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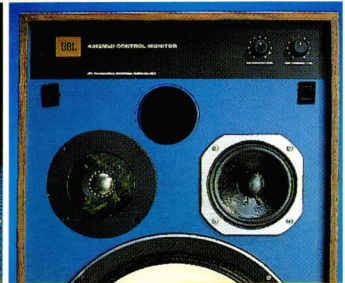
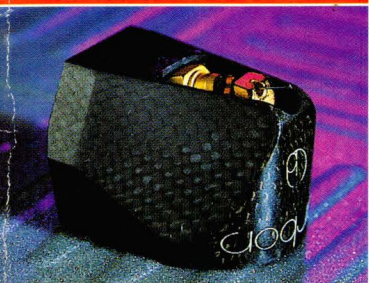


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FEBRUARY
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Gramophone, Jan 97

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DUE TO TECHNICAL DIFFICULTIES BEYOND THEIR CONTROL, OTHER MINI SYSTEMS WILL NOT BE DELIVERING THIS LEVEL OF PERFORMANCE

Chief Musical Officers' Warning

EDITORIAL

● Editor-in-Chief ATW "Stan" Vincent
 ☎ 0171-917 7747 & e-mail: editor.hifichoice@dennis.co.uk
 Regrettably we cannot speak with readers or answer queries on the telephone. Please send a letter, fax or e-mail instead.

Deputy Editor Jason Kennedy

☎ 0171-917 7746 & e-mail: deputy_ed.hifichoice@dennis.co.uk

Reviews Editor Alan Sircom

☎ 0171-917 7751 & e-mail: alans@ascrc.com.demon.co.uk

Art Editor Del Gentleman

☎ 0171-917 7748 & e-mail: art.hifichoice@dennis.co.uk

Production Editor Christina Bunce

☎ 0171-917 7745 & e-mail: edprod.hifichoice@dennis.co.uk

Consultant Editor Paul Messenger • Technical Editor Paul Miller •

Contributors Richard Black • Tim Frost • Alvin Gold • Kevin Hilton •

Jimmy Hughes • David Vivian • Assistant Andrew Liasi • Photography

Chris Foster • Chris Richardson

ADVERTISING

Group Ad Manager Rob Debenham

☎ 0171-917 3834 & e-mail: ads.hifichoice@dennis.co.uk

Deputy Ad Manager Sean Gibson ☎ 0171-917 3932 • Sales Executive

Clare Smith ☎ 0171-917 3935 • Advertising Fax 0171-917 5555 ☎

PRODUCTION

Manager Simon Maggs ☎ 0171-917 7676 • Advertisement Controller

Robin Ryan ☎ 0171-917 3885 • Production Fax 0171-580 6430 ☎

CIRCULATION & MARKETING

Director Sean Farmer ☎ 0171-917 7654 • Manager James Burnay ☎

0171-917 7810 • Marketing Director Alison Townsend ☎ 0171-917

7675 • Manager Mary McGovern ☎ 0171-917 7768 • Co-Operative

Marketing Executive Paul Smyth ☎ 0171-917 3946 &

e-mail: coop_marketing@dennis.co.uk • Circulation & Marketing Fax

0171-917 7677 List Rental Department Simon McCay ☎ 0171-917 3943

• Nerys Church ☎ 0171-917 5663 ☎

MANAGEMENT

Publisher Simon Davies ☎ 0171-917 7718 & e-mail: publisher.hifi-

choice@dennis.co.uk ☎ 0171-917 7718 • Advertising Director Ian

Westwood ☎ 0171-917 7618 • Publishing Director Eric Fuller ☎ 0171-

917 7686 • Managing Director Alistair Ramsay ☎ 0171-9177661 •

Chairman Felix Dennis ☎ Pre-Press Bureau Unidigital Elements, London W1

Printing St Ives (Plymouth) Ltd. Distribution USM Distribution Ltd, 86 Newm-

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Hi-Fi Choice is the UK hi-fi magazine representative of the European Imaging & Sound Association (EISA). Every year EISA honours the finest hi-fi and home cinema products throughout Europe.

Editor's Notebook



PHOTO BY SEAN BLOOMFORTH

Where do we draw the line between standards and aggressive marketing? Stan 'Dard' Vincent holds forth.

A new standards wars is raging. This time over carriers of pre-recorded music. Long-term readers will remember the early-'90s battle between MD and DCC. Both were brand-new digital formats trying to set new standards for the domestic recording of music, at a time when another 'new' format, CD, was less than 10 years old. If recordable CD had been launched to consumers at the same time, I reckon a lot more people would have cottoned on to it.

Why didn't recordable CD launch then? Well, the technology was still quite expensive, but I think the music biz is to blame. Too many vested interests foresaw a wave of middle-class piracy and a consequent dent in the balance sheet. The piracy happened all right, but in sweatshops of Eastern Europe and the Orient. Music lovers ran the gauntlet of dodgy CDs to avoid paying the exorbitant prices charged by the record moguls.

Gradually the industry realised that a little domestic piracy was preferable to large-scale copyright theft on a criminal scale. Domestic CD recorders have tumbled in price to £500 (eg Philips CDR 870, HFC 174), prices are set to be slashed further, and the prospect of rewritable discs is already secured.

It looks increasingly possible for CD to become a consumer-driven standard for music storage, both prepackaged and home-made. MiniDisc is a triumph of miniaturisation and offers far superior editing functions to CD. But will it end up the new Betamax, accomplished but unloved?

Audiophiles like you and I want the best-possible sound-quality. Historically, there have been too few of us prepared to pay for quality, to justify music and electronics' industries investment in new formats. DVD-Audio, hailed as the great hope for a better-quality CD, is still mired in the mud of political battles conducted behind closed doors. (See our feature on p33.)

All of sudden, the commercial momentum of CD might lead to a new disc variant which would satisfy both audiophiles and bean-counters at Record, Inc and Product plc. This proposition is called Super Audio CD, has been developed jointly by Philips and Sony, and is explained on p32. One of

its key attractions is backwards compatibility with existing CD players. A smooth transition to tomorrow's world looks possible!

This Month's Cover Gift!

Digital Radio is set to be the big story of 1998, as we reveal on page 36. And UK readers can receive their own personal multimedia briefing on every aspect of this exciting new technology, simply by sending in a postage-prepaid card to be found on the cover of this issue. In return the BBC will send you a FREE CD/interactive CD-ROM (narrated by Alan 'Fluff' Freeman no less!) which explains all about Digital Radio's unique benefits for listeners, and the kind of products you'll soon be able to buy. Act now — send in your card today!

HI-FI CHOICE
DEALER OF THE YEAR 1997
 IN ASSOCIATION WITH
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John Clayton receives his Dealer of the Year 1997 certificate from Hi-Fi Choice publisher Simon Davies. Flanking: left, Julian Richer (Richer Sounds); right, John Hill (Marantz).

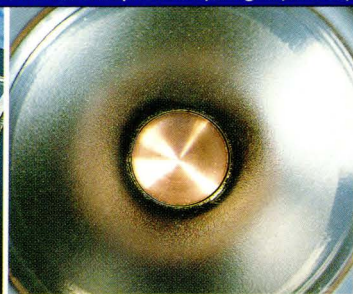
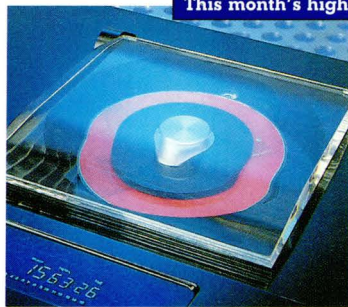
In the September and October issues of *Hi-Fi Choice* we asked readers to nominate their best local hi-fi supplier. And the winning dealer is... John Clayton, Manager of Richer Sounds' Prestwich branch, North Manchester! John scoops a fabulous £1,000 holiday for two in New York.

But the fun didn't end there: all voting forms were entered into a Prize Draw, in which the top reward was another £1,000 jaunt to the Big Apple. The winner was reader David Hewitt of Gisburn, Lancs.

Four runners'-up prizes comprised Marantz CD players. A White of Bloxwich and H W Cosker of London won CD-67SE players worth £350 each; while A Black of Aylesbury and Neil Simms of Leeds will receive CD-67 players worth £270 each.



Classic cartridges on test! p54



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Digital Radio is here — learn all about it with a free CD/CD-ROM from the BBC! To claim your free disk return the postage-prepaid offer card on the front cover of this month's magazine. (UK copies only. If your card is missing, tell your newsagent.) Plus: read our feature on p36!

WIN! WIN! WIN!

A complete Precision system worth over £2,000!



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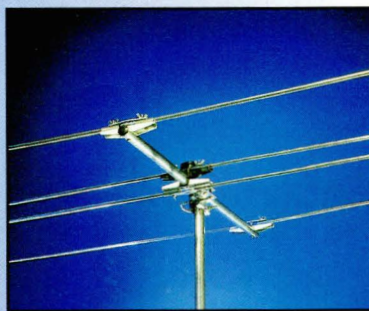
THE BUYERS' GUIDE

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Our icon-infused listing of all new hi-fi products includes an easy-to-use almanac of every current component that we've reviewed!

WIN A TWIG!

Ten Antiference FM aerials must be installed — FREE!



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Update

THIS MONTH... PIONEER'S PRECISION TUNER AND CASSETTE... B&W IN CASA... NAIM'S CAN-AMP... AND MUCH MORE...

In brief

Acoustic Energy's new 200 Series claims to demotivate the benefits of metal-cone technology. There are four models available in Black Ash or Rosewood vinyl veneer, priced from £249.95 for the AE200, to £499.95 for the flagship AE209. AE's new bass/mid driver, from VIFA, has a 130mm chassis in which a metal-alloy cone is thermally bonded to a 32mm high-power voice-coil. ☎ (01285) 654432

JPW has unveiled two new designs. There's a new, low-priced member of the Millennium range: the ML110, priced at £69.99. It is a two-way design loaded by a rear-facing reflex port. And then there's an active subwoofer packing a claimed 50 Watt amp and 200mm drive unit, priced at £199.99. Both items are available exclusively in Richer Sounds stores. ☎ (01752) 607000

Gamepath has introduced the harman/kardon AVR11 remote-controlled receiver. It offers PI, PTY and CT functions, pre-set scan and 10 direct preset buttons. Based on the AVI100, the amplifier offers "discrete high-current ultrawide bandwidth". The receiver will be priced at £299.99. The price of the AVI100, meanwhile, will be reduced to £199.99. ☎ (01462) 893897

Serious Kit is opening a specialist audio shop in Manchester, stocking brands including Audio Note, Rogers, Neat, FiRax, ProAc, Harbeth and Trichord. The shop will also have bargain part-exchanges available. ☎ (0161) 798 7649

Hi-fi and home theatre dealer Castle Sound & Vision has recently opened in Nottingham.

Growing Precision

Pioneer has announced Precision-enhanced versions of its F-504RDS tuner and CT-S550S three-head cassette deck, to complement the existing Precision CD player and amp that have both received *Hi-Fi Choice* Best Buys. The



Pioneer's F-504RDS & CT-S550S — now in Precision focus.

new models cost £300 and £340 respectively.

Pioneer claims that "the finest capacitors" have been deployed in critical segments of the signal path, together with exclusive custom-designed integrated circuits (ICs).

The FM/AM tuner's key audiophile feature is its provision of two aerial inputs. This allows the use of a high-quality antenna pointed at the local transmitter for BBC Radio Three, for example, while still permitting the reception of local stations and others of non-critical quality, via an omnidirectional 'twig'. The cassette deck, meanwhile, incorporates Dolby S noise reduction and auto tape-tuning.

■ In Japan, Pioneer has announced the DV-S9 DVD-Video player, priced at ¥190,000 (£950 approx.) Designed to be a "flagship" model, this product is said to incorporate all of Pioneer's expertise in LaserDisc and CD-player manufacture, including a 96kHz/24-bit DAC and the Hi-Bit Legato-Link S processor.

Pioneer High Fidelity (GB) Ltd ☎ (01753) 789500

Who's NXT?

NXT, the revolutionary flat-panel speaker technology designed by British-based Verity plc, will make its debut in a Mission hi-fi product at the Winter Consumer Electronics Show (WCES) in Las Vegas. No details were available at press time, but the announcement is bound to be a key feature at the show, especially in the wake of awards for NXT from US specialist magazines *AudioVideo* and *Popular Science*.

The company behind NXT, New Transducers Ltd, claims it is attracting industry plaudits and new licensees at an increasing rate. NEC, first to adopt NXT for speakers in a laptop computer, has announced a range of products based on the technology.

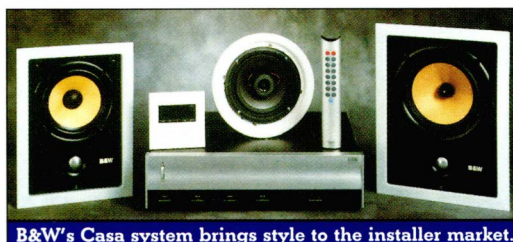
Furthermore, NXT claims to have signed a cross-licence agreement with Sound Advance Systems (SAS), forming a strategic alliance under which NXT and its co-licensors Defence Evaluation & Research Agency, Noise Cancellation Technologies, Inc and SAS now represent "over 80 active patents and patent applications in relation to flat-panel loudspeaker technology." NXT ☎ (01480) 451777 • www.nxt.co.uk

HDCD pushes upwards

Pacific Microsonics is claiming a growing market penetration for its High Definition Compatible Digital (HDCD) system.

There are now said to be over 100 HDCD-equipped replay products, with the latest models including the Arcam Alpha 8SE, Rotel RCD-971 and Audiolab 8000DAX.

On the software side, Pacific Microsonics claims that more than 20 million copies of HDCD-encoded recordings have been sold. Adding grist to the mill are recent high-sale album certifications awarded to HDCD discs in the US. Paula Cole's *This Fire* went platinum, while noted audiophile faves Megadeth received a gold for *Cryptic Writings*. Memec plc ☎ (01844) 261919 • www.hdcd.com



B&W's Casa system brings style to the installer market.

B&W bolsters boxes

B&W Loudspeakers has joined in the multiroom game with its new Casa system. Claimed to equal or surpass the quality of traditional hi-fi separates, Casa is based around a system controller capable of addressing up to 32 rooms or zones, plus sub-zones therein.

Speakers, system controller and wall-mount control keypads are linked together with a single-flex multicore cable to form a network in which audio signals are transmitted using balanced techniques to minimise noise.

Two new speakers are intended for in-wall installation, while a third has been designed for ceiling mount. All have built-in amps for active operation.

In its hi-fi ranges, B&W has extended 'Special Edition' (SE) refinements to all members of the company's CDM range, following the announcement of the CDM1SE in last month's Update.

A "dispersion modifier", installed in place of a dust-cap in the company's proprietary 6.5-inch Kevlar mid-bass drive-unit, claims to widen sound dispersion in upper-midband regions. To follow the CDM1SE B&W is promising the CDM2SE, and CDM7SE. A novelty in the latter will be a new Kevlar/fibre composite lower-bass unit.

Other refinements include modified crossover networks, with all but the CDM2SE incorporating separate bass/mid and treble boards.

B&W Loudspeakers ☎ (01903) 750750

Headline here, please

Don't worry — the sub-editor hasn't fallen asleep on the job. Headline is the name of a new headphone amplifier from Naim. Designed for use with high-impedance, dynamic headphone designs, the Headline is said to be "very, very quiet." It is reported that low noise and distortion were key design goals.

A captive lead, terminated in one of Naim's idiosyncratic DIN plugs, permits connection to the tape output socket on its preamps; non-Naim users would have to invest in an adaptor.

The Headline itself costs £205, though it must be partnered with an external power supply. Naim recommends the £170 NA PSC, but claims "greatly enhanced" performance results from the use of the £340 FLAT-CAP or £700 HI-CAP power supplies. (The £22 SLIC lead is required for either of the latter.)

Naim Audio ☎ (01722) 332266



Headline news from Naim: crank up your cans!

In brief

Castle stocks Naim, Castle, Denon and Chord products among others, and has three demonstration rooms on the premises. ☎ (0115) 958 4404

The Edge Sound & Vision, (formerly Anglian Home Entertainment) has recently opened two new stores in Norwich ☎ (01603) 458151 and Sudbury ☎ (01787) 881413.

Moorgate Acoustics has updated its Web-site to include a new Marketplace where second-hand audio products may be purchased. There is also news and information about many of the products supplied. ☎ (01142) 756048 • www.demon.co.uk/moorgate/

Design Audio Classics is a new dealership based in Scotland, offering high-end audio and specialist home cinema. The company supplies products from ProAc, Marantz, Audiolab, Mark Levinson and REL among others. ☎ (0141) 353 7474

Monitor Audio has restructured its management team to incorporate a group of new partners. Robin Jones, Barry Adams, Andrew Flatt and a group of private investors have all joined the team. Monitor Audio ☎ (01223) 242898

Thomas Transducers has implemented production of the Virtuoso Reference horn-loaded speaker under the aegis of its recently-truncated B*a brand. Virtuoso Reference, which was unveiled during *Hi-Fi News's* Heathrow show last September, replaces the Virtuoso Gold (HFC 167) at the top of the company's range. Price is £3995. In line with company philosophy, the speaker boasts a solitary wide-bandwidth Lowther drive-unit; in this case the new DX3 with rare-earth magnet system. The new design is said to improve upon its predecessor with a "faster transient response". It stands just over a metre high. Proprietor Eric Thomas claims the Virtuoso Gold is "a free-range, organic product of the audio world", which "costs a bit more, but tastes a whole lot better." ☎ (01424) 813888

The Sony Corporation has announced the passing of Masaru Ibaku, its founder and Chief Advisor. He was 89.

Dolby triumphs

A Digital Versatile Disk (DVD) format war was averted on December 5, 1997. The DVD Forum's Steering Committee decided that Dolby Digital would become a "mandatory" format in the DVD specification for countries using the PAL TV system.

In practice, claims Dolby Laboratories (developer of the Dolby Digital multi-channel sound system), this means Dolby Digital will become "the worldwide standard for DVD multi-channel audio".

Now DVDs with only Dolby Digital audio may be sold legally in Europe. Previously, following an announcement at the IFA show in Berlin last August, it looked likely that a rival multichannel format, MPEG2, would be required.

Dolby Labs claims that among over 600 DVD titles issued since the launch of DVD-Video in Japan and the USA, "almost every" release has included tracks encoded in Dolby Digital. It estimates 460,000 DVD players have been sold so far.

Turn to page 32 for news of progress on the DVD-Audio standard.

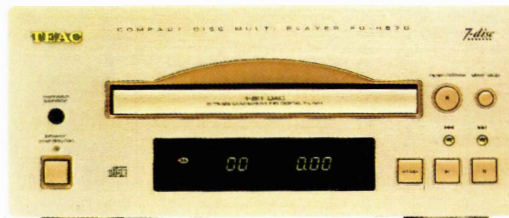
Dolby Laboratories, Inc ☎ (01793) 842100

TEAC that and party

TEAC's Reference 500 system (Best Buy, HFC 174) just keeps on growing. The latest addition to its ranks is the PD-H570 seven-disc CD multiplayer, priced at £299.95. Styled with a gold effect front panel to match the rest of the 500 series components, the PD-H570 incorporates a one-bit DAC with eight-times oversampling.

TEAC ☎ (01923) 819630

TEAC PD-H570



Avon calling...

Preparations are in hand for 1998's *Sound & Vision Bristol* hi-fi show, to be held in the city's Marriott Hotel on Lower Castle Street, from Friday 20th to Sunday 22nd February.

At press time the organisers claimed 51 exhibitors had booked space, with brands including Arcam, Audiolab, B&W, Cable Talk, Cyrus, Denon, KEF, Marantz, Meridian, Mission, Naim, Pioneer, Sony, Tannoy and Yamaha.

The show opens from 11.00am until 6.00pm the first day, and 10.00am until 5.00pm on subsequent days. Admission is £5.00 for adults, £3.00 concessions and free to accompanied children under 16. A 10 per cent discount will be offered on all purchases made at the show from organising retailers Audio Excellence and Audio T.

☎ (01222) 228565 or ☎ (01865) 760844



Get to the Marriott early and beat the monster queue!

The coast is clear

South Coast Speakers has launched a range of four speakers hand-made to order in a choice of nine real-wood veneers. Oden (£299) and Hades (£695) are two-way bass-reflex-loaded designs. The former employs a coated-paper mid-bass driver and aluminium dome tweeter, while the latter has a polypropylene mid-bass and fabric-dome tweeter.

Atlantis (£840) is a two-way stand-mount employing a 'Nawi'-shaped eight-inch mid-bass driver and 25mm aluminium-dome tweeter, while Excalibur (£1,750) is a floor-standing three-way, incorporating a ten-inch Volt driver, plus biwireable isolated bass and mid/treble crossover boards.

The company also trades as supplier of DIY speaker kits, replacement drive-units and accessories.

South Coast Speakers ☎ (01703) 559312



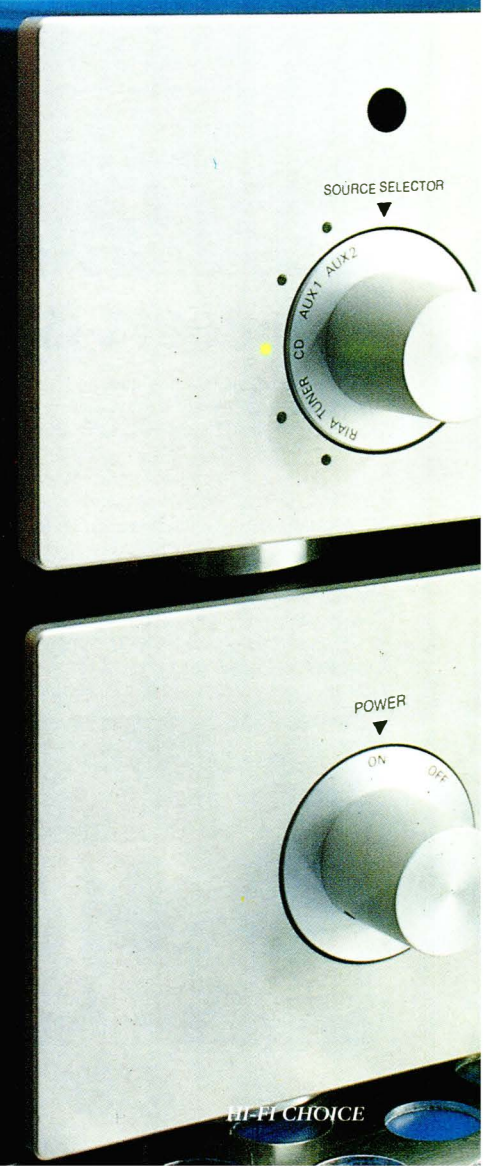
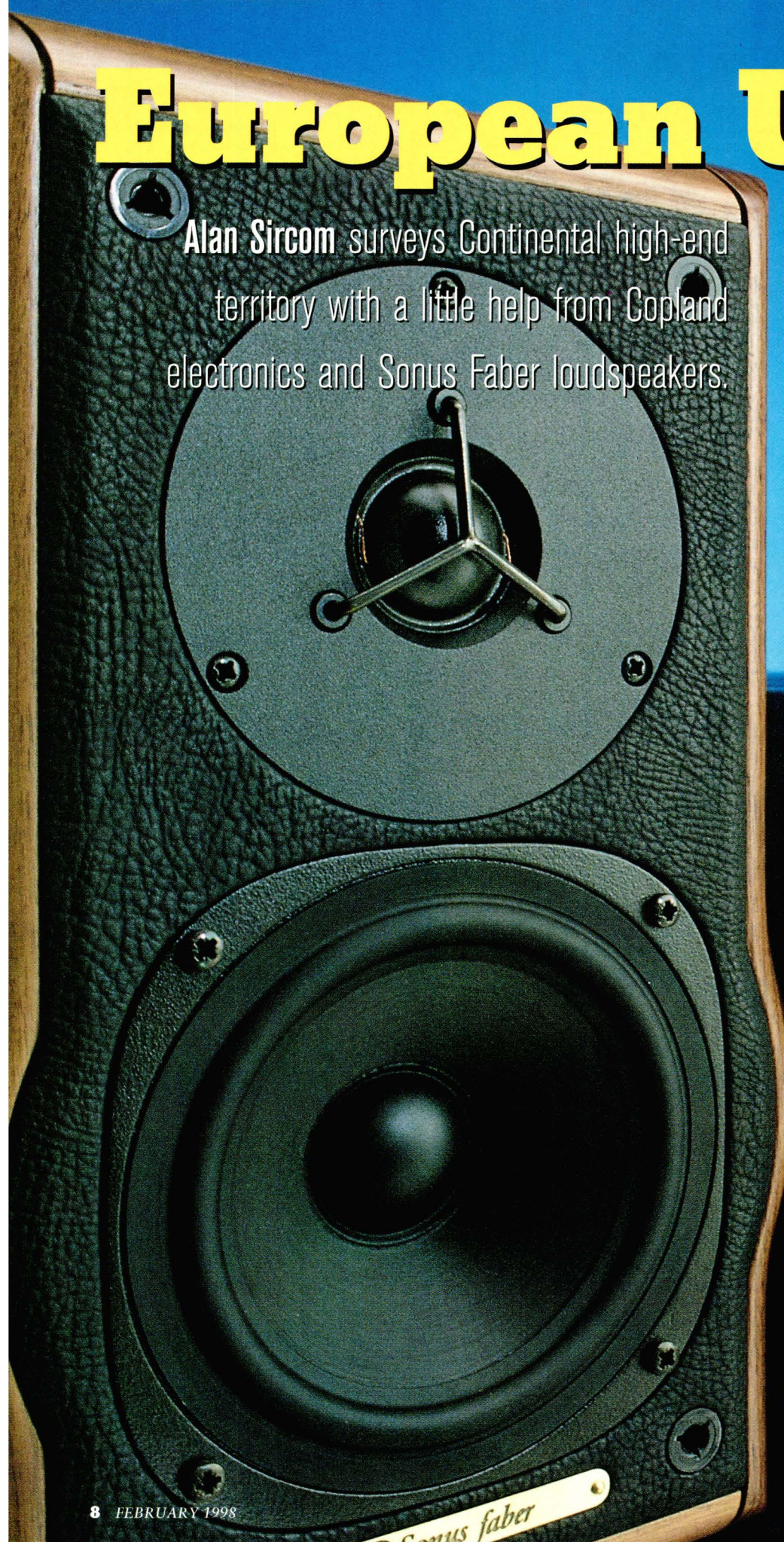
South Coast raiders in formation.

European Union

Alan Sircom surveys Continental high-end territory with a little help from Copland electronics and Sonus Faber loudspeakers.

High-end kit needn't be big, heavy and American. Some of the best high-end audio isn't even too expensive, either. Although high-end distributor Absolute Sounds stocks some of the highest of high-end American kit from brands like Krell, Wilson and Theta, other strings to its bow are products of European companies like Copland and Sonus Faber. These appear to offer a true high-end approach, while falling into the 'almost affordable' segment of many listeners' wish-list budgets.

To test this proposition, we assembled the following system: from Swedish brand Copland, the recently-introduced CDA266 CD player and the brand-spanking-new CSA28 integrated amplifier; from Italian speaker craftsmen Sonus Faber,



the Minima Amator loudspeakers supported on the purpose-designed adjustable Ironwood loudspeaker stands.

Despite its European origins, Copland is committed to the High Definition Compatible Digital (HDCD) system, developed in the US by Pacific Microsonics, which claims to upgrade the quality of CD replay using a special encoding process. All three Copland CD players incorporate the PMD100 HDCD digital filter, allied to the Burr-Brown PCM 63P 20-bit D/A converter; all share a discrete-component, Class-A-configured analogue output section. Unlike Copland's '277 and '288 CD players, the CDA 266 uses a new, sprung-suspension Sony CD mechanism.

The amplifier is the real star of the show, if only because it is so new. The CSA28 is the first Copland amplifier ever to feature a remote control. Like the CSA14, it is a 60-Watt valve/solid-state hybrid. Rugged, hard-driving, cool-running semiconductors populate most of the circuitboards, but a pair of double-triode valves straddle the pre- and power stages exactly where Copland believes sonic benefits are most beneficial and important.

For the speakers we move south to Italy,

home of the exquisite Sonus Faber speaker you see in the photo. This two-way, 11.5-litre ported box is best sited away from the walls for optimal acoustics, but an enclosure like this just cries out to be shown off anyway. With a claimed efficiency of 88dB/W/m and impedance of four Ohms, this speaker must be matched with care to prospective amplificatory suitors, but it doesn't demand a powerhouse.

The distributor chose not to specify cables for this outfit — the natural choice would have been Transparent Audio, also from the Absolute Sounds portfolio, but we experimented with reasonably-high-end Audioquest, DNM, LAT and the new Nordost SBM Reference.

The latter brand was represented by a three-metre set of speaker cables and a one-metre interconnect, whose cost is almost the same as the system components themselves. The cables' portrayal of rhythmic information is among the most accurate around, but I'd say the SBM Reference is better suited to a darker-toned system; I opted for LAT and DNM.

So what does this system sound like? Can it fulfil the promise of 'affordable high end'? Well, if you're seeking the most accu-

THE 'EURO-HIGH-END' SYSTEM

Copland CDA266 CD player	£1,199.00
Copland CSA28 amplifier	£1,249.00
Copland CSA28 remote control	£65.00
Sonus Faber Minima Amator spkrs . .	£1,395.00
Sonus Faber Ironwood stands	£480.00
TOTAL	£4388.00

rate rig in the world, look elsewhere. However, if you would rather spend time with equipment that makes the most of almost any music played on it, this will be much more in line with your tastes. There is a sense of a self-imposed soundstage, especially from the Copland components, but this is nothing if not magically alluring.

Toe in the speakers dramatically and the imagery takes on precise proportions, yet the soundstage doesn't bloat or bloom. It is unquestionably on a slightly small scale, but only because the bass is in correct proportion and doesn't boom or disappear.

I found these components complemented all manner of musical selections, from Muddy Waters' *Mannish Boy* played at full blast, to Monteverdi madrigals relayed at a whisper. This rig makes particular sense of vocals, even massed vocals,

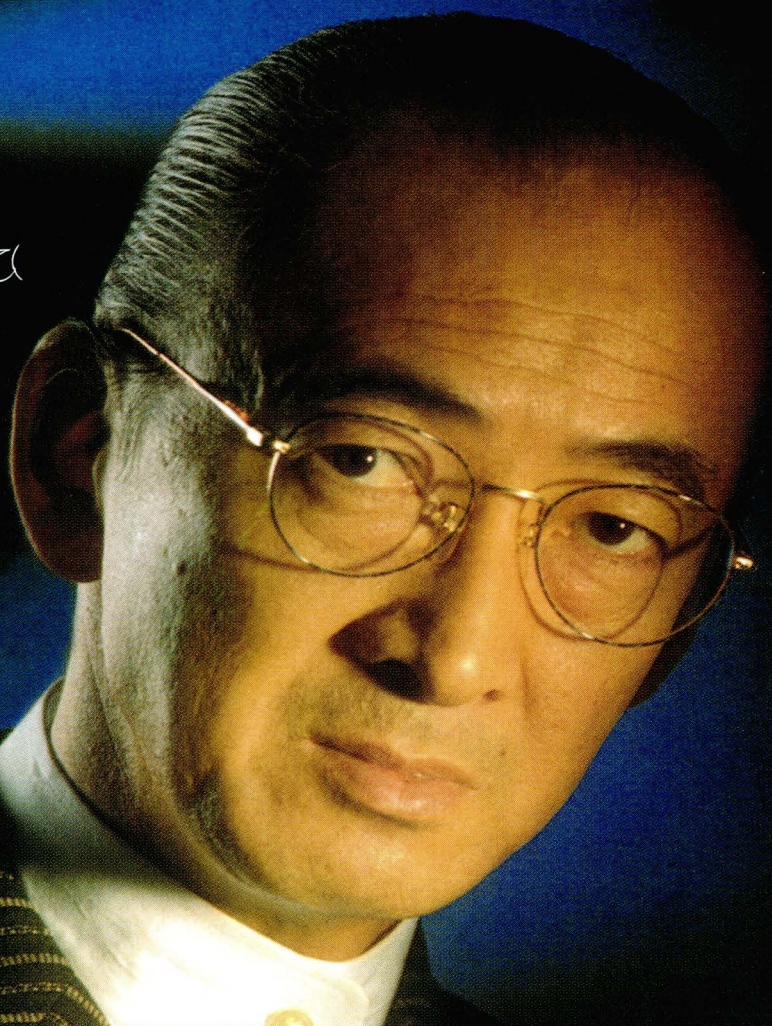
which are expressed with lyricism and articulation. It does tend to paint all music in the same hue, and will not dig deep into the mix to extract the *n*th degree of detail and soundstaging. Instead, it lulls and relaxes the listener with a silken sheen that is the audio equivalent of a Radox bath, soothing away sonic tensions and leaving the listener enraptured and relaxed.

Sophisticates will love this system. The sharp-edged Scandinavian style of the Copland pieces strikes a unique chord with the elegant craftsmanship embodied in the Sonus Faber speakers. The refined sound quality only serves to heighten that Bollinger-sipping appeal. High end but 'almost affordable'? Yes, I think so.

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Ear Waxings

Jason Kennedy, noted unreconstructed rock fan of this parish, finally hears his '70s albums the way they were recorded.

That great music, those groovy clothes, the big, bluff loudspeakers... I'll never forget the '70s. The living was easy, especially for those in the hi-fi business. Pioneer PL-10D turntables, A&R A60 amps and AR18 speakers quite literally flew out of the dealers' doors.

At the same time on the professional side of the fence, blue-baffled JBL monitors like the 4312 were helping a whole host of superstars make the fantastic records we drool over today. And it must be to evoke memories of cheesecloth shirts and flares that JBL has reissued the 4312 in mkII guise, at a price of £1,000. When even retro studio monitors are cool, you know the world is trapped in an endless anachronism.

To be more specific, Japan is the territory most obsessed with two decades past. In fact, the 4312 is a 14-year-old studio monitor, the last in a line of relatively compact designs that were sired in 1968 by the 4310. At the time, the latter was so popular it spawned a domestic sibling called the L100 Century; which in turn was recently reissued as the Century Gold. Both the Century and the 4310 used Alnico magnets to power their five-inch midrange drive-units and distinctive, white 12-inch bass units.

The L100 incorporated a new, soft-dome tweeter, and though a domestic design, was proving most popular in recording studios. JBL was moved to release the 4311 monitor modelled upon it, and according to legend, this latter speaker assisted in the recording or mixing of two-thirds of US Top 50 albums in 1979. It was replaced in 1983 by the 4312, which featured a titanium-dome tweeter,



JBL 4312mkII

A throwback to the days when speakers had tone controls (left).



and JBL claims that rated impedance is the only difference between the latter and the eight Ohm mkII.

I can't help but consider this a pretty cool speaker. In an age of slim-baffled, slickly-veneered boxes, the 4312's big Aquaplas-coated woofer and distinctive blue baffle really stand out. As do the level controls for midrange and treble energy. Heresy! But not every aspect of nostalgia integrates with modernity — it's not easy to use this box with stands. In the 4312's heyday, a speaker stand was a flimsy brown thing with castors underneath it. Big racks of black steel look wrong in a supporting role.

But in this case two wrongs make a right, at least as far as sound quality is concerned: I expected soft, mellow, sophisticated; I got


presence, resolution, power. You can hear an awful lot through these big boxes. In fact I'd be very hard pressed to think of another similarly-priced design that would match it for bandwidth and resolution. The Acoustic Precision Eikos FR1 offers a greater sense of speed and better imagery, but it will never match the glorious sense of West-Coast ease, and the grunt of a big paper woofer cone.

Reelin' in the years

I honoured the reissued JBL with music that might have been mixed on its predecessors: Steely Dan, Brand X, Stanley Clarke, the Doobie Brothers, Supertramp etc. All sounded excellent; there were numerous highlights. I've never before heard such a good rendition of *Goodbye Pork Pie Hat*, for example, from Jeff Beck's 1976 LP, *Wired*. The reasons for such sonic success are quite elusive, however. A speaker of this vintage, with low-tech drivers and a prosaic, inset-baffle box, should not be

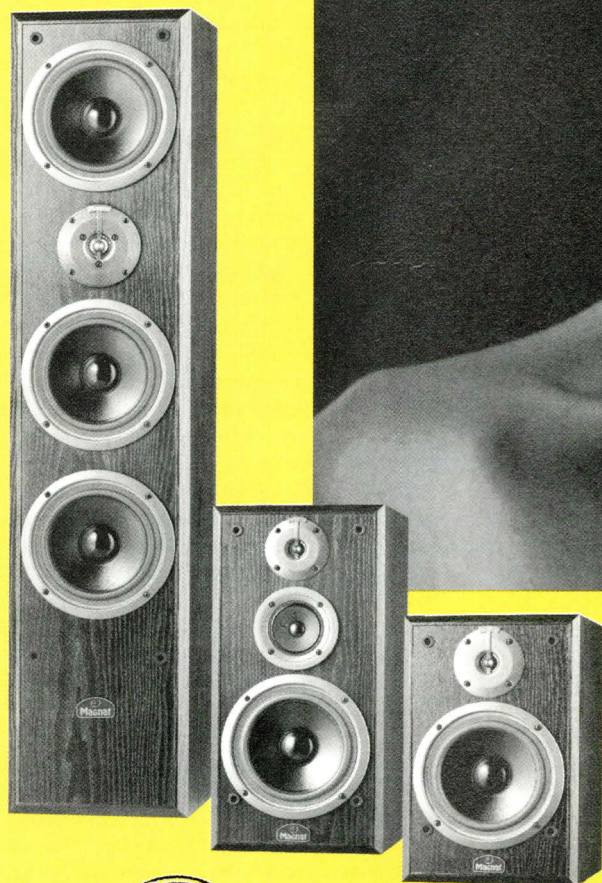
so revealing. Perhaps it's because good three-way designs are so rare: this unusual driver array pays little by way of lip service to timing and imaging, yet delivers them consummately nonetheless.

I tried the 4312mkII both upright and on its side. The latter gave a warmer balance, but both configurations were pretty effective. What you hear is character: of instruments, voices and recording techniques, but not of the speakers themselves. Switch to the Eikos FR1, and the contrast throws into relief the signature of the JBL's box and its multiple drivers; but when the JBL performed I found its artefacts quickly blended into the background, leaving only the sound of the music in a very palpable sense.

So the only niggle is their awkward look on top of a pair of stands. Guess I'll just have to invest in a mixing desk and effects rack to make 'em feel at home... 

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The Jimmy Hughes Experience

Criticism of Jimmy Hughes's hi-fi system sparked him to reappraise the noble principle of compromise.

I know good sound is a matter of personal opinion, but it does help if you have some sort of yardstick. Because my principal goal is the natural, unexaggerated reproduction of classical music, my reference is the warmth, homogeneity, and sheer ease of live acoustic sound when heard in a good concert hall. The trouble is, I also want music to be immediate, involving — and exciting.

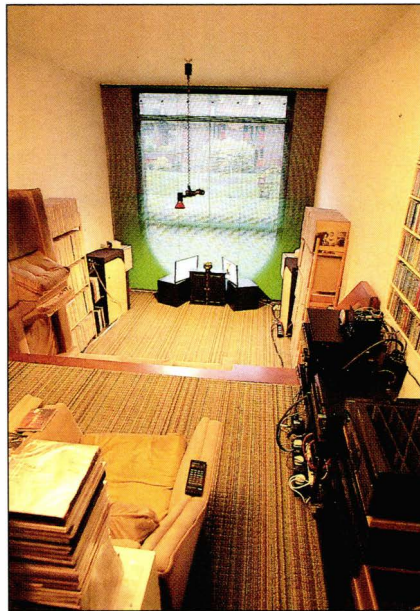
Are all of these qualities incompatible? Not necessarily. But it is easy to enhance excitement and involvement by exaggeration. More is always better until you go too far. It's a bit like increasing the contrast and colour saturation on your TV set to enhance the picture and make it more vivid and 'real'. It seems like an improvement until you notice every person looks like they have a serious drink problem.

Exaggeration works up to a point, but the drawback is its selectivity. The effect is superb in some cases, terrible in others. Something truly neutral shows no preference, but recreates all things without favour. The trouble is, because 'more' is always 'better', sometimes it's difficult to accept a neutral, unexaggerated balance: the temptation is to spice things up. It's easy to be seduced by added boom and tizz.

I love the way that good reproduced sound can clarify complex textures which might sound rather opaque when heard live. Some pieces of music are so dense and layered, it's almost impossible, during a live performance, to hear everything the composer wrote. A carefully-balanced recording can capture detail lost in the concert hall, to give a more complete experience of the music.

Over the years I've aimed steadily for sound that approaches the smooth tonal balance and unequivocal integration I perceive when seated in a concert hall. Unfortunately, this conflicts with the part of me that wants the sound of hi-fi in excelsis: forward, clean, brightly-detailed, tactile, articulate, dynamic. Of course I want to hear every note reproduced clearly, but I'd rather avoid obvious highlighting or exaggeration.

In a sense, the problem stems from trying to serve two masters. On the one hand there's fidelity to the sound made by an orchestra in a specific concert hall. On the other, there's fidelity to the music itself. Each overlaps the other, so a compromise must be achieved.



Jimmy's rig (with reversed Impulse speakers) is intended to sound like a concert hall.

Second opinions

To more closely approach the live experience, I've reversed my loudspeakers so the sound is reflected from the rear wall. I've added several line-matching transformers to enhance subtle changes in pitch definition and dynamics. It's a highly unusual approach, so I'm always interested to see what others make of its results.

Last October I received a visit from Branko Bozic of Audiofreaks, and Alan Sircom of *Hi-Fi Choice*. Branko last visited me some 10 years ago, while for Alan it was his first venture into my inner sanctum. "Would they like my system?" I wondered. The short answer was... no! Indeed, Branko listed several parameters in which he believed the sound was lacking.

I wasn't shocked by Alan's thumbs-down. He listens to Rehdeko loudspeakers, which have a very forward and articulate midband. After Rehdeko, even the QE2's foghorn would sound recessed! The French manufacturers put immediacy, dynamics and articulation before neutrality and bandwidth.

However, I was surprised Branko wasn't more positive. He did say the tonal balance was extremely natural, but I felt this was a consolation prize. For Branko (and Alan too, I suspect), the sound wasn't exciting and involving enough. It didn't grab you by the lapels and make you listen. The very things I'd struggled to achieve — evenness, neutrality, integration — meant little or nothing.

I thought the sound was rather good. I liked the way each new recording sounded quite different to the last. With many hi-fi systems, once you've heard a track or two, you often know exactly what to expect — the sound never surprises you. Here it was nicely integrated and homogeneous, yet remarkably contrasted, tonally and dynamically.

I also liked the way each recording was revealed in a positive light, so you heard what was right rather than what was wrong. If sheer physical excitement was lacking, I felt it was a price worth paying for the virtues outlined. For sure, I also want that excitement at times. But not if it means sacrificing integration and naturalness.

Some weeks later, Branko rang back to say he'd changed his mind about my system. He'd been to the New York Metropolitan opera to hear Rossini's *Cenerentola*, and realised what he heard at home, although of superb quality, was not like the sound he'd heard performed. The balance at my place, he felt, was much closer to a 'live' experience.

I was pleased to receive this 'phone call, but ironically, perhaps having been stung by criticism, I had subsequently modified my rig to live things up a bit. Maybe before, I'd gone too far towards integration and smoothness, at the expense of bite.

The truth is, good live sound encompasses extremes of loud and soft, sharp and smooth, high and low, which hi-fi equipment still struggles to recreate. It's inevitable that we will have to compromise certain facets of our systems' performance, in order to make the most of others which are more important to us. The hi-fi enthusiast's skill is in knowing where the compromises should be made. ▲

MARTIN
LOGAN

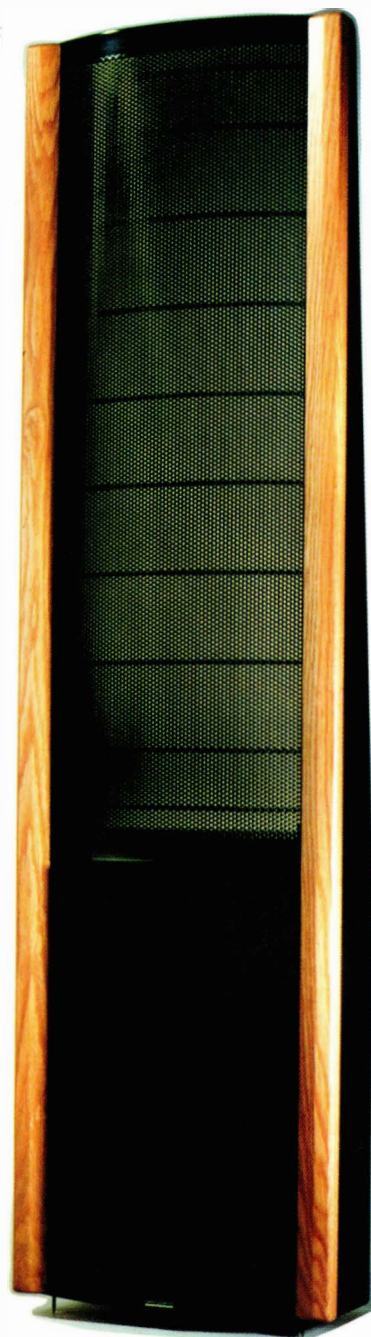
Martin Logan the name in electrostatics

re:Quest

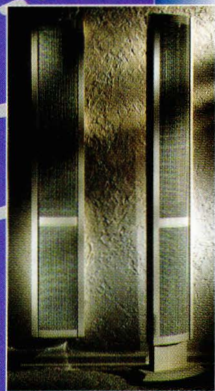
Aerius i



SL3



Aerius — Best Loudspeaker Value
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Stylos

MARTIN LOGAN electrostatic/moving coil hybrid loudspeakers successfully combine the 'slam' of moving coil bass with the transparency and precise detail of an electrostatic. Martin Logan Ltd—the electrostatic loudspeaker technology company—offers a range that incorporates the classic CLS Hz full-range, full-height electrostatic, the flagship hybrids re:Quest and Monolith and the massively popular SL3 and Aerius i hybrids. The Aerius i is the culmination of a decade of advances in hybrid loudspeaker technology. Compact enough for the smaller room, this revealing speaker sacrifices nothing in performance. Recent cosmetic and electronic changes including a new woofer and crossover topology has created a speaker that has been awarded the accolade 'Best Loudspeaker Value' in the prestigious AAHEA Awards for 1996. Reviewers' opinions of Martin Logan products are remarkably positive—(What Hi-Fi? June 1996): 'It's the natural sound of every instrument that makes this speaker so appealing.' Alvin Gold (Hi-Fi Choice January 1996) also wrote of the SL3: 'more capable of assuming the persona of the music than almost any box speaker you care to name'. Ken Kessler (Hi-Fi News August 1995) found the SL3 to be: 'one of the sweetest, smoothest mid-price electrostatic hybrids I've ever heard regardless of maker.' He continued: 'The SL3 can produce images that don't impress: they convince.' Contact Absolute Sounds for a dealer list where you can audition these remarkable loudspeakers. And now Martin Logan Home Cinema speakers Stylos surround speakers are in/on wall full-range electrostatic dipoles that can be painted to match any room; the Logos is a centre-channel wide dispersion electrostatic/dynamic tweeter hybrid. Martin Logan—the name in electrostatics



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COMPETITION

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The FM1083, worth £49, is a three-element design incorporating Antiference's Trumatch dipole with unique 'parallel resonance properties'. With an almost flat performance across the FM frequency range, the FM1083 claims to give 5 dBd of forward gain, with an acceptance angle of $\pm 32^\circ$.

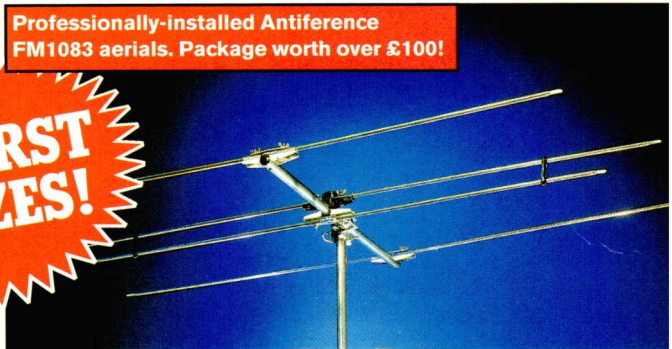
Doubling the value of each prize is Antiference's offer to install each 'twig' professionally. This service will include a full site survey, using professional signal-level-measuring equipment to determine the optimum position for each winner's aerial. Even better still, Antiference has generously offered to provide all brackets, masts and down-lead cables, making each prize worth at least £100!

One of the UK's leading aerial suppliers for over 60 years, Antiference currently offers a complete range of FM and TV aerials, masthead and distribution amps, signal boosters and all manner of accessories.

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All entries must arrive by first post, Thursday 26th February 1998.

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What is the Antiference dipole called?

- a) Matchmaker
- b) Trumatch
- c) True Blue
- d) Match of the Day

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Fourth prize of one pair of Wharfedale Diamond 7.1 loudspeakers goes to:

- D Warren of York

■ In the Dual competition the correct answer was:
d) Cardan.

First prize of one Dual

CS 750-1 turntable goes to:

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Second prize of one Dual CS 505-4 turntable goes to:

- R Knight of Bucks

Third prize of one Dual CS 455 Gold turntable goes to

- J Jones of Worcs

Two fourth prizes of one

Dual CS 435-1 turntable go to

- M Mills of Plymouth

- S Mitchell of Nottingham

■ In the NAD competition the correct answer was:

a) NAD's classic 3020 amp of yore.

First prize of one NAD system goes to:

- A Field of W Midlands

Two second prizes of a NAD 312 integrated amplifier go to:

- J Penney of Chesterfield

- M Hellen of London

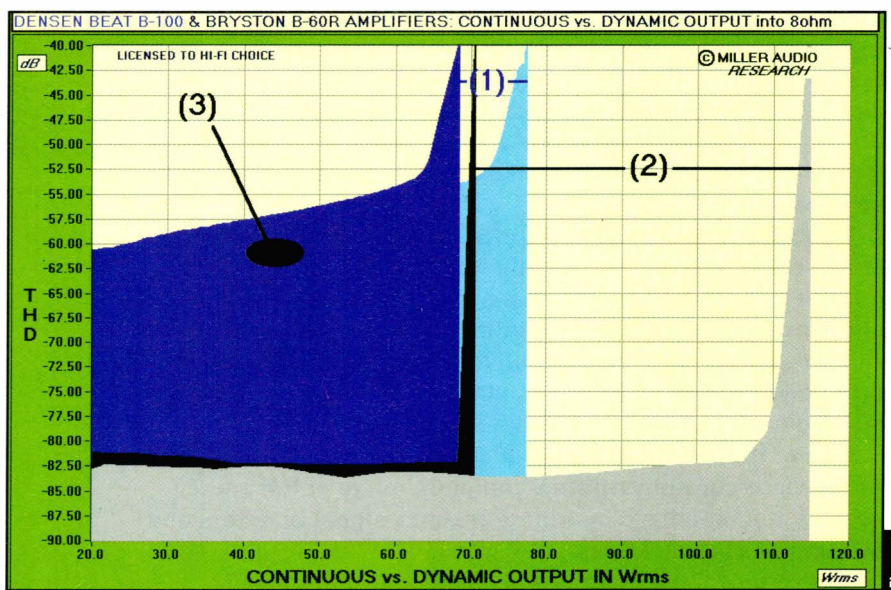
Paul Miller's Oasis of Sanity

Two amplifiers with the same quoted power output sound as loud as one another, right? Wrong, actually – and here's Paul Miller to explain why.

This month's column prefaces a feature next month in which we will investigate the arcane amplifier/loudspeaker interface (now known in the office as the 'Grand Unified Theory' – Ed). This month I will build upon an earlier *Oasis* (HFC 166) in which the topic of an amplifier's 'load tolerance' was first raised. We will uncover important differences between an amplifier's continuous power output, its *dynamic* power output and its tolerance of difficult speaker loads. I have drawn examples from the contestants in this month's group test (p62).

Power output specifications still come top of the list for unscrupulous manufacturers who want to exaggerate the potential of their amplifiers. These days, bogus or over-optimistic specs are hardly rife, but they still occur often enough to catch out those magazines lacking *Hi-Fi Choice's* technical expertise. Even if the specification is not deliberately 'exaggerated', different measurement conditions will give rise to different results. For example, power output might be specified into eight or four Ohms or, alternatively, with both channels or just one driven. In each case, the latter of the two options will seem to give a higher power figure. Also, power output might be tightly specified at a one per cent distortion limit (*à la Choice*), instead of at 'clipping' or 'maximum' which involve a degree of interpretation and error.

'Peak music power' is especially dubious, so be wary of any product specified in such a fashion, particularly if the power output seems too good to be true. I mention this because it goes to show that one manufacturer's '70 Watt specification' may not equate to another's, and why it's especially dangerous to cross amplifiers off your short-list just because they seem to offer a lower power output. It could be that those 'lower



spec'd' products are simply more honestly described.

This is also why you'll read comments in the hi-fi comics like "this amplifier sounds a lot louder than we expected". The assumption, of course, is that several amplifiers all rated at (say) 70 Watts will drive the same loudspeakers to an equal level. In practice there is no mystery surrounding the reasons why one 70 Watt amplifier may seem to 'go louder' than another model, even when both models are adhering to a common method of specification.

FIGURE 1: DYNAMIC AND CONTINUOUS POWER RATINGS

Here's an example of two amplifiers taken from this month's group test: the Densen Beat B-100 (dark and



light blue) and Bryston B-60R (black and grey). The maximum *continuous* power outputs of both amplifiers are represented by the dark blue and black traces respectively, and are plotted against distortion on the vertical axis. On this scale, -40dB equals 1 per cent distortion, -60dB equals 0.1 per cent and -80dB equals 0.01 per cent. As a result, it's possible to see that even within the power band of both amplifiers (say, up to 60 Watts), the output of Densen's B-100 is always more distorted (3) than that of Bryston's B-60R. But this is incidental to the main thrust of our discussion.

Importantly, we can see that the continuous power output of the B-100 is 68 Watts into eight Ohms, while its dynamic output reaches 77 Watts, a *difference* or 'dynamic headroom' of just +0.5dB (1). By contrast, though the continuous power output of



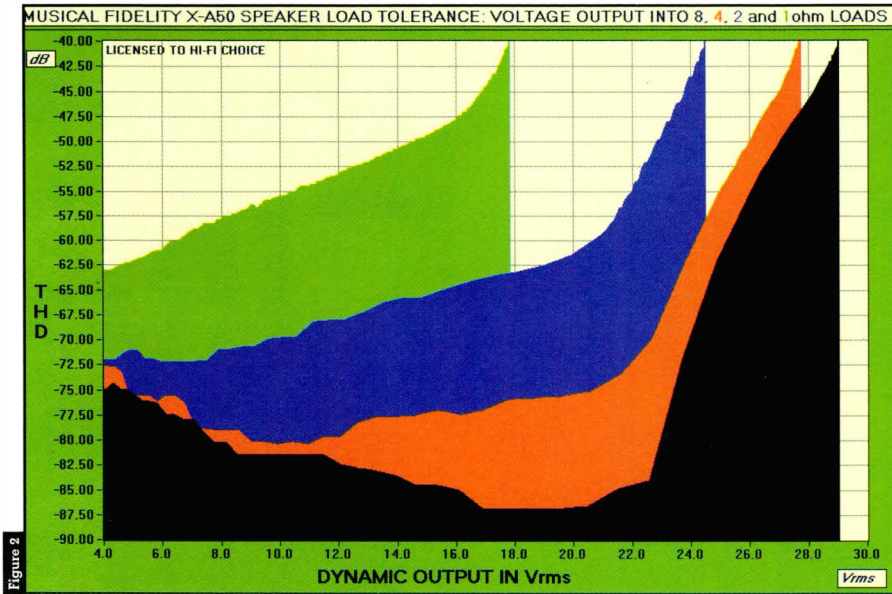


Figure 2



the B-60R is little more than its rival at 71 Watts into eight Ohms, it has sufficient headroom (2) to achieve 115 Watts per eight Ohms under *dynamic* conditions.

I am not trying to make a qualitative statement about the respective sound qualities of either amplifier. Rather, the graph simply demonstrates that while both amplifiers might seem to be rated at a similar 70 Watts per eight Ohms, in practice the B-60R may well have the capacity to achieve greater sound levels under dynamic conditions.

FIGURES 2&3: SPEAKER LOADS

Of course, this assumes your loudspeaker offers a broadly non-reactive eight Ohm load

which, in practice, few ever do. So why else might two similarly-specified amplifiers sound 'louder' or 'quieter' than expected? The answer lies in their ability to maintain a given output regardless of the difficulty posed by the speaker load. The easiest way to appreciate such differences is to view the amplifier as a source of Volts and not Watts. Broadly speaking, the more 'load tolerant' the amplifier, then the more able it will be to sustain a given voltage across the speaker load. Take Credo's IMP-702 and Musical Fidelity's X-

A50 by way of comparison.

The former will maintain roughly 29.5V across eight Ohms (a dynamic power output of 108 Watts) while the latter offers a similar 29.0V or 104 Watts into eight Ohms. This is realised graphically by the black traces in both images, which plot dynamic *voltage* output against distortion, once again.

As before, obvious differences in distortion versus output are apparent and will exact their own influence on the respective sound quality of each amplifier. For our purposes, however, we are more interested in how this 20.5V or 29.0V output is maintained into lower four Ohm, two Ohm and one Ohm loads (red, blue and green traces, respectively).

And the difference or respective 'load tolerance' of both amplifiers is very obvious indeed. Under identical, dynamic conditions, the Credo collapses very quickly indeed, its 29.5V holding to 23.1V (133 Watts) into four Ohms but then collapsing to 15V (113 Watts) and 8V (64 Watts) into two and one Ohm loads respectively. Contrast this with the X-A50, which only falls marginally from 29V to 27.5V (188 Watts) into four Ohms and then 24.5V (286 Watts) into two Ohms and 17.9V (289 Watts) into one Ohm.

So, although the Credo has a slight +0.2dB advantage in dynamic output into eight Ohms, it's the MF that ends up with a handsome +4.0dB margin if and when the speaker load dips momentarily to two Ohms or so. As a result, the '100 Watt MF' will still be singing through the sort of difficult speakers which would leave the '100 Watt Credo' gasping for breath.

The moral of this tale is simple: don't rely on simple power specs to gauge the ultimate loudness capacity of a given amplifier/speaker combination.

If that's set your head reeling, just wait until next month, when we begin divining the loudspeaker's rôle in the replay chain! ▲

Do you have ideas for topics we might address in the Oasis? Please contact Paul Miller direct via E-mail on 100576.3021@compuserve.com

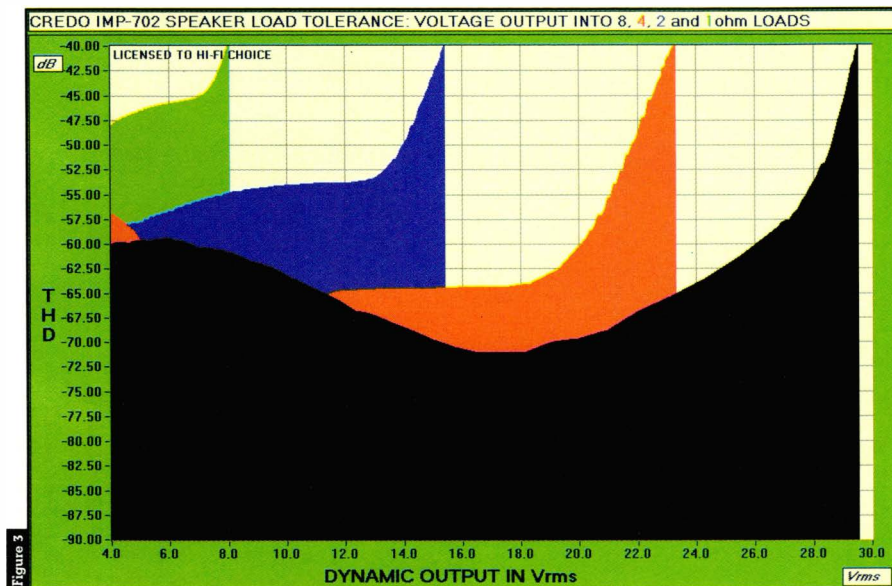


Figure 3



Musical Fidelity X-PRE/X-A50

MS

Mordaunt-Short



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WHAT HI-FI? October 1997 ★★★★★

A Little Gem

"Standmounters that sound simply huge - the most complete speakers you can get at the price."

WHAT HI-FI? Awards 1997

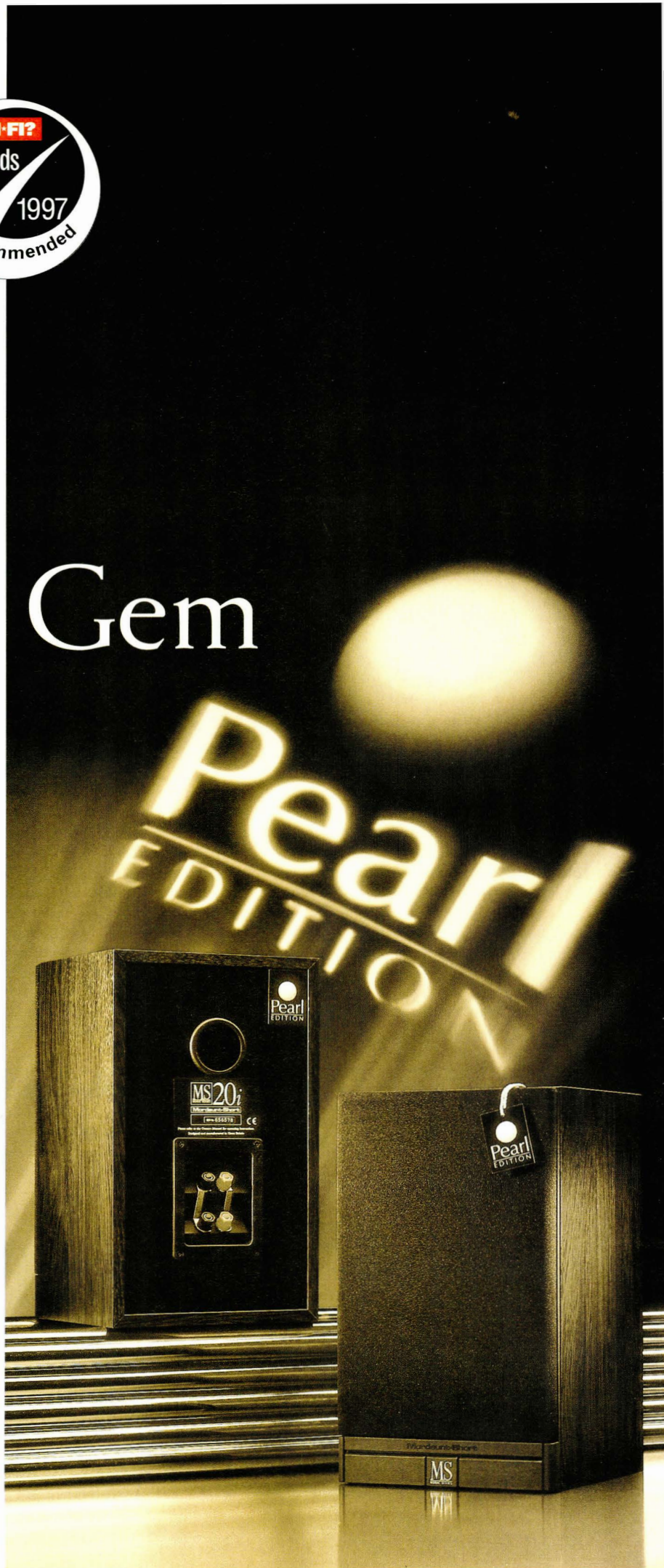
The MS20i Pearl is a further celebration of Mordaunt-Short's 30th Birthday and, like the MS10i Pearl and the MS25i Pearl, has been born from a lasting dedication towards new technology and a fearless, open minded approach towards original thinking and innovation. In short, the Pearl Series encapsulates all the ideals that have ensured Mordaunt-Short's success over the last 30 years.

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Personal

Having undertaken his first cartridge test for 10 years, Paul Messenger ponders the continuing power of vinyl.

Messages



Microgroove or microbus? Paul has his fave.

Monthly magazines do a good job of chronicling day-to-day hi-fi topics, but their 30-day perspective is apt to ignore the longer-term view. And the latter can be more useful in the way it avoids trivia and focuses on trends. This month's group test of vinyl pickup cartridges (p54) comes roughly 10 years after I was last involved in such a project. The differences between then and now aren't enormous, but they are important.

A decade ago vinyl looked ready to receive its last rites, its doom long foretold by the false prophets of the silver disc. Today (thanks in no small part to the DJ/club scene) vinyl seems to have established a solid, if small, specialist niche; and sales of hi-fi turntables, tonearms and cartridges have picked up. One rep recently complained he thought he'd seen the last of 'dressed fiddly little pickup cartridges' years ago — and was not at all happy to find them making a comeback.

To what extent this is happening is difficult to gauge, but there certainly seems to be more vinyl activity than five years ago, and a 'lost generation' of under-30s is starting to discover what it's been missing. A 19-year-old hi-fi-nut friend of my son stayed over for a weekend recently. It was maybe a little unfair to hit him with the full 20-grand-and-some Linn/Naim experience, way beyond teenage aspirations. But it was the vinyl bit that really knocked him out. It was so far beyond his expectations, he went straight down to the hi-fi shop the next day, to put his name on the secondhand Sondek list.

The past 10 years has seen steady improvements in all areas of hi-fi, but I can't help feeling that the gap between vinyl and CD has widened rather than shrunk. I can certainly hear differences between

CD players, but I'm not sure how important they are. The contrasts between the cartridges I've just tried were altogether more obvious and interesting.

The only components I haven't changed over the past 10 years are my turntable and tonearm. Even so, vinyl sound quality has improved dramatically, thanks to improvements in support furniture, pickup cartridges (and, for that matter, cartridge head-amp arrangements and power supplies).

A worthwhile investment

The big down-side of vinyl addiction is running costs. Turntables and tonearms need little more attention than a sun dial, but pickup cartridge styli wear out as you use them. The high-end cartridges reviewed this month are not only seriously expensive items: they'll need replacing in a few years time, depending on usage. If you get a thousand hours out of a £1,500 cartridge, that works out at around 50p per LP side, which is a sobering reflection. Still, I guess it's no more than a long-haul holiday in the sun — and that's only going to last a few weeks.

The high prices of these cartridges shocked me at first, but when I investigated the historical record, I found that real increases hadn't significantly outstripped general inflation. Indeed, van den Hul's MC10 and MC One models cost £600 and £800 in 1986. Today's *Directory* lists them at £800 and £1,000, which is actually considerably less than 12 years' inflation.

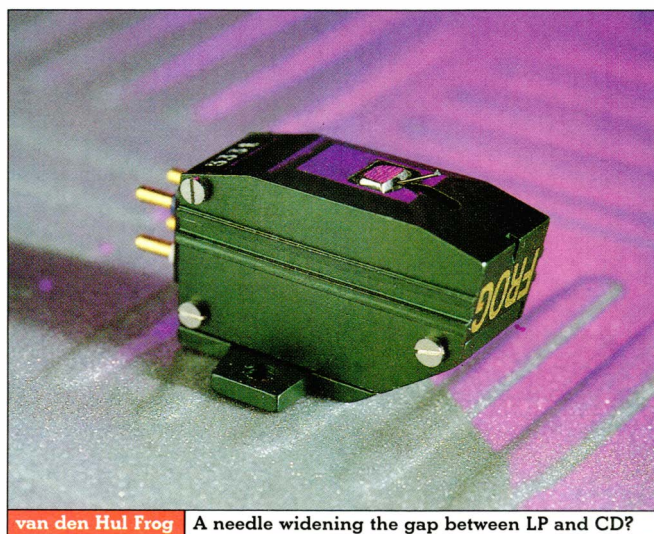
Those two cartridges were VdH's top (and only) models back in 1986. Nowadays

there are more expensive Grasshoppers and Frogs, with all sorts of extra refinements. High-end cartridge prices have risen ahead of inflation over the years, but that rise only reflects the considerable improvements in performance which have been going on at the same time. I picked the van den Hul examples because they were the only models listed under identical names in *HFC* issues 48 and 172. All other 'equivalents' had undergone upgrade processes. For example, Linn's 1986 Karma (£400) has evolved into the 1998 Arkiv 2 (£1,200), following a pattern much closer to inflation, but offering considerable performance improvements at the same time.

The historical perspective gives some reassurance about the price tags on today's high-end cartridges, and if 'value for money' is an inappropriate phrase, I am thoroughly convinced that the 'value' part is in place. The cartridges tested in this issue provide us with an excellent example: I wouldn't kick any of them out of my tonearm, and managed to fall in love with each of the Recommended models in turn, for their own special reasons.

When I got quite excited by Linn's new Arkiv in my December '97 column, the office caption writer identified this as a 'shocking confirmation of known prejudices'. Perhaps so, but the fact that it so comprehensively blows away its predecessor is perfect evidence of the continuing progression of the cartridge art. The Arkiv 2 suits my own system and preferences very well, but every one of the five Recommended cartridges in this month's group test offers its own alternative set of temptations. To be perfectly honest, I wouldn't mind hanging onto a selection, just so I can ring the changes according to the mood or disc!

The 10-year trends don't involve any radical changes, but instead relate to small, incremental improvements in micro-engineering. More precise stylus profiles, smaller diamond tips, and stiffer (eg boron) cantilevers all help in controlling high frequency resonances. Efficiencies are up a couple of dB too, probably as a result of refinements in the magnetic structure, and the overall effect is considerably enhanced transparency and dynamic range. After three weeks playing exclusively with vinyl, I'm finding it very hard to go back to CD!



van den Hul Frog A needle widening the gap between LP and CD?



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Regular *Hi-Fi Choice* readers will recognise the name of Tom Evans. For a number of years now he's been a prominent hi-fi iconoclast, with a highly individual view of what makes a great hi-fi rig. This month's Prize System represents the realisation of Tom's 'phase-linear' system concept.

Both electronic components are from Pioneer's Precision series. The CD player and amp are based on standard Pioneer products, albeit with Tom's extensive tweaks fitted at Pioneer's Yorkshire-based factory.

The PD-S505 Precision CD player incorporates a revised master-clock module and a proprietary IC output stage which has reduced distortion. The A-300R Precision, meanwhile, incorporates upgraded op-amps and offers a power output of 57 Watts (into eight Ohms).

Linking the two together is a metre of Acoustic Precision's noted Eikos interconnect.

Acoustic Precision is also the name gracing our system's speakers. The Eikos FR1 enclosures, made from a special 30mm-thick honeycomb-copolymer material, are the fruit of a liaison between Tom and Paddy Handscombe of Electrofluidics. With a single metal-cone drive-unit and no crossover, the FR1s are built for speed. Though sporting a black finish for our photo, those supplied to our competition winner will be dressed in an appropriate shade of British Racing Green.

To complete the rig there's a three-metre-long pair of Electrofluidics Monolith 20:20 speaker cables, and Acoustic

Precision's Black Box power conditioner to supply high-purity juice to the CD player.

Alan Sircom reviewed this system last month, and his findings are best boiled down into the following statement: "If your music collection is a little more eclectic than the norm, the Pioneer/Acoustic Precision/Electrofluidics outfit will show you why musical diversity makes the rockin' world go round."

We await your submissions...

HOW TO ENTER

Answer the question below by circling the correct answer, then fill in your name, address and day-time telephone number in the spaces given below. Please remember to tell us whether you are over 18 years of age.

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Hi-Fi Choice Competition (CHFC802B)
Bradley Pavilions,
Bradley Stoke North,
Bristol BS12 0BQ

All entries must arrive by first post, Thursday 26th February 1998.

THE QUESTION

Tom Evans's system concept is based on which concept?

- a) Linear Phase
- b) Line Phase
- c) Phasers Set To Stun
- d) Phase Linear

YOUR DETAILS

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COMPETITION RULES

● The Closing Date for this competition is Thursday 26th February 1998.

● Winners of the Phase Linear System Competition will be judged from all correct entries submitted, and drawn at random after the Closing Date.

● Winners will be notified by post.

● The Editor's decision is final and no correspondence will be entered into.

● The Phase Linear System Competition is not open to employees of Dennis Publishing Ltd, Pioneer High-Fidelity (GB) Ltd, Acoustic Precision Ltd, Electrofluidics Ltd, nor their suppliers, agents or associates.

● We regret this competition is open to UK residents only.

● No cash alternatives will be offered.

● We reserve the right to substitute alternative prizes with equivalent value to those shown, in the unlikely event of stock being temporarily unavailable.

● By entering the competition you agree to be bound by the rules.

● All entries must be on this official entry coupon. If you do not wish to cut your magazine, you may send a photocopy of the page instead. Please note: only one entry form per household.

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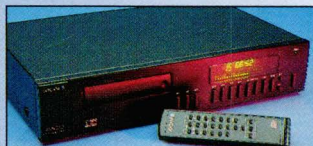
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LETTER OF THE MONTH



Arcam: tip-top after-sales service.

Great (hi-fi) mates

In these cynical times when consumers are abused willy-nilly by retailers, stories of good service deserve to be heard. My system here in the 'land of sand' currently comprises an Arcam Delta 250/Black Box 50 CD replay system, Delta 290/290P amps, Castle Avon speakers and Audioquest cables. All but the speakers are almost two years old.

Recently my Delta 250 developed a fault whereby it failed to read discs on their first insertion. When I switched the power off and on again the fault corrected itself, but obviously all was not well. Assuming a problem due to dust or lack of lubrication, I took the unit to local Naim dealer, Mate Hi-Fi, here in Dhahran.

Investigation revealed that the problem lay in a weak laser assembly. So I contacted my Arcam dealer in the UK, Acton Gate Audio, who approached the company about the fault. As a result Arcam agreed to supply a replacement laser assembly, merely on being informed of the unit's serial number. They didn't even want to view the player! I received the replacement part, free of charge, within 10 days of my initial enquiry.

I passed on the new laser assembly to Mate Hi-Fi, who installed it, tested the player and returned it to me within 24 hours — again, free of charge. The owner of the shop justified his generosity by pointing out that I have regularly coaxed my colleagues in his direction, so he was happy to return the favour.

As far as I'm concerned the first lesson from this fortunate tale is to 'buy British'; the second is find a good dealer, and stick with him. Loyalty is repaid! This goes to prove that manufacturers and retailers *do* value their customers.

P C Jones, Dhahran, Saudi Arabia

A measured response

First, let me say I enjoy reading your magazine. It is entertaining, but not entirely useful, because most of the equipment you review is not available in the USA. However, I noticed another curious thing: the measurements you print for every contender in a group test are not consistent from model to model. Case in point: your November *Budget Beaters* amp review lists output impedance figures for some players, but not all.

Even more interesting: lab reports for the top two

machines are devoid of those measurements. Why is that? Could it be that those measurements might be in the unexceptional range of 500-1,000 Ohms, a characteristic of most inexpensive Japanese players? *

I've long since accepted reviewing along national/distributor/advertiser lines, so popular in US and British magazines, but your decision to leave out those measurements leaves a bad taste. Please prove me wrong and include ALL measurements, for ALL players.

Albert Guzik, NYC, US

Our Technical Editor, Paul Miller, includes in his Lab Reports the results that he believes to be most relevant to findings during the listening tests. Listening tests are our final arbiters of quality, but it is useful to form an objective opinion of why a product sounds the way it does. Inherent to this approach is a policy of leaving out unexceptional test data. If you desire rigorously-tabulated spec-lists, read a user manual. ❧

Power trip

With interest I have followed the 'loudness' debate initiated by Musical Fidelity with its Kelly Transducers KT-3 loudspeaker. The whole premise behind this power trip (pun intended) is the reproduction of 'live concert' SPLs. But is this classical-music performance SPLs, or rock-concert SPLs?

In the orchestra we experience levels of up to 105dB, but in the hall itself, even with the music in full swing, a sound-pressure-level reading would be less than that. I believe there is an issue here that is being ignored: perspective.

I used two recordings, both Cleveland Symphony Orchestra playing Mussorgsky's *Pictures At An Exhibition* and Tchaikovsky *Symphony N° 4*. If I put the levels any higher than 92dB while playing these two pieces the whole orchestra would appear too close. That is to say, if I listened to the opening trumpet solo in *Pictures* with the amplifier attenuated for a 92dB peak, it would put me about 15 feet away from the first trumpet, which would have me sitting on top of the fourth stand of violas!

If I wanted to hear the group the way the director

OUR ADDRESS

The Editor-in-Chief, *Hi-Fi Choice*,
19 Bolsover Street, LONDON W1P 7HJ.
f 0171-917 5512.

e editor.hifichoice@dennis.co.uk.

We reserve the right to edit all letters. Concise correspondence preferred! All letters must include address and daytime 'phone numbers.

hears it, I would listen this way, but it's not a particularly realistic way of simulating a concert hall experience.

Sean Engel via the Internet



LP vinyl: still esteemed at HFC.

Vinyl solutions?

As a recent convert from CD back to records, I am disappointed in the paucity of reviews and editorial dedicated to turntables, tonearms, and cartridges in *HFC* of late. In the light of evidence pointing to a vinyl revival, and when you con-

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Write on!

sider the number of people who still have record collections in their home, is it not time to redress this imbalance?

A regular review of cartridges would be most useful, as these are some of the most difficult components to audition for oneself. Being able to draw up a shortlist from your reviews would be a relief not only for those readers who still use vinyl, but for dealers as well. How about bringing back 'Sessions' for this purpose?

