. MDD. AT&T/COAX)  
 DPA T-1 TRANSPORT (WITH DELTRAN)  
 DRELE CD10T TRANSPORT SILVER WIRED  
 COUNTERPOINT DA-11E TRANSPORT  
 THETA OS PRD GEN III (AT&T, CDAX, ETC.) WAS £6000 APPROX  
 THETA DS Pre GEN III (PRE-AMP/DAC)  
 THETA OS PRD PROGENY A DAC  
 THETA OS PRD BASIC-11 DAC  
 DPA PDM-1 MKII 2 BDX DAC (WITH DELTRAN)  
 DPA ENLIGHTENMENT DAC (WITH DELTRAN)  
 AUDIOPHILE DAC-1X SIGNATURE  
 MONRIAD 18B DAC & SEPERATE PSU.  
 TECHNICS SL-P 2000 REF CD PLAYER  
 SDNY XA-50ES CHAMPAYNE GOLD  
 PIONEER PD-91  
 TALK THUNDER-1 EX DISPLAY/NEW  
 TECHNICS SLPs 900

## VINYL

FORSSELL AIR FORCE ONE REFERENCE AND ARM  
 NOTTINGHAM ANALOGUE STUDIO MENTOR REFERENCE/COVER & MATCHING ARM  
 DRACLE DELPH 3. BONDED PLATTER ETC  
 SYSTEMDECK LINK BASIK NEW A.T. CARTRIDGE  
 ARISTON O DECK-11  
 DECCA LONDON INTERNATIONAL ARM (NEW UNUSED BOXED)  
 LEHMAN BLACK CUBE SE  
 HEDD AUDIO QUAZAR PHONO STAGE & SEPERATE PSU  
 McCORMACK PHONO STAGE  
 TALK BREEZE PHONO STAGE MM/MC EX DISPLAY  
 DENSON DRIVE MOVING CD/LD PHONO STAGE

## LOUDSPEAKERS

WILSON SYSTEM 5.1 PIANO BLACK  
 B & W SILVER SIGNATURE, EXTERNAL X-OVER/3 METRE CABLES & SLATE STANDS  
 SONUS FABER ELECTA S  
 AUDIOPHILE ANK/SP SILVER WIRED  
 KELLY KT-3 HIGH 95 DB SENSITIVITY CHERRY VENEER  
 INFINITY KAPPA-8 REFERENCE  
 SNELL C MK-IV AMERICAN DAK VERY RARE/GOOD  
 ALR JORDAN NOTE-5 SPECIAL BOBINGA WOOD FINISH EX DISPLAY/AS NEW  
 PRDAX STUDIO 150  
 ROGERS STUDIO-7  
 EPDS ES-11 MK2  
 ROKSAN DJAN 3X & DJAN 3S SUBWOOFER SYSTEM (ROSEWOOD) RARE/SUPERB  
 BOSE 901 MK IV & MATCHING EQUALISER (RECENT/700 SERVICE)  
 AMPHION NEDM MK1 EX DEMO  
 AMPHION HELIUM 1

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 MINT/BOXED £1395  
 £375  
 EXCLT. £1995  
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 £395  
 EXCLT. £2250  
 MINT/BOXED £1650  
 EXCLT. £475  
 MINT £695  
 MINT BOXED £375  
 MINT/BOXED £395  
 EX DEM/BOXED £350

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 MINT £995  
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 AS NEW/BOXED £2995  
 MINT £795  
 MINT £375  
 MINT/BOXED £395  
 AS NEW/BOXED £375  
 EXCLT £1250  
 AS NEW £295  
 MINT £550  
 EXCLT/MINT TBA  
 MINT £995

MINT/BOXED £1695  
 MINT/BOXED £995  
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 MINT/BOXED £895  
 EXCLT/BOXED £1750  
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 EXCLT £475  
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 MINT/BOXED £395  
 EXCLT £595  
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 MINT/BOXED £350  
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 MINT £675  
 MINT £595  
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 MINT/BOXED £1250  
 BOXED £225  
 BOXED/VGC £195  
 £149  
 BRAND NEW/BOXED £450  
 BRAND NEW BOXED £450  
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 CASTLE AVON FLOORSTANDERS  
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 MORDANT SHORT 902S SIGNATURE  
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 REL STORM ACTIVE SUBWOOFER

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 MINT £795  
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 EXCLT £550

## TUNERS /TAPE/DAT/MINIDISC/MISC

NAKAMICHI DR-3 (VERY LITTLE USE)  
 SONY 3000S TUNER (GOLD)  
 TALK LIGHTNING 1.1 TUNER EX DIS.  
 DENON TU-600 TUNER  
 PIONEER CTa-91 REFERENCE CASSETTE DECK  
 AUDIO RESEARCH BAL-1 BALANCED/PHONO CONVERTER

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 SOUNDSTYLE XS 310 A/V TABLE (£320)  
 SOUNDSTYLE XS 105 5 SHELF CANCELLED ORDER 2 OFF  
 SOUNDSTYLE XS 100 4 SHELF CANCELLED ORDER 2 OFF  
 SOUNDSTYLE XS 250 CD STORAGE RACK CANCELLED ORDER 2 OFF  
 ATTACAMA R724/ATTABITE ( WAS £250)  
 B&W STANDS FOR CD-1NT SILVER/BLACK  
 TARGET 24 INCH STANDS  
 TARGET R-2  
 ACCUSTIC ENERGY AE-2 STANDS LEAD FILLED

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 EX DIS £195  
 EX-DIS £195  
 BRAND NEW BOXED £225  
 BRAND NEW BOXED £195  
 BRAND NEW BOXED £195  
 VGC £150  
 MINT £75  
 EX DIS/AS NEW £250  
 MINT £375

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 BLACK RHODIUM S-300 BI WIRE LOUDSPEAKER CABLE BRAND NEW LTD QUANTITY £25 PER METRE

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BRAND NEW £225  
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 £75

## CABLES

### LOUDSPEAKER CABLE

VAN DEN HUL REVELATION 2 METRE STEREO PAIR TERMINATED  
 VAN DEN HUL REVELATION 1.5 METRE STEREO PAIR TERMINATED  
 MIT MH-750 8 FT. PAIR  
 MIT TERMINATOR 6 3.3 METRE PAIR (NEW)  
 NIRVANA AUDIO SL-SERIES 2 X 3 METRE PAIR EX DEM. FACTORY TERMINATED  
 TRANSPARENT WAVE 200 2 METRE PAIR  
 CARDAS HEXLINK 2 METRE PAIR (FACTORY TERMINATED)  
 AUDIONOTE AN-SP 2 METRE PAIR (FACTORY TERMINATED)  
 AUDIONOTE AN-L 4 METRE PAIR (FACTORY TERMINATED)  
 QED GENESIS SILVER SPIRAL 4 X 1.5 METRE TERMINATED  
 VANDEN HUL MC CS 122 2 X 3 METRE PAIR  
 AUDIQUEST CRYSTAL HYPERLINK 2 METRE BI-WIRE TERMINATED  
 AUDIQUEST INDIGO 3 METRE PAIR  
 LUM K-400 3 METRE PAIR (TERMINATED)  
 CABLE TALK CONCERT BI-WIRE 5 METRE PAIR (TERMINATED)  
 CHORO CO. 5 METRE PAIR (TERMINATED)

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 £525  
 £175  
 £275  
 £375  
 £225  
 £175  
 £75  
 £75  
 £50  
 £35  
 NEW £100  
 NEW

## INTERCONNECT

ACOUSTIC ZEN SILVER REFERENCE 1.5 METRE PHONO  
 ACUSTIC ZEN SILVER REFERENCE 0.5 METRE PHONO  
 ACOUSTIC ZEN SILVER REFERENCE 11 0.5 METRE  
 ACOUSTIC ZEN MATRIX REFERENCE 1METRE PHONO  
 HARMONIC TECH MAGIC LINK ONE 1 METRE  
 XLD SIGNATURE SEVERAL NEW PACKAGED INTERCONNECTS  
 MANDRAKE BALANCED XLR INTERCONNECT 2.5 METRES  
 GRYPHON 'THE GRYPHON GUIDELINE' 1.5 METRES  
 BLACK RHODIUM REQUIEM-2 NORMALLY £1750/METRE LTD QUANTITY  
 BLACK RHODIUM ORATORIA 1 METRE  
 BLACK RHODIUM ORATORIA 0.5 METRE  
 BLACK RHODIUM SYMPHONY 1 METRE (SEVERAL) CANCELLED ORDER  
 BLACK RHODIUM SYMPHONY 0.5 METRE (3 OFF)  
 VAN DEN HUL INTEGRATION 0.6/ 0.8 METRE (2 OFF)  
 SONIC LINK VOICES 1 METRE EX DEM  
 SUPRA EFF-ISL 2.5 FT PAIR NEW/PACKAGED  
 AUDIQUEST DIAMOND 2 X 2 METRE PAIRS (MINT)  
 AUDIQUEST LAPIS 5 METRE PAIR  
 AUDIQUEST TURQUOISE 2 X 2 METRE PAIRS (MINT)  
 YFERA 1.5 METRE PAIR  
 LFD.4 FEET PAIR

