

HI-FI CHOICE

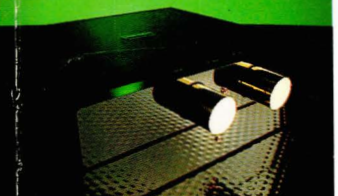
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We were honoured to be voted **Hi-Fi Magazine of the Year** at the CETI Industry Awards, Harrogate, May 1996.

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



Editor's Notebook



PHOTO BY SEAN ROODWICH

Stan Vincent ponders the mystical parallels to be drawn between hi-fi and boats. Plus: save a life for quality sound today!

Farad Azima, Chief Executive of Verity Group plc, has been busy. Verity's Mission, Cyrus, Quad, Roksan and Wharfedale brands are all active in their own right, and before Christmas a new Verity division, New Transducers Ltd, unveiled radical new *nxt* panel speakers, as reported in *HFC* 160.



Mission 50 sets sail.

Mr Azima, however, is not one to rest on his laurels. At this year's London International Boat Show, the talk was of the Mission 50, a brand-new 14.2-metre yacht from — you guessed it — Farad's latest company, Mission Yachts. Sea-dogs were already intrigued by this new name out among the Oysters and Moodies. But what really blew them away was the way Farad's boat combines the creature comforts of a luxury yacht with the performance of an ocean racer.

As Farad explained in an interview with *The Guardian* newspaper: "Sixties sports cars like the MGs had to be pretty rough-and-ready to get the performance. But the generation of sports cars made in the 1980s were comfortable and fast."

That quote encapsulates Farad's new yacht — at £400,000 it'll on my fantasy shopping list for a while — but I believe it also holds true for hi-fi. Back in the old days microprocessor control, surface-mount components and industrial design were the stuff of dreams, so hi-fi equipment was ugly and user-unfriendly, even if it did sound 'the business'. Nowadays, premium hi-fi products aimed at a mainstream audience are judged on looks, ease of use and convenience — good performance is a pre-requisite. Hi-fi industry, take note...

Another yard of hi-fi, please...

Just after Christmas I heard John Clare, Group Chief Executive of Dixons, interviewed on Radio 4's *Today* programme. And guess what dominated pre-Xmas sales? Yup, Santa delivered multimedia computers and Sony PlayStations by the sleigh-load. It doesn't surprise me. Sony seems to have sold more PlayStations in the past couple of years than they have shifted CD players since 1983. The PlayStation

just happens to be the hottest newcomer in a market of commodities. Alas, commodities are easy come, easy go, and people still confuse 'real' hi-fi with packaged audio.

For companies active in 'real' hi-fi, there are two responses to this crisis. The first, "if you can't beat 'em, join 'em", seems to be Mission's rationale for the launch of its MM7 mini system (Update, p. 6). Alternatively, one can pull up the drawbridge, fill the moat with sharks and defend *Castle Hi-Fi* to the hilt. Enter the new *Hi-Fi Separates Campaign*.

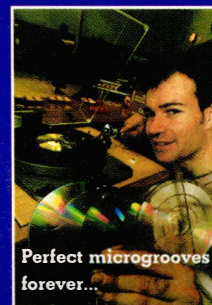
Spiritual successor to the *Real Hi-Fi Campaign*, HFSC is distinguished by a "midi systems are cack" stance. Headline-grabbing stuff... but dangerous. Disenfranchise the thousands of midi owners who are ripe for conversion to 'real' hi-fi, and you'll never win over the teenagers (and overgrown teenagers) who buy PlayStations. Among them must be myriad music fans who've swapped Ravel for *Ridge Racer* because of frustration with a midi's mediocre sound. But the best way to win their hearts is not to infer they were schmucks for buying midi in the first place; instead, I would recommend convincing them by demonstration and persuasion.

Readers of *Hi-Fi Choice*, it's up to you!

Stan Vincent

Meanwhile in the twilight zone...

Here's a guy who's squaring the analogue/digital debate by cutting grooves into a CD. Steve Mann, proprietor of a company called *Silvernote*, rigged up a 1930s MMS record-cutting lathe as an attraction at a recent record fair, turning CDs into latterday 78s. You can catch Steve's lathe in action again at *Wolsey Hall* in Cheshunt, Herts, on Sunday 23 March. Call ☎ (01992) 620905 for details.



Perfect microgrooves forever...



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Tall ones, short ones, fat ones, thin ones... we test all the best speakers around.



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Is the Rega Planar 3 still the Silver Dream Machine of turntables?

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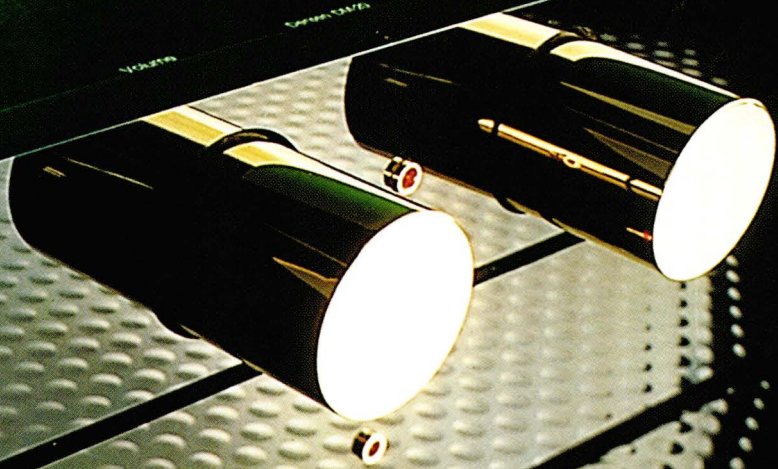
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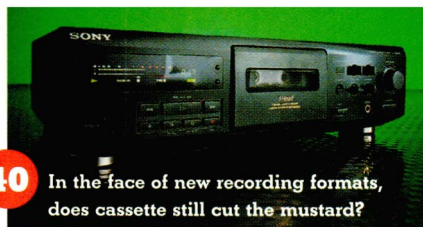
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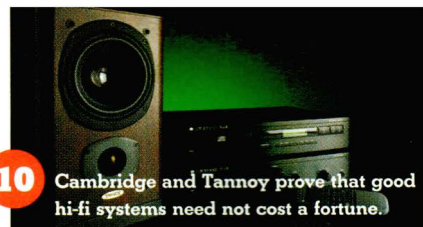
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Gold! Always believe in your soul... or this conrad-johnson CD/DAC combo.





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Richard Black takes the podium to play you the platters that matter on the wheels of steel, pop pickers. Our very own Dave Doubledecks tests three budget vinyl spinners with aspirations to greatness.

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WIN!WIN!WIN!

£3,000 worth of Mission AV and hi-fi gear must be won this month!



PRODUCTS FEATURED IN THIS ISSUE

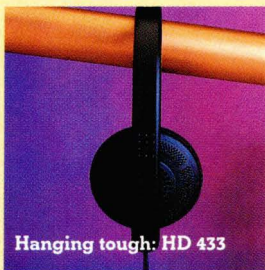
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Update

CATCH UP ON ALL THE LATEST PRODUCTS AND NEWS, WITH FRONT-LINE REPORTS FROM HI-FI CHOICE'S ROVING REPORTERS

In brief

EMI Records is celebrating its centenary year by rereleasing 20 classic rock albums, with original artwork, as 180g vinyl pressings. The list includes seminal albums such as The Beach Boys' *Pet Sounds*, Pink Floyd's *Dark Side Of The Moon*, and Frank Sinatra's *Songs For Swinging Lovers*. Availability is strictly limited as there will be only one pressing run of this edition. Each album is expected to cost £15, and will only be available in a small number of specialist outfits such as North London dealership Grahams Hi-Fi. ☎ (0171) 226 5500.



Hanging tough: HD 433

Sennheiser has a new £20 headphone: the HD 433. This open-back design is tough enough to withstand the rigours of personal stereo use, sporting a 3m OFC lead and soft-foam replaceable earpads. ☎ (01494) 551551

Goldring has taken on the distribution of Pope Music audiophile CDs, a label that uses its own 'Dynamic Fidelity' recording technique to capture artists such as Lori Lieberman and Mark Gornstein with the Russian Symphony Orchestra. ☎ (01284) 701101

Glasgow has a new hi-fi store. Loud & Clear is at 520 St Vincent St, Finnieston, and carries brands that include Exposure, Trichord and Marantz. ☎ (0141) 221 0221

Mission's special delivery

Mission's new Special Products division has revealed its first fruits: a mini system and car hi-fi range. Due in April is a range of professional sound reinforcement equipment.

The remote-controlled MM7 mini system has separate CD player, amp, cassette deck and tuner, and comes with a pair of Mission 731i speakers. At £699.99 it is intended as a 'second system' for existing Mission separates owners.

'Audiophile' features include a moving-magnet phono input, Dolby B, C and HX Pro on the cassette deck, plus a tone-control defeat function for more purist performance. The electronics had design input from Mission's UK engineers, but are manufactured in South Korea.

Mission's car hi-fi range comprises two loudspeaker



Mission's mini marvel...

packages, a sub-woofer, and an amplifier. The speakers are 130mm (£199) or 170mm (£249) in diameter, making them direct replacements for most line-fit units. Each package incorporates an Aerogel cone with high-temperature voice coil, and a one-inch silk tweeter.

The £199 subwoofer is a coupled-cavity band-pass design, which handles both channels. Its two 125mm doped paper drive units are claimed to operate down to 38Hz (-6dB). Nominal impedance is four Ohms.

Like the Cyrus III hi-fi amp, the Mission car amplifier (£349) has a precision-cast aluminium alloy housing that serves as a heatsink. The 'audiophile-quality' amp claims a 50W RMS output (may be bridged to 100W) using surface-mount devices.

Mission ☎ (01480) 451777

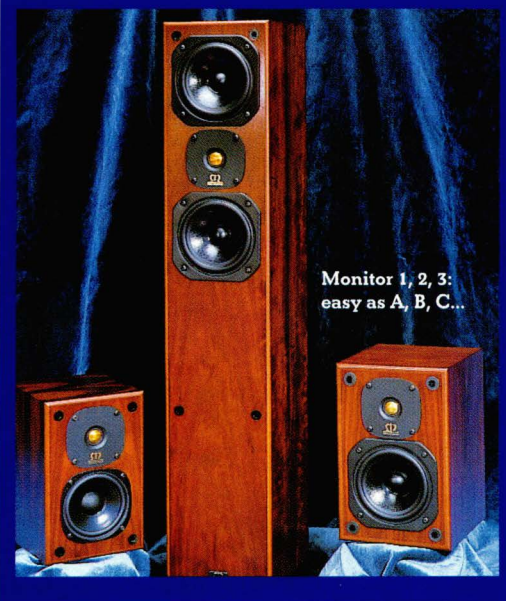
<http://www.mission-cyrus.com>



Monitor Audio's new entry

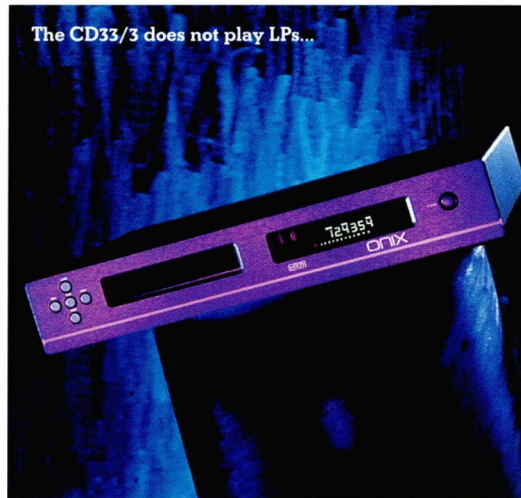
Monitor Audio has announced 'entry-level' Monitor Series speakers, comprising the bookshelf-sized Monitors 1 (£249.99) and 2 (£299.99), plus the floor-standing Monitor 3 (£399.99). Drive units, all MA's own, include the legendary Gold-Dome tweeter and profiled doped-paper-cone mid/bass driver. Cabinets are made from 12mm balanced veneered MDF, and the hard-wired crossover has an 'audiophile' capacitor and air-core inductor.

Monitor Audio ☎ (01223) 242898



Monitor 1, 2, 3:
easy as A, B, C...

The CD33/3 does not play LPs...



Onix: black to the future

Newhaven's Onix Electronics is the latest company to take up the Pacific Microsonic HDCD challenge. The new Onix CD33/3 is one of the first British CD players to use the HDCD decoder. The CD33/3 is typical of the Onix clan with its solid power supply — it uses a large toroidal transformer internally. This player also sports a redesigned front-panel layout to enable easier access to function buttons. It also has a more legible display and a remote control that will control forthcoming Onix amps. The price of the new Onix CD33/3 is £1,100.

Onix Electronics ☎ (01273) 517358

Meridian's audiophile attack

In 1997 Meridian Audio will stake its claim to the future of music and AV, with a host of new products. Highlights include the 586 DVD player pictured, and a revised version of the acclaimed 565 AV processor.

However most revolutionary are the 800 Reference CD Machine and 861 Reference Surround-Sound Decoder, due on sale later this year. The latter are notable for a 'card-based' approach normally found only in professional equipment, which is intended to make them totally future-proof. Even control microprocessors are card-mounted, meaning that any aspect of a unit's performance can be upgraded. At present 14 cards are available for both 800 and 861, with three specific to the 800.

The 800 CD Machine is a new breed of component that is as much computer as hi-fi. It uses high-speed, high-integrity CD-ROM drives, from which musical data is read more quickly than necessary to reduce jitter, using a proprietary RAM and DSP-based system. The 800 is designed to interface seamlessly with computer hard disk drives, while up to two CD drives may be installed internally. Plug-in cards include tuner and preamp sections.

The 861 extends the all-embracing processing of Meridian's acclaimed 565 surround decoder into a card-based modular concept. It will handle more than eight surround channels (in theory up to 64) and accept 12 dig-

ital and 12 analogue audio inputs. Broadcast-grade video switching is available for monitors, projectors etc.

Prices are expected to be £1,800-£2,000 for the 586 DVD player, £2,900 for the 565 upgrade, £3,000 for the 800 CD Machine and £7,000 for the 861 Reference Surround-Sound Processor.

Meridian Audio ☎ (01480) 434334



Music and movies for the high-end fraternity!

In brief

Nordost, the company behind Flatline speaker cable, has a new budget cable called Octava, which costs £2.99/m and features eight OFC cables in a flat blue PVC dielectric. Also new is a cable treatment called ECO 3, which costs £29.99 and claims to improve sound quality by eliminating the stray static charges that are alleged to build up in a cable's insulation. ☎ (01352) 730251

Scotch has a new Laser Lens Cleaner (£11.99) — which offers voice instructions and a stereo set-up feature — and a Head Cleaner/Demagnetiser (£4.99) for cassette decks.

Musical Images has been expanding its Covent Garden store with new dem rooms and a new store at 14 Monmouth St. The latter will specialise in entry level AV and hi-fi kit. ☎ (0171) 497 1346

The Hi-Fi Show 97 (12th - 14th September) is expanding to take in a second venue, namely the Excelsior Hotel, which is just across the road from show's traditional venue, Heathrow's Ramada Hotel.

MESA Engineering, the US company behind the Boogie range of guitar amps, has announced a follow up to its Baron tube amp. The forthcoming Tigris is an integrated design that's expected to retail for around £2,000. It features switchable tube or solid-state rectification, and pushes out 35 Watts of full-on push-pull pentode power. ☎ +1 (707) 778-9505



An inverted Excel VX.