R Dane, Gillingham, Dorset

As chance would have it, we've taken the opportunity to review tasty cartridges in this very issue (p54). In last September's edition we dedicated six pages to audiophile recordings — much 'black gold' was included therein. We are duty bound to concentrate on features appealing to the greatest number of readers, and our Help pages show that, perhaps regrettably, very few of them still 'put the needle on the record'. However, more than half of our contributors still use turntables, so rest assured we're still keeping the LP faith. ✎



CDP-X3000ES: a good vintage.

The fine wine effect

May I congratulate you on the CD player test in the September issue. It must be no mean feat to test so many machines, assemble a coherent listening panel, meet a deadline and arrive at useful, accurate conclusions.

At your prompting I purchased the Sony CDP-X3000ES. I am pleased with my purchase but (and here it comes) I must bring to your attention a problem not properly underscored: the break-in time necessary to evaluate good gear. This varies from blessedly short to absurdly long. In either case a reviewer or purchaser can't judge until this waiting game is over!

World class reviewers need world class integrity as well as the ears to hear, lest they lead the eager lambs astray.

The Sony is a perfect example: 300 hours later it is still changing — for the better. I shudder to think how many reviews have been unjust or misleading due to haste. Careful ageing is mandatory for wine and hi-fi alike.

Shepperd Strudwick, La Mothe Cassel, France

I'm glad to hear your CDP is still improving, I remember a series of letters from a reader whose Sony CDP kept getting better over the months.

As you point out, most components improve as they are run in, which is why we always thoroughly warm up our review samples. However, when it comes to our group tests, where comparative evaluations are made, it's unlikely that extended run-in periods would affect the pecking order of components. And because of the inevitable time constraints of our thorough reviewing procedure, we rely on manufacturers to run-in products before supplying them.

When one-off reviews are carried out we have longer to appraise a product and less need to make A/B comparisons. This might explain why most Statements candidates always seem to fare relatively well. ✎

Taping times

I was very pleased to see that in issue 171 of your magazine, you conducted tests on twin cassette decks, which sometimes are not regarded as proper hi-fi. My interest is in getting up to three hours *uninterrupted* recording time on an audio tape. Unfortunately, none of the decks included in your test report will provide this, because they do not reverse until the spool is empty, so there are two silent gaps in the recording where both sides of the leader tape have passed over the recording head.

Could your experts please tell me of a twin deck with a 'quick reverse' action? I realise that this may be outside the price range set for the tests you featured.

George Carmichael, Beverley

A number of autoreverse single decks of yesteryear featured an optically-triggered end of side detector, but it is debatable whether that sophisticated feature ever made the transition to a double-deck machine.

An alternative (and far more elegant) means of recording up to eight hours non-stop is to use a video recorder equipped with Hi-Fi Stereo capability, switchable audio input sockets and a long-play (LP) feature. With one of these you have the added bonus of timer control — just leave your tuner hooked up and turned on, and Bob's your uncle! Sound quality is on a par with FM radio; no worse than that of most double decks. ✎

Tighten your Belts

Jimmy Hughes's monthly column in your magazine tends to conclude that purely mechanical explanations of hi-fi sound quality are insufficient. So I was therefore disappointed at the way in which JMH's column and your editorial comment (HFC 172, p19) dismissed Peter Belt as a crank.

Peter Belt has done more than anyone else in hi-fi to establish the effectiveness of new and far-reaching techniques to improve perceived sound. PWB Electronics, which markets and develops Belt's inventions, continues to produce its remarkable devices. These deserve renewed attention from the press.

The issue now is not whether they work, but whether the public and the hi-fi industry are prepared to listen to PWB's explanation of what's going on. Theory deserves its proper place in the scheme of things, and it is not enough to be easily dismissive of new ideas, particularly when these are producing consistently impressive results. I recommend that Jimmy Hughes revisits the PWB Web site (www.belt.demon.co.uk) and checks out the latest developments. To dismiss them out of hand would be to close the door on profound developments in the theory of perceived hi-fi sound. And the editor of the magazine should be more circumspect. The 'left-field' theory to which he refers may one day become axiomatic!

Kenneth Hyam, London

Epiphany...

I have only discovered hi-fi in the past few years. Being an impoverished student I have limited funds available to lash out on equipment. However, I have always had two things:



OCS: reinventing the wheel?

lots of vinyl, and the means by which to hear it. Recently I've been able to splurge and I am happy with the equipment I have purchased, even though it is not, by any means, the best gear available.

I have noticed, however, that my musical tastes have gradually shifted away from styles I used to follow religiously (mainly rock), in favour of classical, jazz and folk genres. Do you think this is a function of decent hi-fi revealing the compressed nature of many rock recordings, or just a side-effect of maturing tastes?

Even though I am musically metamorphosing, I still think that the greats of '60s and '70s rock trample all over any of today's pretenders (Ocean Colour Scene, Oasis, Supergrass, even Paul Weller). Why do they insist on reinventing the wheel? I'd almost rather listen to the Spice Girls!

Also, I've seen the word 'musicality' bandied about in hi-fi reviews — what does it mean? It strikes me as a very subjective term to use.

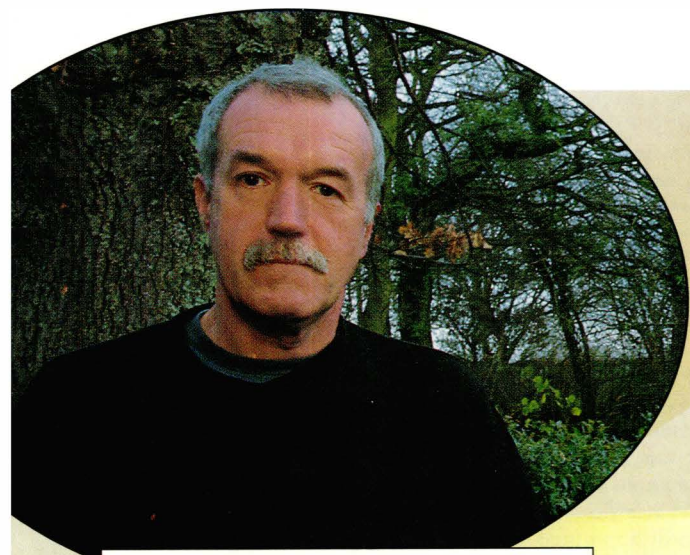
Ramon Zarete, via the Internet

Look at it this way: a good system does not so much reveal the deficiencies in bad recordings, as reproduce more sophisticated recordings in such a way as to show off their attractive qualities to the full. The best hi-fi system is the one that makes the most difficult material sound like music.

'Musicality' is a subjective term, so we try to avoid it wherever possible. In general it refers to timing and the sense of musical enjoyment that strong hi-fi products can confer. ✎

INSPIRATIONS

The Gold



The room (below) built by David Lewis (above) made use of 'sacred geometry'. The hassle was worth it: never before has his hi-fi sounded so good!



Standard

Architect **David Lewis** tells the tale of his 'ultimate' hi-fi upgrade: a new listening room created using 12th Century mathematical principles – and 20th Century builders...

Two years ago I decided to leave full-time employment as director of a large architectural practice in London. I would get out of the Smoke and move to a small house in Sussex, previously used only at weekends. The only problem on arriving was what to do with my hair-shirt music-playing system and collection of 3,000 records. My wife was reluctant for the full-on hi-fi to usurp the user-friendly, all-transistor record player. The rig and most of the records were consigned to the loft for rest and recuperation.

Having intended to enter semi-retirement, I found myself suddenly flooded with work. Even the spare bedroom was pressed into service as a temporary office. We were seriously running out of space, and one evening — in expansive mood after a particularly fine supper — we concluded our only option was to build an extension onto the rear of the house.

You'd think this would be child's play for an architect. But there's an old saying that the shoemaker's children always have bare feet. As the new room was intended as an office-cum-music room, I was adamant, to the point of obsession, that it should have Golden Section proportions.

Golden headcuffs

The Golden Section is an architectural term for a room whose dimensions are based on a sequence of numbers identified by the 12th Century Italian mathematician Leonardo Fibonacci, in which each term is the sum of the preceding two terms. For example, 1, 2, 3, 5, 8, 13, 21 etc. In practice, a space thus constructed will not entertain deleterious standing waves at any frequency.

(For an explanation of this concept, read David's article in *HFC* 167. You can order it via FactsBack reference 1974 — see page 128 for instructions. —Ed.)

Numerous obstacles presented themselves. My wife, who has spent many years working with architects, wasn't going to be fooled easily. She was adamant that the view of an old oak tree from the dining room was sacrosanct. Then the local planners gave me a hard time about my proposal to build immediately next to a former Roman road and hedgerow. The garden was quite narrow, so how would my neighbour react to an extension overlooking her patio? Problems, problems.

Worst of all was my mounting inability to reconcile the practical needs of an office, and the recreational needs of a serious listening room. Where to put the drawing board and computer? What about the filing cabinet? The speakers had to be installed well clear of walls and corners, but how to achieve that while preserving access through the French doors?

Could I work out a layout that would allow me to swivel around in my chair, from desk to listening position? Would an acoustic obstacle result from the presence of our family heirloom, a Jacobean chest which had to be moved into the new room?

On paper, walls were going up and down like yo-yos. Every evening my wife and I staggered around the garden in the dark, banging canes into the lawn in an attempt to visualise the outline of our metaphorical building, and its effect on the existing house, its roof, the views, the hedgerow, the neighbour. Indeed, it seemed, the entire universe.

Slowly, I had to acknowledge there would be compromises in my quest for audio nirvana. With all constraints imposed, there was no way the room could be constructed to wholly-Golden-Section proportions in both plan and cross-section.

Reluctantly I settled for a Golden Section plan (ie floor area). I selected ceiling height such that resonant modes occurring along



INSPIRATIONS

the length and breadth of the room would be incompatible with those occurring in the vertical dimension. Once I got to this point, I knew that in theory, the room should possess beneficial acoustics. Things started to move on apace from this point onwards, and in what seemed like no time at all, the builders arrived. Then the fun really started.

Building confidence

I've had a lot of experience with all types of builders over the years, but I'm still amazed by their ability to take over one's life lock, stock and barrel. Building work is very much like war: short periods of frantic activity and anxiety, followed by long periods of boredom and waiting. It's very easy to become dis-

heartened by an apparent lack of progress, and I wondered if I would ever hear my system again. On the plus side, however, the hiatus made time for my Leak Stereo 20 and Troughline 3 tuner to be rebuilt and restored by Graham Tricker of GT Audio.

Building work lurched to a halt just before Christmas, so I had time during the festive break to get the room 'warmed up'. I had only theoretical reassurance that the room would sound wonderful, but despite my anxiety to get everything up and running, I took time to savour every moment of installing, positioning and mounting the equipment. When working out how the room was to be constructed and finished, I had been careful to select dense materials

— such as a concrete suspended floor — to make sure that bass would be kept under control. I was also keen that there was little or no absorption of sound by curtains or over-soft furnishings.

As the room was appointed so sparsely, initially it sounded very 'live'. Gradually I added more and more 'diffusion' (books and records on the rear and side walls) then more absorption. I tried a range of rugs, small and large, thick and thin, on the wood-block floor. Slowly, the sound came into focus. In fact, it became really quite awesome!

Room for improvement

It seemed so clean, effortless and dynamic that, initially, I couldn't work out whether this

was due to the room, my home-made Dave Berriman DBS6 kit loudspeakers, or the rebuilt Leak Stereo 20. Graham Tricker had warned me that a straightforward rebuild of the Leak amp would produce a really knockout amplifier, equivalent to one that might cost around £1,500-£2,000 at today's prices. And even though Graham had gone so far as to replace the original capacitors with Cerafines, I hadn't expected a design obsolete for 30 years ago to sound like this.

I moved the system to the living room, which has completely different proportions, being longer and narrower, more like a double square, with more absorption but roughly the same volume. Sited therein, as I had expected, the system still sounded dynamic but much less controlled. I suspect part of this was due to the speaker stands being spiked to a timber floor, but it was pretty



"Classic Garrard seeks loving home".

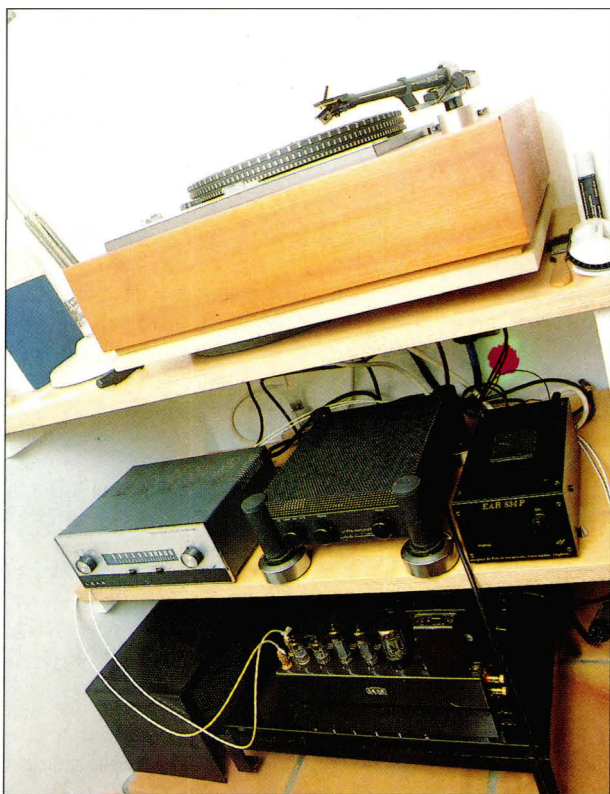
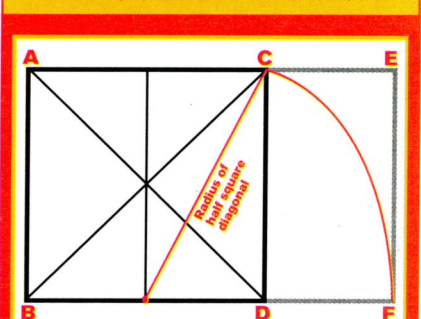
After about nine months of fine tuning, the room — now known in my household as the 'dog-box' — has really settled in, and just seems to sound better and better. This has had the unforeseen effect of attracting my nephew, Mo, to use the room as a test-bed for his esoteric prototype valve amplifiers with kiloVolt supply rails. His latest idea is to fashion lead-cloaked Blu-Tack surrounds for volume controls, capacitors and any other components susceptible to vibration or resonance. I made one and tried it out on my preamp valve, and it really did seem to bring about quite an improvement.

As I wrote in *HFC 167*, audiophiles can save a lot of hair-pulling by isolating the effect of room acoustics prior to upgrading components, interconnects et al. I have been fortunate enough to design my listening room from scratch, so you'd think I would now concentrate on the widgets and wires. Chance would be a fine thing — now I've become convinced that my room isn't big enough. So my next upgrade will be to build a bigger space with absolutely ideal Golden Section proportions. Signor Fibonacci was on to something special, but I bet he didn't have to deal with builders...

David Lewis has worked as an architect for 27 years, and has been involved in the building of spaces for the Arts, music and broadcasting.

Below: In search of sonic purity. A-B,C,D is a square, while A-B-E-F is a Golden Section.

THE GOLDEN SECTION



David's system includes a Garrard 401 turntable, Audio Innovations L1 preamp, Leak Stereo 20 power amp, Troughline 3 tuner and home-made DBS6 speakers.

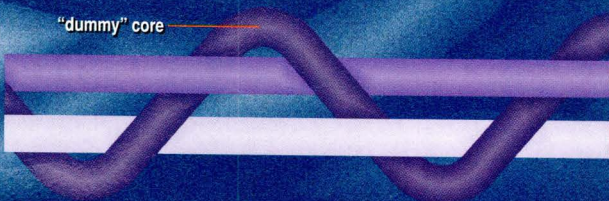


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plan view of Gamma Geometry® cable



"dummy" core

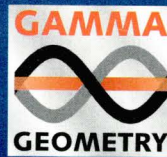
exploded side view illustrating how the two conductors run in parallel form without twisting around each other

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Moss of Bath, Bath 01225 465085
Paul Roberts Hi-Fi, Bristol 01179 429370
- Bedfordshire**
Sevenoaks, Bedford 01234 272 779
- Berkshire**
Fraser's Hi-Fi, Slough 01753 520244
- Buckinghamshire**
Sony Centre, High Wycombe 01494 521382
Techosound, Milton Keynes 01908 604 949
- Cambridgeshire**
Hi-Fi Company, Peterborough 01733 341755
- Cheshire**
Peters Hi-Fi, Chester 01244 319 392
Chester AV Centre, Chester 01244 320 414
Warrington AV Centre, Warrington 01925 636 215
- Cumbria**
Sevenoaks, Carlisle 01288 590 775
Searle Audio, Barrow-Furness 01299 821 233
- Devon**
Audio Excellence, Exeter 01392 491194
Upton Electronics, Paignton 01803 551 329
Hi-Fi Attic, Plymouth 01752 669 511
- Dorset**
Movement Audio, Poole 01202 730 865
- Essex**
Rayleigh Hi-Fi, Rayleigh 01268 779 762
- Gloucestershire**
Photo Sight and Sounds, Gloucester 01452 503 691
Sevenoaks, Cheltenham 01242 241171
- Hampshire**
Now That's Hi-Fi, Portsmouth 01705 811 618
Southampton Hi-Fi, Southampton 01703 228 434
- Hertfordshire**
Hi-Fi City, Watford 01923 226169
- Humberside**
Manders Hi-Fi, Grimsby 01472 351 391
- Kent**
Musical Images, Beckenham 0181 663 3777
Sevenoaks, Tunbridge Wells 01892 531 543
E.D.C., Bexleyheath 0181 298 7880
- Lancashire**
Clearstone Hi-Fi, Bolton 01204 531 423
Beaver Hi-Fi, Liverpool 0151 709 9898
Bill Hutchinson, Manchester 0161 832 1600
Sevenoaks, Preston 01772 825777
- Leicestershire**
Electra Etc., Leicester 0116 255 7518
Cowlings, Leicester 0116 255 3232
- London**
Hi-Fi Care, W1 0171 637 8911
Kamla, W1 0171 323 2747
Musical Images, Covent Garden 0171 497 1346
Nicholls Hi-Fi, SE12 0181 852 5780
Hi-Spek, Finchley 0181 349 1166
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Musical Images, Edgware 0181 952 5535
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Dades, West Drayton 01895 420 898
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Bennetts Retail, Norwich 01603 625955
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Forum Hi-Fi, Nottingham 01159 622 150
John Kirk, Nottingham 01159 252986
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Astleys Audio, Wallingford 01491 839305
Audio T, Oxford 01865 765 961
Sevenoaks, Oxford 01865 241773
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Sevenoaks, Aberdeen 01224 587 070
JD Brown, Dundee 01382 226 591
Hi-Fi UK, Edinburgh 0131 667 2877
Bill Hutchinson, Glasgow 0141 248 2857
Music Station, Inverness 01463 225 523
- Somerset**
Mike Manning, Yeovil 01935 479 361
- Suffolk**
Bennetts Retail, Ipswich 01473 610 801
- Surrey**
Sevenoaks, Kingston 0181 547 0717
Tru-Fi, Redhill 01737 766 128
- Sussex**
Churchers, Hove 01273 324 616
Jefferes Hi-Fi, Eastbourne 01323 731 336
- Tyne and Wear**
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Bill Hutchinson, Newcastle 0191 230 3600
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Sevenoaks, Cardiff 01222 472 899
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Frank Harvey Hi-Fi, Coventry 01203 525 200
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Clearstone Hi-Fi, Bradford 01274 309 266
Bill Hutchinson, Leeds 0113 242 7777
Sevenoaks Hi-Fi, Leeds 0113 245 2775

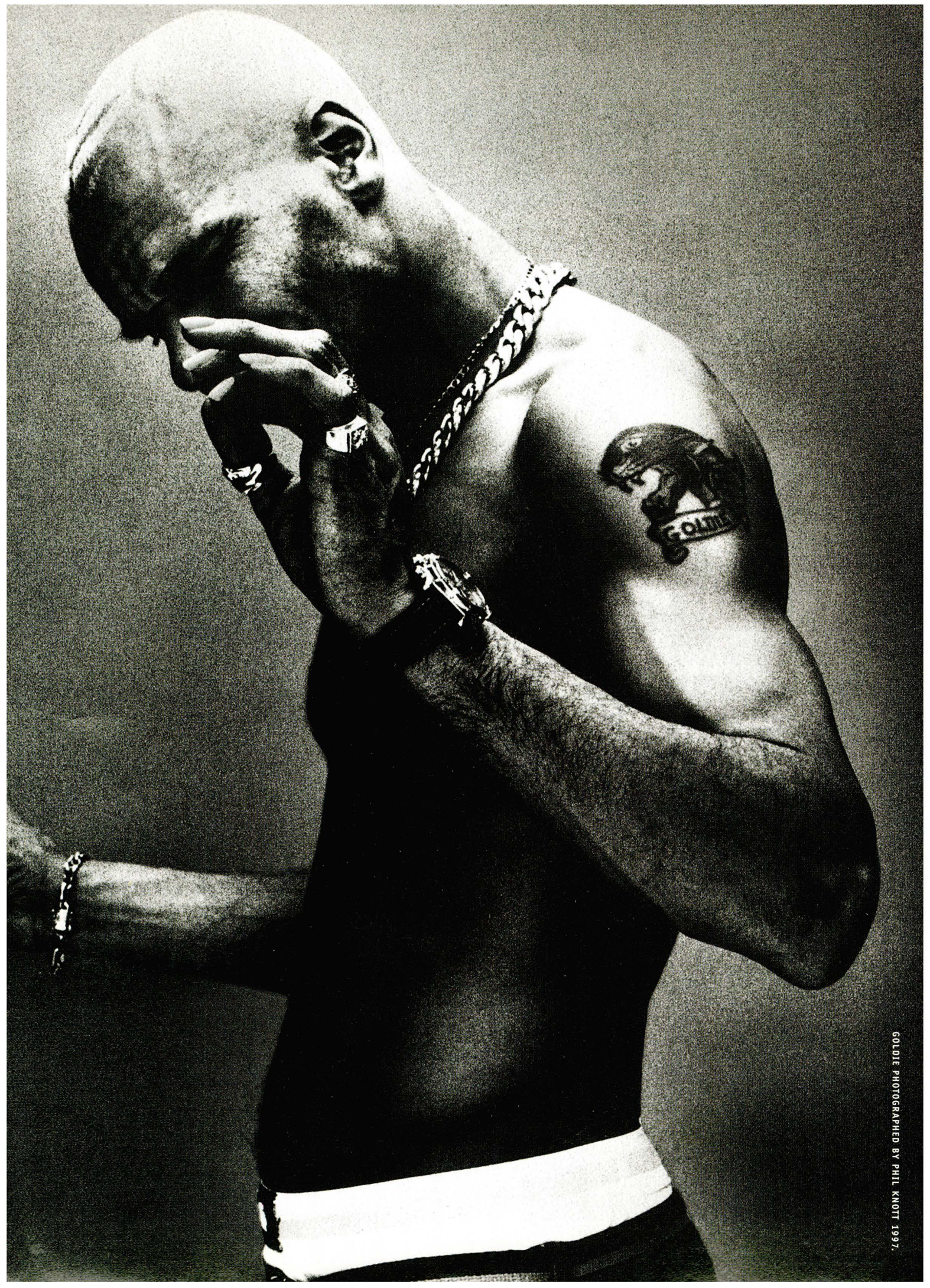
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GOLDIE PHOTOGRAPHED BY PHIL KNOTT 1997.

The Direct approach

As debate rages over DVD Audio, Sony and Philips have upped the stakes with an alternative 'super CD' intended to be compatible with today's CD players. Could this late entrant end up leading the field? **Richard Black** has been calculating the odds.

Typical. You wait 15 years for a better digital audio standard, then two come along all at once. Just as everyone was quietly assuming that DVD would go ahead with the mooted high-quality audio format of 96kHz sampling/24-bit word length, Sony and Philips have revealed details of a rival idea, 'Super Audio Compact Disc' (SACD). And on the face of it at least, this one's a stormer.

SACD is based on a Sony invention called 'Direct Stream Digital' (DSD). Proposed six years ago, this system was first announced publicly about two years back when Sony needed to archive a gigantic tape collection newly acquired from the old CBS vaults. (As explained on p23 of *HFC 155* -Ed.) The principle of DSD is simple and elegant, and is related to the fact that most modern analogue-to-digital (ADC) and digital-to-analogue (DAC) converters use the so-called 'Delta-Sigma' technique.

This mathematical shorthand refers to the sampling/encoding process whereby conversion is done at a one-bit level. (For example, in Philips' 'Bitstream' system and derivatives.) Digital signal processing is used to intermediate between this and the 16-bit Pulse Code Modulation (PCM) format, which is a data storage technique used by compact discs to store data.

One for the money

"Well," said the Sony boffins. "If you're converting analogue to one-bit digital, and later one-bit digital to analogue, why go to all the trouble of twiddling bits to get to 16-bit and back again, just for the benefit of a storage medium? Why not, in fact, store the one-bit data?" And that's exactly what DSD does. Using well-established techniques >34



Philips' CD-i: a spiritual ancestor of DVD, but arrived before technology could really deliver.

THE FAT-CAT SAT ON THE FORMAT

The shape of 'super CD' is taking place behind closed doors. But Super Audio CD (SACD), and even DVD-Audio itself, are far from being guaranteed automatic commercial success *writes Tim Frost.*

The audio format for DVD-Video is now more or less agreed, with both MPEG and Dolby Digital stereo (or multichannel) soundtracks equally allowable on European players and discs. So now it's the turn of DVD-Forum to sort out DVD-Audio.

The Forum, which is the talking shop for companies with an interest in DVD, still has just ten decision making members: Matsushita, Mitsubishi, Pioneer, Toshiba, Hitachi, Sony, Thomson, Time-Warner, Philips and JVC. These are the entities most responsible for DVD's development, and the ones which will decide on the final format for DVD-Audio.

But from the very start the Forum has been split, with Matsushita/Toshiba/Time-Warner on one side, and Philips/Sony on the other. There have been incessant battles between the two camps over every possible aspect of DVD. And it is no different with DVD-Audio: Matsushita/Toshiba/Time-Warner are going in one direction, while Philips/Sony have opted for something completely different.

However, the Sony/Philips contingent has found itself in a position where it can, and will, be outvoted on any suggestion, so the companies involved are simply not even trying to get their Super-Audio-CD/DSD system adopted as the official DVD-Audio standard. Top sources in Sony have confirmed that there are no proposals being presented to the DVD-Audio working groups from Philips/Sony, so Super Audio is simply off the DVD-Audio agenda. That is not to say that DSD is going to go away — quite the opposite. It will continue as a viable alternative, but won't officially carry the DVD logo.

All of the Forum's own proposals for the audio disc are in the melting pot, still under discussion by the Forum's working groups, but some fundamentals are emerging.

Serious audio is to be served by an uncompressed audio track with substantially wider dynamics and bandwidth than CD: 24-bit resolution and sampling frequency around 96kHz. This will be able to carry stereo or multi-channel sound.

Intriguingly, there have been comments from Forum members claiming that "PCM has nothing to do with DVD-Audio", showing a marked preference for single-bit data-streams rather than the pure PCM of CD, for example. A single-bit protocol has the distinct attraction of being much easier to implement successfully in moderate-quality players than expensive, sensitive, 24-bit PCM DACs. But on the other hand, PCM has universality in its favour.

If it comes to a battle between different 'DVD' audio formats, groups representing the recording industry are trying to ensure that all discs carry at least one format in common, so any disc will work on any player. 24-bit PCM stereo is a strong contender for that. One PCM option being actively considered is 'scalable' — meaning that artists can choose from a range of bit-rates and sampling frequencies the combination that suits them best. The player would automatically adjust itself on playback.

No matter that audiophiles fret over precise provision for two-channel stereo: there's more to DVD-Audio, which will carry a compressed multi-channel audio bit-stream — several if there is space.

For DVD-Audio, Dolby Digital, DTS and MPEG are all possibilities. Another portion of data-space is reserved for video, stills, text and/or computer programs; DVD-Audio it might be, but no new disc

format can afford to ignore the 'advantages' of multimedia and Web site link-ups.

So while the hardware manufacturers continue to make decisions behind proverbial closed doors, where does the record industry stand on all of this? After an abortive attempt to organise industry-wide listening tests, the American recording industry's representative body, the RIAA, has retreated to the position of ensuring only that DVD-Audio discs will carry enough copy protection and anti-piracy measures to protect its members' assets.

"What audio standards will be applied are up to the record companies themselves," says RIAA Senior Executive VP Cary Sherman, who "hopes" for some form of agreement between the different camps. The RIAA has left the field wide open for a free-for-all on audio standards — as long as all of them incorporate copy-protection measures.

A format war is almost inevitable, but if it occurs, it will exhibit a novel twist: DVD and DSD audio players should be able to extract information from each other's discs, even if not to the level of high-bit, high sampling rates and multi-channel feeds. Artists, record companies, studios and the buying public will decide which format survives.

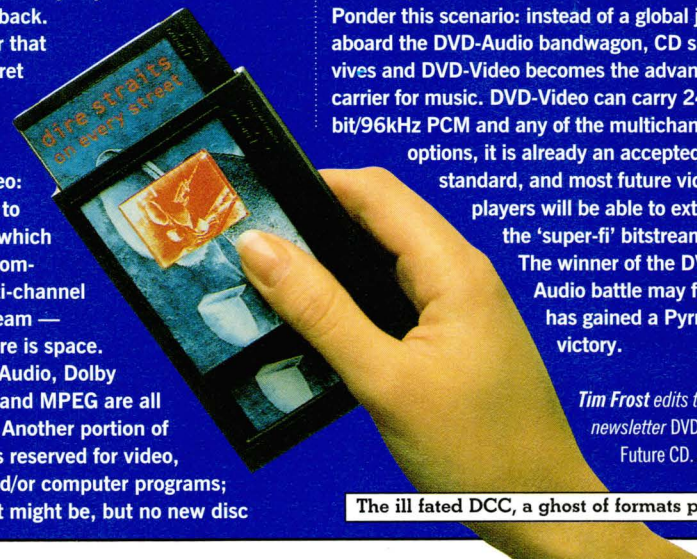
But another real possibility is that DVD-Audio is just one new standard too far.

Ponder this scenario: instead of a global jump aboard the DVD-Audio bandwagon, CD survives and DVD-Video becomes the advanced carrier for music. DVD-Video can carry 24-bit/96kHz PCM and any of the multichannel

options, it is already an accepted disc standard, and most future video players will be able to extract the 'super-fi' bitstream.

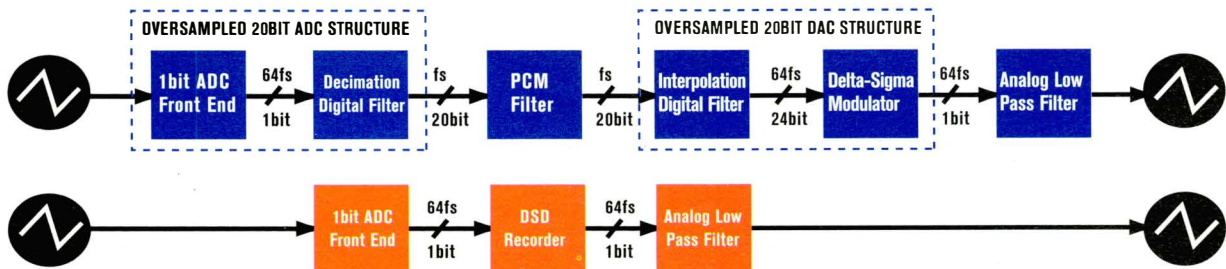
The winner of the DVD-Audio battle may find it has gained a Pyrrhic victory.

Tim Frost edits the newsletter DVD & Future CD.



The ill fated DCC, a ghost of formats past.

Conventional multibit PCM requires decimation filters on the record side plus interpolation filters on the playback side.



Direct Stream Digital eliminates the filters and records the original 1-bit signal directly.

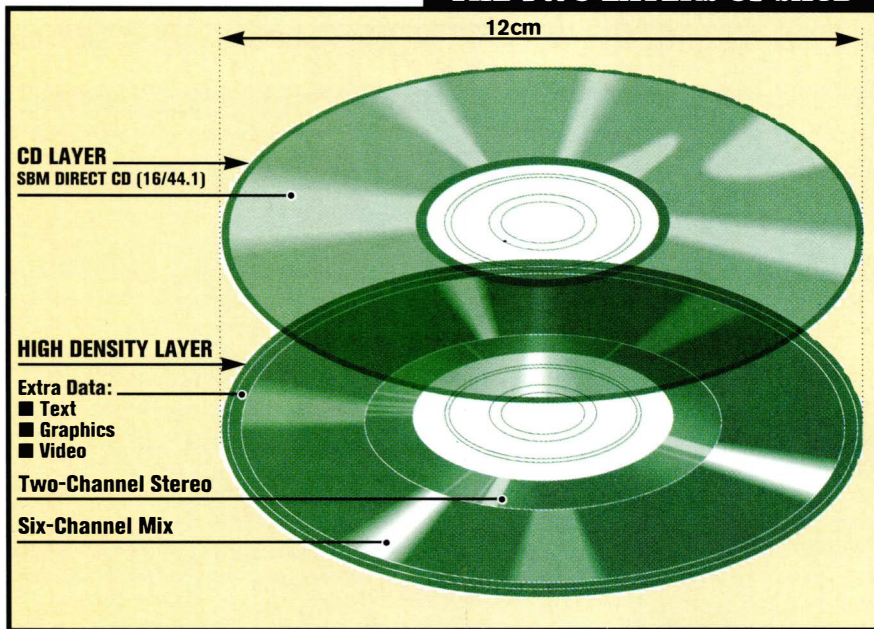
DSD SHORTENS THE PATH

the audio signal is oversampled by a factor of 64 with noise shaping (as in the input stage of most ADCs), and the resulting data stream is stored on tape or disc. On replay, the bits are simply fed to a one-bit DAC, as you will find implemented in most recent CD players.

Naturally, this process has pros and cons. The most obvious pro is that less signal processing means less scope for distortion. But there would appear to be a clear con: a 64-times-oversampled, one-bit audio signal occupies four times as many bits as a normal 16-bit signal. In 1983, when CD was launched, this was a major consideration, but in the era of multi-gigabyte optical discs, bits are frankly so cheap that it's no longer a problem to store this quantity of data.

And, indeed, that con is really a hint at the biggest pro of all, which is that four times as many bits means four times as much information. That's four times the bandwidth of CD, potentially, with the same signal-to-noise ratio, or four times the signal-to-noise

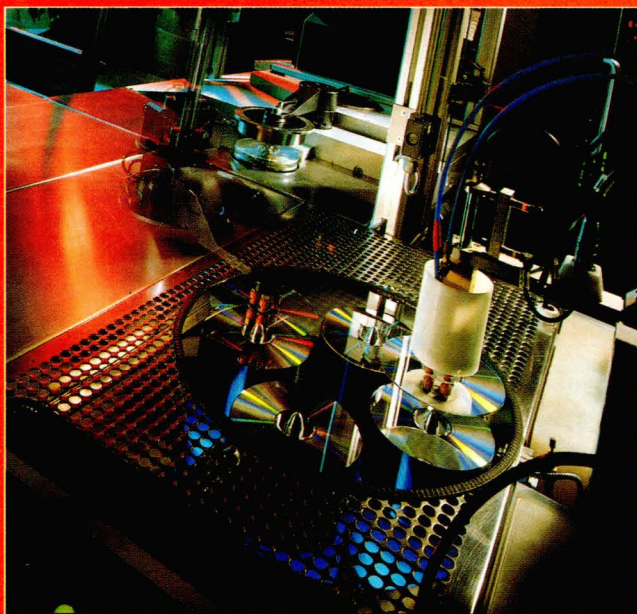
THE TWO LAYERS OF SACD



THE MUSIC INDUSTRY'S DILEMMA

Recording engineers suddenly have more to worry about than whether or not to use soft-knee compression writes Stan Vincent. When capturing the warblings of the latest hot stars and starlets, they have to produce a master-tape for the 44.1kHz/16-bit CD we know and love, while at the same time preparing for future re-releases made on a 'super' CD format, such as DVD-Audio, or SACD as outlined elsewhere in this feature.

At present, many recordings are being mastered at 24-bit/96kHz resolution, which are then 'decimated' to 44.1kHz/16-bit using digital interpolation techniques, a process known as 'downconverting'. This has led to some disingenuous packaging of CDs, such as the recently-reissued series of Jean-Michel Jarre albums on Sony Music. These are decorated with 24-bit/96kHz references, which might well lead the uninitiated to assume that the existing CD format had somehow taken a leap in quality. Of course not. Sony's engineers may well have dug out the master-tapes, and loaded them into a 24-bit/96kHz Sonic Solutions workstation; but the CD is still ultimately only of 16-bit/44.1kHz quality.



Industry sources suggest that SACD would not cost much more than CD to manufacture. 75p is the premium being touted.



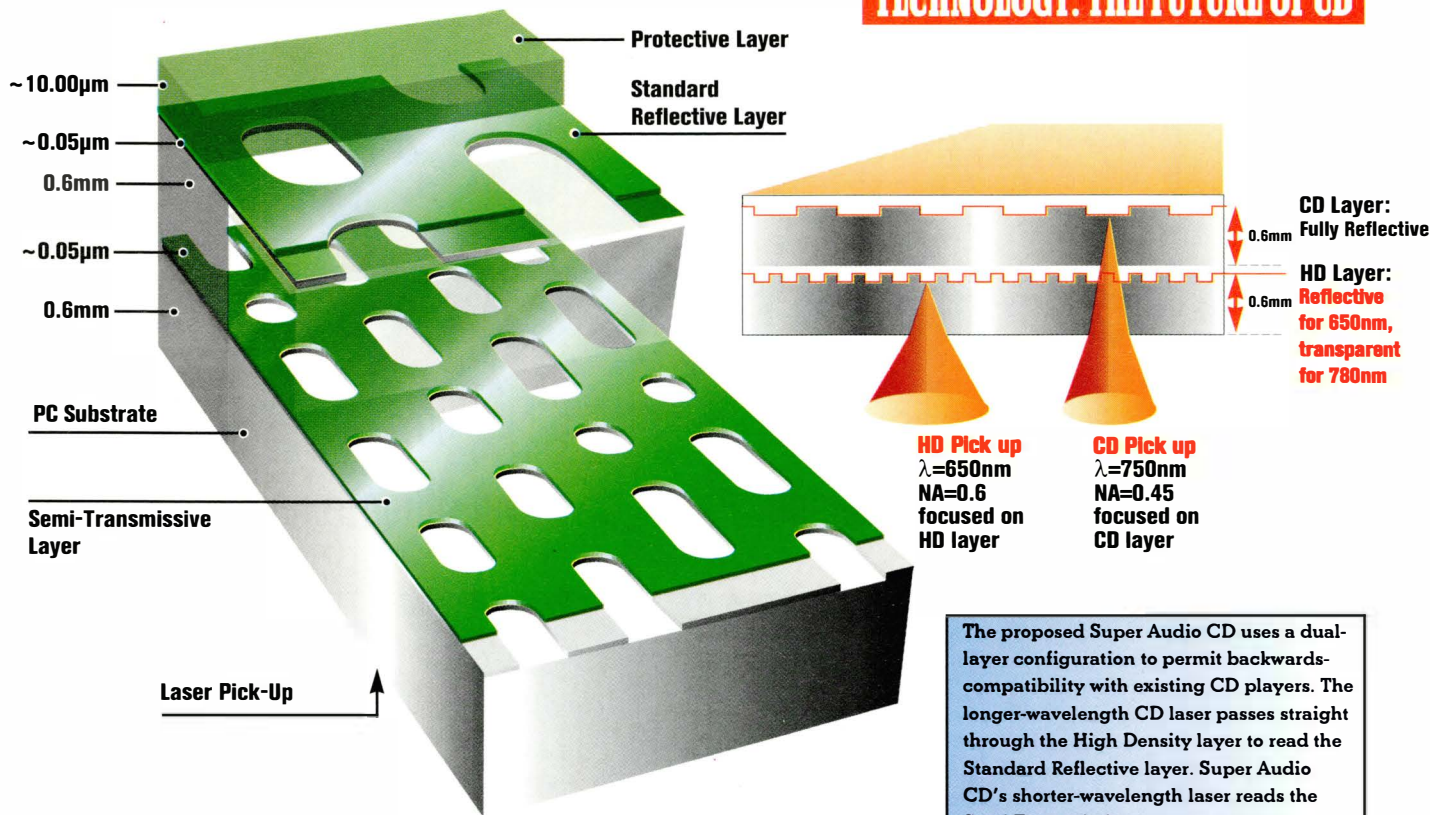
Will record producers and musicians embrace DSD and SACD?

Pacific Microsonics, the US-based company that invented the High Definition Compatible Digital (HDCD) system to 'enhance' standard 16-bit CDs, is eager to jump on the super-CD bandwagon. As reported in last month's *Update*, the company has recently announced an HDCD recording processor offering mastering at 88.2kHz — ie, twice the sampling frequency of CD. Pacific Microsonics claims the interpolation process required to decimate 96/24 recordings into the 44.1/16 format, generates "audible distortions that can only be reduced, but not eliminated, by elaborate DSP". It alleges 88.2kHz HDCD recordings "can be converted to 96kHz with fidelity that remains superior to any other 96kHz recordings."

DSD appears to circumvent these problems by reason of its one-bit nature, and the fact that its sampling frequency is 2.8224MHz — exactly 64 times that of CD. Sony claims that the downconversion process can generate masters with any combination of sampling frequency and word-length, but without the degradation one would experience when moving from a 24-bit/96kHz master.

On paper at least, DSD appears to be the best each-way bet for recording practitioners, whether for capturing new music or remastering the old. Apparently the only fly in the ointment is a greater susceptibility to clock jitter; but one would assume this is a straightforward engineering challenge. As a consequence, it's no surprise that the recording industry seems very interested in DSD.

Numerous Audio Engineering Society (AES) preprints have hinted at the whole-scale design of the new components necessary to equip a multi-track DSD studio. Sonic Solutions has already announced a DSD editing system based on an existing digital editing workstation. Interesting times indeed for twiddlers of multitrack faders...



The proposed Super Audio CD uses a dual-layer configuration to permit backwards-compatibility with existing CD players. The longer-wavelength CD laser passes straight through the High Density layer to read the Standard Reflective layer. Super Audio CD's shorter-wavelength laser reads the Semi-Transmissive layer.

ratio (SNR) with the same bandwidth — or any permutation of the same in different proportions.

What DSD offers, according to the Technical Proposal for SACD published jointly by Sony and Philips, is an SNR of 120dB across the audio band (20Hz to 20kHz), and bandwidth extending to 100kHz, albeit with decreasing SNR. In a remarkable climbdown from earlier crowing about 'perfect sound forever', the proposal talks about matching and exceeding the performance of the best analogue tape recorders and concedes that CD as it stands does not in fact meet the highest aural requirements.

By contrast DSD, with its 2.8224MHz sampling rate, gives better bandwidth and SNR than any analogue recorder, and 'analogue-like' gentle roll-off instead of the brick-wall filters that chop off CD player output signals above the audio band.

Entente cordiale

Now comes the clincher. Not only does SACD offer a substantially higher quality of sound reproduction — it bundles in full, both-ways compatibility with normal CD too. The idea is that discs are made as a dual-layer affair, with one layer carrying normal CD audio, the other DSD. In this way, discs will be compatible with existing CD players, and new SACD players will still be able to read existing CDs. Hey presto: no dual-inventory problems for retailers during the changeover period.

Sony has even been muttering about offering SACD for the same price as existing CD. Experience suggests we should perhaps take that with a dose of salt, but the economics of recording production bear close scrutiny

on this count. Even doubling manufacturing costs of the disc needn't have a vast effect on retail prices: maybe less than 75p per disc.

At the recording stage, a DSD master can be turned into CD-format audio with minimal effort — the same process occurs already in conventional ADCs. Sony has already announced 'Super Bit Mapping Direct', which executes the conversion process to higher standards than existing ADCs. And the solitary SBMD CD currently available (see the

box below) is very promising.

These are early days, but the few recording engineers who have heard DSD are pretty impressed. To me, it makes sense: it's compatible in every sense with existing standards (which can't be said for 96kHz/24bit), and offers a major step forward. As a commercial entity it's undoubtedly a little way off, but if all of us stand up and clamour for it, maybe the powers that be will hurry things along. I'm clamouring already! ▲

'THE WORLD'S FIRST COMMERCIAL DSD RECORDING'

Jazz fans will know of the US record label Digital Music Products (DMP). And article CD-521 of its catalogue — *Alto*, by guitarist Joe Beck and jazz-flautist Ali Ryerson — is claimed to be the first CD created from a Direct Stream Digital master.

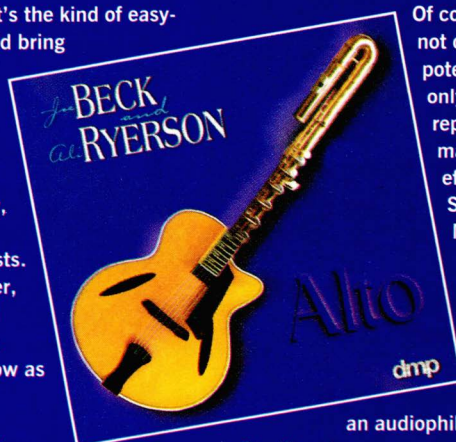
In musical terms, it's the kind of easy-listenin' fare that would bring a smile to the face of Louis Balfour, who hosts *Jazz Club* in the now infamous sketch of BBC2's *Fast Show*.

Undeniable artistry, then, but unlikely to upset your dinner guests. The recording, however, is notably smooth and detailed. The sound is every little bit as mellow as the music.

Just by way of comparison, we played *Somethin' Else*, by the Julian 'Cannonball' Adderley quintet. The 1958 Blue Note

recording, as transferred onto CD, seems immediately screechy by comparison. But listen closer and you can hear all the subtleties of instrumental articulation. 40 years of progress have not revolutionised recording; merely refined it.

Of course, this CD does not demonstrate the true potential of DSD. It is only a downconverted representation of the mastering process, effected for CD using Sony's Super Bit Mapping Direct process. Nonetheless, as the first purchasable artefact associated with DSD, it may go on to become an audiophile collector's item!



Stan Vincent

Wollaton Audio ☎ (0115) 928 4147

● On the Web, www.dmprecords.com

Radio's days are numbered...

Or at least they will be this Spring! A bright new digital future awaits good ol' analogue radio, as **Kevin Hilton** reports.

Changing names is in vogue these days. Look at Nigel Kennedy, who has gone the other way to Inspector Morse and become just 'Kennedy'. The same thing has happened to digital audio broadcasting, or DAB to its closer friends. Henceforth, it'll be known as Digital Radio.

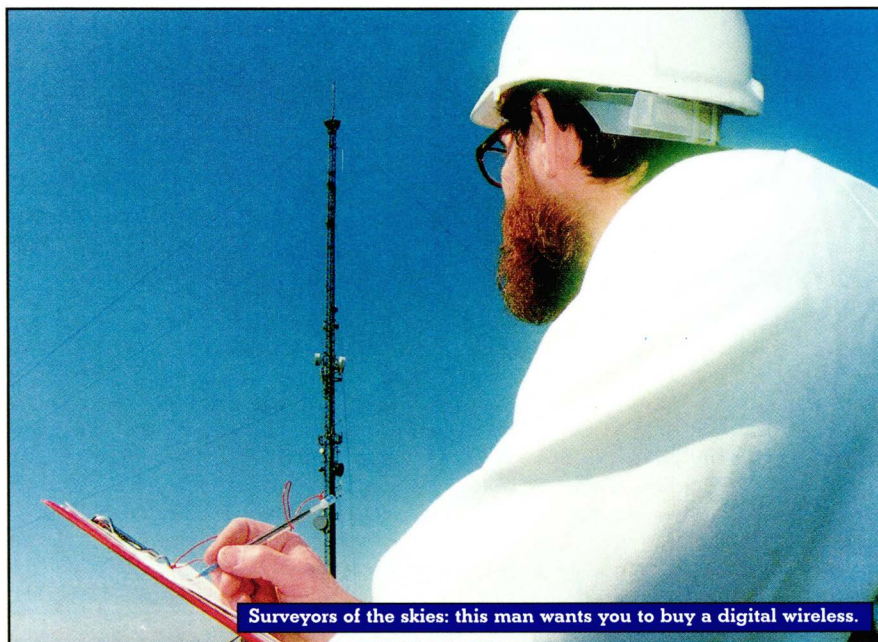
Promoters of the new technology have effected this change to separate the technology from the actual service it provides for the listeners. Stephen Mulholland, Editor, BBC Digital Radio, says: "By calling the format Digital Radio, we think that people will be able to get a better handle on what it can do for them. Anyway, 'digital' is no longer a scary thing in the public psyche."

This 'brand repositioning', as the marketers might describe it, has occurred because the end is so near for the big build-up to Digital Radio. But the process began in 1987, when European broadcasters (including the BBC), and manufacturers, began collaborating on the Eureka 147 project. The aim was to create radio for the 21st Century.

The benefits of digital

Digitisation of radio, as with digital television, allows multiple channels to be carried as a group, or multiplex, on a single frequency. The greater capacity not only enables existing stations to be carried as a bouquet, but introduces scope for the provision of additional services.

Services will not be restricted to those we have come to expect of conventional radio stations. Instead, digital content will include a dedicated Parliamentary channel and additional sports coverage, plus the potential for



Surveyors of the skies: this man wants you to buy a digital wireless.

associated text, data, still pictures and even near-audio-on-demand.

Eureka 147's intention was to offer all of this with near-CD audio quality, plus the added bonus of easier tuning and distortion-free reception. There is also the potential to liberate space in today's crowded analogue frequency bands, in particular jam-packed FM. However, analogue transmissions will continue to co-exist or simulcast with Digital Radio, for at least the next ten years.

The first you've heard of it

As research work progressed, occasional demonstrations were given to the industry and press. These usually involved driving around a city in a specially-equipped bus; initially, the in-car market was identified as the one with most to gain from a digital radio system. Anyone who's endured wavering reception during a long-haul drive, or has had to re-tune endlessly for the best signal, will need no persuading of the digital advantage.

Eureka 147 was subsequently adopted as a world-wide standard, although the US does not appear to be following Europe and may opt for a rival format, IBOC. With Europe

committed to Eureka 147, the BBC decided to push ahead to be among the first broadcasters to create a Digital Radio network.

Go-ahead for this was given in mid-1994, with a pilot scheme launched on 27th September 1995. Coverage was limited to 20 per cent of the UK population, with plans to reach 60 per cent by March 1998. This service is still running, with Radios 1, 2, 3 and 4 carried in full stereo, and Radio 5 Live in mono. Additional services have included BBC Parliament and BBC 5 Live Sports Plus.

All your favourite stations

Unsurprisingly, the commercial radio sector doesn't want to get left behind in the dash for digital. The Radio Authority (RA), which licences and regulates independent radio, has kept up with developments, and on 25th November 1997 published both its plans for licensing digital services, and a time-table of when everything is likely to happen.

The RA will advertise the licence for a single national commercial multiplex sometime around March 1998, guaranteeing space for the three current independent country-wide stations — Classic FM, Virgin Radio and



Talk Radio — if they show that this is what they want. The Authority says that another five or six services could be sustained on this carrier. Local multiplex licences will be advertised once the mix of programming on the national multiplex has been determined. Present estimates indicate Autumn 1998 as the time this will happen.

Like the BBC, the RA is running a pilot scheme in the London area, with technology provided by NTL, the company supplying transmission infrastructure for the majority of commercial radio. This service started in March 1996 and currently offers the three national stations plus Melody, Sunrise, Kiss, WRN and Capital.

When will it all begin?

Despite this great sense of progress, Digital Radio is still caught in the chicken-and-egg situation that ensnared it in 1995. Now as then, this is due largely to the lack of domestic receivers available. There were promises of a breakthrough at the IFA consumer elec-

tronics fair in Berlin last August (see report, HFC 171). While 17 manufacturers showed product in four distinct areas (in-car, hi-fi tuners, mini systems and PC cards), High Street retailers have yet to be swamped by suitably-equipped products.

Trade groups variously representing specialist hi-fi dealers, retailers and manufacturers say that their members are aware of Digital Radio, but that there is still a strong element of 'wait and see' in the current consumer response. Many companies are still at the semi-prototype stage with equipment.

The BBC's Stephen Mulholland says that the first phase of Digital Radio, the launch of the technology, has been successfully completed. Now the emphasis is on "selling it to the public", which will initially concentrate on building a general awareness of digital, and then beginning to differentiate between the technologies for television and radio. "We've put together a retail database as well," comments Mulholland, "so that when product arrives, the retailers will be ready."

Mulholland says that research shows public awareness of Digital Radio is 40 per cent, while that of the retail sector is 95 per cent. He describes Digital Radio as "re-defining radio, making it a more compelling proposition for the multi-channel future," but warns that people "tamper with the art of making radio programmes at their peril."

While agreeing that, for many, the basic way of listening to the wireless will not change, Mulholland observes: "It's a question of scalability. In the future, there will be small screens on in-car sets, and the Sharp midi-system [due to be launched towards the end of 1998] will have a screen, and will deliver text, audio and still images that change once every ten seconds. The pinnacle of this development will be a Digital Radio card in a PC or personal organiser, to give the full multi-media effect."

Received wisdom

The services are here now, and are being developed for the future. The crucial commercial trigger for Digital Radio will be the spread of receivers. In-car units are due to appear during early 1998, but there is no doubt they will be expensive. And while observers feel that the in-car market is important, the real benefit of this technology will be felt not in the high or medium end of hi-fi, where those with good FM tuners and permanent aerials may react like vinyl buffs confronted with CD. Instead, the real clincher will be Digital Radio's penetration into the home portable market.

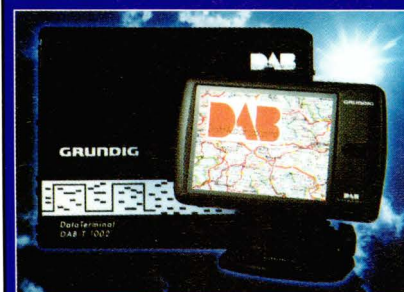
At the moment, Digital Radio chip-sets are too expensive to be considered for the kitchen-windowsill tranny. But thanks to a pro-active BBC initiative, Digital Radio is undoubtedly poised to offer real benefits for radio listeners when it launches formally this Spring. Those selfsame listeners have the power to decide whether or not it becomes established. The waiting continues... ▲

WHICH RADIOS ARE READY?

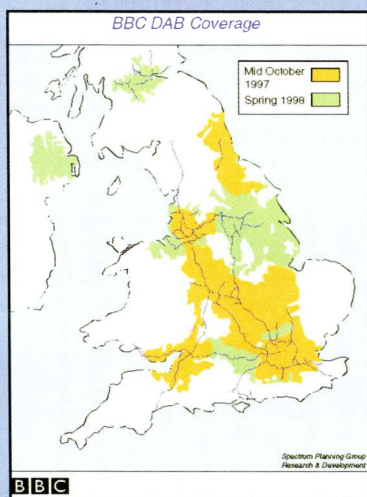
Digital radio equipment shown at Berlin's IFA show last August, and due for future release.

MANUFACTURER	PRODUCT TYPE
Alpine	In-car
Bang & Olufsen	Home mini system
Becker	In-car
Bosch/Blaupunkt	In-car (two models)
Clarion	In-car
Delco	In-car
Grundig	In-car/Hi-fi tuner
Fujitsu Ten	In-car
JVC	In-car
Kenwood	In-car/Hi-fi tuner
Panasonic (Technics)	In-car/Hi-fi tuner/PC card
Philips	In-car
Pioneer	In-car
Sharp	Home midi system
Sony	In-car/Hi-fi tuner
TechnoTrend	PC card

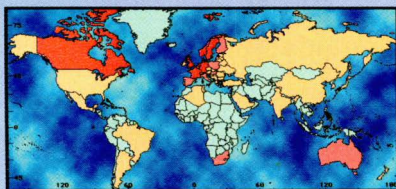
In-car DAB hardware planned for launch this spring. From top: Pioneer, Grundig, JVC



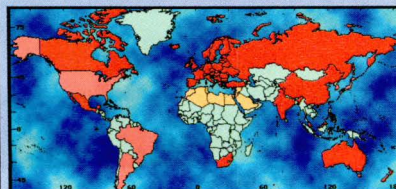
DAB COVERAGE, UK & ABROAD



DAB coverage in the UK. Orange areas are receiving test transmissions.



The status of DAB worldwide in 1997. Red areas have pre-operational (pilot) services while orange areas have advanced interest.



DAB worldwide forecast for the year 2000. The deep red areas are expected to use the Eureka 147 broadcast format.

Help!

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(Don't forget your postal address!)**

Alan Sircom and Jason Kennedy are here with the answers.

Every letter published wins a TDK SA 90 tape worth approx. £2.39! Ten tapes for our Query of the Month!



Query of the month Brought to you in association with TDK

Upwards, backwards, sideways, down

Like so many other readers, I am looking to upgrade my system, which currently comprises a Marantz CD-63SE, PM-66SE and Mission 733s. During a recent speaker test for a friend I was surprised to hear that the Heybrook Optimas sounded better than my Missions, but the thought of purchasing these seems like a sideways or backwards step.

My local dealer suggested I might try changing the amp first, to something like a Cyrus SL, Arcam Alpha 9 or the new affordable Audiolab 8000LX. He claimed that it might tighten the pace and offer more control. I'm suffering with boomy bass at the moment, but that may be a characteristic of my room, which is sparsely furnished.

I enjoy a clean, clear, almost bright sound, and often listen to vocal-oriented music by artists such as Tori Amos, kd lang and The Beautiful South. Would minor (cheap) soundproofing offer a significant advantage? Speakers, or amp? I'm confused.
D George, Kent

We're a little confused, too, as to your requirements. On the one hand you claim to prefer 'an almost bright' sound, but on the other you suggest installing soundproofing, which if anything will have the effect of dulling the sound.

If you want a general increase in resolution you should either replace fundamental components within the

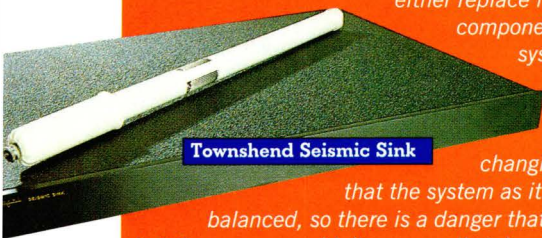
system, or investigate cables and supports. The problem with

changing components is

that the system as it stands is well balanced, so there is a danger that changing anything but the source wouldn't necessarily take you in the right direction. And a better source may not be able to shine through the existing kit. Having said that, changing amps is where we'd start — but can you cope with the idea of improving the rest of the system later?

To refine what you have, look for decent cable and stands. Marantz seems to like Audioquest interconnect and Kimber speaker cable, while a Townshend Audio Seismic Sink under both amp and CDP will tidy up the sound and add weight. You'll be well served by these ancillaries if you decide to upgrade!

Every issue, we're giving 10 of TDK's award-winning SA 90 tapes to the writer of the month's best query. When reviewed in Hi-Fi Choice, TDK's SA tape revealed the heart and soul of music with a graceful and transparent sound. We awarded Five Stars for Sound Quality and our coveted Recommended flag!



Townshend Seismic Sink



Raging slabs

My current system comprises Technics SU-A600mk2 amplifier connected by Gale 189 cable to Mission 733is, each one supported on two concrete paving slabs sandwiched with polystyrene ceiling tiles. I have a Denon DCD-425 CD player and a Sony MDS-510 MD player. Everything is connected up with Cable Talk and Pacific interconnects. I listen to a variety of music from Sheryl Crow to The Prodigy.

I would be very grateful if you could advise me on upgrading first my amplifier and subsequently my CD player (which should incorporate a digital output for MD). I have a budget of £600.

Paul Darke, Plymouth

Assuming that your budget is for both pieces, we'd listen to some or all of the following: Arcam's Alpha 7 CD player and amp, the Denon DCD-1015 CDP and Audio Innovations' underrated Alto amplifier, or the following harman/kardon combination: HD730 CDP and HK620 amp. Some pairings may be easier to audition than others, given the vagaries of distribution, but if you ask nicely you might be able to borrow samples for a weekend.

Interesting speaker support arrangement. Do you have spikes under the speakers? You might try Blu-Tacking the speakers directly to the concrete slabs. It's an unconventional approach but it might give better results.



Audio Innovations Alto

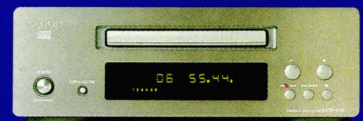
Underrated, stylish, musical communicator.

Black, black, black!

I own a full-size Pioneer stacking system which has served me well — I am very happy with it. The system consists of a TX-720L tuner, CT-400 tape deck, SG-300 equaliser, PL-8 turntable and an SA-510 amp driving Mission 731 speakers. All of the electronic components are finished in silver. My problem is that I wish to purchase a CD player finished in silver to add to my system. I can't seem to find one — everything seems to have a black finish. Can you suggest any sources to try? My budget is around £250.

D G Jackson, Hopeman, Moray

We don't think any of our Recommended budget CD players is available in a silver finish, but you might find a solution to your problems in Denon's DF-10. This is a rather attractive mini-size unit with a brushed-metal facia that costs £250 — conveniently enough. The only catch is that it's not remote controllable without a matching amp. Which would be a nice upgrade option!



Denon DF-10

Compact and silvery.

Joy seeking

My present system includes Naim NAP 90/NAC 92 (1994) amplification, a Mission DAD5 CD with DAC5, and NAD 802 speakers on Epos stands. I tried the Roksan Caspian and the Naim 3.5 with the above system as possibilities for an upgrade.

I thoroughly enjoyed both CD players for different aspects of their sonic capabilities. However, it is deeply frustrating having to trade off their fundamentally different attributes when choosing one above the other.

In short, the Roksan brought weight and smoothness, while the Naim delivered revealing, rhythmic sound which didn't trip up over more complex recordings. I listen to all types of music, from Deep Purple to Wagner. Can you recommend any other CD players which, if possible, have the attributes of both abovementioned CDPs, and would bring joy to my weekends? Victor Romiszewski, Carshalton, Surrey.

It sounds as if you want a little more than a £1,000 CD player can be expected to deliver, but we are in the process of reviewing a dozen machines priced between £450 and £1,300 (for the March 1998 issue). It's possible that we'll discover therein something which will fit your bill.

In the meantime we can't help but feel that your joy factor may be inhibited by your speakers. Have you tried listening to alternative enclosures? Depending on your taste and budget, you might enjoy the speakers that go with your stands, Epos ES14s. These are very 'Naim friendly' and might make it easier to choose a CD player wisely.



Epos ES14

A decent and legal means of ensuring joy-filled weekends.



Musical Fidelity A2

CD player also available!

Balancing act

My system is a Nakamichi DR3 tape deck, Marantz PM-44SE amp, B&W 601 speakers on sand-filled Atacama SE24 stands, Cable Talk Monitor 2 interconnects and Cable Talk 4.1 bi-wire speaker cable.

It sounds great but I would really love a top-quality amp like the Naim Nait, Roksan Caspian or Sonneteer Campion. Or should I buy the cheaper Marantz PM-66 KI-Sig instead?

I intend to buy either a Technics SL-PG580A, Marantz CD-48 or Sony CDP-XE510 CD player. J Bedford, Leeds, W Yorkshire

We think you should invest in a better CD player before going for a serious amp. The amps and CDPs you mention are fundamentally out of balance — like putting a V6 into a Metro!

So audition both source and amp simultaneously, and pick a combination which works. Then buy the CD player and save up for the amp. If you've got a grand to blow overall, then try to hear the Pioneer Precision combo which is up for grabs in one of our competitions this month (p17). Alternatively, listen to Marantz KI Signature, Arcam Alpha 8 and Musical Fidelity A2 combinations.

Can control

I have fallen in love with the quality of sound available from a good CD player and a decent pair of headphones; now I want to permutate a CD/can combination of my own. Given headphones' varying tonal characteristics, must one be as careful matching them to a CD player as when assembling a full system?

Can you recommend a suitable CD player and headphone combination for around £500, that will give a warm but detailed sound, with good bass extension? At this price level, would it be worth investing in a headphone amplifier at a later date? Brett Bylett, Crawley, Sussex



Sennheiser HD 545

Premium intimate listening ahoy!

Good question. We cannot claim to have investigated this topic extensively, but would suggest you start by choosing a headphone. Try to hear Jecklin Floats, Sennheiser HD545s, Philips SBC 3396s and Beyer DT531s. That done, find which CD player works best with your favoured cans. Obvious choices include Pioneer's PD-S505 Precision, Marantz CD-63mkII KI-Sig (you have to adjust volume with the remote), harman/kardon HD730 or Yamaha CDX-890.

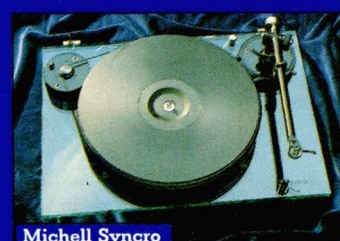
You should audition both combinations before purchase; any will be enhanced by the addition of a headphone amp from the likes of Creek, Musical Fidelity or Amity. See HFC 172 for info.

Turntable tips

Our current system comprises Project 1.2 turntable with Ortofon 510 cartridge, Marantz CD63mkII KI-Sig CDP, Audiolab 8000S amp, Rotel RQ970 phono preamp, Mission 752 Freedom speakers, Audioquest Indigo II speaker cable and Audioquest Quartz interconnects. All stand on Mission Isoplats or a Stands Unique Sound Tower with Isolation platform. As newcomers to the world of turntables and with a restricted budget, we would welcome your views on the relative merits of upgrading the turntable to either the Pink Triangle Tarantella or the Michell Syncro.

Both are around £500, not including arm or cartridge, and both have been recommended as good choices by my local dealer. We have shortlisted the Goldring 1042, Ortofon MC Super II cartridges and Rega RB250/RB300 arms.

Our dealer has neither of the turntables in stock, and while he awaits review samples we were hoping for your



Michell Syncro

Great value for money at £500.

views on our candidates' build quality, sonic ability on the basis of same arm and cartridge, compatibility with the other components, and our choice of cartridge/arm.

Andy & Helen Hague Glasgow

Not having a good working knowledge of the new Pink Triangle Tarantella, we can't really advise you how it compares with the Syncro. However, the Michell is a great turntable for the money, and has a proven track record with regard to reliability and compatibility with the Rega arm. So unless the spider-like PT beats the Syncro hands-down on sound quality, Michell's option would get our vote. Try to track down a Grado or Denon cartridge — you'll find them a little smoother than the options you list.

Afloat in the Caspian

What would be the best CD player to partner my Roksan Caspian amp? I have listened to a Cyrus dAD3Q and a Marantz CD-17KI, and was not impressed with either, even though the dAD3Q was the better of the two.

I have a pair of Ruark Prologue One speakers on home demo, and I wonder whether I need to change the speakers as well. I am using bi-wired Ortofon SPK300 speaker cable. I have vdH The First interconnect.

Simon Lyons, Washington, Tyne and Wear



Roksan Ojan 3

An ideal partner for the Caspian amp.

This seems a vague approach to system building. Could your dealer not offer you a complete set-up to your liking? We must assume not, so let's make the best of your decent amplifier. Take this to a few dealers and see what they can build around it.

We have yet to test the Ruark Prologue Ones, so can't say whether they are a good match for the Caspian. What is likely to work, however, is one of the Roksan speakers: either the Ojan 3 or the OJ3X which costs a bit more. You could even combine them with the Caspian CD player for a complete Roksan system — we'd imagine that might work very well.

At the crossroads

My system is currently a Linn Sondek LP12/Lingo turntable with Ekos arm and Denon DL304 cartridge. This is connected to a Naim NAC72/Hi-Cap/NAP180 power amp and Linn Kan speakers (1983 vintage).

I am trying to decide on an upgrade. The weak point appears to be the Kans, which cannot be bi-wired. Also, the bass drivers were replaced recently, and they haven't sounded the same since. Should I replace these with Naim SBLs? What are other alternatives? I'd probably bi-amp with another NAP180 in a few years.

Would I gain more from SBLs or would a greater increase in quality be obtained from upgrading the LP12 to the Linto/Arkiv?

I could also leave the system as it is and add a CD player — what do you recommend? My budget is £1,500 - £2,000.

David Barron, North Yorkshire

The Arkiv is an excellent cartridge, and will make beautiful music with your current system if the Kans are placed upon Kan II stands. The bass problem you currently suffer is either due to poor sealing by the repair man, or the drivers have yet to run in.

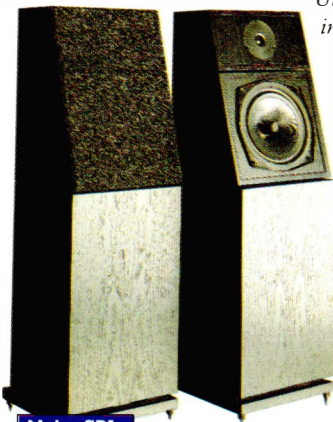
You may not need to go for the Linto with the phono stage, as Naim's own are superb if you use the right board for the Arkiv.

Ultimately, though, the Linto will improve matters further.

The Naim SBLs are the obvious choice, but eventually you may need to upgrade to a NAP 250 or 135s to get the best out of them.

As you have no CD player as yet, upgrade the rest of the system first, especially as the original Kans are not the most CD-friendly speakers around.

When the time comes to bite the CD bullet, go for an Exposure, Marantz, Helios, Naim or Roksan player costing at least a grand or more.



Naim SBL

Kan you afford not to put them on your upgrade list?

Do the side-grade shuffle

My system comprises a Micromega Solo Classic, Audion Silver Night integrated (2x7W silver wired), Audio Note AN/E-SP speakers, Audio Note AN/V interconnects and Nordost Blue Heaven speaker cable.

I'm planning to change my Audion for an EAR 859. Is this a good upgrade? What do you think about these amps? What other valve amps do you recommend?

'Ramon', via our Web site

Yes, this is a good upgrade, but the sound of the two products is radically different. As it stands, your system is ideally matched. The push-pull circuit of the EAR is more powerful, but it will not sound as sweet as a single-ended model like the Silver Night.

In short, we'd class this move as more of a side-grade than an upgrade. Unless you are looking for more grunt we think that you'd be better off going for an Audion or Audio Note pre/power amp in your system.

Phase linear club

I'd like to say that I totally agree with *Hi-Fi Choice* on the Pioneer Precision series, and now I am a big fan of the Tom Evans 'phase linear' club, even though I don't own any Pioneer or Acoustic Precision products! I was caught in sheer joy when I first listened to the Precision series at the Ramada hi-fi show last September. It is nothing less than pure high-fidelity.

Anyway, since I now have a Marantz CD-67, Audiolab 8000A and a pair of KEF Q35s, what should I do? I might swap for the Pioneers but I can't afford the Acoustic Precision speakers.

'Yellowjackets', via our Web site



Musical Technology Kestrel SE

No match for the AP Eikos FR1, but the next best thing.

If you are convinced by the Pioneer Precision, opt for the CD and amplifier by trading in your existing system and add a pair of Musical Technology Kestrel SE speakers. Use lengths of Monolith 20/20 speaker cable and AP Eikos interconnects.

Ultimately, the Kestrel SEs are no match for the clarity of the Eikos FR1s, but they will work well. Alternatively, keep the KEFs for the meantime and save, save, save for the real three-D thing. Oh, and enter this month's competition (p21). You might just win the whole system!

Cosy listenin'

I fancy getting a hi-fi system between £2,500 and £3,000. I like to listen to soul and R&B music. I'm thinking of getting an Audiolab 8000 CD player, Musical Fidelity X-PRE, a pair of Musical Fidelity X-A50 monoblocks and a pair of Jamo Concert 8 speakers. Another system which I've considered is the Roksan Caspian CD player and amplifier with a pair of Jamo Concert 8 or KEF RDM Two speakers.

'Entau', via our Web site



Jamo Concert 8

Goes well with the M-Fs.

The MF pre/power is a lovely warm-sounding combo that will balance well with the dryness of the Audiolab. The Jamo Concert 8 would be an excellent — and much understated — match.

The Roksan Caspian combination is a real clean and crisp star, but we'd not recommend using the RDM Two with it. Try the aforementioned B&Ws, along with Roksan's own Ojan, Linn's Keilidh or Castle's Harlech speakers.

Bitter pills to swallow

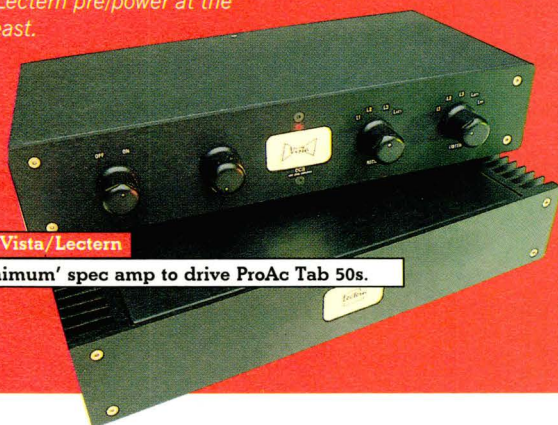
I'd welcome any ideas that might help improve my system. It comprises a Marantz CD-63mkII KI-Sig CD player, Arcam Alpha 9 amplifier and Mordaunt-Short MS25i speakers, with Cable Talk 3 bi-wire speaker cables and DIY interconnect.

I am thinking of upgrading the speakers to ProAc Tablette 50s in order to get better midrange. I prefer female vocals and played at medium levels.

Altan Cin, via the Internet

The amp and CD are not up to the job of driving Tablette 50s. They won't damage the speaker, or become damaged themselves, but their inadequacies will bring on upgrade fever sooner rather than later. You should either upgrade the CD and amplifier, or tone down your speaker selection.

If you decide to do the former, try a Marantz CD-17 KI Signature, Meracus Tanto or AVI S2000MC Ref with an ECA Vista/Lectern pre/power at the very least.



ECA Vista/Lectern

'Minimum' spec amp to drive ProAc Tab 50s.

Hunting for an imaginary hi-fi system

My friend is awaiting the moment he can be reunited with his hi-fi when he moves. His system is transducer-less at the moment, as he has sold his Chario Syntar IIs. He doesn't know where he'll be living, but is sure he wants a pair of floorstanders on the end of: Pioneer PDS-703/Trichord Clock 2/Audio Alchemy DDEv1.1 CD player, Systemdek IIX900 (re-built)/Roksan Tabriz/Sumiko Blue Point record player, Audiolab 8000C/P amplification.

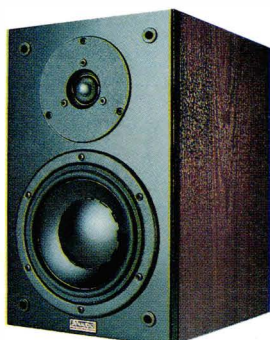
He's heard (and liked) the Castle Harlechs, but I'd have thought we're talking about a VERY big room to get the best out of those. Any ideas? I'd just like to know what would bring out the best in his C/P combination. (I say ProAc Tablettes but he doesn't seem to think small is beautiful...). He's into vaguely left-field rock/pop/dance and, curiously, choral works (Schnittke's a favourite).
Mike Jones, via the internet

Don't worry about room size: the Castles work in some surprisingly small spaces, and do favour the sound of Audiolab. Best check them out in the room if there is a problem, but if they sound bass heavy, then so will almost every other floorstander on the market, except possibly the Musical Technology range.

What shows off Audiolab to its best? Now there's a loaded question. Audiolab claims absolute neutrality that will give the best to any transducer, but the sound is rather antiseptic if not partnered correctly. Even-tempered speakers, such as Dynaudio, KEF and Audiovector designs, are the order of the day, along with old-school BBC designs.

Dynaudio Audience 50

Even-tempered partner for Audiolab.

**Miles of aisles**

I am planning to upgrade the whole of my current system. The items I have in mind, that I have liked individually, are the Theta Miles CDP and Martin-Logan SL3 speakers. Which amp? I know the M-Ls are rather difficult to drive.

Marva Salkit, via the Internet

You are on to a good bet with the Theta Miles and the Martin-Logan SL3. Partnering amps we favour include the Audio Research LS9/VT60SE valve combination, although the speakers could do with a solid-state amplifier combo, like the Classé CP50/CA150 or the new Krell 300.



Naim Nait 3R

Ideal with Arcam or Rega CD players.

Making allowances

Please advise me on how to get tighter bass from my set up. The system comprises Technics 770 CD, Technics SU-C/SE-A1000mk2 pre/power amps, Sony MDS-510 MiniDisc and B&W DM603 speakers with Audioquest Indigo/Topaz cables.

I want a deeper and tighter bass, and wonder if I should invest in another power amp and bi-amp the system. Or maybe I should buy a subwoofer.

My living room is 28 metres square, and the speakers are positioned as far into the room as I am allowed, and 0.5m from side walls. New speakers are out of the question for now, but maybe in a year I will be able to get some.

'Runer', via our Web site

I don't think that another Technics power amp will make things tighter. The amp is smooth and light, but is not capable of delivering a deeper and tighter bass. Also, the floorstanding 603s can tend to wallow a bit if the amp isn't controlling them with a vice-like grip, and this is something that the Technics can't do well. The CD player is seriously smooth and beautifully built, but not the world's best at digging up deep bass. Lastly, the AQ cables are tonally neutral but tend to sound slightly soft at the bottom end.

We would expect this system to have an excellent midband and a nice, smooth treble, but to be wallowing big-time in the bass. You could add a subwoofer like the REL Q-100E, but we don't think this will solve all of your problems.