EX DEM £795  
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 EX DEM £650  
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 TBA  
 TBA  
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 BRAND NEW PACKAGED £400  
 BRAND NEW PACKAGED £275  
 BRAND NEW PACKAGED £55  
 BRAND NEW PACKAGED £55  
 BRAND NEW PACKAGED 100/150  
 £75  
 £50  
 EACH £550  
 TBA  
 EACH £35  
 £60  
 £50

## DIGITAL

XLD 4.1 DIGITAL COAX 1 METRE & 2 METRE NEW/PACKED  
 MADRIGAL AES/EBU 0.5 METRE  
 NIRVANA DIGITAL COAX LEAD 4 FT.  
 VAN DEN HUL FIRST 0.8 METRE  
 VAN DEN HUL D-102 MK.111 HB. 4 FEET  
 CABLE TALK DIGITAL -3

TBA  
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 BRAND NEW PACKAGED £100  
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<b>Digital.....</b>	
Wadia 301 ex-dem silver (£3650)	£2750
Wadia 861 ex-dem immaculate (£8000)	£5995
Revox Exception CD player top loading (£2200)	£995
Gryphon Adagio CD player as new (£4300)	£2500
<b>Amplification.....</b>	
Red Rose Passion integrated (£3000)	£1495
Red Rose Affirmation integrated (£7000)	£3995
Red Rose M5 integrated amplifier (£8000)	£4995
Red Rose M3 silver signature pre-amp (£10000)	£4950
Red Rose M2 silver signature power (£8000)	£3750
Red Rose M1 state of the art monoblocks (£25000)	£9995
Gryphon Callisto 2100 integrated (£3600)	£1995
Revox Exception integrated (£2000)	£895
Audio Analogue Puccini SE (£800)	£495
ATC CA2 line level remote pre-amp (£750)	£495
Aragon Stage 1 theatre processor (£4000)	£2995
Aragon 2005 5 channel power-amp (£2500)	£1895
Aragon 2007 7 channel power-amp (£3000)	£2195
Aragon ACT1 processor/5 channel power-amp s/h	£850
<b>Loudspeakers.....</b>	
Red Rose Spirit LS1 (£1200)	£695
Red Rose Rosebud compact monitor (£3000)	£995
Red Rose Rosebud 2 compact monitor (£3500)	£1495
Dedicated stands for both Rosebud models available	
Red Rose Classic floorstander (£8000)	£2995
Cello Active Seraphin piano black s/h	£4995
Chario Academy 1 solid walnut (£1300)	£495
Chario Constellation Lynx cherry/walnut (£700)	£295
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Revox Magic Cubes pack of 3 (£250)	£185
Revox Elegance Prestige floorstanders (£1500)	£795
Revox Elegance Shelf aluminium (£450)	£249
Revox Elegance Active Sub aluminium (£750)	£395
Revox A1 all metal floorstanders (£1200)	£695
<b>Miscellaneous.....</b>	
Red Rose 336J Speaker cable 8ft (£200)	£145
Red Rose 336J Speaker cable 15ft (£350)	£245
Red Rose Silver 1 Interconnects (£400)	£245
Audioprism mains leads 1m (£150)	£90
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All the above equipment is ex-demonstration except where clearly stated. Most is boxed and as new.

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S/hand and ex-demo clearance items - NOVEMBER 2003

**CD players DACs & Transports**

	Was	Now
47 Labs "Flatfish" CD Player / Dumpty S/H	3785	2499
47 Labs "Progression" DAC S/H	2297	1599
Acoustic Precision Eikos CD Player S/H	2200	699
Accuphase DP65V CD Player x-demo	4250	2995
Mark Levinson No 31.5 Transport S/H	9999	4999
Naim Audio CDI CD player S/H	1895	649
Pink Triangle Ordinal 1307 DAC S/H	749	399
Theta Pearl Transport S/H	1399	699
Theta Chroma 396 HDCD DAC S/H	899	449

**Turntables Tonearms & Cartridges**

	Was	Now
Air Tangent 1C with Wisa Pump X-demo	5800	3999
Avid Acutus Turntable Chrome x-demo	5000	3799
Benz Micro LP New& Boxed	2200	1799
Kuzma Stabi/Stogi S Turntable New& Boxed	1295	1099
Lehmann Audio Black Cube SE New& Boxed	650	449
Lyra Lydian Beta New& Boxed	599	499
Michell ISO Phono Stage S/H	549	250
McCormack Phono Stage New and Boxed	650	399
Roksan Xerxes/Artemiz/Shiraz XPSII BLK S/H	2899	995

**Preamplifiers**

	Was	Now
Einstein "The Tube" Preamplifier x-Demo	6000	3999
McIntosh C100 2 Box Phono Preamplifier S/H	6500	3495
Graaf GM13.5BII Valve Preamplifier x-demo S/H	4000	2999
Roksan L2 preamplifier S/H	1295	399
Spectral DMC12 s Phono x-demo	4750	3299
Spectral DMC30 Remote x-demo	8500	6500

**Amplifiers**

	Was	Now
47 Labs Gain Card 25w / Humpty S/H	3250	1899
Audio Analogue Maestro Integrated x-demo	2700	1899
Krell KAV 300iL Silver x-demo	3750	2699
Krell KSA 250 Power Amplifier S/H	6898	2795
Mark Levinson No334 S/H	6000	3750
Naim Audio 42/110 Prepower S/H	N/A	299
Unison Research S2K Remote x-demo	1295	995

**Loudspeakers**

	Was	Now
Avalon Eclipse Maple x-demo	9800	7249
ATC Model10 R/W Xdemo	1200	749
Epos ES14 Bi-Wire with Stands Blk S/H	N/A	349
Indigo Model Two Centre Channel Cherry S/H	199	129
Living Voice Auditoriums Cherry x-demo	1600	1199
Living Voice Avatars OBX-R Ebony x-demo	4000	2999
Rega Xel Rose wood Floorstanders S/H	1295	399
Verity Audio Fidelio Piano Lacquer x-demo	7995	4999

**Cables & Accessories**

	Was	Now
Air Pod size 1 x3 S/H	210	99
Audio Note AN-V 2m Silver Interconnect S/H	450	199
Acoustic Zen Silver Signature Balanced 12ft	2700	1499
Cogan Hall EM-D 0.6m S/H	199	99
Kimber Illuminations AES/EBU 0.5m Digital cable S/H	169	99
Nordost Red Dawn 0.6m RCA-RCA S/H	294	169

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	Was	Now
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Partington Dreadnaught 24" Stands S/H	250	149
Roksan Short Table/Xerxes Stand S/H	119	59
Siltech LS38G3 2x4.75m Silver speaker cable/WBT S/H	1752	999
Siltech LS25G3 4x 4.50m Copper/Silver speaker cable /WBT S/H	1600	899
Siltech HF8 Digital RCA-RCA S/H	220	99
Tara labs Prime1800 Bi-wire5m S/H	1599	695
Tara Labs The One Balanced 1m x-demo	3000	1500
Tara labs Floating Ground Station x-demo	899	450
Target R1 Stands S/H	299	175
Transparent Music Link RCA-RCA 2m S/H	299	149
Transparent Music Link Balanced 2m S/H	499	249
Transparent Reference Balanced 1.5m S/H	3299	1499
Transparent Music Link Ultra Balanced 7.26m S/H	2349	1499

**Tuners & Tape Decks, Power Supplies**

	Was	Now
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Magnum Dynalab FT-R Remote Switcher for FT101A/Etude (New&Boxed)	450	299

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Sony TCK-461s 2 head cassette decks new&boxed	199	99
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CYRUS POWER AMP BOXED AND SUPERB	£349
CYRUS PSX-R POWER SUPPLY BOXED AND IMMACULATE BLACK	£299
CYRUS PRE AMP NO REMOTE	£299
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DINON DVD1000 BLACK MULTI REGION DVD PLAYER AS NEW	£279
DINON DVD3000 BLACK AND SUPERB-CURRENT MODEL-£1000 NEW	£595
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Arcam	FMJ CD23T	CD	Ex-Demo	£1,450	<b>(Bargains, up to 50% off)</b>									
B&W	Nautilus 803 (r/cherry)	Speakers	Ex-Demo	£2,750.00						Arcam	Diva CD72 (Silver)	CD	Ex-demo	£349.00
Denon	AVC-A1SR	Home Cinema	Ex-Demo	£1,995.00						Arcam	DV88 (black)	DVD	Ex-demo	£495.00
Denon	DVD-A1	DVD	Ex-Demo	£1,495.00						Arcam	FMJ A32	Amplifier	Ex-demo	£899.00
Lexicon	MC12 Processor	Home Cinema	Ex-Demo	£5,995.00						Arcam	DIVA CD92 Silver	CD	Ex-demo	£650.00
Linn	Classik Movie (silver)	Home Cinema	Ex-Demo	£1,599.00						Arcam	CD-62	CD	Ex-demo	£279.00
Linn	Kabers	Speakers	Used	£850.00						Arcam	FMJ CD23T Silver	CD	Ex-demo	£895.00
Linn	CD12	CD	Ex-Demo	£7,499.00						Denon	DVD-800 (zone free)	DVD	Ex-demo	£179.00
Marantz	SR8200	Amplifier	Ex-Demo	£999.00						Rega	ELA (beech)	Speaker	Ex-demo	£200.00
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Ruark	Solstice	Speakers	Used	£999.00						Rega	Radio (black)	Tuner	Ex-demo	£295.00
Stewart Screen45"x80"(16:9) was £4540	Home Cinema	New	£2,995.00	Rega						Planet (silver)	CD	Ex-demo	£389.00	
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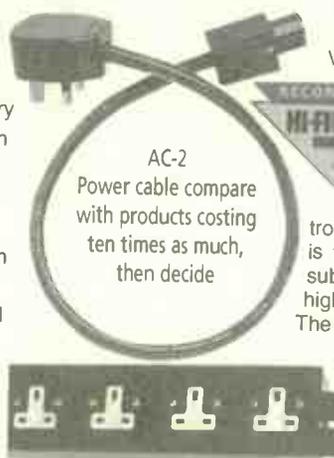
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"...this vinyl front end had my jaw heading towards the floor with the solidity and transparency of the music it was making...Overall a deeply impressive deck...brilliant value for money... component quality is superb and the build process is a doodle."  
**Hi-Fi World**