Goldring has a new range-topping moving coil cartridge, the £495 Excel VX. Changes from the standard Excel include a PH diamond tip for improved tracking, and fine silver wire for the coils. ☎ (01284) 701101

Sound Organisation's Z560 is a new £150 five-shelf equipment rack, with adjustable shelves and two uprights sitting on spikes. It's finished in piano black and measures 90cm high. ☎ (01284) 701101

JVC's bantam blaster



JVC has announced a companion for the EISA-Award-winning UX1000 'ultra-micro' system. The new £329.99 UX-2000R adds a three-band, 30-preset RDS-EON tuner to the UX-1000's facility roster, and its speakers have cherry wood-effect cabinet.

Like its sibling the UX-2000R measures just 165mm tall and 140mm wide, and key features include a new 'smart' bass boost system and clock/timer with snooze, plus audiophile touches such as selected capacitors and a four-layer, edge-wound OFC voice-coil in the speakers. JVC ☎ (0181) 450 3282

ATC's Pro plus

ATC's new SCM PRO range of speakers is professional in design and cosmetics and does without grilles and wood finishes. Intended to be at home either in the studio or the parlour, the range uses new fourth order crossovers in the active speakers and ATC's own all-new Super Linear Magnet system. This is said to solve the eddy current distortions that ATC claims still plague moving coil loudspeakers.

There are two passive and three active loudspeakers in the range. The passive speakers are the £928 SCM10 PRO mini-monitor and £1,465 SCM20SL PRO. Active speakers start with the £5,500 SCM50A PRO and rise to the £7,300 SCM150A PRO.

Loudspeaker Technology Ltd ☎ (01285) 760561



SCM PRO series: studio quality for the home.

Don't bust the budget with Denon

Denon's latest hi-fi duo keeps the budget hi-fi market buoyant. The £149.99 DCD-425 CD player uses Denon's Advanced Multilevel Noise-shaping DAC with eight times oversampling digital filter, and high precision de-emphasis. Add this to a mid-mount transport mechanism and you have a CD player to watch.

There's also a new RDS receiver. The £199.99 DRA-275RD is remotely controllable with Denon's own Signal Level Divided Construction. It punches out 40 Watts into its two front channels. It also has a limited video capacity with two video inputs/outputs, but has no on-board AV processor. Denon at Hayden Labs ☎ (01753) 888447



DCD-425: Advanced multi-level noise-shaping for £150.

A Solid foundation

The Solutions range is a new family of designer speakers from Solid. Comprising the S100 front/rear monitor (£129.95/pr), C100 dialogue speaker (£129.95) and PB100 active subwoofer (£349.95), this outfit is designed for home cinema and music replay.

An AV package will be available with two pairs of monitors, the dialogue and subwoofer for £699.95.

Styled by Morton G Warren, this range claims to blend B&W engineering expertise with ergonomic touches such as a choice of coloured grilles on the S100. Measuring 258mm high, this incorporates a 25mm tweeter and 100mm bass/mid; the C100 is 420mm wide and packs two 100mm bass/mids with 25mm tweeter; while the PB100 sports a 250mm long-throw LF driver powered by a 70W MOSFET amp. B&W ☎ (01903) 750750

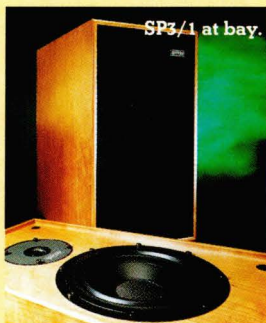


S100 sans grille.

In brief

← Ross has a new infra-red cordless headphone, namely the £34.99 RIR4200, which will operate at up to seven metres from the transmitter, and has an on-board volume control. ☎ (01204) 862026

Spendor Audio Systems has released a new stand mounting speaker, the SP3/1P. Based on



SP3/1 at bay.

the £795 SP3/1, the new speaker boasts greater sensitivity and bandwidth. ☎ (01323) 843474

Polk has introduced a floorstanding loudspeaker with built-in subwoofer. The £1,499.90 RT20P incorporates Dynamic Balance, Power Port and Speed Matching features descended from the company's high end SRT system. Finishes available are black ash, maple or light oak. Two new subwoofers are the PSW50 and the PSW150, priced at £349.90 and £499.90 respectively. ☎ (01727) 827311

Copland's new CD player, the £1,800 CDA 277 integrated, is based on a simplified form of the 288 reviewed in HFC 163. Due to an analogue circuit upgrade, the '288 now costs £2,200. ☎ (01444) 248873

MUSIC PLAYED IN THE HI-FI CHOICE OFFICE THIS MONTH...

The New Folk Sound Of

Terry Callier

Blood Sugar Sex Magik

Red Hot Chili Peppers

The Family Satchel

The Full Sentence

Pigeonhed

Audioweb Audioweb

Heroes David Bowie

A-Tom-Ic Jones Tom Jones

Pendulum Creedence

Clearwater Revival

Fantasia on a Theme by

Thomas Tallis, The Lark

Ascending Vaughan Williams

Endroducing DJ Shadow

Banana splits

The banana plug is dead. Long live the banana plug! The British Federation of Audio (BFA) has launched a speaker connector which aims to comply with an amended EU safety standard, BS EN60065, that has effectively banned the time-honoured 4mm plug.

The BFA Connector comprises an insulated, recessed female plug and male socket. Unlike a banana plug, the BFA plug's 6mm outer diameter is too large to be mistakenly inserted into a 5.5mm European mains socket.

Developed from an original concept by A&R Cambridge Ltd, manufacturers of Arcam hi-fi, the BFA Connector claims additional consumer benefits, specifically the prevention of accidental amplifier output short-circuits during speaker connection and a robust, 'silky precision feel'.

There will be a binding-post version for amplifiers and speakers, which will accommodate 6mm spade terminals. To encourage widespread adoption, a complete



They've gone bananas...

development pack is being offered to manufacturers for a nominal charge.

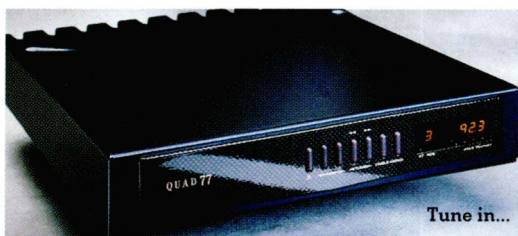
The BFA Connector joins alternative solutions to this problem proposed by Mission-Cyrus, Audio Partnership and QED. BFA ☎ (0171) 930 3206

Engine management



Orelle Hi-Fi has announced its flexible new CD-100e CD 'Engine'. The basic CD chassis can be configured with one of eleven combinations of digital and analogue circuit boards. There are two digital output options that turn the CD-100e into a dedicated CD transport: BNC coaxial and AT&T (ST) optical. There are also three analogue options turning the CD-100e into an integrated CD player: standard Class A board, up-market direct coupled Class A board and custom valve output board. Prices range from £549 for the BNC-only transport to £999 for the valve CD player.

Orelle ☎ 0181-810 9388



Quick Quad duo

Quad has expanded its successful 77 hi-fi range with two useful additions. Those seeking a big amplifier will find the 120 Watt Quad 707 power amplifier more than handy. This new £799.95 amp is based upon the popular but defunct 606 but with revised power supply and Quad bus link.

The £699.95 Quad 77 tuner is an RDS-equipped FM only model, equipped with an expensive discrete front end, with 25 presets and inputs for both aerial and cable feeds.

Both products are available in either the snazzy 'carbon' finish (illustrated) or the more sober original grey. Quad ☎ (01480) 433777



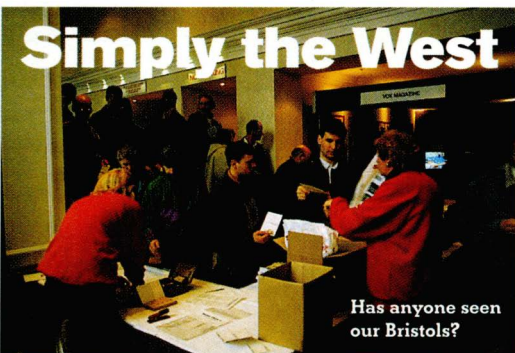
A preamp of Consequence

Thorens' £649.95 Consequence TTP2000F preamplifier has been upgraded and now offers remote-control operation, inaugurating a new range that will eventually include a 160W monoblok power amplifier and a dedicated power supply.

The entire preamplifier has been dramatically revised. The phono stage in particular has come in for massive rejigging. This new circuit contains internal DIL switches to precisely match the preamp impedance to the output of moving coil or moving magnet cartridges.

Other features are a computer-designed PCB with digitally-controlled switching. Metal foil capacitors replace electrolytics in the signal path.

Portfolio Marketing ☎ (01494) 890277



More than 100 hi-fi brands are forecast to appear at the Sound & Vision Bristol hi-fi show, due to be held at the Bristol Marriott Hotel, Lower Castle Street, from 21st-23rd February 1997.

Among numerous highlights will be the world launch of Marantz's PM66KI amplifier, and Ken Ishiwata will be there at the weekend to sign KI product certificates.

There'll also be premieres of Tannoy's £140 Mercury M2 speaker, Roksan's Caspian electronics, and Sennheiser's revolutionary new Lucas surround-sound headphones.

The show will be open from 11am-6pm the first day, 10am-6pm the second, and 10am-5pm the third. Don't miss it! ☎ (01222) 398201 or ☎ (01865) 742194.

THE BRISTOL SHOW

Vegas valuables

Despite much talk of home theatre and future disc formats, specialist hi-fi put in a strong showing at January's annual Consumer Electronic Show in Las Vegas writes *Ashley Norris, Editor of Home Entertainment magazine*. Alexis Park Hotel, housing the cream of the world's specialist audio companies, was one of the busiest venues. Inevitably, the forthcoming Digital Versatile Disc (DVD) hogged the limelight, with most of the major manufacturers displaying their debut players. In addition to Philips, Toshiba, Sony et al, a number of models from specialist audio companies were on show, including one from British digital guru, Meridian.

DVD players should reach the US stores at the end of March, with PAL-compatible British launches expected for September. Prices range from £600 for a budget RCA/Thomson player to \$1,000 for a top-of-the-range Sony model with built-in Dolby Digital AC-3 decoder. Sadly, there is still no agreement on what should constitute the new format's audio capabilities.

Several leading British hi-fi manufacturers used the show as a platform for products which should hit UK high streets by the end of this year. Cambridge-based Arcam displayed a six-disc CD changer pencilled-in for a late-summer launch, priced at around £550. It is also promising new home cinema products for later in the year.

Speaker manufacturer Mordaunt-Short gave the first outing to a black piano-finished centre-channel speaker designed to complement its Performance range, and expected to reach the UK in the late summer, sporting a £700 price tag. B&W also used the show to highlight its commitment to high-end audio, with the star attraction being the Signature 30 top-end floorstander, arriving in the UK in late spring at approximately £7,000. Also making its debut was the company's new range of Solid products, as reported on page 7.

Danish company Primare unveiled its 400 series of hi-fi separates, which are pencilled for UK launch in May. The range includes a £750 CD player, a £400 tuner, and a £700 amp with an output of 2x50 watts.

Other European companies at the show included: Celestion highlighting its recently-launched A series of speakers; Jamo, with its innovative Deco Arts model; and KEF with its RDM One and RDM Two bookshelf models.

While many of the US manufacturers seemed to place home theatre as their top priority, several still touted interesting hi-fi products. Carver showed the Lightstar Reference 2.0 power amp (\$2,495), and a \$500 tuner/pre-amp, the CT-24. Home cinema specialist Miller & Kreisel introduced an innovative bookshelf speaker, the \$500 75, which according to the manufacturer is at home in both hi-fi and AV applications. There was also a new THX-approved active sub, the \$1,800 MX-350THX.

Other highlights included the £1,000 ball-shaped aluminium Nucleus Minor speakers from Gallo Acoustics, which are as weird-looking as they sound, and the awesome CS6 reference speakers from Thiel, which come in at \$8,000 per pair and will be available in several European countries this summer, though sadly not the UK.

Although pride of place on their stands went to DVD players, Internet TVs and digital cameras, the major Japanese and American blue chip manufacturers found some space for new audio ranges.

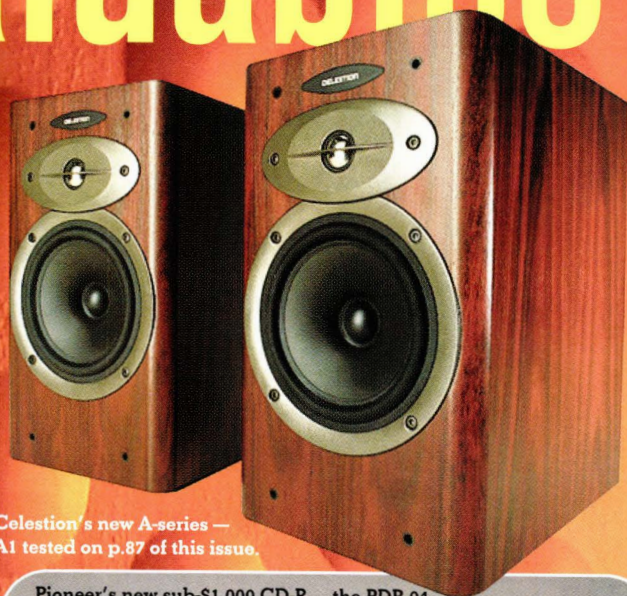
Pioneer became the first manufacturer to crash through the \$1,000 barrier for a CD recorder, with its PDR-04. It also displayed a range of CD multi-changers priced from \$225 to \$1,000. Onkyo re-affirmed its commitment to budget separates with inexpensive cassette decks and receivers, while NAD displayed a pair of amplifiers/receivers.

JBL and Harman/Kardon's stand was dominated by an impressive range of home cinema products, but tucked away in one corner was an innovative-looking hi-fi system, the Festival 60. Due in the UK later this year, the model boasts a CD player, tuner and cassette deck, and is accompanied by a very nifty remote-control handset. Its US price is \$1,200. A Dolby Pro-Logic version, the Festival 80 will also be available.

Of the Japanese companies, Technics displayed a pair of CD changers while Marantz majored on CD changers and tuners, although its top audio product for '97 is the 'affordable high-end' \$500 CD-67SE CD player.

For more details about the imminent arrival of DVD and the amazing range of AV products displayed at CES, check out the March issue of HFC's sister magazine, *Home Entertainment*.

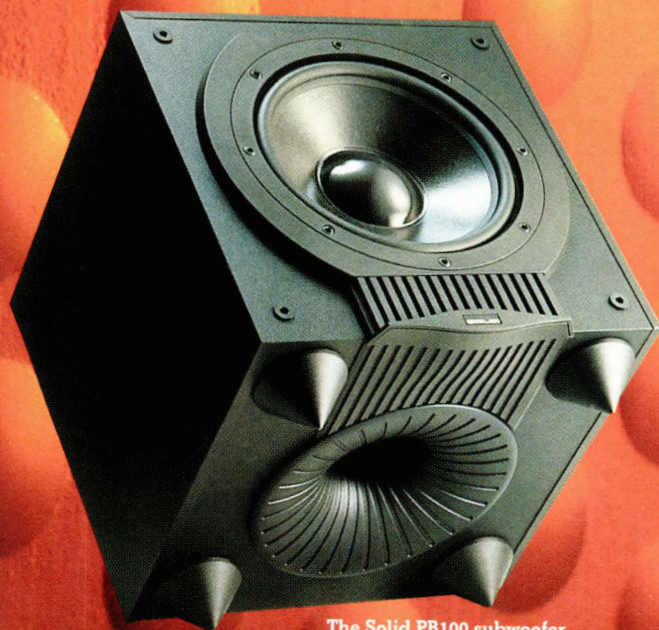
N.B. Where prices are given in US dollars, the product may not be available in the UK.