There are two courses of action you could take. The first would be to invest in a complete collection of Mana equipment including a multi-tier equipment rack and speaker platforms; then buy some kickin' cable like Monolith 20:20 and some tight interconnect like DNM or Tara Labs.

Alternatively trade in the whole system for something with a bit of bite, such as the Rega Planet or Arcam Alpha 8 CD player hooked up to a Naim Nait 3R integrated amplifier using Chord Chameleon interconnects, and thence to a pair of Acoustic Energy 109 speakers with Naim NAC A5 speaker cable.

Changing the entire system may seem like a harsh measure and not one to be taken lightly. But it could pay dividends. Spend a few afternoons sitting in dealers' listening rooms!

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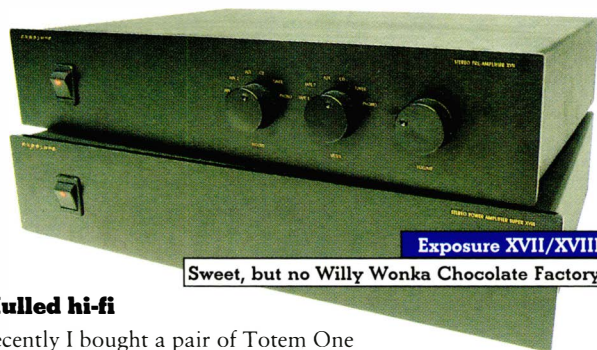
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Exposure XVII/XVIII

Sweet, but no Willy Wonka Chocolate Factory.

Mulled hi-fi

Recently I bought a pair of Totem One speakers and a Rega Planet CD player, but I'm not certain about the best pre/power combination to work with them. I like warm and sweet sounds. Could anyone offer some helpful suggestions?

Juan Arismar, Brazil.

You could try Exposure's XVII/XVIII, but like Naim pairings this may not be sweet enough for you. Alternatively, Rega's Hal/Exon combo is a bit bold, but a nice match for the CD, and always sounds in command of all it plays. Finally, if you have the cash, the Conrad-Johnson PV10AL/MV55 offers the warm and sweet qualities you seek. You should check out these suggestions along with a few other North American models from brands like Sumo, Sonic Frontiers and Audio Research.

Rehydrating a dried-out sound

Which should I upgrade first — CD or amp? My system is an Aura CD 100 CD player, Aura Evolution 100 amp and Monitor Audio 700 PMC speakers. I think the sound from the speakers could be improved.

The problem is that the system sounds too dry. It's more 'studio' than 'live' sound. If necessary, I will upgrade amp or CD because I think I need a warmer sound, so I can listen to music for longer. I listen to jazz, R&B, funk and classical. 'JRW of Brasil', via our Web site

Both the amp and the speakers are bright and will certainly not sound warm. However, I'd say swapping the MA speakers for a pair of Castle Harlechs or Celestion A1s would help greatly, as both of the latter are warm-sounding speakers. Also try Audioquest cables, which can take the sting out of almost any system.



Celestion A1

Warm-sounding, to moisten up a Brazilian system.

HINTS AND TIPS

CABLES CAN HELP TO CONTROL RADIO FREQUENCY INTERFERENCE...

JIMMY HUGHES EXPLAINS HOW!

Most serious hi-fi enthusiasts know that RFI (radio frequency interference) can adversely affect the quality of sound perceived from their hi-fi system. At its most extreme RFI can cause audible interference: either as noise (usually a high-pitched warble or whistle), or the sound of a broadcast. However, even when there's no direct evidence of such interference, it's still possible for RFI to impair your hi-fi.

RFI is omnipresent, and attacks equipment and interconnects at every opportunity. Partly this explains why numerous plug and socket-breaks (in both mains and inter-connect cables) have such an adverse audible effect. They act as an entry point for RFI. So, how do you deal with the problem? Well, one answer appears to be investing in Kimber mains cables. Importer Russ Andrews offers a range of cables and mains distribution boards to suit most kinds of equipment.

Kimber's special plaited construction claims to help cancel out RFI, giving a smoother, cleaner sound. I tried a six-way mains distribution board and was very impressed with the improvement. At £199 it seems expensive, but it made a clear difference to the sound, which became smoother and slightly more relaxed, yet at the same time better separated and more detailed. There was a reduction in 'hash' so that individual voices and instruments emerged with greater separation and individuality.

Superficially, the treble appeared smoother and less sharp, almost as though the top frequencies had been

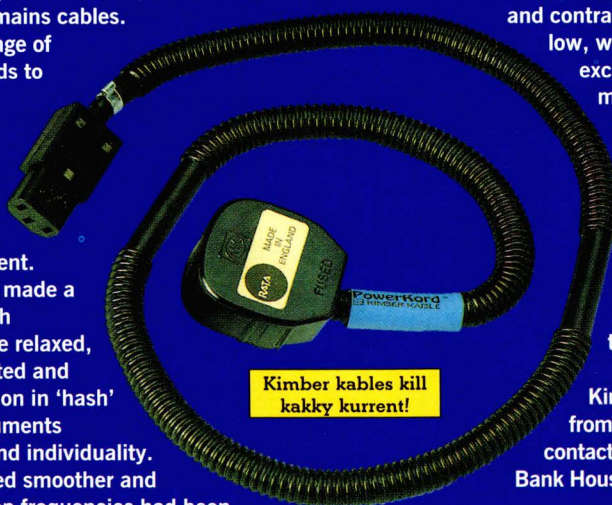
rolled off slightly. But on close listening you'd surely agree this wasn't the case — the treble is just as tactile and articulate; it's just that a halo of background grunge has been reduced. This has the effect of making the music sound more holographic and dynamic. Yet at the same time the tonal balance is actually sweeter, more natural, and less aggressively 'hi-fi'.

This eliminates some of the false brilliance one hears with many systems, and results in a truer, more natural sound. However, if you happen to like this added brilliance, the sound may seem lacking afterwards. Listening to the Kimber distribution board with a friend, he slightly preferred the extra bite and energy of my usual mains board. However, I definitely preferred the Kimber, specifically because it seemed to reveal an extra individuality and dimension to so many tracks.

Essentially, having the Kimber mains distribution board in the system revealed important musical detail that was otherwise obscured. The sound was more obviously stereophonic, and contrasts between loud and soft, high and low, were increased. To make an analogy, excessive RFI is a bit like having too much salt on your food; you no longer taste individual flavours, only salty versions of them. In much the same way, RFI robs the sound of fine detail and subtleties. Superficially, there may be some lack of 'flavour' when RFI is reduced, but if your system's any good there should be an increase in delicacy, and fine tonal colours.

Russ Andrews offers a wide range of Kimber mains cables, ranging in price from about £20 to £60. To find out more contact Russ Andrews Accessories Ltd, Edge Bank House, Kendal, Cumbria, LA8 9AS

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Silence is Golden



Inexpensive high-end audio is a rarity, but one in which US company Golden Tube Audio specialises. For a bag of chips short of a grand (£999) the company's new SI-50 amp seems to perform the impossible. It's an integrated valve design claiming to offer 50 Watts of push-pull pentode power a side, it is microprocessor controlled, it can run in active or passive mode, and it may be operated by an excellent remote control hewn from a billet of solid alloy. You'd expect a much higher price-tag for a product like this, especially as it needs to be shipped thousands of miles.

Furthermore, this is no simple Williamson circuit board with a motorised volume pot and a fancy front panel. Considerable work has gone into the design. Every stage has its own special module, making repair and replacement swift and easy, and the layout is symmetrical. Within the hefty aluminium casing and behind that ultra-thick front panel, the main drive section (containing phase splitter and input triode, preamp driver and power pentodes) is laid out horizontally. Each pair of EL34 pentodes is kept cool by a low-voltage fan on each channel.

The fans, sourced from a supplier to the computer industry, are not especially noisy, but at low listening levels in smaller rooms, I found them quite intrusive. Granted, those swirling blades help to prevent overheating problems, and permit this valve amp to be much more compact than most of the breed. But if your ear/brain interface becomes attuned to the fans like mine did, you'll find the constant whirr impossible to ignore.

The fan is not the only part of the SI-50

Can there be such a thing as a budget high-end amplifier?

Alan Sircom believes he's found one in the shape of the Golden Tube Audio SI-50, a valve amp with microprocessor control.

to have been derived from the computer industry. This amp uses a sophisticated microprocessor control system to control behaviour during switch-on and power-down. The silicon also keeps constant check on the valves for correct biasing, and displays warning lights when a tube goes belly-up.

Another option is for the fuzzy-logic software to switch the amplifier into a tube-saving standby mode. This keeps the valve heaters in a state of pre-warmed readiness, without ramping up to full amplification.

One quirk of the microprocessor system should be brought to the attention of those afflicted by indecisiveness: take great care with the 'power-on' procedure. If you turn the power on, off and on again in quick succession, the amplifier goes into what can only be described as a spasm.

I am informed that rapid on/off switching can play havoc with the microprocessor chip itself, at the hands of ham-fisted operators. This is not explained properly in the manual, but does appear on a loose-inserted 'erratum' sheet supplied with the amplifier.

Cable stitching

Another twist to the 'smart' controls became evident when I came to set up the amplifier for the first time. Inadvertently, I plugged in speaker cable with a broken termination. As any valve aficionado will tell you, to visit this iniquity on a push-pull valve-amp is tantamount to smashing its glowing bottles with a hammer. However, I was surprised by the speed with which the SI-50 went into over-heat, and I believe in part that this resulted from the microprocessor attempting to bias the valve in its distressed condition. No cautionary tale, this, except to myself and those who regularly play the cable game. And since the amplifier's EL34 power tubes remained ultimately untroubled by my abuse, the story is a testament to both tube and installation.

The amplifier can be set up to act as a power amp for bi-amping purposes, but it may not be used as a dedicated preamp. With only two line inputs and a tape circuit available, most people will probably prefer to use a separate preamplifier with more inputs.

If you seek that typical valve-amplifier sound, you'll find it in the SI-50. Like all good tubed kit, it does midband beautifully, and relishes in music that is sympathetic to the bygone golden age of valves. Play Blue Note jazz and the SI-50 becomes part amp, part time machine, as you're transported back to an era when America had Duke Ellington — and we had Billy Butlin. This is especially true when the amp works in 'passive' mode — ie, with the active preamp circuits disengaged. Fortunately, with a pair of ludicrously sensitive Rehdeko RK115a speakers, the power-limitations of passive were no great hardship.

The SI-50's treble is well mannered. You could connect this amp to the most vexatious and brash speakers, and it would still find something good to say about them. It has a smoothing effect on treble sounds, making them polished, even, but never raucous.

Bass is seldom a strong point with valve amplifiers, and the SI-50 is no exception to the rule. It produces full but slightly spongy low frequencies — not the most tight, rhythmic or coherent around. It's never less than dynamic and highly expressive, though. For those of us hooked on controlled, fast, dance-music-style bass, the SI-50 is a bit soft and sluggish; but folks with more catholic tastes may well find the full and easy bottom end appeals. Stereo performance was first class, with pin-sharp images and an excellent sense of air around musicians.

On the debit side, the SI-50 is not the most feature-packed amp around, and its cooling fan may prove obtrusive. To its credit, one word sums up the sound: refined. You'll be hard-pressed to do better for £1,000. ▲

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Tablettes of stone

Tiny speakers and big sound don't always go together. But as **Stan Vincent** discovers, these little ProAcs punch above their weight.

Small is beautiful, and a small speaker is especially beautiful if it generates room-filling sound convincingly. The ProAc Tablette 50 looks like an ideal candidate for performing such a trick.

Based on a design in manufacture since 1979, and priced at £899.90, it is not a cheap proposition, especially when you realise how small it is (11 by 6.5 by 9 inches). But on closer inspection you realise this enclosure is finished in a most elegant real-wood veneer (burr oak as reviewed; ebony, or bird's-eye maple). Pick up the speaker and you'll feel it: at 14 lbs per cabinet it feels densely packed.

Indeed it is. The mid-bass drive unit, housed within a die-cast chassis, incorporates a five-inch polycarbon cone, and is driven by a "special copper magnet" assembly. Poking out of the front is a copper-phase plug to aid dispersion. The tweeter is a three-quarter-inch soft-dome device, with a honeycomb-wound voice coil and ferrofluid cooling. The cabinet housing both units has been "critically strengthened" and "heavily damped" to resist resonance.

On the back panel you will find twin reflex ports and well-specified, bi-wirable cable terminals. These lead to a "specially dedicated" crossover, apparently. Oh, and nestling between the ports is a little plaque inscribed with the signature of Stewart Tyler, ProAc's chief designer.

ProAc claims the Tab 50 Sig has an efficiency of 89dB/W/m, an unconditional frequency response of 35Hz to 30kHz, a nominal impedance of eight Ohms, and a power handling capacity of 150 Watts.

I set the speakers up on Target R/1 pillar stands (£280). ProAc claims these boxes are amenable to most sites in a room, provided there are six to 12 feet of space between them. Regrettably in my shoe-box-sized dwelling I could manage only a four-foot gap, but with a bit of toe-ing in they still provided



ProAc Tablette 50 Signature Note mirror imaged tweeter position.

a stereo image one could believe in.

It appears ProAc doesn't get too involved in cable philosophy wars, and nor do I if I can help it, but I tried AudioQuest Cobalt for bi-wiring and Kimber 8TC for 'ordinary'. The latter gave a greater sense of image size and depth: more freedom to the sound.

Quad-rophonic

Even before listening I gained an impression that these speakers would form a rapport with the Quad 77 CD player and amp I use at home. Fortuitously, that turned out to be the case. The Quad and ProAc components complemented each others' sense of restrained but effective performance. Perhaps inevitably, this restricts the impression they make at low levels; whereas part of the appeal of a Rehdeko, for example, is the way it catches your attention even when idling. But while I am quite enamoured of, say, Paul Messenger's Naim/Rehdeko system, I'm not sure I'd want to live with it.

The Quad/ProAc pairing, by contrast, is right up my street. A key reason for this is its assured handling of my odd-ball record collection, which covers all manner of stylistic bases. The Tab 50 Sigs bring out the differences between recordings by getting right

inside them: by revealing the shimmering harmonics of a struck cymbal, and that spiningling internal harmony-yet-discord characterising a church organ in full flow.

Some might find the treble a little aggressive when the volume's cranked up—it's the price paid for insight into detail, I guess. Others might want for a little more bass, though you'd need a pretty big room to exploit it. Imagery is good, though I must confess with any system it makes my head spin when I try to hear the second violinist's nasal hair twitching. I was surprised, however, by the width and depth of soundstages generated in my little room.

As always, a speaker is the result of several compromises adjusted to suit a particular design goal. In the Tablette 50 Signature, the balance weighs in favour of... well, a balanced approach to all music; a commitment to portraying detail and scale rather than an edge-of-seat, Technicolor performance for the musically uninitiated.

AcousticPrecision Eikos FR1 speakers, by way of contrast, represent an attempt to optimise speed and stereo imagery at the cost of a reduced-bandwidth response. The pedants can argue over that—I'd rather have the Tab 50 Sig's real-wood finish than the Eikos's 'flock', any day. I'd advise everyone to hear these speakers. From small acorns, massive oak-veneered sounds grow. ▲

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WHERE THE MUSIC MATTERS

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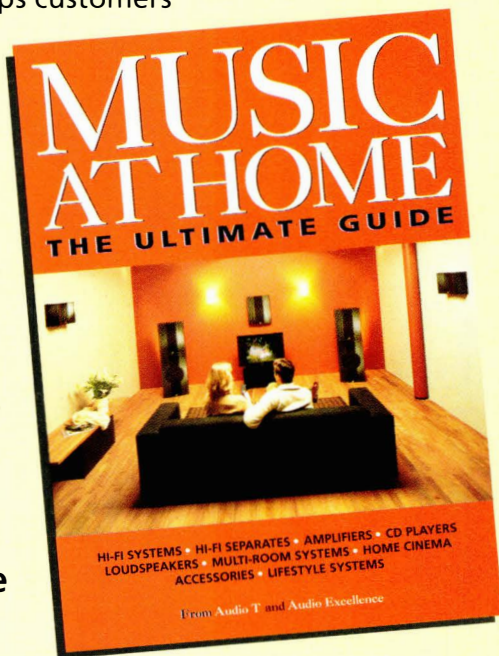
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Wazoo fraternity

This amplifier was inspired by Francis Vincent Zappa, Jr. For Jason 'Black Napkins' Kennedy, that's all he needs to know...

Okay, I admit it: I have a penchant for the music of Frank Zappa. I knew you'd be surprised. If you aren't, then imagine how keen I was to grapple with an amplifier named after one of Frank's finest works: his early '70s album, *The Grand Wazoo*. I recommended the latter to *Choice* readers a few years ago, to rejuvenate those who had become jaded by too much samey hi-fi. So it is a piece of conceptual continuity worthy of Zappa himself, that the component which was inspired by his album, also inspires by virtue of its looks and premise.

The Bow Technologies' Wazoo has been fashioned at the hands of Bo Christensen, a Dane with a reputation for building beautiful kit. In a former incarnation he was the driving force behind the Primare brand, which was known in the late-'80s/early-'90s for some stunning amps in the 'carved-from-solid' mould. The current Bow Tech range must be the envy of industrial designers throughout the industry.

The Wazoo looks like a megabucks product — and it's bigger in size than it looks in the photo. So in material terms alone it seems like good value at the suggested price of £1,795. Its power output claims to be 50 Watts per channel into eight Ohms, and its 20kg anodised chassis sports five inputs, one of which is balanced. Top-notch WBT speaker terminals complete the package, but I was rather baffled by the way these terminals' bare-wire/second-plug holes are oriented horizontally. To bi-wire from these, except when using Y-configured wires with plugs, is not easy.

Bow says that the Wazoo is based on circuit topology found in the company's more expensive ZZ-One (does it have a long beard? -Ed), but the former design is less powerful and uses fewer components. However, according to Bow, neither's circuits use negative feedback in their gain stages.

One immediate downer for me was the Wazoo's lack of a remote-control handset.



Bow Technologies' Wazoo Frank would have been proud...

However, a rear-panel socket shows that the joy of infra-red is coming to a Wazoo soon, as an optional extra. Apparently the receiver will be a stainless-steel tube, with an 'eye' at one end, which may be laid down beside the amp. Nice.

You Are What You Is

The Wazoo took the place of a Densen Beat B-100 in my system — as it happens another Danish design, conspiracy fans. My speaker cable of choice was Electrofluidics Sonolith Monolith 20/20, which comprises two flat ribbons of solid copper. Although never tested formally in *Choice*, it closely resembles Goertz M2, which we tested in *HFC 168*. Both designs share very high capacitance allied to low impedance and resistance. Some amps don't like this combination of electrical characteristics, and the Wazoo was one of them — its protection circuits clamped down on the power output in self-defence. Bo was quite surprised to hear of this, as he is a major fan of Goertz himself. The problem was remedied by swapping the short length of Monolith for a longer length of Goertz. If you plan on using these cables, length is a factor. Consult amplifier manufacturers for their recommendations.

Joe's Garage

Okay, audition time. I hooked up the Wazoo to the new, braced version of the Acoustic Precision Eikos FR1 (*HFC 165*), and the recently reissued JBL 4412mkII studio monitors (see *Ear Waxings*, p11). They say jour-

nalists shouldn't reveal their sources, but I'll tell you all of mine: SME Model 20A/V Gold/Dynavector XX-1 for LP vinyl, and the Acoustic Precision Eikos for CD.

In the wake of the Beat B-100, the Wazoo brought some finesse to the party, but for a while I missed the former's exuberance. However, it was not long before the greater Dane had captivated me with its organic, rich textures, and effortless resolution.

I would not rank it among the quickest or most dynamic of amps, but it offers a special quality of sound that reveals hidden subtleties in music, and brings performances all the way out into the room from the speakers, yielding an intimacy that is rare. Clearly it was happier to work with the more sensitive speakers, the JBLs: together, this pair revelled in dark backgrounds and superb presence. I enjoyed hours of fun, particularly with '70s vinyl. The Wazoo responded positively to the air provided from vinyl via the Michell Iso HR phono stage.

Those who set their watches by imagery, timing and dynamics might be disappointed by the Wazoo. Modern high fidelity qualities like these are not its strong suit. Rather, the Wazoo excels in the way it helps you forget about 'hi-fi'. This valve-like quality inspired me to simply play music long and loud.

It's important for every new hi-fi design to extend the possibilities of hi-fi music reproduction. But hi-fi is only a tool to help people enjoy music. If that music happens to be the magnificent Grand Wazoo — "...an oversize primitive-but-effective megaphone" according to the sleeve notes — then a musically attuned amplifier like the Wazoo is the ideal tool for the job. ▲

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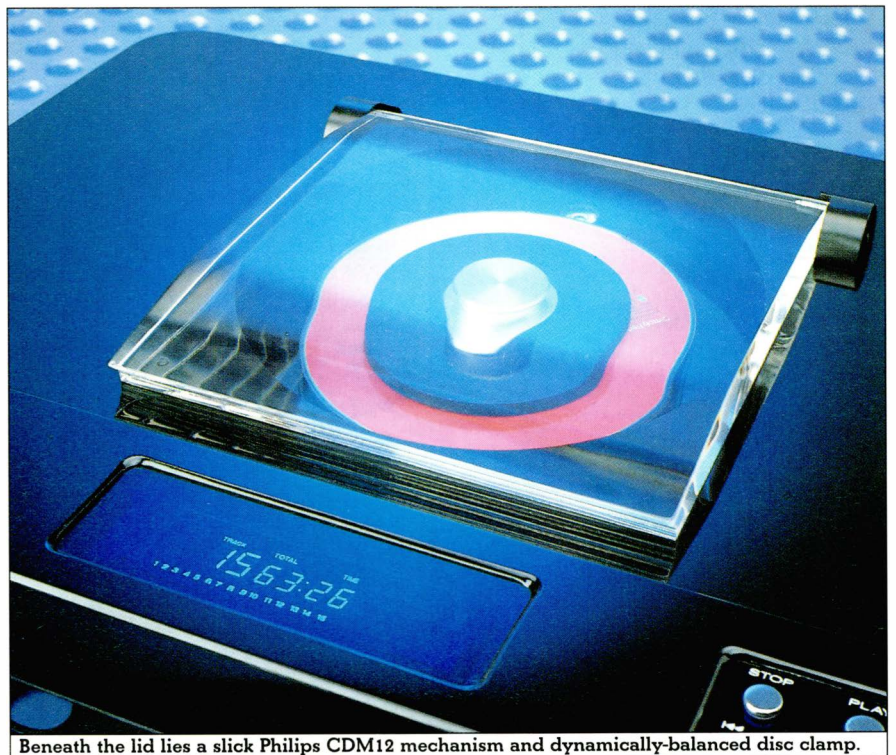
The first-ever CD transport and DAC from speaker specialist Rogers: how much more black could it be? **Alan Sircom** says: "None... but what colour is it?"

If you're a famous name in hi-fi, but specialise in loudspeakers, how do you diversify? For most companies, a sophisticated electronics R&D arm is likely to become a money-pit, from which there is no guarantee of producing a world-class product at the end of the day. It's a genuine problem with which many speaker manufacturers now grapple.

Rogers falls precisely into this pigeon-hole, even though it was known as an electronics manufacturer in days of yore. This time round it has effectively side-stepped a risky transition period by buying in the best brains for the task. The first non-speaker products since the days of the Cadet amplifier were two valve-integrated amplifiers, designed by the back-room boys who brought us the Audio Note Oto. The new Serie Cadenza CD player, CD transport and D/A converter — the latter pair on test here — have been designed along similar lines. Each is every inch a unique Rogers product, but members of this trio were designed and built in France, and carry the unmistakable stamp of a particular Gallic digital designer.

The presence of a top-loading mechanism doesn't narrow down the field much, but the use of a separate power supply for the transport mechanism, acres of black metacrylate and a separate 18-bit D/A converter all point to the design school of Pierre Lurné. Lurné, a craftsman of considerable note, cut his teeth working on the ultra-high-end Goldmund turntable project before going solo with his own range of digital and analogue sources. Pierre Lurné's own line of turntables, arms, CD players, transports and DACs are also available in the UK, imported by Kronos Distribution.

So a Lurné heritage is clearly manifested in Rogers' £2,699 SC-8t CD transport and



Beneath the lid lies a slick Philips CDM12 mechanism and dynamically-balanced disc clamp.

£1,899 SC-8m D/A converter. This is a three-box system for which the power supply is housed in a bluff plastic box with a toggle switch and red 'power on' LED. It connects to the transport using a frankly cheesy D-SUB connector cable borrowed from the computer industry, but I suppose fancy cabling here would be a waste, even if it might have served to reassure. That said, the top-loading transport mechanism is rather slick, with a Philips CDM12 disc tray and a dynamically-balanced, custom-fabricated metal-and-metacrylate disc-clamp.

At the front is a pair of adjustable and springy feet; a spirit level nestles in the transport recess, which is a very useful feature. One minor gripe, applicable almost uniquely to Lurné transport designs, concerns the horizontally-oriented blue-LED display panel directly in front of the transport. Unless you are standing right above the SC-8t, you cannot see any disc information at all.

Get yourself connected

Although transport and DAC have been designed with each other in mind, there is a

host of connections that are not common to both. The transport has Toslink optical, RCA-phono coaxial and AES/EBU balanced XLR digital outputs; while the 18-bit, Analogue-Devices-based D/A converter eschews optical altogether but proffers one more BNC electrical coaxial connection than offered by the SC-8t. Toslink optical is an option for the SC-8m, but both transport and DAC have an optional AT&T (ST) optical connection. Some users may opt also for a re-clock circuit à la Trichord.

Digital sources are selected using a large knob amidst the SC-8m's front panel. This is flanked by a host of red LEDs, and while aesthetically unmatched to the blue displays of the transport, they do elevate the unit's level of information provision above the norm for a humble DAC.

More choices must be made at the analogue end, as the SC-8m may incorporate a Class A balanced output (using a pair of XLR sockets) if the user is minded to pay extra. Even with standard PTFE insulated gold phono sockets, however, the claimed 2V RMS output seems more than sufficient.



Rogers Serie Cadenza This imposing, top-loading, two-box CD player cuts a dash in its black metacrylate and chrome-plated suit.

The transport may have springy feet, but the DAC rests upon lumps of solid metacrylate. Like its disc-spinning sibling, however, it is housed within a rigid, damped enclosure.

After a week's worth of non-stop warm-up, I hooked up the Rogers duo to my Meridian 502/557 pre/power amp combination, and made comparisons with both a Meridian 508.20 and my current Euro-fave, the superb Micromega Solo. Speakers, in the guise of Rehdeko RK115, stayed in the Francophile mode, but to avoid claims of national bias, I made reference to a pair of B&W 805. Both pairs of enclosures were occasionally augmented by a REL Q-100e subwoofer. Cables included DNM, Nordost SBM Reference and vdH The First.

Keep it in the family

Rogers seems intent to produce a 'family' sound all the way from source to speaker: one that is musically faithful and accurate right across the frequency range. It only strays very slightly toward the warm and rose-tinted end of the spectrum, but this doesn't detract from a basically lively nature. The transport and DAC may not be kings of rhythm, but they do James Brown no

disservice. There is a superior sense of detail; play a well-recorded CD and it sounds like someone just handed you the master tape.

The Rogers duo seemed to seek out the good in every silver platter. It strived to put a brave face on even the nastiest Northern Soul track, but that doesn't make it a simple warm-toned crowd-pleaser. Never once did it disgrace itself, even in the dubious company of my record collection. It even made a good fist of generating a kind of soundstage with the most mixed-about Cream records — and I mean those from both the '60s supergroup and the '90s Liverpool club.

So it's a philanthropic design, but also egalitarian in its outlook. Rock music gets the same treatment as jazz, classical or opera.

And if all of the preceding sounds like damning with faint praise, there'd be a grain of truth in such an accusation. This is a hugely competent CD player, very transparent, and because of that very difficult to criticise. Therein lies the rub, however, because it is also nigh on impossible to pin-point this player's strengths when its performance is pretty uniform across the board. Audiophiles who have developed eclectic tastes will not find a hook for their addiction, even if they find a natural

and even-tempered performance complements some CDs in their collection.

So, the \$64,000 question: why do I prefer the Micromega Solo? I'm not altogether sure. If ever two players were very closely matched, they would be the Micromega and the Rogers. In some respects, the Solo remains my Euro-fave for the very reason why the Rogers is so good — its absence of character. The Solo is easy to pin down, with a distinctive, pacey and earthy signature which is at once beguiling and frustrating. The Rogers outfit simply plays the music without comment or criticism. If I owned a Spice Girls CD — and I'm speaking *purely* theoretically here — I could play it on the Rogers rig but would fear the torrent of criticism from the Micromega. It would probably blow Gauloises smoke in my face.

Rogers has been smart with its first digital products. Their honest and tidy sound harmonises with the character of the company's speakers. If more speaker companies started making CD players this good, small CD manufacturers would have to start taking better care of their customers. But I just missed something to get my teeth into. ▲

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Instant Systems
Alan Sircom gets to grips with a pair of £300 separates systems. The question is, can you get real hi-fi for the price of a telly?

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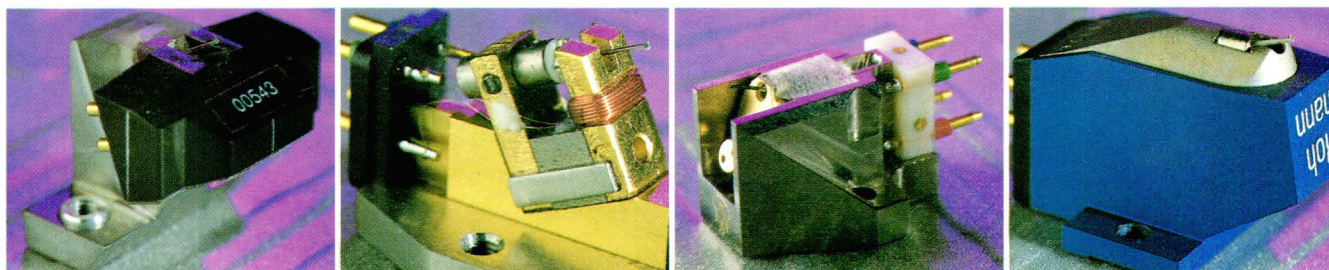
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Into the groove

Paul Messenger puts the needle to the record and tests eight high-end cartridges, priced from £500-£2,000.



HOW THE TESTS WERE DONE

It's more than a decade since I last did a group test of cartridges for *Hi-Fi Choice*. I'd cast the test discs into a dark recess after finishing my last ordeal with 100+ models, but the LPs in question had survived banishment gamely, and helped provide valuable extra insight into this month's very select group. Listening tests provide the final arbiter, and here we decided to use the Naim ARO tonearm, not only because of its fine sound quality, but also because the ability to lift off the complete arm-top quickly is a considerable boon when installing these very delicate and fragile cartridges. Naim loaned some additional arm-tops to facilitate easy comparisons. The main turntable, a modified Linn Sondek LP12, is supported on a combination of Mana and Townshend. Backup deck is an ARO-equipped Rega Planar 9. The main amplification system is Naim throughout, though we also used Linn's Linto/Kairn/Klout combo and Audiolab's delightfully versatile 8000PPA phono stage. The latter fed a Krell KAV-300i. Speakers are Rehdeko RK175 and flush-mounted Tannoy Westminster Royal dual-concentric drive units.

WHAT MUSIC DID WE USE?

The KLF: *The White Room* on JAMS LP006
Joni Mitchell: *Mingus* on Asylum AS 53 091
Tom Waits: *Rain Dogs* on Island ILPS 9803
Nirvana: *Unplugged* on Geffen GEF 24727
Leftfield: *Leftism* on Hard Hands HANDLP2D
Mendelssohn: *Symphony No3/LSO/Maag* on Decca SPA503
Grateful Dead: *Reckoning* on Arista DARTY9
The Chemical Brothers: *Dig Your Own Hole* on XDUSTLP2
Strauss: *Dancing in Old Vienna/LSO/Georgiadis* on Enigma K53577
 ■ Test discs were the 'classic' JVC TRS-1007mkII Frequency Response Test, and the Denon XL-7007-9 Audio Technical Records box set.

The offer was altogether too tempting. The chance to play with eight of the world's finest and most exotic vinyl pickup cartridges would be irresistible to any serious hi-fi nut. This is the cream of the crop (if not quite 'la crème de la crème', as several of the brands have even more extreme and expensive alternatives).

The test candidates cost a pretty packet, when you consider they'll be worn out in a few years' time. But they're an essential part of the audiophile lifestyle. Slip one of these into a good tonearm, at the front end of a high-class system, and you'll know straight away why vinyl is experiencing a revival. CD can never get this good!

Seven of our eight are so-called low-(or lowish-) output moving-coil devices, which is the accepted modus operandum for the serious high end. All require some degree of 'step up' if used with traditional amplifier phono inputs; though in practice the modern trend is to use separate standalone units for cartridge amplification and equalisation. Such a device passes a standard, line-level signal to the preamplifier. Grado's £1,000 Signature provides the high-output, moving-magnet alternative, making it slightly harder to make comparative judgements.

Exotic materials are a major *raison d'être* for these needles' exotic prices. There are diamond styli on all the cartridges, but their bodies are built from all sorts of other extreme materials. Titanium and wood are popular choices, but carbon fibre and nudity are also represented. If you paid attention during chemistry at school, you might remember something called Boron (rhymes with moron), but never had the faintest idea what use it could have. Today it's the popu-

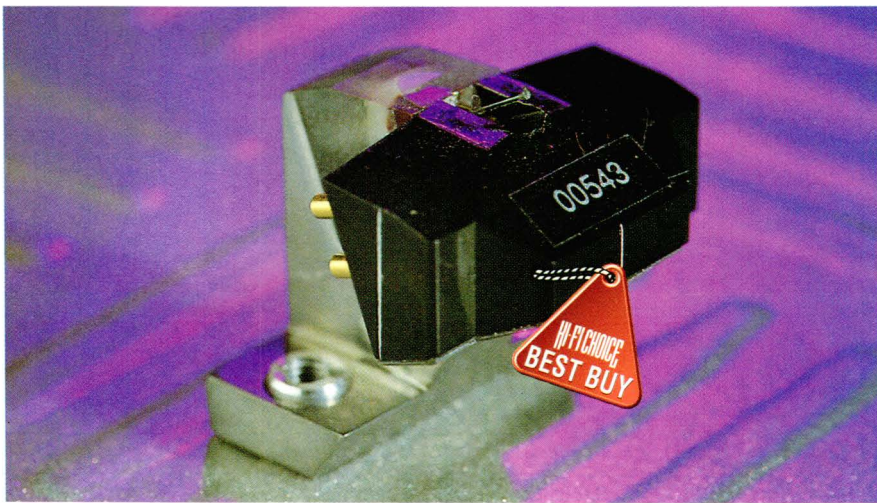
THE CAST LIST

MODEL	PRICE.....	PAGE
Clearaudio Signature.....	£1,495.00.....	p55
Dynavector Te-Kaitora.....	£1,698.00.....	p55
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Lyra Parnassus DCt.....	£1,895.00.....	p57
Ortofon Rohmann.....	£1,000.00.....	p57
van den Hul Frog.....	£1,500.00.....	p58
Wilson Benesch Carbon (less 15% trade-in)	£1,572.50	p58

lar choice for high-end cartridge cantilevers. "Ah! Boron..." you can say at the pub quiz.

I noticed not only silver but also gold wire in evidence, and special super-stiff, non-conductive ceramic elements in both body-work and motor structures. (The latter is the part that converts the mechanical energy abstracted from the LP into electrical juice for your preamp.) To achieve a desired result, the cartridge purveyor has at least as many options as those who make loudspeakers, in the selection of materials, compliances, damping materials and so on.

I was surprised by the ease with which I could hear differences between models. I should caution, however, that the sound of a cartridge is invariably heavily modified by its turntable, tonearm, and support furniture, not to mention the tonal balance of amplifier and speaker. At the high end of hi-fi, subtleties of component and system matching are major factors. Our tests provide a useful comparative perspective, but from an inevitably restricted viewpoint. The final choice is always better made with your own turntable and the help of an experienced, specialist dealer.



CLEARAUDIO SIGNATURE

Clearaudio is a small German cartridge manufacturer which concentrates on the high (and very high) end. I recall reviewing a Gamma for a *Choice Collection* about a decade ago, and being impressed then by both its qualities and its 'differentness'.

The Gamma is still available as the least expensive member of a range which includes this £1,495 Signature. Key features include 24ct gold wiring, a hollow boron cantilever, and a Trygon II stylus.

The shape is best described as a 'hammerhead', with a slim rearward section containing magnet and mounting lugs, while a wide front not only houses the stylus, cantilever and coils, but also the terminal pins. Some tonearms might require longer-than-usual headshell wires to accommodate this.

It's also a relatively heavy cartridge, the heaviest in our group by a small margin at 11-12g. Installation is a bit fiddly because separate nuts and bolts are used, but the stylus guard gives good security. Alignment is straightforward, however, thanks to a neat little line inscribed on the hammerhead side. The stylus-to-mounting-plate height is several millimetres greater than average here, which might pose clearance problems with some dust covers.

Output level is among the highest of the 'low output' types, registering only 10dB below the high output Grado model. The subsonic resonance has slightly higher damping than average, and hit a very sensible 10Hz in our medium-mass tonearm. The response traces are pretty well ordered, though there's a minor glitch at 800Hz, and a well-damped treble resonance across the 7.5-15kHz octave. Vertical/lateral separation is around 30dB over most of the range, dropping gently above 2kHz.

CLEARAUDIO SIGNATURE - VERDICT

SOUND ★★★★★
VALUE ★★★★★
PRICE £1,495

☑ A great all-round performer with fine dynamic vitality and a seductive midband intimacy.

✉ Audiofreaks, 15 Link Way, Ham, Surrey, TW10 7QT
 ☎ (0181) 948 4153

Sound quality

Barring a touch of 'edge' and brightness (presumably associated with that treble peak), the Signature sounds absolutely gorgeous. Voices have great presence and coherence, and a real dose of dynamic vitality. The dry, deep, clean bass helps dig a serious groove, and if surface noise is slightly obvious, there's an overall sense of intimacy and credibility in the midband which is very special indeed.

The most convincing all-rounder in the group, yet by no means the most expensive, Clearaudio's Signature is the obvious recipient of a Best Buy flag.

DYNAVECTOR TE-KAITORA

Long-established Japanese manufacturer Dynavector has been a *Choice* favourite down the years. Its new flagship, the £1,698 Te-Kaitora, is named after a Maori phrase for 'the discoverer'. (Dynavector New Zealand helped with the design.)

The most striking factor is its nudity. There's no bodywork at all here, just the magnet structure left open to the elements, albeit with the backing of a substantial flat titanium plate. There's good sense in doing this because bodywork, however exotically fashioned, is bound to add some degree of resonance coloration to the sound.

There's no stylus/cantilever guard either,

DYNAVECTOR TE-KAITORA - VERDICT

SOUND ★★★★★
VALUE ★★★★★
PRICE £1,698

☑ A real smoothie, but pricey. Worth checking out for its delicate laid-back transparency and low needle-talk.

✉ Pear Audio, 7 Prospect Place, Alnmouth, Northumberland NE66 2RL
 ☎ (01665) 830862

so several millimetres of very fragile, exposed, expensive and almost invisible boron-rod cantilever pokes out. Although it was perfectly straightforward, I have to admit I didn't enjoy the installation process.

The stylus is an Ogura Pathfinder, the wiring is silver, and the cartridge features Dynavector's proprietary magnetic tweaks — a 'flux dumper' coil on the front, and 'magnetic softening' via ferrous metal strips.

Weighing 8.8g, the Te-Kaitora has a relatively low (ie stiff) compliance, giving a lightly-damped subsonic resonance at a highish 14Hz in our medium-mass test arm, though it'll be happy in higher-mass arms, too. Output level is at the low end of our group's range: 16dB below that of the Grado.

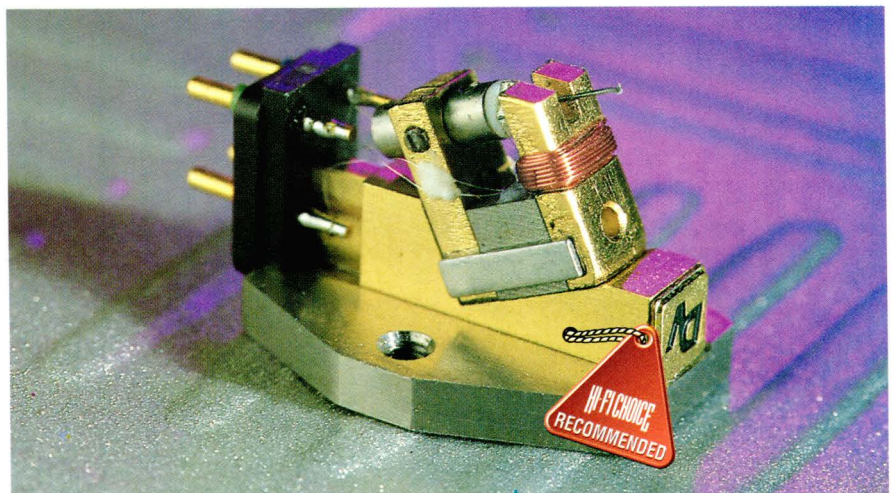
The response traces look very promising. There's no sign of a treble peak, although upper-mid output is a bit suppressed, and there are small glitches at 900Hz and 5.8kHz. Lateral/vertical separation is better than 30dB across most of the band up to 5kHz.

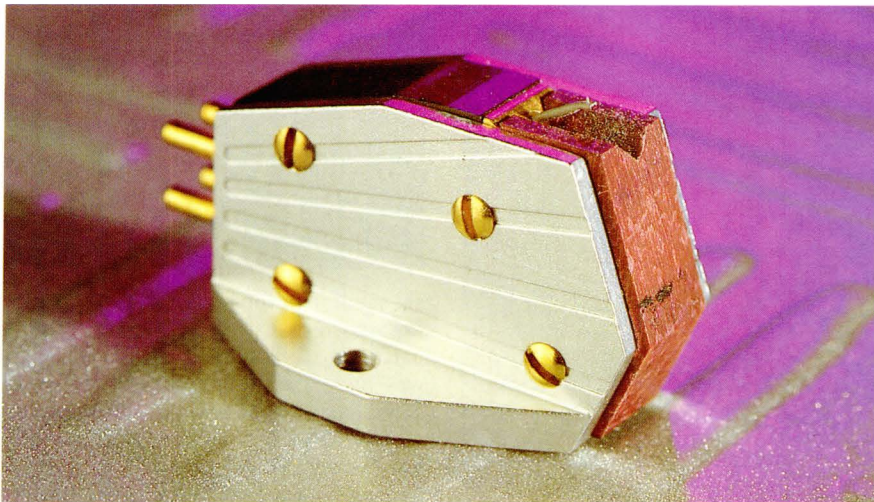
Despite the low compliance, trackability seemed fine, while needle-talk is exceptionally low, which is nice if you dislike dust covers and listen late at night.

Sound quality

I developed a very healthy respect for this delightfully smooth and transparent cartridge, but it took a day or three to fall in love with it. There's very little to criticise about the sound *per se*, save some lack of vividness and power. It's very delicate, with a wide dynamic range, but it is also rather laid back in presentation.

This is a real smoothie. The price is high, but it's well worth checking out if you're looking for laid-back transparency, and value the low level of needle-talk.





GOLDRING EXCEL VX

When I first opened the box, I thought there must have been a mistake. I was expecting a Goldring cartridge, yet inside the box lurked something that looked awfully like an Audio Note IO. Imitation is, of course, a form of flattery; and as it turns out the Excel VX is actually a very different design. It weighs around eight grams, whereas the IO was a serious heavyweight.

The sides are flat, parallel alloy plates, bolted together either side of the motor, with wooden sections filling the gaps. Those sides are then shaped to form a generous and strong mounting plate, with threaded inserts. The shape makes alignment pretty straightforward (especially the 'mirror test' used to ensure perpendicularity, necessary with a uni-pivot arm). A Vital PH stylus with 0.040x0.008 mm radii is fitted.

As a medium-mass cartridge, its compliance was just about right for our medium-mass tonearm, with a well-damped subsonic resonance bang on 10Hz. Output is generous by low-output standards, recording -11dB ref. the high-output Grado.

Response measurements give no cause for concern, though the upper midband could be a little stronger. There's a minor glitch at 800Hz, and while the treble looks encouragingly smooth, there's evidence of some unevenness in the lateral/vertical crosstalk trace.

Sound quality

In the assembled company, this Goldring is outclassed. That's no disgrace, of course, because it costs somewhere between a quarter and half the price of the other models assembled here. It might indeed be a

respectable performer among its direct price peers, but no way does it take on a giant-killer rôle here.

The bass does have a measure of drive and enthusiasm, but further up the band the Excel VX simply sounds thick, kludgy and imprecise. It gets into the groove well enough, but lacks dynamic tension further up the band: the top end sounds diffuse, sibilants smeary. In a group context, however, it's a dull and rather old-fashioned sort of sound, lacking the sort of precision and analysis available at higher prices.

GRADO REFERENCE

From one of the oldest cartridge manufacturers in the business, Grado's £995 Signature is at the top of the company's range, and differs dramatically from the others gathered for this report. It's beautifully built, and is presented in a solid hardwood body with matching, effective stylus guard.

Unlike the rest, this is a high-output, moving-magnet design which will connect directly to the phono input of any amplifier thus equipped, without the need for any step-up device. This fact will be particularly interesting to valve amp users, who usually employ a step-up transformer for low output cartridges.

Even by moving-magnet standards, Grados are unusual in two key respects. Most moving-magnet cartridges are

GRADO REFERENCE - VERDICT

SOUND ★★☆☆☆
VALUE ★★☆☆☆
PRICE £995

☐ Loads of tracking headroom, but treble is limited. A prospect for mid-oriented valve amp users.

✉ Goldring Products Ltd., 8 Greyfriars Road, Bury St Edmunds, Suffolk, IP32 7DX
 ☎ (01284) 701101

designed so that their inductance interacts with the amplifier input, to create a tuned resonance which enhances treble output (somewhat at the expense of treble quality). Grados have a comparatively low inductance, and are therefore unaffected by the capacitance of the amplifier input, and free from that tuned high-frequency resonance.

Grados also have virtually no internal low-frequency mechanical damping — the subsonic sweep shows a very lively fundamental resonance centred on a sensible 9Hz. This in turn puts a premium on the quality of the turntable and arm: any defects in either are likely to be magnified by the cartridge. If available, some arm damping is likely to be beneficial too.

The response sweeps reflect this model's unique mode of operation, showing a smooth trend but some relative lack of mid-band output, a broad treble peak 4-8kHz, and an early ultimate roll-off.

Sound quality

Sonically the Grado's strength is its midband, which is smooth and well ordered, with tracking security and headroom that is very comforting — somehow it seems less stressed than the moving-coil models here. The bass seemed deep and clean, if a bit defocused, though to be fair it might have benefitted from some arm damping. The slightly shiny treble is a disappointment, lacking the analysis and transparency of the top moving-coil models. Cymbals have a slightly artificial character, and consonants are a bit clipped.

The Grado lacks the bandwidth resolution of the low output models, but could make sense in a midband-oriented valve-amp system.

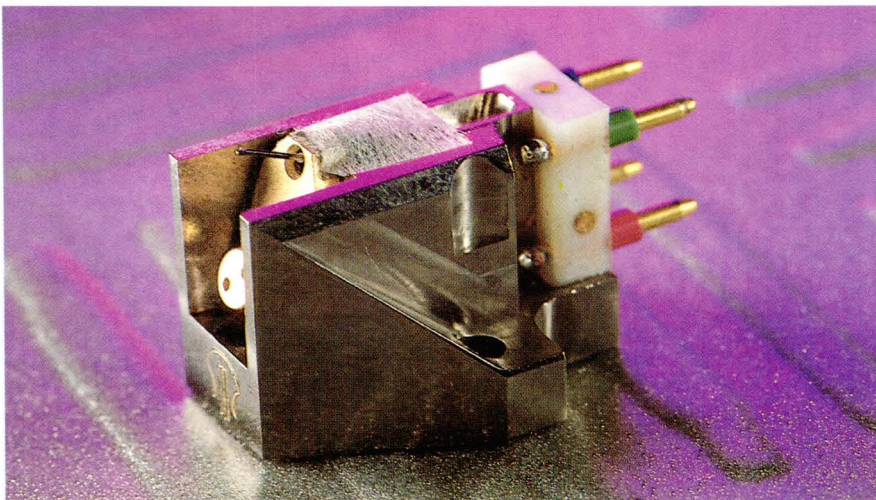


GOLDRING EXCEL VX - VERDICT

SOUND ★★☆☆☆
VALUE ★★☆☆☆
PRICE £525

☐ Good bass drive, but dull and imprecise higher up. An old-fashioned sound that falls short of the true high end.

✉ Goldring Products Ltd., 8 Greyfriars Road, Bury St Edmunds, Suffolk, IP32 7DX
 ☎ (01284) 701101



LYRA PARNASSUS DC:

A specialist high-end brand from Scan-Tech in Japan, Lyra has enjoyed considerable success with models like the £995 Clavis DC. For a few dollars more (well, £900 actually), Lyra has this altogether more dramatic and sexy-looking Parnassus, its motor clad in a milled block of titanium, and yours for a mere £1,895. That's a heck of a price for a cartridge, true; but of all the models assembled for this group test, the Parnassus is the one which looks most like a piece of jewellery, which serves to sweeten the pill a little. In terms of exotic ingredients, Parnassus takes some beating. The stylus is a tiny 60-micron-shanked Ogura PA line-contact, while the cantilever is diamond-coated, ceramic-reinforced aluminium.

The total cartridge weight of 10.5 grams was towards the top end of our group; installation and alignment were particularly straightforward. Output level is the lowest by a small margin, though still perfectly acceptable at -17dB below the high-output Grado. A relatively low compliance ensures that the fundamental subsonic resonance hits a close-to-ideal 10Hz in our medium-mass arm. Internal damping is about average here, so additional arm damping should not be necessary.

The response is well maintained up through the midband, registering just a slight glitch at 900Hz (though rather more modes are visible on the lateral/vertical crosstalk trace). Much more potentially troublesome is a broad treble peak, centred on 7.5kHz but detectable from 4kHz right up to 12kHz.

Sound quality

First listening impressions were very positive

LYRA PARNASSUS DC t - VERDICT	
SOUND	★★★★☆
VALUE	★★★★☆
PRICE	£1,895
☐	A real little jewel of a cartridge, with many good qualities, but handicapped by a rather-too-obvious treble peak.
✉	Path Premier, Unit 2, Desborough Ind Park, Desborough Park Rd, High Wycombe, Bucks HP12 3BG
☎	(01494) 441736

indeed. The Parnassus appeared to combine suitably kicking dynamics with wide-band smoothness and transparency. As the evening wore on, and I worked my way through a number of discs, the effects of that treble peak became more and more obvious — and, once noticed, more and more irritating. It's quite clean, but resolutely shiny in the way cymbals, sibilants and consonants are reproduced. If that's the down-side, there's no denying the exceptionally wide dynamic range, and a fine ability to resolve information deep down in the mix.

There's much to admire in the Parnassus, but the treble peak is unwellcome considering the very high price.

ORTOFON ROHMANN

Danish manufacturer Ortofon claims to have made the world's first moving-coil cartridges (in 1948), and has stuck firmly to that line of trade ever since. Even when it was virtually the sole representative of MC during the moving magnet-dominated '60s and '70s.

When improvements in turntables and tonearms started bringing the moving-coil principle back into favour near the end of the '70s, Ortofon was well placed to take advantage, and now produces complete ranges of both types of needle: from cheap magnetics up to (and beyond) this £1,000 Rohmann.

Named after Ortofon's late proprietor, it

ORTOFON ROHMANN - VERDICT

SOUND ★★★★★
VALUE ★★★★★
PRICE £1,000

- ☐ A class act in nearly every respect, with fine groove security and a very smooth, even-handed sound.
- ✉ Henley Designs Ltd, The Old Coach House, The Street, Crowmarsh Gifford, Wallingford, Oxon OX10 8EH
- ☎ (01491) 834700

features a pretty and purposeful-looking blue-anodised body, milled from solid aluminium. The 'Orto-line' nude stylus has a 100µm major radius to give an unusually extended line contact. This reduces groove pressure and therefore allows the security of a highish 2.5-gram tracking weight. A tapered aluminium cantilever connects to a carbon-fibre armature, wound with high (99.9999 per cent) purity silver wire.

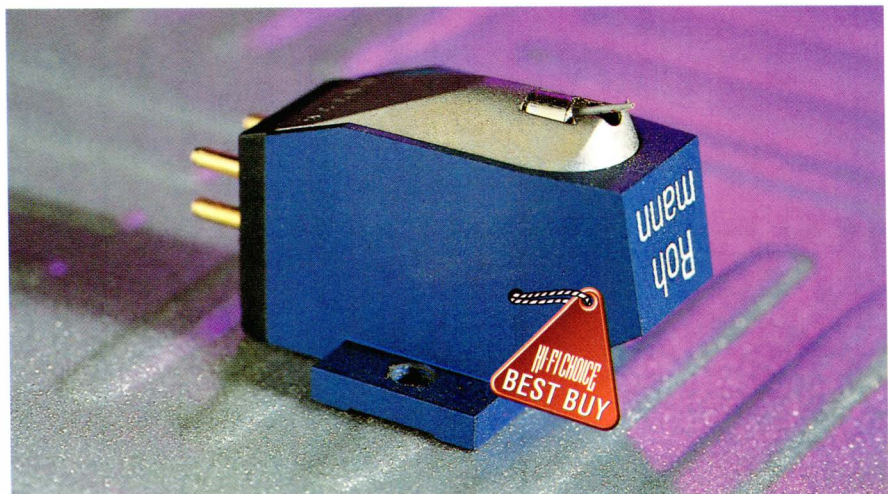
The Rohmann's weight is about average, while the compliance is quite stiff, resulting in a lightly-damped subsonic resonance at a highish 15Hz in our medium-mass test arm. Higher-mass arms should not be a problem, and light damping might be worth trying.

Specific output level is high by historic Ortofon standards, but fairly low in our group context, registering -16dB ref. the high output Grado. The responses are as close to neutral as any, with just a minor glitch at 900Hz and a suggestion of a very well-damped resonance at around 10kHz.

Sound quality

I suspect the security of that generous 2.5g downforce has much to do with the fine stability and solid coherence of this cartridge. Transparency and neutrality are its greatest strengths, with just the faintest top-end sheen in evidence. Dynamic range is excellent, giving clear information retrieval way down into the mix, though dynamics themselves do lack a little spark and vitality. The Rohmann is always laid-back in the way it goes about things. Ultimately, what it lacks in tension and drama, it makes up for in smoothness and delicacy.

A fine all-round performer at a more realistic price than most, the Rohmann deserves confident Recommendation.





VAN DEN HUL FROG

van den Hul's first cartridges came under *Choice* scrutiny in the mid-'80s, at around the time CD was getting under way. The brand was already well-known for the special stylus which Dutchman AJ van den Hul had developed previously.

AJ's top Grasshopper models are completely nude designs, but the Frog has a conventional body in vivid green. The basic cartridge looks to have been sourced from Benz in Switzerland; the body will be familiar to vdH acolytes. Its squared-off shape makes alignment easy, although the screw-together metal body might add resonant colouration.

All the internals, however, are to van den Hul's specifications, especially the crucial and specially-shaped Type 1S diamond stylus, upon which final tuning, adjustment and testing are carried out in Holland. Other features include a solid boron rod cantilever, and mono-crystal silver-wire coils.

The Frog differs from most of the other moving-coil models in a number of ways. It's amongst the lightest at seven grams, yet also has the highest output, just 9dB below the high-output Grado, which should ensure wide electrical compatibility. It also has the highest cantilever compliance, and the lowest recommended tracking weight (the two usually go together). The subsonic trace shows that the fundamental resonance is exceptionally well damped, but at a lower frequency than most (9Hz). Higher mass arms should, therefore, be avoided.

The basic response trace is well balanced, but there is a cluster of small resonances through the midband (500-550Hz, 850-900Hz and 1.4kHz). The mid-treble is just a shade prominent.

VAN DEN HUL FROG - VERDICT

SOUND ★★★★★☆
VALUE ★★★★★☆
PRICE £1,500.00

☐ Seems to control/suppress surface noise better than its rivals, this delicate and subtle performer has great charm.

✉ van den Hul UK, Unit 12, Imex House, 6 Wadsworth Rd, Perivale, Middx UB3 7JS
 ☎ (0181) 810 9388

Sound quality

The most remarkable characteristic of the Frog is the way it seems to ignore surface noise and groove damage, or at least offer superior suppression of it. That alone should commend it to those interested in classical vinyl, or given to scouring second-hand shops. Over and above that observation, the sound itself is very impressive, especially the delicate vocal clarity.

The top is a little shiny, the midband slightly coloured, and the bass could have more drive and authority, but the mid-bass is solid and tuneful, and the whole has a graceful and caressing quality which is very seductive. In all, the Frog is a delicate and subtle performer with great charm.

WILSON BENESCH CARBON

Wilson benesch is arguably the most exciting British hi-fi company to have emerged in the last decade, and is best known for the creative application of carbon fibre composites in various different parts of the hi-fi chain — from cartridges, tonearms and turntables through to loudspeakers.

The company sells several models of cartridge, all at fairly exotic prices, from the £786 Matrix up to the latest £1,850 Analogue. The £1,572.50 (including a 15 per cent trade in for any other MC cartridge) Carbon reviewed here features a very elegant

WILSON BENESCH CARBON - VERDICT

SOUND ★★★★★★
VALUE ★★★★★☆
PRICE £1,572.50 (inc 15% trade-in)

☐ Carbon fibre body contributes to a delightfully clean and open midrange, with a quick, lively and coherent sound.

✉ Wilson benesch, Falcon House, Limestone Cottage Lane, Sheffield S6 1NJ
 ☎ (0114) 285 2656

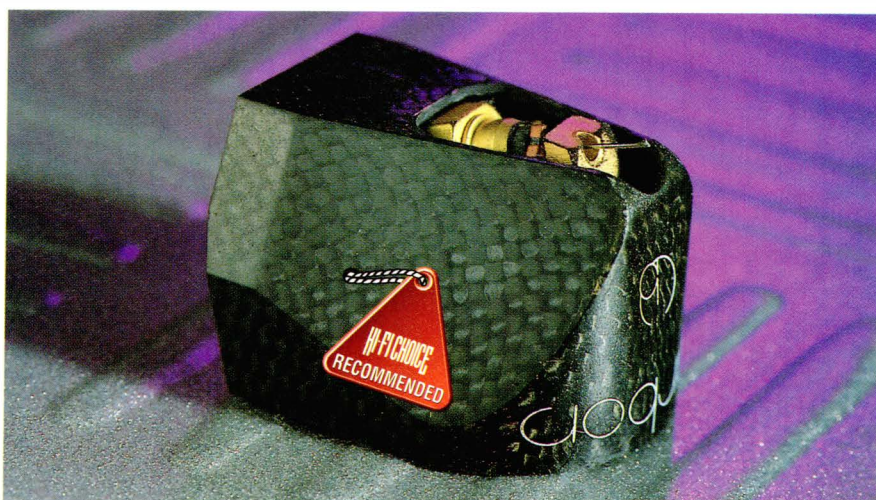
body fashioned from carbon-fibre composite, cladding a low-output, moving-coil generator sourced from Benz of Switzerland. While it looks very tasty indeed, the curvy shape means alignment isn't too easy, and there's no obvious way of attaching a stylus guard, so installation is rather an act of faith.

Other highlights include a solid-boron-rod cantilever, nude elliptical diamond, and sapphire armature. The seven-gram Carbon is among the lighter cartridges in our test group, and also has a highish specific output level: just 12dB below the high output Grado. The compliance is well judged to give a reasonably damped fundamental resonance at 10Hz in our medium mass arm — high mass arms are probably best avoided.

The response is exceptionally flat up to 1kHz. It avoids the slight loss of midband output often found elsewhere, but not a slight mechanical glitch at 850Hz. There's a trace of treble forwardness centred on 7-8kHz, but in that respect results are exemplary, achieving around 30dB vertical/lateral separation right up to 6kHz.

Sound quality

When used in anger the Carbon sounds beautifully open and remarkably free from voice colorations, to a degree probably only matched by the nude designs. The bass is clean, quick and dry, and offers fine timing, but the treble is just slightly shiny and sheeny in character. I can't help suspecting that the Carbon would make a particularly fine match for Wb's A.C.T. One loudspeaker (HFC 162), but it's just as impressive as an all-round performer in any context. Further vindication, I'd say, of carbon fibre's potential value as a hi-fi-manufacturing material.



CONCLUSIONS

I haven't had so much fun (with my hi-fi) for ages! After a decade in which I've barely changed a cartridge except to replace those that wore out, I was quite surprised at how easy it was to perceive differences between these eight very-high-class models. I was gratified, too, to find pretty good correlations between my sound quality notes and the basic measurements I carried out.

Any cartridge faces a major problem: how to cover the full three-decade-wide bandwidth needed for audio. High frequency resonances seem pretty well inevitable, and mid-band 'glitches' are difficult to avoid, too, as the frequency-response and vertical/lateral crosstalk sweeps showed. Not surprisingly, the success with which these are controlled is very closely linked to the cartridge's sound quality.

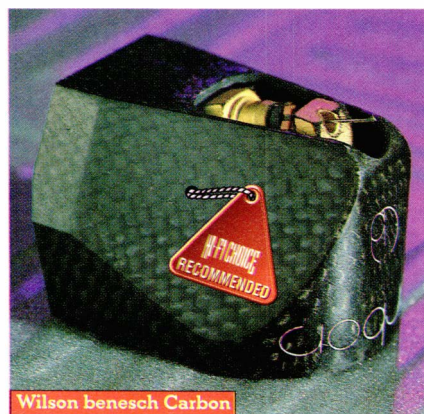
The subsonic resonance of the arm and cartridge is an important factor, too. And



Clearaudio Signature



Goldring Excel VX



Wilson benesch Carbon

there are wide variations between models, both in frequency (a function of compliance and mass) and in self-damping properties. The Naim ARO arm proved a good all-round match, but some cartridges might have worked better with alternatives. The Grado could have used a bit of damping, for example; while the vdH might have been more at home in a lower-effective-mass arm.

Relative output level was another parameter that correlated with sound quality. Our listening tests tended to favour the higher-output types, though whether this is an absolute finding, or one specifically related to our test system, is difficult to say.

Winners and losers

Taking everything into account, two models stand out for Best Buy recommendation. Some might argue that no cartridge costing £1,495 should carry a BB flag, and I have some sympathy with that view, but there's no doubting the fine balance of qualities shown by the **Clearaudio Signature**. The only real complaint is that installation is difficult, and the total height of the cartridge is much greater than average. This might prove awkward with some turntables, for example regarding dust-cover clearance. But the combination of stunning midband clarity and vigorous dynamics is rare and hard to resist.

At £1,000, the **Ortofon Rohmann** is quite a bit cheaper than the group average, yet delivers a sound that's close to the best at any price. For sheer transparency and neutrality it's pretty hard to beat, though you might find it a little reluctant to grab the music by the scruff of the neck, and force the listener to pay full attention.

Three other models earn Recommended flags. I found myself alternatively blowing hot and cold over the £1,698 **Dynavector Te-Kaitora**. The nude construction undoubtedly contributes to a beguiling transparency right across the broad midband, which is quite delightful with acoustic instruments, but heavier rock material seemed less happy, in dynamics and timing for example.

The **Wilson benesch Carbon** carries a £1,572 price-tag, though a 15 per cent discount is available to those trading in an old moving-coil cartridge. The Carbon is just a bit light and dry at the bottom, and a little shiny towards the top, but the midband is beautifully clear and open, with an exceptional dynamic range — thanks presumably to the carbon-fibre bodywork.

The **van den Hul Frog** is not cheap at £1,500, considering the relatively prosaic nature of its body and generator, but this cartridge's crowning glory and *raison d'être* is the famous van den Hul tip, which somehow manages to read the music and ignore any groove damage much more effectively than its rivals. The midband might not be the cleanest around, but anyone heavily into classical vinyl, or hooked on picking up secondhand discs of variable quality, would do well to check this one out.



van den Hul Frog



Grado Reference



Dynavector Te-Kaitora

The **Goldring Excel VX** definitely looks the business, and must be very tempting at a relatively modest £525. Sadly it's no giant-killer. For all I know it might be the best cartridge around the £500 level, but in this much more exalted company it was clearly well out of its depth.

Perhaps it was a little unfair to include the moving-magnet **Grado Reference** (£995) in this otherwise moving-coil test group, and it's equally true that this undamped model was probably least-well-suited to our test equipment. Direct comparison is difficult, but the top-end limitations are real enough, as the test discs confirmed.

The **Lyra Parnassus DCT** was the most expensive in our group at £1,895, arguably also the best-looker, but proved a sonic disappointment. A strong first impression soon gave way to some irritation at the all-too-obvious treble peak, overriding whatever good qualities were heard elsewhere. ▲

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Field 0121 622 2323 Richer Sounds 0121 643 1516 Sevenoaks Hi-Fi 0121 233 2977 Superfi 0121 631 2875 BISHOP'S STORTFORD The Audio File 01279 508576 BLACKBURN Cryers 01245 51842 Romers Hi-Fi 01254 887799 BLACKPOOL Practical Hi-Fi 01253 300599 BLOXWICH Sound Academy 01922 473499 BODMIN E.T.S. 01208 75579	BOLTON Cleartone 01204 531423 Practical Hi-Fi 01204 395789 Sound & Vision 01204 701711 BOURNEMOUTH Movement Audio 01202 529988 Suttons 01202 555512 BRACKNELL B&B Hi-Fi 01344 424556 BRADFORD Erricks 01274 309286 BRENTWOOD Audio T 01277 264730 Hi-Spek Electronics 01277 228303 BRIGHTON Hill's Sound & Vision 01273 418006 Richer Sounds 01273 673333 Sevenoaks Hi-Fi 01273 733338 The Powerplant 01273 775978 BRISTOL Audio Excellence 0117 926 4975 Paul Roberts Hi-Fi 0117 942 9370 Richer Sounds 0117 973 4367 Sevenoaks Hi-Fi 0117 974 3727 BROMBROUGH CROSS Peter's Hi-Fi 0151 344 1874 BROMSGROVE Spains 01527 872460 BURY ST. EDMUNDS Sevenoaks Hi-Fi 01284 753776 CAMBERLEY Audio T 01276 685597 CAMBORNE E.T.S. 01209 712344 CAMBRIDGE The Audio File 01223 368305 University Audio 01223 354237 CANTERBURY Canterbury Hi-Fi 01227 765315 CARDIFF Audio Excellence 01222 228585 Richer Sounds 01222 465654 Sevenoaks Hi-Fi 01222 472899 CARLISLE Practical Hi-Fi 01228 44792 Sevenoaks Hi-Fi 01228 590775 CASTLEFORD Eric Wiley Hi-Fi 01977 556774 CHANDLERS FORD Hampshire Audio 01703 252827 CHOLMSFORD Richer Sounds 01245 355666	CHELTENHAM Audio T 01242 583960 Sevenoaks Hi-Fi 01242 241171 CHESTER Audio Excellence 01244 345576 Peter's Hi-Fi 01244 319392 CHIPPENHAM JD Stereo Centre 01249 654357 CHORLEY Monitor Sound 01257 271935 CONGLETON Hi-Fi Showrooms 01260 280017 COVENTRY Frank Harvey Hi-Fi 01203 525200 Superfi 01203 223254 CREWE Cloughs A.V. 01270 257030 CROYDON Audio Tech 0181 680 1177 Richer Sounds 0141 248 2857 Glasgow Audio 0141 332 4707 Hi-Fi Corner 0141 248 2840 James Kerr 0141 226 5711 Richer Sounds 0141 226 5551 GLoucester Audio Excellence 01452 300046 Sight & Sound 01452 503691 GODSTONE Surrey Hi-Fi 01883 744755 GUILDFORD Rogers Hi-Fi 01483 561049 Sevenoaks Hi-Fi 01483 36686 HAILSHAM Smythe & Barrie 01323 840550 HALIFAX Huddersfield Hi-Fi 01422 366832 HARROW Harrow Audio 0181 863 0938 HASTINGS Adams & Jarrett 01424 437165 HELSTON E.T.S. 01326 573285 HEREFORD English Audio 01432 355081 HIGH WYCOMB B&B Hi-Fi 01494 535910 The Sound Gallery 01494 531682 HOUNSLOW Musical Images 0181 952 5535	EDINBURGH Bill Hutchinson 0131 220 0909 Hi-Fi Corner 0131 2201535 Hi-Fi Corner Select 0131 556 7901 Richer Sounds 0131 226 3544 ENFIELD Audio T 0181 367 3132 Sevenoaks Hi-Fi 0181 342 1973 EPPING Chew & Osborne 01992 574242 EXETER Audio Excellence 01392 491194 EXMOUTH Exe Video 01395 278 558 Laws 01395 272838 FALKIRK Hi-Fi Corner 01324 629011 GATESHEAD Lintone Audio 0191 460 0999 Lintone Audio 0191 477 4167 GLASGOW Bill Hutchinson 0141 248 2857 Richer Sounds 0181 667 1100 Sevenoaks Hi-Fi 0181 655 1203 Spaldings Hi-Fi 0181 654 1231 Zebra 0181 688 2093 DARLINGTON Hi-Fi Experience 01325 481418 DERBY Superfi 01332 360303 DEVIZES Rutters Hi-Fi 01380 722268 DUBLIN Hi-Fi Corner 01671 4343 Richer Sounds 01671 9666 The Sony Centre 01667 0990 DUNDEE J.D. Brown 01382 226591 W.M. Coupar 01382 229588 DUNSTABLE Technosound 01582 663297 EASTBOURNE Smythe & Barrie 01323 729192 EAST GRINSTEAD Audio Designs 01342 314569 EDGWARE Musical Images 0181 952 5535	HUDDERSFIELD Huddersfield Hi-Fi 01484 544668 HULL A Fanthorpe 01482 223096 Superfi 01482 324051 Zen Audio 01482 587397 ILFORD Audio T 0181 518 0915 PRC Hi-Fi & Video 0181 514 7449 INVERNESS The Music Station 01463 225523 IPSWICH Eastern Audio 01473 217217 KETERING Classic Hi-Fi 01536 310855 KIDDERMINSTER MAX 01562 822236 KINGS LYNN Martins Hi-Fi 01533 761683 KINGSTON UPON THAMES Fidelity 0181 943 3530 Richer Sounds 0181 549 9999 Martin-Kleiser 0181 400 5555 M. 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Coupar 01738 634809 PETERBOROUGH Audiovision 01793 352752 Sevenoaks Hi-Fi 01733 897697 The Hi-Fi Company 01793 341755 PLYMOUTH The Hi-Fi Attic 01752 669511 Richer Sounds 01752 222256 POOLE Movement Audio 01202 730865 PORTSMOUTH Now That's Hi-Fi 01705 811618 Now That's Hi-Fi 01705 811230 PRESTON Audio Excellence 01772 253057 Practical Hi-Fi 01772 883958 Sevenoaks Hi-Fi 01772 825777 PRESTWICH Richer Sounds 0161 773 0333 READING Audio T 0118 958 5463 B&B Hi-Fi 01734 583730 Richer Sounds 01734 591111 Sevenoaks Hi-Fi 0118 9597768 Sony Centre 0118 950 0350 REDCAR MSV 01642 494999 RICHMOND Riverside Hi-Fi 0181 892 7613 Richer Sounds 01684 299109 ROSSDALE Cryers 01706 216305 SAFFRON WALDEN Chew & Osborne 01799 523378 SALE Hi-Fi Stereo 0161 973 5577 SALISBURY Salisbury Hi-Fi 01722 322119 SCARBOROUGH Audio One 01723 355654	SEVENOAKS Richer Sounds 01743 456573 Sevenoaks Hi-Fi 01732 459555 SHEFFIELD Audio Images 0114 273 7893 Moorgate Acoustics 0114 275 6048 Richer Sounds 0114 266 1616 Sevenoaks Hi-Fi 0114 255 5861 Superfi 0114 272 3768 SHREWSBURY Creative Audio 01743 241924 Shropshire Hi-Fi 01743 232317 SLOUGH Fraser's Hi-Fi 01753 520244 SOUTHAMPTON Richer Sounds 01703 231311 Sevenoaks Hi-Fi 01703 337770 Creative Audio 01703 228434 ST. 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1994



Best Interconnect & Highly Recommended Speaker Cable

1995



Best Interconnect & Best Speaker Cable

1996



Best Speaker & Highly Recommended Interconnect

1997



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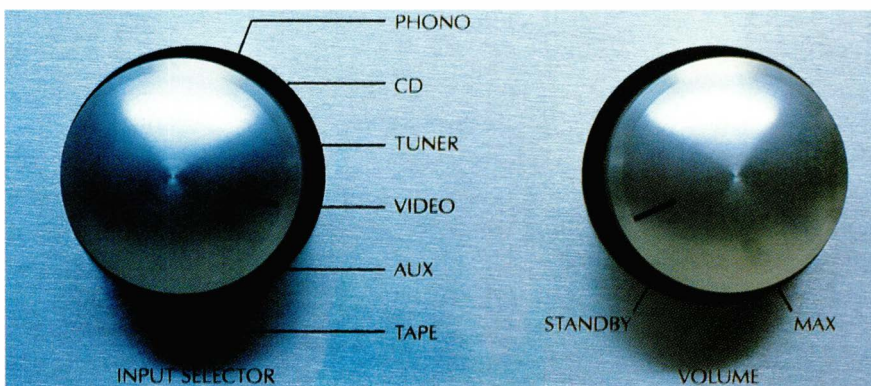
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To Infinity And Beyond!

Alvin Gold (listening tests) and Paul Miller (lab tests) grapple with the latest amplifiers priced from £450 to £1,300.



While our last amplifier group test (*HFC* 171) focused on models priced from £130 to £300, this contest sets its sights on more costly designs. And almost all of our candidates are single-box integrated amplifiers. Exceptions include the Alchemist Kraken, a two-box integrated in which all the audio circuits are in one box, the mains transformers in another. Another, the Technics SU-A900DII, could be described as a hybrid, a half-way house between integrated and separate pre/power amplifiers. It comes in two boxes, but has a solitary power supply housed in the power amp section. It is also the least costly in the group, remarkably since hi-fi component boxes are a major cost factor. The final exception is from Musical Fidelity, which

has supplied a true pre/power amplifier with monoblok power amps, from its novel X-Series range. This family of products has unique styling, and is unusually flexible thanks to a number of matching products which can add functionality to the basic bare-bones rig we tested.

The market consists predominantly of one-box amplifiers at these prices, which

represents a swing back from a situation prevailing a few years ago. Other changes have been triggered by European regulations aimed at electrical safety and RFI performance, namely the dreaded 'CE' mark which all new products must bear.

When it comes to features, most of our candidates exhibit a trend towards increasing minimalism. Only the Technics has tone controls, while the Musical Fidelity provides the option of them with its X-TONE module. Headphone sockets are also becoming rarer, which seems a shame, but phono stages continue to remain widely available — if not as a standard part of the product, then often as a reasonably affordable add-on. The quid pro quo is that an increasing number of amplifiers have remote control, and many models have preamplifier outputs, which can be used with same-make power amplifiers of appropriate input sensitivity for sound-enhancing bi-amplification purposes. *AG*

HOW THE TESTS WERE DONE

Our 14 amplifiers were subject to a full battery of tests, including a close physical examination, unsighted panel-based listening tests in a high-grade system, hands-on listening using a range of speakers and source components, and a computerised measurement test programme. Each amplifier was run in and warmed up prior to being auditioned. Once again, it is worth stressing that the *Hi-Fi Choice* test programme is by far the most searching battery of tests that any magazine employs to judge high-fidelity components.

Panel testing was conducted over a period of two days, and included a number of repeats, with no panel member knowing the identity of the equipment on test. Volume levels were carefully equalised between test runs. The system used for these tests included a Krell KAV-300cd CD player and Tannoy D500 loudspeakers. Cables included Red Dawn from Nordost. The hands-on listening was broadened to include a number of other loudspeakers, including the Tannoy D900 (a gargantuan, wide-bandwidth loudspeaker), Mirage OM-6 (a floor-standing bipole with an active bass section), and TDL Cheviots CF300 (another floorstander). Other source components used included a Meridian 508 CD player. A Classé CAP-100 amplifier was used as a point of reference.

WHAT MUSIC DID WE USE?

Handel: *Chaconne in G Major* HWV428 (Murray Perahia) on Sony SK62785.

Afro Celt Sound System: *Saori/Free from Afro Celt Sound System/Volume 1 Sound Magic* on Real World Records CDRW61.

Jennifer Warnes: *Somewhere, Somebody from The Hunter* on Private Music 261 974.

Mozart Finale: *molto allegro* from *Serenade in B Flat for 13 Wind Instruments* K361 (Wind Soloists of the Orchestra of the Age of Enlightenment, dir. Anthony Halstead) on BBC Music cov. disc Vol VI NP 2.

Dohnányi: *Scherzo* from *Symphonic Minutes Op. 35* (Matthias Bamert/BBC Philharmonic Orchestra) on Chandos CHAN 9455.

Various other titles used during hands-on listening sessions.

THE LISTENING PANEL

Our thanks for the skills and valuable time contributed by our listening panel, which comprised David Inman (The Audio Marketing Department), Keith Haddock (REL), Julian Maddock (Mission), Jonathan Jordan (B&W Loudspeakers), Kevin Edwards (Cable Talk), Steve Cross (Ruark) and Jason Kennedy (*Hi-Fi Choice*).