"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. All OL turntable kits are supplied in various forms:

- A Standard Kit of Parts to enable you to build your own plinth at **£282**
  - The Complete Non-suspended Standard Kit offered with a pre-drilled & finished plinth at **£349**
  - The Complete Ultra Kit comes in two options. The Ultra Kit Classic offering a truly high end suspended sub-chassis turntable with beautifully finished finished solid wood plinth.
  - The Ultra Kit Modern offers the performance of the Ultra Kit Classic combined with the modern day skeletal styling.
- Both options available at **£538**



**TURBOCHARGING YOUR REGA ARM**

"Nothing less than total dynamite"  
**Hi-Fi World**

If you are the proud owner of any rega tonearm, you are now in the enviable position to transform its performance into the league of super arms with our modifications. The OL structural modification at £75 will enable your Rega to perform at a level exceeding that of arms costing over £1500!! High performance rewiring with high grade litz wire is also offered at an additional £70 and external rewiring is also £70 further increasing 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 on structural modification**

**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 within 2 - 3 days



**UNIVERSAL TURNTABLE MOTOR KIT**

"It's value is nothing short of tremendous."  
**Listener Magazine**

"The single most important upgrade you can ever make to any record deck concerns the motor drive...nothing can prepare you for the shock of going DC. In a word, gobsmacking."  
**Common Ground Magazine**

"...if you are thinking of upgrading your system... the OL DC Motor Kit should be high on your list for consideration."  
**TNT Audio**

Whatever your current turntable, the results in upgrading to our DC motor & PS unit are simply astounding. Designed as a drop in replacement for almost all turntables, the OL upgrade kit offers vast improvements to all versions of Linn, as well as: Rega, Systemdeck, Roksan, Rock, Oracle, Michelle, VPI, Clearaudio, Acoustic Signature, etc. The kit consists of a high grade DC motor, aluminium electronic control box and offboard power supply. All this provides an extremely cost effective route to truly high-end audio and is significantly superior in performance to PS upgrades at three times the price.

**OL Power Supply & Motor Kit - £299**

Origin Live, Unit 5, 362b Spring Road, Sholing, Southampton, SO19 2PB, UK  
Tel/Fax: +44 02380 57887 [www.originlive.com](http://www.originlive.com) email: [originlive@originlive.com](mailto:originlive@originlive.com)

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SYSTEMDEK MODEL IIX record deck with Rega arm glass platten black timber base hardly used £150 ono. Tel: 01727 757293 or 07801 140091 (Nov/1)

MARANTZ CD 94 new belts £300. N.V.A. A140 ? monoblock amplifier £400. Manticore Mantra turntable and Musician tonearm £200. Lenco L75 idler drive turntable £45. NAD 3020A amplifier £50. Tel: 01224 646473 (Nov/1)

LOWTHER DX2 drivers brand new still boxed, cost £600, £470. Tel: 02894 479385 (Nov)

LINN LK280/Spark power amps x2 with Linn interconnects. Great with Isobariks £300 each. Tel: 01702 527115 (Essex) (Nov/1)

McINTOSH MC2255 power, C33 control, MR80 tuner, XR19 speakers. All units in walnut Panloc sleeves, 110 volts transformer. Very special outfit, vgc, will split, £3950 ono. Tel: 020 8810 4060 or Email: gwyn1@mailsnare.com (Nov/1)

CELESTION A3 Speakers £850 ono. Monitor Audio PMC703 speakers, mint condition £450 ono. Tel: Phil 01962 851233 or 07941 849601 (Nov/1)

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) (Nov/1)

UNISON RESEARCH Simply Four P Integrated full valve stereo amplifier, pristine condition, boxed with new set of Electro-Harmonix power valves. Superb sounding amp. Can demonstrate. £950 ono. Tel: 01256 895438 (Nov/1)

KEF REFERENCE ONE floor standing speakers in black ash £400 ono. Tel: 01384 860 310 (Nov/1)

KEF REFERENCE 200c centre speaker in black ash. Good condition, boxed with instructions, £400 ono. Tel: 01384 860 310 (Nov/1)

NAIM AV2 processor, mint condition, fully boxed, still under guarantee (18 months), 6 months old, £1700 ono. Reason for selling - going two channel. Tel: 01384 860 310 (Nov/1)

**MERIDIAN 206 Compact Disc player (boxed), John Shearne Phase One amplifier (boxed), Spendor SPI speakers. A classic combination, delicious, detailed and delightful. £450. 01743 355 383 (Nov/1)**

KRELL KAV 300r integrated £1000 (£3500 receiver version of kav300i). Krell Kav 150a power £950 (£2600). Audionote ANJ/SP speakers £400 (£1800). CR Developments Romulus valve integrated £400 (£1800). Transparent music wave plus 2x 15ft £200 (£800). Audioquest Midnight biwire 2x 4 metres £125 (£300). Offers considered. Tel: Bill 01993 851 508 (Oxford) (Nov/1)

AVI S2000 MM monoblocks and S2000 MP pre-amplifier. Outstanding sound and value. Boxed, mint, £600. Tel: 01502 518 938 (Nov/1)

UNISON SIMPLY Four and Simply Phono. Revalved with Svetlanas. Mint. Upgrading to KT88 amp. This sweet amp drives real world speakers. £750 ono (£2100). Tel: Rob 07976 621 529 (Nov/1)

MUSICAL FIDELITY Nu-Vista 3D CD, mint, boxed, £2300 ono. Jamo D8 Sub (£950), mint, boxed, £495 ono. Atacama SE6 speaker stands, silver (£100) unwanted prize still in sealed boxes £85. Tel: 01803 522 041 (Nov/1)

**ROYD ABBOT speakers, black, immaculate condition in original boxes, can demo. Sale due to upgrade, £300 ono. Marantz CD63 MkII KI Signature, black, immaculate, boxed, £200 ono. Tel: 01189 834 838 (Nov/1)**

WANTED - NAKAMICHI PA-7, ST-7E, RM-7AC, RM-20, DA10. Owners manual for Dragon, also period sales literature for Dragon CR-7, Dragon CD, 505 etc. Anything interesting at all. Tel: 07798 737274 (w), 020 8397 7274 (h) (Nov/1)

LOWTHER CORNER Acoustas: pair £430. Original PM6 units upgraded to PM7. Excellent condition - domestic reasons for sale. Buyer collects - Chandlers Ford, Hants. Tel: 02380 255 728 (Nov/1)

MICHELL HYDRAULIC Reference deck, SME 3009 plus Goldring1042. Excellent condition with booklet £750 ono. Nakamichi Cassette Deck 2, mint condition, boxed £125 ono. Tel: 01442 215 652 (Nov/1)

NAIM NAC72 and NAP 140. Very good condition, boxed, £525. Call Ann on 020 8255 8792 (Nov/1)

**PROAC MONITOR speakers Response Three Point Five, £1300, excellent condition. Tel: 015821 659 717 (Nov/1)**

2ND AUDIO 2A3 ECC82, Border Patrol PSU £1750 ono. Concordant Excelsior pre, PSU rewired, Panasonic pot, spare valves £400 ono. Snell J11, stands £300. Tel: Chris 01295 257191, mob 07833 370311 (Oxfordshire) (Nov/1)

VOYD 0.5 Ref PSU, SME 310, Music Maker cartridge, light oak, late model £2500. Audio Innovations 1000 transformer £170. Sony FM/AM STS311 £50. Target table £15, Audiotech £45. Tel: 01295 257191 (Nov/1)

CHRISTMAS PRESENT!?! Give a son or daughter the right start! Mission 752F speakers, Kelvin Labs M60 monoblocks, Audiolab 8000C pre-amp, Sony CDP-JB930E CD-Player, Marantz DR700 CD-Recorder, Sony STS700ES tuner, Sony TCK700ES cassette. £825 ono. Buyer collects Finchley North London. Tel: Mike 001 609 933 2283 (USA) or Email: reeve\_mike@hotmail.com (Nov/1)