Celestion's new A-series — A1 tested on p.87 of this issue.



Pioneer's new sub-\$1,000 CD-R — the PDR-04.



The Solid PB100 subwoofer.



Carver's Lightstar Reference 2.0

Perfect partners

Alan Sircom auditions two systems that eschew fashion but demonstrate the high standards modern hi-fi can achieve.

This part of *Hi-Fi Choice* usually focuses on complete systems that are widely available in specialist dealerships across the land. However, this month is one of the welcome occasions when we encounter an unconventional combination of products that simply must be mentioned. Yet these systems are not typical High-Street hi-fi dealer fodder.

In both systems this month, the speakers could be classed as wild cards. Take the more expensive system on this page: there will be a number of dealers who stock both Arcam and Meridian, but it's unlikely that the same dealers will have the Triangle Antal speakers. Likewise, the Cambridge/Tannoy system is not one that could be purchased in any single UK dealership.

However, I make no apologies for this — these systems work together so well that they deserve to be reviewed, regardless of any politics among manufacturers, distributors and dealers up and down the country. You'll be able to hear the Cambridge and the

Meridian/Arcam combinations with a number of other speakers, as you will be able to hear the Triangle and Tannoy speakers in concert with different CD and amplifier combinations from those assembled here. But I hope that these systems may prove as satisfying to you as they did to me.

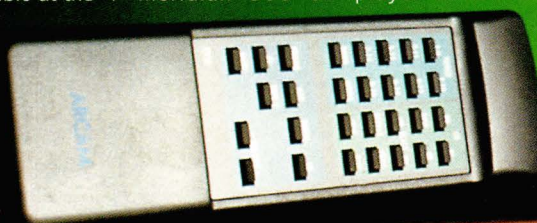
Strangely, although there is a massive jump in price between the two outfits, what fascinated me were the similarities between them. Of course, the budget system lacked the finesse and low-frequency extension of the more expensive system, but both kits combine musicality with accuracy in a manner I hitherto did not believe possible at the respective price points.

(Note: in the first system, the product reviewed is a Meridian 506, not 508 as photographed. You see, they look almost identical, and can easily slip into the wrong boxes when placed side by side... Our apologies for any confusion caused. — Ed)

SYSTEM A

Meridian 506 CD player.....£1,100.00
 Arcam Alpha 9 integrated amp .£499.90
 Arcam Alpha 9P power amps£399.90
 Triangle Antal speakers£1,099.00
 Total (exc. cables, stands, etc.)£3,098.80

Pluck any two British names out of the hi-fi manufacturers' hat, and there's a fair chance that Cambridgeshire addresses will crop up. Take this system, for example: the £1,100 Meridian 506 CD player hails from



Huntingdon, while the £500 Arcam Alpha 9 and £400 Alpha 9P amplifiers are made a little further down the road at Waterbeach.

It would have been easy to slot in a pair of Mission speakers to complete the River Cam triptych, but we played the European Union card and opted for a pair of £1,099 Triangle Antal speakers from France.

The 506 CD player is the latest 20-bit offering from Meridian. Apparently this is almost identical to the more upmarket 508 player, save for the latter's proprietary jitter-busting circuit. However, as the cheaper 506 also lacks the balanced XLR output

option, I'd also suspect a lesser output stage.

Logic dictates a pre-power amplifier combination should match a CD player at this price level. But instead, I opted for the Arcam Alpha 9 integrated amplifier. Based on the Delta 290 amp that preceded it, the Alpha 9 is a 70 Watt, remote-controlled, fully-featured integrated amplifier designed to be as upgradable as you wish. It has an input specifically for home cinema use, or the optional £50 moving-coil/moving-magnet phono stage adds a turntable input. I decided to bi-amp by adding the power amp version of the Alpha 9, ingeniously

called the Alpha 9P. Arcam recommends using the 9P to drive the bass and the Alpha 9 to drive the tweeters. But if you don't mind keeping the volume down, try experimenting with the tweeters in the power amplifier alone — the sound is more free and clear.

The Antal is typical of Triangle's distinctive designs. It's a highly-efficient, ported, three-way design, with the majority of the sound produced through the mid-range unit, leaving the metal-dome tweeter and bass unit to act as fill-ins. This contrasts with the allocation of work in most UK speaker designs, but can trace its lineage back into hi-fi history. I liked Triangle's curved, brown, front baffle against a black cabinet, highlighted with brass accessories.

This system has a definite power band. Although the speakers have a claimed efficiency in the early 90dBs, they are not easy to drive at high volumes, and can make the amplifier's protection circuit kick in if levels are cranked up for a while. At the same time, playing at very low levels fails to wake up the tweeter and woofer, yielding a mid-band-oriented sound.

Between these extremes it's possible to produce remarkably fluid sound — at volumes that 99 per cent of people will use 99 per cent of the time. In particular, vocals take on a close, detailed quality that makes you think the singer is stepping up to the speaker. This superb mid-band clarity is enhanced by a great sense of speed, perhaps thanks to a lack of truly deep bass.

Although the Meridian 506 sounds less cultured than the 508, you'd only realise by comparing the two side by side. In the context of this system, the 506's fundamental bass drive is tempered by the light touch of the speakers, while that slight rough-diamond quality adds an appealing earthiness.

If you seek a system that digs deep into dub reggae, look elsewhere. If, instead, you crave deftly-handled rhythms, quicksilver sprightliness and midband to die for, you should go out of your way to hear this package in action.





SYSTEM B	
Cambridge Audio CD4SE	
CD player.....	£199.95
Cambridge Audio A1mk3	
integrated amp.....	£119.95
Tannoy Profile Plus	
632 speakers.....	£199.90
Total (exc. cables, stands, etc.)....	£519.80

Yet more Cambridge equipment — but this time from that little-known Cambridge in mainland China. Two of the three components in this system come from Audio Partnership, the manufacturing offshoot of Richer Sounds. They bear the name (and logo) of Cambridge Audio, that well-loved Cambridgeshire-based manufacturer of CD players and amplifiers from the '80s. The original company has been pushing up the daisies for some time now, but AP bought the name a while back — and you can't keep a good brand down, can you?

When it come to brand images, only the likes of Coca-Cola, McDonald's and Hoover can compare with Tannoy. Although the name is synonymous with PA equipment, the strength of the brand is a significant advantage unavailable to any other hi-fi manufacturer this side of Sony or Bose.

Of course, all this branding would be

cambridge audio

COMPACT
disc
DIGITAL AUDIO

POWER

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POWER

BASS

completely pointless if there was no product to back it up. Fortunately, both companies and all three products pass the test with flying colours. Cambridge Audio's £199.95 CD4SE has just returned from last month's *Hi-Fi Choice* group test with a shiny new Best Buy swing-tag. It may be a bit of a clunker compared to the slickest of Sony and Marantz players, but its heart is in the right place — with the music.

The all-new £119.95 Cambridge Audio A1mk3 integrated amplifier is a redesign of the highly-rated A1. The new 30 Watt version sports a restyled front panel and new graphics, while under the bonnet is a new close-wound, low-flux toroidal transformer, improved volume and balance pots, and newly-designed output stage, which is claimed to give higher current output.

Tannoy's brand-new £199.95 Profile Plus 632 is also one to watch. Decked out in either a Black Ash or Rosewood vinyl-wrap cabinet, the 632's 150mm polypropylene bass cone and 25mm metal-domed tweeter are sited in the inverted position also favoured by Mission. The speakers come with removable grilles and magnetically-attached tweeter guards — if you can, remove both as the difference in sound quality is enormous. Also, I'd recommend using dedicated Tannoy stands because of the difference in size between the front and rear baffles. Finally, as the speaker is rear-

ported, give the speaker at least half a metre of rear breathing space for best results.

Right from the start, this was the kind of system that restores your faith in the abilities of true budget hi-fi. Back in the days when CD was still too fresh to be an option, a humble system comprising a Rega Planar 2 turntable, Audio Technica AT95E cartridge, NAD 3020 amplifier and a pair of Wharfedale Diamond 2 speakers could decimate any stack or rack system with ease — and you'd still have enough change to buy a bag of chips on the way home, too. Today, the advantages of decent budget hi-fi have become harder to judge against the obvious charms of the convenience-led mini and midi system — unless you have something like this system to counter with.

So, what is so good about it? Simply that it has that ability to convey a musical message, whatever that message may be, with such ease that you keep coming back for more. Analyse an individual aspect of the performance, from the imagery to dynamics, from detail to coloration, and the answer is generally 'good — but not outstanding'. The combination of these properties, however, is what transforms the whole system into something really special.

There's a bouncy, exuberant character to this trio that outweighs any minor failings. This infectious sense of musical appreciation makes any review tough, as you find

yourself losing time to the music. The fact that this can be done for £520 is little short of amazing today.

The only real shortcoming to this system is that it will never be available in one store: Richer Sounds alone stock Cambridge Audio products, while Tannoy have decided not to place the 632 in Richer's stores. So, you'll just have to trust me when I say that — for a shade over £500 without stands, cables or tables — this is one system that's seriously hard to beat. ▲

CONCLUSION

No questions about it: while our back was turned, hi-fi just got a lot better. Whether you pay a little over £500 — or nearly seven times that amount — for a system, these two outfits show that the current state of the hi-fi art appears considerably more musical than it has been for many a year.

In fairness, one expects high quality when paying upwards of £3,500 for a CD-based system, but the levels of fluidity and grace provided by this system are stunning. As for that staggering budget system, it's simply faultless at the price.

MANUFACTURER CONTACTS

Arcam	(01223) 203203
Cambridge Audio	(0171) 586 5977
Meridian	(01480) 434334
Tannoy	(01236) 420199
Triangle Antal	(01868) 748632



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Ear Waxings

Jason Kennedy gets familiar with a subtle but extremely rewarding new loudspeaker, which provides consummate performance at an affordable price.

In *Statements* last month I waxed lyrical about the mighty Living Voice Airscouts and their partnering sub-woofer, the RW24. This month I'd like to introduce a somewhat more modest offering from the Living Voice stable. The Auditorium, as it's been christened rather sensibly, is a neat little two-way floorstander that retails for a virtually real-world £1,300. What's unusual about this speaker is the attention to detail that's gone into it, which explains the relatively high price for a box of this size, and the unusually fine sound quality that can be achieved with it.

Starting at the bottom, the plinth is a box-section steel hoop with nuts welded on its underside to accept large gauge spikes. This plinth is supplied with the speaker and is optionally sand fillable, although I'm informed that this has only marginal sonic advantage, and you'll need a pretty fine funnel to get the stuff in through the 6mm spike-holes.

The real wood-veneered reflex cabinet is available in beech (pictured), cherry and walnut, and is constructed from high-resin-content chipboard — a material that, though a little cheaper than the virtually ubiquitous MDF, is more difficult to use from a cabinet-making point of view. It is, however, stiffer than MDF, particularly when veneered inside and out as it is here.

The drive units are all of Vifa origin and comprise a pair of six-and-a-half inch doped-paper woofers and a one-inch silk-dome tweeter. The latter unit is rebated into the baffle while the larger ones aren't, but all three are held in place by threaded inserts and allen bolts for maximum solidity. These drivers are connected with LC-OFC cable to the most finicky part of the speaker, its crossover. The networks on these speakers are as carefully designed as those you'd find on speakers costing two or three times the price. The air-cored chokes are hand-wound to 0.001 per cent tolerance and oriented to negate cross-talk; the high-frequency capacitors are selected electrolytics tolerated to the same degree. These boards are isolated from the cabinet and resin-damped to minimise mechanically-induced distortion. As I say, it's a labour of love normally lavished on speakers with extreme price tags!



The Auditorium may look pretty civilised, but it can throw down the jam with the best of 'em.

The result is an 18kg loudspeaker that stands nearly a metre high but is only 21.5cm wide and 28.5cm deep; sensitivity is quoted at an impressive 94dB per Watt, which means that even the single-ended fraternity (with its single-figure outputs) gets a look in.

I've been using the Auditoriums (or should that be Auditoria?) for two or three months now, and they've transduced the offerings of a variety of amplifiers, including an original Marantz Model 7/8B combo and the Densens reviewed in

Statements this month. They replaced the Wilson benesch speakers in my system, which were a very hard act to follow, especially for something costing nearly a fifth of the price. However, once the Auditoriums had run in the transition was remarkably painless, and after a while I started to notice their strengths rather than the areas where they failed to live up to their predecessors reputation.

I had expected these speakers to be hot on tone and dynamics, since these parameters embody the company's hi-fi philosophy. I wasn't disappointed. Vocals were superb, instrumental timbre was beautifully resolved and any life that could be found in the music was there to walk into. What I hadn't expected was the nimbleness. The fine sense of timing, especially in the bass where so many speakers fall down, was quite a surprise. I suspect it has something to do with the unusual driver configuration, since it's easier for two medium-sized drivers to reach into the depths without losing the beat, than it is for one large one. This approach is used in the majority of bass-guitar cabs these days, but is not popular with speaker builders (Mission's 753 being an obvious exception).

The Auditoriums have decent bass extension, and need about 18 inches of free space behind to breathe deep and free. I suspect this is the area in which the cabinet material makes its mark — you don't often get bass of this quality from a speaker of this driveability and price. In fact, I've not encountered this combination; usually this degree of bass resolution costs more money or less sensitivity.

All in all this 'entry level' Living Voice loudspeaker is an extremely effective means of extracting maximum music from your software collection. It's one of those rare products whose limitations you can ignore.

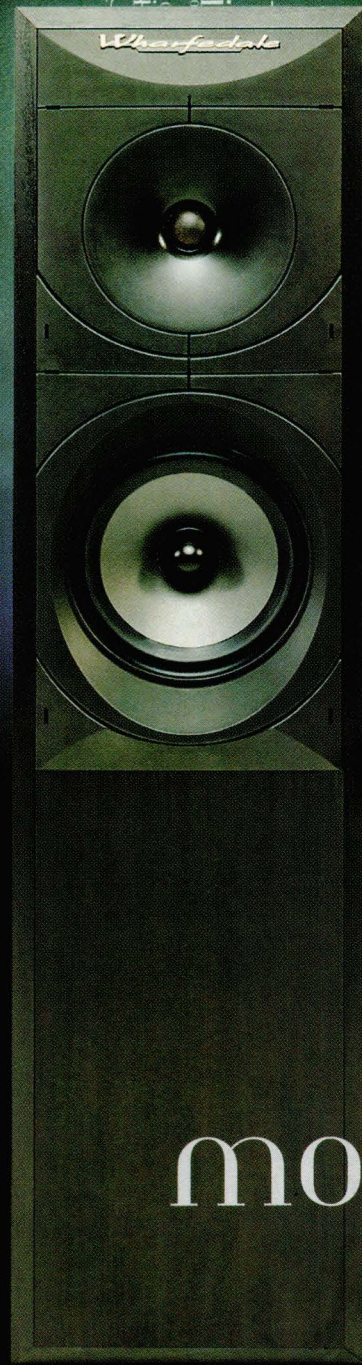
Cake and eat it

Richard Black got so fervent about the Marantz CD-17 KI Sig last month that I had to give it a quick listen before they whipped it away. Very interesting: this thing boogies and images. I'd expected the former but the third dimension caught me off guard. I wonder if they'll lend me the £4,000 CD-23?