THE CAST LIST

MODEL.....	PRICE	PAGE
Alchemist Kraken	£579.00	71
Audio Analogue Puccini	£450.00	64
Audiolab 8000LX	£469.90	66
AVI S2000MI	£999.00	81
Bryston B60.....	from £1,280.00	83
Credo 702	£850.00	84
Densen Beat B100	£649.99	73
Electrocompaniet ECI-2	£995.00	86
Magnum Class A SE	£795.00	88
Musical Fidelity X-PRE/X-A50	£739.97	75
Myryad MI-120.....	£599.95	77
Pioneer A-07	£999.95	89
Talk Electronics Storm 2	£649.95	79
Technics SU-A900DII	£499.95	68



Alchemist Kraken p71



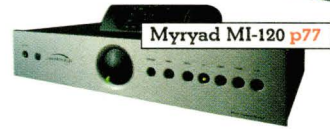
Audio Analogue Puccini p64



Pioneer A07 p89



M.F. X-Pre/X-A50 p75



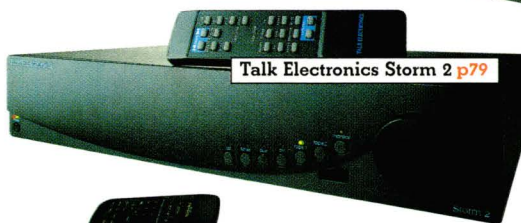
Myryad MI-120 p77



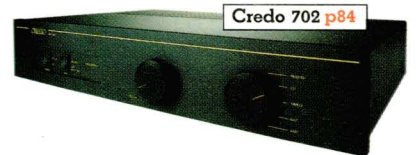
AVI S2000MI p81



Bryston B60 p83



Talk Electronics Storm 2 p79



Credo 702 p84



Technics SU-A900DII p68



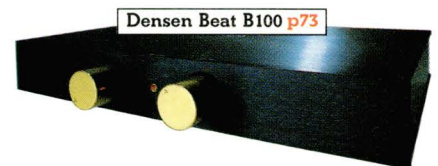
Electrocompaniet ECI-2 p86



Magnum Class A SE p88



Audiolab 8000LX p66



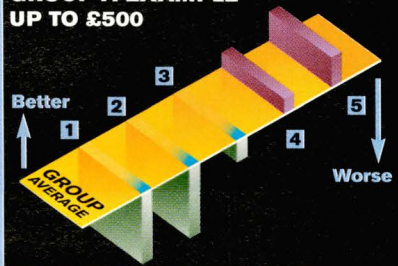
Densen Beat B100 p73

UNDERSTANDING OUR BAR-GRAPHS AND GROUP AVERAGES

There will be significant differences between the cheapest product in our test and the most expensive. For this reason we always segregate our test candidates into two or more categories based on price. Our aim is to assess every product's performance in the context of its closest rivals.

Each lab-report panel is colour-coded according to the key given below:

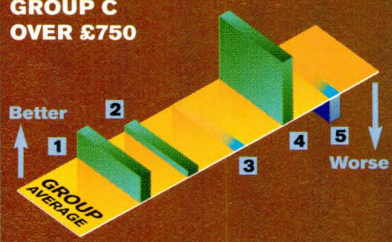
GROUP A EXAMPLE UP TO £500



GROUP B £500-£750



GROUP C OVER £750



UNDERSTANDING OUR BAR-GRAPH MEASUREMENTS

The measurements behind *Hi-Fi Choice's* unique bar-graphs are provided by our Technical Editor, Paul Miller, using both GPIB-controlled measurement hardware and his own, award-winning, PC-based Virtual Instrument software. Each bar-graph value is derived from a weighted statistic of several key measurements and is displayed relative to a notional zero per cent which represents the group average for that particular category.

1 Dynamic Power Output

A measure of power up to one per cent distortion under realistic, music-like conditions, using a brief (20msec) transient signal and a model eight Ohm speaker load.

2 Speaker Load Tolerance

This indicates how ably the amplifier maintains a given level of performance into progressively lower-impedance and difficult speaker loads.

3 Audible Distortion

Rather than quote a single figure for distortion at one frequency and level, this bar value represents a measure of distortion and its consistency across both the whole audio band and the amplifier's entire dynamic range.

4 Noise

This is a direct representation of the amplifier's A-weighted Signal-to-Noise (S/N) ratio at one Watt output into a model eight Ohm load.

5 Susceptibility to RFI

Various forms of Radio Frequency noise can induce audible, dynamic variations in the amplifier's S/N ratio. A susceptibility to this effect is demonstrated by a negative-going bargraph.

TEST INNOVATOR OF THE YEAR

Our Technical Editor, Paul Miller, has been awarded Test Innovator of the Year by *Test* magazine, the leading European journal of the test and measurement industry. This gong came in recognition of Paul's Jitter Measurement Suite, as used to test CD players for *Hi-Fi Choice*.

test
The European Test Industry Journal

Audio Analogue Puccini

The name of Audio Analogue is new to these shores. I can tell you that it is 'handcrafted in Italy', that the Puccini SE has been on sale for a few months, and that the non-SE models boast a single transformer where the dual mono SE uses two. The Puccini is the basic model in a multi-faceted range, which has been designed along purist lines: no tone controls, no speaker switching. Uniquely, however, the Puccini has the neatest 'idle' facility I have ever encountered: it operates when the volume control is set to minimum. Older readers may remember amplifiers with on/off switches incorporated into their volume controls. The same thing happens here but there is no click, and rather than the mains power supply being connected and disconnected, here there is only transition from a 'standby' to an 'active' state.

The amplifier is otherwise conventional in layout, but the standard of finish is well above average. The excellent turned-alloy controls and thick panel extrusion are the kind of touches you might expect only at much higher prices. Claimed power output is a little down on group average, at 40 Watts into eight Ohms on paper, though it is said to almost double into four Ohm loads, to about 72



Watts.

The Puccini is also fitted with an MM/MC phono input, though load-switching involves getting your hands dirty inside the case. The line inputs have a claimed 50 kOhms input impedance.

Sound quality

"Real electricity at last, and at such low cost! Sounds faster, more dramatic and has better dynamics (than previous models)," was the verdict of one panellist after the Afro Celt track. He also noted a lot more activity in the treble than had been apparent before. Another described the same piece as "very detailed"; that it "takes a firm grip on the music, and has great flourishes of authority". A third talked of the "explicit, articulate bass", and that it sounded "bigger, more exciting and lively". Unlike some other amplifiers that made a good job of the Afro Celt track, the Puccini continued to deliver at a slightly less impressive but still credible level with less frenetic music designed to stress more subtle performance elements. The only criticisms were centred on a loss of subtle detail and demeanour: in the Handel, for example, the Puccini was felt to be "jangly....(and it did) not do the system any favours"; but a second listener described the

same track as "very sweet, detailed and involving", though he also commented on the presence of some colorations.

The frenetic quality was noticed in the hands-on sessions too, but this did little to detract from a clean, surprisingly punchy and articulate presentation. This was a real wolf in sheep's clothing, and one of the most enjoyable amplifiers in the test. I believe this impression arises from a tuneful and powerful bass, upfront, well-focused imagery, and enough resolution to paint a clear picture with any half-decent recording. Be warned, though: it doesn't suffer poor transcriptions gladly. The amp worked well with a range of speakers, though it failed to set the big Tannoy D900s alight.

Conclusion

It is always a pleasant surprise when a newcomer with no known pedigree swoops to the front of the field on its first outing. The Puccini is everything a low-cost amplifier should be, and unusually well presented. The real secret of its success, however, is its bold, engaging and crystal-clear sound quality. Best Buy. AG

VERDICT

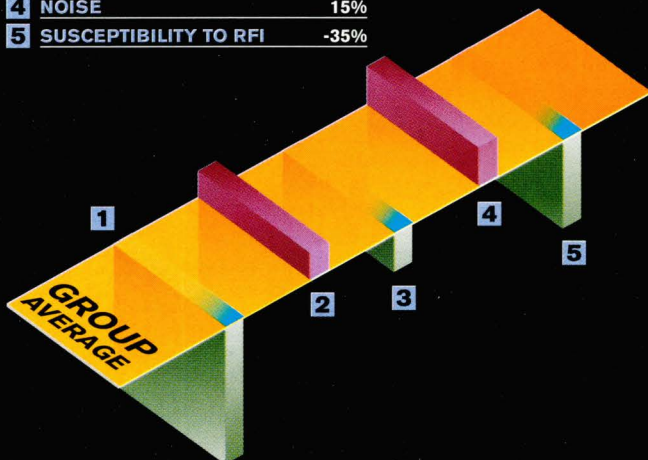
SOUND ★★★★★☆
VALUE ★★★★★★
PRICE £450.00

📄 Bold, pacy and crisply-defined sound are the hallmarks of this well-built amplifier. The best surprise of all is the price.

✉ UKD Distribution, 23 Richings Way, Iver, Bucks SL0 9DA
 ☎ (01753) 652669

HOW IT COMPARES

1	DYNAMIC POWER OUTPUT	-55%
2	SPEAKER LOAD TOLERANCE	10%
3	AUDIBLE DISTORTION	-15%
4	NOISE	15%
5	SUSCEPTIBILITY TO RFI	-35%

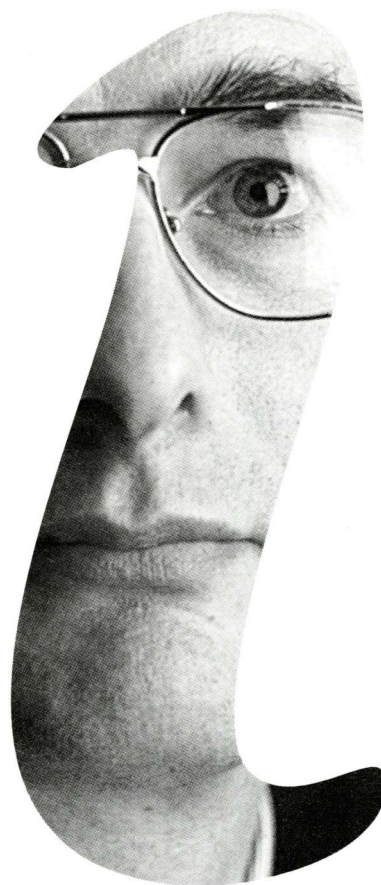
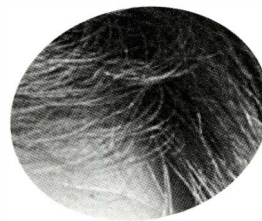


THE LAB REPORT

Turn the volume control below -85dB, and this amplifier immediately drops into standby mode. It's a clever idea in which standby and mute facilities are combined in one hit. There's an increase in odd-order distortion, from 0.002 to 0.015 per cent as output rises from 1W/8 Ohms to two-thirds output. However, as the amplifier is driven hard, at least distortion remains broadly consistent through bass, mid and treble. This is a good sign, as is the low 0.028 Ohm output impedance, the easy-going 50 kOhm input impedance, the flat response and the wide 86.5dB A-wtd S/N ratio (re. 1W/8 Ohms).

Furthermore, though there's a distinct lack of any dynamic headroom (+0.5dB = 49W into 8 Ohms) this is at least partially offset by the amplifier's stiff power supply, which offers a moderate tolerance of difficult speakers. Nevertheless, AA's literature suggests speakers no lower than 4 Ohms should be connected and, in practice, this is wise advice: the Puccini offers a maximum dynamic output of 49W/74W/91W/84W into 8/4/2/1 Ohm loads, respectively. This is equivalent to a current reserve of 8.7A over 10msec or 10A over 5msec. There's some mild susceptibility to RFI but, otherwise, the Puccini should prove solid enough with sympathetic ancillaries. *PMI*

This man can't
believe what he's
hearing...



Audiolab 8000LX

In November last year, Audiolab's parent company, Cambridge Systems Technology, was acquired by the TAG/McLaren group. Time will tell whether this partnership will be as radically fruitful as the publicists have suggested — in the meantime the 8000LX provides an incremental degree of 'new product' interest.

This is the new budget-price, entry-level model, which has lost none of the house styling cues, and looks exactly like another logical addition to the 8000 family. As usual, you notice attention to detail: packaging and engineering can't be faulted. Front-panel controls are limited to those for volume, input (listen) and recording source. There are three line and three tape circuits (video, tape 1 and tape 2), an arrangement that provides monitoring of either tape circuit, or tape-to-tape dubbing in either direction. There is a claimed 600 Ohm preamplifier output and a power amp input, though to activate this your dealer will have to wield the tin snips internally. An optional £15 module drives outboard DC-coupled amplifiers (like Audiolab's own) to prevent turn-on thumps. A headphone socket is fitted. Mute



and power LEDs complete the front panel furniture, and Deltron speaker terminals are fitted at the back. (Be prepared to invest in new plugs for existing speaker wires.) One surprise is that the 8000LX is Class II double insulated, and doesn't require earthing via the mains plug.

The 8000LX is rated at 60 Watts per channel into eight Ohms. Input loading is allegedly 20 kOhms on all inputs, which could result in treble loss with high output impedance CD players connected up using capacitative cables.

Design notes supplied with the amp talk in terms of maximising sound quality through adoption of a simple 'straight line' signal path. The preamplifier electronics are based on the Audiolab 8000A (HFC 140), and the power amplifier borrows its DC-coupled circuit from the 8000S.

Sound quality

The panel score slightly over-stated the case for the defence of an amplifier which, on the whole, was less than enthusiastically received. Some of the complaints concerned a loss of immediacy and of focus, others concerned blandness (read: loss of resolution) in the extreme treble. There was also persistent criticism of a loss of control with

complex material such as the Afro Celt track, which was variously described as "jangly and overblown", "a bit confused" and "strongly detailed but two dimensional".

One listener demurred, or appeared to: "I didn't like this model at the beginning, but I grew to do so. It has good detail resolution, though dynamically it seems rather flat, and everything is a bit too sweet and syrupy. The level of detail is good, however: the effect is quite musical. I ended up charmed".

My own findings were in tune with the consensus view. The Audiolab behaved consistently from speaker to speaker, and mid-band performance was generally good, but there was more than a suggestion of blandness and an inability to maintain its grip when the going got tough, which was mainly observed with complex material.

Conclusion

A well-built entry-level model: the 8000LX performs adequately but without excelling. It works quite well with simple material, but can lose its cool when stressed with complex, difficult music. AG

VERDICT

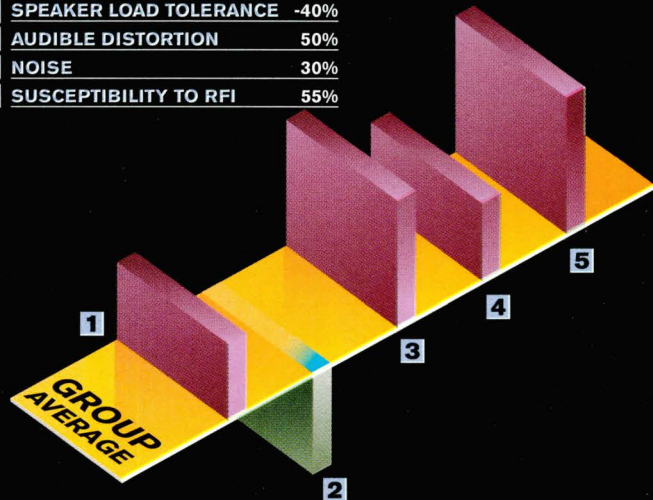
SOUND ★★☆☆☆
VALUE ★★☆☆☆
PRICE £469.90

Well-priced, and predictably well turned out, but this new stripped-down Audiolab for the masses fails to open the adrenalin floodgates.

Cambridge Systems Technology Ltd, Spitfire Close, Ermine Business Park, Huntingdon, Cambs PE18 6XY (01480) 415600

HOW IT COMPARES

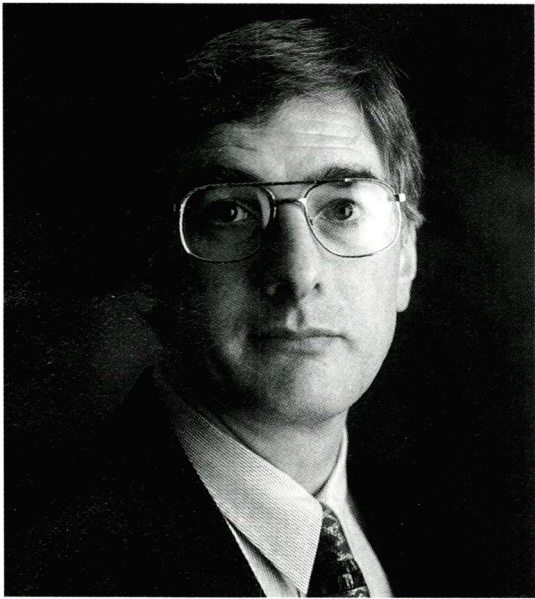
- | | | |
|---|------------------------|------|
| 1 | DYNAMIC POWER OUTPUT | 30% |
| 2 | SPEAKER LOAD TOLERANCE | -40% |
| 3 | AUDIBLE DISTORTION | 50% |
| 4 | NOISE | 30% |
| 5 | SUSCEPTIBILITY TO RFI | 55% |



THE LAB REPORT

Issue 154 carried our review of Audiolab's 8000S, a refined version of the company's long-standing 8000A integrated amplifier. Well, the 8000LX might be a good £200 cheaper, but it gives very, very little away to its illustrious relatives. For example, this version will sustain 82W into 8 Ohms and 136W into 4 Ohms, with midband distortion settling at just 0.0013 per cent. The 'S' offered 78W and 129W respectively at 0.0012 per cent THD. Furthermore, Audiolab's ever-cautious protection circuitry is in evidence, preventing more than 6.5A escaping into 1 Ohm loads, even though some 12A is released to support a dynamic output of 300W into 2 Ohm loads (10msec).

Judging by the slightly poorer channel balance of the LX, it's not unreasonable to suspect it's been fitted with a marginally-cheaper volume pot, even though there's no deterioration in channel separation. Moreover, the LX has been designed with less gain, so its input sensitivity is reduced from 25mV to 37mV (re. 1W/8 Ohm), while its S/N ratio has widened from 84.9dB to 87.1dB. And all without any extra susceptibility to RFI, although the 26 kOhm input loading is marginally tougher than before. As ever, very solid; but, equally, very predictable stuff. Will Audiolab's new owners inject some fresh inspiration? PM



...But it's true.

Peter J Comeau is no ordinary reviewer. As designer of the only product to win the coveted What Hi-fi Best Loudspeaker Award three times in succession, he's generally regarded as the guru of small speakers. With 30 years' experience as a specialist hi-fi retailer, co-founder of a highly respected UK hi-fi manufacturer and one of the 'terrible three' who pioneered subjective reviewing in the staid hi-fi press of the 1970s, his opinion carries formidable weight.

“Percussion is firm and practically floor shaking in its intensity - just a few bars and you are already reaching for your wallet.”

Hi-Fi News & Record Review

“...The 12i marks the baseline performance above which all other speakers should rise. But do they? Do they hell!”

Seasoned hi-fi critics are notoriously hard to impress.

So how come we weren't surprised when Peter J Comeau enthused so fulsomely about our new 12i?

“They sound like a grand's worth of exotic compact,” he wrote in October's Hi-Fi News. “If Celestion can achieve this sort of performance for a miserly figure, why are most of the speakers that arrive on the market so poor in comparison?”

Well, we can't speak for anyone else - but we know what makes the 12i such a remarkable performer.

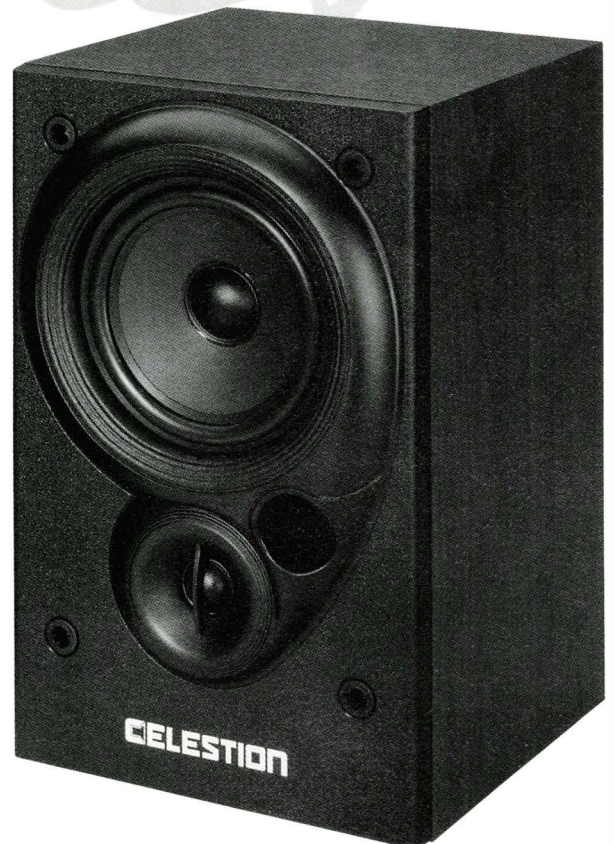
The smooth, natural-sounding vocals? Celestion's 19mm tweeter, whose neodymium magnet is ferrofluid-cooled for improved power handling.

The phenomenal bass response? 130mm long throw bass drivers, which allow the cone extended movement without removing the HF coil from the magnetic gap where energy is most concentrated.

The acoustic purity and lack of distortion? The use of laser interferometry to tune out the response peaks of conventional speakers. Celestion crossovers to ensure seamlessly smooth transitions. Mounting the drivers and reflex port in a dense one-piece composite baffle to minimise resonance. Cabinets computer-designed to eliminate box coloration.

In the words of the Hi-Fi News lab report, “the horizontal off-axis trace is brilliantly managed.” To the listener, that means the same seductive audio experience wherever you sit in the room.

No wonder the 12i reproduces the most demanding material with such accuracy ▷



*i*series

Technics SU-A900D II

It looks like a pre/power amplifier combination, but on this occasion looks deceive. This amplifier does operate using two boxes, which provides the key benefit of unhooking preamps from power amps, but there is only one power supply — the preamp draws its power from the power amp across a wire link. In fact you can't buy one component without the other, but you can acquire a second power amp, the SE-A1000M2, for bi-amplified and multi-room applications.

In some ways, this package is curiously old-fashioned. The big moving-coil meters (scaled for eight Ohm loads and too sluggish in operation to register peaks) are a real blast from the past. But they do possess a kind of charm, especially when viewed with the switchable backlighting. The power amp is otherwise direct and to the point, with switching for two pairs of speakers and a headphone socket up front, a pair of bare-wire terminals and thermostatically triggered cooling fan at the back. (Would a full heatsink have broken the piggy-bank?) Plus, there's a system control socket. The preamp offers two tape, three line and phono (moving magnet) inputs, with monitoring of the

source, tape 1 or tape 2 inputs. All switching is accomplished with electronic logic actuation from the front panel or by remote control. Standard tone, tone-bypass and balance controls are also fitted, with muting available from the remote control only. Rated power output is 70 Watts per channel with the usual stipulations. A limited but unquantified increase is reported to be available into a four Ohm load.

The remote control is a system handset, capable of controlling a tuner, CD player and two tape decks chosen from compatible Technics ranges.

Sound quality

"A lightweight sound, very two dimensional, not very clean, and with a soft bass," wrote one panellist following the Afro Celt track. Unfortunately this comment was all too typical. Even the most favourable comments placed it no higher than average, though one listener felt that the Technics was "light and airy" and that it displayed more "life and immediacy" than the group average. But he too marked the amplifier down for "lacking attack", commenting at the end that it might not have been loud enough.

Of course all amplifiers were presented to the panel at exactly the same sound pressure level. What this listener was hearing was the Technics's lack of internal clarity. Perhaps it was the influence of the pre-amplifier power supply working at a dis-

stance, but aurally this amplifier simply lacked discipline, and sharp transient edges often seemed smudged. Tonally it was attractive enough, but the Technics never seemed to be as much in control as many of the others. The glamorous-looking power amplifier was never quite as solid-sounding as its butch appearance implied: bass especially sounded rather wishy-washy with the bigger speakers, and the treble sounded safe rather than being particularly revealing.

Conclusion

This is a great-looking and well-priced amplifier. It appears to offer the benefits of pre- and power amplifier sections, but in practice it is an integrated amplifier in two boxes. It is tempting to say that without some of the gimmicks — the outsize meters; the complex, two-box packaging — the designers' time would have been better concentrated on bottom-line performance. *AG*



VERDICT

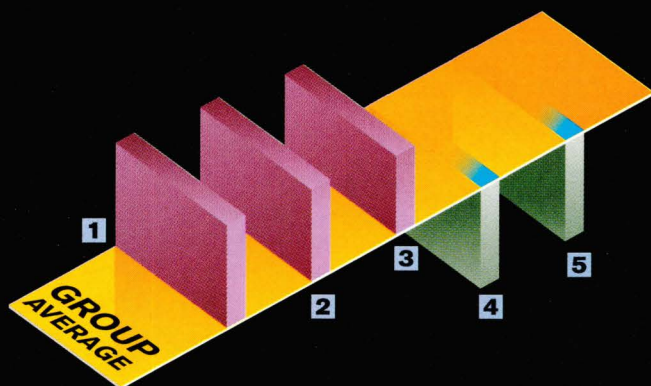
SOUND ★★☆☆☆
VALUE ★★☆☆☆
PRICE £499.95

The most attractive features of this amplifier are its appearance — the power amp with its twin power meters really does look the biz — and its extraordinary material value for money. If only its sound quality was equally impressive.

Panasonic UK Ltd, Panasonic House, Willoughby Road, Bracknell, Berks RG12 8FP
 (0990) 357357

HOW IT COMPARES

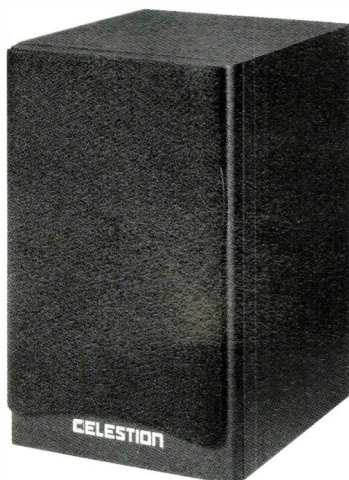
- | | | |
|---|------------------------|------|
| 1 | DYNAMIC POWER OUTPUT | 40% |
| 2 | SPEAKER LOAD TOLERANCE | 35% |
| 3 | AUDIBLE DISTORTION | 30% |
| 4 | NOISE | -40% |
| 5 | SUSCEPTIBILITY TO RFI | -40% |



THE LAB REPORT

Huge, illuminated meters are all well and good, but how accurate are they? At low frequencies they're almost spot-on, registering precisely 100W when 100W is being developed into an 8 Ohm test load at 20Hz. But at higher midband frequencies the meter ballistics are poor, and read halfway between 100-200W when the amp reaches its true clip point of 102W/8 Ohms. Let's be realistic: multimeters accurate in the kHz range are not ten-a-penny, and so are hardly likely to succeed as decoration on a mass-market hi-fi power amp. More funds have been dumped into the amplifier's power supply which has a 17A current reserve and is capable of delivering dynamic outputs of 120W, 233W and 332W into 8, 4 and 2 Ohm loads, respectively.

Otherwise, the SU-A900DII behaves like a slightly more powerful version of Audiolab's 8000LX, with a low 0.0012 per cent midband distortion increasing to 0.03 per cent at the treble extremes. Volume channel tracking is superior, but, conversely, its overall S/N ratio is poorer at 81.5dB. As, I might add, is its susceptibility to RFI, with breaks between 1-5MHz and, unusually, as far up the band as 750-900MHz — this is getting close to satellite baseband frequencies! Another safe but relatively uninspiring amplifier. *PMI*



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Alchemist Kraken APD6A

The latest version of the long-running Kraken stays true to the distinctive Alchemist house style, but thanks to the use of an out-board power supply, it is contained within an unusually compact case only 320mm wide. It ranks with the AVI as the smallest amp in this month's group. It is not an amplifier you would want to leave powered up for extended periods, as it runs very hot. The maker states that the case will reach about 55°C when idling at an ambient temperature of 24°C.

The casework is *très* Darth Vader, with dramatic curves, various colours including brushed aluminium, black and gold, blue LEDs — but too many sharp edges and protruding screws for my comfort. The volume control is rather stiff, and the panel graphics are not easy to read under low lighting. However, separate Listen and Record selectors provide useful off-tape monitoring facilities. There are three line inputs, two tape circuits and a moving-magnet phono input.

In electrical terms it appears to be a pretty simple design. In an external box, Alchemist claims, are dual-mono power supplies based on twin 250VA transformers. These are said to drive a bridge rectifier on

each channel of the main circuit board, leading to claimed power outputs of 'greater than' 55 Watts, (1kHz, eight Ohms), rising to 75 Watts into four Ohms. Another claim is gentle transition into the output devices' clipping region. The latter are said to run at an unusually highly-biased Class A setting, which explains the prodigious heat output. A preamp output offers upgrade opportunities. According to the literature, the front end is a normal differential input feeding a single-ended Class A driver stage.

Sound quality

The Kraken is a bit of a lush, with a warm, sensuous and relaxed delivery at moderate volume levels. However, the nature of its sound did not remain as consistent as some rivals when the volume level increased, or when different speakers were used. Perhaps understandably, it sounded out of its depth with the big Tannoy D900s — other contenders drove them with greater aplomb.

All panel members noted a sense of softness in this amp's sound. "It's quite dynamic with good bass — slightly soft, though," wrote one. Another talked of a "cloudy" sound and a "restrained" quality, though again there was praise for the Kraken's

dynamic midband performance.

More damningly, one listener described the Kraken as having a "soggy" bass, and of not being very "refined or precise". He also felt that the Alchemist "lacked authority" — in fact, each of this panellist's comments closely mirrored my own independent conclusions. There was nothing offensive about this amplifier, and many listeners, with sympathetic systems, might welcome its almost valve-like euphony. It was harder to accept a fundamental 'lack of grip', and inconsistency with different loudspeakers.

Conclusion

It would be unfair to criticise a product for failing to be what it was never intended to be. To describe the Kraken as smooth and rounded is simply to confirm Alchemist's own design goals. Nevertheless, because the Kraken is so system-dependent, and inconsistent in its performance at different volume levels — stereo perspectives seemed to shift, especially with regard to image 'depth' — we will not be able to Recommend it on this occasion. *AG*

VERDICT

SOUND ★★☆☆☆

VALUE ★★☆☆☆

PRICE £579.00

Buy this amplifier for its amazing looks, or because it sounds a bit like a valve amp without the expense. Don't buy it if you're looking for a revealing, disciplined-sounding amplifier.

Alchemist Products, Unit 1, Furzewood House, Cranbourne Industrial Estate, Potters Bar, Herts EN6 3JN (01707) 664607

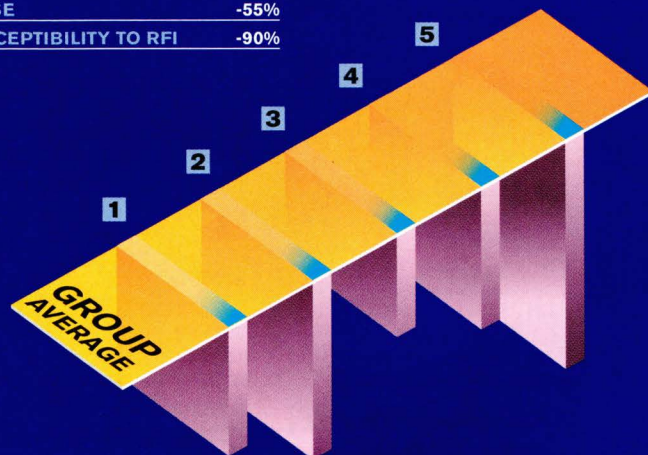
THE LAB REPORT

Alchemist's fire-breathing Kraken was last tested five years ago, when it graced the cover of issue 116 (it seems like yesterday). Today's version has a slightly higher 5.5A reserve of current, though this is still insufficient to prevent a collapse in dynamic power from 90W into 4 Ohms to 56W into 2 Ohms and just 24W into 1 Ohm. A continuous 54W is available into 8 Ohms at 1kHz; yet, as before, power output is limited by slewing at HF rather than genuine clipping, where distortion creeps beyond 1 per cent at 18W/20kHz/8 Ohms. High sensitivity, 8 Ohm speakers are a must.

Noise remains high at -74dB (re. 1W/8 Ohms), RFI susceptibility is very poor (1-200MHz), and the DC offset (like the case temperature) is way too high at +98mV. However, a superior volume control has eliminated the earlier tracking errors — important, because the Kraken is very sensitive at just 14mV for 1W/8 Ohm. Distortion increases from 0.12 to 0.22 per cent (re. 1W/8 Ohm) at high frequencies as the Kraken heats up, though the *nature* of this distortion also shifts from 2nd/3rd harmonic to pure 2nd harmonic. More remarkably, its *frequency response* also changes with temperature so that the -0.7dB drop at 20kHz increases to -1.3dB after an hour, then settles at -0.6dB after several hours. And it's this hot-headed behaviour that lies behind the shifting results of Alvin's blind listening test. *PMI*

HOW IT COMPARES

1	DYNAMIC POWER OUTPUT	-50%
2	SPEAKER LOAD TOLERANCE	-70%
3	AUDIBLE DISTORTION	-40%
4	NOISE	-55%
5	SUSCEPTIBILITY TO RFI	-90%



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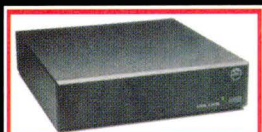
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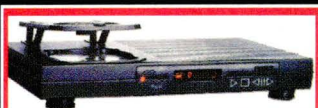


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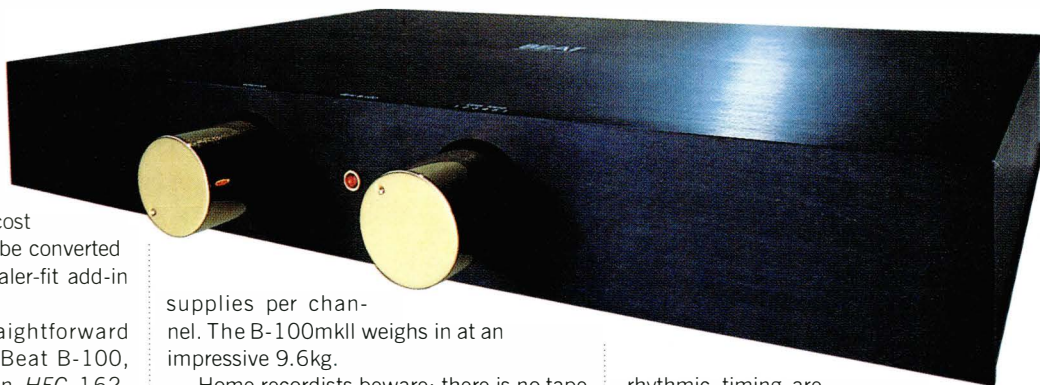
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Densen Beat B-100mkII

You can tell this amplifier means business, just by looking at its massive, purposefully featureless, brushed-alloy case. And its even more massive, rather phallic-looking pair of source and volume controls. At extra cost one of the five line inputs can be converted into a phono input, with a dealer-fit add-in circuit board.

The B-100mkII is a straightforward development of the original Beat B-100, which was Recommended in *HFC* 162. Before that we bestowed the same honour in *HFC* 154. The mkII's internal differences are not radical, but they do include a completely redesigned main circuit board (which has a higher proportion than before of surface-mount components) and an improved power supply. The fundamental circuit topology remains unchanged, so still involves a passive preamplifier section, no overall feedback and only minimal local feedback. There is a specified power output of 60 Watts per channel into eight Ohms (100 Watts into four Ohms).

Other claimed vital statistics include a 360VA transformer and 40,000µF of reservoir capacitance, and two separate power



supplies per channel. The B-100mkII weighs in at an impressive 9.6kg.

Home recordists beware: there is no tape monitor button, though there is a tape input. The maker justifies the omission by arguing that the tape loop should be isolated from the main signal path to avoid degrading sound quality. The amplifier looks good, but the cosmetic quality of the knobs is a little inconsistent, and sharp box corners could catch the skin during careless handling.

Sound quality

This is a 'wide bandwidth' design, according to Densen. In issue 154 we cited a claimed frequency response of 2Hz to 200kHz — too wide, in our Tech Ed's estimation. Could the latter be linked to our discovery in issue 162 of the Beat's susceptibility to radio-frequency interference (RFI)?

Input 1 is wired differently to permit fitting of the phono board — best line-level sound quality will be obtained via the others. Input 2 served for most of the test work.

It sounds like a pun, but isn't: the Beat understands how to rock'n'roll. The listening panel didn't get to hear it through different loudspeakers, and were not privy to the amp's ability to scale its performance to the character of the speakers. Dynamics and

rhythmic timing are the Beat's strong suit, and it performed tirelessly into all of the test loudspeakers, even the massive Tannoy D900s with the volume cranked up high. It just seemed in control.

Curiously, the least fortuitous partnering was with the smaller Tannoys used for the panel test; perhaps this is because the areas in which the Beat excels are at odds with those of the speaker. Its dynamic qualities were markedly inconsistent, but there was some consensus that the amplifier sounded dry, even cold, and that sound didn't always 'breathe' naturally. There was also considerable agreement that this amp was detailed, tight and well projected.

Conclusion

Not the most sophisticated sound on earth, then, but in its elemental way, this is an unusually punchy, detailed performer which took control of some really quite difficult loudspeakers. You'll need to take care with system matching — don't hook up to bright speakers with nasty metal domes — but that caveat out of the way, a Recommended flag is otherwise mandatory. *AG*

VERDICT

SOUND ★★★★★☆
VALUE ★★★★★☆
PRICE £649.99

□ Bold, detailed amplifier that drives many difficult speakers well — only a few trip it up.

A rock-and-roller par excellence, but check it's to your tastes before you buy.

✉ Densen Audio Technologies, Randersvej 28, DK-6700 Esbjerg, Denmark

☎ (01582) 561227 (UK number, links direct to Denmark)

THE LAB REPORT

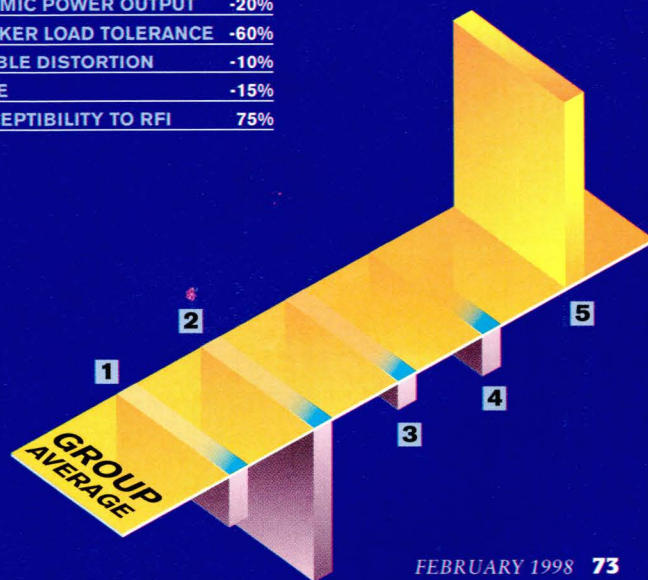
Having been previously evaluated as recently as issues 154 and 162, the Densen BEAT B-100 looks to have been progressively modified during its life in production, though its appearance and manual remain unchanged. Is Densen offering upgrades or trade-ins? I do hope so.

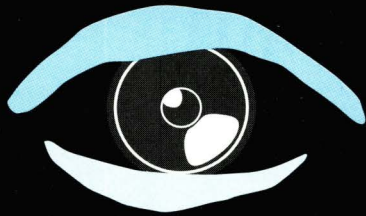
On this occasion I noted a shift from the previously flat response to a marked treble roll-off amounting to -1.5dB at 20kHz. Noise has increased by a substantial 8dB or so, potentially submerging the effects of its RF susceptibility discussed in issue 162. The input loading remains very low at 9.5kOhms but any parallel capacitance has also been held in check, despite the amp's CE compliance. For whatever reason, the B-100's susceptibility to RF is now markedly reduced from before.

The 'latest' B-100 is no more powerful at 66W/8 Ohms. And more importantly, it is just as intolerant of difficult speaker loads. Its dynamic output reaches 77W and 145W into 8 and 4 Ohm loads, but falls back to 117W and just 38W into 2 and 1 Ohm loads respectively, thanks to some over-zealous electronic protection and a very high 0.27 Ohm output impedance. There's the same extended spray of distortion harmonics amounting to 0.13-0.45 per cent at two-thirds power, and the amplifier's DC offset has sneaked back up to >45mV. Will the 'real' B-100 please stand up? *PM*

HOW IT COMPARES

- | | | |
|---|------------------------|------|
| 1 | DYNAMIC POWER OUTPUT | -20% |
| 2 | SPEAKER LOAD TOLERANCE | -60% |
| 3 | AUDIBLE DISTORTION | -10% |
| 4 | NOISE | -15% |
| 5 | SUSCEPTIBILITY TO RFI | 75% |





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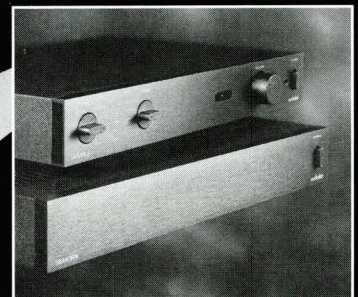
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BADA

Musical Fidelity X-PRE/X-A50

The X Series from Musical Fidelity, from which the X-PRE and X-A50 are drawn, includes a number of purpose-specific modular hi-fi components. JK reviewed the X-PRE preamp in *HFC* 166, while SV tackled the X-A50 power amplifier monoblok in *HFC* 169. On the latter's outing we clocked power output at 65 Watts continuous into eight Ohms. It uses a quasi-complementary bipolar output stage, with paralleled sockets to permit daisy-chaining into other monobloks and therefore bi-amplification.

The X-PRE claims to be a Class A, single-ended-triode design based on KT-88 valves. That would make it about as purist a product as they come, though there is no external indication at all that the X-PRE is tube-powered. There are four line inputs and a volume control (both nail-breakingly small and fiddly) and no tape circuit. It hooks up to the mains via a plug-top transformer.

By way of interconnects we deployed M-F's own X-LINX wires (£40 per pair).

Sound quality

The combination registered an indifferent average score across two presentations to our panel, with the hands-on listening ses-

sions suggesting that the preamp's power supply was a significant drag on system performance, preventing the X-PRE from 'breathing' freely with recorded dynamics. Among other effects, this reduced perceived stereo separation. The £130 X-PSU power supply, though not officially part of the test, did enhance performance, limiting the perception that musical detail was being homogenised. There was more space and 'air' to the sound, and tighter bass.

The following panel comments, however, refer to the preamp's performance with the plugtop PSU. One common observation was of a "refined, spacious... yet slightly hard quality in the Mozart *Wind Serenade*" (referring to the upper registers). But there was a persistent complaint that the sound was rather soft in the lowest octaves — one listener even described the bass as "cardboard-like". There were occasional moans of lacking definition, and one listener speculatively wrote that the combination had a "Class A valve-like" quality. A particularly perceptive comment: the pre-amplifier does tend to dominate the mix, especially with the supplied power supply.

My own listening confirmed an impression that the rather warm, distant balance of the Tannoy D500s was not ideally matched to this combination. The X-PRE/X-A50 rig really comes into its own with big, clean, dynamic speakers, especially the Definitive Technology BP2002 and Mirage OM-6 (both lively, engaging transducers), and even the big Tannoy Definition D900s. The latter sounded surprisingly grown-up

and lifelike hooked up to these cylindrical chassis.

Conclusion

The build quality of these components is excellent; their configuration most flexible. The three-strong assemblage may be expanded in numerous directions as desired, for example by adding an improved power supply, tone controls, or a phono stage. Simplicity and value for money are its principal assets, however.

Taking this into account, and allowing for the effect on panel-test results of an unfavourable loudspeaker, Musical Fidelity's trio earns a Recommended tag. That snazzy little support bracket in the photo costs just £30 extra, by the way! AG



VERDICT

SOUND ★★☆☆☆
VALUE ★★★★★
PRICE X-PRE £199.99, X-A50 (PAIR) £499.99, X-LINK CABLE £39.99

Well built and attractive pre/power amplifier which can be improved and expanded with other X-Series components. Open, likeable sound quality, but best with that £130 X-PSU power supply.

Musical Fidelity Ltd, 15/16 Olympic Trading Est, Fulton Rd, Wembley HA9 0TF
 (0181) 900 2999

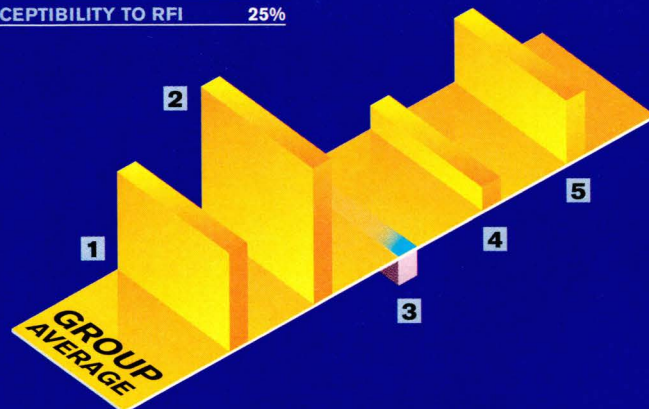
THE LAB REPORT

For whatever reason, this latest sample of MF's X-A50 is not quite the gut-wrenching powerhouse we witnessed back in issue 169. Oddly enough, its *continuous* power rating has improved from 65W to 73W (8 Ohms) and 94W to 109W (4 Ohms) though it still falls to 55W/8 Ohms at 20kHz. Meanwhile, a drop in current reserve from 23.9A to 16.2A, and a 'softer' clipping behaviour, has reduced its *dynamic* output from 92W/180W/342W/571W to 104W/188W/285W/289W into 8/4/2 and 1 Ohm loads respectively. Not quite as stunning then, but still pretty amazing for a '50W' amplifier. As ever, the X-A50 should still prove very tolerant of difficult speakers!

The partnering X-PRE preamp offers a mere, but sensible, +6.5dB gain, and even manages to hold its interchannel balance to within 0.2dB over a full 60dB range. The pattern of distortion is interesting because it almost precisely mimics that of the X-A50, with just 0.003 per cent through the mid-band rising to an equally insignificant 0.006 per cent at HF. It just goes to show that valve (triode) stages need not introduce vast swathes of harmonic distortion. RF susceptibility is another matter, however, with breaks at 1-10MHz and 350MHz. Some CD-player dependence could be experienced, but otherwise, the MF X-Series outfit is a compelling combination. *PMI*

HOW IT COMPARES

1	DYNAMIC POWER OUTPUT	40%
2	SPEAKER LOAD TOLERANCE	55%
3	AUDIBLE DISTORTION	-10%
4	NOISE	10%
5	SUSCEPTIBILITY TO RFI	25%





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Myryad MI 120

This is the same Myryad MI 120 that we reviewed in *HFC* 154, but in a number of respects its design has been modified. No changes are visible externally — indeed there is not so much as a 'mark II' badge in sight.

Changes are claimed to include an improved mains transformer with reduced stray field, said to be particularly beneficial when used with the optional MC phono module. Furthermore, the maker says, enhanced filtering and upgraded rectifiers in the power supply have reduced 'HF hash'. Input coupling, decoupling and RF filter capacitors have been changed, allegedly, for selected high-speed types, likewise improved internal signal wiring.

The rest of the story runs as before. The passive preamp is built around an ALPs volume control, and handles up to four line inputs and two tape circuits, with source selection by relay. Tape monitoring, a headphone socket and preamplifier outputs are provided, the latter usable with the matching Myryad power amplifier. Unusually, the preamp feed is attenuated from the main output: this might seem like a roundabout approach, but it should ensure a strong



degree of resemblance between the two. Remote control comes courtesy of an infra-red handset or the 'My Link' data-bus. The former has the added benefit of a Mute button. The amplifier can be left in Standby mode to keep critical circuits on song, and the power supply looks well endowed for its 60 Watts per channel (eight Ohms) power rating. IHF dynamic power is said to be 80 Watts/120 Watts/160 Watts (eight/four/two Ohms), illustrating the MI 120's substantial power reserves. (The lab test shows these are conservative ratings. —Ed.) A phono input is available as an option.

The amplifier incorporates heavy-gauge side panels, a 6.3mm-thick aluminium fascia, and a unique aesthetic design which to these eyes is extremely attractive. The recessed aluminium volume control sports a protruding illuminated marker, without which it would be difficult to operate. Fit and finish are, in a word, exemplary.

Sound quality

There were indications that the new MI 120 really is a better amplifier. The rather coarse, grainy sound noticed before has been replaced by a much smoother, more detailed quality, with more substantial bass. But the amp did not receive a completely clean bill

of health during one of the two listening sessions: there were complaints of midband compression, and even a suggestion of hiss according to one panellist. "It did nothing particularly well, but it lacks resolution," concluded another. The second day's presentation, however, engendered a more positive reaction, possibly because on this outing it followed a weaker model. Here it elicited such epithets as "accurate tonal colours", "well defined, especially the vocals" (Warnes) and "exciting... best so far".

Having tried this amplifier in various systems, I have found it a consistent performer, with a disciplined, fairly detailed quality, accurate tonality, but a hint of greyness and compression when stretched.

Conclusion

This is a good amplifier that stops just short of generating the electricity perceived from one or two designs in the same price band. Nevertheless, it is Recommended for its inherent clarity and musical manners, its strong features, excellent build and, on the basis of my tests with a number of loudspeakers, its even-handed consistency. AG

VERDICT

SOUND ★★★★★☆
VALUE ★★★★★☆
PRICE £599.95

The MI 120 has been around for a while now, and has been significantly improved to the point where its musical abilities almost match its stunning good looks and build quality.

Myryad Systems Ltd, 2 Pipers Wood, Waterberry Drive, Waterlooville, Hants P07 7XU
 (01705) 265508

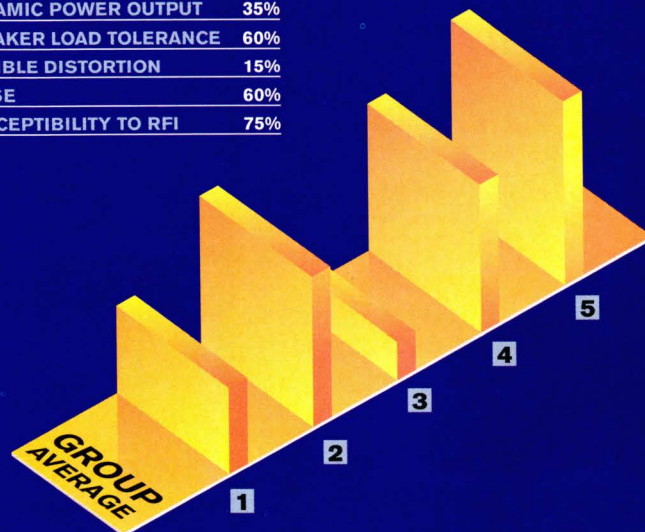
THE LAB REPORT

In this latest iteration of the Myryad amplifier, an enhanced power supply and internal wiring have been specified, though the repercussions are slightly mixed. Noise, for example, has been reduced by a healthy 2dB, bringing the S/N ratio up to an impressive 88.7dB (re. 1W/8 Ohms) and a whopping 103dB re. two-thirds output. All achieved, I might add, without unmasking any harsh-sounding RFI. Channel balance is also slightly improved, either through tighter tolerancing of the volume control or, alternatively, just plain good luck as far as this sample is concerned.

On the other hand, there's a fractionally lower power output, resulting in maximum current reduced from 20A to 17.3A. The original version managed 90/140W into 8/4 Ohms respectively; this latest iteration delivered 87/133W under the same conditions. Short-term output is increased to 110/192/293/329W into 8/4/2/1 Ohm loads, respectively, so the MI 120 remains as immune to the ravages of difficult speakers as ever. Like before, this is a tightly-controlled design capable of a highly 'regulated' and predictable performance. *PMI*

HOW IT COMPARES

- 1 DYNAMIC POWER OUTPUT 35%
- 2 SPEAKER LOAD TOLERANCE 60%
- 3 AUDIBLE DISTORTION 15%
- 4 NOISE 60%
- 5 SUSCEPTIBILITY TO RFI 75%



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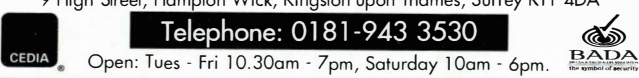
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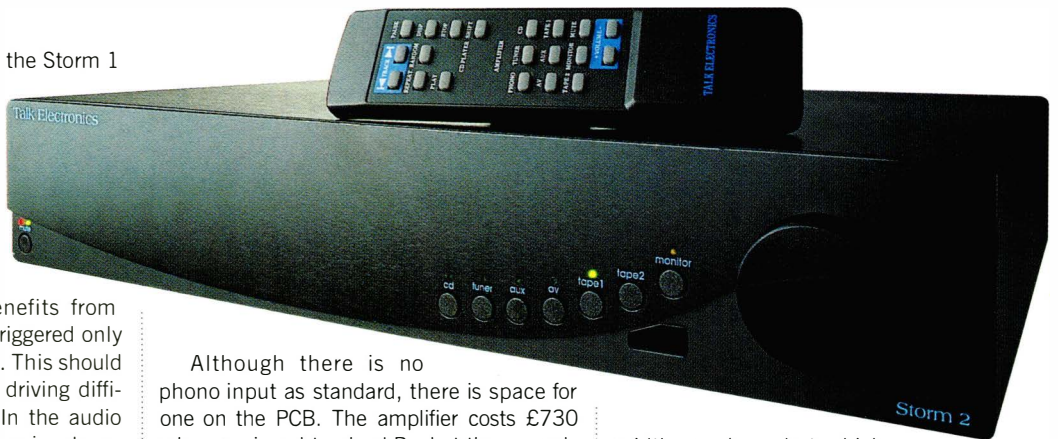


Talk Electronics Storm 2

This is the bigger brother of the Storm 1 amp (HFC 162). Power output is claimed to be 65 Watts per channel into eight Ohms (we measured 54 Watts for the Storm 1), or 80 Watts into four Ohm loads (65 Watts for the Storm 1).

The makers report further that the amp tested here benefits from redesigned output protection, triggered only by near-short-circuit conditions. This should mean that the amp is happier driving difficult loads than early Storms. In the audio circuit and early power-amp gain stage, apparently, there are Field Effect Transistors (FETs); while in the outputs there are Metal Oxide Semiconductor FETs (MOSFETs). This implies a simple, inherent robust design reprising the Storm 1's circuit topology.

In other respects, trying to distinguish between the two Storm integrated amps is like trying to select snowballs in Siberia. The control scheme is minimalist: simple source selection — CD, tuner, auxiliary, AV and two tape circuits — are augmented by tape monitor and mute switches, all accessible from the remote control. In addition, there's a non-inverting preamp-level output. Finish is excellent; control layout is utterly individual.



Although there is no phono input as standard, there is space for one on the PCB. The amplifier costs £730 when equipped to play LPs, but the upgrade can be retrofitted for the difference between this price and the basic version (£80).

Sound quality

Reprising the opinions engendered by the Storm 1 on its earlier outing, the Storm 2 achieved a strong and highly-consistent panel score. It worked at least moderately well in all key areas, and exhibited no obvious identifiable weaknesses. If it does have a particular strength, this would be the open, crystal-clear, yet airy midband, and its good timing. It's difficult to tell whether the Storm 2's extra power makes a lot of difference, but evidence from my own tests suggests this amp was less amenable to difficult loads and ultra-wide-bandwidth loudspeakers. In this instance the sound took on a shrill edge, and developed a plummy, overhung bass when pushed hard. There were also clear indications of power limiting at only modestly high volume levels.

Put these elements together and you begin to form an image of an amplifier that is a little circumscribed in some ways, and not really intended for heavy-duty, wide band-

width speakers, but which is more than routinely communicative and musically engaging when punching inside its weight range.

"Bounces along with real gusto, good perspectives — and it reproduces tonal colour well, too," remarked one of the Mozart *Wind Serenade* test piece. Another chose to comment on "good dynamics", and a "vigorous, powerful and fast sound" in the Afro Celt track, with mild criticisms from some panellists of a slightly two-dimensional, rather matter-of-fact quality. Considered together, these comments might suggest the presence of some harmonic distortion residues.

Conclusion

While I would fight shy of attempting to induce too many links between Talk Electronics Storm 1's and 2's similarity in sonic character (and, apparently, in power yield), I have no absolutely qualms about Recommending the latter, which is well balanced, and accurately attuned to the attributes of mainstream source components and speakers at similar prices. AG

VERDICT

SOUND ★★★★★☆
VALUE ★★★★★☆
PRICE £649.95

✓ Crisp, clean and detailed. This is a good, mid-ranking amplifier which will suit a wide range of mid-price systems, although surely it is a little too close to the Storm 1 for comfort.

✉ Talk Electronics Ltd, Unit 12, Farnborough Business Centre, Eelmoor Road, Farnborough, Hants GU14 7XA
 ☎ (01252) 378383

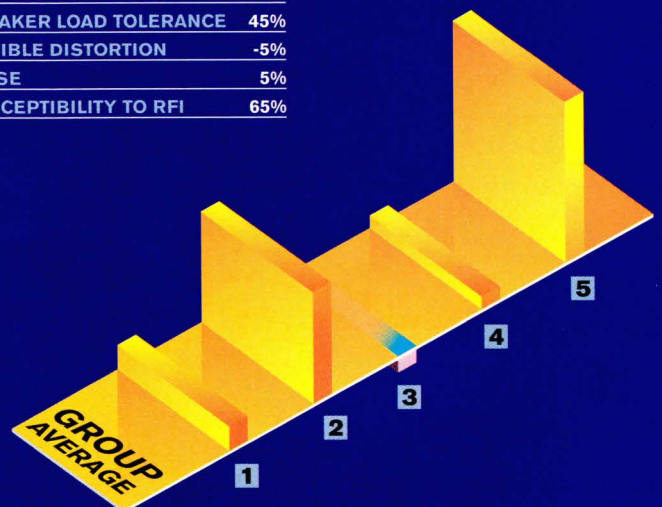
THE LAB REPORT

Over the past year Talk Electronics has improved the frequency response, power output and load tolerance of all its amplifiers. This is evidenced unequivocally by the Storm 2, which is significantly more capable of tackling 'real world' speakers than the cheaper Storm 1 (HFC 162). Indeed, the Storm 2 bears far greater resemblance to the general design and performance of the latest (uprated) version of the Tornado 2 power amplifier (originally reviewed in issue 165). Output is now up to 70W into 8 Ohms and 99W into 4 Ohms, with a short-term delivery of 96W/155W/212W/223W into 8, 4, 2 and 1 Ohm loads, respectively. This blows the old Storm 1 into the weeds and, along with a commensurate drop in output impedance, ensures the '2 will perform very much more consistently and reliably with a wider variety of loudspeakers.

Some old foibles remain to haunt the '2, however, such as the jump in distortion from 0.01 (midband) to 0.22 per cent (high treble), though this now remains consistent with power output. The 68 kOhm input load will prove a doddle for all CD players, though the 4V overload limit is only +6dB above the notional 2V standard. 99 per cent of the time, however, the latest Storm 2 should offer a 100 per cent improvement in performance over its forebears. PM

HOW IT COMPARES

1	DYNAMIC POWER OUTPUT	10%
2	SPEAKER LOAD TOLERANCE	45%
3	AUDIBLE DISTORTION	-5%
4	NOISE	5%
5	SUSCEPTIBILITY TO RFI	65%



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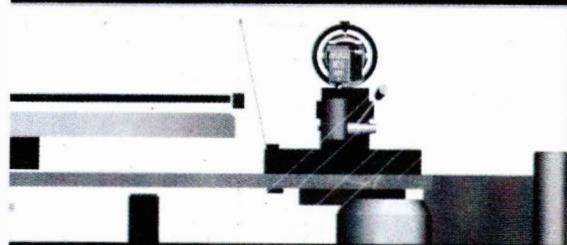
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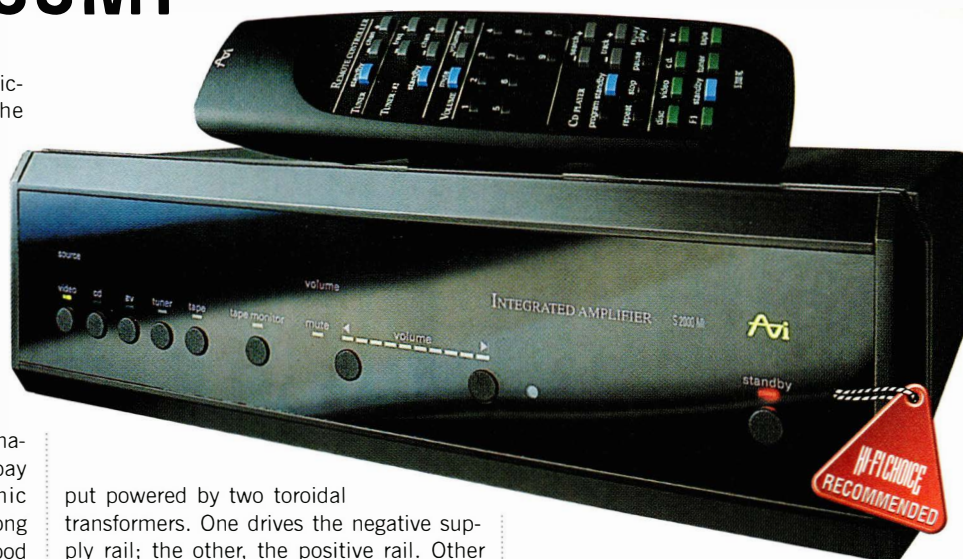
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AVI S2000MI

According to AVI, this amplifier is particularly appealing to women, on the grounds that it is small and sports no protruding controls. Personally, I wonder if it is not a little patronising to suggest that women don't like amplifiers which look like amplifiers. In the meantime, you can use AVI's claim to offset my personal view that the AVI styling job is heavy handed. The control panel probably has its fans, but I found the stepped-ladder volume control (with its low-res thermometer-type level display) awkward and uninformative; and to me the front panel seems to pay scant attention to real-life ergonomic requirements. But I probably got this wrong too, and there is no denying the AVI's good build-quality and finish.

Four inputs and a single tape circuit are provided, with volume and mute switching available, but no balance control or headphone feed. Just the basic connections populate the back panel. The remote control handset, which is well laid out and clear, can be used to control a complete system.

Internally the amplifier appears to be a fairly simple design, with a passive preamplifier section and cool-running bipolar out-



put powered by two toroidal transformers. One drives the negative supply rail; the other, the positive rail. Other highlights include a motorised volume control and reed-relay source switching, and the amplifier is said to have an above-average ability to drive real-life loudspeakers. Power output (which is not synonymous with loudspeaker driving ability) is claimed to be 100 Watts into eight Ohms, and 144 Watts into four Ohms. See Lab Test for our figures.

Sound quality

It may not be a looker, but it steamed along nicely on test, scoring a good average across two sessions, and pleasing the panel with its well-focused midband, strong sense of detail and good timing. More generally, the S2000MI is an amplifier that works well with a wide range of speakers, sounding confident and in command with each. Some might find this amplifier a bit clinical and dry, and one panel member felt that the AVI was coloured and chesty, and "struggling on bravely even though she's got a blocked nose" (Warnes). Valve-like it ain't.

Other comments were more positive. The Handel piano piece was felt by one listener to have "real sparkle", while another wrote of "good detail", and of how the "notes linger and decay in a lifelike way." This was echoed by others. The Afro Celt track was "very detailed, fast and smooth, with good timing," or "rhythmic and powerful." Sporadic criticisms concerned some upper bass excess.

Conclusion

The styling job is ultimately a matter of taste, but the compact packaging is a boon, and musically the S2000MI runs away with the honours. This is a clean and attractive amplifier, and one that worked well with a variety of speakers. It has been in production for some years, and my dealer contacts praise it for reliability. (It is often specified for multi-room systems, where this quality is vital.) Strongly Recommended. AG

VERDICT

SOUND ★★★★★
VALUE ★★★★★
PRICE £999.00

- It may look dated with its Perspex electronic front panel, but don't be fooled: this is a fast, assured control freak, with good timing and resolution, and just mild coloration and other unwanted artefacts.
- AV International Ltd, Unit F3 C3, Bath Road Trading Estate, Stroud, Glos GL5 3QF
- (01453) 752656

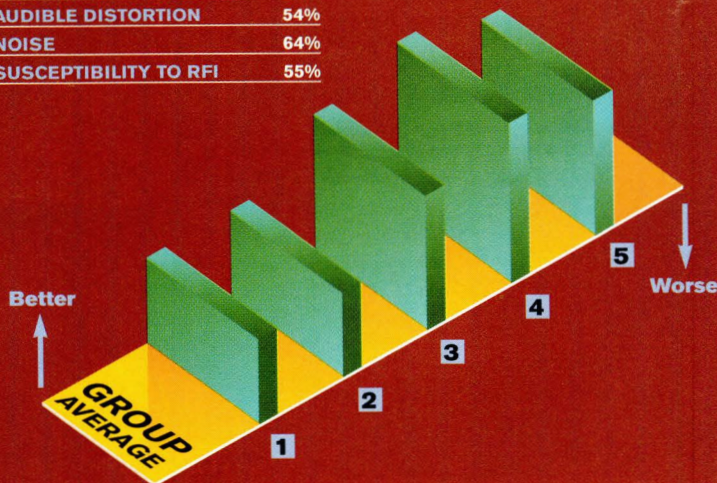
THE LAB REPORT

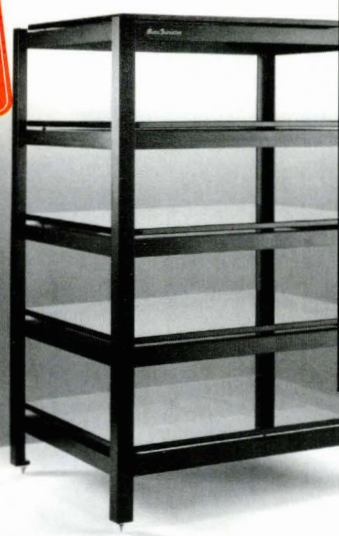
AVI has a reputation for top-notch engineering, and in this instance seems to have striven to deliver as wide an S/N ratio as humanly possible. Subjectively, of course, there are no hard and fast rules. A Naim Nait 3 has a poor S/N ratio, while a typical Orelle or Marantz amplifier will enjoy anything up to 15dB less noise, yet all three amplifiers 'get away with it' on the basis of a subjective airing. AVI's S2000MI has an S/N ratio that's even wider (7dB or so greater, in fact), leading to a final figure of 95.2dB for 1W/8 Ohms. This is ground-breaking stuff, and sufficiently unusual for me to check and re-check the result several times over! At two-thirds output, the S/N ratio reaches an incredible 110dB. Nevertheless, this 'wide open window' also provides ample opportunity for some less desirable distortions — RF IMD in particular — to sail through unhindered. Fortunately, the S2000MI proves fundamentally insensitive to RFI.

It's also unfazed by the demands of different loudspeakers, providing bursts of 133/236/316W and 327W into 8, 4, 2 and 1 Ohm loads (increasing to 18.7A over 5msec/1 Ohm = 350W). This, combined with its flat response and low 0.03 Ohm output impedance, ensures the S2000MI is ideally suited to the unusually low sensitivity of its own marque's matching loudspeaker, the Positron (see Jan '98 issue). PMI

HOW IT COMPARES

- 1 DYNAMIC POWER OUTPUT 35%
- 2 SPEAKER LOAD TOLERANCE 35%
- 3 AUDIBLE DISTORTION 54%
- 4 NOISE 64%
- 5 SUSCEPTIBILITY TO RFI 55%





Photos: Paul Hartley Studios

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Q Magazine, Robert Mills, May 1997



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 Listener Magazine (USA)

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- ▼ **CONS:** A right royal pain to clean and dust

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Bryston B-60

There is nothing glamorous about the B-60. It is a domestic amp from a company that supplies professionals, and it has stark good looks. However, it is distinguished principally by an ultra-slimline faceplate (height barely 1.75in) and tank-like build quality (backed with a 20-year guarantee). Claimed power outputs are 60/100 Watts per channel into eight/four Ohms respectively.

Features include source selection for four line inputs, plus tape, volume and balance controls, a tape monitor switch and headphone socket. A processor loop, too.

The B-60 is available with or without remote handset — a simple device offering volume control (via motorised potentiometer in the amp) and full mute. The remote is an elaborately engineered, heavy and rather blocky design, designed to add prestige. Its presence adds £187 to the bottom line.

The circuits within involve the services of completely independent toroidal transformers, one for each channel. This decision may have been driven by the inability to accommodate a single fatter toroid; the maker



would probably regard that as putting the cart before the horse. Plus there are individually-regulated power supplies for all voltage-gain stages, and claimed unconditional stability for loads of four Ohms or above. Line inputs are said to offer 50 kOhms input impedance, making them easy to drive; though the tape circuit, we're told, is set at 10 kOhms in and out.

Sound quality

The B-60 opened to some rave reviews in the US press. I was certainly very impressed when I visited the Bryston factory near Toronto in Canada, to find a conservative, workmanlike atmosphere and the kind of long-term approach to design and manufacturing that used to be the sole preserve of venerable companies like Quad. I would not be at all surprised if the B60 was still around, essentially unaltered, in 20 years' time, although I doubt this will be as a result of UK sales, given that the UK price is about double that in Canada.

The panel members simply scored by what their ears told them, which was 'average' and no more. Although the character of the comments was by no means damning, there was a degree of damning with faint praise, as in the consistently repeated comment that the amp offered "homogenised

treble".

One rather extreme comment wrote off the B-60 as "two dimensional, one-note and uninvolved" (Mozart), while another described it as "muddy, boxy and confused" (Warnes). My notes repeat a number of points made by the panel, including more positive ones in which the Bryston's smoothness, midband timing and image depth were praised.

However, the loss of clarity in extreme treble, and ungainliness in the deep bass, are artefacts hard to refute, even with speakers more obviously suited to the B-60's laid-back temperament. There was plenty of power on hand, though, and this unit did strike up an affinity with fellow Canuck the Mirage OM-6, which is a sharp, articulate bipolar with active bass.

Conclusion

UK pricing definitely acts against this amplifier's best interests, but despite the shortcomings noted at the frequency extremes, the Bryston has an honest and capable midband, and plenty of poke — and let's not forget that extraordinary 20-year guarantee. These things excuse much, and the B-60 is at least built to last. *AG*

VERDICT

SOUND ★★☆☆☆
VALUE ★★☆☆☆
PRICE **£1,467.00 WITH REMOTE**
£1,280.00 WITHOUT REMOTE

Professional build quality and integrity of the Bryston's midband performance are offset by unattractive UK pricing and a rather bland, lossy performance out at the frequency extremes — but note the 20-year guarantee!

The Professional Monitor Company, Unit 72, Haslemere Industrial Estate, Welwyn Garden City, Herts AL7 1BD
 (01707) 393002

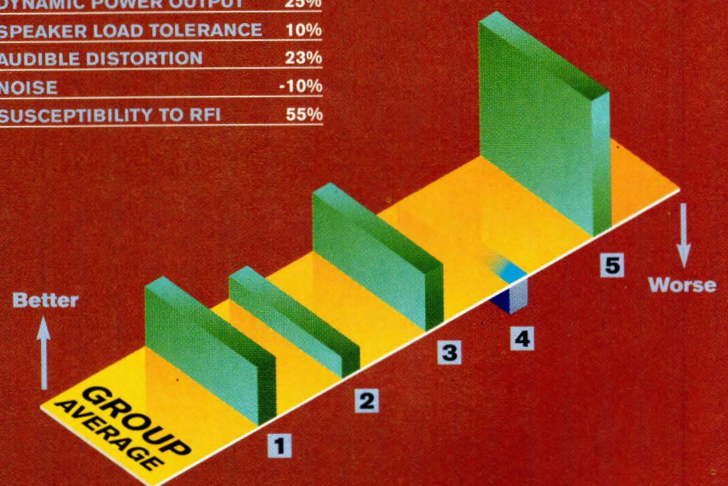
THE LAB REPORT

Do not be deceived by appearances, for though the B-60 is slim, it's also a very tough cookie. Though it'll sustain just 70W under continuous conditions, the B-60 has a substantial *dynamic* headroom in excess of +2dB, which is just as well, because when it runs out of puff the B-60 clips very abruptly indeed. As a result, it is capable of delivering 115W, 193W and 299W under dynamic conditions into 8, 4 and 2 Ohm loads respectively. Only then does its resolve weaken with a drop to 259W into 1 Ohm (equivalent to 15.4A over 10msec or 16A over 5msec at less than 1 per cent THD). Combine this healthy output with its utterly flat response and low 0.02 Ohm source impedance, and the B-60 should perform very consistently with a wide variety of loudspeakers.

Of course, compact high-power amplifiers do not run this cool unless they are very efficient, which typically means Class B operation. In this instance we see a *decrease* in crossover-like distortions of around 4-5dB as the amplifier is cranked up. Nevertheless, with THD typically hovering around the 0.01 per cent region, distortion is hardly an issue of great importance. Nevertheless, I could well imagine the B-60R being criticised subjectively for sounding a little too 'colourless'! *PM*

HOW IT COMPARES

1	DYNAMIC POWER OUTPUT	25%
2	SPEAKER LOAD TOLERANCE	10%
3	AUDIBLE DISTORTION	23%
4	NOISE	-10%
5	SUSCEPTIBILITY TO RFI	55%



ON TEST: AMPLIFIERS (ABOVE £750)

Credo IMP 702

The Credo IMP702 is designed for function, not form. It is a four-square design with a certain hair-shirt appeal, but the rocker switches are positively antediluvian — perhaps Rolls-Royce buys from the same supplier. The plastic volume and input-selector rotaries have shallow, bevelled edges, making them difficult to handle; but rear-panel furniture is more impressive, and internal build quality appears to be good.

The importer, Townshend Audio, confirms that the Credo is 'deliberately understated', and that the designer's brief was to produce an amplifier capable of delivering plenty of current into just about any real-life load; but not for sustained, high-level power delivery. The logic, of course, is that real music has only short-duration high-level crescendos, but this in turn implies that compressed rock and pop music will not be the Credo's best friend. Rated power output is 70 Watts into eight Ohms, a figure said to double into four Ohms. I noticed that it makes threatening noises at full gain with an unloaded input, which could mean incipient instability. The instructions warn against



trying this, but headbangers might see the warning as an open invitation.

The moving-magnet phono and four line inputs are supplemented by a tape circuit, with front-panel features limited to volume, source-selection and a tape-monitor switch. There is neither balance control nor headphone socket.

Sound quality

With one exception, the panel made appreciative noises about this amplifier, though when it came to awarding points, they were a little restrained, and the Credo scored relatively modestly. The nonconformist panel member felt the Credo was "mundane", with a "compressed midrange" (Afro Celt), and a lack of "openness" with vocals (Jennifer Warnes). More typical was the following, also referring to the Afro Celt piece: "Decent drum tone; fast bass; hangs together rhythmically, encouraging further listening". The Handel was praised for sounding "relaxed, yet lively, with good timing". The Jennifer Warnes track offered "the best vocal reproduction of the group so far... very sweet, defined and musical, with an excellent bass and good image depth." You get the picture.

After using the Credo with more loudspeakers and source material, I found myself impressed by its capabilities and infuriated

by its inconsistencies. The volume control favours the early part of its travel, making it difficult to achieve proper channel balance. Musically, it is a rather black and white device. It is sharp and articulate, but also somewhat unforgiving, and even mildly suspect source material can be made to sound hard and grainy. Though with the best-recorded music and appropriate speakers (avoid spitty metal domes, for example) the Credo simply sounded very much alive. This is not, however, an amplifier for the big Tannoy D900s, and in general it doesn't like to be stressed too hard, not because it won't go loud, but because it hardens up and can even become quite steely at high volumes.

Conclusion

Definitely a 'try before you buy' design, and one that undoubtedly prefers the company of high-resolution, well-controlled peripherals. A formal Recommendation was rejected finally on the grounds that the Credo's idiosyncrasies make it a less-than-safe purchase unless you really know what you're doing. But it's definitely worth auditioning in a suitably synergistic system. *AG*

VERDICT

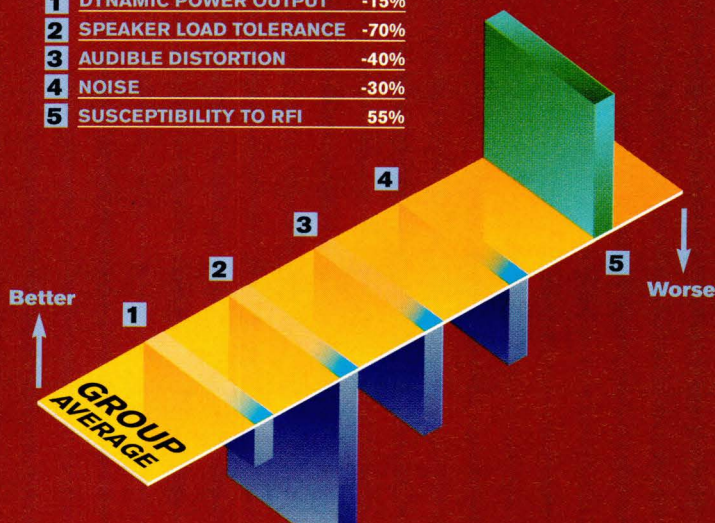
SOUND ★★★★★
VALUE ★★★★★
PRICE £850.00 (W/OUT PHONO BOARD)
 £970.00 (WITH PHONO BOARD)

True high-end exotica: when it behaves, it can out-resolve most comers; but it is something of an 'edge of seat' design if not handled properly, and should be auditioned with care.