CHOOSE THE Speakers! Meridian 505 monoblocks £825. Creek OBH-12 pre-amp £100. DPA Little Bit 3 DAC £100. Meridian 500 CD-Transport £525. Creek OBH-11 headphone amp plus OBH-2 power supply £100. All boxed. Whole system £1500 ono. Equipment in Finchley North London. Tel: Mike 001 609 933 2283 (USA) or Email: reeve\_mike@hotmail.com (Nov/1)

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## "SEE WEBSITE FOR FULL LISTING"

CD & SACD & DACS	PRICE	DESCRIPTION	PRICE	DESCRIPTION	PRICE	DESCRIPTION
AUDIO ALCHEMY mk1 dac	100	CONRAD JOHNSON PYB pre with phono boxed	550	TANNOY Q25, QUAL CONCENTRIC 10" AND ABR, glass tops nice	250	MUSICAL FIDELITY X-A2 integrated amp, mint boxed
AUDIO NOTE DAC 1 sig black front	400	CONRAD JOHNSON PYDIAL boxed	500	TANNOY chevrons MK1. Good pair serviced	450	MUSICAL FIDELITY PRE 3A
AUDIO NOTE DAC 2 black front, boxed	500	CR DEVELOPMENTS CALYPSO 12 watts integrated amp	850	TANNOY DEVONS with serviced hpd 315s	350	MUSICAL FIDELITY A3 or PRE/POWER, boxed silver
AUDIO SYNTHESIS OM	650	CROFT SUPERMICO black, upgraded with stepped attenuator volume control excellent	350	TANNOY GN cabinets repro pair in walnut with 15" golds	4000	NAIM NAC 62/NAP 140 old style v good with cables
AW 20 bit dac boxed	900	CROFT 3m OTL monoblocks	325	TANNOY EOBURGHS prestige range	2000	NAIM 12 pre/nap 160 very old style
CAMBRIDGE CD3, heavyweight machine	375	CROFT SERIES IVs POWER AMP, JUST SERVICED	1100	TDL studio 2 upgraded tweeters, rewired	600	NAIM NAC 52/SUPER CAP
COPLANO CD788	300	EAR v20 INTEGRATED	1400	VANDERSTEEN 2C open baffle 3 way, boxed	400	NAIM NAP 180
COPLANO CD 822 latest as new	1200	EAR 509 mk2 monoblocks chrome	1400	VIENNA ACOUSTICS BACH, beech	500	PASS LABS 0 monoblocks class A single ended 75 watts
DENSEN CD PLAYER bear 400 with gemo	900	GAMMA SPACE REFERENCE, 300b integrated amp	1500	ARCAM ALPHA 10 DAB tuner	250	PINK TRIANGLE PIP oak pre amp boxed
HEART VALVE CD (MODDED MARANTZ)	400	GAMMA ERA REFERENCE special tweaked version	1500	AUDIO AUT 80 tuner, black	750	PINK TRIANGLE PIP TWO pre mm and mc, one box, black
JADC jdc3 cd player	1400	LEAK STEREO 20 serviced	450	BEYER DT 931 headphones boxed	100	PLINIUS 8100 integrated amp line level
KRELL KPS20T transport	3000	MELOS 333 two box pre line great dynamics, boxed	1000	LEAK TROUGHLINE III STEREO legendary tuner, serviced	80	QUAD 33/303 boxed pair with manuals
KRELL STUDIO 2 DAC boxed	650	MUSICAL FIDELITY F22 preamp	500	MERIDIAN 204 tuner	120	QUAD 33/mk3 405 1 all nice with leads
LECTOR CD PLAYER sale	850	QUAD IS excellent resprayed pair with k66 VALVES	700	NARAKMCH B300E dual capstan 3 head	250	QUAD 34/306 with manual excellent
LINN KARIKUNIHURK old but nice & boxed	1000	QUAD IS special anniversary edition gold orig boxes etc	3250	NARAKMCH 582 dual capstan 3 head	300	QUAD 77 amp & cd player carbon, remote
MARANTZ CD6000SE boxed	2000	QUAD 11.40 PRE/ MONOBLOCKS, BOXED LOWLY	2400	PIONEER F91 REFERENCE tuner	125	QUAD 33/405 MK1 100 watts of power
MARANTZ CD15 excellent	1750	ROTHERWELL power amp	450	PIONEER CT1000 cassette deck	250	QUAD 44/405 brown
MARANTZ CDA 94 dac excellent	350	SHANLING MONOBLOCKS in stock, remote control volume, 50 watts	2000	REGA BRIO	175	REGA BRIO
MERIDIAN 203 dac	150	SONIC FRONTIERS SFM160 monoblocks	2400	SIM AUDIO CELESTE integrated amp, with phono	800	SIM AUDIO CELESTE integrated amp, with phono
MERIDIAN 500 transport mk2, boxed	750	SONIC FRONTIERS SS 40, power amp	800	TALK ELECTRONICS HURRICANE 2 power amp	110	TALK ELECTRONICS HURRICANE 2 power amp
MERIDIAN 2000 TRANSPORT	500	TRIOLOGY 901 preamp with phono	375	TECHNICAL AUDIO T2000 CAS 2 100 watt power amp, boxed	275	TECHNICAL AUDIO T2000 CAS 2 100 watt power amp, boxed
MERIDIAN 208 cd/pre	400	UNISON SIMPLY 4 integrated amp, boxed	750	YAMAHA FZ200 professional 200 watts	150	YAMAHA FZ200 professional 200 watts
MICROMEGA DUO 3 transport with DUO IS DAC	1000	UNISON RESEARCH FEATHER ONE/POWER 35 pre/power	1250	ARISTON R800 with ack arm	400	ARISTON R800 with ack arm
MONARCHY 33da dac and pre in one, mint boxed	1650	YIVA SOLISTA B45 remote integrated totally mega	7000	CONRAD JOHNSON EF1 phono stage	600	CONRAD JOHNSON EF1 phono stage
MUSICAL FIDELITY A3.2 cd, 9 months old	600	YIVA 300b INTEGRATED	4750	OECCA LONDON BLUE excellent boxed	125	OECCA LONDON BLUE excellent boxed
NAIM CD3	500	YTL TINY TRIODE monoblocks, switchable between triode and linear, ltd edition, mint boxed	900	GARRARD 401 state plinth, Origin Live Silver arm, Kontra A	250	GARRARD 401 state plinth, Origin Live Silver arm, Kontra A
NARAKMCHI ORAGON CD AND DAC, box player, boxed	3400			GRADO PRESTIGE GOLD cartridge boxed	150	GRADO PRESTIGE GOLD cartridge boxed
ORACLE cd transport mint boxed	4500			GRADO PLATINUM WOODEN bodied boxed	150	GRADO PLATINUM WOODEN bodied boxed
PINK TRIANGLE ORIGINAL dac with 18 bit filter	300			GRAHAM SLEE PHONO STAGES IN STOCK AND AVAILABLE FOR HOME DEMO	1750	GRAHAM SLEE PHONO STAGES IN STOCK AND AVAILABLE FOR HOME DEMO
PIONEER PD 91 CD PLAYER EXCELLENT	400			ORION ANALOGUE DOLBY BZTTI power amp	300	ORION ANALOGUE DOLBY BZTTI power amp
PS AUDIO LAMBDA transport with trichord dock 3, boxed	1000			AUDIOALAB 8000s black, remote	750	AUDIOALAB 8000s black, remote
SHANLING CD 1100 crazy valve cd player, IN STOCK	1850			AUDIOALAB 8000Q/8000PX	900	AUDIOALAB 8000Q/8000PX
SHANLING CD 1200 as above but SACD player ex dem	1850			AUDIOALAB 8000Q/p pre/power BOXED	700	AUDIOALAB 8000Q/p pre/power BOXED
SUGDEN au51 dac boxed	375			AUDIOALAB 8000Q/M monos boxed	1400	AUDIOALAB 8000Q/M monos boxed
TEAC VRDS10 cd player excellent	375			AUDIOION platinum hybrid v, valve/mosfet hybrid	800	AUDIOION platinum hybrid v, valve/mosfet hybrid
TEAC TA7-D1 transport dock 2 and 1 and dac	750			AUDIOION RESEARCH D130 transistor power amp	800	AUDIOION RESEARCH D130 transistor power amp
THETA DATA BASIC 3 WITH PRO BASIC 2 upgraded to 3 boxed	1800			CAIRN ARIA HE integrated with remote, boxed	1500	CAIRN ARIA HE integrated with remote, boxed
THETA GEN VA	2250			CAMBRIDGE C200/SA200 pre	800	CAMBRIDGE C200/SA200 pre
THETA GEN V	2000			CONRAD JOHNSON MF2300 big	500	CONRAD JOHNSON MF2300 big
TRICHORD PULSAR ONE OAC hddc & osars	600			CRIMSON 620 stereo power amp	4000	CRIMSON 620 stereo power amp
TECHNOLOGY FUSION VALVE CD PLAYER	700			CYRUS TWO scullry	1000	CYRUS TWO scullry
WADIA 12 DAC, balanced	3500			CYRUS STRAIGHTLINE & XPA power amp, boxed	450	CYRUS STRAIGHTLINE & XPA power amp, boxed
WADIA 2000 transport and DAC with last upgrades	1650			CYRUS PRE/POWER & PSX-R with master controller	900	CYRUS PRE/POWER & PSX-R with master controller
z-systems rdg-1, DIGITAL EQ, USE FOR SYSTEM CONNECTION,	2400			DENON POA 4400A monoblocks	350	DENON POA 4400A monoblocks
z-systems rdp- digital eq and remote preamp	2400			DHM 2 preamp, metal case but 3 boards, mc	700	DHM 2 preamp, metal case but 3 boards, mc
				DOLAN PM1 pre with phono	300	DOLAN PM1 pre with phono
				DPA DSP2005 line preamp	2000	DPA DSP2005 line preamp
				ELECTROCOMPANET ong class A amp	400	ELECTROCOMPANET ong class A amp
				HAFLER OH110/220 pre, POWER	375	HAFLER OH110/220 pre, POWER
				KEF REF 102 black, boxed	275	KEF REF 102 black, boxed
				KEF REF 2.2 black, boxed	1100	KEF REF 2.2 black, boxed
				KEF REF 2.2 black, boxed	900	KEF REF 2.2 black, boxed
				KEF REF 105.3 black ASH	850	KEF REF 105.3 black ASH
				KEF 105.4 pair	500	KEF 105.4 pair
				LINN KABERS black passive with ku-stone stands	800	LINN KABERS black passive with ku-stone stands
				LINN KEILEDHS, with ku-stone	300	LINN KEILEDHS, with ku-stone
				LINN KANS mk1	200	LINN KANS mk1
				LINTHOWER MALHORN, black with pm6a	700	LINTHOWER MALHORN, black with pm6a
				MISSION 755 MINT BOXED	600	MISSION 755 MINT BOXED
				MISSION 752 floorstanders	350	MISSION 752 floorstanders
				NAIM CREDOS boxed CHERRY	600	NAIM CREDOS boxed CHERRY
				NAIM INTROS boxed, BLACK	390	NAIM INTROS boxed, BLACK
				MARANTZ MA24 monoblocks, class A boxed	600	MARANTZ MA24 monoblocks, class A boxed
				MARANTZ PM17 MK2 KI SIGNATURE, mint boxed	400	MARANTZ PM17 MK2 KI SIGNATURE, mint boxed
				MARANTZ SM 17 power amp, mint boxed	700	MARANTZ SM 17 power amp, mint boxed
				MERIDIAN 105 MONOS	700	MERIDIAN 105 MONOS
				MERIDIAN 201 with 405 monoblocks	1100	MERIDIAN 201 with 405 monoblocks
				METAXAS CHARISMA PREAMP, chrome finish	250	METAXAS CHARISMA PREAMP, chrome finish
				MICHEL ALLECTO STEREO, latest version boxed	400	MICHEL ALLECTO STEREO, latest version boxed
				MOTH 100 WATT MONOBLOCKS, average condition only	600	MOTH 100 WATT MONOBLOCKS, average condition only
				MUSICAL FIDELITY F22 preamp	1200	MUSICAL FIDELITY F22 preamp