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The Jimmy Hughes Experience

Jimmy Hughes wonders what's going on when vinyl-style crackling starts to become apparent on his shiny new Spice Girls CD...

I may be mistaken. I may be totally wrong. But in all the years I've been interested in hi-fi I can't recall a single soul who liked hearing LP surface noise. I can't ever remember anyone buying an LP with blessedly quiet surfaces, and then taking it back angrily to the shop to demand a copy with lots of crackle and pop because the absence of noise interfered with their enjoyment of the music.

No, surface noise was always a bane, and many of us spent hundreds if not thousands of pounds on superlative record playing equipment in order to achieve superior results from vinyl. To hear music emanate from a silent background was our goal, the holy grail of hi-fi, until CD finally made that silence a reality.

I still play vinyl regularly and do so because (at very best) LPs sound great. But surface noise doesn't enhance the pleasure, never has done, never will.

So you can imagine my surprise when a friend's nine-year-old daughter introduced me to the delights of the Spice Girls' 1996 hit *Say You'll Be There* on a CD single, and it was prefaced by a few seconds of LP surface noise! How bizarre — I thought the whole point of CD was its inky black silent background...

With the UK launch of CD in 1983, pressing plants were extremely scarce, leading to a worldwide software shortage. In the early days it was a mark of popularity and artistic clout to have material out on both CD and LP. But as the '80s drew to a close the situation reversed; only acts with the widest appeal had material released on both formats.

As LP releases grew more and more scarce, vinyl became cool again. It became Right On to say how much better vinyl sounded, so it's understandable when a 'class act' like the Spice Girls want to bolster their cred with a vinyl connection.

But was it the snap, crackle and pop that gave vinyl its appeal? Surely it was the extra dimensionality and sense of separation that made vinyl special. That's why I still play LPs, not because I like surface noise. A decent 12-inch 45rpm single can sound absolutely mind-blowing on a good system, beating CD hands down. That, surely, was vinyl's appeal.

Ironically, the sound on *Say You'll Be There* is pop CD at its worst: compressed, thick, one-dimensional. No amount of dubbed-on fake surface noise can alter that, but (puts on broad Yorkshire accent), you try telling kids that today...

Seriously upmarket

One of the drawbacks of being NAD and having an enviable reputation for making excellent budget amps is that perhaps punters won't take your scrumptious upmarket offerings as seriously as they ought to. The

control and input selection is possible using the supplied handset, and tone controls are also provided, but these can be bypassed for purist purposes.

Unusually, the 317's designers have arranged things so that all unused inputs are short-circuited, which should help improve sound quality by reducing pathways into the amp for RFI (radio frequency interference). It should also reduce the adverse effects on sound quality when more than one source is connected to an amp at any one time, though few appreciate this particular detail.

The 317 is pretty heavy, and much of its weight can be traced to a large 'Holmgren' toroid mains transformer. This is a special patented design with reduced sensitivity to DC mains noise that makes conventional toroids buzz and hum mechanically.

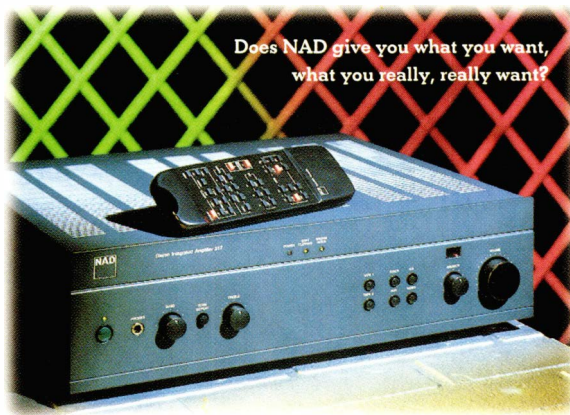
NAD has given the 317 a fairly high level of reservoir capacitance in the power supply (almost 30,000µf), but interestingly there are small capacitors rather than two massive jam jars. The reasoning is that the small caps have better specifications (lower equivalent series resistance and less self inductance) which give a faster, more dynamic sound.

The 317 certainly sounds 'big', but not in the sense of being slow or fat. It's extremely solid and clean, so that voices and instruments are placed firmly in space. The result is a smooth and controlled sound that's beautifully transparent and unobtrusive.

It's not quite as velvety-liquid as some expensive valve designs, yet in many ways its no-nonsense firmness and stability is ample recompense. A further option for those with an eye on future upgrades is the ability to bridge the power amp to increase its output power. You'd then add a 214 power amp (also bridged) to complete the package.

This not only gives considerably more output power (from 2x80W in stereo mode to 240W mono bridged), but also a bigger, more dynamic sound. It's an avenue I'd like to try for myself in the future, though to be honest, the 317 on its own is so accomplished, adding power might be too much of a good thing, it barely seems necessary.

NAD ☎ (0181) 343 3240 



logical upgrade might be a bigger/better NAD when the time comes to replace an ageing 3020, but will the eye be seduced by an Audiolab or suchlike instead?

I don't know. But what I do know is the new NAD 317 integrated is a frisky amplifier offering superlative performance. It's extremely powerful, and not just on paper; the sound has masses of weight and presence giving the impression of ample reserves.

I was immediately taken by the 317's solidity and control, not to mention its clarity and cleanliness. Tonally the sound was smooth, well-balanced, and natural, yet very detailed and articulate too, with plenty of bite and presence. Dynamic separation was excellent, giving instruments and voices plenty of space around them.

Essentially the 317 consists of a NAD 214 power amp with a preamp section added. A phono stage is not included, but there's a choice of six line-level inputs, including tape monitor. Remote volume

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Paul Miller's Oasis of Sanity

In the wake of last month's wide-ranging MiniDisc supplement, Paul Miller explains how the new format stores so much information in so little space.

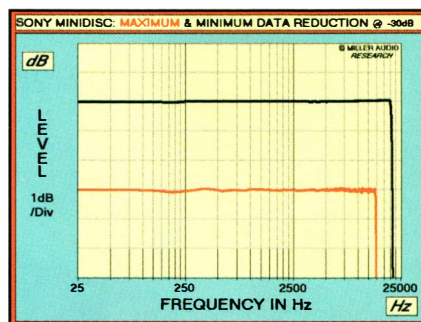
Was your fancy tickled by *Hi-Fi Choice's* MiniDisc supplement last month? If so, then this month's *Oasis* will have you in stitches as we discuss how the MD format manages to squeeze up to 74 minutes of digital music where, with the traditional CD format, there would only be room for 15 minutes. The answer lies in ATRAC or Adaptive Transform Acoustic Coding, a mixture of data reduction and data compression developed by Sony that enables a 'facsimile' of the original 16-bit data to be represented in just one-fifth of the original space.

The terms 'data reduction' and 'data compression' are often used willy-nilly yet they are *not* interchangeable. Data compression is a reversible or 'lossless' technique where redundant zeroes are removed from long digital words, expressing the same data in smaller wordlengths. Data reduction, however, is irreversible because it involves the removal or simplification of components in the musical chain according to clearly defined, psycho-acoustical principles.

Quiet sounds are only audible if they persist above our threshold of hearing and may be drowned out by the presence of louder, adjacent sounds. Sony's ATRAC, like Philips' PASC (Precision Adaptive Sub-band Coding), relies on these phenomena to decide which signals are audible and which may be discarded, thereby reducing the 'density' of digital data.

The ATRAC process begins by filtering the audio signal into three sub-bands: 0-5.5kHz, 5.5kHz-11kHz and 11kHz-22kHz, which are then each represented in terms of critical bands. There are 52 critical bands spread non-uniformly across the audio range, linked to our ability to discriminate between multiple sounds of a

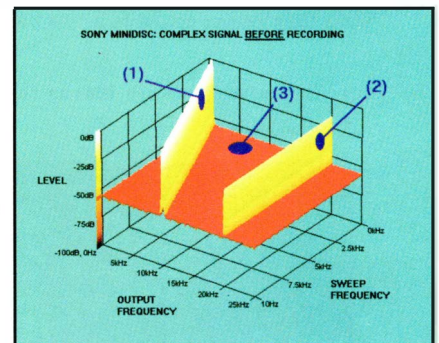
similar frequency. Through the bass region a critical band might only be 100Hz wide, through the midrange it may expand to 200Hz while, at high treble frequencies, a critical band may cover 2-3kHz.



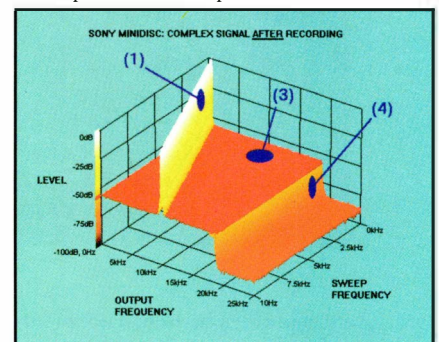
With ATRAC at the helm, different signals occurring within one critical band will be lumped together as a single signal. Its resolution, however, is decided on a dynamic basis according to the nature of the music at hand. For example, where the music is uncomplicated, largely unchanging in content and dynamics, ATRAC will process successive samples across a wide 11.6msec time block, achieving a frequency resolution within the narrowest critical band. These are optimum conditions for the MiniDisc recorder and where, subject to standard tests and measurements, it seems to offer a comparable performance to CD with a full 20Hz-20kHz frequency response (black trace).

Where the music signal is changing rapidly, time blocks as short as 2.9msec or 1.45msec are selected by ATRAC to 'keep up' with the dynamic variations. Frequency resolution suffers as a result, leading to a restricted and 'noisier-looking' response that stops short at 15kHz (red trace).

Under extreme conditions, where the musical content and dynamics are full of variation, the influence of ATRAC is at its greatest as it decides what 'can' and 'cannot' be heard, in order to squeeze the data into one-fifth of its original volume. This can be demonstrated



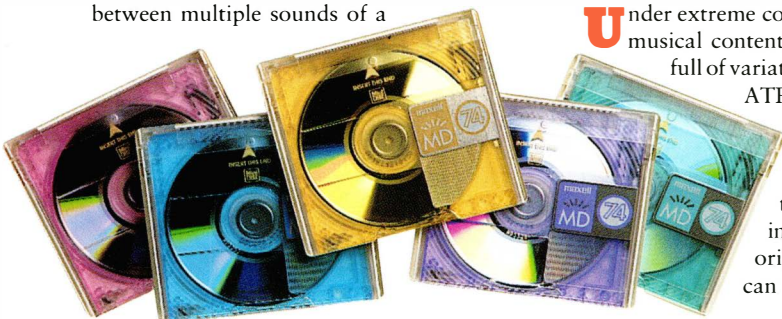
graphically by feeding the MD recorder a complex pattern of signals, a mix that contains a 500Hz-10kHz sweep (1), a continuous 20kHz tone (2) and a broad spectrum of noise (3 — highlighted in red). This gives ATRAC plenty to think about and will swamp its available 'pool of bits'.



After ATRAC encoding and decoding (i.e. playback) we can see that the original 500Hz-10kHz sweep (1) is left intact, as is all the broadband noise (a laboratory equivalent of subtle musical detail!) up to about 17-18kHz (4). Evidently, ATRAC has deemed that, under these conditions, everything above this frequency (4) is inaudible. So the 20kHz tone is lost in addition to any 'subtle detail' at these very high treble frequencies.

With this type of test we can see that MD is not a match for traditional 'linear' digital systems like CD (or, more correctly, CD-R) where the input and output would have looked the same. Nevertheless, this 80 per cent data reduction is so cleverly devised that a good MD recorder can still match the sonic performance of a budget CD player.

Do you have a query for the Oasis? Please contact P.Miller via E-mail on 100576.3021@compuserve.com



DO WE REALLY NEED 86 QUALITY CHECKS FOR EACH AND EVERY SPEAKER?

You may have heard whispered rumours that every single one of our justly famous Danish loudspeakers has to pass 85 merciless quality checks before final assembly.

Well, they're wrong. In fact, it's 86! The moment one of our newborn speakers leaves the hands of master-



craftsman Hugo Nielsen, it has to survive the Skanderborg interrogation chambers. Where we discover any possible fault in cabling, driver or crossover. And after that, our victim is put to the ultimate test. Listening!

Erik 'The Ear' Nielsen himself, our cold-hearted chief-tester, and his no less fearsome colleagues make sure that

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DANES DON'T LIE.[™]

Personal Paul Messenger explains the reflex port-loading system designed into many of today's speakers.

Messages



The only port that doesn't go well with a mature Stilton.

Twelve of the 15 speakers covered in this month's report (p.62) feature some form of reflex port-loading. It was probably ever thus. To the loudspeaker designer, the reflex port is the closest thing to a free lunch.

You need some sort of box to mount the drivers in and hold everything together, and to stop the sound energy from the front of the main cone mixing and cancelling with the out-of-phase energy from the back.

Simply sealing up the box is one solution. It has the virtue of simplicity on its side, in that just a single main driver/box resonance occurs, and that in turn ought to make life simpler for the driving amplifier.

But speaker designers rarely heed the sanity and well-being of amplifier designers. And the simple sealed-box must seem a bit of a creative cop-out, given all the other tricks that can be brought into play.

The most common of these is the reflex port. These come in all shapes and sizes, but the typical one is a short length of plastic tube, shaped at one end but otherwise similar to those left behind by plumbers to warn you that the bill is on its way.

The fancy name for a ported enclosure is a Helmholtz resonator; the volume of air inside the box acts as a pneumatic spring against which the mass of air within the tube acts. Like any mass/spring combination, it has a natural resonant frequency. When the driver cone operates at this frequency, the out-of-phase energy from the back of the cone excites the air in the box, and the box in turn excites the port, conveniently reversing the phase en route.

The port output is therefore in-phase with the output from the front of the cone, and adds its contribution to the total system output. Assuming the designer has done his sums correctly, the port is usually tuned so that it 'comes in' just below the point at which the bass driver itself is naturally rolling off. This is where the main course of that free

lunch comes in, turning that rearward radiation into a positive contribution. There's also a dessert course — the back-pressure from the resonating port provides a measure of reactance against cone excursion, though it's usually regarded as a secondary issue.

Designer control

That's the simple version of a mechanism which is in practice extraordinarily complex and subtle, and not all that well understood. The designer does at least have some control over most of the variables that relate port, box and driver (though the box itself is probably specified by the marketing department, and the driver's main priorities may well lie further up in the midband).

The designer has no control over the room in which the speakers are going to be used. By the same token, I don't have much control over my room either, and it worries me that its characteristics exert some sort of bias over my speaker review findings.

As speaker midband performance continues to improve (which it does, slowly but surely), and as our system electronics also become more transparent (ditto), so the speaker/room bass interaction idiosyncrasies are becoming an increasingly important factor in the performance of our systems. However, in knowledge terms, it's as if this is the last uncharted hi-fi territory.