Townshend Audio, 7 Bridge Road, Hampton Court, Surrey KT8 9EU
 (0181) 979 2155

HOW IT COMPARES

1	DYNAMIC POWER OUTPUT	-15%
2	SPEAKER LOAD TOLERANCE	-70%
3	AUDIBLE DISTORTION	-40%
4	NOISE	-30%
5	SUSCEPTIBILITY TO RFI	55%



THE LAB REPORT

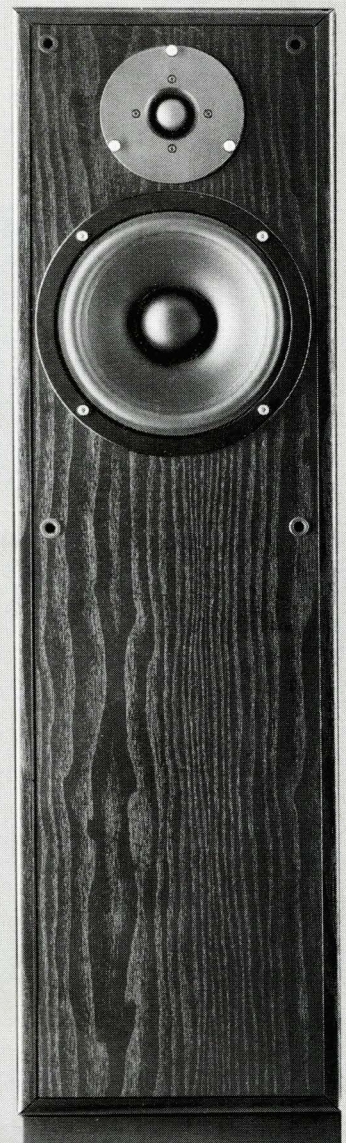
This amp displayed an apparent manufacturing date of 15/05/95, but the time elapsed since then and this test must have been a sabbatical, because the amp's dynamic output seems perfectly strong at 108W and 133W into 8 and 4 Ohm loads respectively. It falls back to 113W (<1 per cent THD) and 65W (<2 per cent THD) into lower 2 and 1 Ohm loads as levels of distortion gradually creep upwards. This is a consequence of a design where even at 1W/8 Ohms, distortion increases from 0.06 per cent through the midrange to over 1 per cent through the extreme treble. Its maximum 8.3A/5msec current delivery is meagre for an amplifier rated at 70W, though its output impedance is low at 0.05 Ohms. Easy-to-moderate-impedance loudspeakers should not prove a problem.

At just 15mV for 1W/8 Ohms, the 702 is also a very sensitive amplifier, so you'll be limited to the bottom end of its volume control when listening to modern, high-output line-sources like CD. Noise is gratifyingly low at -84dB (re. 1W/8 Ohms) but you could experience channel errors of between 0.5-1dB (up to 2dB at -60dB). The DC offset was also very high at 78mV on one channel of this sample. However you look at it, the IMP 702 is a very 'colourful' amplifier! *PMI*

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Electrocompaniet ECI-2

The ECI-2 is in direct line of descent from the original (and famously unreliable) Two Channel Audio Amplifier of the '70s. The current, much-evolved model is rated at 50 Watts into eight Ohms, 90 Watts into four Ohms and 150 Watts into two Ohms. It has four line inputs, a single set of speaker outputs, an external processor loop (with readily-detachable wire U links) and a preamplifier output. A gain switch is provided to give easier volume setting and improved channel balance at low volume levels, but there is no centre detent on the balance control, and no tape-monitor loop. The amplifier is well built, the stand-out feature being the blackened Perspex front panel and gold-finished control knobs. Tiny blue LEDs on each one show that the power is on.

One amplifier topology graces the entire range of Electrocompaniet integrated, pre and power amps. The input section is described as a 'transconductance' amplifier, and claims to have no overall feedback. The output block, described as a transresistive amplifier *with* feedback, has bandwidth limitations designed to prevent TIM (Transient Intermodulation Distortion) and related

distortions, and again loop (local) rather than overall feedback. The power supply appears to use a large (575VA) transformer, fast rectifiers and small electrolytics with parallel-connected bypass caps. This, allegedly, permits quick recovery from transient surges.

Sound quality

The ECI-2 scored encouragingly, and more to the point, attracted consistent comments all round. This author's own findings echoed those of the panel. This is an energetic, full and weighty performer capable of high sound pressure levels, with solid dynamics and large — sometimes excessive — imagery. The treble, by contrast, was slightly recessed with the panel test speakers; less so with others. There is a sharp edge to the treble, amounting at times to a suggestion of fizziness, which with some material led to a rather grainy result.

Overall this is a fine amplifier, a little slow according to two panel members, but the bass is tuneful, deep and well controlled, which invests the music with a sense of solidity and substance lacking in some other amplifiers. "Good atmosphere, and sound-staging is good," wrote one of the piano test piece. "The instrument has a real sense of

scale". The Jennifer Warnes track was praised for its "well-separated vocal," and, more generally, for its "open, full" quality.

This particular sample has been around for a while, and survived a change in UK distributor a few months ago. Although it sounds a little less fresh and consistent than I remember of an earlier sample, the basic qualities of the original are still present. This design has some significant sonic limitations, but they are not fundamental to the musical integrity of the design. Uppermost in a cauldron of impressions lies that of an amp which retains the feel and character of real players, performing on real instruments in real acoustics.

Conclusion

Nothing if not big, bold and interesting, the Electrocompaniet ECI-2 has a degree of musical integrity which more than offsets its occasional lack of manners. This is, however, an audiophile design, so don't expect to be able to play games on its control set, and never listen in anger until it has been warmed up and run in for a few days. *AG*



VERDICT

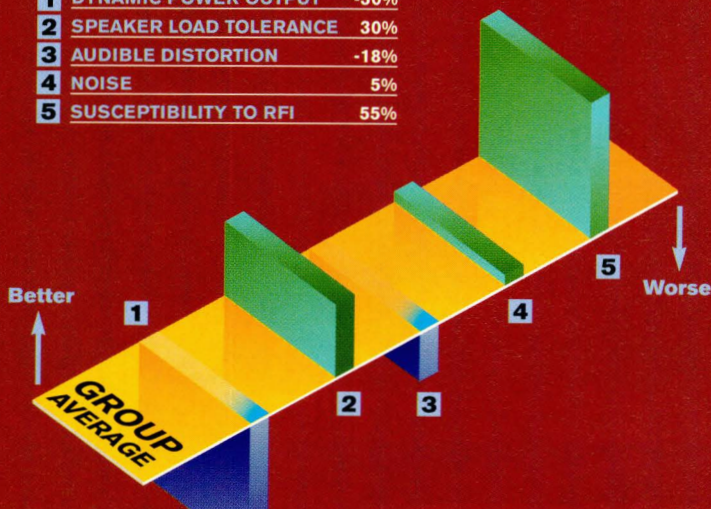
SOUND ★★★★★☆
VALUE ★★★★★☆
PRICE £995.00

☐ A 50 Watt amplifier that comes on like a 100 Watter, with solid projection. The ECI-2 has the ability to conjure up solid imagery in space, though there is a hint of roughness at times.

✉ Sound Image UK Ltd, 52 Milton Road, East Sheen, London SW14 8JR
 ☎ (0181) 255 6868

HOW IT COMPARES

- | | | |
|---|------------------------|------|
| 1 | DYNAMIC POWER OUTPUT | -50% |
| 2 | SPEAKER LOAD TOLERANCE | 30% |
| 3 | AUDIBLE DISTORTION | -18% |
| 4 | NOISE | 5% |
| 5 | SUSCEPTIBILITY TO RFI | 55% |



THE LAB REPORT

Described as a 'high current' integrated amplifier, the ECI-2 comfortably exceeds its 50W specification through the midband with a *continuous* 8 Ohm output of 66W. There is a shortfall in bass, however, amounting to -2.6dB at 20Hz, where the maximum output is just 49W. Distortion is just over Electro's 0.001 per cent spec at 0.002 per cent (1kHz/8 Ohms/1W) but then this also increases to 0.06 per cent with increasing output and frequency (where there's less compensation at work). The company's claim of a >45Amp 'max peak current' is very vague, much like harman/kardon's claims for its HCC (High Instantaneous Current Capacity).

In practice, as the amplifier is asked to drive more taxing loads, VI limiting rears its head and prompts an early increase in THD. This reaches 1 per cent at a point where the dynamic power output into 2 and 1 Ohm loads is almost precisely 250W (or 15.1A over 10msec at <1 per cent THD). Into easier 8 and 4 Ohm speakers, the dynamic output is 84W and 154W respectively. Otherwise, noise is very low at -87.2dB (re. 1W/8 Ohms), input loading satisfactory at 20 kOhms and its immunity to RFI very good indeed. So, overall, the ECI-2 looks solid enough, even if Electro should be more precise in its specification. *PMI*

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ON TEST: AMPLIFIERS (ABOVE £750)

Magnum Class A SE

It may come as a surprise to some when they discover how hot this amplifier runs. There is a deep top-plate heat sink, which is a clearly capable device, but it doesn't prevent this unit from cooking some.

A number of refinements have been visited on the Class A to make this SE version. Upgraded components are said to include Vishay bulk foil and Holco Precision caps in the feedback paths, affixed with silver solder. There are some external identifiers, including a blue LED. Wot, no SE label?

The rest of the technical story is of a basic circuit from the Magnum cupboard, using Hitachi MOSFETs with jacked-up bias. Apparently this is an enriched Class AB amplifier that is said to produce about 10 Watts or so in Class A, and up to 80 Watts or so in Class AB (both eight Ohms). The power amplifier is, apparently, driven by separate stabilised power supplies for each channel, each with its own separate transformer windings, bridge rectifier and reservoir. The preamplifier has its own similar power supply, and claims to feature the shortest practical signal paths and reed-relay input switching. One consequence of all this is a back-breaking weight of 15.5kg.

The control set includes separate record



and 'select' (listen) selectors for four line inputs, and one tape circuit with a separate tape-monitor switch. Other controls include balance, volume and mute, which in fact disconnects the loudspeakers. A non-inverting preamplifier output is available, but no headphone socket. A version of this model is available with a phono input.

In addition to the enriched bias output, there is a touch of high-frequency response tailoring, notionally outside the audio band. The combination of these two features is meant to endow the Class A with the aural character of valve amplification.

Sound quality

The panel gave this one a thumbs-up. All listeners were agreed on the basics, namely a rich and well-extended bass, "and a clean and dry, even clinical mid/treble", and "excellent low-frequency extension and control, with good differentiation on percussion," as one wrote following the Afro Celt track. Another, discussing the same track, wrote of "fast tempi, with a dry presentation and a slightly soft, but well-extended bass".

A third commented: "tight and musical, very dry sounding. Very 'spicy', with a firm grip on the music and a fine ambience". Clearly all listeners were singing from the

same sheet — the story repeated itself with other musical excerpts.

My own listening with other speakers gave slightly different results. My notes describe the Magnum as coloured with some of the source material, and that the overall feel was rather dark and close, lacking air and space. Background noise levels often seemed more intrusive than expected, though the impression was more subliminal than obvious.

Conclusion

The declared aim was to produce a MOSFET amplifier with valve-like attributes, and Magnum has succeeded on a much deeper level than usual. The amplifier's tonality is inescapably valve-like, yet its information-retrieval abilities are greatly superior to the usual character stereotypes one assigns to valves. However, the amplifier also shows clear signs of variation in its performance with different types of loudspeaker, and I couldn't replicate the panel results with all the test enclosures. *AG*

VERDICT

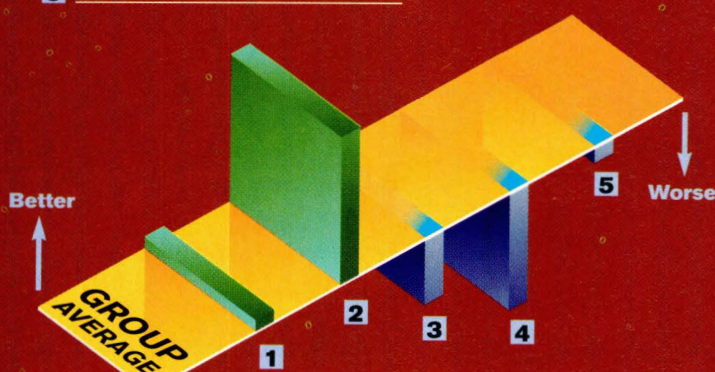
SOUND ★★☆☆☆
VALUE ★★★★★
PRICE £795.00 (PHONO VERSION £840)

An intriguing (and hot running) amplifier with considerable abilities, but a degree of inconsistency with different speakers which means it should be auditioned thoroughly before purchase.

Hailey Audio Ltd, 328 Ware Road, Hailey, Hertford, Hertfordshire SG13 7PG
 (01992) 442425

HOW IT COMPARES

1	DYNAMIC POWER OUTPUT	5%
2	SPEAKER LOAD TOLERANCE	60%
3	AUDIBLE DISTORTION	-25%
4	NOISE	-45%
5	SUSCEPTIBILITY TO RFI	-5%



THE LAB REPORT

Appearances are deceptive, for though this behemoth looks just like the Magnum Class A reviewed five years ago in issue 116, this 'SE' version represents a marked improvement on that high-temperature MOSFET design of yesteryear. Power output has now increased substantially from 55/88W to 92/144W into 8/4 Ohm loads respectively, while holding up to a full 86W at 20kHz. The old model incurred a severe slewing distortion at HF, which limited its output to around 4W at <1 per cent THD! Sure enough, even this new version incurs a big increase in 2nd harmonic distortion as the volume is cranked up and the amplifier runs from Class A into the more efficient but less linear Class AB. Nevertheless, a figure of 0.022 per cent through the midrange is now complemented by a perfectly satisfactory 0.1 per cent through the treble.

So the A-Class SE remains 'colourful' but not overwhelmingly so — even its response is a lot 'flatter'. For example, under dynamic conditions, the amplifier will deliver 111W into 8 Ohms at typically 0.02 per cent THD, rising to 201W/4 Ohms (0.04 per cent) 342W/2 Ohms (0.08 per cent) and 463W/1 Ohm at typically 0.2-0.25 per cent THD. This is equivalent to a speaker-crunching 20.5A reservoir of current. There's still some residual susceptibility to RFI around 200-300MHz, but otherwise the Class A has been given a new lease of life. *PMI*

Pioneer A-07

This flagship one-box amplifier is fabulously built, and attractively presented in a pale champagne finish. Although of standard 440mm width, it is unusually tall (163mm). Its 475mm depth amounts to a good half meter once you've made the necessary allowance for cables. Not only big, but heavy too: 18.4kg is the reading on the scales. Despite these heavy-duty attributes, this is a minimalist design, with little that could be described as superfluous gadgetry.

The only controls are for volume, input selection and a gain-range setting. Low gain is recommended unless there is insufficient input to drive the system at the required volume. There is no balance control, no headphone feed, no off-tape monitor; but there is a remote control with source and volume switching. The only other front-panel decoration is a switch that determines whether any input is to be fed to the tape output. The preferred setting is 'off', though I found its effect hard to identify consistently.

There are six inputs, including two tape circuits and a moving-magnet phono input. Rated power output is 80 Watts into eight Ohms and 120 Watts into four Ohms (DIN, 1 per cent THD, in the absence of a standard RMS figure).

VERDICT

SOUND ★★☆☆☆
VALUE ★★☆☆☆
PRICE £999.95

There's plenty of detail and discipline here, yet the big Pioneer lacks real transparency, and the effect is to disengage the listener.

Pioneer High Fidelity (GB) Ltd, Pioneer House, Hollybush Hill, Stoke Poges, Slough Berks SL2 4QP
 (01753) 789500



Design
 features include a highly symmetrical circuit layout, mirror-imaged from input to output. Attention to detail is seen everywhere, for example compartmentalised internals to help with signal screening, and a mains input fitted in the centre of the base (shades of Mark Levinson). There are some notable proprietary circuits, including the Version 5 iteration of Pioneer's Wide Range Linear Circuit.

Sound quality

This amplifier left the panel underwhelmed. There was a consistent feeling of it starting out well with the energetic Afro Celt track, but that it was all downhill from there on in, and little to engage the emotions or suffuse the spirit. A consistent thread running through the critiques was that the amp sounded detailed, but rather thin and small, and although this implies an amplifier with plenty of small detail resolution, there were other models in this group with comparable resolving power but which somehow seemed more in charge of proceedings. Somehow, we just couldn't shake the feeling that the Pioneer seemed to lack conviction.

The overall panel test score was far from disastrous, but for an amplifier costing

£1,000 results were slightly disappointing. It was the Mozart and the Handel — music relying on a sense of discipline, proportion and fine control over dynamics and tonality — which suffered worst.

The A-07 did liven up a little when tested with other loudspeakers. With the Mirage OM-6, it sounded easy, generous and spacious, and even with the big Tannoy D900s it worked well, mostly due to the latter's generous and well-voiced bass/lower mid-band. The amp remained consistent tonally, dynamically and spatially as the volume was increased, even to very high levels, which makes the modest power rating seem more conservative than is sometimes the case.

Conclusion

Here is another example of an amplifier that fails the consistency test. It only worked well in some combinations. At the end of the day, the Pioneer failed to convincingly improve upon other good amplifiers in this group, even when it was on best behaviour. AG

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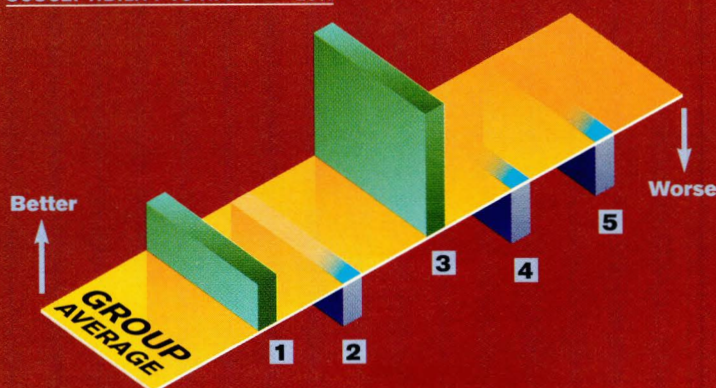
THE LAB REPORT

Regrettably, this A-07 has all the hallmarks of a very powerful, low distortion, highly 'controlled' design that, in the final analysis, is simply not particularly exciting. There's a current limit of around 15.2A which enables the amplifier to punch out short-term peaks of 122W, 215W, 292W and 255W into 8, 4, 2 and 1 Ohm loads respectively. But there is no obvious VI-limiting: the amplifier continues to provide a very low distortion output (typically <0.01 per cent) regardless of load condition or frequency until it reaches its 'end-stops' and clips very abruptly indeed. Pioneer specifies a damping factor of 350, which is well met at 371 while rating the A-07 at 80/120W continuous into 8/4 Ohms. In practice, it's possible to wrest 90/135W, respectively, into 8/4 Ohms.

All else is highly contained. Noise falls to -84.6dB (re. 1W/8 Ohms), the response is flat to within +0.0/-0.5dB limits from 20Hz-20kHz, while distortion collapses to as low as 0.001 per cent through the midband. A hint of RF susceptibility between 1-10MHz gives a clue to the true open-loop bandwidth of the amplifier and suggests some variability in performance might be encountered with different CD players. Otherwise, I cannot help but wonder if the A-07 is too squeaky-clean for its own good (cf Audiolab, Technics and Myryad). *PMi*

HOW IT COMPARES

1	DYNAMIC POWER OUTPUT	20%
2	SPEAKER LOAD TOLERANCE	-15%
3	AUDIBLE DISTORTION	50%
4	NOISE	-20%
5	SUSCEPTIBILITY TO RFI	-20%



Conclusions

It is always a pleasure to review a group of hi-fi components in which there are some genuinely interesting models, and the sure-fire probability of some real talent. However, while many of these amps intrigued, only one was outstanding.

Observation and instinct suggest that European regulations relating to electronic equipment are beginning to have a real impact, but not always in the manner intended. Some designers have been taking

the regulations seriously, learning how to reduce RF problems without spoiling the performance of their designs. Others have simply 'slugged' their amplifiers with capacitance to wipe out all high frequencies that might cause trouble, with predictable consequences. A third group appears to have simply ignored the regulations altogether. Surely, if we need these regulations they should be enforced; if not, why bother? There are reports that the strictures referring

to RFI are partly a matter of interpretation anyway: move a wire a quarter of an inch and the whole pattern of interference can change. The situation has become so farcical that in the trade, CE has become known as Caveat Emptor, and the result is that performance standards are often lower than two or three years ago, and there appears to be more model-to-model variation than ever. I am sure the Editor would welcome correspondence on this topic. AG

GROUP A (UP TO £500)

Audio Analogue Puccini	£450.00
Audiolab 8000LX	£469.90
Technics SU-A900D II	£499.95

The budget threesome in this test turned out to be an unusually interesting and varied collection. The **Technics SU-A900D II** is what might be described as a two-box integrated: its single power supply built into the power amplifier drives the preamp via a low-voltage wire link. The Technics was the only amplifier tested with tone controls, and it also boasts massive moving coil power meters, though the meter response doesn't appear to bear much relation to real-world power output. The Technics looks good

enough to eat, but it was a disappointing listen, with fudged leading edges and a generally lossy, rather soft-centred quality — though it never sounded unpleasant.

The new entry-level model from the **Audiolab** stable, the **8000LX**, is a real chip off the old block, with the usual immaculate presentation and well-sorted feature set (minus tone controls in this case) of the 8000S. Sadly, the LX doesn't have the precision and dynamics, and it sounds a little too safe to convince.



Technics SU-A900D II

For inspiration at a bargain price, look no further than the **Audio Analogue Puccini**. This amplifier is reasonably powerful, immaculately presented, cleverly equipped (it comes as standard with an MM/MC input, and standby switching incorporated into the volume control), and has sharp, articulate musical manners. The pricing seems particularly keen, perhaps thanks to the strength of the pound relative to the Italian lira. Isn't it about time that other importers reappraised their pricing policies?

GROUP B (£501-£750)

Alchemist Kraken	£579.00
Densen Beat B-100 mk II	£649.99
Musical Fidelity X-Pre/X-A50	£739.97
Myryad MI-120	£599.95
Talk Electronics Storm 2	£649.95

The **Alchemist Kraken** is a mid-size amplifier with an outboard power supply. It is a likeably lush-sounding package, but it runs too hot, though the maker insists it is within legal limits. It impressed us with its laid-back quality, but failed to exert much grip with some speakers. If you like easy listening music, though, this could be the one.

The **Myryad MI-120** has been here

before, but has been improved for this outing. The result is a clearly smoother and more euphonious amplifier than before, and one that seems more in command, though its basic character remains unaltered. The **Densen Beat** also had a repeat run: now it displays a controlled, dynamic and coherent character, but sometimes a machine-like quality, with suggestions of background hiss.

The **Talk Electronics Storm 2** is an up-spec, higher-power derivative of the Storm 1. This is the one to go for: it gives every indication of being more powerful and in command of the situation, though it is no muscle amp. The **Musical Fidelity X-PRE/**

X-A50 is easily the most flexible amplifier tested: not just in its standard trim, but with the user's personal choice of 'X-Ponent' add-ons, which can include valve buffer stages, tone controls, outboard power supplies for the valve preamp (strongly recommended), headphone amps and more. Curiously there is no tape monitor facility — yet.



Alchemist Kraken

GROUP C (OVER £750)

AVI S2000MI	£999.00
Bryston B60	from £1,280.00
Credo 702	£850.00
Electrocompaniet ECI-2	£995.00
Magnum Class A SE	£795.00
Pioneer A-07	£999.95

The **Magnum Class A** runs hot enough to be a potential hazard. Despite some aural inconsistencies, at its best this is an extremely fine amplifier, with many valve-like attributes but none of that breed's loss of resolution and smeared leading edges. The **Credo 702** is a crisp, well-defined amplifier, but the line inputs are too

sensitive for most CD players, noise levels are also rather high, there are level-related inconsistencies.

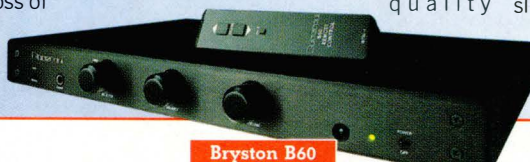
Electrocompaniet's ECI-2 is a powerful, solid-sounding model, with the kind of in-depth ability that will make sense in many quality systems. The same goes for the **AVI S2000MI**, a brand renowned for its reliability. The control system isn't very user-friendly, but this remains an excellent-sounding design, whose clear and detailed

quality

shone through a wide variety of source components and loudspeakers.

In material terms, the **Pioneer A-07** looks more than good value. It has all the attributes of a serious amplifier, with a stripped-down control set. In some systems it excelled, but it could sound rather 'hands-off' in some combinations.

The **Bryston B60** also missed out on a recommendation. The 20 years' guarantee is a unique benefit, and the unit is astonishingly slim (though it takes up no less shelf space than most). But there is no getting away from the high pricing, and performance fell off towards the frequency extremes.



Bryston B60

BEST BUY

Only one model, the £450 **Audio Analogue Puccini**, met all the requirements for Best Buy. This is a first-rate budget amplifier that looks and sounds like an altogether more costly model. Check it out.

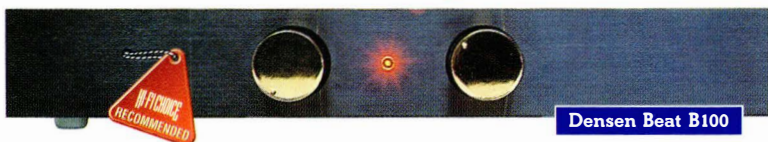
Audio Analogue Puccini



RECOMMENDED



Myryad MI-120



Densen Beat B100

The Recommendations are all drawn from the £600 to £1,000 band. The **Myryad MI-120** (£599.95) is an enhanced version of an existing amplifier which has finally come on song. It's unusually attractive and well built. Only a little more expensive, the **Densen Beat B-100 mk II** is another improved version of an existing model, and majors on dynamic qualities: this is one for the pace and timing brigade, and it will only set you back £649.99. The obvious point to make is that existing owners seem to have been left in the cold by these changes, and might feel aggrieved. The **Talk Electronics Storm 2** (£649.95) is much better than the Storm 1 tested some time ago — a good all-rounder.



Talk Electronics Storm 2



Electrocompaniet ECI-2

The real oddball is the **Musical Fidelity X-PRE/X-A50** (£739.97 with X-LINX cable), which can be extended in several ways and turned into the kind of amplifier you'd like it to be, unless you have a three-head cassette deck. Even a two-header can be difficult to plumb in without feeding everything through the cassette deck's amplifier chain — though it could be done with an external switchbox. The **Electrocompaniet ECI-2** (£995.00) is a solid, dynamic performer, and a good base for some heavyweight systems, while the **AVI S200MI** (£999.00) while somewhat sharper but less 'physical', is still a consistent, high-level performer.

Musical Fidelity X-Pre/X-A50



AVI S200MI

BEST OF THE REST



Audiolab 8000S

Be in no doubt: there is no shortage of genuinely talented amplifiers already doing the rounds, especially towards the lower end of this month's price band. Obvious luminaries include the **Mission Cyrus SL** (£398), **Marantz PM66 KI Signature** (£400) and the **Pioneer A-300R Precision** (£400). Only one step further up the price ladder, is the excellent **Orelle SA100** (£449). Around £500, check out the **Musical Fidelity A2** (£499) and the **Arcam Alpha 9** (exactly £500).



Marantz PM66 KI Signature

Those interested in the Densen Beat might like to check out the model which in many ways comes closest to being its inspiration, the **Naim Nait 3** (£575), though the Densen is a much more powerful design, and there are many other differences. The **Roksan Caspian** (£695) is a particularly strong contender, and arguably the one to beat at the price, but the **Musical Fidelity A220** (£700) and **Audiolab 8000S** (£750) should also be considered here. Last but not least, there are two **Copland** models that fall just within our price band, both svelte and highly listenable designs: the **CSA-8** (£945) and the **CSA-14** (£1,199).



Pioneer A-300R Precision

Five Stars

Paul Messenger explains why you should visit an independent

Why use a specialist hi-fi dealer? The short answer is because he knows one hell of a lot more about hi-fi than you do. And if you've gone to the trouble of picking up a specialist magazine on the subject, you're obviously interested in something rather more than a mini system from the nearest electrical superstore.

You've probably bought this magazine for one of two reasons. You're looking for advice (presumably unbiased and good) on choosing and using your hi-fi system, and/or you're checking out the ads to decide where to go and buy it.

The independent specialist dealer doesn't know everything, and he doesn't know much about you, but if music's an important part of your life, he's the only guy around who's able (and hopefully willing) to help you choose the equipment which will give you the best long term satisfaction.

Power of the Press

Dealers sometimes moan to me about the power of the press, and the disproportionate influence of its 'Best Buy' and multi-star ratings. Well, I've been in the press for twentysomething years, and still feel more ignorant than powerful.

The more I mess around with hi-fi gear, the more I become aware of our lack of real understanding of the subtleties involved, and the more I appreciate the importance of the dealer's skills and experience, in bringing together components so that the whole is greater than the sum of its parts.

We hacks get paid to write words, often about components in isolation, because



individual product reviews are still the staple diet of the press. They can sometimes provide a useful guide to the way a product performs, but only under the particular circumstances in which the review was conducted.

The hi-fi reviewer attempts, with varying degrees of success, to evaluate a particular component, and find something interesting (and hopefully positive) to say about it. That's about the end of it, and it's on to the next product.

The magazine prints the review, and that very process magically confers a measure of authority. Experienced hi-fi

enthusiasts, who read reviews over a period of years and try out various products themselves, soon start to realise the limitations of that approach. Some reviews are better than others, but none can get to grips with the real heart of the problem - whether a given product will improve your musical satisfaction, in your system and your room.

The Role of the Dealer

The dealer's role is very different, and potentially much more valuable. He has the chance to talk one-on-one. If he's good at his job, he'll use that opportunity to find out what you as an individual are looking (or listening) for.

His motivation is very different too. Sure he wants to make a sale. That's the lifeblood of any shop. But he also knows that if something he sells really does deliver long term satisfaction, there's a very good chance you'll come back again to see if he can repeat the trick some time in the future.

If you go into a shop and demand a particular CD player, on the basis that it got seven stars (out of five) in last month's magazines, the shop will probably simply take the line of least resistance and sell it to you. (Or switch-sell you to a similar price alternative, if he's fresh out of stock of that particular flavour-of-the-month.)

If you go in and say you're looking for a CD player, and want his advice on what to choose, things are liable to become more interesting. The onus is now on the dealer to show what he can do. His first task is to ask the right questions to try and get some idea of what you might be after.

Asking the questions is the easy bit. The real skill comes in using the information to come up with a shortlist of likely contenders, and then conducting a demonstration so that you have a real chance to play a central role in the

For Value

specialist dealer if you are searching for real hi-fi satisfaction

decision making process.

Putting together a successful hi-fi system might not be as difficult as it was twenty or thirty years ago, but it's just as easy to make a mess of things. Put the 'wrong' combination of components together and it'll still sound a lot better



than any cute little mini system package. It might even rate a five star review. But it won't match the potential of a carefully balanced and properly installed system, and it certainly won't cater for your own particular preferences and personality.

We British are notoriously indiscriminating consumers, at a mass market level at least. The majority of the population don't even bother to drive a car they're thinking of buying, never mind take the trouble to listen to hi-fi equipment.

The majority will therefore end up with hyperstore mediocrity, and hi-fi that's about as tasty as supermarket bread. But if music is an essential ingredient in your daily diet, you owe it to yourself to become a member of the discriminating minority.

You know full well that your music collection is as individual as your wardrobe, and just as precious too, so it's worth taking the time and trouble to search out the dealer and equipment that will make that collection come alive, and give you a new buzz every time you play your favourite discs.

The independent specialist may not beat the chain store on price, but he continues to thrive in a hostile environment because real hi-fi is so much more than a matter of price. The people who work in these shops are themselves enthusiasts, often with many years of experience in meeting customer's needs, and the very necessary expertise to ensure that the whole thing is properly set up to deliver the best results.

The better the hi-fi, the more important it is to get the fine details right at the installation end of things, but even the least expensive equipment can be made to sound a whole lot better if good care is taken over the fine details - the support furniture, the cabling, the positioning of speakers and so on.

Without expert assistance even high class hi-fi can give mediocre results. With it you'll stand a very good chance of ending up with something rather more than a consumer durable - something which will be a source of considerable pleasure and genuine emotional satisfaction for decades to come.

I agreed to write this signed piece, irrespective of the specific sponsors, because I believe the independent specialist dealer plays a vital role in giving customers long term hi-fi satisfaction.
"The views and opinions expressed here are my own and not necessarily those of hi-fi choice."

Paul Messenger

The specialist Dealers listed here are professional and enthusiastic. Give your nearest a ring for a demonstration.

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278 High Street
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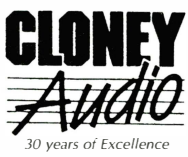
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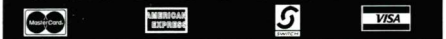
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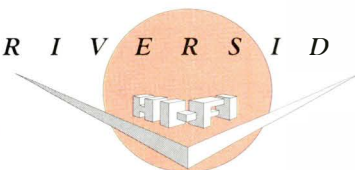
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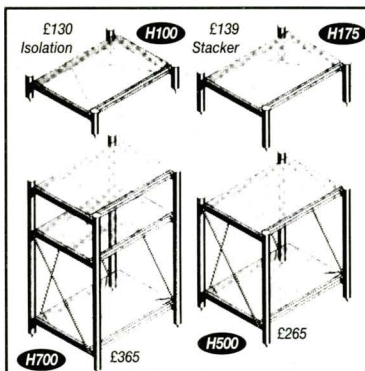
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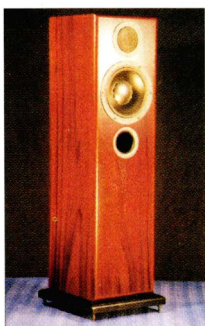


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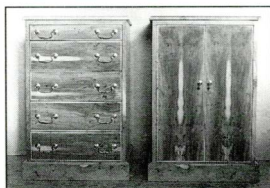
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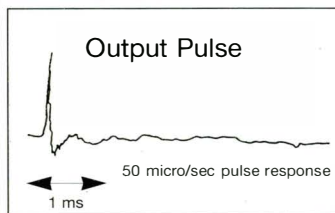
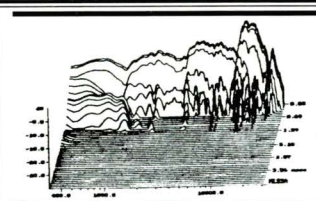
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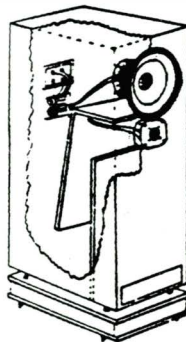
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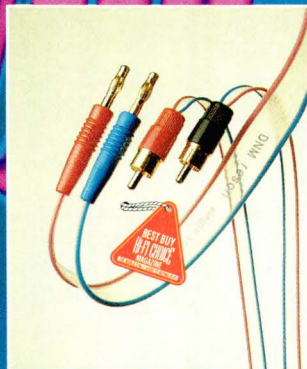
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KRELL KRS Reference six box pre-amp	£3995	LUMLEY Promenade SP1 Loudspeakers (NEW)	£250
AUDIO NOTE 10 Limited cartridge & PSU	£2750	TECHNICS SLQ30 Turntable	£125
LUXMAN D-5000s CD Player MINT/BOXED (E3495)	£1395	KSEKI Blackheart Unused/Board (E1995)	Special Offer £995
NAKAMICHI ZX1000 Tape Deck & SW Serviced	£1895	YAMAHA CDX880 CD Player	£195
AUDIO NOTE ANS 7 Step-up Transformer	£3000	AUDIO AB 80XIC Pre-amplifier	£295
ARCAM Alpha 3 Integrated Amp with phono	£165	MACPHERSON 2x Panel Loudspeakers	£950
CAMBRIEZ P50 Integrated Amplifier	£75	APOCHE Stage speakers with stands	£1495
AUDIO NOTE Ansa Silver Amplifier	£1995	BAV JOHN BOWERS Active 1 Speakers	£895
MISSION 782 Loudspeakers with stands	£250	MARK LEVINSON 385 pre-amp ex-demo	£4850
KEF 104 Loudspeakers	£450	ROTEL RCD9658X CD Player	£195
AUDIO NOTE M7 Silver Signature pre-amp	£7000		

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Audiolab 8000P - new	749.90	675.00	Linn Kaim Phono - x/d	1750.00	1299.00
Audiolab 8000M - x/d	1999.80	1358.00	Linn Kaim Phono - s/fh	1750.00	1190.00
Cyrus Disc/Dac - x/d	1500.00	999.00	Linn Wakanda Phono - x/d	900.00	750.00
Cyrus PS3K	329.00	278.00	Mission 754 - x/d new	1299.00	999.00
Cyrus Pre/Power	1146.00	974.00	Naim CDS - x/d latest spec	3940.00	3940.00
Cyrustilia	598.00	508.00	Naim NA AV1 - x/d	1680.00	1398.00
Cyrus A/V Master - x/d/new	698.00	558.00	Naim SBL - x/d	197.00.00	1905.00
Epos ES25 - x/d	398.00	338.00	Naim 32.5 - s/fh		239.00
Linn Arkiv - x/d	165.00	129.00	Pioneer Precision A300R - x/d	399.00	359.00
Linn Lingo s/fh	1000.00	700.00	Pioneer Precision PDS55 - x/d	469.00	419.00
Linn Ekos - x/d	750.00	565.00	Pioneer PDHS - new	999.00	799.00
Linn Klout - s/fh	1500.00	1125.00	Pioneer D05 - new	699.99	795.00
Linn Mink II - s/fh	2400.00	1800.00	Quad 77 Amplifier - Nextel - x/d	699.99	579.00
Linn Wakanda/Kudos Sneaky/LK100 - s/fh	485.00	405.00	Quad 77 Amplifier - Nextel - new	699.99	629.00
Linn Numerik - s/fh	995.00	995.00	Quad 77 System Console - new	2999.99	2499.99
Linn Keelidh - s/fh	15000.00	999.00	Rel D1 00 - new	475.00	375.00
Linn Keelidh - s/fh	850.00	680.00	Rel Stentor - x/d	1795.00	1355.00
Linn Keelidh Yew - s/fh	6000.00	3800.00	Spenor SP2 - s/fh inc. stands		189.00
Linn Keelidh Walnut - s/fh	6000.00	36.00.00	Yamaha DSPA3030 - x/d	1499.99	1099.99

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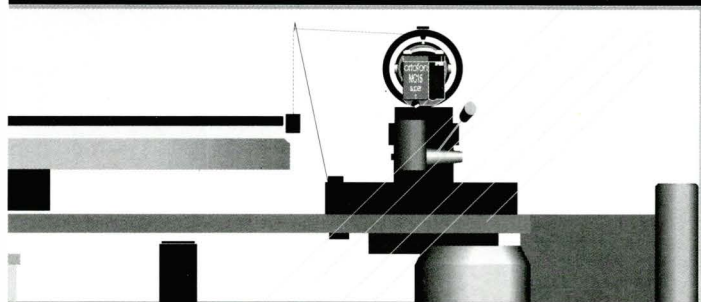
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THE DIRECTORY

Our Three Step Guide to Buying Hi-Fi

The legendary *Hi-Fi Choice* Directory is now simpler to use than ever before, but contains all the information you need to select and buy the perfect hi-fi system.

STEP 1 Discover which products fall within your budget by using our Price Guide (starts on the next page). This listing is updated bi-monthly and includes all hi-fi products currently available in the UK. It is organised by product type, then by price band, and is sorted alphabetically. Products whose names are printed in **red** are those that we have reviewed. Which leads us to...

STEP 2 Read about the hi-fi equipment that we have reviewed in the Directory (starts after the Price Guide). Here you will learn which items have been singled out for our famous Best Buy and Recommended awards that denote products of exceptional quality and value. The Directory is sorted by product type and listed alphabetically, and the beginning of each section provides essential information about each kind of hi-fi component.

STEP 3 Find your nearest hi-fi store in our Dealer Directory (at the end of the 'reviewed product' directory) to book a demonstration of the products you are interested in.

Best Buys and Recommendations

If you see a Best Buy (**red**) or Recommended (**blue**) flag at the beginning of an entry in our Directory of reviewed products, the item concerned is particularly deserving of your attention.

B **Red** signifies the Best Buy swing-tag, which indicates products of the best quality and superb value for money in their price category.

R **Blue** Recommended products offer excellent quality and value, but not the same cost-effectiveness as a Best Buy.

Please note that an expensive Recommended product will nearly always perform better than an inexpensive Best Buy.

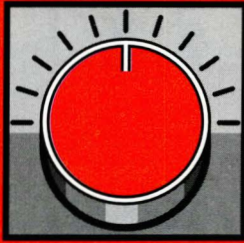
Using Best Buys and Recommendations to buy hi-fi.

Do not commit the cardinal sin of dashing into your local dealer, magazine in hand, demanding to purchase Best Buy CD player A, Best Buy amplifier B and Best Buy speakers C. This is unlikely to result in your long-term satisfaction. Our belief at *Hi-Fi Choice* is that you must consider the hi-fi system as a complete entity, not as a collection of components. While a superb system might well contain Best Buy and Recommended components, one cannot lump together Best Buys and Recommendations in the hope that they will automatically perform superbly. These ratings make a useful guideline for short-listing components worth trying, but only by hearing them for yourself can you draw meaningful conclusions about what suits your taste. Furthermore, don't panic if the dealer offers you equipment that we have not tested. At the end of the day, what matters most is that your hi-fi system fits your tastes like a glove, and it is the dealer's challenge to ensure your satisfaction by any means – and components – necessary!



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AMPLIFIERS
Integrated Amps

KEY

Ⓢ - number of line-level inputs.
'20W' - output power per channel
into nominal load of 8 Ohms.

Up to £250

Aiwa XA-003	Ⓢ	40W	140
AMC 3020	Ⓢ	20W	100
AMC 3025A	Ⓢ	30W	130
AMC 3050A	Ⓢ	45W	170
Arcam Alpha 7	Ⓢ	40W	250
Cambridge A1 Mk III	Ⓢ	40W	120
Cambridge A3i	Ⓢ	60W	200
Denon PMA-250SE	Ⓢ	30W	160
Denon PMA-350SE	Ⓢ	50W	200
Denon PMA-425R	Ⓢ	45W	230
Denon PMA-100M	Ⓢ	80W	240
Goodmans Delta 801	Ⓢ		140
H/K HK610	Ⓢ	30W	180
H/K HK620	Ⓢ	40W	250
JVC AX-V4BK	Ⓢ	30W	200
JVC AX-R5BK	Ⓢ	45W	200
Kenwood KA-1080	Ⓢ	60W	140
Kenwood KA-3080R	Ⓢ	70W	170
Kenwood KA-3020SE	Ⓢ	50W	200
Marantz PM-47	Ⓢ	40W	150
Marantz PM-57	Ⓢ	50W	200
Marantz PM-66SE	Ⓢ	50W	230
Marantz SR-47	Ⓢ	40W	250
Musical Fidelity E1	Ⓢ	30W	199
NAD 310	Ⓢ	20W	100
NAD 312	Ⓢ	25W	200
Pioneer A-105	Ⓢ	30W	130
Pioneer A-204R	Ⓢ	25W	160
Pioneer A-300R	Ⓢ	50W	200
Pioneer A-305R	Ⓢ	50W	200
Pioneer A-405R	Ⓢ	60W	250
Rega Brio	Ⓢ	30W	229
Rotel RA-931	Ⓢ	35W	150
Rotel RA9708X	Ⓢ	60W	250
Sherwood AX-7030R	Ⓢ	95W	250
Sony TA-FE210	Ⓢ	45W	130
Sony TA-FE310R	Ⓢ	45W	150
Sony TA-FZ48E	Ⓢ	40W	200
Sony TA-F448EB	Ⓢ	55W	250
TEAC A-R300	Ⓢ	45W	200
TEAC A-R500	Ⓢ	90W	250
Technics SU-V300	Ⓢ	25W	150
Technics SU-V500	Ⓢ	30W	180
Technics SU-A600 Mk3	Ⓢ	60W	200
Technics SU-V620	Ⓢ	70W	230
Technics SU-A700 Mk3	Ⓢ	45W	250
Yamaha AX-390	Ⓢ	60W	170
Yamaha AX-492	Ⓢ	85W	220

£251 to £500

Alchemist Maxim	Ⓢ	30W	319
AMC CVT 3030A	Ⓢ	30W	400
Arcam Alpha 8	Ⓢ	50W	350
Arcam Alpha 9	Ⓢ	70W	500
Audio Analogue Puccini	Ⓢ	40W	450
Audiolinn Alto	Ⓢ	35W	300
Audiogram MB1	Ⓢ	35W	493
Audiolab 8000LX	Ⓢ	60W	470
Audiolab 8000A	Ⓢ	50W	500
Aura VA-100 II	Ⓢ	70W	350
CR Dev CR324	Ⓢ	100W	499
Creek 4330	Ⓢ	35W	279
Creek 4340	Ⓢ	35W	279
Creek 4330R	Ⓢ	35W	355
Creek 5250	Ⓢ	50W	450
Denon PMA-725R	Ⓢ	65W	350
EMF Audio Sequel	Ⓢ	50W	450
H/K HK640	Ⓢ	55W	400
Kenwood KA-5090R	Ⓢ	65W	300
Kenwood KA-7090R	Ⓢ	85W	400
Magnum IA120	Ⓢ	65W	265
Magnum IA170	Ⓢ	96W	330
Magnum IA170SE	Ⓢ	90W	430
Marantz PM-68	Ⓢ	90W	300
Marantz PM-66 Ki Jig.	Ⓢ	50W	400
Micromega Minium	Ⓢ	40W	350
Mission Cyrus SL	Ⓢ	50W	398
Monrio Asty	Ⓢ	60W	440
Musical Fidelity E11	Ⓢ	60W	300

Musical Fidelity A2	Ⓢ	25W	500
NAD 314	Ⓢ	35W	260
NAD 317	Ⓢ	80W	470
Onkyo A9210	Ⓢ	40W	260
Onkyo A921	Ⓢ	50W	350
Onkyo A922	Ⓢ	70W	400
Orelle SA-100	Ⓢ	50W	499
Pioneer A-400X	Ⓢ	80W	300
Pioneer A-605R	Ⓢ	80W	400
Pioneer A-300R Precision	Ⓢ	35W	400
Pro-Ject Model 7	Ⓢ	40W	300
Rega Elex	Ⓢ	50W	398
Shearpe 2.5	Ⓢ	35W	489
Sony TA-FA3ES	Ⓢ	70W	400
Sony TA-F3000ES	Ⓢ	60W	500
Talk Electronics Storm 1	Ⓢ	50W	500
TEAC A-H500	Ⓢ	50W	280
Technics SU-A800D	Ⓢ	55W	400
Technics SU-A900 Mk2	Ⓢ	90W	450
Technics SU-A900D	Ⓢ	70W	500
Yamaha AX-592	Ⓢ	100W	280

£501 to £700

Alchemist Kraken Integrated	Ⓢ	55W	579
Alchemist Nemesi	Ⓢ	80W	700
Audio Analogue Puccini SE	Ⓢ	50W	595
Audio Note Kanji Line SE	Ⓢ	9W	699
Audio Note First integrated	Ⓢ	40W	699
Audiogram MB2	Ⓢ	60W	599
Audiolab 8000S	Ⓢ	60W	700
CR Dev Kalypso	Ⓢ	15W	599
CR Dev CR325	Ⓢ	175W	699
Creek 5250R	Ⓢ	50W	575
Creek 5250SER	Ⓢ	60W	665
Densen Beat B-100	Ⓢ	60W	600
DPA Renaissance int.	Ⓢ	40W	595
Exposure XX Super	Ⓢ	55W	700
Fase Evoluzione Performance 2.0	Ⓢ	40W	570
Gamma Gemini	Ⓢ	12W	699
H/K HK660	Ⓢ	65W	700
Hi Q Sound MCI	Ⓢ	30W	565
JoLida 202	Ⓢ	40W	695
LFD Integrated 0	Ⓢ	50W	549
Linn Majik (Line)	Ⓢ	33W	650
Lynwood Opal	Ⓢ	80W	685
Magnum IA200	Ⓢ	100W	599
Magnum Class A	Ⓢ	85W	690
Mission Cyrus IIIi	Ⓢ	50W	598
Musical Fidelity A220	Ⓢ	50W	700
Myryad MI 120	Ⓢ	60W	530
Naim Nait 3	Ⓢ	30W	575
Orelle SA-100RX	Ⓢ	75W	649
Prime Design A-100	Ⓢ	100W	650
Quad 77 Integrated	Ⓢ	85W	700
Roksan Caspian	Ⓢ	70W	695
Rose Scion	Ⓢ	65W	615
Shearpe Phase 2	Ⓢ	50W	649
Stemfoot SF60	Ⓢ	60W	549
Talk Electronics Storm 2	Ⓢ	65W	650
TEAC A-BX7R	Ⓢ	80W	700

£701 to £1000

Alchemist Forseti Integrated	Ⓢ	100W	949
Audio Note Oto Line PP	Ⓢ	12W	950
AWI S2000M1	Ⓢ	100W	999
Copland CSA8	Ⓢ	60W	945
Credo IMP702	Ⓢ	70W	938
Credo IMP703	Ⓢ	70W	1,000
Electrocompaniet ECI-2	Ⓢ	50W	995
Exposure XV Super	Ⓢ	55W	800
Fase Evoluzione Performance 1.1	Ⓢ	70W	790
Fase Evoluzione Performance 1.0	Ⓢ	60W	790
Golden Tube Audio SI-50	Ⓢ	50W	1,000
H/K HK680	Ⓢ	85W	1,000
LFD 0 LE Integrated	Ⓢ	60W	799
Linn Majik (Phono)	Ⓢ	33W	800
Magnum Class A SE	Ⓢ	85W	815
Marantz PM-17	Ⓢ	60W	900
Meridian 551	Ⓢ	55W	795
Micromega Tempo 1	Ⓢ	50W	750
Micromega Tempo 2	Ⓢ	75W	950
Minstrel Ultra Linear	Ⓢ	25W	900
Naim Nait 3 R	Ⓢ	30W	760
Pioneer A-07	Ⓢ	80W	1,000
Primare A20	Ⓢ	60W	800
Rega Elicit	Ⓢ	70W	730
Shearpe Phase 2 Reference	Ⓢ	50W	799
Sonnesteer Alabaster	Ⓢ	50W	900
Stemfoot SF100	Ⓢ	100W	849
TEAC AB-X10	Ⓢ	100W	1,000
Unison Simply Two	Ⓢ	12W	995

£1001 to £2000

Art Audio Integra	Ⓢ	30W	1,499
Audiolinn Classic 25	Ⓢ	25W	1,099
Audiolinn S500	Ⓢ	25W	1,199
Audio Note Soro Line PP	Ⓢ	20W	1,200
Audio Note Oto Line SE	Ⓢ	12W	1,200
Audio Note Oto Phono SE	Ⓢ	12W	1,500
Audio Note Soro Line SE	Ⓢ	18W	1,699
Beam-Echo SA-50	Ⓢ	50W	1,950
Bryston B-60	Ⓢ	75W	1,280
Copland CSA14	Ⓢ	70W	1,199
Copland CSA28	Ⓢ	50W	1,299
Copland CTA401	Ⓢ	25W	1,699

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Credo LIM 703	Ⓢ	1,249	1,249
EAR 834	Ⓢ	40W	1,999
Graaf Venticinque	Ⓢ	20W	1,995
LFD Integrated 1	Ⓢ	65W	1,099
Marantz PM-16	Ⓢ	90W	1,700
Meracus Intrare	Ⓢ	60W	1,095
Minstrel Partridge	Ⓢ	26W	1,499
Monrio MC-205	Ⓢ	80W	1,545
Musical Fidelity A1000	Ⓢ	50W	1,500
Primare 301	Ⓢ	80W	1,800
Rogers E-20a	Ⓢ	20W	1,229
Rogers E-40a	Ⓢ	40W	1,900
Sonic Frontiers Anthem Integrated	Ⓢ	25W	1,295
T+A PA1200	Ⓢ	90W	1,350
T+A R1200R	Ⓢ	90W	1,495
T+A PA1500	Ⓢ	135W	1,650
T+A R1500R	Ⓢ	135W	1,895
Unison Simply Four P	Ⓢ	24W	1,555
Unison Simply Four T	Ⓢ	11W	1,595
Woodside ISA230 Disc	Ⓢ	30W	1,099
Woodside ISA230 Disc	Ⓢ	30W	1,249

Over £2000

Adyton Opera	Ⓢ	50W	2,595
Audio Note Meishu Line	Ⓢ	9W	2,750
Audio Note Ongaku	Ⓢ	26W	56,000
Audio Research CA50	Ⓢ	3,990	3,990
Cary CAD-300SE1	Ⓢ	11W	3,495
Conrad-Johnson CAV-50	Ⓢ	50W	2,495
EAR 859	Ⓢ	13W	2,499
Electrocompaniet ECI-1	Ⓢ	100W	2,195
Gamma Rhythm	Ⓢ	18W	2,499
Gamma Rhythm Ref	Ⓢ	40W	3,499
Gamma Moment 845	Ⓢ	40W	19,999
Jadis DA30	Ⓢ	30W	3,490
Jadis DA60	Ⓢ	60W	5,750
Krell KAV300i	Ⓢ	150W	2,550
Meracus Onesta	Ⓢ	75W	2,595
Pioneer A-09	Ⓢ	45W	4,000
Tube Tech Unisig Sig. Int.	Ⓢ	30W	2,300
Tube Tech Synergy PPS	Ⓢ	150W	6,900
Unison Performance One	Ⓢ	25W	4,500
Unison Absolute 845	Ⓢ	40W	11,995

PREAMPS

Alchemist Kraken Pre	Ⓢ	519	519
Alchemist Forseti Pre	Ⓢ	919	919
Art Audio Headline	Ⓢ	700	700
Art Audio VPL	Ⓢ	741	741
Art Audio Conductor Phono	Ⓢ	750	750
Art Audio VP1	Ⓢ	952	952
Art Audio Conductor	Ⓢ	1,250	1,250
Art Audio Conductor Export	Ⓢ	2,000	2,000
Audio Note M1 Line	Ⓢ	550	550
Audio Note M1 RIAA	Ⓢ	550	550
Audio Note M2 Line	Ⓢ	999	999
Audio Note Discovery	Ⓢ	999	999
Audio Note M2RIA	Ⓢ	1,099	1,099
Audio Research LS7	Ⓢ	1,750	1,750
Audio Research LS3	Ⓢ	1,997	1,997
Audio Synthesis Pro Passion	Ⓢ	595	595
Audio Synthesis Passion	Ⓢ	695	695
Audio Synthesis Passion 8S	Ⓢ	1,295	1,295
Audio Synthesis Passion 8M	Ⓢ	1,695	1,695
Audiolab 8000C	Ⓢ	580	580
Audiolab 8000PPA	Ⓢ	1,000	1,000
Audiolab 8000Q	Ⓢ	1,250	1,250
Aura CA-200	Ⓢ	700	700
AWI S2000MP	Ⓢ	949	949
AWI S2000MP + P	Ⓢ	1,199	1,199
Beam-Echo SP-21	Ⓢ	1,116	1,116
Bryston .4	Ⓢ	642	642
Bryston BP5	Ⓢ	889	889
Bryston BP20	Ⓢ	1,326	1,326
Bryston BP-25	Ⓢ	995	995
Cary SLP-50	Ⓢ	1,495	1,495
Cary SLP-74	Ⓢ	1,795	1,795
Cary PH-301	Ⓢ	1,774	1,774
Chord CPA 1800	Ⓢ	900	900
Concordant Exhilarant	Ⓢ	1,950	1,950
Concordant Exquisite	Ⓢ	995	995
Conrad-Johnson PV-10AL	Ⓢ	1,295	1,295
Conrad-Johnson PV-10A	Ⓢ	1,990	1,990
Conrad-Johnson PV-12AL	Ⓢ	1,990	1,990
Conrad-Johnson EF-1	Ⓢ	990	990

KEY
Ⓢ - (etc) number of line-level inputs.
Ph - phono input fitted as standard
(may be an option on some other models).

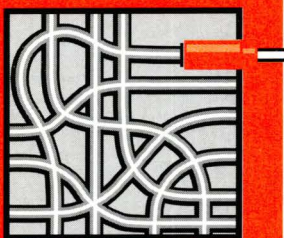
Up to £500

AMC CVT 1030A	Ⓢ	Ph	400
Art Audio Minuet	Ⓢ	Ph	499
Audio Analogue Bellini	Ⓢ	Ph	475
Audiolinn P1	Ⓢ	Ph	369
Audiolinn L1	Ⓢ	Ph	369
Audio Note The M	Ⓢ	Ph	

PRICE GUIDE

Conrad-Johnson PF-2	Ⓔ	Ph	1,990	Unison Mystery One	Ⓔ	1,750	NAD 912	30W	200	Naim NAP140	45W	750
Copland CSA303	Ⓔ	Ph	1,199	Unison Phono One	Ⓔ	1,995	NAD 214	80 W	370	Naim NAP180	60W	1,060
Copland CTA301 MkII	Ⓔ	Ph	1,399	Van Den Hul Pre-amp	Ⓔ	1,700	NAD 218THX	125W	470	Naim NAP135	75W	1,655
CR Dev Carmenta	Ⓔ		659	Wilson Benesch Stage One	Ⓔ	995	Naim NAP90/3	30W	450	Naim NAP250	70W	1,655
CR Dev Argento	Ⓔ	Ph	699	Woodside SC27 Line	Ⓔ	949	Rotel RB970BX MkII	60W	225	Papworth TVA50	50W	1,425
Creo CMP004	Ⓔ		1,246	Woodside SC26 Line	Ⓔ	1,557	Rotel RB980BX	120W	450	Prime Design P-150	150W	650
Creo CMP005	Ⓔ		1,876	XTC PRE-1	Ⓔ	1,250	Shearpe 3.5	35W	469	Quad 77 Power	85W	600
Densen DM-20	Ⓔ		1,200	Yamaha CX-2	Ⓔ	650	Talk Electronics Tornado 1	50W	450	Quad 707	140W	800
DNM 3 Start	Ⓔ		1,000		Ⓔ		Technics SE-A1000	70W	400	Rega EKS	70W	598
DNM 3A Start	Ⓔ		1,650	Over £2000			£501 to £2000			Rega Exon	125W	1,196
DPA Enlightenment pre	Ⓔ		795	Adyton Temper	Ⓔ	2,495	Alchemist Kraken pwr	60W	529	Roksan ROK-S1.5	70W	1,495
DPA DSP500S	Ⓔ		2,000	Adyton Modus	Ⓔ	2,695	Alchemist Forseti Pwr	150W	1,309	Rose RP-190 (Dual Mode)	75W	550
Dynavector L200	Ⓔ		1,195	Alchemist The Alchemist pre	Ⓔ	4,995	AMC CVT 2100A	80W	600	Rotel RB990BX	200W	625
Dynavector P100	Ⓔ	Ph	1,495	ATC SCA2	Ⓔ	2,499	Art Audio Quintet	15W	1,393	Shearpe Phase 3	50W	619
Dynavector L100	Ⓔ		1,995	Audio Note M3Line	Ⓔ	2,650	Art Audio Quintet SE MB	-W	1,500	Shearpe Phase 3 Reference	50W	729
Earmax Earmax Pre	Ⓔ		1,895	Audio Research LS15	Ⓔ	3,399	Art Audio Concerto	50W	1,669	Shearpe Phase 5 Mono	100W	1,500
ECA Vista S	Ⓔ	Ph	760	Audio Research LS5 MkIII	Ⓔ	6,435	Audio Analogue Donizetti	60W	575	Sonic Frontiers Anthem Amp 1	40W	1,195
ECA Vista HD	Ⓔ		880	Audio Research REF 1	Ⓔ	9,900	AudiInnov First Audio	7.5W	1,749	Sonographe SA250	125W	1,195
ECA Prisma	Ⓔ	Ph	880	Boulder L3AE	Ⓔ	2,100	AudiInnov Series 1000	50W	1,799	Sonographe SA400	220W	1,695
Electrocompaniet EC-4.5	Ⓔ		1,195	Boulder L5AE	Ⓔ	3,400	Audio Note The P	40W	550	Sumo Polaris III	164W	950
Electrocompaniet EC-4R	Ⓔ		1,495	Boulder L5M	Ⓔ	3,800	Audio Note P0	9W	599	Sumo Model Five	60W	1,975
Electrocompaniet EC-4.6	Ⓔ		1,750	Boulder 2010	Ⓔ	19,995	Audio Note P1	12W	750	Sumo Andromeda III	240W	1,975
Exposure XIX	Ⓔ		800	Cary SLP-94L	Ⓔ	2,095	Audio Note P1SE	12W	999	T+A A1200	110W	845
Exposure XVII	Ⓔ	Ph	850	Cary SLP-98L	Ⓔ	2,295	Audio Note P2	20W	1,000	T+A A1500	140W	1,495
Fase Evoluzione Controlsources 2.0	Ⓔ	Ph	625	Chord CPA 2200	Ⓔ	2,355	Audio Note P2SE	18W	1,499	Talk Electronics Tornado 2	65W	600
Fase Evoluzione Controlsources 1.0	Ⓔ		1,395	Chord CPA 2800	Ⓔ	3,246	Audio Note Conqueror	8W	1,599	Talk Electronics Tornado 3	100W	750
Golden Tube Audio SEP-1	Ⓔ		990	Chord CPA 3200	Ⓔ	3,320	Audiolab 8000SX	60W	550	Talk Electronics Tornado 4	110W	1,100
Graaf WFB Two	Ⓔ	Ph	1,195	Chord CPA 4000	Ⓔ	6,210	Audiolab 8000PX	100W	850	Technics SE-A2000	100W	1,100
Graaf WFB One	Ⓔ	Ph	1,895	Conrad-Johnson PF-R	Ⓔ	2,490	Audiolab 8000MX	125W	1,800	Thorens TTA-2000	30W	599
Henley HMC200	Ⓔ		750	Conrad-Johnson PV-12A	Ⓔ	2,590	Aura PA-100	100W	700	Trilogy 948	50W	1,895
Heybrook Signature II Pre	Ⓔ		555	Conrad-Johnson Premier 15	Ⓔ	3,995	Aura PA-200	110W	1,200	Tube Tech Syrinx	45W	1,150
Hi Q Sound MCB2	Ⓔ	Ph	545	Conrad-Johnson Premier 14	Ⓔ	4,495	Aura PA-200 C	1,250	1,250	Tube Tech Unisig Sig. Pwr	30W	1,900
Hi Q Sound MCL2	Ⓔ		645	Conrad-Johnson Art	Ⓔ	14,995	AVI S2000MM	150W	1,399	Woodside SA240	40W	1,199
Jadis DPL2	Ⓔ	Ph	1,790	CAT SL1 Sig. Mk2	Ⓔ	6,500	Bryston 2B-LP	75W	750	Woodside MA100	100W	1,733
LFD MC1 Phonostage	Ⓔ		949	CR Dev Kastor	Ⓔ	2,995	Bryston 3B-ST PRO	150W	1,160	Woodside STA50	50W	1,880
LFD LS1 Linestage	Ⓔ		999	Creo LPR 001	Ⓔ	2,815	Bryston 3B-ST	150W	1,160	XTC POW-2	150W	1,450
LFD MC2 Phonostage	Ⓔ	Ph	1,499	DNM 3C Primus	Ⓔ	2,550	Bryston THX3B	150W	1,262	Yamaha MX-2	150W	750
LFD LS2 Linestage	Ⓔ		1,599	DNM 3C Twin	Ⓔ	3,800	Bryston 7B-ST PRO	500W	1,545	Over £2000		
LFD LSB Linestage	Ⓔ		1,999	DNM 3C Six	Ⓔ	5,050	Bryston 4B-ST PRO	-W	1,756	Adyton Cordis 1.6	120W	3,495
Linn Wakonda	Ⓔ		750	EAR 802MC	Ⓔ	2,599	Bryston 4B-ST	300W	1,756	Adyton Cordis 3B	280W	12,995
Linn Linto	Ⓔ		850	EAR G88	Ⓔ	9,999	Bryston 7B-ST	500W	1,815	Alchemist The Alchemist pwr	220W	3,995
Linn Kairn	Ⓔ		1,400	EAR P52	Ⓔ	15,999	Bryston THX4B	300W	1,850	Alchemist The Alchemist mono	55W	8,995
Lumley LV1.5	Ⓔ		895	Gamma Era Ref	Ⓔ	7,999	Bryston THX7B	500W	1,886	Art Audio Tempo	30W	2,499
Lumley LV1	Ⓔ		1,150	Gamma Era Sig	Ⓔ	19,999	Carver TFM-15CB	100W	599	Art Audio Quintet SE	-W	2,500
Lumley PV1.5	Ⓔ	Ph	1,700	Graaf GM13.5B	Ⓔ	3,950	Carver A-500X	250W	949	Art Audio Maestro	100W	3,524
Lumley PV1	Ⓔ	Ph	1,700	Jadis DP60L	Ⓔ	2,800	Carver A-760X	380W	1,299	ATC SPA2-150	200W	2,500
Marantz AC-500	Ⓔ	Ph	700	Jadis DPL	Ⓔ	3,190	Cary SLA-70 II	30W	1,495	AudiInnov Ser 1000SE	50W	2,499
Marantz EC-500	Ⓔ		900	Jadis DPMC	Ⓔ	3,190	Chord SPM 400	100W	1,325	AudiInnov Second Audio	15W	3,299
Matisse Atom	Ⓔ		1,000	Jadis JPL	Ⓔ	4,720	Chord SPM 600	130W	1,720	Audio Note P3	9W	2,150
Meracus Ingredi	Ⓔ		925	Jadis JPP200	Ⓔ	4,998	Conrad-Johnson MV-55	50W	1,995	Audio Note Quest	9W	2,750
Meridian 501	Ⓔ		695	Jadis JP30MC	Ⓔ	5,978	Copland CTA501	30W	1,750	Audio Note Yubi	18W	3,850
Meridian 562	Ⓔ		765	Jadis JPS2	Ⓔ	7,900	CR Dev Amphion	12W	1,949	Audio Note Conquest	18W	4,450
Meridian 562V	Ⓔ		995	Jadis JP80MC	Ⓔ	11,989	Creo PMP 804	80W	1,876	Audio Note Tomei	30W	8,500
Meridian 502	Ⓔ	Ph	1,295	Krell KRC3	Ⓔ	3,250	Creek A52SE	80W	599	Audio Note Neiro	7W	11,360
Michell Argo	Ⓔ		730	Krell KRC-HR	Ⓔ	6,949	Crimson CS630C	100W	800	Audio Note Ankoru	60W	14,500
Michi RHC-10	Ⓔ		795	LFD Disc Preamp	Ⓔ	4,499	Densen DM-30	100W	1,200	Audio Research D130	130W	2,299
Michi RHQ-10	Ⓔ	Ph	1,150	Marantz Model 7	Ⓔ	3,500	DNM PA Start	45W	1,000	Audio Research VT60	35W	2,395
Michi RHA-10	Ⓔ		1,150	Mark Levinson 25S	Ⓔ	2,950	DNM PA1 Start	45W	1,650	Audio Research D300	300W	4,678
Micromega Tempo P	Ⓔ		1,250	Mark Levinson 380	Ⓔ	3,995	DPA Enlightenment pwr	100W	995	Audio Research VT100	100W	4,995
Mission Cyrus Pre	Ⓔ	Ph	648	Mark Levinson 380S	Ⓔ	6,495	Earmax Earmax Power	25W	1,895	Audio Research D400 MkII	400W	6,850
Monrio ADN	Ⓔ	Ph	625	Matisse Fantasy	Ⓔ	2,500	ECA Lectern S	50W	880	Audio Research VT130 SE	130W	8,500
Monrio Pluri-L	Ⓔ		960	Matisse Reference	Ⓔ	3,500	ECA Lectern HD	50W	1,480	Audio Research VT150 SE	150W	17,000
Muse Model 3	Ⓔ		1,990	Meracus Pretare	Ⓔ	2,195	Electrocompaniet AW60B	60W	1,095	Audio Synthesis Desire Decade	200W	2,495
Musical Fidelity F25	Ⓔ	Ph	1,500	Naim NAC82	Ⓔ	2,160	Exposure XVIII Super	7.0	850	Beam-Echo DL7-35	30W	3,525
NAD 118	Ⓔ		1,000	Naim NAC52	Ⓔ	3,350	Fase Evoluzione Powersource 2.0	65W	860	Border Patrol 300B SE	10W	3,495
Naim NAC92R	Ⓔ		630	Roksan ROK-L1.5	Ⓔ	2,250	Fase Evoluzione Powersource 1.0	100W	1,670	Boulder 102AE	100W	2,800
Naim NAC72	Ⓔ		725	Sonic Frontiers Line 2	Ⓔ	2,995	Golden Tube Audio SE-40	40W	1,100	Boulder 102M	100W	3,100
Naim NAC102	Ⓔ		1,050	Sonic Frontiers Line 3	Ⓔ	4,995	Golden Tube Audio SE-300B MkII	8W	1,490	Boulder 500AE	150W	4,995
Quad 77 Pre	Ⓔ	Ph	850	T+A Pre DA3000	Ⓔ	2,800	Golden Tube Audio SE-100	100W	1,995	Boulder 500M	150W	5,500
Rega Hal	Ⓔ	Ph	998	Tesseract TAP-A	Ⓔ	5,300	Graaf Venticinque P	25W	1,250	Boulder 2060	600W	19,000
Roksan ROK-L2.5	Ⓔ		1,250	Trilogy 918	Ⓔ	2,775	Heybrook Signature II Pwr	120W	1,045	Boulder 2050	999W	35,000
Rose RV-23S	Ⓔ	Ph	525	Unison Dream	Ⓔ	11,995	Hi Q Sound MCM	70W	715	Bryston THX8B	150W	2,385
Shearpe Phase 6 Pre	Ⓔ		899	Woodside SC26 Line & Phono	Ⓔ	2,233	Jadis DA5	40W	1,997	Cary CAD-572SE	20W	2,495
Shearpe Phase 1 Pre Ref	Ⓔ		1,399	POWER AMPS			Lexicon 212	120W	1,850	Cary CAD-300SE	12W	3,795
Sonic Frontiers Anthem Pre 1P	Ⓔ	Ph	895	KEY			LFD PA1 Powerstage	60W	999	Cary CAD-805	50W	8,495
Sonic Frontiers Anthem Pre 1	Ⓔ	Ph	1,495	'20W' - output power per channel			LFD PA2 Powerstage	75W	1,599	Chord SPM 800	160W	2,265
Sonic Frontiers Phono 1	Ⓔ		1,995	into nominal load of 8 Ohms.			LFD PA2M Powerstage	90W	1,999	Chord SPM 1000B	200W	2,785
Sonic Frontiers Line 1	Ⓔ		1,995	Up to £500			Linn LK100	50W	650	Chord SPM 1200B	250W	3,525
Sonographe SC26	Ⓔ		995	AMC CVT 2030A	Ⓔ	30W	Linn LK240	120W	750	Chord SPM 1200C	315W	3,915
Sumo Athena II Line	Ⓔ		767	Arcam Alpha 8P	Ⓔ	50W	Linn AV5105	100W	1,200	Chord SPM 1600	200W	4,718
Sumo Athena IIB/II LS	Ⓔ		987	Arcam Alpha 9P	Ⓔ	70W	Lynwood Ruby	120W	985	Chord SPM 1400B mono	380W	7,830
Sumo Athena III	Ⓔ		987	Arcam Delta 290P	Ⓔ	75W	Magnum MF330	150W	685	Chord SPM 5000	415W	13,544
Sumo Artemis uP	Ⓔ		1,595	Carver TFM-6CB	Ⓔ	400	Magnum MF660	125W	825	Conrad-Johnson MF-2300A	250W	2,990
T+A P1200R	Ⓔ		890	Creek A43	Ⓔ	50W	Magnum A500SE	200W	1,485	Conrad-Johnson Premier 11A	70W	3,500
Talk Electronics Hurricane 2	Ⓔ		650	Creek A52	Ⓔ	50W	Magnum A505E	200W	1,595	Conrad-Johnson Premier 12	140W	6,900
Talk Electronics Hurricane 3	Ⓔ		900	Crimson CS620C	Ⓔ	70W	Meracus Ciere	60W	1,095	Conrad-Johnson Premier 8XS	150W	17,000
Talk Electronics Hurricane 4	Ⓔ		1,550	Earmax Earmax Headphone	Ⓔ	0.1W	Meridian 555	60W	750	Conrad-Johnson Premier 8A	275W	17,000
Talk Electronics Hurricane 5	Ⓔ		1,900	LFD Mistral Power	Ⓔ	475	Meridian 556					

EAR 549	200W	6,499
Electrocompaniet AW100DMB	100W	2,095
Electrocompaniet AW120DMB	120W	2,695
Electrocompaniet AW250DMB	250W	3,995
Electrocompaniet AW180MB	180W	4,595
Exposure IV	80W	2,199
Exposure XVI	125W	4,000
Gamma Aeon	20W	4,999
Gamma Space Ref	18W	7,999
Gamma Aeon Ref	50W	39,999
Graaf 5050	50W	2,150
Graaf GM20	60W	2,750
Graaf GM100	100W	4,490
Graaf GM200	200W	8,000
Jadis DA8	80W	3,333
Jadis DA7	100W	5,290
Jadis JA30	30W	5,980
Jadis JA300B	10W	9,000
Jadis JA80	60W	9,912
Jadis JA200	160W	15,518
Jadis JA500	400W	21,500
Krell KAV500/2	100W	3,485
Krell FPB200	200W	6,490
Krell FPB300	300W	9,500
Krell FPB600	600W	12,900
Krell KAS2	200W	20,000
Lexicon 225	250W	2,500
Lexicon 501	500W	5,000
Linn Klout	80W	2,400
Lumley M125	120W	3,750
Lumley M250	250W	7,500
Magnum Class A mono	180W	2,450
Magnum A200SE	275W	3,750
Marantz Model 8	35W	3,500
Marantz Model 9	70W	4,000
Mark Levinson 331	100W	4,495
Mark Levinson 332	200W	6,495
Mark Levinson 333	300W	8,495
Mark Levinson 33H	150W	19,395
Matisse Ref Monoblocks	180W	8,000
Meracus Tentare	75W	2,245
Meracus Cantare	-W	8,995
Muse Model 160 Ser. II	160W	2,290
Muse Model 150	125W	2,690
Muse Model 175 Ser. II	175W	3,490
Muse Model 300 Ser. II	300W	3,990
Musical Fidelity F16	200W	2,500
Musical Fidelity F19	300W	4,000
Papworth M100	100W	2,645
Papworth M200	200W	3,825
Roksan ROK-M1.5	160W	2,250
Shearpe Phase 1 Pwr Ref	100W	2,199
Sonic Frontiers Power 1	55W	2,495
Sonic Frontiers Power 2	110W	4,995
Sonic Frontiers Power 3	220W	9,995
Sumo Model Ten/M	240W	4,200
Sunfire Sunfire	300W	2,170
T+A A3000	190W	3,000
Talk Electronics Tornado 5	200W	2,100
Tesseract TAMP-60	60W	7,350
Trilogy 958	100W	3,395
Tube Tech Genesis Sig.	100W	4,700
Tube Tech Synergy DMA	150W	6,400
Unison Smart 845	24W	3,250
Unison Palladio	32W	11,995
Van Den Hul Power amp	65W	2,500
XTC POW-1	200W	2,250



CABLES
ANALOGUE INTERCONNECTS

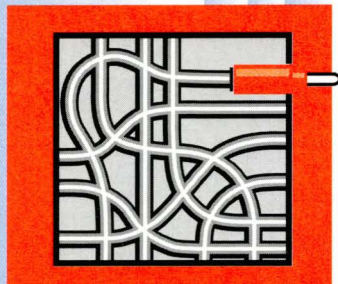
KEY
 ☉ - stranded construction.
 ● - solid-core construction.

Prices of interconnects are for a one-metre terminated pair.