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LEAK STEREOFETIC tuner, wood sleeve boxed; Thorens TD124 II, RB250/Scorpio tonearm, modern solid black plinth with lid; Marantz KI 17 Signature, mint, boxed. Any reasonable offers. Tel: 0114 272 7969 (day), 0114 233 5413 (evening) (Nov/1)

WANTED: PAIR of Audax HD3P gold dome piezo tweeters. Alternatively pair of WAD KLS10 Gold speakers. Cabinet condition not a problem. Tel: Matty 01472 859950 or Email: storage2@onetel.net.uk (Nov)

EAR 834P phono stage MM/MC, good condition, hardly used £225 ono. Tel: 020 8316 2993 (Nov/1)

RARE AUDIO Valves, private sale, Mullard ECC83, ECC85, PC88. Also Telefunken EL519 and Ei EL519. All NOS. Tel: 020 8316 2993 for details. (Nov/1)

ROGERS CADET III valve amplifier, excellent £200 ono. Revox A77 2-track, late model, vgc, but capstan fault, repair/spares, offers. Quantity 7" and 10 1/2" metal reels, offers. Tandberg TR1010 receiver £100. Tel: 01625 861728 (Nov/1)

MUSICAL FIDELITY Nu-Vista pre-amp (1999). Immaculate plus two spare sets Nu-Vistas £700. Linn LK140's (1999) (2001) both immaculate £450, £550 respectively. All packaging, receipts etc. Tel: 01924 240 676 or 0771 576 4265 (Nov/1)

FROM OCTOBER 2003 ISSUE

MARK LEVINSON 380 pre, 331 pwr amps with box, manual, 1/2mm M.L. balanced cable, just about run in, getting married why selling (new £8880) £4500 may split. Tel: 020 8357 1264 work 07971 708041 mobile (Oct/1)

MUSICAL FIDELITY Tri-Vista 300 integrated Ltd Edition amplifier mint, boxed, etc £3000 Tel: 020 8531 5979 or 07903 265205 (Oct/1)

THIEL CS3.6 floorstanding loudspeakers, excellent condition £5495 brand new, absolute bargain at £1995. Tel: 01508 499586 after 6.30 or leave message on answer machine. Oct/1

INSTRUCTION BOOK needed for Sony Stereo Music System HMK-70. Please phone Fisher: 020 8450 1779 (Oct/1)

WANTED LATE D.P.A. 2005 power amp must be in top condition cash waiting. Tel: Rob 07813 702571 or Email: robert@higginson990.fsnet.co.uk (Birmingham) (Oct/1)

ADVANTAGE MONOBLOCKS M.300 x2, £2500. Advantage P1 preamp £1000. Rel Strata subwoofer black £250. Audio Alchemy V3 DAC Audio Alchemy Transport £650 with 0.5 lead all good condition with boxes Tel: 01395 275 698 (Oct/1)

TOM EVANS modified Pioneer A300 Precision. Norm price £750, £300 ono. Moth 30 active preamp £70. Creek A50i integrated amplifier new & guaranteed £450. DNM speaker cable 5.50 metre. Tel: 01582 724414 (Oct/1)

NORDOST SPM Reference bi-wire speaker cable 3m £1600 (£2900). Nordost Quatrofil interconnect balanced 1m £850 (£1250). KEF Reference 3.2 speakers rosewood £1300 (£2250). All boxed, mint. Tel: 07739 870377 (Oct/1)

LINN KOLEKTOR preamp and LK140 power amp £700. Linn Karik 3 CD player £620. All items in good condition, boxed with manuals. Tel: 01256 461453 (Basingstoke) (Oct/1)

LINN: 5103 (2003) pre-amplifier/processor (silver) £2100, 5125 (2002) power amplifier £1200. Heybrook HBI speakers with dedicated stands £100. All in mint condition and boxed. Tel: 01778 421397 (Oct/1)

MAGNEPLANAR MG2.5R loudspeakers. Shahinian Arc loudspeakers, Meridian 500 transport CD player, Meridian 518 processor, Audiosynthesis DAX-2 D/A converter, Quad 606 power amplifier, Synn AP900 60wpc valve amplifier, excellent condition Tel: 01179 521341 (Bristol) (Oct/1)

LINN KOLEKTOR preamp £250, Marantz PM66SE £90. Musical Fidelity X-LP, £70. Tascam Portastudio Porta 02 II £60. JBL MRCentre £40. NAD 5120 turntable (modified) £60. Tel: 07624 499464 (Oct/1)

AUDIO RESEARCH D250, new valves £2200. Audio Research SP14, mint £1100. Krell KSA 100, fully serviced, perfect £1300. KEF 1053, rosewood, mint £825. Tel: 01959 575737 or 07980 646832 mobile (Nov/1)

KRELL KSA50 £1000. Krell PAM5 preamp £1000. Krell KSA50 Mk2 £1050. Sonus Faber Concertino £375. Naim Nac5 3 x 3m £75. All vgc. Tel: 01905 764145 Worcs, evening 01684 278418 days, Email: scurtis@zoom.co.uk (Oct/1)

REGA PLANAR 2 with RB200 arm, P2 motor spectradynamics mat. Wooden plinth. Tel: 01803 851630 (Torbay) (Oct/1)

AUDIOLAB 8000S integrated remote amplifier, low use. No box. Mint condition. Can demo. Reason for sale gone value! (£750) when new asking £325, buyer collects (South Wales). Tel: Rhys 01269 850084 (Oct/1)

TRICHORD TRANSPORT + Pulsar One DAC + power supply + MOD's (£3000+) £750. Clock Four now available. Tel: 01772 314151 Preston Mobile: 07751 475062 (Oct/1)

WANTED: CELESTION Kingston speakers or Yamaha NS1000/NS1000m speakers for cash. Tel: 07932 063335 (Oct/1)