There's a lot we don't know, but we do know that the room provides a degree of amplification across the whole bass region, wherever the speakers are placed. A speaker which measures 'flat' when 30 feet up an outdoor hoist will sound very bass heavy when operating with a partner in a room.

At least one of the mechanisms involved seems to be the main room modes. My room has significant modes in the bass region at



I read the news today, oh boy... 10,000 holes from Mission, Cambridgeshire...

30Hz and 50Hz, which I suspect correspond to the width and height dimensions respectively. While the 30Hz one is quite useful in boosting the low bass, most of which has more to do with ambience than music, the 50Hz reinforcement can be a pain — especially when it coincides with the enthusiastic output of a large port.

I haven't gone back over years of data to check the statistics of port tuning frequencies, but I was a little perturbed to realise that seven of the 12 ported examples in this month's group test were tuned between 45Hz and 60Hz, and even more so to notice that, as a broad generalisation, the speakers with ports tuned to lower frequencies (30-40Hz) tended to give better listening findings for bass performance.

What I have no means of checking, of course, is what the effect would be of re-tuning the port system of, say, the Wharfedale or B&W examples down by half an octave. Would it improve the bass performance in my room? Possibly. Would it also upset the performance in another respect? Equally possible. Indeed, in an American room with much more bass-absorbent construction, it's quite possible that the strong 50Hz output of the abovementioned would be a positive benefit rather than a mild embarrassment.

If my assumptions are valid, a case could be made for supplying the more upmarket enthusiast speaker models with alternative ports. One of Wilson's expensive models does this, primarily in order to compensate for the different damping factors of valve and transistor amplifier, but I'd have thought room mode avoidance was an equally valid reason. So far more mainstream brands have confined themselves to a simple bung (which effectively seals the system), so perhaps there's room for a little more flexibility and imagination in tackling this final frontier? ▲



Are two ports better than one?

Write on!

WRITE AND TELL US YOUR THOUGHTS ABOUT HI-FI AND THE MAGAZINE. THE BEST LETTER WINS A PRIZE!

LETTER OF THE MONTH

A prodigal son returns to the hi-fi fold

I've been buying *Hi-Fi Choice* on-and-off for some time now, but only when I needed to buy a new component or upgrade. When I was a student a few years ago, I had to make do with second-hand kit, but when I got a job one of the first things I splashed out on was a new hi-fi system. It's still very much a budget job (pair of Mission 760is, Pioneer A-300X and Marantz CD52mkII), so with Christmas bonus in hand I started to buy hi-fi magazines again, eager to spend my cash. Because of your mag, I decided to try some of the 'tweaks' I'd read about. I bought a pair of Atacama SE24 speaker stands, some Cable Talk speaker cable and an inexpensive Ixos 104 interconnect (pictured right).

I just had to write to say thanks for the amazing difference these so-called tweaks have had on my sound! Not only have I availed myself of a great-sounding tuner, but the CD part of my system sounds much better now too. The sound is much more detailed and open, and though I used to read while listening to music, now I get distracted by musical details I never noticed before.

Experimenting with the position of the speakers on my new stands has made the sound cleaner and more detailed. Complicated dance tracks from the Prodigy now keep pace; before there was a long, drawn-out bass drone with an occasional thump. Acoustic tracks from Michelle Shocked sound much sweeter, clearer and open, too. I've started listening to older CDs again, rediscovering tracks I used to dislike because of boomy bass. My investment in CDs is finally being repaid.

Thanks for re-awakening my interest in music. I'm looking forward to improving on my system — I'll start slow and take it one step at a time.

Chris Totten, Randalstown, N. Ireland



We were as surprised as you that the ES12 failed to match the ES11's reputation. However, just because a new product replaces a well-regarded model, does not necessarily mean it will also be a winner. Many factors have changed since the ES11 came along, not least that its designer, Robin Marshall, wasn't involved with the ES12. Also, the rest of the speaker industry has itself endeavoured to produce a better speaker than the ES11 at that price, and it would be fair to say that events have caught up with and indeed have overtaken a speaker that was once hard to beat. —Revs Ed

Where's that raccoon?

I notice your wonderful mag carries adverts for Dynaudio loudspeakers. Having heard some of their cheaper models (Audience 5, Audience 10) I would like to see a review of the more expensive models, for example the Contour 1.3 (as shown with the raccoon) or the new Contour 1.1 miniatures.

Alan Rew, via the Internet

Look out for a review of Dynaudio's Kraaft speakers in a forthcoming issue. —Ed

Losing your balance

I've just read your article *Instant Systems* in issue 162. I must say that I find it very appealing to compare two different systems, one budget and one rather expensive. But on the other hand, I wonder how you selected the components in those two systems? As anyone can see, both systems are more or less out of balance.

Take 'System A' for a start, on which you spend about 43 per cent of the total cost on the amplifier. Why? 'System B' is even more unbalanced, with 66 per cent of the total budget lavished on the Audiolab amps.

If one purpose of this article was to show that "even if you spend £4,000 on a system it's hard to get it right in the end", then you have underestimated your readers completely. It's obvious that 'System B' would not sound great being so totally out of balance. System balancing is the key to hi-fi success! Stefan Fridfors, via the Internet

That the first system worked so well proves the key to success is more to do with careful matching of components than any rigid hierarchy or balancing act. While 'balanced' systems do work well generally, we have heard superb systems that break all the rules — how about a £300 CD player, £300 amp and £14,000 speakers?

In the UK, there is a 'magic bullet' school of thought which suggests that by simply using products from a handful of 'special' companies, good sound automatically results no matter how unbalanced a system. The second system, assembled along these lines, disproves this theory. —Revs Ed

Tuner fishing

Your *Directory* is very useful, but I have a couple of comments on the Tuners section.

Crivens!



This stylish *Hi-Fi Choice* garment will be awarded to the writer of the most interesting letter every month. Available only in capacious, flattering, XL size!

Whither progress?

Why does *Hi-Fi Choice* often give cheaper products a better review than more expensive ones in the same range? Often an amplifier, for example, will have a better power supply and greater current capacity than its cheaper sibling, but will not be recommended because it has

lost its 'sparkle' or failed in some other subjective aspect.

A case in point was the review of the Epos ES12 speaker in issue 160. The original ES11 obtained cult status, and in its price range was considered the speaker to beat. Epos released the long-awaited successor, claimed to improve upon the original design in almost every parameter, yet the ES12 was denied a recommendation because "it seems less artful at disguising its limitations"! What's going on?

Sean Engel, via the Internet



There is no "Best Buy" in the range of prices between £120 and £750!

My price range might be restricted to £200-£250, bearing in mind that digital radio will be along before we know it. I would imagine this is a popular price range, and HFC should consider identifying a Best Buy in this bracket. Thank you for an excellent magazine. Alan Hood, Dundee, Scotland

We're planning a tuner round-up for our May issue, and will endeavour to find some Best Buys for you then! -Revs Ed

Mana Acoustics – The Anti-Backlash Backlash Begins!

In issue 163 we published a letter from Mr Mick Sissine, in which he expressed his scepticism about the benefits of Mana equipment isolation supports. Needless to say, not all of our readers agree with him... and here's just a sample from our post-bag - Ed

I would love to hear Mr Sissine's system. Why? Because I have never heard a system that DOESN'T respond well to Mana supports, and I really cannot remotely imagine what it must be like. (I am presuming here that Mr Sissine has actually tested the product he is dismissing, and found it to be ineffective).

Personally, I have found Mana supports improve absolutely anything and everything: CD

players, amplifiers, tuners, loudspeakers, even TVs and VCRs. Whatever the innate strengths of the equipment being used, the Mana supports simply bring them out. Moreover, Mana platforms are as effective with cheap equipment as they are with expensive gear; they have the scary ability to make systems sound four or five times as expensive, whatever their cost. I'll take the Mana challenge anytime.

Richard Majlinder
Rich.Maj@dial.pipex.com

Mana Acoustics' stands are so much better than all the opposition, that others can only be considered furniture. Use of anything but Mana stands for reviewing is illogical, because this would introduce unnecessary feedback to cloud a reviewer's judgements.

I would venture that Mr Sissine is suffering from that unpleasant affliction known as 'a little knowledge is dangerous'. He is requesting science in your reviews without understanding what he is saying.

Science is based upon models which can predict events given that certain phenomena are known. These models are developed from experience (prior knowledge, conducting experiments, or by observing other phenomena). By reviewing all equipment sited on Mana stands you are supporting the theory 'that all equipment sounds better on Mana stands'. To contradict this

Mr Sissine must come up with evidence to the contrary. This is how scientific models are developed: when unexplained phenomena occur, new scientific models are developed to explain them. Just as theories of relativity and quantum mechanics came to complement the Newtonian view of physics, so we must develop a new theory of hi-fi sound.

Ian Wright, via the Internet

A belated Happy New Year to all your readers, although I suspect Mick Sissine's 1997 would be happier if he allowed himself to try some Mana!

My Meridian system comprises a 500 transport coupled to a pair of DSP 5000 active speakers. Two years ago I contacted Mana and invested in a Reference table/soundstage for the transport. No glib prose here: everything Mana said the stand could do, it did, effecting an amazing difference.

At this time (like Roger Hooton, *Write On*, HFC 163) I had placed my speakers on concrete slabs and was extremely pleased with the improvement. However, knowing the difference the table had made, I decided to purchase a pair of Mana Soundframes for the speakers. The improvement was really staggering. But don't take my word for it!

The DSP 5000s contain internal electronics which,

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other things, detect when a drive unit is being pushed too hard. When this happens (e.g. at reasonably high listening levels when there is very strong low bass) a small indicator briefly illuminates on the affected speaker. Well, since the 5000s were moved from the slabs onto the Mana Soundframes, the 'crisis' indicator does not show until significantly higher volume levels are reached, and most of the time does not show at all!

I'm no expert, but that is a test you can see as well as hear. Happy 1997, Mana!

Ian Sanderson, Wantage, Oxon

Like Mick Sissine I felt sceptical about equipment racks, in particular those from Mana, and I found it difficult to sanction huge amounts of money to purchase supports, when the money could be used to further upgrade my interconnects. Basically, I just refused to believe the hype.

However, since Mana managed to help me with a problem in my system, my LP12 has sounded better than ever atop a Mana support. I don't work in the hi-fi marketing or advertising fields, and have never met anyone in Mana — I have not been paid to write this letter. I just want to express my thanks to Mana and possibly save some time for other music lovers by saying: "Do believe the hype!" Mana makes equipment racks that work and John Watson is one hell of a nice guy who knows his stuff.

I am now saving up to upgrade my Naim CD player — in the form of a Mana support!

Evan Parashou,
London E4
Mana equipment tables are fab! Or so say the devotees...



Let the music play

Alan Sircom tries out the new conrad-johnson transport and converter, and discovers it is the first affordable digital device that can equal the sound of vinyl.

After 20 years at the tiller of a principal US high-end brand, Bill Conrad and Lew Johnson should know a thing or two about making music. Especially as it seems like the last time they had a less-than-favourable review, England could bat 500 at cricket and still have time for tea.

It's amplifiers (especially valve pre-amplifiers) that conrad-johnson is famous for; but

does Bill and Lew's

Excellent

Adventure

extend to digital audio, too?

If the £1,695 DR-1 CD transport and £1,990

valve-sporting D/A-2b (2b — 'tube', geddit?) converter are anything

to go by, the answer is a resounding 'yes'.

The duo isn't c-j's first venture into CD players — an integrated CD player in the solid-state Sonographe line, and an up-market Premier Nine D/A converter were both around prior to these newcomers. Nor are they the cheapest: the D/A-3, a FET-based version of the D/A-2b, is available. There's talk of an integrated c-j CD player waiting in the wings, but this pairing, including its first dedicated CD transport, represents c-j's digital flagship. From a company unafraid to stick a £30,000 price tag on its top pre/power combo, the products here are in January Sales territory by comparison.

Both units are kitted out in classic c-j livery. Both sit in a solid 483mm-

wide, 84mm-high and 365mm-deep case; both have the characteristic brushed-gold front panel and black lower-case lettering; and both come supplied with that rarity in modern hi-fi, a captive mains lead. The DR-1 CD transport (or 'data reader' in the blurb) uses a red LED display and a row of neat circular touch buttons that respond too slowly for my liking. The D/A-2b converter is far more chunky, with two knurled knobs at either end of the front panel: the left one selects the digital source and the right one switches absolute phase through 180 degrees. In between these lie a standby switch and two LEDs — one denoting a locked digital signal and a second showing that the converter is ready to roll. It is advisable to give the converter a good couple of minutes of warm-up before playing music.

Beneath the hood

Under both lids there are lots of Philips components. There is a common-or-garden CDM12 mechanism inside the DR-1, but c-j has breathed heavily upon this entire transport package, having precisely adjusted the laser intensity and focus, as well as adding a proprietary reclocking circuit. The casing, too, helps mass-load the DR-1's circuit boards, even though its top panel could do with a dose of Neoprene to eliminate a noticeable ring when tapped.

Using a predominantly Philips circuit gives the DR-1 an advantage over many transports, as the c-j data reader retains the 30-track programming and digital volume controls built into the circuitry. Fortunately, neither are deemed to be sonically detrimental.

There are two variants of the DR-1 transport. I tested the £1,990 Professional option, which adds

Toslink and AT&T fibre optic links to the single RCA option used in the standard version. That aside, the two units are identical, so if optical is not for you, skip the Pro version.

Bucking the trend of high-bit high-end DACs, the D/A-2b opts for a classic Philips 7350 BitStream chipset. This is identical to the circuit used in the previous Premier Nine DAC and is kept powered as long as the machine is plugged in. Switching standby to 'on' engages the output stage, which is where the c-j signature is writ large.

A pair of 6GK5 medium-gain, high-current single cathode follower triode valves were chosen by c-j over a single double triode (an ECC88, for example) because of the 6GK5's inherent low noise and immunity to microphony. The back left of the top panel is slatted to allow the two valves a bit of ventilation, and it's important not to obscure this airway.

There are two coaxial digital inputs (one using BNC and the other phono connectors); a Toslink optical input and a pair of outputs; a single BNC coaxial digital output; and a pair of gold-plated phono sockets. Balanced operation is not a c-j trademark, as proper balanced circuits are unnecessary in domestic applications, in the company's opinion.

It's also worth noting that the manufacturer's claimed one-volt output for the D/A-2b converter will make it seem slightly less dynamic, but more expressive, under demonstration conditions. As most CD players have nearly double this output sensitivity, it may explain why the c-j sounds soft and quiet on first audition. But it won't overtax a line stage intended for tuner or tape inputs, in amplifiers hailing from the pre-CD age.

As you would guess, combining Philips transport and Philips DAC,



If you're feeling out of phase, the D/A-2b is fully equipped to correct your angular imbalance.



both tweaked by c-j, has paid off. Yet most of the fundamental components — save the valve output stage — can be found in many mid-priced CD players. So the \$64,000 remains: does a fancy front panel and a high-end name tag make the DR-1 and D/A-2b better than a Marantz CD-63 with a Musical Fidelity X-10D tagged on the end of it?

Sound to savour

In truth, the whole is much greater than the sum of the Philips parts. If you've listened to almost any other CD player beforehand, the c-j pairing will sound easy-going — perhaps a little too easy-going. But very soon, you become aware that the previous CD player sounded pushy, clinical and cold, and this duo just sounds natural.