Apertura Model B	260.00
Apertura Model A	469.00
Art Yam Church 5000	515.00
Audio Note AN-A	18.00
Audio Note AN-C	35.00
Audio Note AN-S	99.00
Audio Note AN-V	179.00
Audio Note AN-Vx	450.00
Audioquest Jade	30.00

Audioquest Turquoise 2	40.00
Audioquest Topaz 2	60.00
Audioquest Ruby 2	80.00
Audioquest Quartz	120.00
Audioquest Opal	189.00
Audioquest Emerald	249.00
Audioquest Lapis	399.00
Audioquest Diamond	549.00
Cable Talk Improved 2/CD	26.00
Cable Talk Advanced 2	35.00
Cable Talk Monitor 2.1	50.00
Cable Talk Improved 2/Tape	50.00
Cable Talk Studio 2	65.00
Cable Talk Professional 2	85.00
Cable Talk Broadcast 2	100.00
Cable Talk Reference 2	150.00
Cable Talk Signature 2 Gold	300.00
Cambridge Atlantic	10.00
Cambridge Arctic	20.00
Cambridge Pacific	30.00
Cambridge Studio Reference	40.00
Cardas Audio 300B-Microtwin	115.00
Cardas Audio Quadlink-Five	200.00
Cardas Audio Cardas Cross	360.00
Cardas Audio Hexlink-Five C	530.00
Cardas Audio Hexlink Golden-5 C	600.00
Cardas Audio Golden Cross	700.00
Connections UK Ultra	28.00
Connections UK Midas	39.00
Connections UK HD	46.00
DNM-Reson TCC75	34.00
DPA Slink	41.00
DPA White Slink	75.00
DPA Black Slink	245.00
Expressive Tech IC-1	700.00
Gamma Wow Balance	799.00
Goertz Interconnect	148.00
GT Audio Intercon	130.00
Henley HSP10	20.00
Henley HSP50	35.00
Henley HSP100	65.00
Henley HSP200	95.00
Heybrook Black Flash	49.50
Insert Audio Focus 1.2	21.50
Insert Audio IC100 Mk II	46.95
Insert Audio Status 3.4	160.00
Ixos 104	20.00
Ixos 1003	30.00
Ixos 1002	40.00
Ixos 103	45.00
Ixos 102	60.00
Ixos 101	100.00
Ixos 100.X03	150.00
Kimber PBJ	68.00
Kimber KC1	96.00
Kimber Hero	110.00
Kimber Silver Streak	180.00
Kimber KCAG	390.00
Kimber KCTG	720.00
Kronos Konnekt 3	49.00
Kronos Konnekt 2	99.00
Kronos Konnekt 1	199.00
LAT International IC-50	37.00
LAT International IC-80	60.00
LAT International IC-100-D	89.00
LAT International IC-200 Mk II	151.00
Lieder Chanson	340.00
Lieder Lek	420.00
Lieder Het Lied	420.00
Lieder Song	580.00
Lieder Maas	620.00
Lieder Rijn	1,000.00
Lieder Waal	1,400.00
Lumley Silver 12/2	115.00
Lumley Silver 14/4	175.00
Moth Leyline Black	100.00
Moth Leyline Grey	200.00
Nordost Magic	35.00
Nordost Black Knight	60.00
Nordost Blue Angel	98.00
Nordost Blue Heaven	145.00
Nordost Red Dawn	285.00
Nordost SPM	825.00
Ortofon 7N interconnect	250.00
Precious Metals Silver Signal 35	40.00
Precious Metals Silver Signal 50	50.00
Precious Metals Silver Signal 52	70.00
Precious Metals Silver Signal 53	90.00
Precious Metals Silver Signal 100	100.00
Precious Metals Silver Signal 102	130.00
Precious Metals Silver Signal 103	160.00
Precious Metals Silver Signal 104	190.00
Precious Metals Silver Signal 200	220.00
Precious Metals Silver Signal 202	290.00
Precious Metals Silver Signal 203	360.00
Precious Metals Silver Signal 204	430.00
QED P2 Gold	20.00
QED Incon P2 Screened	23.00
QED Incon P1 Screened	26.00
QED Qnect 2	30.00
QED Qnect 4	60.00
Roksan ROK-Intercon	75.00
Siltech MC2-12	308.00

Siltech MC4-24S	400.00
Siltech FTM-3S	730.00
Silver Sounds SS2	99.00
Silver Sounds SS1	199.00
Silver Tone Ex-Static	35.00
Silver Tone Sci-Fi	95.00
SME S2LB-4	46.18
SME S3LB-4	52.06
SME 4900A	76.83
SME 5900A	102.57
Sonic Link Bonus	15.00
Sonic Link Red	25.00
Sonic Link Silver pink	35.00
Sonic Link Black	49.00
Sonic Link White	65.00
Sonic Link Brown	70.00
Sonic Link Violet	85.00
Sonic Link Maroon	125.00
Sonic Link Blue Nickel	150.00
Sonic Link Vermillion	195.00
Sonic Link Red earth	300.00
Sonic Link Black earth	450.00
Sonic Link Blue earth	695.00
Sonic Link Black Rhodium	995.00
ChordCo Chrysalis	33.00
ChordCo Cobra	50.00
ChordCo Siren	65.00
ChordCo Chameleon	85.00
ChordCo Solid	99.00
Transparent Cable Musichord Int	48.00
Transparent Cable The Link	92.00
Transparent Cable Music Link	119.00
Trichord Pulsewire 75	169.00
Vampire Wire CC	24.00
Vampire Wire CCC/II	58.00
Vampire Wire SC/II	98.00
Vampire Wire SC/IV	144.00
Vampire Wire AI/2	259.00
Vampire Wire SL	412.00
Van Den Hul Storm	25.00
Van Den Hul Source HB	50.00
Van Den Hul D102 IIHB	70.00
Van Den Hul Thunderline HB	130.00
Van Den Hul First	210.00
Van Den Hul Second	240.00
Van Den Hul MC Gold	400.00
Van Den Hul MC Silver IT	1,240.00
Van Den Hul MC Silver IT Bal	1,560.00
XLO Type 150	50.00
XLO Type 0.1	180.00



DIGITAL INTERCONNECTS

KEY
 ☉ - stranded construction.
 ● - solid-core construction.

Prices of interconnects are for a one-metre terminated pair.

Apertura Model B	139.00
Apertura Model A	255.00
Apogee Digital Wyde Eye	20.00
Apogee Digital Wyde Eye Bal.	30.00
Art Yam Church 5000	275.00
Audioquest Digital/video 1	30.00
Audioquest Digital/video 2	60.00
Audioquest Optilink X	90.00
Audioquest Digital PRO	100.00
Audioquest Optilink Pro	149.00
Audioquest Optilink Z	179.00
Cable Talk Digital 2	78.00
Cardas Audio Lightning	190.00
DNM-Reson DIG100	26.00
DPA Opti-link	20.00
DPA Digi-link	28.00
Insert Audio Dataline 500	24.95
Insert Audio Dataline 700	39.95
Insert Audio Image 5.1	44.95
Ixos 105	25.00
Ixos 106	30.00
Kimber Opti-link	50.00
Kimber Illuminati DV-30	55.00
Kimber Illuminati D-60	215.00
Kimber Illuminati DX-50	350.00
Kimber Illuminati Orchid	750.00
LAT International DI-20-D	79.00

Moth Leyline Datalink	140.00
Nordost Moonlog	155.00
Precious Metals Silver Dig 35	20.00
Precious Metals Silver Dig 100	50.00
Precious Metals Silver Dig 200	110.00
Precious Metals Silver Dig 202	145.00
QED Digiflex	20.00
QED Optiflex	25.00
Roksan ROK-Intercon	45.00
Siltech HF-6	145.00
Sonic Link Green	60.00
ChordCo Codac	36.00
ChordCo Prodac	50.00
Transparent Cable PDL	199.00
Trichord Pulsewire 75D	75.00
Trichord Pulsewire 110D	145.00
Vampire Wire DI/1	150.00
Van Den Hul Source HB	30.00
Van Den Hul Videolink	60.00
Van Den Hul AES-EBU 110	65.00
Van Den Hul First	125.00
Van Den Hul Second	130.00

SPEAKER CABLES

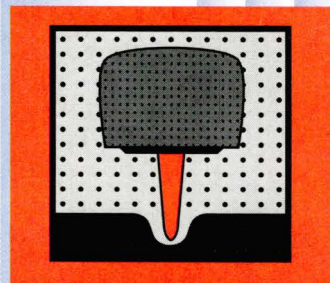
KEY
 ☉ - stranded construction.
 ● - solid-core construction.

Price per mono metre unterminated.

Acoustic Energy AESC-C3	11.95
Apertura Silver	82.50
Art Yam Church M2000	470.00
Art Yam Church 5000	795.00
Audio Note AN-D	4.50
Audio Note AN-B	16.50
Audio Note AN-L	29.50
Audio Note AN-SP	150.00
Audio Note AN-SPX	450.00
Audioquest Type 2	3.50
Audioquest F-16	3.60
Audioquest Type 6	7.50
Audioquest Indigo 2	12.00
Audioquest Crystal	18.00
Audioquest Forest	65.00
Audioquest Argent	95.00
Audioquest Clear 3	150.00
Bandridge LC7409	4.00
Bandridge LC4110	28.00
Bandridge LC3410	40.00
Bandridge LC3210	75.00
Bandridge LC3219	75.00
Bandridge LC3220	90.00
Bandridge LC3310	95.00
Bandridge LC3240	125.00
Cable Talk The Flat One	1.50
Cable Talk Theatre 2	2.00
Cable Talk Talk 3.1	2.25
Cable Talk Overture 2.1	3.25
Cable Talk Talk 4.1	4.25
Cable Talk Talk 3.1 Biwire	4.50
Cable Talk Concert 2.1	7.00
Cable Talk Talk 4.1 Biwire	8.50
Cable Talk Symphony 3	12.50
Cable Talk Concert 2.1 Biwire	14.00
Cardas Audio 300B-Microtwin SC	35.00
Cardas Audio Quadlink-Five SC	59.00
Cardas Audio Cross SC	99.00
Cardas Audio Hexlink-Five SC	109.00
Cardas Audio Hexlink Golden-5 SC	175.00
Cardas Audio Golden Cross SC	789.00
DNM-Reson LSC	6.95
DNM-Reson LSCB	11.95
DPA Black Sixteen	100.00
Electrocompaniet EC-K2	30.00
Gale XL189	1.00
Gale XL315	2.00
Gale XL160-2	2.50
Gamma Wonder Line	99.00
Goertz M1	16.00
Goertz M2	32.00
Goertz Big Boy	64.00
GT Audio Speaker	50.00
Ixos 607	2.00
Ixos 6004	3.00
Ixos 6003	3.00

Ixos 605	3.00
Kimber 4PR	8.00
Kimber 4VS	12.00
Kimber 4TC	19.68
Kimber 8TC	40.00
Kimber 4AG	394.00
Kimber 8AG	656.00
LAT International SS 800	21.00
LAT International BIWIRE	27.00
LAT International SS 1000	42.50
Lieder Pad	460.00
Lieder Bel Canto	500.00
Lieder Spoor	660.00
Lieder Straat	1,080.00
Lieder Weg	1,400.00
Linn K20	4.00
Linn K400	10.00
Linn K600	15.00
Lumley Silver 12/2	35.00
Lumley Silver 14/4	40.00
Mission Duet	1.90
Mission Quartet bi-wire	3.90
Naim NACA 5	5.50
Nordost Octava	3.00
Nordost 4-Flat	12.00
Nordost Blue Heaven	55.00
Nordost Red Dawn	110.00
Nordost SPM	325.00
Ortofon SPK100	3.00
Ortofon SPK200	5.00
Ortofon SPK300	8.00
Precious Metals Silver L'r 32	7.50
Precious Metals Silver L'r 102	10.00
Precious Metals Silver L'r 34	15.00
Precious Metals Silver L'r 104	20.00
Precious Metals Silver L'r 106	30.00
Precious Metals Silver L'r 108	40.00
Puresonic OFC 7892	1.20
Puresonic OFC 7844	1.65
Puresonic 7845	1.95
Puresonic 7891	2.85
Puresonic OFC 7816	3.75
Puresonic OFC 7832	3.75
Puresonic OFC 7812	3.75
Puresonic OFC 7834	5.50
Puresonic OFC 7825	6.95
Puresonic PS0CC 7801	9.50
Puresonic PS0CC 7802	18.00
Puresonic PS0CC 7803	27.00
QED Qudos Micro	1.25
QED Qudos Silver	3.95
QED Qudos Bi-Wire	4.50
QED Profile 8	6.50
QED Profile 4x4	9.00
QED Profile Silver 12	15.00
Rega REGA	2.00
Roksan ROK-Speaker	6.00
Siltech LS2-45	109.00
Siltech FT-12 Mkl	240.00
Siltech LS4-120	549.00
Silver Sounds 12 Gauge	15.00
Silver Sounds 10 Gauge	35.00
Silver Sounds 8 Gauge	75.00
Silver Tone Silver-Sonic	10.00
Silver Tone Silver-Sonic HC	15.00
Silver Tone Silver-Voice	55.00
Silver Tone Silver-Voice Ultra	85.00
Sonic Link AST50	1.95
Sonic Link AST75	3.00
Sonic Link AST200	5.95
Sonic Link AST200x2	10.00
Sonic Link S300	18.00
Sonic Link S130x2	20.00
Sonic Link S300x2	35.00
Sonic Link S900	50.00
Sonic Link S600x2	70.00
Sonic Link RE3.1	90.00
Sonic Link RE3.4	330.00
Tech + Link SPC 79	1.20
ChordCo Myth	6.00
ChordCo Legend	15.00
Transparent Cable Musichord Spkr	11.00
Transparent Cable The Wave	23.00
Transparent Cable Music Wave Spkr	25.00
Vampire Wire SC-384	11.00
Vampire Wire SC-554	15.00
Vampire Wire ST-I	30.00
Vampire Wire SC-1108	30.00
Vampire Wire ST-II	48.00
Vampire Wire ST-III	73.00
Van Den Hul Skyline HB	3.50
Van Den Hul Snowline	5.00
Van Den Hul Skytrack HB	5.50
Van Den Hul Clearwater	7.00
Van Den Hul Snowtrack	10.00
Van Den Hul CS122 HB	12.00
Van Den Hul Cleartrack	13.00
Van Den Hul D352 HB	20.00
Van Den Hul Teatrack HB	22.00
Van Den Hul SCS12	34.00
Van Den Hul Magnum HB	38.00
Van Den Hul The Wind HB	40.00

Van Den Hul Revolution HB	76.00
Van Den Hul Revelation HB	120.00
Van Den Hul The Third	900.00
XLO Pro 625	4.00
XLO Pro 600	16.60

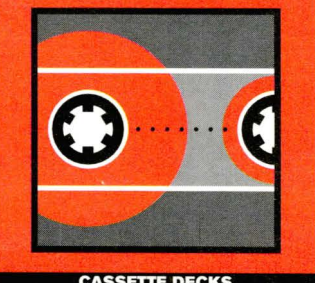


CARTRIDGES
KEY
MM - moving-magnet type.
MC - moving-coil type.
 Up to £100

Audio Note IO1	MM	99
Audio Technica AT-91	MM	15
Audio Technica AT-95E	MM	20
Audio Technica AT-110E	MM	28
Audio Technica AT450E	MM	70
Audio Technica AT440ML	MM	90
Benz-Micro MC20EII	MC	70
Denon DL110	MC	70
Denon DL160	MC	90
Denon DL103	MC	100
Goldring Elan	MM	19
Goldring Elektra	MM	29
Goldring 1006	MM	59
Goldring 1012GX	MM	79
Goldring 1022GX	MM	99
Grado ZIE + 1	MM	27
Grado ZCE + 1	MM	37
Grado ZF3E + 1	MM	48
Grado Prestige Black	MM	49
Grado Prestige Green	MM	59
Grado Prestige Blue	MM	69
Grado ZF1 +	MM	83
Grado Prestige Red	MM	99
N'ham Tracer I	MM	98
Ortofon VMS2	MM	14
Ortofon OM 5E	MM	20
Ortofon OM 10	MM	30
Ortofon 510	MM	38
Ortofon OM DJ	MM	50
Ortofon 520	MM	65
Ortofon OM 20	MM	70
Ortofon MC1 Turbo	MC	70
Ortofon Concorde DJ	MM	80
Ortofon OM 30	MM	90
Ortofon MC10 Super	MC	100
Ortofon 530	MM	100
Pickering TE-15	MM	20
Pickering VE-15	MM	25
Pickering T-E	MM	25
Pickering V15-DJ	MM	28
Pickering TL-E	MM	35
Pickering TL-2E	MM	45
Pickering XV15-625E	MM	50
Pickering XV15-150-DJ	MM	50
Pickering TL-2-S	MM	55
Pickering XV15-757S	MM	60
Pickering XV15-625DJ	MM	60
Pickering XV15-1800S	MM	70
Pickering TL3S	MM	80
Pickering XEV-3001E	MM	95
Pickering XLZ-3500	MM	100
Pickering TL-4-S	MM	100
Rega Bias	MM	39
Rega RB78	MM	39
Rega Super Bias	MM	59
Rega Elys	MM	85
Shure M708X	MM	21
Shure M92E	MM	22
Shure SC35C	MM	29
Shure M447X	MM	35
Shure M44GX	MM	35
Stanton 500AL II	MM	34
Stanton 500EL	MM	37
Stanton 680AL/X	MM	56
Stanton 680EL/X	MM	70
Sumiko Oyster	MM	30
Sumiko Black Pearl	MM	50
Sumiko Pearl	MM	70
Sumiko Blue Point	MC	100
Over £100		
Audio Note IO2	MM	139
Audio Note Soara	MC	795
Audio Note IO1V	MC	1,095
Audio Note IO2V	MC	1,695
Audio Note IOLtd	MC	4,500

Audio Technica AT-OC9	330
Benz-Micro The Glider	650
Benz-Micro M090	700
Benz-Micro L040	700
Benz-Micro H200	700
Benz-Micro Reference	1,100
Benz-Micro Reference Ruby	1,500
Benz-Micro Ruby Open Air	1,600
Clearaudio Aurum-Alpha	135
Clearaudio Aurum-Beta	195
Clearaudio Aurum-Beta/S	265
Clearaudio Gamma-S	745
Clearaudio Signature	1,595
Clearaudio Accurate	2,500
Clearaudio Insider	4,900
Denon DL304	200
Dynavector 10X4II	189
Dynavector Z3RS	375
Dynavector 17D2	450
Dynavector XX-1L	998
Dynavector XX-1	998
Dynavector Te-Kaitora	1,698
Goldring Eroica LX	110
Goldring Eroica	110
Goldring 1042	120
Goldring Elite	220
Goldring Excel VX	495
Grado Prestige Silver	119
Grado Prestige Gold	149
Grado Signature Junior	150
Grado Signature 8M2	250
Grado Signature MCZ	375
Grado Signature TL2	650
Grado Signature XTZ	975
Koetsu Red T	1,550
Koetsu Red K Sig	1,998
Koetsu Urushi	2,297
Koetsu Signature	3,218
Koetsu Gold PR	5,498
Linn K9	125
Linn Klyde	500
Linn Arkiv	1,000
London Decca Maroon	259
London Decca Gold	299
London Decca Maroon Dp	339
London Decca Gold Dp	379
London Decca S Gold	399
London Decca S Gold Dp	479
London Decca Jubilee	999
Lyra Lydian	649
Lyra Clavis Da Capo	995
N'ham Tracer II	310
N'ham Tracer III	410
N'ham Tracer IV	660
Ortofon MC3 Turbo	130
Ortofon MC15 Super II	130
Ortofon 540	130
Ortofon MC25E	180
Ortofon MC25FL	250
Ortofon MC10 Supreme	300
Ortofon SPU mono	350
Ortofon MC20 Supreme	425
Ortofon SPU Classic	450
Ortofon MC30 Supreme	525
Ortofon MC2000II	750
Ortofon MC Rohmann	1,000
Ortofon MC Rohmann	1,000
Ortofon MC3000 II	1,100
Ortofon MC5000	1,500
Ortofon MC7500	2,000
Pickering TLZ-3003	145
Pickering XLZ-4500	150
Pickering TLZ-4004	175
Pickering XSV-5000U	200
Pickering XLZ-7500	200
Pickering TLZ-7500-S	200
Reson Mica	185
Reson Recca	250
Reson Aciore	299
Reson Etile	455
Reson Lexe	1,300
Roksan Corus Black	130
Roksan Shiraz	970
Shure V15XMR	295
Stanton 890AL/X	118
Sumiko BPS	250
Transfiguration Spirit	1,000
Transfiguration Temper	1,950
Van Den Hul MM-1	250
Van Den Hul DDF-II	300
Van Den Hul MC-10	600
Van Den Hul MC-10e	750
Van Den Hul MC-One	900
Van Den Hul MC-ONE Super	1,050
Van Den Hul MC-Two	1,200
Van Den Hul The Frog Low o/p	1,500
Van Den Hul Grasshopper IIISLA	2,000
Van Den Hul Grasshopper IIIGLN	2,800
Van Den Hul Grasshopper IIIGLA	2,800
Van Den Hul Grasshopper IIICMN	2,800
Van Den Hul Grasshopper IIICHN	2,900
Van Den Hul Grasshopper IVGLA	3,000

Wilson Benesch Matrix	MC	786
Wilson Benesch Hybrid	MC	1,068
Wilson Benesch Carbon	MC	1,586
Wilson Benesch Analog	MC	1,850

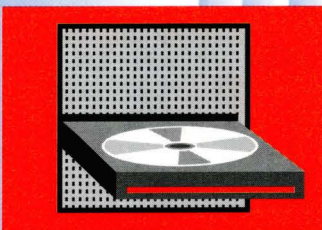


CASSETTE DECKS
KEY
 ← Autoreverse — no need to remove and turn round the tape.
3-H - 3 heads, i.e. separate record and replay heads.
 Up to £200

Aiwa AD-F450	120	
Aiwa AD-WX727	170	
Denon DRM-550	160	
Denon DRM-580	200	
Denon DR5-640	200	
Goodmans Delta 801	130	
JVC TD-X372BK	170	
JVC TD-R472BK	200	
Kenwood KX-W4080	160	
Kenwood KX-3080	160	
Kenwood KX-W6080	200	
Kenwood KX-5080S	200	
Marantz SD-555	200	
Onkyo K 185	200	
Pioneer CT-S250	150	
Pioneer CT-W205R	160	
Pioneer CT-W505R	180	
Pioneer CT-S4M5	200	
Pioneer CT-W606DR	200	
Sony TC-KE200	120	
Sony TC-WE405	150	
Sony TC-KE400S	180	
Sony TC-WE505	180	
TEAC W-416	100	
TEAC V-610	100	
TEAC W-780R	170	
TEAC R-560	180	
TEAC R-H500	200	
Technics RS-BX501	170	
Technics RS-TR373	200	
Yamaha KX-390	150	
Yamaha KX-W392	180	
Yamaha KX-490	200	
Over £200		
Aiwa AD-F850	3-H	230
Aiwa AD-S950	3-H	300
Carver TDR-1550	629	
Denon DRM-650S	230	
Denon DRM-740	310	
Denon DR5-810	3-H	270
H/K TD420	250	
H/K TD450	3-H	350
JVC TD-V662BK	3-H	270
JVC TD-W178BK	300	
Marantz SD-57	249	
NAD 613	230	
NAD 614	270	
NAD 616	300	
Onkyo TA 6210	230	
Onkyo TARW 211	270	
Onkyo TARW 311	320	
Onkyo TA 6310	330	
Onkyo KR 609	350	
Onkyo KW 606	370	
Onkyo TARW 411	370	
Onkyo K 611	460	
Pioneer CT-S550S	3-H	250
Pioneer CT-W806DR	300	
Pioneer CT-S550S Precision	3-H	340
Pioneer CT-S830S	3-H	500
Pioneer CT-95	1,000	
Sony TC-WE805S	250	
Sony TC-KA6ES	3-H	550
T+A CC1200R	990	
TEAC W-850R	250	
TEAC V-1030	3-H	250
TEAC W-6000R	450	
TEAC V-6030S	3-H	450
TEAC V-8030S	3-H	650
Technics RS-TR474	230	
Technics RS-AZ6	3-H	220
Technics RS-TR575	280	
Technics RS-AZ7	3-H	300

Yamaha KX-580SE	250
Yamaha KX-W592	280
Yamaha KX-690	400

3-H



CD PLAYERS

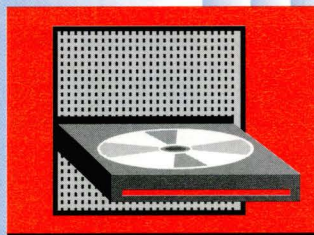
KEY

⇒ - multiplayer: can be loaded with more than one disc.
 □□□ - electrical (coaxial) digital output.
 Many players also include an optical (Toslink) output.
 Up to £250

Aiwa XC-300	150
AMC CD9	120
AMC CD8A	150
AMC CD6	250
AMC CDM7	250
Cambridge CD4	150
Cambridge CD4SE	200
Cambridge CD6	250
Denon DCD-635	180
Denon DCD-625	200
Denon DCD-715	235
Denon DCD-825	240
Eclipse CD30	50
Eclipse CD50	60
Eclipse CD101	80
H/K HD710	200
JVC XL-V120BK	110
JVC XL-V130BK	120
JVC XL-V230BK	140
JVC XL-F116BK	180
JVC XL-F216BK	200
JVC XL-Z574BK	250
Kenwood DP-1080	110
Kenwood DP-2080	130
Kenwood DP-R3090	140
Kenwood DP-R4090	160
Kenwood DP-3080	170
Kenwood DP-R6090	200
Kenwood DP-4090	250
Marantz CD-46	150
Marantz CC-38	200
Marantz CD-48	200
Marantz CD-57	230
Marantz CD-67II	250
Marantz CC-47	250
NAD 510	200
NAD 512	250
Philips CD711	120
Philips CD721	130
Philips CD751	150
Philips CDC751	180
Pioneer PD-106	130
Pioneer PD-206	150
Pioneer PD-F06	200
Pioneer PD-M603	200
Pioneer PD-S505	200
Pioneer PD-F706	250
Rotel RCD-930AX	180
Sherwood CD-4030R	180
Sony CDP-M205	110
Sony CDP-XE210	120
Sony CDP-M305	130
Sony CDP-XE310	140
Sony CDP-CE105	150
Sony CDP-XE510	180
Sony CDP-CE315	200
Sony CDP-C325M	200
TEAC CD-P1800	130
TEAC CD-P3450SE	200
TEAC PD-H500	240
TEAC PD-D2200	250
Technics SL-PG380A	100
Technics SL-PG480A	130
Technics SL-PG580A	150
Technics SL-PD687	160
Technics SL-PD887	180
Technics SL-PS670D	200
Technics SL-PS770D	250
Yamaha CDX-390	130
Yamaha CDC-565	170
Yamaha CDX-490	170
Yamaha CDC-665	220
Yamaha CDX-590	230
£251 to £500	
Aiwa DX-C100M	500
Arcam Alpha 7	320

Arcam Alpha MCD	450
AudiInnov Alto	399
Aura CD100	400
Carver SDA-400	299
Carver MV-5	469
Denon DCM-260	300
Denon DCD-1015	350
H/K HL8300	300
JVC XL-Z674BK	300
Kenwood DP-R7080	300
Kenwood DP-9090	300
Kenwood DP-7090	400
Marantz CD-67	270
Marantz CD-67SE	350
Marantz CC-870	400
Marantz CD-63IIKI	500
Micromega Minium	400
Musical Fidelity E60	300
Musical Fidelity A2	500
NAD 513	290
NAD 515	350
NAD 514	370
NAD 517	400
Onkyo DX 7210	260
Onkyo C721	290
Onkyo DXC 320	380
Onkyo DX 7510	400
Onkyo CM 716	450
Pioneer PD-F805	300
Pioneer PD-S705	300
Pioneer PD-F906	350
Pioneer PD-S904	400
Pioneer PD-S505 Precision	460
Rotel RCD-965BX	300
Rotel RCD-970BX	375
Sony CDP-CX55	280
Sony CDP-XE900E	300
Sony CDP-CX200	380
Sony CD-XA20ES	450
Sony CDP-X3000ES	500
TEAC CD-5	350
Technics SL-MC400	350
Yamaha CDX-890	350
£501 to £1000	
Acurus ACD11	899
Alchemist Nexus	597
Arcam Alpha 8	520
Audiolab 8000CD	1,000
AVI S2000MC2	895
Creek CD42	599
Denon DCD-3000	1,000
DPA Renaissance int CD	950
Fase Evoluzione Laserdrive 1.0	995
Helios Model 3	650
Helios Model 2	950
Hybrook Signature II	989
Linn Mimik	875
Marantz CD-17	800
Micromega Stage 4	600
Micromega Stage 5	750
Micromega Stage 6	950
Mission dAD3	598
Mission dAD3Q	898
Monrio Privilege	995
Myriad MC100	700
Naim CD3	1,000
Orelle CD100eA	649
Orelle CD-100eSA	999
Pink Triangle Numeral	999
Pioneer PD-506	550
Primare D20	800
Quad 77 Bus	700
Quad 77 Mains	900
Roksan Caspian	895
T+A CD1200R	895
TEAC VRDS-7	599
TEAC VRDS-9	700
TEAC VRDS-10SE	850
Technics SL-P2000	1,000
Trichord Genesis	549
Trichord Digital Jukebox 25	599
Trichord Digital Jukebox 50	649
Trichord Digital J'box 100	699
Trichord Revelation	799
Over £1000	
Alchemist Forseti	1,950
Audio Research CD1	3,290
Audio Research CD2	4,100
Audiomeca Talisman	2,150
Audiomeca Talisman SE	2,300
AVI S2000MC	1,399
Cary CD-301	2,495
Conrad-Johnson DF-2	1,695
Conrad-Johnson DV-2b	2,495
Copland CD277	1,800
Copland CDA288	2,199
Helios Model 1	1,250
Helios Stargate	2,250
Krell KPS30i	5,490
Krell KPS-20i	9,990
Marantz CD-17KI	1,300

Marantz CD-23	4,000
Mark Levinson 39	4,995
Meracus Tanto	1,395
Meracus Imago Player	4,495
Meridian 506	1,100
Meridian 508	1,995
Micromega Solo	2,750
Musical Fidelity FCD	1,500
Myriad MCD500	1,300
Naim CD2	2,000
Naim CDS	3,940
Pink Triangle Litaural	2,099
Primare 302	1,800
Roksan Atessa-DP3P	1,495
Sherwood CD1	1,100
Sonic Frontiers Anthem CD1	1,595
Sonic Frontiers SFT-1	3,495
TEAC VRDS-25	1,300
XTC CDP-1	1,250

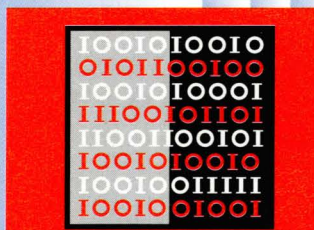


CD TRANSPORTS

KEY

□□□ - electrical (coaxial) digital output.
 Many players also include an optical (Toslink) output.

Arcam Delta 250	800
Audio Research CDTI	3,290
Audio Synthesis Transcend	1,395
Audiolab 8000CDM	1,400
Audiomeca Damnation	999
Audiomeca Damnation SE	1,100
Audiomeca Kreatura SE	1,400
Audiomeca Mephisto	2,350
Cambridge Discmagic One	300
Conrad-Johnson DR-1	1,795
DPA Enlightenment Drv	725
Jadis JD3	4,850
Jadis JD2	4,990
Jadis JD1	12,500
Krell KPS-20t	8,490
Linn Karik	1,850
Mark Levinson 37	3,995
Mark Levinson 31.5	9,295
Meracus Imago	3,995
Meridian 500	1,245
Micromega Drive 3	750
Micromega Data	2,250
Monrio Bitmatch	950
Muse Model 5	1,800
Pink Triangle Cardinal II	875
PS Audio Lambda TR	2,250
PS Audio Lambda AT&T	2,778
Roksan Atessa-DP3	1,295
Sonic Frontiers SFT-1	2,295
Sonic Frontiers Transport 3	5,995
T+A CM1200R	990
TEAC VRDS-T1	550
TEAC P-30	2,500
Theta Digital Data Basic II	2,397
Theta Digital Data III NTSC/PAL	5,455
Thorens TCD-2000	999
Trichord Digital Turntable	699
Tube Tech Fulcrum	1,000
Wadia 8	3,195
Wadia 20	4,37



DIGITAL TO ANALOGUE CONVERTERS (DACs)

KEY

④ - number of digital inputs

AMC CDM7DAC	100
AMC DAC8	130

AMC CDM7VAC	200
Apogee Digital DA-1000	3,395
Arcam Black Box 50	480
Arcam Black Box 500	750
Audio Note DAC1	675
Audio Note DAC2	1,099
Audio Note DAC3	1,750
Audio Research DAC5	2,148
Audio Research DAC5	2,335
Audio Research DAC3	4,195
Audio Research DAC3	4,555
Audio Synthesis DAX Decade	2,795
Audiolab 8000DAC	900
Audiomeca Elixir	799
Audiomeca Ambrosia	1,850
Boulder 2020	17,750
Cambridge Dacmagic 2 Mk II	150
Chord DSC1100	2,575
Chord DSC1500	3,850
Conrad-Johnson D/A-3	1,195
Conrad-Johnson D/A-2b	1,990
Denon DCD-425	150
DPA Little Bit 3	325
DPA Renaissance DAC	570
DPA Enlightenment DAC	825
DPA SX128	2,000
DPA SX256	4,000
DPA SX512	8,000
Jadis JS3	2,129
Jadis JS1	8,068
LFD DAC2	1,950
LFD DAC3	3,000
Linn Numerik	1,500
Manley Professional DAC-20	6,950
Mark Levinson 36	3,995
Mark Levinson 30.5	15,950
Meracus Auriga	1,295
Meracus Flagrare	2,495
Meridian 566	1,095
Micromega DAC 2	750
Micromega Dialog	2,000
Monrio 18B2	795
Muse Model 2	2,190
Muse Model 2 Plus	2,500
Musical Fidelity X-ACT	200
Musical Fidelity X-DAC	300
Onkyo DX 7310	330
PS Audio DL3	777
PS Audio SL3	1,449
PS Audio UltraLink 2 HDCD	2,590
PS Audio Ref Link	4,550
Roksan Atessa-DAC2	595
Sonic Frontiers SFD-2 Mk 2	5,295
Sonic Frontiers Processor 3	6,995
Sumo Theorem II	945
Sumo Theorem IIB	1,155
TEAC D-T1	500
TEAC D-700	600
Theta Digital Chroma Std	849
Theta Digital Pro Geny	1,145
Theta Digital Pro Prime II	1,800
Theta Digital Pro Basic III	2,990
Theta Digital Gen V SE	4,300
Theta Digital Casablanca LS	5,910
Thorens TDA-2000	700
Trichord Pulsar Ser One	1,395
Tube Tech Fulcrum	1,400
Wadia 12	1,530
Wadia 15	3,790
Wadia 64.4	4,750
Wadia 16	7,395
Wadia 7	9,995
Wadia 9	12,790
Woodside DVAC-18	1,499



DIGITAL RECORDERS

KEY

MD - MiniDisc
 DAT - Digital Audio Tape
 ⊕ - portable

Denon DMD-1300	MD	500
Kenwood DM-7090	MD	500
Onkyo MD 122	MD	700
Pioneer PDR-04	MD	700
Pioneer D-05	DAT	900
Pioneer PDR-05	DAT	1,000

SENNHEISER



THE ESSENTIAL ACCESSORY – SENNHEISER'S HD565

"Sound quality is exceptionally good... easily the best all-round model tested".

Alvin Gold, Hi-Fi Choice, September 1996.

Call (01494) 551551 for more information or your nearest stockist.

Pioneer D-C88	DAT	2,000
Sharp MD-R1E	MD	300
Sharp MD-MS200H	MD	350
Sharp MDX300H	MD	1,000
Sony MZ-E20	MD	180
Sony MDS-JE510	MD	250
Sony MZ-E30	MD	280
Sony MDS-S38	MD	300
Sony MZ-R30	MD	300
Sony MDS-JA30ES	MD	699
TEAC MD-H500	MD	650
TEAC MD-10	MD	950

Pioneer SE-A40	D	20
Pioneer SE-A20V	D	23
Pioneer SE-M250	D	25
Pioneer SE-M350	D	30
Sennheiser HD56	D	18
Sennheiser HD433	D	20
Sennheiser HD435 Vegas	D	30
Sennheiser HD435 Manhattan	D	30
Sennheiser HD60TV	D	40
Sony MDR-W20G	D	18
Sony MDR-E837	D	18
Sony MDR-P70	D	18
Sony MDR-ED238	D	20
Sony MDR-009TV	D	20
Sony MDR-A34L	D	20
Sony MDR-E848	D	20
Sony MDR-P1TV	D	25
Sony MDR-CD270	D	30
Sony MDR-E868	D	35
Sony MDR-V400	D	40
Sony MDR-D11	D	40
Technics RP-HT280	D	30
Technics RP-HT300	D	40
Vivanco SR250	D	19
Vivanco SR150	D	20
Vivanco SR200	D	25
Vivanco SR300	D	30

Over £41

AKG K301	D	80
AKG K222R	D	100
AKG K401	D	120
AKG K501	D	150
AKG K333R	D	150
AKG K444R	D	180
AKG K290S	D	250
AKG K1000	D	700
Audio Technica ATH910PRO	D	80
Audio Technica ATHD40FS	D	120
Audio Technica ATHM40FS	D	120
Audio Technica ATH911	D	120
Beyer DT311	D	50
Beyer DT411	D	63
Beyer DT511	D	106
Beyer DT801	D	125
Beyer DT811	D	145
Beyer DT100	D	160
Beyer DT901	D	160
Beyer DT911	D	170
Denon AH-D210	D	45
Denon AH-D350	D	65
Denon AH-D550	D	80
Denon AH-D650	D	95
Denon AH-D950	D	150
Grado SR40	D	45
Grado SR60	D	79
Grado SR80	D	100
Grado SR125	D	150
Grado SR225	D	200
Grado SR325	D	300
Grado RS2	D	495



HEADPHONES

KEY

'D' - dynamic type, compatible with virtually all normal headphone sockets.

'E' - electrostatic type; generally includes a separate power supply.

☉ - open-back construction.

☿ - closed-back construction.

Up to £40

Aiwa HP-X301	D	20
Aiwa HP-VX303	D	25
Aiwa HP-K705	D	40
AKG Rox	D	30
Audio Technica ATH-P5	D	20
Beyer DT111	D	15
Beyer DT211	D	31
Beyer DT211TV	D	35
JVC HA-CD88	D	18
JVC HA-D525	D	20
JVC HA-F65	D	20
JVC HA-D626	D	25
Kenwood KPM-310	D	18
Kenwood KPM-410	D	25
KLH KHP201TW	D	21
KLH KHP-300V	D	25
KLH KHP-420V	D	33
Maxell HP-1000	D	20
Maxell HP-2000	D	25
Maxell HP-3000	D	30

Grado RS1	D	695
Jecklin Float Model 1	D	79
Jecklin Float Model 2	D	99
Jecklin Float ELS	E	399
JVC HA-D727	D	43
JVC HA-W60	D	49
JVC HA-D910	D	65
JVC HA-D1000	D	250
JVC HA-F25	D	699
Philips SBC 3396	D	70
Philips SBC HP9000	D	90
Pioneer SE-M550	D	50
Pioneer SE-M750	D	60
Precide Ergo Model 1	D	120
Precide Ergo Model 2	D	140
Sennheiser HD445	D	45
Sennheiser IS 380	D	55
Sennheiser HD455	D	55
Sennheiser HD465	D	65
Sennheiser HD475	D	80
Sennheiser HD25 SP	D	90
Sennheiser HD535	D	105
Sennheiser IS450	D	120
Sennheiser HD545 Ref	D	125
Sennheiser HD250II	D	150
Sennheiser HDC 451-1	D	150
Sennheiser HD565 Ovat'n	D	150
Sennheiser HD265 Linear	D	150
Sennheiser HD25-13	D	160
Sennheiser HD25	D	160
Sennheiser HD 580 P'cision	D	200
Sennheiser HD600	D	250
Sennheiser Lucas	D	280
Sennheiser IS850	D	859
Sennheiser HE60/HEV70	E	998
Sennheiser Orpheus	E	9,652
Sony MDR-IF120K	D	50
Sony MDR-E888	D	55
Sony MDR-IF125RK	D	60
Sony MDR-V600	D	70
Sony MDR-F1	D	100
Sony MDR-NC5	D	100
Sony MDR-IF420RK	D	100
Sony MDR-CD770	D	100
Sony MDR-D77	D	130
Sony MDR-IF520RK	D	150
Sony MDR-CD1700	D	200
Stax SR-0001	E	280
Stax SR-Lambda Nova C	E	370
Stax Lambda Nova Basic	E	449
Stax SR-Lambda Nova S	E	450
Technics RP-HT400	D	50
Technics RP-HT600	D	60
Technics RP-HT700	D	70
Technics RP-DJ1200	D	130
Vivanco IR5800	D	50
Vivanco IR5700	D	50
Vivanco IR5000	D	50
Vivanco SR850	D	50
Vivanco SR650	D	50
Vivanco SR750	D	60
Vivanco IR6000	D	70
Vivanco SR909	D	70
Vivanco FMH 3000	D	80
Vivanco IR6500	D	90
Vivanco SR10001FL	D	110
Vivanco IR7100	D	120
Vivanco IR7600	D	140
Vivanco SR200IFL	D	140

Atacama SE16		65
Atacama SE12		65
Atacama SX500		67
Atacama F2		70
Atacama F1		70
Atacama SX600		70
Atacama SL200		70
Atacama SE24		70
Atacama SE20		70
Atacama SX700		73
Atacama SL300		73
Atacama TP600		75
Atacama TP500		75
Atacama SE615		75
Atacama SE515		75
Atacama SE415		75
Atacama SL400		76
Atacama SE1000S		80
AVF Tower P6144BP		60
BCD Model 1010		60
Crede STD 001		284
Custom Design CD 500		50
Custom Design AS 630AV		65
Custom Design AS 130		25
Custom Design Tri 100		50
Custom Design R/S 200		50
Custom Design R/S300		60
Custom Design Tri 300		55
Custom Design SCS 24		60
Custom Design X24		61
Custom Design C 20		50
Custom Design H1		50
Deadrock 903		60
Deadrock 902		47
Deadrock 901		39
Dynaudio Trophy		120
Dynaudio Master		200
Dynaudio Ultima		290
Harbeth HL-Stands		21
Heybrook Stand-ULT		3
Heybrook Stand-S6		63
Heybrook Stand-S4		48
Heybrook Stand-S1		47
JPW MS2		45
JPW MS3		61
JPW MS1		46
JPW HS1		58
JPW HS2		45
Kudos Audio Arrow		60
Kudos Audio S-50		60
Kudos Audio S-100		63
Mission Micrometer		58
Mission Entasis		58
Opera S1		60
Pioneer CP-7		50
Pioneer CP-8		80
Projekt Signature		55
Revolver RS1		50
Royd Royd		55
SD Acoustics SD Alexandra		50
Silverado Silverado 1 Stand		60
Sonus Faber Ironwood		475
Sonus Faber Stonewood		497
Sound Org Z037		55
Sound Org Z027		55
Sound Org Z026		55
Sound Org Z518		45
Soundstyle X6118		42
Stands Unique Speaker support		59
Stands Unique Tuned Spkr Support		59
Stands Unique Tuned Carbon Fibre		59
Stands Unique Vivas CF Spkr Supp		60
Target TR60		68
Target R1		53

EQUIPMENT SUPPORTS

KEY

3 - number of shelves



EQUIPMENT SUPPORTS

Speaker Stands

KEY

60 - height of stand

Alphason NCI	60	47
Alphason Akros I	60	49
Alphason RS1	120	49
Alphason Akros II	60	59
Alphason NCI	60	84
Alphason HDS-40/M	60	85
Alphason Titan S	60	125
Apollo AZ6	66	80
Arcici Q-1	30	299
Arcici Q-2	30	299
Atacama BD21	56	55
Atacama BD17		55
Atacama BD25		60
Alphason SM17	1	49
Alphason VSM17	1	85
Alphason GSM17	1	85
Alphason GMV1P	1	110
Alphason R17/17	3	120
Alphason GMH1P	1	150
Alphason GR17/17	3	150
Alphason VR17/17	3	190
Audiophile Base 01	1	79
Audiophile SAT120	4	280
Audiophile SAT120P	4	560
BCD Model 1006/8	1	795
BCD Model 1000	3	1,250
Custom Design G3	3	130
Custom Design Aspect 650	4	240
Custom Design Aspect 500AV	3	270
Custom Design Aspect 850	5	270
Deadrock 701	1	60
Deadrock 802	2	90
Deadrock 703	3	130
Deadrock 704	4	190
Deadrock 705	5	230

Fi-Rax R4	6	399	Projekt B4	8	340
Frameworks H175	1	130	Projekt B Multi	8	345
Frameworks FS1		150	Projekt B3ii	7	345
Frameworks FT2		285	Projekt C3	9	375
Frameworks FT3		350	Projekt D3	12	420
Frameworks H700		355	Projekt C3i	8	420
Frameworks H900		389	Projekt B5	10	425
Frameworks H500/H175	3	404	Projekt C3iii	11	465
Heybrook Stand-Signature	4	249	Projekt C3ii	10	465
Impulse Iso-plate		190	Projekt D3i	12	500
JPW 3 Tier	3	80	Projekt C4	12	500
JPW 5 Tier	5	100	Projekt C3iv	10	510
Kudos Audio Corinthian	5	600	Projekt D3ii	14	545
Linn K3000		85	Projekt C Multi	9	555
Mana Sound Frame		125	Projekt D4	16	560
Mana Mini Table		150	Quadraspire Q4S mini shelf	1	60
Mana Power supply table		150	Quadraspire Q4S shelf	1	60
Mana Reference flat top		150	Quadraspire QKS Cabinet shelf	1	80
Mana Sound Shelf		175	Quadraspire QAV shelf	1	120
Mana Sound Base		175	Quadraspire Q4M mini table	4	200
Mana Sound Stage		200	Quadraspire Q4 table	4	200
Mana Sound Table		235	Quadraspire QAV table	3	300
Mana Ref Shelf		325	Quadraspire Q4SP Table	4	320
Mana Reference Table		350	Quadraspire QAVSP Table		400
Mana 2 Tier Amp stand		375	Quadraspire QK Cabinet	4	400
Mana 3 Tier Amp Stand		450	Reson DOMOPS	1	195
Mana 4 Tier Amp Stand		500	Reson DOMOWS	1	195
Mana 5 Tier Amp Stand		600	Sound Org Z022	1	65
Mana 6 Tier Amp Stand		700	Sound Org Z021	2	78
Mission Hark		298	Sound Org Z030	3	100
Optimum G2	2	69	Sound Org Z060	4	120
Optimum G2/Pedestal	2	99	Sound Org Z038	5	135
Optimum G4/Pedestal	5	130	Sound Org Z540	4	140
Optimum OPT 340S	3	149	Sound Org Z545	4	140
Optimum G5/Pedestal	6	150	Sound Org Z560	5	160
Optimum OPT 490S	4	199	Sound Org Z530	3	170
Optimum OPT 660S	5	249	Soundstyle X300	3	180
Optimum OPT 340	3	249	Soundstyle X305	3	210
Optimum OPT 490	4	299	Soundstyle X053	4	210
Optimum OPT 440	4	299	Soundstyle X050	4	210
Optimum OPT 1020S	6	299	Soundstyle X6300	3	215
Optimum AV 300	3	329	Soundstyle X100	4	220
Optimum OPT 700	5	349	Soundstyle X6110	4	230
Optimum OPT 610	5	349	Soundstyle X058	5	240
Optimum OPT 660	5	349	Soundstyle X310	3	250
Optimum OPT 1020	6	399	Soundstyle X105	5	250
Optimum OPT 1190	7	450	Soundstyle X6053	4	255
Projekt A3	3	145	Soundstyle X6100	4	265
Projekt A4	4	190	Soundstyle X6310	3	275
Projekt A5	5	235	Soundstyle X6058	5	290
Projekt B3	6	255	Soundstyle X6105	5	300
Projekt A6	6	280	Soundstyle Finewoods W105	5	320
Projekt B3i	6	300	Stands Unique Isolation Platform	1	52

Stands Unique Sound Support	4	249
Stands Unique Sound Tower	5	289
Stands Unique Compact Sound Supp	4	315
Stands Unique Sound Support 10	4	315
Stands Unique Sound Twr Cabinet	5	369
Stands Unique Ref Wall Support	1	550
Stands Unique Ultimate tower	10	689
Stands Unique Ref Floor Support	6	799
Target B5	5	175
Townshend Seismic Sink 1-CD		110
Townshend Seismic Sink 1-3D		400
Townshend S/Sink Stand 1-4	4	999
Townshend Seismic Sink 3-4	4	1,250
Wilson Benesch Standard Shelf	1	130
Wilson Benesch Mono Block	1	265
Wilson Benesch Kevlar Shelf	1	270
Wilson Benesch Asside Basic		590
Wilson Benesch Asside	4	720
Wilson Benesch Triptych	1	990

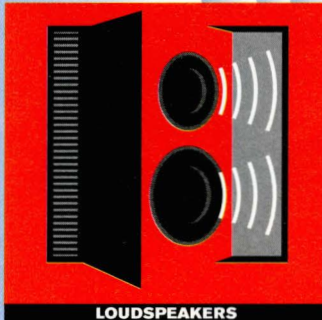
Tangent Monitor 5	100	80
Tangent Monitor 7	100	100
Tannoy Mercury M1	100	120
TDL Nucleus 1	100	60
TEAC LS-X8 Mk II	100	80
Technics SB-CS55	100	80
Technics SB-CS75	100	100
Visionik 5202	100	129
W'dale Valdus 100	100	80
W'dale Diamond 7.1	100	100
W'dale Valdus 200	100	110
W'dale Modus Micro	100	110

£131 to £200

Acoustic Energy AE100	100	200
Allison Model 4A	100	170
B&W DM302	100	150
B&W CWMS	100	170
B&W DM601	100	199
Bose 101	100	190
Bose 141	100	200
Boston CR6	100	149
Boston 325	100	149
Boston Micro 80 Sat	100	169
Boston Runabout	100	169
Boston 375	100	179
Boston 351	100	189
Boston CR7	100	199
Boston Runabout II	100	200
Celestion 15i	100	199
Cerwin-Vega CT-165	100	200
Denon SC-E313	100	160
Gale 2iB	100	140
Gale 4i	100	140
Gale 3s	100	150
Genexxa GX650	100	140
GLL Imaggio IC100	100	170
Heybrook Prima	100	159
Infinity SM65	100	150
Infinity Reference 1i	100	150
Infinity Reference 11i	100	200
Interaudio XL2000	100	200
Jamo 38	100	150
Jamo 525	100	150
Jamo 560	100	170
Jamo 660	100	170
Jamo Cornet 65	100	170
Jamo Studio 180	100	180
Jamo D165	100	200
Jamo 68	100	200
JBL TLX121	100	150
JPW ML510	100	150
JPW ML610	100	170
JPW SS551	100	200
KEF Coda 8	100	189
KEF Q15	100	199
KEF Model 60S	100	199
Kenwood LS-200G	100	200
KLH Model 21	100	155
KLH Model 11	100	155
KLH Model 31	100	185
Mission 731i Pro	100	140
Mission 732i	100	200
Mordaunt-Short MS10i	100	140
Mordaunt-Short VS-200	100	150
Mordaunt-Short MS20i Pearl	100	200
Mordaunt-Short VS-300	100	200
Mordaunt-Short MS20i	100	200
Pioneer CS-5030	100	170
Polk M2	100	180
Polk RT3	100	200
PolkAB610	100	200
QLN Qubic111	100	200
Rega Kyte	100	198
Revolver Colt	100	139
Revolver The 230	100	169
Revolver Purdey MkII	100	199
R Allen Minette 3	100	159
R Allen Dim'n 5/1 Compact	100	179
R Allen RA6	100	199
Rogers GS1	100	179
Royd ATX	100	155
Sequence 200	100	199
Solid Monitor	100	200
Sony SS-126EB	100	150
Sony SS-176E	100	200
Tangent Monitor 9	100	150
Tangent Monitor 11	100	180
Tannoy Mercury M2	100	140
TDL RTL 1	100	190
TDL NFM 1	100	200
Technics SB-CS95	100	150
Technics SB-M20	100	200
Visionik 6003	100	143
Visionik 5001	100	170
W'dale Diamond 7.2	100	140
W'dale Valdus 300	100	150
W'dale Modus Music Two	100	200
W'dale Valdus 400	100	200
W'dale Diamond 7.3	100	200
ZYP A1	100	199

£201 to £300

Acoustic Energy AE200	100	300
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LOUDSPEAKERS

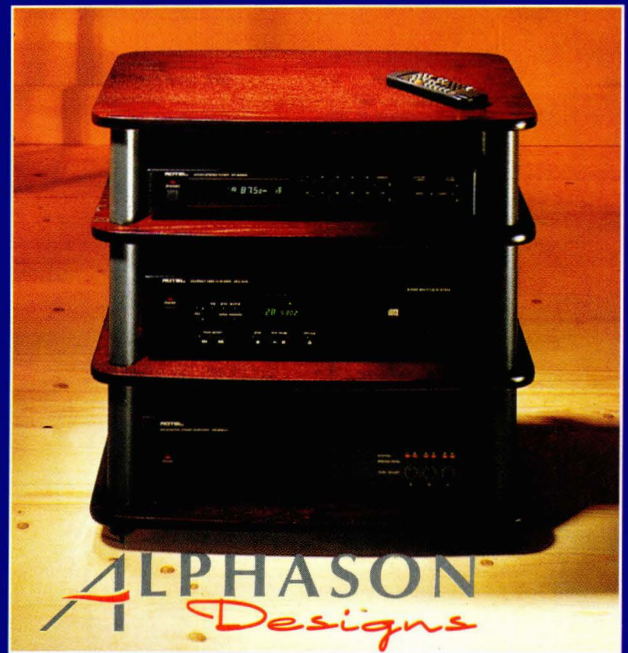
KEY

- ↓ - floorstander; larger models requiring no separate stand.
- ↑ - stand model; smaller models designed to be raised above the floor.
- ↔ - wall mount; designed to be hung on the wall or mounted in-wall.
- - box type, including infinite baffle, reflex and transmission line types.
- ▷ - horn type; mostly large and very efficient.
- ▭ - panel type, including electrostatic and planar magnetic types.

Up to £130

Allison Micro Monitors	100	95
Allison Mini References	100	120
Celestion 12i	100	119
Denon SC-M2	100	80
Gale Mini Monitors	100	70
Genexxa GX300	100	80
Genexxa GX330	100	80
GLL Arena	100	99
Goodmans Active 75	100	65
Interaudio XL1000	100	130
Jamo Studio-80	100	70
Jamo SAT-90	100	90
Jamo Cornet 25	100	100
Jamo D-110	100	100
Jamo SAT-170	100	110
Jamo Studio-110	100	110
Jamo Cornet 35	100	120
Jamo Artina	100	120
Jamo D-115	100	120
Jamo 28	100	125
JBL TLX111	100	120
JPW Mini Monitor	100	60
JPW ML110	100	70
JPW Gold Monitor	100	80
JPW ML210	100	80
JPW ML310	100	90
JPW ML410	100	100
JVC SX-SC1VBK	100	60
JVC SP-V50	100	80
JVC SP-X220TBK	100	100
JVC SP-X550BK	100	130
KEF Coda 7	100	129
Kenwood LS-90UK	100	130
Mission 731i	100	130
Mordaunt-Short VS-100	100	100
Mordaunt-Short MS05i	100	100
NAD 801	100	100
Pioneer CS-3030	100	120
Polk AB410	100	100
Realistic Minimus 26	100	56
Realistic Minimus Pro-77	100	100
Revolver Beretta	100	100
R Allen Minette 2	100	129
Solid HCM2	100	130
Sony SS-86E	100	100
Tangent Monitor 3	100	60

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60S Effects
80C Dialogue



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Rega XEL	1,040
RMS Revelation S 1	1,299
Rogers C6/28	1,399
Roksan Ojan 3X	995
Royd The Albion	985
Ruark Broadsword II	899
Ruark Paladin	1,099
Shahinian Super Elf	875
Shahinian Compass	1,395
Silverado Ryder	1,395
Sonus Faber Minuetto	898
Sonus Faber Concerto	1,098
Spendor 2040	899
Spendor SP2/3E	1,050
Spendor SP1/2E	1,390
T+A TAS 1200E	990
T+A TB 120	990
Tannoy Definition D300	999
TDL Cheviot	850
Technics SB-M1000	1,500
Totem Model One	1,195
Triangle Antal	1,099
Vandersteen 2Cz	1,395
Visonik LB1	935

£1501 to £3000

Acoustic Energy AE1 Sig	1,695
Acoustic Energy AE2 Sig	2,695
Alon II Mk II	2,300
Ambience Mod 3.2	1,780
Apertura Tanagra	1,895
Apertura Tanagra Sig.	2,395
ATC SCM20	1,599
ATC SCM20 Tower	2,099
Audio Note AN-E/D	1,520
Audio Note AN-E/SPx	2,250
Audio Physic Spark 2	1,749
Audio Physic Tempo	1,999
Avalon Monitor	2,995
B&O Beolab 6000	1,550
B&O Beolab 8000	2,100
B&O Beolab Penta 3	2,650
B&W Matrix 804	1,695
B&W Matrix 803s2	2,495
B&W Matrix 802s3	2,995
Bose 901 VI	1,650
Boston Lynfield 300L	2,000
Bravura Virtuoso Bronze	2,995
Carver AL-111P	1,999
Cary SP-301	2,295
Celestion A3	2,399
Celestion Kingston	2,500
Chord LS5/12A	1,595
Chord CEL 201	2,130
Chord CEL 202	2,375
Chord CEL 301	2,840
Clements Reference 7	1,995
Credo SPB 003	1,820
Credo SPB 009	2,453
Dali Grand Coupe	2,500
Def Tech BP2002	2,400
Diapason Adamantes II	1,895
Dynaudio Contour 1.8	1,842
Dynaudio Craftt	2,598
ECA Servo A.2	2,450
ELS Res'ch Vision	2,800
Epos ES25	1,655
Epos ES30	2,385
Gamma Epoch Ref Five	2,999
Harbeth HL-58	1,999
Helius Syrius II	2,395
Helius Syrius I	2,850
Hi Q Sound SM108	2,000
Horning Aristophane	2,600
Impulse Lali	1,850
Jamo Concert 11	2,000
JBL L100	1,750
JM Lab Spectral 913.1	1,850
JM Lab Antea	2,850
Jordan Watts JH2K	2,820
KEF Ref. Model Two	1,599
KEF Ref. Model Three	1,999
Linn Kaber Passive	2,000
Linn Kaber Aktiv	2,640
Lowther Fidelio	1,999
Lowther Academy	2,399
Lowther Bel Canto	2,699
Lumley L/M2 MK3	2,995
Magneplanar MG-10 SE	1,650
Magneplanar MG-1.5 SE	1,780
Magneplanar MG-2.7 SE	2,650
Manticore Matisse	1,890
Martin-Logan Aerius i	2,299
Meridian M60	2,150
M-A Studio 20SE	2,200
Mordaunt-Short Perf 860	1,895
Mordaunt-Short Perf 880	2,795
Naim SBL Active	1,830
Naim SBL Passive	1,970
Neolith NEO 1	2,999
NHT VT-2	1,600
Opera Caruso II	2,350
Origin Live Conqueror	1,650

KLH Model 82Ti	690
Linn Tukan Passive	550
Linn Kellidh Passive	750
Manticore Minaret	690
Meridian A500	750
M&K S-85	700
Mission 752f	578
Mission 735i	650
Mission 753f	798
M-A Studio 25E	600
M-A 700 PMC	600
M-A 702PMC	700
M-A 703PMC	800
Mordaunt-Short MS50i	550
Mus Tec Falcon	575
Naim Intro	660
Neat Mystique	575
Neat Petite II	745
Opera Seconda	595
Opera Operetta II	770
Opera Platea	795
Origin Live Resolution	732
Origin Live Victory	750
Pentachord B	519
Pentachord Pentode	729
Polk RT12	600
Polk RT16	799
Polk LS50	800
Proac Tablette 50	599
Proac Studio 100	699
Promenade SP4	650
QLN Classic One	800
Quad 10L	600
Rogers GS9	579
Rogers LS3/5A	699
Rogers C6/25	799
Roksan ROkone 1	595
Roksan Ojan 3	795
Royd The Sorcerer	595
Royd Abbot	695
Ruark Templar II	599
Ruark Sceptre	599
Ruark Talisman II	749
Ruark Prologue One	799
SD Acoustics SD3R	649
Silverado Raider	695
Sonus Faber Concertino	599
Spendor 2030	599
Spendor LS3/5A	630
Spendor SP3/1P	795
T+A TB 100	690
Tannoy Precision P30	600
Tannoy Definition D100	689
Tannoy Precision P40	800
TDL T-Line 2	550
TDL Cotswold	650
TDL RTL 4	650
TDL T-Line 3	700
Totem Rokk	695
Triangle Comete Tze	525
Triangle Lunn	550
Triangle Zephyr	799
W'dale MFM7	650

£801 to £1500

Acoustic Energy AE2-II	1,095
Acoustic Solutions Eight	1,200
Alon I Mk II	1,500
Ambience Mod. 4.0	1,185
Apertura Prima	920
Apertura Agora	1,095
Apertura Nova	1,295
ATC SCM10	999
Audio Note AN-I/D	930
Audio Note AN-K/SPx	1,060
Audio Note AN-E/B	1,299
Audio Note AN-I/SPx	1,415
Audio Physic Step	1,299
AVI Positron	899
B&O Beolab 4000	1,100
B&W P5	875
B&W DM604	1,000
B&W P6	1,095
B&W Matrix 805 V	1,095
Bandor Trident	846
Bandora Mora	1,260
Bandora Bandora	1,340
Bose A'mass AM7	900
Bose 701	1,000
Boston VR40	1,000
Castle Harlech	880
Castle Howard S2	1,200
Celestion A1	899
Celestion A2	1,499
Cerwin-Vega AL-1000	1,100
Cerwin-Vega 1515	1,300
Charlo Academy 1	1,300
Clements Reference 1	995
Dali 850	1,100
Def Tech BP8B	1,000
Def Tech BP10B	1,500
Diapason Prelude II	875
Dynaudio Contour 1.1	879
Dynaudio Contour 1.3	1,198
Electrocompaniet EC-Qube	1,195
Electrocompaniet EC-Qube SE	1,495
Epos ES22	1,185
Harbeth HL-K6	1,049
Harbeth HL-Compact 7	1,499
Harbeth BBC LS5/12A	1,499
Heybrook Sextet	1,299
Impulse Kora	1,250
Jamo 707i	900
Jamo Concert 8	1,300
JBL L40	1,000
JBL PS15	1,000
JBL L80	1,250
JBL L90	1,500
JM Lab Profil 77	1,050
JM Lab PS 5.1	1,250
JM Lab Spectral 909.1	1,375
Jordan Watts JH1 + 1	995
JPW Ruby 4	1,000
KEF Q75	999
KEF Ref. Model One	1,199
Kelly KT3	1,200
Keswick Torino	999
Keswick Figaro Evolution	1,099
Keswick Milano	1,199
Keswick Legato	1,199
Keswick Amber	1,499
Linn Tukan Aktiv	1,050
Linn Kellidh Aktiv	1,250
L Voice Auditorium	1,300
Lowther Accolade 2	1,199
Lumley L/M3.5	1,050
Magneplanar SMG-C SE	990
Magneplanar MG-0,6 SE	1,370
Meridian Argent 1	995
M&K S-125	1,150
Mission 754f	1,298
M-A Studio 12	1,000
M-A 705PMC	1,400
Mordaunt-Short Perf 820	1,495
Mus Tec Condor	845
Mus Tec Hawk	1,250
Mus Tec Eagle	1,500
Naim Credo	1,060
NHT VT-1.2	999
Opera Callas II	950
Opera Terza	999
Opera Callas Gold	1,050
Opera Divina II	1,500
Origin Live Sovereign	975
Polk LS70	1,200
Polk RT20p	1,500
Proac Tablette 50 SIG	899
Proac Response 1 5C	1,199
Proac Studio 150	1,399
Prof Monitor Co LB1	935
Prof Monitor Co AB1	1,496
QLN Signature	1,000
QLN Signature HDII	1,300

Paragon Jubilee	⌄	□	1,995
Pentachord P'column	⌄	□	1,649
Polk LS90	⌄	□	1,700
Posselt Albatross	⌄	□	2,500
Proac Response 2S	⌄	□	2,000
Proac Studio 250	⌄	□	2,249
Proac Response 2.5	⌄	□	2,700
Prof Monitor Co IB1S	⌄	□	2,099
QLN Prestige	⌄	□	1,600
QLN Sig. Splitfield	⌄	□	1,600
QLN Reference	⌄	□	2,000
QLN Reference HDII	⌄	□	2,500
Rehdeko RK115	⌄	□	1,700
Rogers LSS/9	⌄	□	1,549
Ruark Crusader II	⌄	□	1,599
Ruark Equinox	⌄	□	1,849
Ruark Accolade	⌄	□	2,699
SD Acoustics SD5	⌄	□	1,549
SD Acoustics SD1E	⌄	□	2,995
Shahinian Arc	⌄	□	1,875
Shahinian Obelisk	⌄	□	2,695
Silverado Silverado 1	⌄	□	1,995
Sonus Faber Minima Amator	⌄	□	1,566
Sound-Lab Quantum	⌄	□	2,150
Spendor SP7/1	⌄	□	1,990
Spendor SP100	⌄	□	2,099
T+A TB 140	⌄	□	1,680
Tannoy Definition D500	⌄	□	1,999
Tannoy Stirling TW	⌄	□	2,200
Tannoy Definition D700	⌄	□	2,500
TDL Studio Monitor-m	⌄	□	2,750
Totem Mann-2	⌄	□	2,795
Triangle Zays	⌄	□	1,750
Triangle Altinis	⌄	□	2,250
Triangle Extan	⌄	□	2,950
Wilson Benesch Stand-in	⌄	□	2,000
Over £3000			
Acoustic Energy AE5	⌄	□	7,995
Alon IV Mk II	⌄	□	3,495
Alon Lotus SE	⌄	□	3,495
Alon V Mk III	⌄	□	4,995
Alon Adriana	⌄	□	8,500
Alon Circe	⌄	□	9,995
Alon Phalanx	⌄	□	19,000
Ambience Mod 5.0	⌄	□	9,550
Apertura Athena	⌄	□	4,395
Apertura Atlante	⌄	□	6,995
ATC SCM20A	⌄	□	3,049
ATC SCM50	⌄	□	3,750
ATC SCM100	⌄	□	4,499
ATC SCM50A	⌄	□	5,250
ATC SCM100A	⌄	□	5,999
ATC SCM200A	⌄	□	12,999
ATC SCM300A	⌄	□	14,999
Audio Note AN-JSE Silver	⌄	□	7,900
Audio Note AN-ESE Silver	⌄	□	9,600
Audio Physic Virgo 2	⌄	□	3,399
Audio Physic Avanti 2	⌄	□	6,699
Audio Physic Caldera	⌄	□	10,599
Audio Physic Medea	⌄	□	24,999
Avalon Avatar	⌄	□	4,495
Avalon Arcus	⌄	□	6,000
Avalon Eclipse	⌄	□	6,495
Avalon Radian	⌄	□	10,995
Avalon Osiris	⌄	□	72,000
B&W Matrix 801s3	⌄	□	3,995
B&W Silver Signature	⌄	□	5,500
B&W Nautilus	⌄	□	35,000
Bandor Bandoline	⌄	□	3,290

Bandor Bandora/Mora	⌄	□	3,290
Boston Lynfield 500L	⌄	□	4,449
Bravura Virtuoso Silver	⌄	□	3,195
Bravura Virtuoso Gold	⌄	□	3,395
Bravura Virtuoso Reference	⌄	□	3,995
Bravura Accelerando	⌄	□	6,600
Chario Academy 3 Junior	⌄	□	6,000
Chario Academy 3	⌄	□	9,000
Credo SPB 012	⌄	□	3,147
Credo SDL 001	⌄	□	5,677
Dali Grand	⌄	□	4,000
Def Tech BP2000	⌄	□	3,600
Dynaudio Contour 2.8	⌄	□	3,198
Dynaudio Contour 3.3	⌄	□	4,815
Dynaudio Confidence 3	⌄	□	4,846
Dynaudio Confidence 5	⌄	□	5,924
Dynaudio Consequence	⌄	□	14,566
Electrofluidics Sonolith 2.2xi	⌄	□	5,999
ELS Res'ch Vista	⌄	□	3,900
ELS Res'ch Illusion MkII	⌄	□	9,000
Fase Evoluzione Aria	⌄	□	3,100
Genesis 400	⌄	□	4,000
Genesis V	⌄	□	15,000
Genesis 300	⌄	□	27,500
Horning Agathon	⌄	□	3,555
Impulse Ta'us	⌄	□	3,100
Infinity Sigma	⌄	□	5,995
Infinity Epsilon	⌄	□	9,995
Jamo Oriel	⌄	□	7,000
JBL S2600	⌄	□	3,500
JBL S3100	⌄	□	4,000
JM Lab Alcor	⌄	□	4,995
JM Lab Utopia	⌄	□	16,000
JM Lab Grande Utopia	⌄	□	33,000
Jordan Watts JH5K	⌄	□	3,950
Jordan Watts JH10K	⌄	□	7,570
KEF Ref. Model Four	⌄	□	3,299
Keswick Zero 2	⌄	□	7,000
Linn Keltik Aktiv	⌄	□	6,000
L Voice Air Scout	⌄	□	19,500
L Voice Air Partner S	⌄	□	37,200
Lowther Delphic	⌄	□	3,099
Lowther Opus One	⌄	□	4,999
Lumley L/M 2 Sig. Mk3	⌄	□	4,500
Magneplanar MG-3.5SE	⌄	□	3,800
Magneplanar MG-20 SE P	⌄	□	10,300
Magneplanar MG-20 SE A	⌄	□	11,000
Martin-Logan SL3	⌄	□	3,499
Martin-Logan CLS IIz	⌄	□	4,555
Martin-Logan Re-Quest	⌄	□	5,875
Martin-Logan Monolith S	⌄	□	7,440
Martin-Logan Monolith IIP	⌄	□	8,550
Martin-Logan Monolith IIXPB	⌄	□	11,900
Meridian DSP5000	⌄	□	3,295
Meridian DSP5500	⌄	□	5,950
Meridian DSP6000	⌄	□	9,400
M-A Studio 50	⌄	□	4,000
M-A Studio 60	⌄	□	6,000
Naim DBL Active	⌄	□	7,414
Neolith NEO 2	⌄	□	3,499
Neolith NEO 3	⌄	□	4,999
NHT Model 3.3	⌄	□	3,500
Paragon Regent	⌄	□	3,490
Proac Response 3.5	⌄	□	4,250
Proac Response 5	⌄	□	9,000
Proac Response 4	⌄	□	12,000
Prof Monitor Co MB1P	⌄	□	4,370
Prof Monitor Co BBS A	⌄	□	16,688
QLN Artec 1600	⌄	□	5,000

Quad ESL63	⌄	□	3,450
Rehdeko RK125	⌄	□	3,200
Rehdeko RK145	⌄	□	4,800
Rehdeko RK175	⌄	□	8,800
Revel Gem	⌄	□	5,295
Rockport Syzygy	⌄	□	15,000
Rockport Procyon	⌄	□	32,500
Shahinian Hawk	⌄	□	4,995
Shahinian Diapason	⌄	□	8,895
Shun Mook Bella Voce	⌄	□	6,800
Sonus Faber Electa Amator	⌄	□	3,293
Sonus Faber Extrema	⌄	□	6,500
Sound-Lab Dynastat	⌄	□	3,790
Sound-Lab Aura	⌄	□	6,490
Sound-Lab Pristine III+	⌄	□	7,990
Sound-Lab A-3	⌄	□	11,990
Sound-Lab Ultimate II	⌄	□	13,950
Sound-Lab A-1	⌄	□	13,990
Sound-Lab Ultimate III	⌄	□	18,950
Sound-Lab Ultimate I	⌄	□	23,950
Spendor SP9/1	⌄	□	3,450
T+A AD4	⌄	□	3,940
T+A AD3	⌄	□	4,660
T+A AD2	⌄	□	8,590
Tannoy Edinburgh TW	⌄	□	3,250
Tannoy Definition D900	⌄	□	3,999
Tannoy GRF Memory TW	⌄	□	4,000
Tannoy Westminster TW	⌄	□	6,600
Tannoy Canterbury 15 TW	⌄	□	7,720
Tannoy Westminster Royal	⌄	□	14,920
TDL Ref Standard-m	⌄	□	6,000
Triangle Nemo Altair	⌄	□	4,250
Wilson Audio Cub	⌄	□	5,495
Wilson Audio WATT 5	⌄	□	8,750
Wilson Audio WITT	⌄	□	8,888
Wilson Benesch Actor	⌄	□	3,800
Wilson Benesch ACT1 spkr	⌄	□	6,400

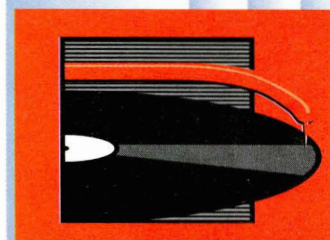
KEF Model AV1	⊙	THX	2,499
Kenwood SW500	⊙		250
Keswick Alto	⊙		1,299
KLH ASW10-100	⊙		350
KLH ASW12-120	⊙		380
Linn AV5150	⊙		2,850
L Voice RW24	⊙		11,500
Meridian M2500	⊙		1,595
M&K VX-7MkII	⊙		450
M&K V-75 MkII	⊙		650
M&K V-125	⊙		800
M&K V-125 (THX)	⊙	THX	800
M&K MX-70	⊙		900
M&K MX-150 (THX)	⊙	THX	1,500
M&K MX-200	⊙		1,800
M&K MX-300	⊙		2,500
M&K MX-5000 (THX)	⊙	THX	2,900
Mission 73AS	⊙		450
Mission 75AS	⊙		548
Mordant-Short T2000	⊙		500
Mus Tec Sub	⊙		650
Muse Model 22	⊙		1,890
Muse Model 18	⊙		3,790
Neat Gravitas	⊙		1,095
NHT SW2Pi	⊙		609
Polk PSW50	⊙		350
Polk PSW150	⊙		500
Polk PSW300	⊙		750
REL Q50	⊙		375
REL Q-100E	⊙		495
REL Strata II	⊙		575
REL Strata I	⊙		695
REL Stadium II	⊙		995
REL Stentor II	⊙		1,800
REL Studio II	⊙		4,000
Revel Sub-15	⊙		2,195
Revoliver The Recoil	⊙		100
R Allen Gold Sub	⊙		149
R Allen Dim'n Active	⊙		499
R Allen Magnum Active	⊙		699
Rogers AB1	⊙		549
Rogers Sub-bass	⊙		679
Roksan Ojan 3S	⊙		795
Sequence FW120	⊙		249
Solid PB100	⊙		350
Sony SA-W101	⊙		230
Sunfire True Sub	⊙		1,450
Tannoy G25ALFie	⊙		600
TDL Nucleus SBR	⊙		200
Triangle SATIII	⊙		650
Velodyne VA-68XII	⊙		399
Velodyne VA-79XII	⊙		499
Velodyne VA-810XII	⊙		599
Velodyne VA-1012XII	⊙		700
Velodyne VA-1215XII	⊙		999
Velodyne FSR-12	⊙		1,099
Velodyne FSR-15	⊙		1,299
Velodyne F-1800II	⊙		1,999
W'dale Modus Sub Bass	⊙		180
W'dale Modus Powered Sub	⊙		350
Wilson Audio Puppy 5.1	⊙		8,450
Wilson Audio Whow III	⊙		12,500
Yamaha YST-SW40	⊙		140
Yamaha YST-SW80	⊙		180
Yamaha YST-SW150	⊙		280
Yamaha YST-SW300	⊙		350



SUBWOOFERS

KEY
 ⊙ - active; includes a dedicated power amplifier.
 THX - THX approved by LucasFilm for use in Home THX installations.


Acoustic Energy AE108S	⊙		300
Aiwa TS-W9	⊙		170
Allison Mini Ref Sub	⊙		210
Alon Poseidon	⊙		12,000
AMC B1-20	⊙		350
ATC SCM 0.1/15	⊙		2,750
Audio Physic Terra	⊙		3,499
B&W AS6	⊙		500
B&W Matrix 800ASW	⊙	THX	1,500
B&W Matrix 800ASW	⊙	THX	1,500
Boston CR400	⊙		300
Boston VR500	⊙		450
Boston VR2000	⊙	THX	800
Celestion CS135	⊙		139
Celestion CSW MkII	⊙		329
Celestion S1i	⊙		349
Cerwin-Vega HT-10D	⊙		200
Cerwin-Vega HT-12D	⊙		250
Credo SDC 001	⊙		3,054
GLL LE Bass	⊙		350
H/K Citation 7.4	⊙	THX	875
Infinity SSW-10	⊙		500
Jamo 860SW	⊙		110
Jamo SW303E	⊙		220
Jamo SW400E	⊙		330
Jamo SW505E	⊙		400
Jamo Sub One	⊙		400
Jamo SW600e	⊙		530
JBL CM6	⊙		200
JBL PSW800	⊙		275
JBL Sub 10	⊙		300
JBL PSW1000	⊙		325
JBL PSW1200	⊙		375
JPW Subwoofer	⊙		130
JPW SW40	⊙		199
JPW SW60	⊙		350
JPW SW-120	⊙		500
KEF Model 20B	⊙		349
KEF Model 30B	⊙		499



TONEARMS

KEY
 ⊙ - pivoted.
 # - parallel tracking.

Air Tangent IC	#		3,333
Air Tangent 10B	#		7,777
Air Tangent Ref. Sig.	#		11,000
Audio Note AN-ARM 1	⊙		169
Audio Note AN-0s	⊙		795
Audio Note AN-1s	⊙		995
Audiomeca SL5	#		2,500
Clearaudio TQ-1 Improved	#		1,950
Dynavector 507	⊙		1,995
Graham 1.5 Basic	⊙		1,695
Graham Mk 2.0	⊙		2,650
Helius Orion 4 Copper	⊙		549
Helius Cyalene 2	⊙		1,495
Kuzma Stogi	⊙		750
Kuzma Stogi Reference	⊙		1,250
Linn Akito	⊙		500



Take it to 11, Captain! The Jeff Rowland Concentra amp on idle.



Acoustic Precision Eikos CD player — £1,800 worth of digital dreadnought.