MUSICAL FIDELITY A3 dual mono amplifier £400 boxed. Monitor Audio silver 8i loudspeakers £400 boxed. Tel: 01482 508389 mint condition. Tel: 01482 508 389 (Oct)

GRANITE PLINTH polished grey 20 x 16 x 2 inches £20. Target HJ24/2 speaker stands 24" tall £20. Tel: 01564 770013 (South Birmingham) (Oct/1)

ROBERTSON AUDIO 4010 power amplifier x2 for sale £1000 new, £500 for both. Willing to sell separately. Tel: 01535 654220 (Oct)

LEAK SANDWICH speakers real classics 25 3/4 high x 12" deep x 14 3/4 wide, teak wood finish cabinets perfect, still working. Offers welcome Tel: 020 8690 1939 (Oct/1)

SIMPLY THE best 300Bs? Unison Research Smart 300B. Mono Blocks S.E.T. 25 watts per channel new and boxed £4250 new. £2000 no offers. N-T-W please. Tel: 01562 827710 (Oct/1)



## SALE LIST

	PRICE NEW	SALE PRICE	
KRELL FPB 300c Power amp	£9,500.00	£5,595.00	D
KRELL KAV 500i Int Amp	£4,995.00	£2,499.00	D
KRELL KAV 250 CD		£599.00	S/H
KRELL KAV 300 CD		£1,195.00	S/H
KRELL KAV KRC-3		£1,495.00	S/H
CYRUS DVD7	£1,000.00	£599.00	D
CYRUS 5 AMPLIFIER	£500.00	£329.00	D + N
CYRUS 7 AMP	£700.00	£479.00	D + N
CYRUS AV MASTER - PROCESSOR		£100.00	D
AUDIO RESEARCH LS16 PRE AMP - BLK	£3,500.00	£2,195.00	D
ARCAM DV88 DVD PLAYER	£1,000.00	£679.00	D + N
ARCAM DIVA CD92	£800.00	£579.00	D
ARCAM DIVA A75 AMP	£470.00	£309.00	N
ARCAM ALPHA 7R AMP	£280.00	£189.00	D
ARCAM FMJ A22 AMP	£1,100.00	£679.00	D
ARCAM FMJ A22 Inc DAVE AC3/DTS processor	£1,850.00	£999.00	N
SONUS FABER SIGNUM SPEAKERS	£1,250.00	£799.00	D
TAG MCLAREN AVR32BEX (NEW BOXED)	£2,994.00	£1,949.00	N
TAG MCLAREN AVR32	£2,500.00	£1,495.00	D
TAG MCLAREN DPA32R (Digital pre inc DAB)	£1,990.00	£1,189.00	D
TAG MCLAREN SR - 5 CHANNEL POWER AMP	£2,995.00	£1,799.00	D
MARTIN LOGAN AEON	£3,148.00	£2,195.00	D
MARTIN LOGAN ASCENT	£4,499.00	£2,895.00	D
MARTIN LOGAN SCENARIO	£2,498.00	£1,629.00	D
CELESTION C1 - Compact speakers	£199.00	£114.00	D
CELESTION - C2 - Floorstanders	£499.00	£299.00	D
LINN MAJIK - INT AMP	£650.00	£399.00	D
LINN KAIRN - PRE AMP	£1,400.00	£595.00	D
LINN 5140 - FLOORSTANDERS approx.	£2,400.00	£799.00	D
LINN KABERS - BLK		£395.00	D
MERIDIAN 500 CD TRANSPORT approx.	£1,100.00	£599.00	D
MERIDIAN 502 PRE AMP	£1,470.00	£849.00	D
MERIDIAN 556 - 2 CH POWER AMP	£995.00	£649.00	D
MERIDIAN DSP 5000 96/24 SPEAKERS (VGC)	£4,275.00	£3,200.00	D
MERIDIAN DSP 5500 96/24 SPEAKERS	£7,695.00	£3,599.00	D
MERIDIAN DSP 5000C 96/24 CENTRE SPEAKER	£2,150.00	£1,099.00	D
MERIDIAN 565 PROCESSOR		£895.00	D
MERIDIAN 559 - 300W 2 CH POWER AMP	£2,550.00	£1,895.00	N
PROCEED AVP PROCESSOR. VGC/LIGHT USE	£4,700.00	£2,579.00	D
PROCEED PMDT DVD PLAYER. VGC/LIGHT USE	£5,495.00	£2,995.00	D
MUSICAL FIDELTY XA100R - INT AMP	£900.00	£599.00	N
TRICHORD GENESIS CD PLAYER	£500.00	£150.00	D
MISSION 780 - ROSEWOOD	£300.00	£219.00	D

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Systemdek	II/LVV - ex/ex	249
Michell	Gyro Export/RB300/1042 - nr mint, boxed	895
Michell	Focus One/Focus - ex/ex	295
Moth	Almo/Moth(RB250) - ex/ex	125
Rega	Planar 2/RB250 - vgc/ex	149
Linn	Axis/LVX+ - ex/ex	249
Linn	LP12/Akito/K5 - ex/ex, black, boxed	595
Linn	LP12/Lingo/LVII - nr mint, boxed	1095
Linn	LP12/Valhalla/LVII - nr mint, rosenut, boxed	795
Technics	SL15 - ex	95
Thorens	TD160s/SMEIII/P77 - vgc	175
Revolver	Revolver/Revolver/AT95E - ex/ex	125
Thorens	TD125/SME3009 - ex/ex, SME plinth	195
Michell	Gyro SE/RB300 - nr mint, ex dem	895
Oracle	Delphi - vgc, linn armboard	795
SME	V - nr mint, boxed, unused since SME service	950
Transcriptors	Skeleton/Vestigal - ex/ex	995
Logic	Dm101/Datum/P77 - vgc	175

### Digital

Philips	CD101 - ex	75
Meridian	206 - ex,	295
Meridian	200 - ex	325
Sony	DTC690 DAT - vgc	175
Marantz	CD80 - ex, boxed	195
Kenwood	DP1100 - ex, v. underrated	95
Marantz	CD63se - ex	SOLD
Roksan	Caspian - nr mint, boxed	395
Sony	CDP333esd ex	150
Teac	CDP4500 - ex	95

### Amplifiers

Musical Fidelity	B1 - ex, mm/mc	95
Roksan	Caspian Integrated - nr mint, boxed	395
Roksan	Caspian Power - nr mint, boxed	395
Krell	2x KMA100 - ex	2495
Audiolab	8000A - vgc	195
Audiolab	8000c - ex, boxed	249
Audiolab	8000P - nr mint	449
Audiolab	8000S - nr mint	349
Naim	Nait 1 - vgc	SOLD
Audio Innovations	Alto - ex	125
Mission	Cyrus One - ex, boxed, black lpte model	125
Creek	CAS4040 - ex, boxed	95
Hatler	D110 - ex	125
Trio	2x L-05M - ex, rare and gorgeous!!!	750
Quad	44 - ex, boxed, CD input	250
Quad	405 - ex, boxed	150
Magnum Ref.	MP300 & 2x MF125 - ex/ex, mm/mc, fabulous!	495
Meridian	101/103/103 - good/fair	149

### Speakers

Castle	Howard - ex	595
Castle	Howard S2 - nr mint, boxed	695
Acoustic Energy	AE109 - fair	125
Heybrook	HB100 - vgc, superb vfm	180
Celestion	7000 - fair/good, huge bargain!	395
Magnephanar	SMA - vgc	295
Mofittor Audio	MA14 Gold - ex, filled	175
Rega	Kyle - vgc	175
Harbeth	HL Monitor Mk II - fair	Offer
Dean	Alto - good, tight fast sound	95
KeF	Concord IV - ex, with stands	150
Musical Tech.	Kestrel SE	SOLD
Castle	Kendal - nr mint	195
Acoustic Energy	AE1 Mk II - vgc	350
JBL	Control 1G - nr mint, boxed	75

### Tuners

Teac	TX3000 - ex, digital	75
Creek	CAS3140 - ex, digital	95
Sony	STS 311 - vgc, digital	75
Pioneer	TX7800 - vgc, analogue monster	95
Pioneer	TX7500 - vgc, analogue monster	95

### Tape

Denon	DRM22 - ex, 3 head	75
Denon	DRM30HX - ex, 3 head	75
Teac	V1010 - ex, 3 head	75
Aiwa	ADF810 - ex, 3 head	75
Nakamichi	480 - ex, the best for less	95

### Home Cinema

Yamaha	DSPE492 - ex, manual	75
Yamaha	DSPE580 - ex, manual	95
Sony	VA777ES - nr mint, manuals and push remote	795

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AUDIOLAB 8000LX integrated amplifier, mint condition, boxed with manual £250. Tel: Mark 07930 401634 (Staffordshire) (Oct/1)

ARCAM ALPHA 9 CD player £450 ono. AE 109SE loudspeakers £200. Wanted: Naim Flatcap 2 power supply. Tel: 01752 291625, Mobile: 07817 413421 (Oct/1)