This naturalness is helped by a soundstage so holographic that you start to worry about making tea for all of the musicians in the room. Play something live like Panufnik's *Percussion Concerto*, and instruments begin to sound tangibly present. This illusion is no doubt aided and abetted by the fine dynamic range of the combination. In all, the stereo imaging of this outfit is a strong point, but one more likely to be compromised by other equipment in the chain.

If a single word could describe the c-j equipment's performance on audition, that word would be 'real'. You

get a real-world sense of scale to the voices and instruments. The dynamics — both small-scale-instruments-within-an-orchestra dynamics, and large-scale-dirty-great-Mahlerian dynamics — are palpable. Even the tonal balance makes for a natural and real performance.

While this flattering reality benefits classical styles, can it deliver a similar boost to a bit of heads-down rock? Absolutely. Whether it's the most densely-recorded slab of thrash metal, syrupy soul ballad or produced-in-my-Gran's-bathroom sound of indie pop, the c-j duo brings out the best in the mix. Not by plastering over the cracks, but just by sounding good and honest. Fortunately for those among us not completely free from the grip of the Devil's music, similarities between the c-j duo and *The Waltons* cannot be drawn, as five minutes in a room with this kit and the new Lewis Taylor CD quickly prove.

It is often said that valves have their greatest problems in the bass. That isn't the case here. The bass was ever-tuneful and near bottomless. It was neither forced nor muted: bass notes occurred naturally without attracting the adverse attention that hampers musical enjoyment. I'd have to admit that the combination's bass was far less flawed than either my system or the room it was playing in.

It would be possible to improve on

this pairing's resolution, especially that of the DAC, by swapping in one of the select few components at the top of the digital tree. But such components are priced well beyond the level of the c-j combo and — in many cases — lack this combination's lyrical finesse. Individually, the c-j components hold their end up; both live up to their reputation as a pair when used with third-party equipment.

I found the c-j duo reminiscent of a top-class Linn turntable in this respect. This is not to say that they sound similar to an LP12, but share with it a slight loss of absolute detail abrogated in favour of a more musical nature. Such a warm, vibrant sound won't appeal to every taste, but it makes most CD players sound like experiments by comparison, and, being an LP12 user myself, I can think of no greater compliment to pay a CD player.

I often receive letters from vinyl junkies who can't live with the sound of digital audio. A few seek carbon copies of their analogue replay systems, but many more can't live with the clinical nature of most CD players. If you detect something amiss with your digits but Krell and Wadia are out of your reach, conrad-johnson's DR-1 and D/A-2b combo may be the answer to your prayers. ▲

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c-j's first CD duo sets the gold standard in digital audio.

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The Air Guitar Factor

Jason Kennedy whips out his Fender Stratocaster and gets down with Densen's most dynamic amplifier duo.

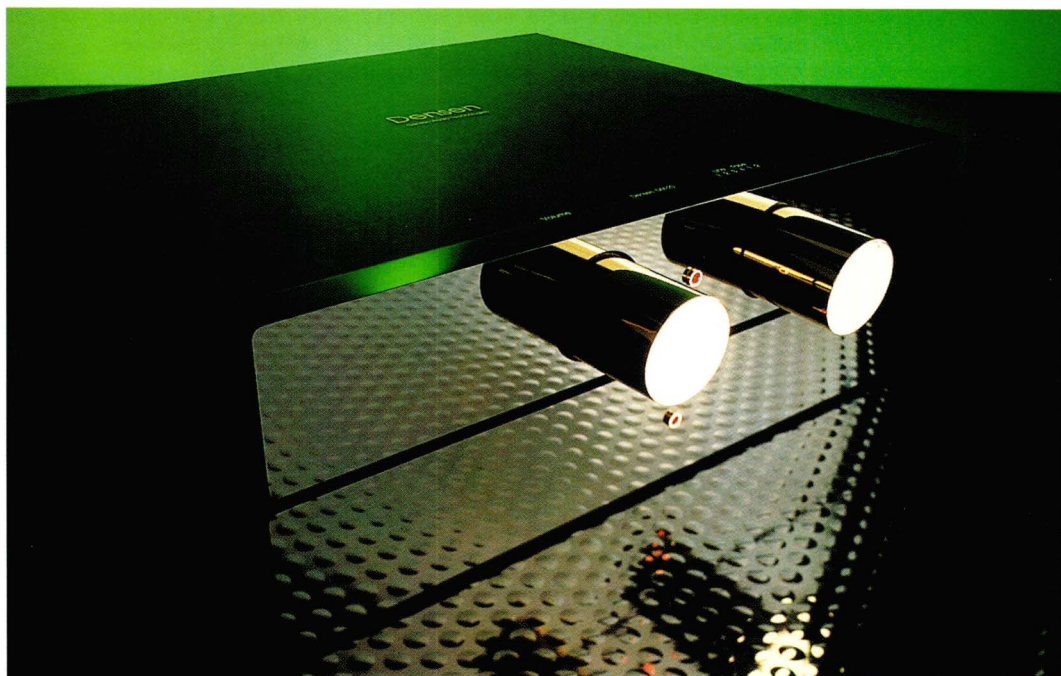
Densen is a Danish electronics company with a passion for two things: minimalism and music. Quite how the gigantic control knobs on the DM-20 preamplifier fit into the equation I'm not sure, but they make up for the dearth of graphics, switches and lights which characterise these black Perspex-faced units. Those of you familiar with the British Onix brand will not be surprised to learn that Densen is the Danish distributor for the marque — the similarity in basic styling is pretty strong. There is another more tenuous link: both brands come from the 'rhythm and timing' school epitomised by Naim Audio.

But Densen blends its own distinctive style with the urge to make hi-fi that makes the music boogie. Head honcho, Thomas Sillesen, calls this 'the air guitar factor' and cites it as the most important element when it comes to designing an amplifier. The amps are technically notable for their complete lack of feedback and being partly single-ended — features usually associated with valve amplifiers.

The DM-20 preamplifier (£1,200) features six inputs and four outputs; these are divided into an optional phono input, two pairs of tape loops and two sets of main outputs. The pre-amp is accompanied by a separate phono stage called the DP-01 (£300), which features an unusual filtering system in its power supply, specifically an optical link that's said to obviate the need for large-scale PSUs.

The DM-30 power amp (£1,200) pumps out 100 Watts per channel into eight Ohms, doubling that into four Ohms. It has two inputs and two pairs of speaker outputs. One pair of inputs is DC-protected, which saves both the amp and your speakers should something really nasty come down the line. However, Densen recommends using the regular input with its preamps.

I used this combination with a variety of pretty efficient speakers. Unfortunately the amps arrived just after the Wilson benesch A.C.T. 1 speakers had departed, but I suspect



that they would have made a rather effective combination. In some respects powerful amps seem less happy with easy-to-drive speakers than they are with tough ones; it's got something to do with power bands. There's a similar problem with car engines that are more responsive in the middle of their RPM ranges than they are at the extremes. My theory was borne out in this instance by the considerable increase in dynamics that accompanied turning the up Densens to a good rockin' level. Thomas explained that for him it was more important that an amp is engaging rather than totally neutral, a factor which certainly comes into play when you give this combo a bit of stick.

One's initial impressions of this pair is of effortless resolution coupled with a slightly dark balance. But one soon grows accustomed to the balance and starts to notice the rather good imaging, which is a lot better than some highly-acclaimed kit at this price. And then there's the timing, the most crucial element in the air guitar factor. I'm not quite as hung up on timing as some of my colleagues, but when you come across a component like

this, that just begs to boogie, it's not hard to hear why it's such a prized sonic feature. A lot of amps with this ability end up sounding quite forward, and I don't go for that. But the Densens manage to stop and start without emphasising the upper midrange: in fact they are tonally very strong with a speaker that swings that way, resolving timbre rather effectively and pulling out big differences in software.

I compared the Densens with Meridian's 502/557 pre/power amps — next to that equally engaging pair the Densen's fluid, valve-like tonal abilities were emphasised, as was its great rhythmic sensibility. The Meridian sounded a touch mechanical by comparison, although both made an excellent impression.

I don't think I've found the perfect speakers for these amps, yet I had some great sessions with them — and they passed the air guitar test with flying colours. These combine elements of tube and transistor designs to give you effortless enjoyment. If you want to get down with your bad self, these could just be the way to do it. ▲

Don't let the sleek exterior and extreme controls deceive you, this pre/power combo can kick butt with the best of them.

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Help!

Malcolm Steward is this month's man of the match in the hi-fi field

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Query of the month

My sister wants to replace rather than upgrade her amp and speakers. Her system is a Sony CDP-761E CD player, NAD 3225PE amp, and Mission speakers about 10 years old.

We have short-listed a NAD 314 or Harman/Kardon 620 amp, and Royd Minstrel or Castle Durham speakers for listening tests.

The speakers will come first as she can buy the Castles on offer from a local dealer, but would her current NAD control them? And what difference would the new amp make?

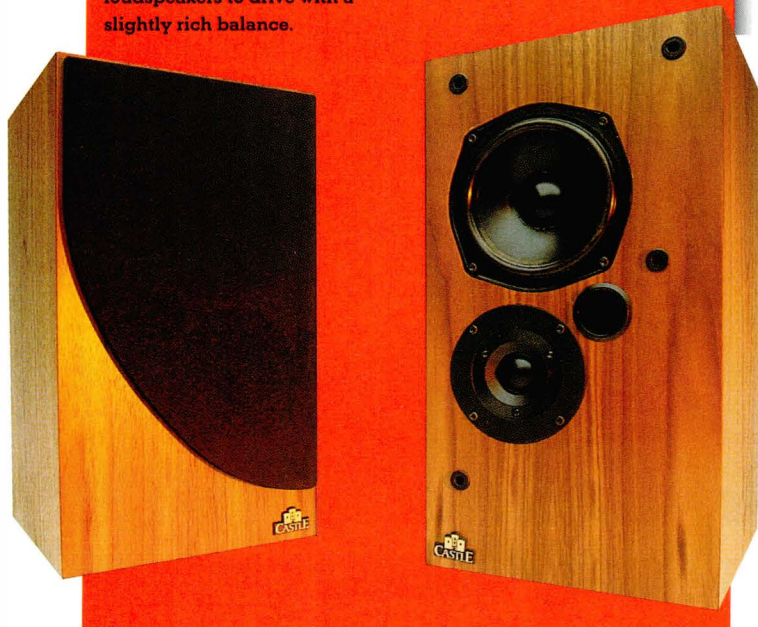
She listens to all types of music and has a relatively small listening room. The wood veneers of both models are appealing to her décor-conscious eye.

M. Fiske, Guisborough, Cleveland

The Castle Durham is an easy loudspeaker to drive and should not cause problems for any respectable budget amplifier. I would recommend, however, listening to other models in addition to the NAD and H/K you have short-listed — the 314's tonal warmth, for example, might prove overbearing with the slightly rich balance of the speakers. I would also audition the Magnum IA170, Denon PMA350SE, and Rotel RA970BX.

Don't forget to budget for loudspeaker stands and cable. A pair of Atacama SE24s and two lengths of Cable Talk Talk 3 won't break the bank but will significantly enhance the system's performance.

The Castle Durhams: easy loudspeakers to drive with a slightly rich balance.



Maximising power

My system consists of a Rega Planet CD player, Alchemist Maxim amplifier, Mission 751 speakers, Quadraspire table, damped and filled Sound Organisation stands, home-made interconnects (sonically superior to Chord Cobra), Radio Shack 14AWG flat speaker cable, Thorens TD160 turntable, Fisher tuner, and an Aiwa ADR460 cassette deck. All this is set up in a small, terraced-house front room.

While I am very happy with almost all aspects of the system, for the clarity of definition in Mary-Black-type music and the sense of wholeness for orchestral works, there seems to be something missing. Given that most of my listening is classical I feel that having a little more power to hand than the Maxim delivers would be useful. Could I use the Maxim as a pre-amp and add an Alchemist Kraken power amp? If this is not sonically or practically possible could I get the same sound with an Alchemist Nemesis integrated, but with more power in store?

Dominic Stockford, Exeter

I would suggest a complete change of tack because, as I've noted elsewhere this month, Mission speakers — small models such as the 751 in particular — tend to respond most enthusiastically to powerful amplifiers that can take a firm hold of them. Ideally you should be looking at an Orelle SA-100 (above), Audiolab 8000S or similar, or you could search around for a second-hand pre/power — a Naim NAC32/NAP160 would be a highly suitable candidate.

Controlled grunt

My system comprises a Linn LP12 Valhalla, Ittok LVII, Audio Technica ATOC5, Meridian 200 transport, Theta Cobalt 307 DAC, Denon TU 260L tuner, Audiolab 8000A II, and Mission 753s bi-wired with Cyrus solid core.

In general the system lacks extension, tightness and tonal contrast in the bass, but has good midrange detail and treble sweetness. The tuner sounds warmer and more musically involving than CD or LP, though this is dependent on software quality. I am baffled but suspect the amp. Any comments?

R. C. Barrell, Norwich

I suspect your suspicions are correct. The Mission 753 favours source components and amplifiers with decent helpings of controlled grunt down low. That is not to say that the Audiolab is deficient here but it is probably not the ideal choice. The Ittok/ATOC5 combination produces a rather lightweight sound.

What really isn't helping here, though, is that solid-core speaker cable. Your first move should be to get some man-sized Naim NACA5 in there, give it a week or two to bed down, and you'll hear marked improvements.

Justifying an upgrade

My hi-fi system consists of a Nakamichi DR3 tape deck, Marantz PM44SE amp and B&W 602 speakers, plus Cable Talk Monitor 2 interconnect and Cable Talk Talk 3 speaker cable. I am delighted with all the components and sound quality. However, I do dream about owning a Naim Nait 3 or Alchemist Kraken Anniversary. Both are too expensive for me. Should I replace my amp with either a Pioneer A400X or Marantz PM66SE?

Also, is it a good idea to buy an exotic mains lead from, say, XLO or Kimber, or is that a waste of money?

Julian Bedford, Leeds

I don't think spending another £100 on a new amplifier is worthwhile or justifiable. You won't achieve a truly significant performance lift. So, keep saving for that Nait or Kraken. Similarly, think about exotic mains cables once you've built your dream system. The stress in that last sentence, by the way, is on the word think: weaky mains leads improve some systems, pass unnoticed in many, and can degrade the performance of others.

Slamming bass speakers

My present system consists of a PS Audio Lambda and Reference Link CD system, Threshold T100 power amp and Sonus Faber Minima Amator speakers sitting on Foundation Designer stands. Cabling is XLO and vdH carbon. Although I enjoy the full-bodied sound my speakers produce, I am now planning to replace them with a larger floor-standing design. Could you recommend a pair with realistic bass slam and good spatial definition, that will retain the warm nature of the Amators? My budget is flexible up to £3,000, the room is carpeted and 12 x 18 feet in size. My main tastes in music are jazz and female vocal.

Henry Mok, Hong Kong

The Mordaunt-Short Performance range combines excellent precision with good bass weight. The 860 or 880 should produce fine, weighty stereo in your listening room because the speakers do not depend upon wall loading for low frequency tailoring. The KEF Reference range is also worth auditioning: the Uni-Q drivers and bass loading system employed here should also produce a sound that fits your requirements. ProAc's Response range is another that is worth investigating if you fancy a conventional loudspeaker. If, however, you want to be a little adventurous, consider the Shabnian Obelisk, a speaker whose bass is truly awe-inspiring



The Mordaunt-Short Performance range combines excellent precision with good bass weight

Turntable upgrade

My system currently comprises a Sherwood CD-501R CD player, Rotel RC/RB850 amplifier, Rotel RT850AL tuner and a pair of home-made Chris Rogers design transmission line speakers from Hi-Fi Answers.