Linn Ekos	⊕	1,500
Manticore Musician II	⊕	595
Manticore Magician II	⊕	895
Manticore Magician 12	⊕	995
Moth Mk I	⊕	109
Moth MKIII Stainless	⊕	146
Moth Mk III Tungsten	⊕	174
Moth Moth 900	⊕	598
Naim ARO	⊕	1,040
N'ham Space	⊕	450
N'ham Paragon 3	#	550
N'ham Paragon 2	#	800
N'ham Mentor	⊕	800
N'ham Foot	⊕	1,100
N'ham Paragon 1	#	1,600
Rega RB250	⊕	109
Rega RB300	⊕	174
Rega RB900	⊕	598
Rockport Series 7000	#	6,000
Roksan Tabriz	⊕	320
Roksan Tabriz Zi	⊕	420
Roksan Artemiz	⊕	895
SME 3009 Ser II Imp	⊕	309
SME 3009 S2 Ser II Imp	⊕	338
SME Series II 3009-R	⊕	514
SME Series II 3010-R	⊕	526
SME Series II 3012-R	⊕	565
SME 309	⊕	689
SME 310	⊕	705
SME 312	⊕	802
SME Series IV	⊕	983
SME Series V	⊕	1,461
Wheaton Music Tri-Planar 4i	⊕	3,000
Wheaton Music Tri-Planar 5i	⊕	3,250
Wilson Benesch Act 0.5	⊕	795
Wilson Benesch ACT1 Std	⊕	950
Wilson Benesch ACT2	⊕	1,350
Zeta AS	⊕	469
Zeta VDH	⊕	549

Arcam Alpha 8	P24	280
Arcam Delta 280	P20	399
Audiolab 8000T	P39	800
Aura TU80	P30	350
AVI S2000MT	P16	599
AVI S2000T2	P99	799
Carver TX-8R	P20	469
Creek T43	P68	399
Day Sequerra FM Ref		5,937
Day Sequerra S B'dcast Mon		14,640
Denon TU-260L	P20	120
Denon TU-215RD	P40	150
Denon TU-425RD	P40	200
H/K TU930	P30	150
H/K TU950	P30	200
Kenwood KT-2080	P20	130
Kenwood KT-3080	P30	180
Linn Kudos	P50	775
Linn Kremlin	P80	2,600
Magnum Dynalab FT11		550
Magnum Dynalab FT-101A		825
Magnum Dynalab Etude		1,250
Magnum Dynalab 108		4,500
Marantz ST-57	P59	150
Marantz ST-65	P59	200
Marantz ST-17	P60	600
Meridian 504	P30	695
Michi RHT-10	P16	895
Micromega Minium FM Mk2	P39	329
Micromega Tuner	P39	750
Mission Cyrus FM7	P29	400
Musical Fidelity E50	P20	300
NAD 412	P24	190
NAD 414RDS	P30	250
NAD 710	P24	270
NAD 712	P24	330
Naim NAT03		595
Naim NAT02		1,080
Naim NAT01		1,730
Onkyo T 4210RDS	P30	180
Onkyo T 409	P30	230
Onkyo T 411RDS	P30	260
Pioneer F-204RDS	P30	140
Pioneer F-504RDS	P40	250
Pioneer F-504RDS Precision	P40	300
Quad 77FM	P25	700
Rega Radio	P24	229
Roksan Caspian	P50	495
Rotel RT-935AX	P20	160
Rotel RT-990BX	P16	500
Sony ST-SE200	P30	100
Sony ST-SE300	P30	120
Sony ST-SE500	P30	140
Sony ST-SE700	P30	180
Sony ST-SA3ES	P30	250
T+A T1200R		745
TEAC T-R400	P20	170
TEAC T-H500	P20	170
TEAC TB-X10	P20	400
Technics ST-GT350L	P30	150
Technics ST-GT550L	P39	200
Technics ST-GT650L	P39	250
Thorens TRT-2000	F59	499
Yamaha TX-480L	P40	100

Yamaha TX-492RDS	P40	RDS	130
Yamaha TX-590RDS	P40	RDS	180

TURNTABLES

KEY
 ⊕ arm included.
 ⊕ cartridge included.

Up to £500

Audio Note AN-TT 1		349
Dual CS435-1	⊕	150
Dual CS455	⊕	190
Dual 505-4 UK	⊕	250
Eclipse TT430	⊕	60
Genexxa Lab-710	⊕	60
Genexxa Lab-810	⊕	70
Kenwood KD-492F	⊕	100
Michell Mycro	⊕	435
Moth Alamo	⊕	199
Moth Kanoot Mk1 Arm	⊕	279
Moth Kanoot Mk3 Arm	⊕	329
NAD 533	⊕	220
N'ham Interspace	⊕	500
Pioneer PL-J2500-C	⊕	80
Pioneer PL-990	⊕	130
Pro-Ject 0.5/OM10	⊕	160
Pro-Ject 1/510	⊕	200
Pro-Ject 2/520	⊕	300
Pro-Ject 6/MC15	⊕	450
Rega Planar 78	⊕	214
Rega Planar 2	⊕	274
Rega Planar 3	⊕	214
Roksan Radius	⊕	470
Sherwood PM8550	⊕	130
Sony PS-LX150H	⊕	90
Sony PS-LX300H	⊕	150
Systemdek I/920	⊕	136
Systemdek IIX/900	⊕	230
Systemdek I/920/Moth	⊕	235
Systemdek IIXE/900Ap	⊕	388
Systemdek 960	⊕	500
Systemdek 2X2	⊕	500
Technics SL-J110D	⊕	120
Technics SL-BD20	⊕	160
Technics SL-BD22	⊕	180
Technics SL-1210MKII	⊕	400
Technics SL-1200MKII	⊕	400
Thorens TD-180 AT91	⊕	190
Thorens TD-280 IV/UK	⊕	210
Thorens TD-166 VI/UK/RB	⊕	400
Thorens TD-318 III TP50	⊕	500

TUNERS

KEY
 'P20' - (etc.) number of presets.
 RDS - Radio Data System; receives text information on station, programme type etc.

AMC T7	P30	130
Arcam Alpha 7	P24	230

Over £500	
Audio Note AN-TT 2	995
Audio Note AN-TT 3	1,995
Audiomeca Romance	⊕ 1,895
Audiomeca J1	3,500
Basis 2001	2,750
Basis Ovation II	4,800
Basis Debut Gold Std III	7,200
Basis Debut Gold Vacuum	9,250
Chantry QT Level 2	⊕ 705
Clearaudio Evolution	⊕ 1,790
Clearaudio Reference	⊕ 3,990
DNM-Reson Rota 1	⊕ 3,900
DNM-Reson Rota 2	⊕ 5,600
Impulse Moskito	⊕ 695
Kuzma Stabi	1,950
Kuzma Stabi Reference	3,750
Linn LP12 Basik	1,100
Linn LP12 Lingo	1,750
Manticore Mantra 97	595
Manticore Mantra	895
Manticore Magister	4,400
Marantz TT-1000	6,000
Michell Gyrodek	825
Michell Orbe	1,950
N'ham Spacedeck	750
N'ham Graphic	1,200
N'ham HyperSpacedeck	1,500
N'ham Mentor	2,600
N'ham Anna Log	5,500
Oracle Paris	1,100
Oracle Delphi	3,370
Oracle Delphi 15th Anniv	3,800
Pink Triangle Tarantella	575
Pro-Ject 6/Sumiko	⊕ 850
Rega Planar 9	⊕ 1,598
Reson RS1M	⊕ 600
Reson Rota 1	⊕ 3,900
Rockport Capella II	7,000
Rockport Sirius III	50,000
Roksan Xerxes 10	1,295
Roksan TMS	2,750
SME Model 20/2	3,403
SME Model 20/2A	⊕ 4,863
SME Model 30/2	10,675
SME Model 30/2A	⊕ 12,135
Stratosphere ST1	⊕ 6,500
Technics SL-1200LTD	⊕ 700
Thorens TD-146 VI TP50	⊕ 550
Thorens TD-2001 TP90	⊕ 700
Thorens TD-520 SME	⊕ 1,050
Well Tempered Record Player	⊕ 1,850
Well Tempered Classic	⊕ 2,980
Well Tempered Super	⊕ 3,900
Well Tempered Reference	⊕ 5,300
Wilson Benesch Circle	⊕ 795
Wilson Benesch WB Turntable	1,775
Wilson Benesch Full Circle	⊕ 1,995

Remember that all entries printed in RED refer to hi-fi products that we have reviewed. Turn to page 114 for a full summary of test results!

Do you want to choose your hifi in a comfortable and relaxing environment . . . ?

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Do you want to buy your system based on what you hear (and not what somebody tells you) . . . ?

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. . . or Addlestone, Aldershot, Ashford (Middx), Ashstead, Bagshot, Basingstoke, Bracknell, Camberley, Chertsey, Crowthorne, Cranleigh, Dorking, Epsom, Esher, Farnborough, Farnham, Fleet, Frimley, Godalming, Hartley Wintney, Haslemere, Hook, Horsham, Kingston, Liphook, Leatherhead, Molesey (East & West), New Malden, Odiham, Petersfield, Reading, Reigate, Redhill, Richmond, Shepperton, Virginia Water, Walton-on-Thames, West Byfleet, Weybridge, Windsor, Woking, Wokingham, Yateley?

Nobody else in these areas stocks all the following major brands: Acoustic Energy, Arcam, Audiolab, Aura, B&W, Cyrus, Epos, DPA, Harman Kardon, Heybrook, Infinity, JPW, KEF (Reference), Linn Products (including records), Marantz, Meridian, Mission, Musical Fidelity, NAD, Nakamichi, Onix, Pioneer, PROAC, QED (Systemline), Quad, Rega, Revox, Rogers, Rotel, Sony, Sound Org, Target, T.D.L., Yamaha (including Home Cinema Systems) & Top Tape.

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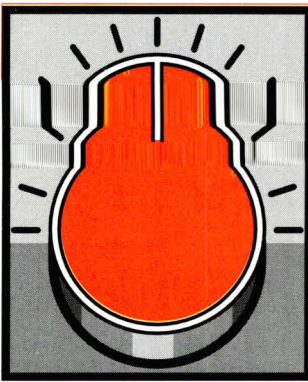
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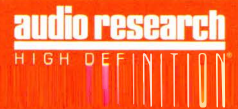
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Amplifiers

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The amplifier sits at the heart of the system, processing the outputs from the various music sources as necessary and then driving the loudspeakers. These two (quite separate) functions are integrated into a single box at the low-to-middle price points, but become separated into preamps and power amplifiers. Even separate power supplies become increasingly common as one moves upmarket. Bear in mind that output power and sound quality are not necessarily

related. Some of the finest amplifiers available have outputs as low as 12 Watts, but team them with high-efficiency loudspeakers and you can achieve loudness aplenty. Power output is equally no indication of sound quality.



KEY

LINE INPUTS: Amount of input sockets for non-vinyl sources such as CD players, tuners and cassette decks.
MM PHONO INPUT: If an amp has a vinyl phono input for moving magnet (normal output) cartridges.

MC PHONO INPUT: If an amp has a vinyl phono input for moving coil (low output) cartridges.
REMOTE CONTROL: If an amp is couch potato ready.
HEADPHONE SOCKET: If an amp is can friendly.

POWER OUTPUT (W): Lab tested power output in Watts per channel.
RECEIVER: If an amp has a built in radio tuner.
FACTSBACK NUMBER: The Factsback reference for ordering a fax copy of the review. Use the contents page to find the Factsback

information page.
ISSUE NUMBER: The issue of *Hi-Fi Choice* in which the original review appeared

INTEGRATED AMPLIFIERS

Product	Price(£)	Comments	LINE INPUTS	MM PHONO INPUT	MC PHONO INPUT	REMOTE CONTROL	HEADPHONE SOCKET	POWER OUTPUT(W)	RECEIVER	FACTSBACK NUMBER	ISSUE NUMBER
Alchemist Maxim	319	Vivid and colourful sounding amp that's just too bold and brassy	5	●				30		1737	154
Alchemist Kraken APD6A	579	Compact, with Darth Vader styling, yet sound quality is surprisingly meek and mild, despite strong midband dynamics	5	●				55			175
Alchemist Nemesis	700	Good if ultimately undistinguished amplifier whose strengths include warmth, authority and distinctive aesthetics	6					80			168
AMC 3025a	130	Surprisingly potent and easy on the ear, if not especially analytical. Classic bargain basement material in fact.	4	●	●	●	●	30			171
AMC 3050a	170	Tremendous value for money, and a full, big, if rather uninformative sound	4	●	●	●	●	45			167
AMC CVT3030a	400	Beer-budget valve amp, with quintessentially valve-like virtues (euphony with dynamics) and vices (system dependency, noise)	6	●				30			168
Arcam Alpha 7	260	Decent, if slightly system-fussy amplifier that generally pulls all the right strings	5	●				40			167
Arcam Alpha 8	360	Enjoyably soft-centred amp, won't frighten the animals. Upgradeable via preamp output, and R/C (not supplied)	5	●				50		1853	162
Arcam Alpha 9	500	Not quite as much a star as the Alpha 9/9P combo, the solo integrated is nevertheless colourful and explicitly detailed	7			●	●	70			168
Audio Analogue Puccini	450	Superbly finished, the new entry-level Audio Analogue performs way out of its class	5	●	●			40			175
Audio Innovations Alto	300	Probably because of a lack of deep bass, this stylish amp sounds open, natural and relaxed	6					35		1540	138
Audio Note Ongaku	56,000	A single-ended, zero negative feedback triode, line-level amplifier and a half. Probably the best amplifier in the world	3					26			C91
Audio Note Oto SE	1,500	Transparent, dynamic, clear and subtle, but limited power	4					24			126
Audiolab 8000LX	470	Well built, minimalist entry level model ultimately lacks bottle and pizzazz	6				●	60			175
Audiolab 8000A	500	The 8000A remains a highly disciplined and mature-sounding amp	5	●	●			60			1581
Audiolab 8000S	700	Informative in every sense, only a slight lack of bite detracts. Perhaps Audiolab's best yet!	6			●		60		1740	154
Aura VA100 II	350	Big and smooth, yet slightly disjointed sound was equally familiar	5	●				70			1541
AVI S2000MI	999	Fine, detailed amplifier with excellent timing and strong control of a wide range of loudspeaker loads	5			●		100			175
Bryston B-60	1,249	Build quality can't be faulted, but the lazy bass and opaque treble bracket an articulate midband. Comes with 20 year guarantee	5			●	●	60			175
Cambridge Audio A3i	200	Maximum information design, with plenty of usable and reasonably refined power. A snip	4	●				60			167
Copland CSA8	945	Sophisticated yet transparent, this is one of those amplifiers that sounds good even when the gloss has worn off	5					60			168
Copland CSA14	1,199	Great sound and looks, but watch out for high capacitance cables	4	●				60		1416	148
Credo IMP702	850	Old fashioned looking, but bags of clarity and precision, though it can sound brash in the wrong system	5					70			175
Creek 4330	279	Compact, even pretty, but sounds dark and uninviting, with coarse treble and woomy bass	5					40			171
Denon PMA-250SE	160	This amp can sound rough when extended, but within its limits it is open, detailed and likeable	5				●	30			171
Denon PMA-350SE	200	Reinvented in the minimalist tradition, the new SE model is a control freak, but can sound wonderful	5				●	50		1856	162
Denon PMA-425R	230	Well-equipped and generally enjoyable but slightly ragged performer. You can do better	3	●			●	45			167
Denon PMA-725R	350	Warm, bold, up-front presentation, but musically unexciting	5	●	●	●	●	97		1802	157
Densen Beat B-100 MkII	650	High 'air guitar' factor, and can punch outside its weight, but check to ensure it will complement the rest of your system	5					60			175
DPA Renaissance	595	DPA's first integrated amp is typically innovative, but a little too 'crisp 'n dry' for our tastes	5	●			●	40		1582	140
EMF Audio Sequel	450	Relaxed and restrained design from Mike Creek	5	●			●	50			109
Exposure XX Super	700	Rather transistorised, unexciting sound. Good coherence and rhythm. Best played loud	6					55		1743	154
Electrocompaniet EC1-2	995	A 50 watt amplifier which sounds more powerful, and makes real sounding music in real sounding acoustic spaces	4					50			175
Gamma Acoustics Gemini	699	Genuine single-ended triode design, but low power, mundane sound and poor build	3					12		1416	148
Harman/Kardon HK610	180	Lively and friendly sound, but could prove too exciting for the faint hearted	6	●			●	30		1465	149
Harman/Kardon HK620	250	Capable and musical amplifier which is among the nicest available at the price. Optional add-in MM/MC board available.	6			●	●	40		1858	162
Harman/Kardon HK640	400	Breezy, nimble sounding amp, lacks grip and fortitude – it can sound artificial and insubstantial	6				●	55		1542	138
JoLida 202	695	Well-built and technically accomplished, affordable valve integrated with subtle and refined, if not quite gripping sonic performance	4					40			168
JVC AX-V4	200	Respectable performance for a Pro-Logic AV amplifier. Lacks resolution and sparkle, though	5	●			●	63		1805	157
JVC AX-R5	200	Versatile, and lots of even-handed, articulate detail; but let down by superficiality	5	●			●	45		1466	149
Kenwood KA-3020SE	200	Not a brilliant phono stage, but this is a lively, exuberant sounding amp via CD	5	●			●	50		1130	134
Kenwood KA-5090R	300	Large, well equipped and high tech integrated, but TRAITR output still gives a harsh, unsubtle performance	5	●	●	●	●	65			171
Krell Digital KAV-300i	2,550	EISA Award winner with balanced inputs and AV friendly outlook, sound is confident and three-dimensional (Statements)	5					150		1825	160
LFD Integrated Zero	549	Lively and brisk, but at the same time cold and unsympathetic	6					50		1584	140
Linn Majik (Phono)	800	The cornerstone of Linn's modular hi-fi system is innovative, but sounds vague and confused	5	●	●		●	33		1013	129
Magnum IA120	265	Mirror finish amplifier with a bold, colourful delivery, but needs careful system matching to avoid loss of focus and clarity	6				●	65			171
Magnum IA170	330	Gives a realistic sense of instruments playing within a very believable acoustic, preserves colour and dynamics well	6				●	96		1260	142
Magnum IA-200	599	Sweet, valve-flavoured solid state amplifier flatters where it doesn't cast light. Note: power output listed is peak	7					100		1860	162
Magnum Class A	690	Lashings of rich and compelling music, but the Class A trades lushness for accuracy	4	●	●			60			116
Magnum Class A SE	795	A MOSFET amplifier that draws its inspiration from the world of valves, the Magnum is an erratically refined, detailed amplifier	5	●				80			175
Marantz PM-57	200	Well equipped but ultimately anodyne amplifier which lacks for nothing but star quality	5	●			●	50			171
Marantz PM-66SE	230	A bit lush, and power output is limited, but it communicates well and gives airy, large-scale music. An excellent budget buy	5	●			●	50			167
Marantz PM66 KI-Signature	400	An amplifier that knows how to rock and roll with holographic detail and stereo, but prefers small/medium scale acoustic material	5	●			●	50			168
Mission Cyrus IIIi	598	Beautifully presented, but mid-dominated balance and other anomalies were not liked. Upgradeable using PSX unit PSU	6	●			●	50		1854	162
Mission Cyrus SL	398	Sharp, articulate amplifier, and superb, outgoing midband with lean though well-extended bass – and build quality to die for	6					50			168

INTEGRATED AMPLIFIERS

MM PHONO INPUT
LINE INPUTS
MC PHONO INPUT
REMOTE CONTROL
HEADPHONE INPUT
POWER OUTPUT(SOCKET)
FACTSBACK REVERSE
ISSUE NUMBER

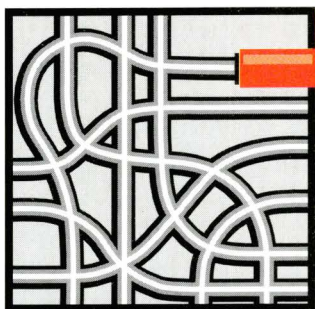
Product	Price(£)	Comments	5	4	3	2	1	25	1862	162	
Musical Fidelity A2	499	Lucid, transparent midband and a full upper bass are provided by this highly proficient A1 replacement	5	●				25	1862	162	
Musical Fidelity A220	700	Powerful, authoritative and well turned-out amplifier that is easy to match with comparably priced speakers and source components.	5	●				50		168	
Musical Fidelity E1	199	Vivid, richly flavoured tonality and realistically scaled imagery distinguish this new entry level Richer Sounds special	6					30		171	
Myriad MI120	600	Well styled, well built and, well, a good, even tempered amplifier, though it can sound a tad brittle, and lacking in euphony.	6			●	●	60		175	
NAD 310	100	Fleet and sure of foot, it seems likely to set all appendages tapping with its blend of enthusiasm and artfulness	5					20	1468	149	
NAD 312	200	Another great budget price NAD, and a worthy all-round successor to the 302	6	●			●	25		171	
NAD 314	260	Lively if coloured presentation that is musically engaging and easy on the ear	6	●			●	53	1807	157	
Naim Nait 3	575	Distinctive and highly musical sounding integrated amp. Perhaps too distinctive for some tastes	5					30	1748	154	
Orelle SA-100	499	A musically rewarding amplifier that grows on you. Trace of coarseness in treble	5					50	1749	154	
Pioneer A-204R	160	The A-204R makes no special claims beyond being well equipped and cheap, but it displayed unexpected talent on test	5	●		●	●	25		171	
Pioneer A-300R	200	Its bright and breezy sound is a natural tonic to those of us worn down by the ongoing stress of life	5	●		●	●	50	1469	149	
Pioneer A-400X	300	On second audition, this amp was tonally unchanged but less compelling	6	●	●		●	50	1545	138	
Pioneer A-300R Precision	400	Sophisticated, breathed-on variant of the A-300R. Not an obvious winner, but will slowly win you over with its subtle charms	5	●		●	●	35	1863	162	
Pioneer A-605R	400	Intriguing technology, but execution is certainly impeded by excessive gadget count	5	●		●	●	80		168	
Pioneer A-07	999	Curious mix of high end attributes and inconsistent, though undeniably detailed sound	5	●		●		80		175	
Prime Design A-100	650	Dynamic but somewhat aggressive powerhouse with limited stereo interest (either MM or MC phono)	4	●	●			100		168	
Pro-ject Model 7	300	A minimalist amplifier brimming with good intent, but too quirky for its own good. Either MM or MC	5	●				40	1264	142	
Quad 77 Integrated	700	Compact and sophisticated Quad system amp, limited range of inputs when used with 'foreign' components (optional system remote)	3					84		168	
Rega Elex	398	Minimalist amplifier derived from Elicit, is a little uninspiring, though at least it is not badly behaved	4	●				50	1865	162	
Roksan Caspian	695	Well-built, open and articulate amplifier, which is also consistent from system to system, and well built	6			●		70		168	
Rose Scion	615	Unique two-box integrated gives real subtlety and low level resolution, but the sound lacks scale and weight	5	●	●			65		168	
Rotel RA-931	150	Rather dry and unforgiving sound from this internally well specified and attractively priced amplifier	4	●			●	35		171	
Rotel RA970BX	250	Lively, fresh and perky with plenty of power, but not so clever with complex recordings	6				●	60	1546	138	
Sony TA-F448BE	250	Classic minimalist interface is matched to carefully considered circuit to broadly satisfactory effect - but keep the volume in check	5	●			●	55		171	
Talk Electronics Storm 1	500	Good soundstaging and strong detail are provided by this unassuming and not especially powerful model	6					50	1868	162	
Talk Electronics Storm 2	650	Crisp, clean, well defined sound, arguably lacking warmth, but a good midrange purchase overall	6				●	50		175	
TEAC A-BX7R	700	Characterful balance mars an otherwise meticulously designed amplifier. Includes a balanced input, optional MM/MC stage	5			●		50	1869	162	
Technics SU-A700 Mk 3	250	Fully equipped, high-tech amplifier ultimately fails the 'is it Stork...?' test, and can sound messy and inarticulate	5	●			●	45	1870	162	
Technics SU-A900DII	400	Looks like a pre/power amplifier, but in effect it's an integrated, with a rather soft, centred sound to match	5	●		●	●	70		175	
Woodside ISA230 Disc	1,249	Smooth and inoffensive valve amplifier, though it lacks the sparkle and euphony required for a truly entertaining sound	3	●				30		116	
Yamaha AX-592	280	Fine, middle ranking amplifier, with a detailed, dynamic midband, and some performance falloff at the frequency extremes	5	●	●	●	●	100		171	
Preamplifiers											
Acurus RL11	899	Well-featured US preamp with plenty of grunt and depth when used with the A150 power amp (Sessions)	6				●		1624	151	
AMC CVT1030A	400	Budget valve preamp, modest build and a bit noisy, with fair sound	6	●			●			165	
Audio Innovations L1	369	Reviewed with S800 Anniversary - explicitly detailed, conveys the message of the music as a whole	4						1300	145	
Audiolab 8000C	580	Distinctive, stark neutrality that will not appeal to all. Good value engineering	5	●	●		●			97	
Audiolab 8000Q	1,250	Tested with 8000M monoblocks	6				●	●	1301	145	
Aura CA200	700	Flexible, well designed - can sound slightly aggressive, but it's fast, clean and dynamic, and makes compelling listening	10	●	●	●	●			165	
Conrad-Johnson PV-10A	1,295	Beautiful imaging, superb detail, plenty of gain on the phono input; classy build too. Tested in Sessions	4				●		1560	139	
Copland CTA-301MkII	1,399	Sweet sounding - but never gets bogged down in audio treacle	4	●					1630	151	
Cyrus Pre	648	Tested with Cyrus Power. High-tech design, punchy, light-footed character with a sense of substance and natural warmth	5	●			●			155	
Densen DM-20	1,200	Stylish Danish preamp with a pair of huge knobs and effortless resolution and a slightly dark balance (Statements)	6							164	
EAR 802MC	2,599	Tested with 509 Mk II - see comments in power amp section	4	●	●					63	
ECA Vista	760	Wind up the volume and blow a breath of fresh music into your system (tested with Lectern)	5						1302	145	
Exposure XVII	849	Superbly rhythmical; maybe a bit overpowering in the midband. Tested in Sessions with XVIII Super	5	●	●					142	
Jadis JP-30MC	5,980	French tubes, JP-30MC has beautiful build, nostalgic styling and delightful midrange. (tested with JA30)	5	●						60	
LFD Mistral Linestage	449	Strong ergonomics, generally decent sound, but a little lacking in detail	6							165	
Meridian 501	695	Tight, positive sound, but dispassionate; intense at high levels. Tested with 555	5	●			●		1303	145	
Meridian 562V	995	Transparent and capable preamp, also features six digital inputs	9	●			●	●		140	
Meridian 502	1,295	Extremely sophisticated analogue controller with tremendous flexibility and a fast and tidy presentation (Statements)	7				●			162	
Moth 30 Passive	149	Modular system gives cracking results. Passive preamp and power amp warrant Best Buy (tested with 30/Stereo 60)	4							109	
Moth 30 Active Line Stage	349	Excellent sounding ultra-simple miniature preamp	4							165	
Muse Model Three	1,990	Natural sounding tranny preamp with useful audiophile features. Works beautifully with 160 power amp (tested in Statements)	5				●			166	
Musical Fidelity X-PRE	200	Cleverly configured and attractively packaged preamp with many upgrade options, and open, lively and engaging sound	4							175	
NAD 114	270	Beer-budget preamp, sounds focused, detailed and consistent	6	●	●		●			165	
Naim NAC92R	470	Upgradeable preamp uses proprietary socketry, etc. See NAP90 power amp for comments	5				●			165	
Quad 77 Pre	850	Sophisticated design with 2-way remote control console; open colourful sound and very flexible	4	●	●	●				165	
Rega Hal	998	Dedicated to Exon power amps - passive line stages	6	●	●	●				165	
Rose RV-23	450	You can pay more to get a more transparent sound, but it's hard to criticise at the price	3	●						77	
Rotel RC970BX MkII	175	Confident, consistent sound. reviewed (in Sessions) with RB970BXMkII power amps	5				●			144	
Sumo Athena IIB	767	Tested with Polaris III. Big, natural and tidy-sounding with very natural reproduction of acoustic and electric instruments	6							1305	145
Talk Hurricane 2L	649	Design of integrity which gets to the heart, if not the soul, of the music	6							165	
Thorens TTP2000F	699	Glamorous, shoebox-format, minimalist pre with fine detail and some granularity	3	●	●	●				165	
Woodside SC26 Phono	2,233	Synergistic with STA35, with a cool, controlled sound, good focus and transparency (tested with STA35)	5	●	●					100	
Power amplifiers											
Acurus A150	899	Tested with RL11 preamp. Powerful remote-control US combo with a slightly forward inclination	1					150	1624	151	
Alchemist Kraken/Pwr	529	Hardly accurate, but entertaining nevertheless	1					60		124	
AMC CVT2100A	600	Astonishing value valve/MOSFET hybrid with KT88 output, but lacks the magic of the best valves	1					80		165	
Arcam Alpha 9P	400	Clear, colourful and well-disciplined, the Arcam is a strong all-rounder that can compete with conviction	1							165	
Art Audio Quintet	1,500	Switchable triode, ultralinear output stage. In triode mode, these are 15 of the sweetest Watts around. Surprisingly gutsy	1					15		109	
Aura PA100	700	Can sound slightly aggressive, but it's fast, clean and dynamic, and makes compelling listening	1					100		165	
Audiolab 8000M	800	Strong, controlled sound; confident bass, but colourless. Tested with 8000Q	1					125	1301	145	

POWER AMPLIFIERS (CONTINUED)

Product	Price(£)	Comments	MM PHONO INPUT	MC PHONO INPUT	REMOTE CONTROL	HEADPHONE SOCKET	POWER OUTPUT(W)	FACTSBACK NUMBER	RECEIVER	ISSUE NUMBER
Audio Research VT60	2,395	Ranks as 'must try' American cultural item (tested in Statements). Tube design	1				35	1179	136	
Copland CTA-505	2,099	Grown-up amplifier with a refined, yet never over-civilised air	1				67	1630	151	
Cyrus Power	498	Tested with Cyrus Pre. Punchy, light footed character with a sense of substance and natural warmth (bridgeable)	1				50		155	
Densen DM-30	1,200	Fluid, valve-like power amp with effortless resolution and a slightly dark balance (Statements)	2				100		164	
EAR 509 Mk II	3,699	Combining sonic strengths of transistors and valves, this amp warrants attention (tested with 802)	1				100		63	
ECA Lectern	880	Tested with Vista. Wind up the volume and blow a breath of fresh music into your system	1				50	1302	145	
Exposure XVIII Super	849	Slight dullness and hardness, but great 'boogie factor'	1				70		142	
Jadis JA-30	5,980	French tubes, JP-30MC has beautiful build, nostalgic styling and delightful midrange (tested with £5,978 JP30)	1				30		60	
LFD Mistral Power	449	Infectious upper band vitality, but LF dynamics lacking, and lacks 'grip' and transparency	1				60		165	
Meridian 555	750	By providing an open window on the music, this amp is wide open to RF and low level IM distortions	1				60	1303	145	
Meridian 557	1,400	Hefty British lump with balanced inputs and a transparent, nimble sound with no shortage of power (Statements)	1				200		162	
Michell Alecto	1,150	Open, well focused imagery with natural, refined textures	1				50		165	
Moth 60 Watt Stereo	599	Miniature power amp lacks control and finesse, not comfortable with difficult speaker loads	1				60		165	
Moth 30 Series Monobloks	879	Tested with Active Preamp. While demonstrating solid, even balance it proved adept at delivering vital musical qualities	1				100		155	
Muse Model 160	2,290	Transparent muscle amp with minimal character and a natural performer in both scale and tone (tested in Statements)	1				160		166	
Musical Fidelity FX2	800	Quality build and imposing presentation is married to strong power yield, tonal colour and finesse	1				100		165	
Musical Fidelity X-A50	500	Cleverly configured and attractively packaged, open, lively and engaging sound. Reviewed with X-PRE	1				50		175	
Myryad MA120	450	Based in MI120 integrated – see for comments, but sounds significantly better when bi-amped with MI120	1				60		165	
NAD 214	370	A little lightweight, but detailed, consistent sound quality, and excellent value for money	1				80		165	
Naim NAP90	450	Power amp from a Nait integrated with some improvements	1				30		165	
Quad 77 Power	600	Open, bold and colourful, with mild compression	1				85		165	
Rega Exon	1,196	Monoblock, priced each, dedicated for Hal preamp. Bold, outgoing, in-command kind of sound	1				125		165	
Rotel RB-970BX MkII	225	Tested with RC970BX MkII in Sessions (see preamp section)	1				60		144	
Rotel RB-980BX	450	Tames enthusiastically recorded material with a laid-back and occasionally smeared sound (tested with RC980BX)	1				120		155	
Sumo Polaris III	950	Tested with Athena IIB. Big, natural and tidy-sounding with very natural reproduction of acoustic and electric instruments	1				164	1305	145	
Talk Tornado 2	599	Good, but slightly retiring sound which lacks the authority to stand out in a crowd	1				65		165	
Thorens TTA2000	599	Low power shoe-box format, but gutsy and surprisingly subtle and articulate	1				30		165	

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Cables

Cables are not just accessories, but an integral part of a system. Inevitably some cables are better than others. The best cable for your system will only be found through trial and error, but by combining our recommendations with those of a dealer, you will end up with something suitable. Generally speaking, budget to spend about 10 per cent of the total system cost on cables.

■ Analogue interconnects are the leads that connect source components to amplifiers and pre to power amps. The cables in this section are priced for a one-metre terminated pair.

■ Digital interconnects connect CD transports to DACs, and are traditionally coaxial with a 75 Ohm impedance. They come in optical and electrical varieties, the former being made of plastic or glass. The prices shown are for a terminated linear metre.

■ Speaker cables are used between the amplifier and speaker. Our prices are per unterminated metre. Termination (plugs and soldering) costs vary with brands.

B Best buy **R** Recommended

KEY	FACTSBACK NUMBER:	ISSUE NUMBER:
SYMMETRICAL: A twisted pair of conductors.	FACTSBACK NUMBER: The Factsback reference for ordering a fax copy of the review. Use the contents page to find the Factsback information page.	ISSUE NUMBER: The issue of Hi-Fi Choice in which the original review appeared.
COAXIAL: A central 'hot' conductor and a shield that carries the negative signal.		
STRANDED: Multiple strands with no intervening insulation.		
SOLID CORE: Single or multiple, individually insulated strands.		
COPPER: Material used for conductor.		
SILVER: Material used for conductor.		
DIG CABLE TYPE: O - optical digital, E - electrical digital.		

CABLES

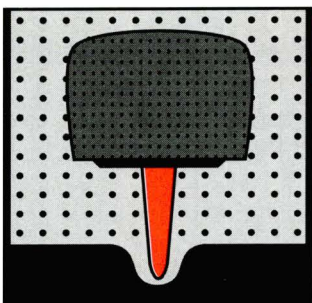
Product	Price(£)	Comments	SYMMETRICAL	COAXIAL	STRANDED	SOLID CORE	COPPER	SILVER	FACTSBACK NUMBER	DIG CABLE TYPE	ISSUE NUMBER
Analogue Interconnects											
Audio Note AN-A	29.50	Not especially impressive, warm but well-rounded balance that restricts 'air' but is not unclear									108
Audio Note AN-C	59.50	Neutral but lacking in subtle texture and unable to distinguish fine detail							1687		131
Audio Note AN-S	139	Up-beat and enthusiastic sound with satisfyingly deep and grumbly bass							1687		131
Audio Note AN-V	219	15 individually insulated silver strands make up this very clean and dynamically unchallenged cable							1687		131
Audioquest Turquoise	40	A 'fit and forget' cable that sounds distinctly lazy							160		
Bandridge AL421	5	Light and airy sound lacks authority, splashy treble							1688		131
Bandridge AL426G	10	Gold-plated plug OFC version of AL421 with same ineffectual sound quality							1688		131
Bandridge SG AL4720	13	4N OF copper, full smooth balance but a little plodding and relentless, lacks panache							1688		131
Bandridge SG + AL4820	25	4N OF copper, distinctly teutonic, thrusting detail forward but still plodding and relentless							1688		131
Bandridge ProfiGold PG301	65	A perfect cable for enlivening a system, but too cold for most systems							160		
Cable Talk Studio 2	65	A first-class performer from tonal, dynamic and rhythmic standpoints							160		
Cambridge Audio Studio Ref	40	Dynamic cable with strong soundstaging and only a slight lack of detail							160		
Chord Chameleon	68	Anomalous treble with a dry but vaguely sibilant quality, sometimes sounds smooth, sometimes harsh!							108		
Chord Solid	99	Thin but very stiff with excellent resolution of subtle timbral detail and fine dynamics							108		

CABLES (CONTINUED)

Product	Price(£)	Comments	CABLE TYPE					ISSUE NUMBER
			SYMMETRICAL	COAXIAL	STRANDED	SOLID CORE	COPPER	
Connections Midas HD	39	Canary yellow cable with excellent plugs and an open sound. Slight treble glare	●		●			160
DNM TCC75	34	Price for 0.75m length. High resolution cable, but best in short runs due to higher than average series impedance					● ●	1690 131
DPA Slink	41	Slightly bright and zingy sound with flat soundstaging and hollow sounding bass, vocals and strings sound convincing though					● ●	1690 131
DPA White Slink	75	Highly expressive, very easy on the ear and attractively detailed though not entirely characterless at high frequencies					● ●	1691 131
DPA Black Slink	220	Initially dark and meaty but becoming lucid and transparent with running in. Quad geometry, Gore-tex dielectric	●				● ●	1691 131
Ixos 104	20	Open and detailed presentation, full bass and silky if overly smooth treble			● ●		● ●	1692 131
Ixos 103	40	Even-handed and generous sound, bass has a well-rounded, bouncy quality			● ●		● ●	1692 131
Ixos 102	60	A bit bright and undynamic, this cable is nevertheless a good all-rounder, whose faults are largely subtractive			● ●		● ●	160
Ixos 101	100	A cable with personality, its veiled and shut in quality brings an earthiness to vocals and rhythm guitar alike			● ●		● ●	1693 131
LFD Spirolink I	35	Price for 0.7m length. Dynamic but smoothly detailed performance, but gives the impression of looking down on the music					● ●	1694 131
LFD Spirolink II	70	Price for 0.7m length. Strong and confident sound enhancing bass depth and subtlety, concentrates on the meat of the music	●				● ●	1694 131
LFD Trilink	150	Price for 0.7m length. Warm and luxurious sound but a little too fruity in balance, treble is a little subdued, bass detached	●				● ●	1695 131
Linn Phono to Phono	47	Encourages a delicate performance underpinned by a strong and authoritative bass			● ●		● ●	1695 131
Monster Interlink 200	20	Colourful in an appealing rather than contrived sense, bass is slightly over-blown, large and ingratiating sound stage	●		● ●		● ●	1696 131
Monster Interlink 300	30	Richer, smoother more civilised sound than 200 with improved articulation and reduced sibilance	●		● ●		● ●	1696 131
Monster Interlink 400	40	Compromised by a grainy top end, treble and vocal range sound particularly sharp and untidy	●		● ●		● ●	1697 131
Monster Interlink 500	50	Sounds rather good, providing a livelier and more interesting account of music than most sub £100 cables	●		● ●		● ●	108
Monster Interlink 800	80	Not as bright or aggressive as the 400 but treble is strangely lumpy, muted and manipulated - odd cable	●		● ●		● ●	1697 131
Monster Interlink Reference 2	100	Easy on the ear but rather contrived, slightly clanky treble fails to integrate with the smoother but splodgy midband			● ●		● ●	1697 131
Moth Ley Line Black	100	Offers a full and big sound, neutral yet very solid and confident in delivery. Expansive imaging retains music's energy	●		● ●		● ●	108
Moth Ley Line Grey	200	Detailed enough but there's a sense of distance between the music and the listener, vox are coarse rather than liquid	●		● ●		● ●	108
Nordost Black Knight	55	Flat black cable that is distinctive but slightly coloured - but not in a wholly negative manner	●		● ●		● ●	160
Panasonic RP-CA910	50	Uncongested and even handed balance if slightly flat imagewise, retains impact but has a vaguely untransparent quality			● ●		● ●	108
Silvertone Ex-Static	35	Pleasantly unfatiguing and competitively priced cable that lacks detail and insight			● ●		● ●	160
SonicLink Silver Pink	35	Dynamically sensitive and muddle-free. Unsure about the flesh-coloured finish though...	●		● ●		● ●	160
SonicLink Black	49	Encourages an upbeat and snappy sound that's driven by leading edges, full and rumbustious bass maintains an even tempo			● ●		● ●	1699 131
Tara Labs Prism 11	45	Very compatible cable that wins through with a naturally balanced and realistically dynamic sound. 6N purity copper	●		● ●		● ●	1699 131
Tara Labs Prism 22	56	Delivers a fresh and detailed sound with clear and bright treble giving it a free, quick and dynamic character			● ●		● ●	1700 131
Tara Labs Quantum CD	75	Lacking in obvious vices, neutral and transparent, there's also a good solid bass. Vox are not always as intimate as possible	●		● ●		● ●	108
Tara Labs Prism 33	90	A pedestrian cable that sounds lively but muddled. Quite dynamic, quite rich, quite smooth but also quite indistinct			● ●		● ●	1700 131
Transparent Audio Music Link	119	No aggressive nasties to tax the ears, neither does it sparkle with inspirational detail. Only suited to low output impedances			● ●		● ●	1701 131
van den Hul The Storm	25	Price for 0.8m length. Rich and warm but bass is rolled off, however there's plenty of drive and high frequencies are clean	●		● ●		● ●	1701 131
van den Hul Source HB	50	Price for 0.6m length. Hybrid carbon-fibre/copper cable that is a paragon of naturalness. Airy and well controlled			● ●		● ●	160
van den Hul The First	210	Using 12,000 carbon fibres, a gentle and subtle sounding cable that conveys oodles of information but lacks dynamic punch			● ●		● ●	1702 131
van den Hul The Second	225	Wonderfully open and relaxing but also intimately detailed, slightly softens percussive dynamics	●		● ●		● ●	1702 131
XLO Type 150	50	A restrained but useful cable for taming lively CD players, dynamics lack freedom, treble lacks clarity			● ●		● ●	1703 131
XLO Type 0.1	180	Unusual but highly expressive and detailed with a hint of graininess on powerful vocals					● ●	1703 131
Digital Interconnects								
Audio Note AN-V	110	Ostensibly an analogue cable but gives a meaty and natural performance when used for digital duty	●				● ●	E 1704 131
Audioquest Optilink Z	120	Good level of midband detail but frequency extremes lack depth and extension					● ●	108
Audioquest Digital Pro	100	A silver cable with all the drive of Video Z but lacking its clear cut transparency			● ●		● ●	E 108
Bandridge AL4900G	40	Lacks deep rounded bass and treble is coloured with a spittiness, a little rough and ready			● ●		● ●	E 1705 131
Chord Codac	32	A connection with a stranded inner core and a sound that lacks integration			● ●		● ●	E 108
Chord Prodac	50	Price for 0.6m length. Lively detailed treble, drives music along confidently with no hint of fizz			● ●		● ●	E 1706 131
DPA Opti-link	20	Very similar to Bandridge AL560; sound is lacklustre			● ●		● ●	108
DPA Digi-link	28	Can seem slightly impassive but there's no avoiding its exceptionally detailed sound			● ●		● ●	E 108
Ixos 105	25	Extended but soft-edged treble that's mercifully free of fatiguing colourations, plenty of weight, smooth vox			● ●		● ●	E 1707 131
Kimber Kable Opti-link	50	Appears to be a bog-standard PMNA fibre, yet sounds a little brighter and livelier than most					● ●	108
LFD DigiLink Copper	30	Slightly grainy highly compatible cable with coherent and forward dynamic quality			● ●		● ●	E 1708 131
Moth Leyline Datalink	140	A thin, coaxial version of Leyline Black with a rather hard and unforgiving character. Too expensive			● ●		● ●	E 108
QED DigiFlex	20	A top performance, low-loss 750hm coax with a very open, almost liquid quality			● ●		● ●	E 108
Siltech HF-6	150	Sounds detailed, very clean and very extended, but bass is less well resolved - a treat for high-end systems			● ●		● ●	E 1709 131
SonicLink Green	60	Spacious, positive and engaging if a bit over crisp at times, very compelling however			● ●		● ●	E 1709 131
van den Hul MC Videolink 75	48	An AV-cum-digital cable that nearly beats QED's DigiFlex, but emphasises sibilants			● ●		● ●	E 108
van den Hul The First	120	Exceptionally natural albeit slightly dark or cautious compared to some, plenty of subtle information and beautiful integration			● ●		● ●	E 1710 131
Loudspeaker Cables								
Audio Note AN-D	4.50	Supplied in linear, non-polarised lengths that should be twisted into stereo pairs. Sounds rather grippy and forward					● ●	109
Audio Note AN-B	16.50	Well suited to valve systems, elastic bass, methodical but unintrusive and musical					● ●	1711 133
Audio Note AN-L	29.50	Fruity bass and expressive vocal rendition was appreciated by the panel which was happy to accept its foibles	●				● ●	1712 133
Audio Note AN-SP	125	A calm and civilised presentation, very quiet in the way it reveals subtle low level detail. Great poise and clarity	●				● ●	109
Audioquest F-14	1.95	Ideal for laying under carpets, F-14 encourages a slightly warm and vibrant sound					● ●	109
Audioquest Type 4	4.95	Four 18-gauge OFHC copper conductors wound in a Litz-type fashion increases capacitance but restrains the cable's 'bite'	●				● ●	109
Audioquest Cobalt 2	45	A rather polite and anaemic sound that bubbles gently with detail and is largely uncoloured and cautiously spacious			● ●		● ●	133
Audioquest Crystal	18	Neutral balance is spoiled by some graininess and smearing			● ●		● ●	168
Bandridge SF LC1070	42p	Basic figure 8 bellwire, lightweight balance and a softness that dilutes even the strongest bass			● ●		● ●	1713 133
Bandridge SF LC1259	1	Fresh and open, bubbly and naturally colourful soundstage that's neither forced or unduly edgy. Treble is slightly messy	●		● ●		● ●	1713 133
Bandridge LC7409	3.85	Detailed and up-beat cable. A bit too steely for classical strings					● ●	1800 157
Cable Talk Talk 3.1	2.25	Quite well-balanced but tends to lose bass lines in complex music	●				● ●	168
Cable Talk 4.1	4.25	Smooth and cultured sound that lacks fine detail and is a bit too restrained					● ●	1800 157
Chord Myth	5.95	Light and airy tonality may please, but bass is recessed and detail not outstanding	●				● ●	168
DNM LSC350	6.95	Majors on midband and lower treble lucidity at the expense of bass and extreme treble extension	●				● ●	168
DNM LSCB500	5.95	High impedance can influence the treble response, but this was a winner on sound per pound. Bi-wire					● ●	1716 133

CABLES (CONTINUED)

Product	Price(£)	Comments	SYMMETRICAL	COAXIAL	STRANDED	SOLID CORE	COPPER	FACTSBACK NUMBER	ISSUE NUMBER
DPA Black Sixteen	90	Unflappable resolution of fine musical details, there's no dampening of dynamics, simply oodles of taut information	●				●	1717	133
Electrofluidics Monolith 20/20	40	One of the best cables available, incredible bass, imaging and resolve in a high capacitance, flat, Goertz style design (Sessions)	●				●		142
Gale XL189	99p	Slightly bright and not that subtle, but a perfectly acceptable cable for any starter system	●				●		168
Gale XL315	2	A little lacking in detail but plenty of life and excellent value					●	1800	157
Gale XL160-2	2.50	Rhythmic and bouncy-sounding bi-wire cable. Can be slightly manipulative					●	1800	157
Goertz M2	20	Remarkably detailed, smooth, neutral and with excellent bass; check amplifier compatibility	●				●		168
Heybrook Heywire	4	This well-meaning facsimile of earlier ribbon cables ends up sounding lumpy and uneven					●		109
Ixos 603	2	Big and expansive-sounding cable, full and engaging while retaining a high degree of neutrality					●	1718	133
Ixos 604	5	Midrange is detailed and surprisingly smooth but treble is hard and synthetic and the bass no better					●	1719	133
Kimber 4TC	19.68	A well-balanced cable with good performance in all areas	●				●		168
Kimber 4TC Double-wire	40	A variation on a Kimber classic which produces a rich and weighty sound, but isn't quite as transparent as single runs					●		133
Mission Quartet	7.90	Mixed, inoffensive sound, adds guttural resonance to vocals and could be generally more coherent. Bi-wire					●		1722
Monster Cable XP	1.50	XP offers plenty of slightly soft bass and a slightly rounded treble, a relaxed cable whose indiscretions are not bothersome			●		●	1723	133
Naim NACA 5	5.11	Described as a 'dinosaur of a cable', this stiff wire rod doesn't belong outside Naim systems. But it works a treat in them					●		109
Nordost Octava	2.95	Fair bass but confused treble and some coloration			●		●		168
Ortofon SPK100	3	Grey-sounding and strips instruments of their natural richness and resonance, a bit bass shy too					●		133
Ortofon SPK300	8	Tremendously open and atmospheric with robust full blooded bass, and dynamic too if slightly bright at times					●		133
Puresonic 7845	1.95	Big, weighty sound — but too messy and bloated for its own good					●	1800	157
Puresonic 7891	2.85	Chunky cable design, shame about the sound quality			●		●	1800	157
QED Qudos	2.50	Despite high-tech design and excellent Air-Loc plugs, the music failed to gel					●	1800	157
QED Profile	9	Good midrange and treble balance, but bass is rather slack and detail not outstanding					●		168
QED Profile 8	5	Sophisticated flat cable that lacks decent bass and get up and go					●	1800	157
Silver Sounds 12 gauge	12	Basic 'homemade' construction gives fairly neutral sound, though not outstandingly competitive	●				●		168
Sonic Link S300	18	Happiest with simple music; tends to smudge detail in complex pieces	●				●		168
SonicLink AST50	1.95	It may look like bell-wire, but AST50 sounds detailed, ordered and balanced					●	1800	157
Transparent Audio Musichord	11.42	Sweet, open and refined treble, a bit of breathy exuberance and can sound slightly lackadaisical					●		1728
Transparent Audio Wave	22.84	Very close to the sound of 'no cable', one of the very best. Slightly softens treble detail	●				●		1728
Tech + Link OFC79	1	Bargain basement cable that sounds cosy, but suffers from a wobbly bass					●		1800
van den Hul The Clearwater	6	Despite its evocative title, the Clearwater turns out to be a disappointingly murky-sounding cable					●		109
van den Hul CS122	19	Smooth and articulate with superb focus and control, its sheer coherence makes it a winner (tested in Sessions)					●		153
van den Hul The Magnum	31	Touted as vdH's most prestigious twinlead cable, Magnum sounds soft and old fashioned					●		109
van den Hul The Wind	35	'The Wind' kicks up a storm with its lush midrange and bone-crunching bass!					●		109
van den Hul Revolution	64	Silver-plated OFC combined with carbon fibre prompts a sombre character with an easy and relaxed treble					●		1726
XLO Pro Type 625	4	Lively but natural and relaxed-sounding but a hint of congestion at frequency extremes					●		1726
XLO Pro 600	16.60	Basically neutral tonality but can become aggressive and two-dimensional	●				●		168



Cartridges

Cartridges fall into two groups: high output MM (moving magnet) models, capable of working directly into most phono inputs; and generally more expensive low and very low output MC (moving coil) models. MC cartridges usually have better mechanical integrity, tighter tolerances and give better performance. Many amplifiers are no longer equipped with the necessary phono input for a cartridge, and a separate phono stage is necessary. Phono input equipped valve designs need a

transformer to cope with MC cartridges.

Cartridge/amplifier interfacing can be very subtle, but even basic high output MM designs benefit in overall balance from optimised amplifier capacitance loading.

B

Best buy

R

Recommended

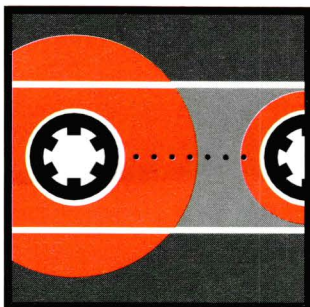
KEY	REPLACEABLE STYLUS:	OUTPUT (MV):	copy of the review.
MM: Moving magnet cartridge with a normal output suitable for all vinyl disc amplifier inputs.	sensitivity vinyl disc amplifier inputs.	MASS (g): Cartridge mass can affect arm choice.	ISSUE NUMBER: The issue of Hi-Fi Choice in which the original review appeared.
MC: Moving coil cartridge with a low output only suitable for high-	REPLACEABLE STYLUS: Most MM cartridges have a stylus that can be removed and replaced.	FACTSBACK NUMBER: The Factsback reference for ordering a fax	

CARTRIDGES

Product	Price(£)	Comment	REPLACEABLE STYLUS	OUTPUT (MV)	MASS (g)	FACTSBACK NUMBER	ISSUE NUMBER
Audio Note Io IIv	1,695	One of the best, giving an extraordinarily relaxing midrange clarity. Needs a transformer		●	0.1		100
Audio Technica AT-95E	19	Clear and dynamic, though richly balanced	●	●	2.8		48
Audio Technica ART-1	944	This is a delicate and very fluid-sounding MC that tracks well		●	0.4	9	72
Clearaudio Signature	1,495	A great all-round performer with fine dynamic vitality and a seductive midband intimacy		●	0.55	11.5	175
Denon DL110	70	A fine all-rounder, this high output MC model is likely to perform well	●	●	1.0	6	48
Denon DL160	90	Although listeners just preferred the 110, its brother here survived lab tests and is still 'thoroughly competent'		●	0.1	6	43
Denon DL103	100	Good performance in bass and good 'life'. Is seriously let down by its spherical stylus which kills subtle detail		●	0.1	6	103
Denon DL304	200	Uncoloured, detailed, tracks superbly. Top notch altogether and a bargain too		●			103
Dynavector Karat 17D2 mk2	449	Clean and controlled sound with taut, tuneful bass. Detailed and musically cogent		●	0.15	5.3	158
Dynavector Te-Kaitora	1,698	A real smoothie, but pricey. Worth checking out for its delicate laid-back transparency and low needle-talk		●	0.25	8.5	175
Dynavector XX-1L	998	Very clear, very detailed; a response lift around 20kHz seems to do no harm		●	0.25	12	84
Dynavector XX-1	998	Good, but not immensely competitive at the price, and not helped by comparison with the low output version		●	2.0	12	84
Goldring Elan	19	A lightweight and frisky-sounding MM apparently based on Nagaoka MM4 body		●	5.0	7	67
Goldring 1012GX	79	Slightly harsh but plenty of life and detail. Some high frequency colouration apparent		●	6.5	7	85
Goldring 1022GX	99	As with 1012, a touch harsh; detail and transient purity improved		●	6.5	7	85
Goldring Eroica LX	110	Not the most subtle cartridge in the world: can sound edgy at times, but lively and informative		●	0.5	8	84

CARTRIDGES (CONTINUED)

Product	Price (£)	Comment	REPLACEABLE STYLUS		OUTPUT (mV)		FACTSBACK MASS (g)		ISSUE NUMBER	
			MM	MC	MM	MC	MM	MC	MM	MC
Goldring 1042	120	Not terribly subtle, and not such good value alongside 1012 and 1022. Quite lively though	●	●	6.5	6	6.5	6	91	
Goldring Elite	220	The basics are right, and it will cheerfully tackle any source material, but its sound has a certain dirtiness	●	●	0.5	8	103			
Goldring Excel VX	525	Good bass drive but dull and imprecise higher up. An old-fashioned sound that falls short of the true high end	●	●	0.45	8	175			
Grado Prestige Gold	150	Rich sounding with an unusually refined top-end for a moving magnet-type cartridge	●	●	4	6	158			
Grado Reference	995	Loads of tracking headroom but treble is limited. A prospect for mid-oriented valve amp users	●	●	1.7	6.5	175			
Linn K9	125	Linn improved this model by beefing up the Basik's bodywork and adding a super stylus	●	●	4.5	5	Col			
London Decca Maroon	259	Now manufactured under the London brand name, this Decca cartridge is as iconoclastic as ever	●	●	5.0	6	67			
London Decca S Gold	339	Immediate and detailed, but coloured, nonlinear with a questionable effect on records	●	●	5.0	6	84			
Lyra Lydian	649	Superbly capable all-round musical performer that improves markedly when its body cover is removed	●	●	0.3	7	158			
Lyra Clavis Da Capo	995	A stable tracker, and one of the finest cartridges we've heard	●	●	0.1	7	143			
Lyra Parnassus D.C.t	1,895	A real little jewel of a cartridge, with many good qualities, but handicapped by a rather too obvious treble peak	●	●	0.22	10.5	175			
Ortofon 510/P	38	For the price, a good blend of virtues – weight, clarity and neutrality	●	●	3.0	5	85			
Ortofon 520/P	65	Sensitive to load capacitance, the 520/P has a lively, effervescent sound	●	●	3.0	5	67			
Ortofon MC3 Turbo	130	The 3 Turbo is bright, cheerful and bouncy, but unsubtle – take it as it comes	●	●	3.3	4	103			
Ortofon MC15 Super II	130	A good all-rounder, with outstanding resolution, if slightly bright and close up	●	●	0.35	7	103			
Ortofon MC25E	180	An excellent upgrade for a mid-price turntable	●	●	0.5	11	139			
Ortofon MC25FL	249	A bit too stark and honest, but faithful to what's on the LP	●	●	0.5	11	139			
Ortofon MC30 Supreme	525	Highly detailed and even-sounding cartridge that has a special affinity with female vocal recordings	●	●	0.5	10.7	158			
Ortofon Rohmann	1,000	A class act in nearly every respect, with fine groove security and a very smooth and even-handed sound	●	●	0.25	8.5	175			
Ortofon MC3000II	1,100	A real eye-opener. Nothing to criticise anywhere, one of the very best	●	●	0.12	10	84			
Ortofon MC5000	1,500	Limited tracking ability, bright and forward sound, but good stereo	●	●	0.12	10	91			
Rega Bias	39	Difficult to mount in some arms due to its shallow build, the Bias offers a gentle, refined sound	●	●	5	4	67			
Rega Elys	85	Clearly superior to the Bias, the Elys is more detailed, accurate and convincing	●	●	5.0	5	67			
Roksan Corus Black	130	Recognisably related to the Corus Blue, but smoother and more civilised	●	●	6.5	5	91			
van den Hul MM-1	250	If woody midrange could be tamed, imaging and security would pull it through	●	●	5.5	6	103			
van den Hul DDT-II	600	Outstanding stereo imaging and neutral balance are appealing, but rhythmically the DDT-II is a bit lazy	●	●	0.35	7.6	158			
van den Hul MC-10	799	A neutral, balanced performer, gives fine depth and focus and a firm, extended bass	●	●	0.4	6	60			
van den Hul MC-One	900	This extended all the positive qualities of the 10, but added greater authority and scale – worth all the extra money	●	●	0.4	6	60			
van den Hul MC-Two	1,200	MC-Two rewards with a highly detailed yet fluid and musically convincing portrayal	●	●	0.4	6	72			
van den Hul Frog	1,500	Seems to control/suppress surface noise better than its rivals, this delicate and subtle performer has great charm	●	●	0.65	7	175			
van den Hul G' hopper III/IIA	2,800	Undoubtedly one of the finest cartridges available, it has tremendous bandwidth, energy and finesse	●	●	0.4	6	122			
Wilson benesch Matrix	786	Extraordinarily well balanced cartridge: neutral and detailed yet lively and rhythmically assertive	●	●	0.58	6	158			
Wilson benesch Carbon	1,572	Carbon fibre body contributes to a delightfully clean and open midrange, and a quick, lively and coherent sound	●	●	0.45	7	175			



Cassette Decks

The compact cassette is still the world's most versatile and ubiquitous music storage medium. Buffs may wrinkle their noses, but they all use it.

There should be no problems in connecting a cassette deck to any normal amplifier, but some care needs to be taken in choosing the best tapes for a specific machine. (Trial and error is one effective technique, but many decks have manual bias adjustment and some match up to the tape automatically.)

Twin decks offer the option to dub tapes and play two cassettes sequentially. Autoreverse is a useful feature, but usually implies some mechanical compromise. Useful facilities include tape monitor switching and Dolby S.

B Best buy **R Recommended**

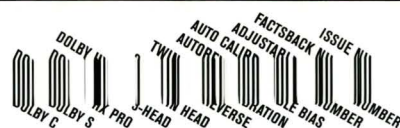
KEY

DOLBY C: A rather extreme noise-reduction system not usually associated with high sound quality.	for cassette recording.	AUTOREVERSE: Automatically plays both sides of the cassette.	FACTSBACK NUMBER: The Factsback reference for ordering a fax copy of the review. Use the contents page to find the Factsback information page.
DOLBY S: A desirable derivative of the Dolby SR professional noise-reduction system.	3-HEAD: If you want to monitor a recording while you are making it, a third head is essential.	AUTO CALIBRATION: The deck will automatically set up bias and EQ for any tape.	ISSUE NUMBER: The issue of <i>Hi-Fi Choice</i> in which the original review appeared.
DOLBY HX-PRO: System designed by B&O to extend headroom	TWIN DECK: Contains two decks for dubbing and continuous play. In most instances only one deck will record.	ADJUSTABLE BIAS: Bias can be manually set to suit the tape being used.	

CASSETTE DECKS

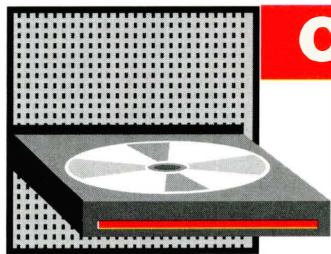
Product	Price (£)	Comments	DOLBY HX PRO		DOLBY S		DOLBY C		TWIN HEAD		AUTO CALIBRATION		ADJUSTABLE BIAS		FACTSBACK NUM.		ISSUE NUMBER		
			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Aiwa AD-F450	120	Basic but well-designed budget deck, astonishing value; only the poor metering gives the game away	●	●	●	●	●	●	●	●	●	●	●	●	●	1513	136		
Aiwa AD-WX727	170	High-class twin for those who want bells, whistles - and music	●	●	●	●	●	●	●	●	●	●	●	●	●	1377	146		
Denon DRM-550	160	There are some technical limitations, but this remains a fine sounding deck, and excellent value	●	●	●	●	●	●	●	●	●	●	●	●	●	158			
Denon DRW-580	200	Twin deck: OK for casual use, but will quickly pall with more quality critical applications	●	●	●	●	●	●	●	●	●	●	●	●	●	171			
Denon DRS-640	200	Draw-loading deck, with simple facilities and smooth, well-adjusted sound	●	●	●	●	●	●	●	●	●	●	●	●	●	1591	140		
Denon DRM-650S	230	An all-round improvement on predecessors, offers a wide-ranging, disciplined sound. Dolby S is not the best feature	●	●	●	●	●	●	●	●	●	●	●	●	●	164			
Denon DRM-740	270	Breathed-on DRM-710, with good external treatment, offers good, if somewhat detached sonics	●	●	●	●	●	●	●	●	●	●	●	●	●	1514	136		
Denon DRS-810	310	Draw-loading deck, carefully designed yet lacking in subtlety on audition	●	●	●	●	●	●	●	●	●	●	●	●	●	127			
Harman/Kardon TD420	250	Minor inconsistencies detract from a well-conceived, minimum features design	●	●	●	●	●	●	●	●	●	●	●	●	●	1592	140		
Harman/Kardon TD450	350	Draw loader with poor tape navigation features; good midband but shallow bass	●	●	●	●	●	●	●	●	●	●	●	●	●	164			
JVC TD-R472	200	Excellent auto-reverse deck which doesn't suffer the usual disadvantages and is very sharply priced	●	●	●	●	●	●	●	●	●	●	●	●	●	158			
JVC TD-V562BK	220	Ultra-sophisticated transport at a silly price; sound quality is stable but slightly opaque	●	●	●	●	●	●	●	●	●	●	●	●	●	123			
JVC TD-V662BK	270	Assured, clean and agile sounding recorder, if not quite the most refined in its class	●	●	●	●	●	●	●	●	●	●	●	●	●	1380	146		
JVC TD-W718	300	Twin deck. Good for creative live recording, but no timer standby. Respectable though not earth-shattering performance	●	●	●	●	●	●	●	●	●	●	●	●	●	171			

CASSETTE DECKS (CONTINUED)



Product	Price(£)	Comments	DOLBY C	DOLBY S	XLR PRO	J-HEAD	TWO-HEAD	AUTO CALIBER	ADJUSTER	REVERSE	FACTSBACK NUMBER	ISSUE NUMBER
Kenwood KX-W6080	200	Modestly decent sounding twin deck, with some transport instability and ragged bass. The features list is also strong	●	●	●	●	●	●	●	●	1384	146
NAD 613	230	Rough and ready, but enjoyable sound, though marred by mechanical motor noise	●	●	●	●	●	●	●	●	1384	146
NAD 616	300	Primitive twin deck with basic features. No Dolby setting memory, transports are too unstable for serious quality first use.	●	●	●	●	●	●	●	●	1384	146
Onkyo K-611	460	Cute drawer loading mini-size component with 3-heads and dual capstan transport	●	●	●	●	●	●	●	●	1384	146
Pioneer CT-S550S	250	Great features, good with cheap low bias tapes, but slightly synthetic sound quality	●	●	●	●	●	●	●	●	1384	146
Pioneer CT-W806DR	300	Had it not been for the iffy transport quality, this ultra-sophisticated twin would have been recommended.	●	●	●	●	●	●	●	●	1384	146
Pioneer CT-S830S	500	High-class mechanism, if lacking in battleship externals, and superb sound	●	●	●	●	●	●	●	●	1385	146
Sony TC-KE600S	300	Mild setting-up problems notwithstanding, this UK-tweaked design has a smooth, open and un-cassette-like sound	●	●	●	●	●	●	●	●	1385	146
Technics RS-AZ6	230	For those who can't afford the RS-AZ7; exquisite clarity over the widest bandwidth thanks to AZ thin-film head	●	●	●	●	●	●	●	●	158	158
Technics RS-AZ7	300	Thin-film head gives a solid, almost CD-like bass and midrange. A clear advance in the state-of-the-art	●	●	●	●	●	●	●	●	158	158
Yamaha KX-490	199	Electrifyingly transparent and capable deck whose only flaw is a trace of audible wow and flutter	●	●	●	●	●	●	●	●	158	158
Yamaha KX-580SE	250	Subtle, engaging and transparent sounding deck, with a lightweight tonality, but good stability and strong detail	●	●	●	●	●	●	●	●	158	158

CD Players brought to you in association with



All CD players offer a basic selection of facilities, and some can keep you entertained for hours as you programme in disc names and track orders. All but the excessively inexpensive feature remote control. Most CD players can be upgraded by adding an outboard DAC (see below). To do this the player needs a digital output of either electrical or optical persuasion; the former is preferable. A CD player can be split into two basic components: the disc drive or

transport, and a device which turns the digital bitstream coming off the disc into an analogue audio signal. This is called a digital to analogue convertor, or DAC. Although most players are contained in a single box, expensive players are usually two-box affairs.

B **Best buy**
R **Recommended**

KEY

ELECTRICAL DIGITAL OUTPUT: For electrical connection to an outboard DAC.
AES/EBU ELEC DIG OUTPUT: Balanced digital output to be used with similarly equipped DACs.
OPTICAL DIGITAL OUTPUT: For optical connection to an outboard DAC.

AT&T OPT DIG OUTPUT: High-speed optical output to be used with similarly equipped DACs.
BAL ANALOGUE OUTPUT: Balanced analogue output for amplifiers equipped with balanced inputs.
HEADPHONE SOCKET: For car users.
VARIABLE OUTPUT: Remotely adjustable, volume-

controlled output.
MULTI-DISC: Equipped with a carousel or multi-tray system for continuous play of multiple discs.
DAC TYPE: Digital to analogue convertor. BS – Philips Bitstream, MB – multibit, Hyb – hybrid of multibit and bit-stream technologies, 1bit – single bit types such as MASH,

bitstream, PWM, etc
FACTSBACK NUMBER: The Factsback reference for ordering a fax copy of the review. Use the contents page to find the Factsback information page.
ISSUE NUMBER: The issue of *Hi-Fi Choice* in which the original review appeared.

CD PLAYERS

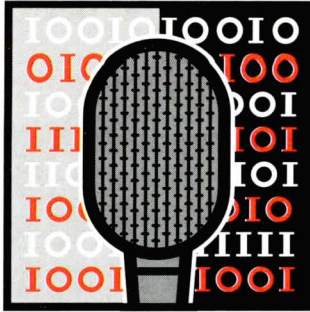
Product	Price(£)	Comments	AES/EBU ELEC DIG OUTPUT	OPTICAL DIGITAL OUTPUT	AT&T OPT DIG OUTPUT	BAL ANALOGUE OUTPUT	HEADPHONE SOCKET	VARIABLE OUTPUT	MULTI-DISC	FACTSBACK NUMBER	ISSUE NUMBER	
Alchemist Nexus APD32A	597	Refined treble, constrained yet capable bass and attractive all-round presentation distinguish this player from the crowd	●	●	●	●	●	●	●	Hyb	169	
Acurus ACD11	899	First-rate if costly player from the US, which combines a delightful transparency with an uncontrived naturalness	●	●	●	●	●	●	●	1bit	166	
Arcam Alpha 7	320	Very detailed for a budget player with a slick and free sense of dynamics, needs careful ancillary matching	●	●	●	●	●	●	●	Hyb	1872	163
Acoustic Precision Eikos	1,850	Seriously customised Pioneer with extraordinary resolution and world beating imaging and bass (Statements)	●	●	●	●	●	●	●	1bit	165	
AMC CD8A	150	Has balanced output, but is otherwise rather grey and unremarkable	●	●	●	●	●	●	●	BS	172	
Arcam Alpha 8	520	Refined, intricately detailed but a little cautious, this should be broadly compatible with a variety of amps	●	●	●	●	●	●	●	BS	1873	163
Audio Innovations Alto	399	Refreshing piece of audio sculpture belies inconsistent audio behaviour	●	●	●	●	●	●	●	BS	1635	151
Audiolab 8000CD	1,000	Developed according to the Green Cross Code of digital audio with an elegant but safe musical presentation	●	●	●	●	●	●	●	BS	1874	163
Audio Research CD1	3,290	Suspends disbelief with a frighteningly real yet obviously coloured sound. A rare proposition among CD players	●	●	●	●	●	●	●	BS	1875	163
AVI S2000MC Reference	1,399	Lean, dry, high resolution player, built to outlast most of us, and a fine performer in a sympathetic system	●	●	●	●	●	●	●	MB	169	
Cambridge Audio CD4	150	Basic appearance and sluggish track access/track search belies its up and at 'em sound quality	●	●	●	●	●	●	●	Hyb	1268	147
Cambridge Audio CD4SE	200	Among the best players we have encountered at the price, considerably more refined and convincing than CD4	●	●	●	●	●	●	●	BS	1877	163
Cambridge Audio CD6	250	A sharp, lively and articulate player, a real thoroughbred in fact, perhaps too sharp and lively for some systems	●	●	●	●	●	●	●	BS	159	
Copland CDA-288	2,199	A gentle giant of a player that errs in favour of pastel shades rather than bold daubs of colour, one for refined tastes	●	●	●	●	●	●	●	MB	1880	163
Denon DCD-625	200	DCD-615 replacement is generously equipped but lacks sophisticated sound of its forebear	●	●	●	●	●	●	●	MB	1269	147
Denon DCD-825	240	Despite extensive revisions, this latest player still sounds like a typical 18-bit Denon, which is no bad thing!	●	●	●	●	●	●	●	MB	1531	137
Denon DCD-1015	350	Excellent, mid-range player – fast, fluid and lean	●	●	●	●	●	●	●	MB	1599	141
Denon DCD-3000	1,000	Sings with the temperament of a huge orchestra under the baton of a timid conductor, but very agreeable at that	●	●	●	●	●	●	●	MB	1881	163
Denon DCD-635	180	Modest presentation gives little clue to the thoroughbred electronics ticking away inside	●	●	●	●	●	●	●	MB	172	
Eclipse CD101a	80	If you want to know the sound of high order distortion, this is probably as good a place to start as any	●	●	●	●	●	●	●	MB	144	
Harman/Kardon HD710	200	A player of integrity, but can sound a bit hard and rough when extended, and is somewhat amplifier fussy	●	●	●	●	●	●	●	1bit	159	
Harman/Kardon HD730	300	Competitive at the price, with a coloured but dynamic and outgoing sound supported by a raft of user features	●	●	●	●	●	●	●	BS	166	
JVC XL-Y1848K	120	Excellent budget player, well presented, a tad opaque but its heart is in the right place.	●	●	●	●	●	●	●	1bit	172	
JVC XL-Y2848K	140	Featuring a new set of bitstream innards, this flexible player has a refined, if occasionally unpredictable sound	●	●	●	●	●	●	●	1bit	1270	147
JVC XL-2574	250	Strong resolving power and good midband and dynamics, but slightly raw and thin	●	●	●	●	●	●	●	1bit	159	
JVC XL-26748K	300	Even-handed, but glosses over the most intimate moments	●	●	●	●	●	●	●	1bit	1637	151
Kenwood DP-3080	170	Bold, dynamic and outgoing sound, though somewhat aggressive. Poor build quality and finish	●	●	●	●	●	●	●	1bit	159	
Kenwood DP-4090	250	Focuses a clear, wide aperture lens on the music - and has CD Test too	●	●	●	●	●	●	●	1bit	172	
Kenwood DP-7090	400	A lively and compelling performer with an even-handed and coherent disposition	●	●	●	●	●	●	●	MB	1885	163
Krell KPS 20i	9,990	Forthright, edge-of-the-seat sound with outstanding bass performance (tested in Statements)	●	●	●	●	●	●	●	MB	1734	155
Linn Mimik	875	Useful multi-room features matched to strong bass, but poor imagery and transparency	●	●	●	●	●	●	●	Hyb	1762	155
Marantz CD63MKII KI Sig	500	It's the quintessential sound of Marantz – warm, open, and smooth almost to a fault	●	●	●	●	●	●	●	Hyb	169	
Marantz CD-67	270	Dynamic, authoritative, and wide tonal response, but also shut-in and mid-forward balance	●	●	●	●	●	●	●	1bit	159	
Marantz CD-67SE	350	Refined, enjoyable player, though ultimately a little soft-centred	●	●	●	●	●	●	●	BS	166	
Marantz CD-48	200	Somewhat inconsistent, middle ranking player which hints at better things	●	●	●	●	●	●	●	1bit	172	
Marantz CD-17	800	Fabulous packaging and an excellent all round performer: smooth, detailed and consistent	●	●	●	●	●	●	●	BS	1763	155
Meracus Tanto	1,395	Believable tonal colours and textures, refinement takes preference over dynamics – but it's not cheap	●	●	●	●	●	●	●	DS	169	
Meridian 508 (20-bit)	1,685	Combines a delicate mid and treble with rich, opulent bass and has impressive low-level resolution	●	●	●	●	●	●	●	BS	1886	163
Mission Cyrus dAD3	598	This front loader has a relaxed style of delivery that convinces with guile and subtlety rather than orchestral ordnance	●	●	●	●	●	●	●	BS	1887	163

CD PLAYERS (CONTINUED)

Product	Price(£)	Comments	AES/EBU ELEC DIG OUT	OPTICAL DIG OUT	AT&T OPT DIG OUT	BAL ANALOGUE OUT	HEADPHONE SOCKET	VARIABLE OUTPUT	MULTI-DISC	FACTS/DAC TYPE	ISSUE NUMBER
Mission Cyrus dAD3Q	898	Lucid, transparent and uncontrived sound quality, superb build, and readily upgradeable					●			MB	169
Monrio Privilege	995	Costly and well-engineered, but ultimately rather heavy-handed and dull, if refined player	●							MB	166
Musical Fidelity E60	299	This entry-level player lacks proper stereo localisation and clarity	●				●			BS	166
Musical Fidelity A2	499	Warm (too warm), attractive and open player, a great improvement on (related) E60	●				●			BS	169
Musical Fidelity FCD	1,500	A forward disposition makes this perfect for Fenders but less appropriate to Guarneris	●					●		BS	163
Myryad MC100	700	A little extra get-up-and-go wouldn't go amiss, but its sheer maturity and composure ensure listenability	●							BS	1889 163
NAD 510	200	Pale version of NAD's senior CD players with a stripped down feature count								1bit	172
NAD 512	250	Simple, well-focused presentation, and articulate with it, though hard-nosed quality is not everyone's cup of tea	●							1bit	159
NAD 514	370	Boisterous sound, but undeniably attractive	●							BS	1639 151
Naim Audio CD3	1,000	The idiosyncratically packaged CD3 is solid and highly articulate. Always has its feet on the ground though								MB	1765 155
Naim Audio CD2	2,000	Provides bags of detail with a solid stereo focus but not all the romanticism we know to be possible								MB	1890 163
Onkyo DX-7210	260	Well-bred CD player features an unusual digital filter, is smooth and cultured without appearing grey or boring	●							BS	1273 147
Onkyo DX-7510	400	Strongly flavoured, assertive sound	●							BS	1640 151
Orelle CD-100EA	649	Excellent imagery, timing and transparency, and readily upgraded or reconfigured	●			●				MB	166
Philips CD-721	130	Surprisingly well-sorted, articulate if slightly glossy and attractively presented sound. Captive signal lead								1bit	159
Philips CD751	150	Inconsistent and occasionally opaque and scrawny sounding cheapie	●							1bit	172
Pioneer PD-204	150	Generally easy on the ear, but can bite back, especially with complex high-frequency music content. Well endowed								1bit	159
Pioneer PD-S705	300	A dichotomy, this machine was loved by some for its articulacy and disliked by others for sounding too impressive!	●							BS	1891 163
Pioneer PD-S904	400	Too much legato – literally – in sound, but a very smooth performer	●							1bit	1641 151
Pioneer PD-S505 Precision	460	Assured, fluid-sounding player, with great spatial coherence	●							1bit	166
Quad 77	900	A true thoroughbred combining a penetrating insight into detail with poise rarely found at the price								Hyb	1893 163
Roksan DP3P	1,495	Dramatic and compelling, classical listeners should be ready to 'air conduct' when auditioning this player	●							BS	1896 163
Roksan Caspian	895	Solid, articulate, and fundamentally well-engineered player, but with some subtle low-level limitations	●							Hyb	169
Rotel RCD-970BX	375	A combination of solid build, useful facilities and an attention grabbing sound make this a winner	●							BS	1897 163
Sherwood CD-4030R	180	Easy on the ear, smooth-sounding player, with limits set by the slightly soft, compressed quality – and messy fascia					●			BS	159
Sherwood CD1	1,100	A very neutral, even handed sounding player with a rather flat, lifeless sound. Beautiful construction	●							BS	1899 163
Sony CDP-XE510	180	Souped up CDP-XE500 which tells a rather bland and unengaging story								1bit	172
Sony CDP-XE900E	300	Refined and analytical disc scavenging tool, but there are some distinctive colourations making auditioning vital								BS	159
Sony CDP-X3000S	500	Shoebbox format player, with looks to die for, and switchable digital filters to tweak the already excellent sound	●							BS	169
Teac 3450SE	200	For once a budget player where the gadgets take second place to respectable, budget amplifier-friendly sonics								1bit	166
Teac CD-5	350	Bright, breezy and up-beat – but short in the trouser department	●							BS	1643 151
Teac VRDS-7	599	Although bold and outgoing, this player can sound both intrusive yet lacking in fine detail	●							BS	1769 155
Teac VRDS-10SE	850	Superbly built and presented, but rather leaden bass, with an over-prominent and not ideally refined mid/top	●							BS	169
Teac VRDS-25	1,300	A solid player in all respects combining powerful sound with state-of-the-art technology	●							MB	1903 163
Technics SL-PG480A	140	Full driving sound, but somewhat uneven in balance with a unsubtle, slightly harsh top end								1bit	159
Technics SL-PS770D	250	High tech and well built technology battleship which smoothes the rough edges off the music								BS	172
Trichord Genesis	549	Breathed-on Pioneer is warm and mellifluous, but ultimately lacks drive and authority.	●							Hyb	169
Trichord Revelation	799	Well-ordered and clean sound that may be a little too refined for some, images well	●							1bit	166
Yamaha CDX-390	130	Well endowed entry level unit, with inconsistent sound that can be harsh in extremis								1bit	172
Yamaha CDX-490	170	Big, blowsy sound, is undermined by lack of precision and focus								1bit	159
Yamaha CD-X890	350	Clearly a quality product in every sense, the Yamaha provides a spacious, refined and tuneful account of the music	●							BS	166
TRANSPORTS											
Arcam Delta 250	800	Arcam's best effort yet is a new design based on Philips CDM9 transport. Specification includes Sync Lock facility	●								1491 130
Audiolab 8000CDM	1,400	Super-slick transport and basically very honest sound, but lacking the last degree of fine detail	●								162
Audiomeca Kreatura SE	1,400	Superb combo for those who like the sound of valves (tested with Elixir DAC in Sessions)	●							MB	141
Audiomeca Mephisto	2,350	Tested with Trichord Pulsar, the duo provides a highly composed and tactile sound	●								1320 144
Linn Karik	1,850	Based on early Linn transport, the Karik is dry but very positive, detailed and engrossing	●								1323 144
Meridian 500	1,245	Used with the 563 DAC, the combination is thin, brash and uncomfortable	●								1103 133
PS Audio Lambda	2,250	With Ultralink Two, sound positively sparkles with colour and resonant detail	●								1106 133
Roksan Attessa ATT-DP3	1,295	Not the most detailed or refined but capable of good excitement with the right material	●							1bit	162
Teac VRDS-T1	550	Superb quality engineering is mated to tidy and composed sound (tested with D-T1)	●								1325 144
Theta Data Basic II	2,397	Uses a Philips CDM-9 Pro mechanism and works a treat with more lively DACs	●								1494 130
Thorens TCD2000	999	Lively and up-front presentation not helped by rather loose bass and splashy treble	●								162
Trichord Digital Turntable	699	Very detailed, precise, controlled yet involving; a first-rank performer	●								162
Wadia 8	3,195	Budget version of Teac's VRDS mechanism in a fancy case; just too expensive for the performance on offer	●								1495 130
DACS											
Arcam Black Box 50	480	Measured and sophisticated sound from a DAC that leaves plenty in reserve for future upgrades								Hyb	1506 133
Arcam Black Box 500	750	Sophisticated unit with sync lock and discrete DAC								BS	1519 136
Audio Note DAC1	675	Oddball DAC with manual de-emphasis switch. Needs a high preamp input impedance or bass will suffer								MB	127
Audiolab 8000DAC	900	Basically very honest sound, but lacking the last degree of fine detail								BS	162
Audiomeca Elixir	799	DAC was tested with Kreatura SE – see above								BS	141
Linn Numerik	1,500	A new 20-bit DAC and revised Karik transport have cleaned up; but sounds a bit dry and humourless								MB	1323 144
PS Audio UltraLink 2 HCD	2,590	With Lambda transport, the sound positively sparkles with colour and resonant detail								MB	1106 133
PS Audio Reference Link	4,550	Consolidates reputation of PS Audio for high performance digital electronics								MB	1069 132
Roksan Attessa ATT-DA2/DS5	1,145	Not the most detailed or refined but capable of good excitement with the right material								1bit	162
Teac D-T1	500	Teamed with VRDS-T1 for test, this superb quality unit is tidy and composed								BS	1325 144
Teac D-700	600	With P-700, the D-700 may lack the resolution, but is bubbly and entertaining								MB	120
Thorens TDA 2000	700	Lively and up-front presentation not helped by rather loose bass and splashy treble								BS	162
Trichord Pulsar Series One	1,395	Very detailed, precise, controlled yet involving; a first-rank performer. Switchable phase, dither etc								Hyb	162

You must listen to **MISSION** For details of your nearest stockist, ☎ 01480 451777. Or visit the company's WorldWideWeb site – <http://www.mission-cyrus.com>

Digital Recorders



Digital recorders come in a variety of different guises, but have yet to make much of an impact on the domestic market. At present there are three types to choose from: DAT (digital audio tape), MD (MiniDisc), and CD-R (CD Recordable). MD's claim to fame is its optical disc format, which offers instant track access and can't be worn out like a tape. DAT has been on the market for quite some time now, but has never really 'made it' as a consumer medium due to the dearth of pre-recorded material. However it has begun to carve itself a

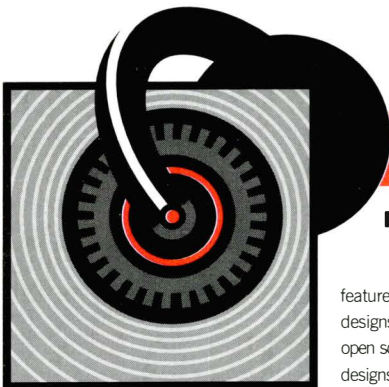
niche in the top end of the market, replacing reel-to-reel as the audiophile's tape based medium. Home CD-R is coming into its own with Pioneer's PD-R05 machine attempting to set a trend.