NAIM SBL's with passive x-over. Black. Unopened in boxes, han plans to emigrate, then didn't! Obviously perfect condition and excellent Naim sound. May deliver £1600. Tel: 07780 995 483 (Oct/1)

ARCAM FMJ A22 amp silver, remote, 100 wpch, seven months, boxed, mint, (£1000) £599. Marantz CD6000KI black remote £249. Arcam P75+ power amp £199. Quad 11L speakers black £319 Tel: 0115 960 3934 (Nottingham) (Oct/1)

WANTED FOR spares etc. faulty or non working Quad 44 preamps and Quad 405 power amps or boards for above. Also required Quad FM3 tuners. Tel: Mike 01758 613790 (Oct/1)

AUDIONOTE M1 phono pre-amplifier, mint, boxed, £350. Audiolab 8000C preamplifier £200. Tel: Tom 020 8986 1762 (Oct/1)

NAIM CDI very good condition with packaging £730 ovno. Tel: 01778 393264 or Email: petergio@northor30919.fsnet.co.uk (Oct/1)

QUAD 22L top of range loudspeakers in maple finish £680. Only 3 weeks old, genuine reason for sale. Also Arcam 6 CD player £75. Tel: Tony 02476 460729 or 07788 642632 (Oct/1)

ROKSAN KANDY amplifier boxed manual with remote power 110 watts with control £275. Philips CDR 602 CD recorder boxed manual remote £90 both excellent reviews. Can demonstrate. Tel: Steve 01924 871782 (Wakefield) (Oct/1)

MICHELL/TRICHORD Orca pre Alecto monoblocks Russ Andrews power cords as new £1950. Tel: 01288 361113 (Oct/1)

KRELL KAV300r integrated £1200 (£3500) Krell Kav150a power (£1100). Audionote ANJ/SP speakers £500 (£1800) CR Developments Romulus valve integrated £500 (£1800). Tel: Bill 01993 851508 (Oxford) (Oct/1)

REVOX TAPE recorders. G36 4-track with service book £100. C278, 8 channel unused with remote and service book £350. Tel: 01732 850574 (Oct)

CASTLE SEVERN 2SE floor-standing loudspeakers in cherrywood. 9 months old boxed £295 ono. Tel: 01246 274735 (Oct/1)

EAR 834P (phono) MM pre amp, black case, as new condition, original owner, invoice available, £195. Tel: 020 8654 2223 or Mobile: 07879 805 837 (Croydon) (Oct/1)

DENON DCD S1011 CD player, high end, luxury, champagne gold, phono/balanced, superb involving musical sound. 14 kilos! Immaculate, boxed, can deliver London area (£20). £495 (£1300 new). Tel: 01273 541 462 (Brighton) (Oct/1)

WANTED: CELESTION Kingston speakers or Yamaha NS1000/NS1000m speakers for cash. Tel: 07932 063335 (Oct/1)

TOP QUALITY system in mint condition. Kuzma Stabi deck, Kuzma Stogi tonearm with Benz Micro cartridge plus wall stand, £495. Shearne Audio Phase 7 compact disc player, £600. Shearne Audio Phase 2 Reference integrated amplifier, 2 Phase 3 Reference amplifiers, 3 Cable Talk interconnects, £1500. Jamo Concert II floor-standing loudspeakers, 3 5m lengths Q.E.D. 4x4 Profile speaker cable, £1000. 5 shelved Soundstyle unit £50. Tel: 01253 854 114 or Email: robert@simpson2.v-net.com (Oct/1)

NAD 4020A tuner, case top slightly marked, otherwise VGC and sounds excellent, £50 ono. Rega headshell, vgc, comes with A&R cartridge body (don't know if the latter works) £10 ono. Want outgrown interconnects, speaker cables, RDC cones, w.h.y. Phone Keith on 01594 837695 or Email: aburrow@clara.co.uk (Oct/1)

BOW WIZARD CD Wand £1950. Tannoy SR840 power amp £895. Adcom 585LE power amp £795. NHT/VT2 piano black floorstanders £895. Nakamichi 505 cassette £595. Wanted: Naim tuner. Tel: 01747 853 372 (Dorset) (Oct/1)

SONUS FABER Gremona Auditor speaker with stands. Finish maple, £1700. Michell Gyrodec SE with Rega RB300, Sumiko BPS cartridge, £800. Tel: 020 853 5979 or 07903 265 205 (Nov/1)

LINN SONDEK LP12 with Zeta arm and Grace F-9 cartridge with spare unused Grace RS-9E stylus, £800 ono. Tel: 01706 819962 (Oct/1)

CELESTION A1 speakers with matching stands finished in cherry. Bought new this year and absolutely new. Genuine reason for sale. A true bargain at £550. Tel: 020 8874 6262 or Email: michael@hlaustin.co.uk (Oct/1)

MARANTZ CD73 classic 1980's analogue sounding CD player. "Arguably the best CD transport ever designed" - Hi-Fi World April 2003. One owner from new. Good condition. £270. Tel: 07790 880 328 (Yorkshire) (Oct/1)

SHACKMAN ELECTRO-STATIC speakers. Excellent working condition. Fantastic big sound. £300 ono. Tel: 07831 227788 or Email: sportingbauchers@aol.com (Liverpool) (Oct/1)

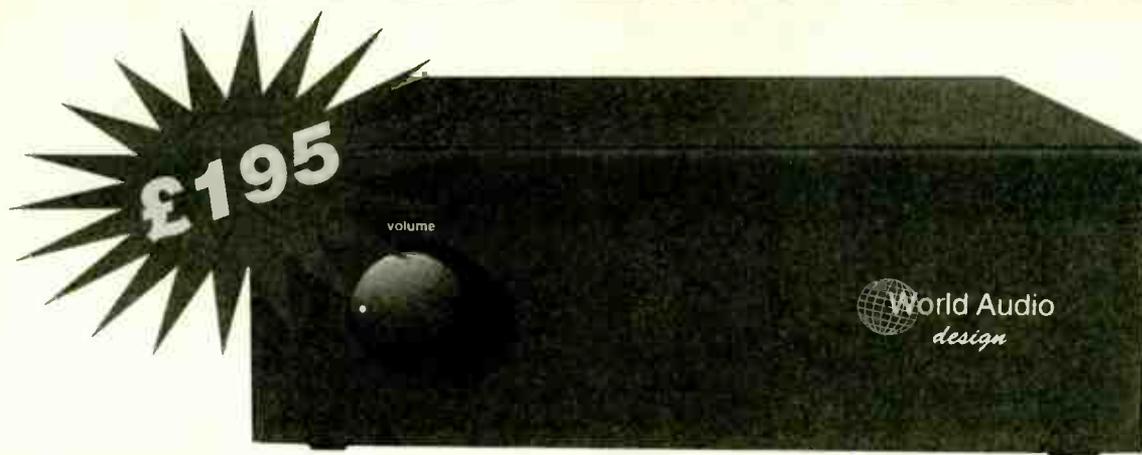
FOR SALE: Townsend Glastonbury 11 speakers, (2nd owner) in good working condition, serial numbers 105A and 105B. There are no front covers. £400. Contact Alan at alan.cavender@bt.com or 01661 852 874 evenings (Oct/1)

CAMBRIDGE CD4SE ISO Magic DAC, interconnect, £150. Goldring 1042 £45. Hardly used. Aiwa XIL009 needs new heads, any offers. Tel: 01923 230214 ask for George (Watford) (Oct/1)

WANTED: PAIR of WAD KEL80 monoblocks. QC Power supply for Gyrodec. Harmon Kardon Citation power amp. All items to be top notch. Tel: 00 33 2 33 48 03 91 (Nov/1)

INSTRUCTION BOOK needed for Sony Stereo Music System HMK-70. Please phone Fisher: 020 8450 1779 (Oct/1)

# 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.

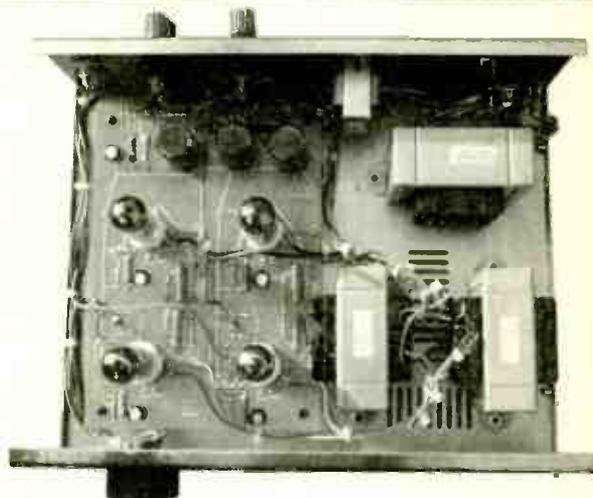
We chose the ECL82, a triode/output pentode. This tube is readily available and has a good sound. In push-pull mode it delivers 8Watts. Realistically you need a speaker of around 89dB or above. This is possible at a budget price - try the smaller Triangle models, or a Tannoy mX3 or even one of the older 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](http://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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**E.M.A.S. REVOX sales service,** spares. A700 £750, B77 HS £650, PR99 MkIII £1200, PR99 MkII £950, A725 £750, A710 £550, C278 £1200, A810 £950, A80 VU £1200, B67 VU £950, A807 VU £1200. Tel: 01246 275479 or Fax: 01246 55042. Email: [j.i.tipping@amservice.net](mailto:j.i.tipping@amservice.net) (Nov/1)