For the past 20 years, I have been using an Acos Lustre tonearm with a Connoisseur turntable. On many occasions I have considered upgrading the turntable but never actually got round to it. It has now finally given up the ghost forcing me to make a decision. My question is: how does the Acos tonearm compare with current tonearms, and is it worth keeping, to partner it with a new turntable — if so which one? Alternatively, can you recommend a complete new turntable package suitable for my system? I had been thinking of a budget of around £250, but could pay more if the benefits will be really noticeable.

Simon Waring, London N2

The short answer is to retire the old deck and arm, and invest £214 in a Rega Planar 2. Anything less is a waste of time and money. If you can stretch to £274 for a Planar 3, do so — that will make you and your record collection even happier. Assuming, of course, that you've not been using the same cartridge and stylus for the past two decades! If you want to spend a little more still, audition the new Systemdek 2X2.

Interconnect or speaker cable?

I have assembled my first system: Harman/Kardon HK1400 amp, Arcam Alpha 6 CD, Monitor Audio Monitor 3 speakers (mass loaded), Tandy interconnect and Kelvin cable.

I am looking to invest in new cabling and have in mind the following: Chord Solid or Audioquest S19 cable, both available from local dealers. Bi-wiring and an equipment support will be a future upgrade.

Which first, interconnect or speaker cable? And should I audition both as I am not convinced marked differences will be apparent? I would like a smooth but airy and

detailed sound — I listen to most types of music. *K. Wilson, Glasgow*

It is best to audition everything you buy, even if it's "only" an interconnect. I don't think either of the cables you're considering is ideal for your particular system. I suggest you listen to alternatives from the ranges of Cable Talk, Nordost and Sonic Link along with others from the Chord Company — I've found that Solid generally works best in more exotic systems.

Listen to speaker cables at the same time, even if you're not ready to purchase them. Recent experience with Nordost's ultra-expensive, high-performance SPM cables suggested that the best results were contingent upon using matched interconnects and speaker leads.

Finally, think about buying a proper support table before you do anything else. This would improve the performance of your CD player and amplifier, giving your cables a healthier signal to play with.



Cable Talk Studio 2 — a Recommended interconnect

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Rediscovering vinyl

I have recently rediscovered vinyl and get quite excited over the extra detailed, dynamic 'feel' of records.

My modest system comprises a Naim Nait (now a good few years old) with a Rega Planar 2 and Ortofon 510, Marantz CD53 (with Chord Cobra interconnect) and Celestion 3 MkIIs (which I preferred to Coda 7s in audition) on filled Atacama SE24s (with my local dealer's own-brand 80-strand cable).

I find comparing the same music on both formats invariably leaves me smiling with satisfaction at the shiny black stuff: some CDs (especially classical) sound as if they were performed from under a duvet.

I am not a bass freak; however, music, particularly on record, appears to lack the 'weight' that ideally I would like to hear. Also, it seems difficult at times to pinpoint instruments within the soundstage accurately.

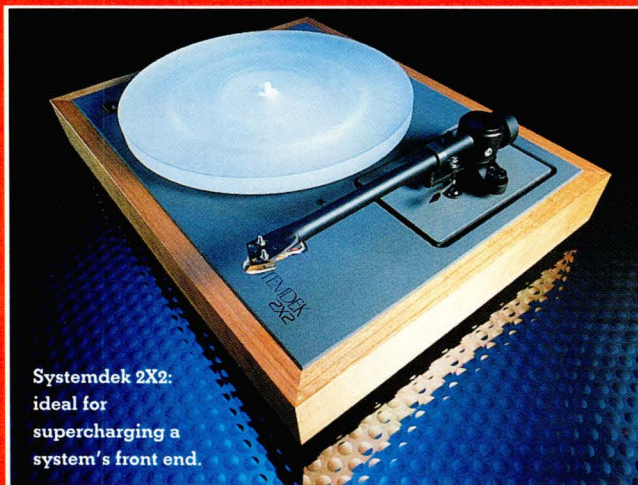
I don't know what's to blame — the cartridge, speakers (our room isn't huge so I'm not sure bigger speakers are the answer), or is it that the phono stage on my amp is aging a bit?

I'm a young family man who can't afford to fall prey to upgraditis — this does not mean that I'm not open to suggestions as to possible upgrades — and wonder whether I'm just asking too much from my system?

Andrew Price, Sherborne, Dorset

Fundamentally you have a fine, if as you note, modest system. This means that to obtain significantly improved performance you'll need to spend a fair bit of cash. If you decide to grovel at your bank manager's feet, ask for around £700 to supercharge the system's front end: a Systemdek 2X2, RB300 and Rega Elys. Too steep? Whip the arm off your Rega and bolt that onto the Systemdek.

Then — or alternatively — get your deck onto a decent turntable support and check out different loudspeaker cables. If you're worried about your NAIT's phono stage, have the amplifier checked by Naim. That being said, I have a truly ancient NAIT that has survived unbelievable abuse yet still performs as well as it did when new, eons ago. I'm not as sprightly as I was but the amp soldiers on!



Systemdek 2X2: ideal for supercharging a system's front end.

Should plugs go bananas?

I notice a lot of reviewers seem to prefer banana plugs to other means of connecting speaker cables. Apart from making the task of setting-up speakers easier, I don't see the advantages of using banana plugs.

Why splurge out on high-purity copper cables terminated with plugs made of a different metal? Since the cable is a much better conductor than the plug itself, the signal carried along will surely be degraded by having to pass through the banana plug. Isn't the use of banana plugs contrary to the principle of the shortest signal path?

Lee Tet Shin, Malaysia

Okay, 4mm plugs degrade the signal but to a lesser extent than other connections. Bare wire connections are better but degrade consistently and rapidly because screw terminals don't maintain a constant pressure on the cable. Furthermore, bare cable oxidises. High quality, soldered 4mm plugs maintain constant contact with the terminal, prevent oxidation and are easily cleaned.

(See this month's Update (p.6) for details of a new 4mm connector being proposed — Ed)

CD and turntable combination

Which CD player and turntable would be a good front-end to a Conrad Johnson PV10A/MV55 and ProAc 2.5 combination?

Bo Westman, Quito, Ecuador

For refined and exotic, to match the amplifier and speakers, see if you can find local stockists who can demonstrate the following. You might not be able to hear all of these but try and audition as many as you can: you're spending a considerable sum and turntables tend to be extremely subjective creatures.

The Well Tempered Record Player, along with its variants, has a full bodied and seductive quality that is exceedingly appealing. SME's Model 20A is costlier but offers exceptional performance. Voyd's even costlier three-motor Reference should also be on your list. Less stratospherically expensive are the Pink Triangle Anniversary, Rega Planar 9, Kuzma Stabi, and Nottingham Analogue Spacedeck, all of which have attractive characteristics that could firmly push your enjoyment button.

You'll need a truly capable CD player to match the performance of any of these turntables and I would look first at the Naim CDS, Audiomeca Mephisto transport with Elixir or Trichord Pulsar DAC, or the PS Audio Lambda/Ultralink 2 combination.

Improving clarity

My system consists of: Arcam Delta 290 amp, Marantz CD-52 MkII player, Bose Acoustimass 5 speakers, Audioquest interconnects, and Kimber speaker cables. I know that there is something wrong with my system because I cannot obtain the clarity and detail I require when listening to jazz, pop and blues.

I am planning to change my speakers to Monitor Audio Monitor 3 or Acoustic Energy 109, whichever is better. Alternatively, should I change or upgrade my CD player?

Joselito Casayuran, Singapore

Your system is unbalanced because your amplifier really warrants a more capable CD player, especially if you plan to spend over £300 on loudspeakers. Unless you can afford to change both, settle for a less expensive loudspeaker. Listen to models such as the B&W DM601, Castle Isis, Mordaunt-Short MS20i and Tannoy 632. Any of these will provide an immediate improvement in the short term without masking subsequent steps forward when you upgrade your CD player.



B&W DM601s: flexible when upgrading.

Smaller set-up

I'm moving from a house with a gigantic lounge, where my Snell Ks, Audio Innovations 500 and Michell Gyrodec were all very happy together, to a miniscule flat with a 12'5" x 11'9" living room.

Do you think the Snells will be okay in a room that small or should I sell them and try to get more suitable speakers? If so, what do you suggest for around the same price? There are a couple of other things about the room: two of the walls are stud and the suspended floor is chipboard and not floorboards. Are there problems lurking there?

Patrick James, London W14

You might fare better with different speakers given that the Snells prefer plenty of free space in which to work. You'll need a high efficiency design so I would suggest trying the Castle Chester, Heybrook Quartet, and Mission 752, all of which will function a foot or so away from a rear wall.

Whether you choose one of these or an entirely different design, do ensure that you can try them at home before committing to the purchase. The musical behaviour of rooms with stud walls isn't predictable, especially at low frequencies.

Heybrook Quartet: off the wall.

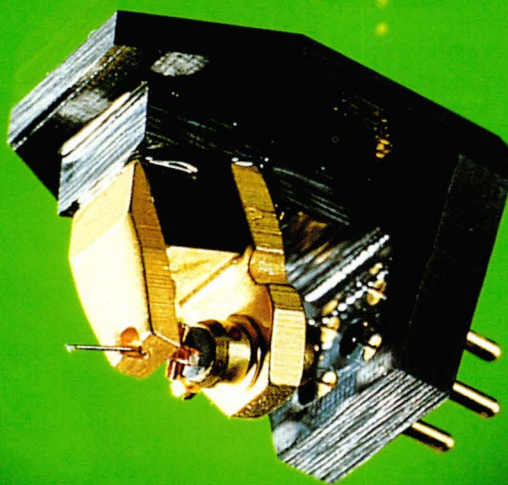
Increasing precision

My system comprises a Rega Planar 9 turntable with Ortofon MC15 cartridge, a Michell Iso phono stage, Pioneer A-400 amplifier and old Celestion Ditton loudspeakers. I listen to classical music in an average-sized room. The sound is slow, thick and it lacks precision. How should I upgrade with a budget of around £1,500?

Jacques Cohen, France

The only change I'd make to your front-end would be to fit a Lyra Lydian or Wilson-benesch Matrix cartridge. However, either of these will consume a large chunk of your budget and so you might prefer to postpone this upgrade until the MC15 expires.

You certainly need a more revealing amplifier and speakers. Given your musical tastes and the potential of your turntable, I would suggest auditioning a high quality but affordable pre/power combination such as the Moth 30 Series, or a capable integrated such as the Copland CSA-14. Partnered with speakers such as the Mission 752, Professional Monitor Company TB1, Rega ELA II, or Neat Mystique, you'll not want for clarity, liveliness or precision.



Wilson benesch Matrix cartridge: peerless stylus.

CD player or amplifier?

I have an old system comprising: Monitor Audio E500 turntable with SME 3009 and Stanton 681, Hitachi Pre-Power 6500, Hitachi D980 deck, Hitachi HS 530 speakers and an Akai AT2650 speaker. The Stanton and the pre-amp are in bad condition; the Hitachi D980, Akai AT2650 and the wires of the SME have problems too.

I want to buy a CD player as the base of my system, like a Micromega Stage 4 or Marantz 63KI. Do you suggest I replace only the pre-amp with another such as a Rotel, or buy a Cyrus, Audiolab, or Arcam integrated?

I want to spend about £500-£800, plus £150 for a cartridge and wires for the SME.

Petros Nicolaidis, Thessaloniki, Greece

Start afresh with a new amplifier. Try those you've suggested along with the new Storm integrated from Talk Electronics and the Naim NAIT3, both of which have excellent phono stages. Get your dealer to examine your turntable — you might find a new turntable is worth the additional outlay. Listen to a Rega Planar 3 and the new Systemdek 2X2. If you opt to repair your existing deck, fit a Rega RB300 arm.



Pioneer A-300R: optimised for music.

Receiver or speakers?

My system consists of a Proton 930 stereo receiver, Philips CD721 CD player, NAD 6300 tape deck, and Jamo D115 speakers on spiked stands.

My problem is that I feel my overall sound could be vastly improved. I am on a budget of £350 and would like your advice on whether to upgrade my receiver or my speakers.

Regarding a receiver, I have been looking at both the Yamaha RX-V390 and the Pioneer VSX-505 RDS both of which sound good. On the other hand, should I change my speakers?

I am interested in the Sony SS-176EB Brooklands Edition, or the Tannoy Profile 632 Plus, both of which are bi-wirable.

David Sherlock, Birkenhead, Merseyside

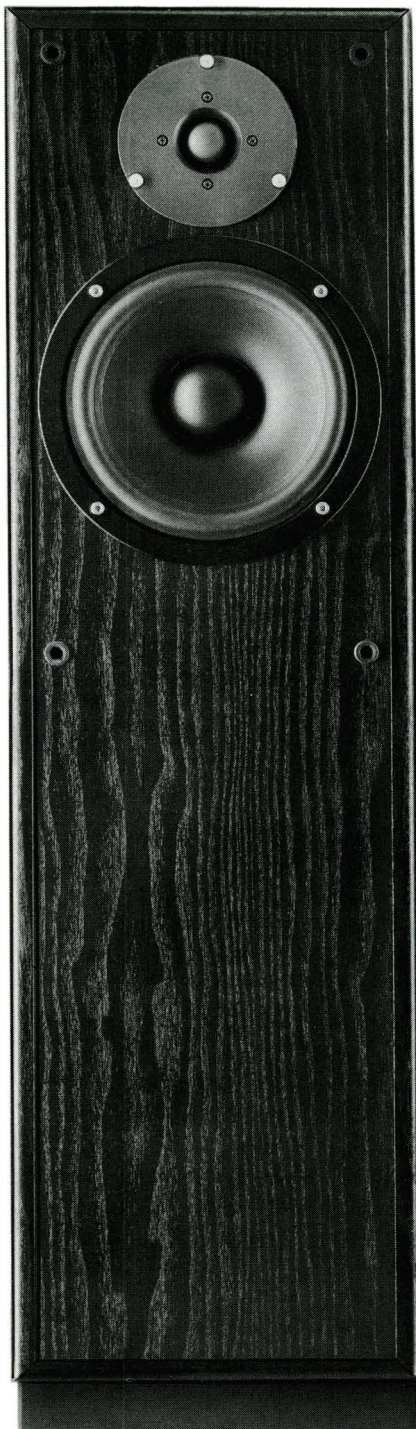
First, you need to decide what you want your system to do. Both the receivers you mention are AV surround-sound designs, so they won't be optimised for music reproduction. Unless you get involved with home theatre, ignore AV amplifiers and receivers. An equivalently-priced amplifier and tuner, such as a Pioneer A-300R, Denon PMA350SE or Harman Kardon HK620, with a Denon TU260L, will suit your needs better.