B Best buy **R Recommended**

KEY	FORMAT: Type of recorder, see above for descriptions. DAC TYPE: Digital to analogue converter: BS - Philips Bitstream, MB - multibit, Hyb - hybrid of multibit and bitstream technologies, 1bit - single bit types such as WASH, bitstream, PWM etc.	ADC TYPE: Analogue to digital converter types as per DACs. PORTABLE: Can be run off batteries but not necessarily personal stereo size. OPTICAL IN/OUTPUTS: Digital socketry for optical cable.	ELECTRICAL IN/OUTPUTS: Digital socketry for electrical cable. FACTSBACK NUMBER: The Factsback reference for ordering a fax copy of the review. Use the contents page to find the Factsback information page.	ISSUE NUMBER: The issue of <i>Hi-Fi Choice</i> in which the original review appeared.
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DIGITAL RECORDERS

Product	Price(£)	Comments	FORMAT	DAC TYPE	ADC TYPE	PORTABLE	ELECTRICAL IN/OUTPUTS	FACTSBACK NUMBER	ISSUE NUMBER
Pioneer PDR-04	700	Scaled down version of the 05 with auto level setting but all the socketry and features you need to make your own CDs	CD-R	BS	BS	●	●	●	171
Pioneer D-05	900	Second generation 96kHz DAT recorder can offer startling realism with the right software - ie first generation	DAT	BS	BS	●	●	●	1652 152
Pioneer PDR-05	1,000	CD recorder that uses domestic blanks only (limited to 74 minutes), write once but excellent sound quality	CD-R	BS	BS	●	●	●	1652 152
Pioneer D-C88	2,000	State-of-the-art portable 96kHz DAT recorder, the size of a lap-top computer this Nagra country on the cheap	DAT	BS	BS	●	●	●	1431 150



Headphones

Brought to you in association with **SENNHEISER**

There are a variety of different approaches to headphone design. Among the more expensive models, electrostatic drivers are used in open-backed phones. Most models feature dynamic (moving coil) drivers in circular, open or closed-back designs. The advantage of open backs seems to be a correspondingly open sound, but one can also hear external noise, of course. Closed-back designs are useful in situations where it is necessary to block out noise.

There are three styles of headphone: circumaural models enclose the ear; supra-aural designs feature a flat pad which presses on the outer ear; and intra-aurals (in-ear) rest inside the ear itself, à la personal stereos. For best results a separate headphone amplifier is recommended.

B Best Buy **R Recommended**

KEY	TYPE: Operating principle: D - dynamic, E - electrostatic. SUPRA-AURAL: Style where a flat pad presses on the outer ear. CIRCUMAURAL: Style which encloses the ear. OPEN BACK: Offers an open sound but lets in noise.	CLOSED BACK: Keeps out external noise. WEIGHT (G): Mass in grams IMPEDANCE (Ω): Load offered to the headphone amplifier. All else being equal, the lower the impedance the louder the sound for a given	amplifier output. 3.5MM JACK ADAPTOR: Can be used with mini-jack-equipped components such as personal stereos. FACTSBACK NUMBER: The Factsback reference for	ordering a fax copy of the review. Use the contents page to find the Factsback information page. ISSUE NUMBER: The issue of <i>Hi-Fi Choice</i> in which the original review appeared.
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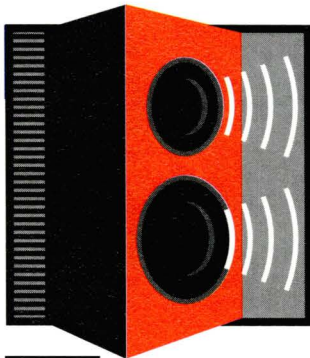
HEADPHONES

Product	Price(£)	Comments	SUPRA-AURAL TYPE	CIRCUMAURAL	OPEN BACK	CLOSED BACK	3.5mm JACK ADAPTOR	WEIGHT(G)	IMPEDANCE(Ω)	FACTSBACK NUMBER	ISSUE NUMBER
AKG K1000	700	One of the best dynamics on the market, hooks directly into speaker outputs	D	●	●	●	●	270	120	●	99
Audio Technica ATH910PRO	90	The closed back 910s are an improvement on the 909s, with a nice rhythmic quality rarely found with headphones	D	●	●	●	●	280	40	●	55
Beyer DT100	152	Rugged, modular professional design, but bass is woolly and treble lacks detail	D	●	●	●	●	350	600	●	157
Beyer DT311	57	Uncharacteristically tight, unrefined sound quality from this otherwise well engineered 'phone	D	●	●	●	●	124	40	●	1098 133
Beyer DT331	82	Tonally bright and deficient in bass, but exceptionally comfortable, articulate, detailed and refined	D	●	●	●	●	210	40	●	1801 157
Beyer DT411	69	A reasonable but not very thrilling headphone that doesn't really offer enough at the price	D	●	●	●	●	120	250	●	111
Beyer DT511	117	Superb midband clarity and speed slightly at odds with soft bass. High tingle factor even so	D	●	●	●	●	200	250	●	172
Beyer DT531	135	A good buy for serious, heavy-duty music making	D	●	●	●	●	245	250	●	144
Beyer DT911	235	Probably too revealing for many headphone amps, these are very subtle and fine, if expensive cans	D	●	●	●	●	275	250	●	111
Denon AH-D550	80	A competent 'phone with integrity, but little panache or charisma. Hard headband causes brain strain	D	●	●	●	●	200	35	●	1801 157
Denon AH-D750	130	Loud and gutsy, meaty bass, good with rock and dance. Can sound thick and clumsy	D	●	●	●	●	250	30	●	172
Grado SR-40	45	Cheap and nasty appearance largely redeemed by cheerful, up-beat sound. Very comfortable	D	●	●	●	●	120	32	●	172
Grado SR-80	100	Clear, open and dynamic with pedantically open mid-band. Crude physical design, rough frequency extremes	D	●	●	●	●	60	8	●	1801 157
Grado SR-225	200	Warn, darkly-coloured tonally and ultimately lacking in clarity, but true to the spirit of the music if not the letter	D	●	●	●	●	200	32	●	1883 163
Jecklin Float Model 1	79	While very unusual in appearance, the Floats give remarkable sound quality and openness at a reasonable price	D	●	●	●	●	400	200	●	55
Jecklin Float Model 2	99	Helmet shaped, but open sounding and comfortable in the long term, despite lack of adjustment	D	●	●	●	●	400	200	●	63
JVC HA-D910	65	Broadly acceptable if unexciting design with low level losses and some colourations	D	●	●	●	●	220	32	●	121
JVC HA-W60	49	Remarkably lack of interference and hiss makes adequate sound seem even better than it is	D	●	●	●	●	165	I/R	●	172
Kenwood KH-1000	20	First step-up from a true mini: a near miniature which is cheap, comfortable and inoffensive	D	●	●	●	●	30	32	●	121
Maxell HP-3000	30	Solid, smooth-sounding supra-aural headphone, but congested and undynamic. Includes in-lead controls	D	●	●	●	●	120	32	●	1099 133
Precide Ergo Model 2	140	Still has much of the spaciousness and detachment of the Float from which it is derived, but has a coarse mid/top	D	●	●	●	●	380	100	●	1892 163
Philips SBC 3396	70	Remarkably airy for closed-back designs. Fine tonal balance, punchy delivery. Amazing for money	D	●	●	●	●	255	32	●	172
Philips SBC HP900	90	Sharper, snappier midrange than 3396 initially impressive but blows the balance and listenability	D	●	●	●	●	200	32	●	172
Ross RDH-300CD	17	In-lead controls are the highlights of this shoddy, sometimes aggressive-sounding design	D	●	●	●	●	155	8	●	133
Sennheiser IS 380	55	As close as you'll get to real hi-fi with IR phones at this price. Inevitable hiss spoils the illusion	D	●	●	●	●	192	I/R	●	172
Sennheiser HD 455	55	Inoffensive, if nondescript sound, modular, but can become dislodged from head	D	●	●	●	●	185	60	●	1801 157
Sennheiser HD 475	80	Elegant, uncluttered sound and very comfortable but lean bass saps satisfaction	D	●	●	●	●	120	60	●	172
Sennheiser HD 545	125	Fine all rounder that takes all styles of music in its stride. Ear-clamping headband	D	●	●	●	●	255	150	●	172

HEADPHONES (CONTINUED)

Product	Price(£)	Comments	CIRCUITRY TYPE	SUPRA-AURAL	OPEN AURAL	CLOSED BACK	CLOSED BACK	3.5mm JACK IMPEDANCE(Ω)	FACTSBACK NUMBER	ISSUE NUMBER
Sennheiser HD 565 Ovation	150	Wide bandwidth design which is refined, expressive and extremely comfortable	D	●	●	●	●	255	150	1801 157
Sennheiser HE 60/HEV70/UK	998	Very nearly a superb electrostatic, with an achingly pure midband, but top end is sibilant and edgy	E	●	●	●	●	260	n/a	1898 163
Sony MDR-CD770	100	Neutrality and comfort make the Sony easy to live with. Technically correct-sounding too, yet musically unrewarding	D	●	●	●	●	-	-	1801 157
Sony MDR-CD1700	199	Astonishingly detailed, uncoloured and free of the usual artefacts from a sealed back headphone. Tremendous value	D	●	●	●	●	325	32	1901 163
Sony MDR-F1	100	Natural, easy-going sound teamed with great looks and comfort. Shame about the lightweight bass	D	●	●	●	●	300	12	172
Technics RP-DJ1200	130	Functional design with head-pulping bass and muggy tonal balance. Good job they're sweat-proof	D	●	●	●	●	230	32	172
Stax Lambda Nova Basic	449	Refined, articulate, yet with real presence – and a notable bargain by electrostatic standards	E	●	●	●	●	347	n/a	1902 163
Technics RP-HT700	70	Well-finished but physically crass and grubby sounding	D	●	●	●	●	255	-	1801 157
Vivanco IR5800	50	Consistently musical and easy going. Doesn't reach for sonic heights so hiss is less bothersome	D	●	●	●	●	226	1/R	172
Vivanco SR650	50	Unusually comfortable 'phone with excellent detail resolution but aggressive, thanks to tweeter resonance	D	●	●	●	●	175	-	1801 157
Vivanco SR750	60	Cossetting physical design, attractive sound an pricing, though suffers overhang and lacks ultimate dynamics	D	●	●	●	●	188	-	1801 157
Vivanco IR7100	120	Infra-red phones that work well but suffer from the limitations of the medium ie compression and hiss (Sessions)	D	●	●	●	●	265	-	149
Vivanco Cyberwave FMH3000	80	The only cordless headphone that offer genuine walkabout freedom. But it sounds like a cheap FM tuner	D	●	●	●	●	210	FM	172

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Hi-Fi Loudspeakers

Brought to you in association with KEF

As the last item in the hi-fi chain, the loudspeaker is merely the slave of what has gone before; it is only as good as the signal it is fed. Nevertheless, the distortions introduced by loudspeakers (and rooms) tend to be the most obvious. The average loudspeaker consists of an enclosure plus a couple of drive units behind a removable grille. Inside the box lurks a simple electrical circuit known as a crossover, which divides the incoming (full range) signal into the right bits for the drivers to handle. The designer's primary

task is to balance the 'sensitivity' of the loudspeaker (how loud it goes for a given electrical input) against the bass extension (how low it goes), for the given box size. Subwoofers augment the bass and come in passive and amplified active form. They are less sensitive to placement than regular speakers.



KEY

SIZE WxHxD (cm): Width by height by depth in centimetres.
 FLOORSTANDER: As opposed to requiring a dedicated stand.
 SENSITIVITY (dB/W): Efficiency: how much volume you get for a given input; the higher the louder.
 IMPEDANCE (Ω): Measured in Ohms impedance it is a measure of how hard a loudspeaker is to drive: the lower the number the more powerful the amplifier needs to be.
 BASS FROM (Hz): The lowest frequency that a speaker can reproduce, based on in-room measurements.
 FREE SPACE: Speakers should be placed away from walls.
 CLOSE TO WALL: It is recommended that these speakers be placed close (between 3 and 12cm) to the rear wall.
 FACTSBACK NUMBER: The reference for ordering a fax copy of the review. Use the contents page to find the Factsback page.
 ISSUE NUMBER: The issue of Hi-Fi Choice in which the original review appeared.

HI-FI LOUDSPEAKERS

Product	Price(£)	Comments	SIZE WxHxD(CM)	SENSITIVITY(DB/W)	IMPEDANCE(Ω)	BASS FROM (Hz)	CLOSE TO WALL	FREE SPACE	FACTSBACK NUMBER	ISSUE NUMBER
Acoustic Energy AE109	350	Lots of mass-loaded twin-driver speaker for the money, especially for loud, driving bass	18,90,25	●	88	4	25	●	1904	164
Acoustic Energy AE120	500	Attractive presentation and good sonic headroom, but a heavy, uneven overall balance, and a difficult amp load too	18,98,28	●	89	4	25	●	170	
Acoustic Precision Eikos FR1	800	Lightweight single cone design with state-of-the-art midrange resolution, speed and imaging (Statements)	17,4,25,28	●	86	8	65	●	172	
ATC SCM20	1,599	Massively built, invariably informative but the rather forward presentation can be uncomfortable	24,44,31	●	83	8	28	●	86	
Audio Gem Emerald	540	Pretty compact floorstander with lively if lightweight sound	18,94,21	●	87	6	40	●	1905	164
Audio Note AN-J/D	930	Light damping and local unevenness add some colouration, but don't spoil the speaker	38,58,25	●	93	8	25	●	110	
Audio Note AN-E/D	1,520	Coherent, dynamic and transparent, with extended bass and high sensitivity - but ugly!	36,84,28	●	94	8	20	●	106	
Audio Physic Tempo	1,999	Tall and unusually-styled floorstander has stunning stereo but suspect bass tuning	22,107,47	●	88	8	28	●	1344	143
AVI Positron	900	Suited to smaller rooms, this 'mini-floorstander' is capable of great precision and delicacy, but in a rather small scale way	17,5,25,7784	●	85	6	40	●	174	
B&W DM302	150	Highly competent and neutral all rounder; clever Prism enclosure	19,32,22	●	88	4	45	●	1778	156
B&W DM601	200	Great main driver for the price, entertaining dynamics	20,5,35,5,23	●	88	6	30	●	1779	156
B&W DM602	300	Prefers tall stands and space, but offers impressive midband dynamics and musical tension	24,49,31	●	90	8	30	●	1654	152
B&W 305	350	Ridged paper cone gives lively sound, clever box, but a little uneven	22,87,31	●	89	4	40	●	1908	164
B&W 603	500	Squat floorstander with decent dynamics and well-judged, restrained balance; bass could go deeper	23,5,88,29	●	89	7	45	●	170	
B&W P4	675	Strikes a nice balance between all-out studio monitor sound and bass-filled crowd pleaser (tested in Sessions)	20,81,25,6	●	88	8	50	●	156	
B&W CDM1	600	Gorgeous stand-mount delivers unusually good bass for its size	22,38,28	●	88	6	30	●	1818	160
B&W CDM7	1,000	A combination of serious welly and physical elegance, a basic lack of midband smoothness rather let the side down	22,97,29	●	90	4	22	●	174	
B&W Matrix 805 V	1,095	Stylish, remarkable imaging, good balance and low colouration	33,33,21	●	87	8	30	●	98	
B&W Matrix 804	1,695	A great all-rounder which combines exceptional bass extension with fine sensitivity	26,96,26	●	88	4	20	●	167	
B&W Matrix 801S3	3,995	Lacks transparency and the drama of the best dynamics, but acoustically a tour de force	44,100,56	●	87	8	20	●	81	
B&W Nautilus	35,000	Radical design results in one of the finest loudspeakers available. Active x-over needs 4 power amps (Statements)	42,105,90	●	87	4	10	●	166	
Cadence ES	3,500	Hybrid electrostatic/dynamic design from India that excels with classical material (Statements)	33,108,37	●	91	8	35	●	1798	157
Castle Isis	250	A great miniature at a very competitive price. Sound is lightweight but very coherent, with a fine overall balance	17,35,5,21	●	87	8	45	●	170	
Castle Severn 2	580	Carbon fibre cone gives lovely, subtle midband but treble is a bit dull and bass a bit thumpy; lovely cabinetwork	21,84,25	●	87	8	30	●	174	
Castle Avon	730	Lovely box and lovely voices from carbon-fibre composite cone	22,91,28	●	85	8	22	●	1909	164
Castle Harlech	880	Handsome big-sounding floorstander, great value and dynamic midrange	20,96,33	●	88	8	28	●	1820	160
Castle Howard S2	1,200	Able fills the gap between Chester and Winchester; has a rich, laid-back balance	26,104,41	●	90	8	40	●	1078	132
Celestion AI	899	Rich, warm and laid-back, but a true quality sound; lovely build	24,41,35	●	88	6	25	●	1910	164
Cerwin-Vega VS10	350	Not all that refined but ballsy as heck, these rock boxes have no shortage of gung-ho	33,70,29	●	95	6	37	●	1758	155
Chario Syntar 100	250	Pretty with a pleasantly easygoing balance, but not the most communicative or exciting sound around	18,32,27	●	87	6	45	●	170	
Dali 104B	370	Lively, rich sounding and communicative. Shame about bland styling and dull balance	22,86,27	●	93	4	28	●	1657	152
Dali 606	400	A big bruiser at a tempting price, Dali's 'no-frills' 606 sounds refined and polite, but also packs some punch	22,97,32	●	91	4	25	●	174	
Dynaudio Applause 50	577	This compact stand-mount doesn't look big, but sound quality can match many models at twice the price	20,33,25	●	86	4	30	●	174	

SIZE WxHxD(CM)
SENSITIVITY(DB/W/M)
IMPEDANCE(Ω)
BASS FROM (Hz)
FACTSBACK CLOSE TO WALL FREE SPACE
ISSUE NUMBER

HI-FI LOUDSPEAKERS (CONTINUED)

Product	Price(£)	Comments							
▲ Dynaudio Contour 1.8	1,842	Wonderful voice-band delicacy and loads of deep bass from a very elegant and compact box	21,95,29	●	85	4	20	●	167
Electrofluidics Sonolith 2.2xi	5,999	Polymer concrete cabinet with aluminium cones produces world class imaging and very serious bass (Statements)	38,95,42.5	●	86	4	n/a	●	139
Epos ES12	500	High quality luxury stand-mount has great midband and stereo imaging	20,38,25		85	8	45	●	1823 160
▲ Epos ES14	675	Substantial stand-mount delivers delightful midrange focus and delicacy with good bass control	23,49,29		87	8	25	●	98
Epos ES22	1,185	Elegant floorstander with 'safe' balance that can be enlivened with the right cable and energetic material (Sessions)	21,88,25	●	87	6	58	●	1629 151
Epos ES25	1,655	Handsome floorstander with a rather uneven and bass heavy balance	24,90,35	●	88	6	22	●	1346 143
Faraday Siren	445	High mass concrete cabinet is let down by imbalance of ageing driver combination	25,27,46		90	4	48	●	94
Gale 2i	140	Unspectacular sound and appearance fail to help this solid little miniature stand out from the crowd	22,40,27		88	7	40	●	170
GLL Imagio IC130	500	Lots of speaker for the money, but sound is decidedly dull and shut in	22,112,29	●	88	4	20	●	1824 160
Harbeth BBC LS3/5A	699	Still a classic miniature, though not to every taste, and none the better for the recent update	19,30,18		82	10	80	●	66
▲ Heybrook Prima	159	Fine pace and timing, but balance is forward and bass is tight	20,29,18		87	6	50	●	110
Heybrook Heylette	269	Attractive traditional-style near-miniature has fine bass-to-mid integrity, but dull and shut-in top end	19,5,30,20		89	6	45	●	170
▲ Heybrook Heylios	389	Great all-round performance in a pretty package at a sharp price	24,36,27		87	6	25	●	164
Heybrook Heylo	439	Good vocal reproduction, but sounds thin and bass seems an afterthought	23,73,19	●	88	8	30	●	1658 152
▲ Heybrook Quartet	649	Solidly large bookshelf model with good sensitivity and a lively, forward sound	24,41,22		90	8	48	●	122
Heybrook Ultima	650	Has the bass wallop to justify its dual hi-fi/home cinema roles, but didn't get our listeners particularly excited	22,97,29	●	89	6	45	●	174
▲ Heybrook Sextet	1,299	Coherent and highly analytical, partly due to distinct upper-mid forwardness	27,90,20	●	88	8	25	●	102
Infinity Reference 1i	150	Although not to our tastes, this is a competent speaker, and decent material value	20,34,20		89	6	50	●	1403 148
Jamo BX100A	350	A cracking output for their size, these rock boxes can be a bit bright but have decent bass	31,5,54,28		91	8	40	●	1758 155
Jamo Classic 8	400	A lot of speaker for the money; good when playing quietly, but boom 'n' tizz character sounded crude	22,90,29	●	90	4	28	●	1659 152
Jamo 477A	500	Very prettily styled, but build and sound quality are disappointing at the price	19,77,28	●	88	4	40	●	1549 138
Jamo 507A	700	Exceptionally imaginative styling keeps the front view super slim yet still packs a punch. Glass top is a neat extra touch	22,94,37	●	88	3	40	●	174
Jamo Concert 8	1,300	Employing a die cast magnesium cone with a charming open and detailed midband (Statements)	24,5,38,31		90	4	38	●	1822 160
▲ JBL LX2	250	Lively and invigorating, if a touch crude, this good-hearted speaker reproduces music with considerable enthusiasm	22,40,27		87	8	40	●	170
▲ JBL L20	700	Pricey, heavy and a bit laid back, but this is a fine rock'n'roller which is dynamic and communicative	26,42,28		86	8	30	●	1550 138
JBL SVA1500	700	A distinctive Pro-style bi-radial horn tweeter, and the sound is quite a lot of fun, enlivened (?) by a juicy bass thump	17,5,51,31		86	8	40	●	174
▲ JBL L40	1,000	Classic, large, stand-mount 3-way is full of vim and vigour, with a superb sense of balance	30,65,31		88	4	23	●	167
▲ JBL L90	1,500	A classic monitor which communicates with gusto and enthusiasm, though it can sound a bit crude	24,94,35	●	91	6	23	●	1348 143
▲ Jordan Watts JH 400	565	Piano-finish hexagon has controversial sound, with uneven balance but delightful mid	28,38,21		86	8	50	●	106
▲ JPW Mini Monitor	60	Ultra-cheap miniature works well in a limited way	18,27,17.5		86	8	50	●	1781 156
▲ JPW Gold Monitor	80	More informative than Mini Monitor - but fiercer too	18,27,17.5		86	8	50	●	1782 156
▲ JPW ML510	140	Lots of good-quality speaker for the price, but not an ideal match for cheap budget components	20,34,22		88	5	50	●	169
▲ JPW ML1010	400	A seriously substantial speaker for the price, and an obvious choice for those who like their music loud	22,5,115,40	●	91	6	25	●	170
▲ JPW Ruby 1	400	Very pretty but pricey luxury metal-cone miniature has good, if slightly edgy balance	19,32,21		87	6	55	●	1572 139
▲ JPW Ruby 4	1,000	Twin metal-cone main drivers improve the dynamic performance and bass extension, with little sacrifice in focus precision	22,94,26	●	88	8	25	●	174
▲ KEF Coda 7	130	Lovely open voice reproduction, but bass could be tauter; build tougher	18,30,23		88	6	50	●	1783 156
▲ KEF Coda 8	190	Outstandingly well-balanced, bass is deep but a little vague	20,32,5,29		86	6	28	●	1784 156
KEF Coda 9	300	Uneven budget 3-way floorstander with poor bass definition	20,86,28	●	89	6	30	●	1785 156
KEF RDM One	500	Cute and tiny, nice midband but lack of bass warmth and weight	23,30,24		88	6	70	●	164
KEF Reference Model 2	1,599	Classy, large floorstander that has massive headroom and clean mid-to-treble, but limited deep bass for size	23,103,34	●	89	4	30	●	167
▲ Kelly KT3	1,200	Super high sensitivity, this hefty floorstander sacrifices smoothness to dynamic realism - to very good effect	25,95,36	●	95	4	28	●	174
▲ Keswick Audio Aria II	379	Confident and dynamic sound, if a little crude and shut in	21,42,24		89	8	20	●	1405 148
▲ Keswick Audio Torino	999	Good value, lively contender with distinctive shape and styling. Goes loud and deep but could be smoother	18-26, 93,28	●	90	4	20	●	167
▲ Linn Keilidh Passive	750	Stunning timing and coherence, and awesome bass drive	20,83,28	●	87	4	22	●	1552 138
▲ Linn Kaber Passive	2,000	Dry, bright balance emphasises dynamics and transients, but can sound unforgiving	20,90,28	●	87	4	25	●	118
Living Voice Airscout	19,500	You want dynamics? Get a horn, get a very, very good horn. This is a very, very good horn. Tested with RW24 horn sub	62,5,115,57	●	104	8	60	●	163
Living Voice Air Partner S	37,200	Outstanding transparency and dynamics from remarkably solid and fast mega horn	64,160,90	●	108	8	40	●	138
Meridian DSP6000	9,400	Sophisticated digital design, with a wide-ranging, refined and detailed sound. Has on-board amplification	28,133,43	●	-	-	35	●	1226 140
▲ Mission 731 PRO	140	Cautious balance makes a fine match with budget equipment. A classy baby for smaller rooms	17,5,31,5,20		89	8	55	●	169
▲ Mission 733i	330	New tweeter gives this floorstander a more open sound; a good all-rounder that doesn't sound as big as it looks	20,5,88,30	●	88	8	45	●	170
▲ Mission 752 Freedom	580	A beautifully judged compromise in the art of combining presentation with a decent sound, and a lively midband	20,90,25	●	89	8	45	●	174
▲ Mission 753 Freedom	798	Great styling. New, more restrained tweeter reveals fine midband dynamics	21,90,31	●	89	4	40	●	164
Mission 754 Freedom 5	1,298	Tall but exceptionally elegant floorstander gives fine midband projection; goes loud but limited deep bass for size	22,111,31	●	88	4	40	●	167
Monitor Audio Monitor 3	400	An exceptionally discreet floorstander; sonically uneven, it's capable of fine results if used in a sympathetic system	16,91,21	●	88	5	30	●	170
▲ Monitor Audio MA700 PMC	600	Good-looking luxury compact with all-metal diaphragms, lovely midrange, but occasionally edgy	22,35,26		89	8	45	●	1661 152
▲ Monitor Audio 702PMC	700	A good all-round stand-mount with that intimate midband focus which seems the preserve of metal cone main drivers	20,40,25		87	8	30	●	174
▲ Monitor Audio MA703 PMC	800	Lovely but pricey floorstander has up-front, coherent 'shiny' sound	20,89,27	●	88	8	50	●	1826 160
Monitor Audio Studio 12	1,000	A real looker, but sound and content are a bit on the small side for the price	17,92,20	●	90	8	28	●	1349 143
▲ Mordaunt-Short MS10i	140	Up front, bouncy and a whole lot of fun	18,5,30,5,20		86	8	50	●	1789 156
▲ Mordaunt-Short MS30i	275	Slightly shut-in and coloured quality is compensated by fine bass and impressive communication	25,43,28		90	8	28	●	1662 152
Mordaunt-Short Perf 860	1,895	Although a very neutral loudspeaker it can, with the right ancillaries, pack a serious punch (Statements)	26,86,35	●	90	6	35	●	1367 146
Musical Technology Kestrel SE	300	Brighter and drier-sounding than the standard Kestrel (and not the better for it)	20,84,19	●	84	5	50	●	164
▲ Musical Technology Condor	1,000	Lots of clever ideas in a compact floorstander, which places transparency and smoothness ahead of dynamic drama	25,91,23	●	85	4	28	●	174
▲ Musical Technology Harrier	400	Very pretty package, good measured performance and even sound. Sensitivity is low, and dynamics limp	25,80,23	●	86	8	25	●	1663 152
▲ Naim Intro	660	Great dynamic range and info retrieval, but thin, lacks warmth	24,89,27	●	89	6	30	●	164
▲ Naim SBL Passive	1,970	Lively and punchy - smoother but more upfront than before	27,89,27	●	88	6	25	●	1352 143
▲ Neat Mystique	575	Elegant compact floorstander has good all-round sound and value	20,85,18	●	84	8	25	●	1827 160
Neat Petite II	745	Compact design now utilising ribbon tweeter with a fine sense of timing and surprising musicality (tested in Sessions)	20,30,18		86	8	33	●	160
Neat Petite II/Gravitas	2,000	Beautifully presented miniature/subwoofer combo with ribbon tweeter gives smooth, laid-back sound	23,105,40	●	85	6	25	●	167
▲ NHT SuperOne	358	A fine compromise between size and performance, though sensitivity and loudness capability is modest	18,5,29,5,23		85	8	30	●	170
Origin Live Conqueror	1,650	Chunky floorstanding 3-way has lovely cabinetwork and lively sound, but limited deep bass	24,94,27	●	88	8	30	●	167
Pink Triangle Ventrical	999	If you are after Quad Electrostatic-type transparency but can't afford the price... (Sessions)	15,80,32		86	11		●	142

HI-FI LOUDSPEAKERS (CONTINUED)

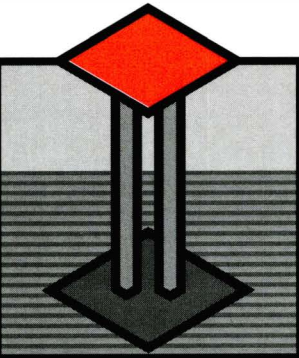
Product	Price(£)	Comments	SIZE WxHxD(CM)	SENSITIVITY(OB/W)	IMPEDANCE(O)	BASS FROM (Hz)	FACTS CLOSE TO WALL	ISSUE NUMBER		
PMC TB1	410	Superb transparency, subtle laid-back sound, well worth seeking out	20,40,31	87	8	45	●	1830 160		
PMC LB1	935	Delightful smoothness and transparency, though bass and treble are both limited	18,53,25	89	4	33	●	110		
PMC AB1	1,496	Lovely panel-like transparency, slightly shut-in balance, needs a big room	26,79,43	89	6	22	●	114		
Polk LS50	800	No enthusiast tweaks here, but powerful and beautiful balance	27,83,29	●	89	8	25	●	1155 138	
Polk RT16	800	Bass rich, lively and powerful, but suspect top end; big and not very pretty	22,105,39	●	91	4	22	●	1831 160	
Polk LS70	1,200	High sensitivity, but balance has too much midbass boom; mid-top is laid back	31,94,37	●	90	8	22	●	1084 132	
Proac Response 2.5	2,700	For aspirant high-enders looking for seriously good conventional boxes, this speaker should be first port of call	22,107,25	●	86	8	30	●	1457 149	
QLN Qubic 222	400	Ugly but good value floorstander with loads of bass and a smooth balance	21,87,29	●	88	6	25	●	1832 160	
QLN Signature	1,000	Attractive pyramidal stand-mount with heavy, laid-back balance but remarkably unboxy sound; superb stereo	27,37,36	●	83	4	25	●	167	
Quad ESL-63	3,450	Classic electrostatic lacks punch, but has strengths some can't live without	66,93,27	●	86	8	34	●	60	
Rega KYTE	198	Has splendid timing and coherence, sounds very explicit and informative	19,31,19	●	87	8	50	●	114	
Rega EL8	298	Kyle drivers in compact floorstander gives more bass but less coherence	17,72,20	●	86	8	55	●	122	
Rega ELA Mk II	498	Pretty and smooth, the latest incarnation has a superb midband and excellent communicative skills	30,80,20	●	87	8	40	●	1578 139	
Rega XEL	1,040	Looks and sounds great: balance bright but even, with delightful coherence and timing	20,82,30	●	89	6	40	●	1083 132	
Rehdeko RK 115a	1,700	Single-driver system has limited bandwidth and obvious coloration, but wondrous dynamic and temporal coherence	34,42,27	●	95	8	55	●	167	
Revolver Beretta	100	Great bass for the price, a bit crude further up	19,35,22	●	87	8	45	●	1790 156	
Revolver Colt	139	A good all-rounder, if a little bland, and excellent value for money	30,19,22	●	88	6	48	●	1407 148	
Revolver 250	250	A nice price for a floorstander, but over-bright sound balance has potentially fatiguing consequences	21,85,5,25	●	87	8	22	●	170	
Revolver 260	350	A no-nonsense presenter of rock with plenty of dynamics, not too refined (tested in Sessions)	21,5,91,6,30	●	89	6	40	●	1731 154	
RMS Revelation Series 1	1,300	Innovative metal-box compact with integral port/stand – clean with good timing but very laid-back balance	20,99,24	●	81	8	22	●	167	
Rogers LS1	149	High grade miniature	20,20,30	●	87	6	●	●	1408 143	
Rogers dB101	250	Style par excellence, this shapely sub-miniature is fast and agile but lightweight and forward: great voices; lacks bass	20,26,20	●	88	6	45	●	170	
Rogers Studio 3	499	Pricey LS3/5A derived miniature, excitingly coherent if lightweight, can't go loud	19,30,16	●	85	8	30	●	118	
Rogers LS3/5A	699	Clever AB1 stand/subwoofer helps the classic 3/5A monitor give its best shot	19,31,17	●	82	12	45	●	1354 143	
Rogers Studio 5	699	Luxury finish bookshelf-size model has genuine monitoring capabilities	25,25,48	●	89	8	40	●	1556 138	
Rogers Studio 7	899	Latest variation on classic BBC-monitor theme has beautifully voiced, laid-back sound	30,63,30	●	90	8	30	●	122	
Rogers C6/28	1,399	Large floorstander with carbon-fibre tweeter. Sounds much better than it looks, especially through the midband	25,103,29	●	88	6	20	●	167	
Roksan ROKone	595	Large stand-mount is musically very communicative if a little coloured	21,45,33	●	89	6	30	●	1834 160	
Roksan Ojan 3 Black	795	Squat, stylish and black, great bass extension and somewhat uneven balance	28,76,46	●	88	8	20	●	1082 132	
Roksan OJ3X Black	995	Innovative low-line, 2-way floorstander with decoupled tweeter; great bass and fine dynamic range	28,79,46	●	84	8	20	●	167	
Royd Minstrel	275	Not much wellie or loudness but fine coherence and timing, a bit bright	18,69,12	●	86	8	30	●	1167 135	
Royd Doublet	485	Great value compact floorstander; lively and very informative, if a little uneven	18,93,19	●	90	4	28	●	1835 160	
Royd The Sorcerer	595	Extremely musical and communicative speaker that's fun to listen to. Aesthetics could use improving though	20,31,18	●	86	8	35	●	139	
Royd Abbot	695	Dynamic and fine transient qualities are hampered by a rather coloured mid-forward balance	20,81,30	●	90	8	43	●	118	
Ruark Sceptre	600	Graceful 'traditional' cabinetwork with classy veneer and shiny gilt fixings, hampered by a rather wayward sound balance	21,38,31	●	87	8	40	●	174	
Ruark Talisman II	749	Less ideologically committed than some, strength lies in fine all-round coherence	23,84,32	●	88	8	30	●	118	
Ruark Crusader	1,600	Elegant luxury 3-way with wonderfully even-handed, if rather laid-back balance	24,94,31	●	85	6	22	●	167	
Ruark Equinox	1,849	The primary strength of this speaker is its ability to remove itself from the picture	25,88,34	●	88	6	45	●	1227 140	
SD Acoustics SD3R	649	New SD3 has the agility and charm of a quality miniature, good bass and low sensitivity	20,38,30	●	87	8	25	●	106	
SD Acoustics SD5	1,549	Bass suspect but forward midband is delightfully smooth. Has ribbon tweeter	20,110,30	●	88	8	30	●	1081 132	
SD Acoustics SD1E	2,995	Two-part design with four rear firing bass drivers that has vibrancy, transparency and energy (Statements)	25,120,40	●	90	6	25	●	159	
Sequence 400	330	Clever hang-on-wall panel is well voiced, though bass isn't too great	25,100,7	●	86	8	45	●	164	
Shahinian Arc	1,875	Occasionally wonderful small floorstanding omni; bright but coherent and revealing	35,69,25	●	88	6	24	●	110	
Silverado Raider	695	Beautifully built audiophile compact, neutral if bright, tough work for amps	20,40,25	●	83	3	30	●	164	
Sonus Faber Concerto	1,098	Beautiful Italian bookshelf design with superb midrange but limited loudness capabilities (Statements)	22,5,36,34	●	87	8	45	●	165	
Spendor 2020	399	Utilising an oval drive unit in a stylish cabinet, this is a neutral design with AV inclinations (tested in Sessions)	18,34,26	●	87	8	●	●	1756 155	
Spendor 2030	599	Discreet slimline floorstander with delicately coherent, laid-back sound	18,89,27	●	87	8	30	●	1836 160	
Tangent Monitor 5	80	An uneven performer best suited to small rooms and generous volume levels	17,5,27,18	●	83	8	55	●	169	
Tangent Monitor 9	150	Budget floorstander that can motor when the music demands with a solid bass but occasionally raw treble	19,5,75,5,22,5	●	90	6	45	●	165	
Tannoy Mercury M2	140	A fine all-rounder with big box and deep bass for the price; could be sweeter and tighter	20,5,38,28	●	87	8	25	●	169	
Tannoy Mercury M3	230	Good-looking fine value floorstander is very neutral and evenhanded, with fine midband but weak dynamics and drive	20,5,87,28	●	87	7	20	●	170	
Tannoy D300	1,000	Gorgeous-looking compact floorstander. And a fine all-round performer too	16-24,85,23	●	87	6	26	●	167	
Tannoy D500	1,999	Plenty of muscle and stereo, but short of poise and delicacy. Hard work for amps	31,93,34	●	91	6	20	●	1355 143	
Tannoy Westminster TW	6,600	These awesome horn-loaded speakers are remarkably controlled and impressive	large	●	99	8	38	●	●	C93
TDL RTL2	280	Spacious, weighty and enveloping sound if you can accept the laid-back balance	20,73,22	●	87	8	25	●	1412 148	
TDL RTL3	400	Bargain-price floorstander has rich, heavy and bright sound with a good scale	20,90,37	●	90	8	25	●	126	
TDL RTL3SE	450	A touch of boom n' tizz might be to taste, but this is a lot of box for the money, with floor-shaking bass capabilities	20,91,39	●	89	6	22	●	174	
TDL T-Line 3	700	Plenty of bass and treble, but broad midband is rather repressed	20,97,38	●	86	8	20	●	164	
TDL Studio 1m	899	Transmission line helps bring the best from metal cone driver	23,77,34	●	86	8	20	●	118	
Technics SB-M20	200	Well-balanced with natural perspectives and fine midband coherence, but bass is a bit boxy and uneven	20,32,23	●	70	8	50	●	1413 148	
Technics SB-M500	450	This model offers a clean, open sound, offset by midbass, heavy balance and low sensitivity	25,78,37	●	100	8	25	●	1666 152	
Totem Model One	1,195	Utterly delightful but exasperatingly expensive luxury miniature sets the benchmark for its size	17,31,23	●	87	4	28	●	122	
Vandersteen 2Ce	1,395	Elegant staggered baffle contributes to a refreshing freedom from boxiness	41,101,27	●	88	7	23	●	86	
Wharfedale Diamond 7.2	140	A good-hearted, lively and up-front performer that's a little lacking in subtlety and smoothness	19,29,5,23	●	88	4	45	●	169	
Wharfedale Valds 400	199	Goes very loud with a minimum of amplification, but the sound is ve y thick and uneven, with a heavy upper bass	25,80,26	●	91	8	30	●	1414 148	
Wharfedale Valds 500	299	Offering a large version of events these rock boxes can move plenty of air, albeit not as subtly as alternatives	25,108,26,5	●	91	4	40	●	1758 155	
Wharfedale MFM-3	350	Smooth broad midband gives fine voice rendition; bass could be better	22,89,28	●	87	8	40	●	164	


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HI-FI LOUDSPEAKERS (CONTINUED)

Product	Price(£)	Comments	FLOORSTANDER	SEMI-ACTIVITY(OB/W)	IMPEDANCE(O)	WASS FROM (Rz)	FACTS	ISSUE NUMBER
Wilson benesch ACT1	6,400	Stylish, technically advanced and sonically as clean as a whistle, this is truly a high-end loudspeaker (Statements)	23,108,37	●	89	6	40	1852 162
ZYP AI	199	Cute metal cased micro-miniature is quite coloured but great fun	14,22,12	●	88	8	30	110
SUBWOOFERS								
B&W AS6	500	Good material value with a fair amount of low bass from 100W active design	45,51,45,5	●			30	1736 154
Celestion CS135	139	Compact hideaway passive sub lacks deep bass for high sensitivity speakers	52,19,34	●	86	8	45	128
Jamo SW600	530	Has some neat styling touches and remote control but deep bass is limited (active)	38,41,53	●			30	1736 154
KEF Model 30B	500	Commendably discreet with good sense of timing but limited extension (active)	38,5,37,43	●			45	1736 154
KEF AV1	2,500	Works well, looks great, shakes the windows but costs a lot and is bulky	56,43,50	●			45	128
Living Voice RW24	11,500	The only horn subwoofer on the UK market brings new meaning to low frequency energy, speed and resolution	146,84,59	●	104	8	40	163
M&K VX-7B	450	Baby of a big range this active design delivers deep, plenteous bass albeit lacking in transparency	35,25,37	●			40	1736 154
Rogers AB1	549	Subwoofer-cum-stand designed as partner for LS3/5a or similar miniatures	19,57,16	●	82	8	●	1354 143



Stands & Supports

Hi-fi furniture is more important than you might imagine. The effect it can have on the sound of your system is far from subtle. Hi-fi furniture can be split up into two categories — equipment supports and loudspeaker stands. It is not entirely clear what makes a great equipment support, but some are definitely more equal than others. There's a variety of approaches and materials used, including particle board, glass and

all manner of steel tube and section. Speaker stands come in a variety of sizes and styles to suit different models. Use dealer or manufacturer recommendations to narrow down the choice, but as a rule you want the tweeter at ear height.

Best buy

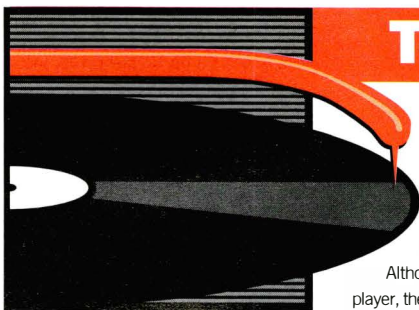
Recommended

KEY	HEIGHT (CM):	TOP PLATE SIZE (CM):	FILLABLE:	lead to increase mass, which affects sound.	WELDED:	NUMBER OF SHELVES:	rack or support.	SHELF TYPE:	FACTSBACK NUMBER:	copy of the review. Use the contents page to find the Factsback information page.	ISSUE NUMBER:
	Height of stand or equipment shelf.	Dimensions of top plate on speaker stand or equipment support.	Some speaker stands can be filled with sand and/or		The better stands and supports are welded rather than bolted together.	The amount of tiers on an equipment		Material that shelves are made of on an equipment rack. Wood generally means MDF.	The Factsback reference for ordering a fax		The issue of Hi-Fi Choice in which the original review appeared.

STANDS & SUPPORTS

Product	Price(£)	Comments	FLOORSTANDER	SEMI-ACTIVITY(OB/W)	IMPEDANCE(O)	WASS FROM (Rz)	FACTS	ISSUE NUMBER
Equipment Supports								
Audiophile Furniture Base	480	Easy to set up, well-ordered sound	40				4	Wood 1633 151
Custom Design Classic Four	270	Glass-shelved stand with octagonal wooden uprights with upward facing spikes isolating the top shelf, adjustable shelf height	81	46,37			4	Glass 166
Fi-Rax R4	250	Lively, exuberant sound, slightly weak bass					5	Glass 1633 151
Frameworks H500/H175	404	Two-shelf stand and isolation platform combo in tubular steel that made a spectacular impression on audition	70	52,34	●		3	Glass 166
Mana Acoustics Ref. Table	350	King of its type, angle iron, chipboard and glass combined to make a significant difference to sound quality					1	Glass 147
Mana 5 Tier Sound Table	600	Infinitely upgradeable. Persuasive and thrilling glass and angle iron design that adds speed and bandwidth to components upon it					5	Glass 1633 151
Opt mum Int 2000 OPT490	350	25kg stand with shelves sandwiched between variable height tubular uprights. Sounds smooth and relaxed with sturdy bass	50	60,40			4	Glass 166
Quadraspire Q4	200	Easy to live with, and tonally neutral					4	MDF 1633 151
Sound Organisation Z038	130	Too lively and lacking order – but cheap	50	84,40	●		5	Wood 1633 151
Sound Organisation Z560	150	A mix of welded and bolted members gives good structural integrity. While performance is not up with the best, it's great value	90	46,36	●		5	Wood 166
Soundstyle Select 6105	280	Respectable sonics, structurally solid and smart					5	Glass 1633 151
Soundstyle Finewoods W105	320	Veneered shelves clamped between tubular uprights that delivers with classical material	82	48,27			4	Wood 166
Stands Unique Sound Tower	249	Wooden uprights combine with glass shelves to provide a fresh, forward sound, but bass could be quicker	81	72,42			5	Glass 1633 151
Target B5	175	Free of colorations, fine grip and good value					5	Wood 1633 151
Speaker Stands								
Alphason NC I	45	Filled single-column design without threaded spike holes that's appropriate for non-critical applications	40-60	16,16	●			1373 146
Alphason NCII	80	Tall, slim and elegant, though sound and value are unexceptional	40-60	17,17	●			159
Alphason Titan	120	Excels in the midband and allows voices to come across in a detailed and expressive fashion	40-60	16,16	●	●		1373 146
Apollo AZ6	80	Fine engineering value, but sound unexceptional and top-plate small	66	15,13	●	●		159
Atacama BD21	55	Good-looking and good value but doesn't match the SE24's sound quality	56	15,17	●			159
Atacama SE24	70	Stands out from the budget crowd because of the consistency and overall quality of the performance	61	19,5,17	●	●		1373 146
AVF Tower 400	35	Ridiculously cheap and much better than no stand at all	54	17,20	●			159
Ixos Deadrock 903	50	Smooth and tonally even but short on definition. Deep bass is soft which doesn't help timing	60					1373 146
Gale Reference 600	60	Smooth sounding with impressive bass well suited to less civilised speakers					●	1373 146
Kudos S50	100	Better sound than the budget stands, particularly at the bottom end	60	15,21	●			159
Kudos S100	270	The best all-round stand around... Probably...	63	15,21	●			159
Mana Soundframes	125	For use under floorstanders and equipment racks, these make music effortless and natural, can be stacked for greater effect	5		●			1373 146
Partington New Merlin	60	Although light in weight, the stand's performance seemed remarkably muscular but musical rendering lacked a little precision			●	●		1373 146
Partington Discovery	80	The depth and substance of the presentation truly added to the convincing nature of the system's portrayal			●	●		1373 146
Partington Trophy	100	Four-column design with damped top and base plates, sound is tight and cogent with smoothly integrated detail			●	●		1373 146
Revolver RS1	70	A good blend of performance and appearance for the price	53	18,18	●			159
RMS/Stands Unique Vivus	550	Pricely carbon fibres give ultra-clean sound with exceptional voices	50	N/A				159
Soundstyle 124	100	Big, shiny and solid, with fine midband projection	65	17,16	●			159
Stands Unique HP	220	Real wood disguises high performance tuned technology	59	22,23				159
Target R1	280	Truly high-mass four-pillar design with superb weight and speed, giving music delicious attack and outstanding imagery	53	15,21	●	●		1373 146
Target TR60	68	Lively, dynamic midrange and detailed treble from a less-than audiophile oriented twin column design	60	15,15	●			1373 146

Tonearms



Turntables at the cheaper end of the market tend to be supplied with a matching tonearm, and often include a 'starter' cartridge. Still better quality is found at higher prices among the separate motor units and tonearms. Careful partnering and set-up is essential for these components.

Although the turntable is the most important part of a record player, the tonearm is the second most important, and the quality of

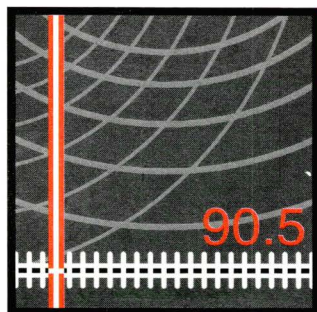
its construction and design have a significant bearing on sound quality. There are three basic types of arms listed in the key and each has its strengths, but pivoted designs are the most popular, for reasons both practical and economical.

B Best buy **R** Recommended

KEY	
EFFECTIVE MASS: This relates to cartridge compliance. Generally high mass arms are suitable for low compliance cartridges and vice versa.	PARALLEL TRACKING: An arm which allows the cartridge to track the disc in a linear fashion.
PIVOTED: Arms which allow the cartridge to describe an arc as they traverse the record.	UNI-PIVOT: Pivoted arms with a bearing that allows movement in two planes.
EFFECTIVE LENGTH (cm): Length of arm from bearing to cartridge mounting.	ADJUSTABLE HEIGHT: Important for accurate cartridge set-up.
FACTSBACK NUMBER: The reference for ordering a fax copy of the review. Use the contents page to find the Factsback.	ISSUE NUMBER: The issue of <i>Hi-Fi Choice</i> in which the original review appeared.

TONEARMS

Product	Price(£)	Comments	PARALLEL TRACKING	EFFECTIVE MASS	EFFECTIVE LENGTH (cm)	ADJUSTABLE HEIGHT	UNI-PIVOT	FACTSBACK NUMBER	ISSUE NUMBER
A Alphason HR100S	490	S-shaped arm sounds smooth, but nevertheless reproduces transients with fine attack	Medium	●	229	●	●	86	
A Kuzma Stogi Ref	1,000	Large, solid and well-made arm, gives exceptionally clear sound with just a hint of brightness	High	●		●	●	79	
A Linn Ekos	1,297	Superb, state-of-the-art design which builds significantly on predecessor's strengths	Medium	●	229	●	●	6	
A Moth Arm	95	The ultimate budget arm? Refined, sweet, detailed and natural	Low	●	237	●	●	60	
A Rega RB300	139	Despite its modest price it sets exceptional standards and could be used on many high-end turntables	Low	●	237	●	●	60	
A Roksan Tabriz Basic	275	Targeted at the Xerxes, this is a good alternative to the Rega arm in many cases – a touch bright though	Low	●	240	●	●	91	
A SME Series 300-309	657	Beautifully made and finished; fully adjustable and a highly neutral performer	Low	●	238	●	●	79	
A SME Series IV	936	Superb engineering and finish with a finely balanced sound, impressive stereo focus and low coloration	Low	●	233	●	●	60	
A SME Series V	1,391	Excellent in all respects, this arm arguably sets the standards for pivoted arms, regardless of price	Low	●	233	●	●	60	



Tuners

The radio medium operates at a lower profile than TV, but in areas outside pop music the BBC service is the envy of the world. Live concerts rival all other sources from a hi-fi perspective. Though tuners might seem something of a hi-fi afterthought, the task they discharge is far from simple, since it requires the skills of RF (reception) and audio (signal processing) engineering. The importance of the former will depend on reception conditions, but a high-quality aerial system is

well worth having. Tuners come in two basic types. Analogue models tune gradually and can have analogue or digital displays; they are often preferred for sound quality. Digital tuners offer convenient automatic tune facilities and pre-set memories.

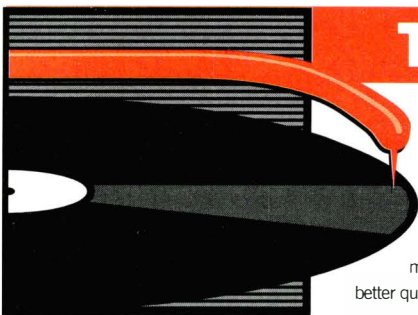
B Best buy **R** Recommended

KEY	
WAVEBANDS: Only the FM (VHF) bands give stereo hi-fi sound, though AM (MW & LW) are useful for receiving certain transmissions in the UK.	APPLICATIONS: Basically RDS tuners can identify and display the name of the radio station being received, but they offer a variety of other features as well.
PRESETS: Number of station frequencies that can be stored.	REMOTE CONTROL: Couch-potato friendly.
RDS: (radio data system) was originally designed for in-car	SIGNAL STRENGTH METER: Indicates strength of signal from aerial, useful for aligning your 'twig' during installation
	ROTARY TUNING KNOB: The ergonomically attractive approach to dial-surfing.
	FACTSBACK NUMBER: The Factsback reference for ordering a fax copy of the review. Use the contents page to find the Factsback information page.
	ISSUE NUMBER: The issue of <i>Hi-Fi Choice</i> in which the original review appeared.

Tuners

Product	Price(£)	Comments	WAVEBANDS	PRESETS	RDS	ROTARY TUNING KNOB	SIGNAL STRENGTH METER	FACTSBACK NUMBER	ISSUE NUMBER
A AMC T7	130	Performance adequate but price is sharp, especially with remote control. Some hum	FM, M	30	●	●	●	166	
A Arcam Alpha 7	230	Indifferent RF performance but a touch of audiophile sound quality with clean, strong signals	FM, M, L	24		●	●	166	
Arcam Delta 280	399	Fine sound quality marred by mild synthesiser whine; RF performance only average. Remote £60 extra	FM	20		●	●	120	
B Audiolab 8000T	750	Unusual combination of fine sound quality and RF performance (inc AM), and superb ergonomics	FM, M, L	39	●	●	●	1254	142
A Denon TU-260L	120	Careful minimalist design promises a surprisingly open and vivacious sound	FM, M, L	20		●	●	93	
A Denon TU-425RD	200	A fine all-rounder with advanced RDS, good RF performance and decent sound. Remote extra	FM, M	40	●	●	●	166	
B Harman/Kardon TU950	200	Bulky but effective, delivering fine RF performance and good sound for the price	FM, M, L	30	●	●	●	166	
A Linn Kremlin	2,600	Controversially good sound at a very high price. The reviewer's saving up but you should check it out for yourself	FM	80		●	●	1254	142
A Magnum Dynalab FT101	825	Although fairly expensive given its minimum set of facilities, its excellent sound provided ample compensation	FM			●	●	72	
A Micromega Tuner	700	Has digital output but even without the Micromega DAC, this provides exceptional sound quality. Looks good too	FM	39		●	●	1810	157
A Mission Cyrus FM7	400	Open, generous soundstaging gives the music plenty of foundation, if a touch shut-in at the top	FM	29		●	●	1254	142
A Musical Fidelity E50	300	Sounds involving if coloured and with a subjectively larger-than-life presentation	FM	20		●	●	1810	157
A Naim NATO1	1,645	There may be better sounding tuners in the world, but we have yet to hear one	FM			●	●	1254	142
A Pioneer F-504RDS	250	Cable-friendly with advanced RDS and excellent RF performance, slightly disappointing sound	FM, M	40	●	●	●	166	
A Ronyl RT-935AX	160	Good ergonomics and sound quality at a realistic price, but limited features and RF selectivity	FM, M	20		●	●	166	
A Sony ST-SA3ES	250	Clean, lean presentation but needs a quality aerial to perform at its best	FM, M, L	30	●	●	●	1810	157
A Technics ST-GT350L	150	Decent RF performance is offset by sound quality more typical of a mini/midi system	FM, M, L	30		●	●	1254	142
A Thorens TRT2000	450	Not exactly neutral sounding, it nonetheless makes listening fun	FM, M	59	●	●	●	1810	157

Turntables



Specialist turntables are what high fidelity sound is all about. CD players may offer silent backgrounds and flat frequency responses, but they can't match the dynamics and superlative timing that serious turntable users take for granted. Turntables at the cheaper end of the market tend to be supplied with a matching tonearm, and often include a 'starter' cartridge. Still better quality is found at higher prices among the separate motor units

and tonearms. Careful partnering and set-up is essential for these components, but many so-called 'sympathetic' combinations exist.

Because turntables are mechanical devices that are designed to retrieve modulations as small as a micron, engineering quality is of paramount importance. It is also the reason why turntables cost as much as they do, and require high quality support systems.



KEY

MANUAL: You do it all: put the needle on the record and take it off.
AUTO: The record player does it all.
SEMI-AUTO: You share the work: you put it on, it takes it off.
SPEEDS: In RPM to correspond with your platters.
SUSPENDED SUBCHASSIS: Sprung suspension to minimise

structural interference.
EXTERNAL PSU: Outboard power supply; generally it indicates high quality.
SUPPLIED WITH ARM: Many turntables require a separate arm to be fitted; if not, this tells you so.

SUPPLIED WITH CARTRIDGE: Most turntables do not come supplied with a needle.
FACTSBACK NUMBER: The Factsback reference for ordering a fax copy of the review. Use the contents page to find the Factsback information page.

ISSUE NUMBER: The issue of *Hi-Fi Choice* in which the original review appeared.

TURNTABLES

Product	Price (£)	Comments	MANUAL	AUTO	SEMI-AUTO	SPEEDS	SUSPENDED SUBCHASSIS	EXTERNAL ELECTRONIC PSU	SUPPLIED WITH CARTRIDGE	SUPPLIED WITH ARM	FACTSBACK NUMBER	ISSUE NUMBER	
Cleaudio Reference	2,500	Opulent beast tested with Souther TQ-1 arm. Tends to gloss over detail with a fizzy character but is quite bold	●			33/45					1328	144	
DNM Rota 2	4,800	Tonally slightly bleached, but extracts detail like few others. Works well on own table	●			33/45					1328	144	
Dual 505-4 UK	200	Consistent sounding and well isolated turntable. It is slightly lacking in oomph		●		33/45						103	
Kuzma Stabi/PS	1,200	(Tested with Stogi Reference) Solid oak plinth; sound is very clear, detailed and extended	●			33/45						91	
Linn LP12 Basik	1,050	Trails the full LP12 significantly, but pace, rhythm, timing etc still top rank	●			33						103	
Linn LP12 Lingo	1,750	The classic reference is improved by the Lingo, but charming character remains	●			33/45						91	
Michell Gyrodec	765	Sweet and natural-sounding player, well matched to Rega RB300 arm	●			33/45						55	
Moth Kanoot	329	Rather coarse-sounding deck that requires decent isolation and comes with a Rega RB300 arm	●			33/45				●		164	
Notts Analogue Spacedeck/Arm	1,125	No frills, just a first-rate, outstandingly natural-sounding deck that will last forever	●			33/45						159	
Pink Triangle Anniversary	1,980	Possibly the most detailed, clear and neutral-sounding deck around. Likeness to master tape is uncanny	●			33/45						91	
Pro-ject 2	299	Remarkably effective at the price with decent timing and a generally well defined sound	●			33/45						164	
Pro-ject 6/Sumiko	699	Don't think of this as a mid-price deck with a good arm, but as a scaled-down Oracle Delphi – it's that good	●			33/45						138	
Rega Planar 2	214	A remarkable product at the price, surprisingly articulate and confident	●			33/45						48	
Rega Planar 3	274	The '3 sounds musical in a balanced and coherent manner, needs decent isolation and suffers a little pitch instability	●			33/45						164	
Rega Planar 9	1,598	Featuring the RB900 arm and a ceramic plinth, this deck puts Rega into contention with the best decks available	●			33/45						151	
Reson RS1	675	Supplied set-up and ready-tuned, this unconventional deck is packed with mid-band detail	●			33/45						159	
Rivelin Eclipse	1,100	Tested with SME 309. Tends to simplify things and add a slightly ragged edge to the proceedings	●			33/45						1328	144
Roksan Radius 3/Tabriz zi	890	Elegant-looking turntable with a tidy, ordered sound. Bright and breezy if a shade lightweight	●			33/45						159	
SME Model 20A	4,631	Supplied with Series V arm. Engineered to last a lifetime, giving excellent stereo and detail retrieval	●			33/45/78						118	
Thorens TD166 VI/UK/RB	300	Refined and solid sound with well-focused imagery; suitable for use with good MM and budget MC cartridges	●			33/45						103	
Thorens TD2001	700	Balances convenience and sound well, but deck lacks detail and bass could be better controlled			●	33/45						159	
Well Tempered Record Player	1,800	Intriguing and challenging. Musically it is not ideal, but has a limp quality and a lack of artificiality that sets standards	●			33/45						1180	136
Wilson-benesch T/Act 2 arm	3,249	Carbon fibre is extensively used in this neutral and well-resolved turntable with its fabulous unipivot tonearm (Statements)	●			33/45						1775	156

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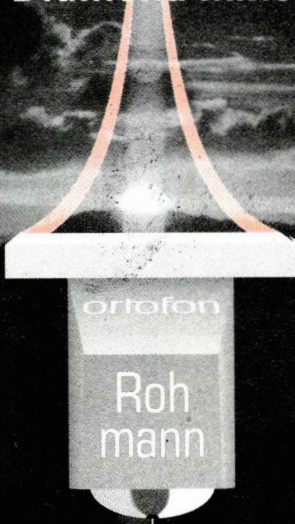
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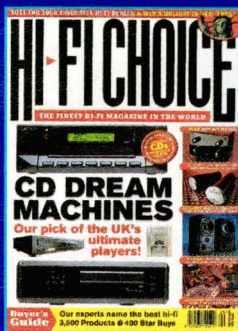
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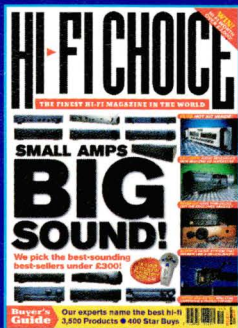
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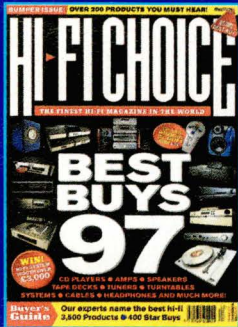
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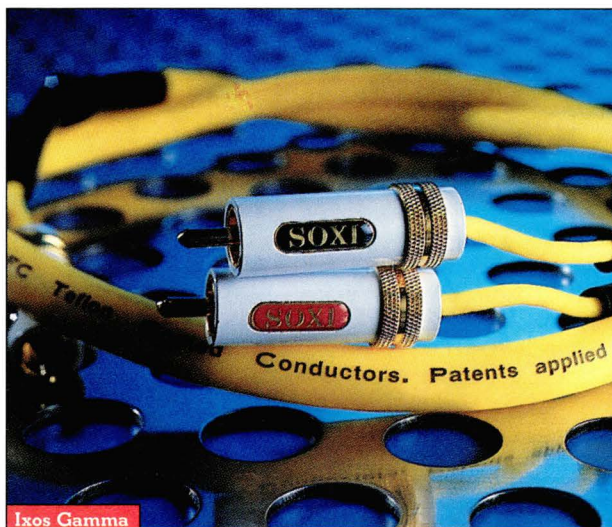
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NEXT MONTH'S ISSUE

- MID-PRICE CD PLAYERS
- INTERCONNECT CABLES
- STUNNING HIGH-END KIT



Ixos Gamma

GET YOURSELF CONNECTED

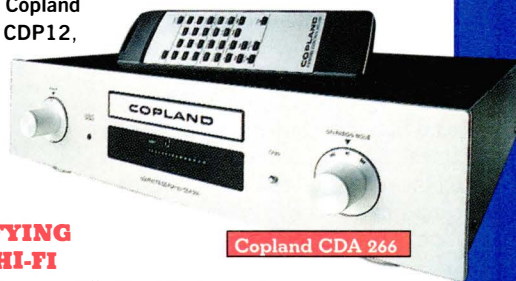
Interconnect cables are every bit as important as the hi-fi components they link together. To keep you abreast of the ultimate umbilicals, we'll be testing wires in the £25-£150 price range from Audioquest, Goertz, QED, van den Hul and more.

STATEMENTS

After many years of cogitation, eclectic amp specialist DNM has unveiled the revised version of its legendary pre/power combination. This idiosyncratic duo is said to offer a "stunning" level of resolution — we'll put that claim to the test. Plus: Theta's latest integrated CD player, Miles. One for trumpet aficionados, no doubt!

MID-PRICED CD PLAYERS

This month's test sorted the mid-priced amplifier men from the boys — in March we'll move up a link in the chain to correspondingly-priced CD players. Among the hot new models on test are the Arcam Alpha 8SE, Copland CDA 266, Cymbol CDP12, Myrrad MCD 500, Pioneer PDS-06, Sony XA-20ES, and XTC CDP-1.



Copland CDA 266

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Ultra Is it really worth forking out £1,300 for a single-box CD player? David Vivian thinks he's found one worthy of such an accolade.

Vivian Scene

Time to face one of the tougher, most recurrent questions in hi-fi. Is it worth handing over serious wedge for a one-box CD player? The arguments against are fairly well rehearsed. But I'll run through them anyway.

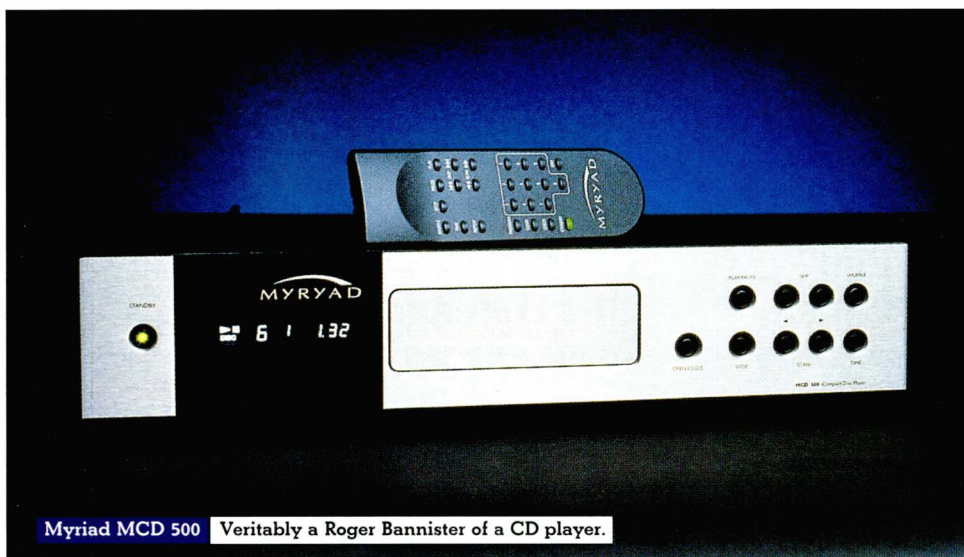
Cheap players get the latest DAC technology, but tend to be bereft of fancy circuit topology, trick power supplies and lavish build quality. No bad thing, some say. Simple is often sweetest. Indeed, you could level an accusation at makers of four-figure players, that they're merely gilding the lily, piling on unnecessary sophistication to justify an inflated price. This implies that there is nothing inherently 'better' about expensive one-box players. The march of progress rules; they can't help but be wrong-footed.

It's obvious, really. The value-for-money superstars — machines like the £450 Pioneer PD-S505 Precision and £400 Marantz CD-63II KI-Signature — are judiciously-tweaked editions of cheap players, not stripped-down versions of high-enders. The tastiest technology is to be found at the volume end of the market.

Hmmm. Smarter, surely, to splash out on a battleship transport that will last a dozen years (let's say the £900 TEAC P-700); and partner it, initially, with a modestly-priced but talented DAC such as the Musical Fidelity X-ACT, at £130. This should sound good but, more importantly, it will have the potential to sound much better as the years roll by, and you hook up more expensive or simply newer magic boxes. Reap the benefits of galloping technology by upgrading the DAC, not the whole shebang.

Fair enough, but the TEAC/MF project isn't a pretty combo. Pricy one-boxers are usually easier on the eyes, and should have the build quality and engineering integrity to hack it as a first-rate transport when time comes to spruce up their sound with a more capable DAC. Which brings us back to the original question. Just how good does a £1,300 one-box CD player sound?

Glad you asked — I've got one parked over here. The Myryad MCD 500, a development of the well-liked and respected MCD 100 at roughly twice the price, is a classic product for the man or woman who wants that little bit more and can afford it. I'm



Myryad MCD 500 Veritably a Roger Bannister of a CD player.

reminded of a line from the film *Pulp Fiction* — "you'll know where that extra money went". First, as you can see, the MCD 500 is very pretty. Second, it weighs a ton, especially on the left-hand side where all the heavy-duty power supply stuff is. And third, its spec is dressed to impress.

Briefly, it claims to have 20-bit dual-differential Delta-Sigma converters, pure-Class-A discrete output-stage circuitry, two separate toroidal transformers (one for the transport, the other for the audio electronics) and no less than 13 separate regulated supplies serving different functions within the circuit. Components for the hell of it? Apparently not. According to Myryad's Chris Evans, it's all done to keep the audio signal pure and uncorrupted by crosstalk as it passes through the player. The DAC is controlled, allegedly, by a hand-picked, high-quality, crystal-controlled master-clock, fed from its own dedicated low-noise power supply. The clock also controls the transport.

There's much more to it than that, but if I started talking about ultra-high-speed DIFET op amps and double complementary cross-coupled configurations, you'd probably nod off. I'm yawning already.

Lord of the dance?

So, £1,300 poorer, you slip your favourite CD into the MCD 500's chunky disc tray, thumb the "play" button on the ergonomically rounded (but, it has to be said, disappointingly lightweight) remote and... huh. And... mmmm. Maybe even an ironic...

But let me put it this way. I'd be surprised if you ripped open your shirt and did a Michael Flatley around the sofa. Sparks don't fly, the earth doesn't move, rays of sunlight don't spear through the clouds.

If you've just been listening to a Pioneer PD-S505 Precision, as I had, the Myryad will sound a bit dull and uninvolved. What can I say? If you're a Myryad dealer, keep these two products away from each other if it's the MCD 500 you want to sell. Over 100 metres, the Pioneer murders it.

Different story if you want to run the pair over a marathon. That's how long it takes. The Myryad, you see, is a slow-blooming CD player. Sounds a bit up-tight to begin with, but the longer you listen, the more you appreciate its beauty, its sheer musicality. It has drive but it isn't all leading edge. It has soundstage depth, but it isn't exaggerated. It has speed but it doesn't sound lean. And it has warmth, but it's a rich harmonic warmth, not merely a mellow balance.

After a while you can hear what the Pioneer's up to, and suss its technique. With the Myryad it's harder. You find yourself listening more to the music and less to the mechanics of its reproduction.

I believe this is called long-term satisfaction. And, of course, if you can design a CD player which gives you that, questions of hard-nosed value and upgrading regimes aren't so pressing. If it seems a little premature to be thinking about your last CD player, take a listen to the MCD500. A long one. ▲

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Stratford Hi Fi 01789 414533

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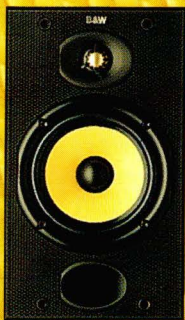
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