**AUDIOREPUBLIC,** 78 Otley Road, Headingley, Leeds, O113 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 (Nov/1)

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**AUDIO RESEARCH LS25 Mk1,** 4yrs, (£5000) £3000. Audio Research M300 Mono Blocks MkII status (£12000) £4000. Tom Evans the Groove, phono stage, 2yrs, (£1800) £1350. Sonus Faber Extrema's on stands (£7800) £3500 All mint, boxed. Telephone Jules on 01792 280061, Email: [info@sounddrjuleshifi.co.uk](mailto:info@sounddrjuleshifi.co.uk) Web: [www.sounddrjuleshifi.co.uk](http://www.sounddrjuleshifi.co.uk) (Nov/1)

**LINN KLIMAX Twin Power amp,** 8mths old, as new (£6000) £4950. Linn Kellidh's, black ash, active cards, passive (£1000) £450. AudioTechnica OC9 cartridge brand new £270. Telephone Jules on 01792 280061, Email: [info@sounddrjuleshifi.co.uk](mailto:info@sounddrjuleshifi.co.uk) Web: [www.sounddrjuleshifi.co.uk](http://www.sounddrjuleshifi.co.uk) (Nov/1)

**ARCAM DV88 plus DVD Player,** brand new unwanted gift. (£800) £650. Mission DAD 5 & DAD5 Dac, (£800) £350. LFD Mistral CD player, stainless steel & gold livery, boxed. Mint (£1050) £450. Telephone Jules on 01792 280061, Email: [info@sounddrjuleshifi.co.uk](mailto:info@sounddrjuleshifi.co.uk) Web: [www.sounddrjuleshifi.co.uk](http://www.sounddrjuleshifi.co.uk) (Nov/1)

**LINN CLASSIC CD Player etc,** black, un-used, box- opened. (£1025) £650. Wadia 16, 4yrs, mint (£7450) £3500. Basis Debut Gold Standard Turntable, inc custom dust cover. (£8,500) £3900. Koetsu Red Signature \*, 20hrs, (£2200) £1300. All mint, boxed. Telephone Jules on 01792 280061, Email: [info@sounddrjuleshifi.co.uk](mailto:info@sounddrjuleshifi.co.uk) Web: [www.sounddrjuleshifi.co.uk](http://www.sounddrjuleshifi.co.uk) (Nov/1)



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 £260. Siltec 1.0 mtr RCA-RCA  
 (£300) £180. Telephone Jules  
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 Email:  
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## GUIDELINES FOR BUYING AND SELLING SECOND-HAND EQUIPMENT

### FOR THE BUYER

1. Not everyone is honest - Buyer Beware!
2. Don't send cash!
3. Accept no verbal guarantees.
4. Have you heard the item or something similar? If not, why do you want it?
5. Don't pretend to have knowledge - it's your fingers that will get burnt!
6. Is it working? If not, why not?
7. Has it been modified and, if so, have notes been kept?
8. Was it any good in the first place?
9. Don't send cash!
10. If you are in the slightest doubt, arrange an audition (see point 5). If it's too far, wait for another time.
11. Either buy it or don't: vendors are excusably impatient with 'consultation' exercises.
12. Don't send cash!

### FOR THE SELLER

1. Not everyone is honest - Seller Beware!
2. Make no verbal guarantees.
3. Even 'nearly new' is still second-hand. If the manufacturer's guarantee is no longer in force, your price should reflect this.
4. There is very little intrinsic value in second-hand hi-fi; it's only worth what some one will pay for it.
5. The best guide to pricing is last month's Classifieds: that a 'classic' was worth £xxx a year or two ago is no guide. Values fall as well as rise.
6. Amateur second-hand dealing is not a big money game: you win some, you lose some.
7. Be prompt with despatch. If in doubt about buyer's bona-fides, either wash out the deal or send C.O.D.
8. There will always be time-wasters; be tolerant within reason!



**S/hand and ex-demo clearance items - NOVEMBER 2003**

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Mark Levinson No 31.5 Transport S/H	9999	4999
Naim Audio CDI CD player S/H	1895	649
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**Turntables Tonearms & Cartridges**

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Avid Acutus Turntable Chrome x-demo	5000	3799
Benz Micro LP New& Boxed	2200	1799
Kuzma Stabi/Stogi S Turntable New& Boxed	1295	1099
Lehmann Audio Black Cube SE New& Boxed	650	449
Lyra Lydian Beta New& Boxed	599	499
Michell ISO Phono Stage S/H	549	250
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Roksan L2 preamplifier S/H	1295	399
Spectral DMC12 s Phono x-demo	4750	3299
Spectral DMC30 Remote x-demo	8500	6500

**Amplifiers**

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Krell KSA 250 Power Amplifier S/H	6898	2795
Mark Levinson No334 S/H	6000	3750
Naim Audio 42/110 Prepower S/H	N/A	299
Unison Research S2K Remote x-demo	1295	995

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Siltech HF8 Digital RCA-RCA S/H	220	99
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DECEMBER 2003 ISSUE - WEDNESDAY 8TH OCTOBER 2003  
 JANUARY 2004 ISSUE - 5TH NOVEMBER 2003

# Parallel Universe

David Price looks back to the wonderful world of nineteen seventies parallel tracking turntables, in the shape of Pioneer's PL-L1000.

**A**lthough various manufacturers, such as Harman Kardon, had broached the subject of parallel tracking turntables in the mid seventies, it wasn't until the arrival of Technics' stunning SL10 in 1978 that the breed truly came of age. Here was a brilliantly conceived and packaged hi-fi separate that was hard to argue against from any angle. Supremely well built from aluminium alloy, packed with the latest 8-bit microprocessor and optical sensors, and claiming full audiophile status by the inclusion of one of the best moving coil cartridges around – bar none – and even an excellent built in head amplifier, it was a seminal hi-fi design statement.

It rocked the entire hi-fi world, and very soon the rest of the industry was at it. Sony pushed its Biotracer armed decks, which although not parallel trackers attempted to address the same issues as tangential tonearms. Kenwood, Hitachi, Aiwa and a host of other Nipponese names responded in kind with true parallel trackers. Japanese hi-fi magazines – not so influenced by the cult of Linn as

those in this country – went into forensic detail explaining their relative merits. Then came Pioneer – never a company to do high end by halves – responded with the PL-L1000.

Just under £400 (nearly twice the price of a Linn Sondek in 1979) bought you a deck which can only be described as a behemoth. Measuring 494x154x456mm and weighing in at 12kg, it was not in the mould of your average Japanese direct drive that reached the UK in those days. And although it didn't respond with the exquisite, Swiss watch precision of Technics' SL10, it was nevertheless and extremely impressive bit of kit to use. By contrast, high-end British belt drives felt clunky, clumsy and positively prehistoric.

A row of micro switches at the front of the deck gave touch control over power, speed, disc size and repeat – with small LEDs to indicate the mode of operation – while a large rotary knob on the right of the deck gave manual cueing control over the tangential tracking tonearm. The plinth itself used Pioneer's superb coaxial suspension system, effectively giving the deck an

independent sprung subchassis whereas all other Japanese direct drives had to rely on sheer mass – or in the case of the otherwise impeccable SL10 – careful placement and trusting to luck. Inside was Pioneer's top Quartz Phase Locked Loop Direct Drive motor driving the 310mm platter, giving very respectable wow and flutter figures of 0.013% (WRMS), and a signal to noise ratio of better than 78dB.

At the back ran the

rail upon which the tonearm sits. A straight piped, static balanced, medium to high mass affair of 190mm effective length, it came supplied with three different counterweights, all secured to the end stub via a screw (Origin Live modded Rega arm style) – this gave a wide cartridge weight range of 4g to 24g. At the end, a middling Pioneer PC-600 moving coil cartridge came supplied, affixed to the SME-style headshell.

The result was an extremely impressive sounding turntable with a very smooth and organic sound. Although – in truth – not competitive with a Linn LP12/Ittok of the day in terms of precision and low level detail, the Pioneer boasts a superbly tight and punchy bass (a typical characteristic of a well engineered direct drive deck) that makes the Linn – and indeed a modern DC motored Michell – seem quite loose around the bottom.

This strong, powerful, tight and punchy low frequency performance goes all the way up to the midband, which is quite explicit and very tidy. Images are solid, and there's a real feel of stability and unflappability thanks to the tangential tracking tonearm. Only the treble, which is sweet but a tad veiled, lets the show down.

Like the Technics SL10, this deck is no upgrade from a modern high end belt-drive, but it's an interesting and characterful alternative. The superlative build quality means that it's likely to still be spinning when most new budget or mid-price designs have blown their weak little Impex AC motors! Although rare, PL-L1000s do crop up from time to time, at ridiculously low prices considering their excellent quality – expect to pay around £150-£200 for a minter.





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