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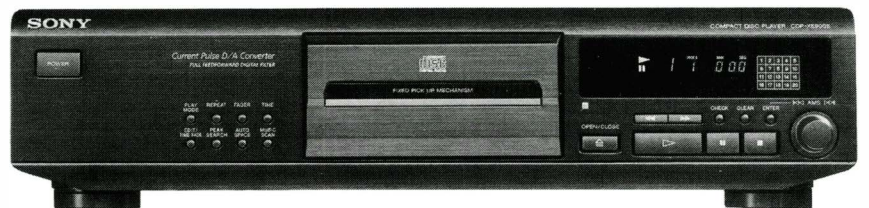
TA-F448E AMPLIFIER. "...sounds clean and totally in control. This amp is good - very good"

(JULY '96)



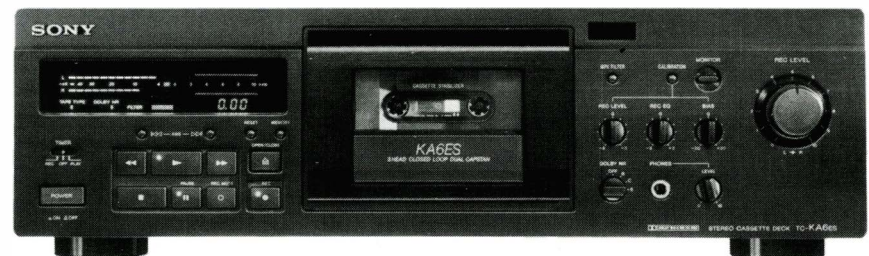
MDS-JA3ES MINIDISC SYSTEM. "The Sony makes recordings virtually indistinguishable from the original"

(DEC '95)



CDP-XE 900E CD PLAYER. "...feels built to last, looks smart and sounds very classy: it deserves to do well"

(AUG '96)



TC-KA6ES TAPE DECK. "...a very superior piece of machinery. Superbly built, this deck mixes luxury and functionality."

(JUNE '96)

SSI176EB SPEAKERS. "...their space, presence and rich authority make for a wholly satisfying listen." (SEPT '96)

SONY

*Sony is a trademark of the Sony Corporation, Japan.

Remote quality

My system comprises a Pioneer 703 CD player with Audio Alchemy DACMAN, Pioneer A-400 amplifier and Mission 733 speakers.

While I'm very happy with the crisp, detailed sound, I would like the convenience of remote volume control. I've been considering buying an Audiolab 8000S to give me this much-desired facility, but would value your opinion on whether I will also improve the sound quality of the system, or if it will remain pretty much the same. Bearing in mind that the price of the new amp would be double that of my existing Pioneer, am I likely to spend solely for remote convenience or am I making a significant upgrade? I would consider other remote amps of equal quality.

M. J. Watson, Saudi Arabia



The Audiolab 8000S (above) should improve your system's performance quite markedly. An inexpensive CD player would normally start to show its limitations with a more revealing amplifier, but the combination of the 703's excellent transport and the AA DAC might just cope. It's worth bearing in mind that although Mission's loudspeakers usually work well with budget amplifiers their performance does tend to improve significantly when you up the quality of what's driving them. Other similarly-priced remote control amplifiers worth auditioning include the Mission Cyrus III and the Myriad M1120.

Proper speaker set-ups

I have a Ferrograph F307 MkII amplifier, Pioneer TX9100 tuner, Connoisseur turntable, SME MkII arm with Shure M75E cartridge, and Spendor BC1 floor-standing speakers resting on concrete blocks on carpet. My CD player is a cheap, retail-giant own-brand (£10 second-hand — and it needs a rap on the case with the knuckles to get it started!) and I recognise its limitations.

I will certainly be replacing the CD player and would welcome some advice on something to suit my current set-up and whatever else you might recommend. I don't play many LPs these days.

I listen to all types of music in a room 12 feet by 24 feet. One speaker is in a corner and the other is halfway down the long side of the room, again against the wall. I sit centre, opposite.

Keith Spann, Dartmouth, Devon

Let's first sort out your loudspeaker set-up so you can properly hear any improvements to be had from a better CD player. The Spendor BC1 is not a floor-standing speaker, nor should you place it in a corner or against a wall. It should be on an appropriate stand, away from the wall and clear of room corners. Once you have sited it appropriately, it should sound cleaner, clearer and you might have a properly balanced sound stage. Then you can start auditioning CD players, ideally models in the over-£350 region such as the Rotel RCD-970BX, Kemwood DP-7090 or Arcam Alpha 8. I'm sorry that I can't make any firmer recommendations because the Ferrograph amplifier is an unknown quantity. Take it to your dealer to compare with more modern designs.

HINTS AND TIPS

Turntable tracking

Jimmy Hughes passes on some turntable tricks

I improved the sound of my turntable recently by the simplest tweak; all I did was increase the tracking weight slightly, going from 1.6g to about 1.9g. This eliminated a couple of problems I'd been experiencing on and off for a while; specifically less than totally secure tracking and higher levels of surface noise than I'd have liked.

Also, my stylus had developed a susceptibility to becoming caked with dirt and debris far more than it ought. Since I keep my LPs in mint condition this was worrying; at times I'd only play half a side and the stylus would need cleaning. I began to think my Audio Technica ATOC30 cartridge was on its way out — after all, it is about five years old...

Cartridge tracking weight is very much a question of compromise. In the bad old days, very heavy playing pressures were frowned on because of increased record and stylus wear. During the late '60s and early '70s the search for lower playing weights was taken to grotesque levels; it almost became a sign of manhood if you could play at less than 1g.

When moving coil cartridges began to take over in the mid to late '70s, tracking weights increased to a more sensible 1.8-2g. At pressures like these the stylus can actually 'clean' the groove as it plays, dislodging particles that the tip would otherwise ride over.

In the late '70s I had a Supex 900 (typically a 1.8g tracker) that liked tracking at 3g! It produced a sharp lively sound, but best of all it was brilliant at 'cleaning' records; you could often get an LP with surface noise, play it once or twice with this Supex, and it would have audibly quieter surfaces.

Now I've got the ATOC30 tracking at nearly 2g it's doing a similar job; not on every record of course, but quite a few have quieter surfaces after being played. However, before going for higher playing weights, there are some pitfalls to watch out for. First, not all cartridges are happy playing at high weights. It's risky to exceed the manufacturers' stated maximum downforce.

Excessive tracking weights may cause the cantilever to 'collapse' so that the cartridge body rides too close to the LP surface. Another drawback is poorer sound; increasing stylus pressure in excess may dull the treble and make the bass heavier.

Temperature and humidity play a part too, so often you have to strike a compromise between sound quality and security of tracking, as the two

don't automatically coincide. I'd always err on the side of too heavy than too light, but not all authorities would agree.

Incidentally, you're more likely to increase record wear by tracking too light than too heavy. If your stylus mistracks, the damage caused as the diamond tip careers

about is far more serious than a slight increase in playing force that secures firm tracking.



Put the needle to the record — but ensure the tracking force is with you!



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Taped crusaders

Cassette tape is still Number One for cost-effective compilation creation. Alvin Gold tries out six decks that are ideal for dubbing albums and CDs.

At this precise time (1997) and place (UK), the humble tape cassette deck has been with us, hugely refined but fundamentally unchanged, for around three decades. In that time it has withstood numerous cold blasts of competition — from DAT, from MiniDisc, from DCC (created in cassette's own image), and even from Elcassette, if anyone remembers that short-lived 'super-cassette' format.

It can't go on forever, and there are early signs that MiniDisc (MD) may establish itself as the next generation recording format. This is not yet thanks to a new groundswell of support from the grass roots, but because MD has had considerable success elsewhere, in particular the Far East, and in broadcast studios where they favour it for convenience, robustness and low cost. However, was it not these very qualities that helped establish the popularity of compact cassette in the first place?

MiniDisc offers additional attractions for the home user. As it is modelled on the compact disc, it is a natural container for the contents of compact discs. And because it is small and can be teamed up with a digital memory to fill in gaps caused by motion, MD is a natural for use in cars — another application that has supported compact cassette over the years.

For now, however, and perhaps for some time to come, compact cassette will remain unchallenged, even though sales of pre-recorded cassettes are well past their peak. Compact cassette remains the only universal recordable carrier and by far the most affordable medium. It's likely to remain so, with most cassette-deck sales concentrated below £150, at half the price of the cheapest MiniDisc recorders to date. The cassette is not above adopting some of the benefits that have been built into its competitors, especially the thin film heads developed for DCC. Currently, however, these are only used in a



THE CAST LIST

Denon DRM-650S	£229.99
Harman/Kardon TD450	£349.99
NAD614	£269.95
Pioneer CT-S500S	£249.95
Sony TC-KE550S	£229.99
Technics RS-AZ6	£229.95

range of cassette decks from Technics (see RS-AZ6 review, p.45). In the long term the writing may be on the wall for the humble analogue cassette, but for now its show remains firmly on the road.

The emphasis in this test group is on the practicalities of the cassette as a recording medium performing common tasks — such as recording from compact disc, or making tapes for use on the road. Five of the six decks chosen cover a narrow price band, from £230 to £270, reflecting a preponderance of newly introduced models in this band, and some gaps left by models that have been available for some time, but which we have not previously covered.

It is interesting to note that there is still no 'standard' specification at this price. There are two- and three-head models, some with Dolby S and others without, some with auto tape tuning, and some without, or with a manually assisted set-up procedure (the Sony TC-KE500S). Not all have headphone sockets, which once would have been regarded as a necessary part of any recorder. The one thing their designers all seem agreed upon is that cassette deck owners no longer make live recordings with microphones.

For those interested in recording the baby's first words, or their own music making, it is worth pointing out that any cassette deck can be used with microphones on the addition of a microphone preamplifier or mixer. Such devices are readily available from electrical accessory outlets like Tandy.



DENON DRM-650S £229.99

As if to underline the snail-like rate at which Dolby S has been adopted by the industry as a whole, this is the first Denon cassette deck to feature it. Happily, Denon has chosen as its launch vehicle a comparatively inexpensive and straightforward deck. In day-to-day use it is the nicest of all six models tested here, with particularly well-judged ergonomics, and a practical set of facilities.

The feature list includes a display dimmer, adjustable-level headphone output, record return (make a trial recording, and a single button press resets the tape to the start point in record/pause mode) and more. A quick acting automatic tape-tuning feature is also included, and the deck has an IR sensor which allows it to be controlled by a Denon system remote control.

Technical highlights (Dolby S and auto tape-tuning aside) include a so-called 'silent logic' mechanism, which is just that in some modes. On the other hand, it can be quite noisy with some transitions, for example from fast wind to play, and the high speed run is neither quiet in itself, nor quick. But these are minor qualifications in the grand scheme of things, and more than offset by the degree of attention to detail elsewhere. The design is also notable for its use of separate power supplies in the transport and the audio circuitry, an idea mirrored in other high-class cassette decks and CD players.

Dolby S is a powerful process which in the past has proved difficult to engineer

without some unwanted side effects, and sure enough this is the case here, perhaps inevitably given that Denon is just getting underway with Dolby S. These recordings suffered occasional sibilance, and had an over-lit yet dynamically damped treble, which suggests that either the Dolby settings are in error or the player's frequency response is not quite right. Dolby B, which involves less electronic manipulation of the audio signal, sounds more neutral, if less

DENON SPECIAL FEATURES

The DRM-650S fairly bristles with features that will interest those who make recordings for use in cars or portable stereos. The wide-ranging record-level meters and adjustable-level headphone output are especially useful – this deck is one of only two models in this group thus equipped.

The Denon also includes a CD Synchro function, which as usual is designed to co-operate with Denon-branded CD players via their Synchro socket, which is patched with a lead to a similar socket on the back of the cassette deck. Many third-party CD players will work just as well, but do try before you buy. The modus operandi is similar to others of the type: the blank tape and CD are cued up at record/pause and pause respectively, with the Dolby circuit and record levels set, and recording is started with a single keystroke.

The feature is handled in a fairly rudimentary way, however. If a CD track is interrupted at the end of a side of tape, it won't restart automatically when the tape is turned over. Also, there's no 'peak search' level-setting facility – yet you'd expect to find this on a relatively inexpensive mini system. However, no mini system cassette deck could ever sound as good as the DRM-650S...

lively though the midband and lower treble.

The deck worked well with all high bias tapes, but jumped through hoops almost as effectively with chrome bias tapes as with metals (Type II and IV respectively), which makes chrome the optimum choice for most situations. Type I ferric tape recordings sounded smooth enough, but lacked the bite and passion of recordings made on tapes from the higher-bias tape groups.

Pitch stability is very good. There was no audible loss of pitch integrity with sustained piano notes for example, and that is a stiff test. Complex high-frequency passages remained transparent and well separated, which is a strong indication that flutter is well suppressed.

The bottom line is that the DRM-650S is an attractive, moderately-priced deck, which offers real musical integrity with good ergonomics and fine build quality. It has its limitations (in particular the Dolby S circuit needs a little fine tuning) but they are entirely in line with the modest selling price.

DENON DRM-650S - VERDICT

SOUND ★★★★★
VALUE ★★★★★
PRICE £229.99

- ▲ Excellent Dolby S deck at an affordable price, with good build quality and ergonomics to its credit.
- ▼ Dolby S itself can sound slightly synthetic.
- ✉ Hayden Laboratories Ltd, Hayden House, Chiltern Hill, Chalfont St Peter, Bucks SL9 9UG
- ☎ (01753) 888447



HARMAN/KARDON TD450
£349.99

◀ The TD450 is a full three-head machine, capable of playing back recordings as they are being made. It is also physically larger, or at least taller than most, which comes as a bit of a surprise as it uses a drawer-loading mechanism. These can easily be exploited to produce a slimmer profile.

There are no space savings here, however, and no specific claims are made for the qualities of the drawer-loading transport. Because the tape path is buried inside the machine, it tends to be less affected by acoustic feedback, which should mean less intermodulation and a cleaner, less muddled sound. On the minus side, because the tape is out of sight once loaded, there is none of the visual feedback that makes cassettes so intuitively obvious to use.

The traditional solution is a real-time counter that works out how much tape is on each hub, and gives an absolute time reference, either time elapsed or time to go. Instead, Harman/Kardon has fitted a simple time counter that resets every time the tape is inserted. There is not even a memory stop feature, which would have helped. Another slap on the wrist is also due to Harman for fitting the open/close drawer button as far as possible from the drawer. Why not go the whole hog and put it on the back panel? Tape wind speeds are a little slow.

Other facilities include Dolby B and C (but not S), with HX Pro to give low-bias tapes a lift, and an MPX filter switch (a bit of

a relic these days) which should be left switched off to extend the treble bandwidth. A fine-bias adjust control is fitted, and you get a well-endowed infra-red remote control of obvious generic origin, since it includes features not included on the TD450. There is no headphone socket, without which a recorder seems somehow undressed.

Metal (Type IV) tapes were a little under biased at the standard settings, giving a

rather bright tonal balance, but this was correctable with the fine bias control, switching the source/tape monitor back and forth until the two sound as close as possible. Dolby C slightly exaggerated this brightness, which was much less apparent with Dolby B. At the opposite end of the frequency spectrum, bass sounded a little boxy and lightweight, though I'd rather have this than the wishy-washy, overblown bass that characterises many lesser cassette decks.

Between these two frequency extremes, the TD450 was impressive (and a little reminiscent of the NAD 614) for its solid, articulate and stable midband. Recordings, especially those made using metal (Type IV) tapes, sounded large in scale, but well focused and with good inner resolution — allowing one to hear deep into the finest detail of the recordings. Treble quality was also good, and largely free of the subtle furring of fine detail that is so often associated with even quite costly cassette decks.

H/K SPECIAL FEATURES

The basics for home recording are well handled, thanks to large, well separated transport controls with a positive action, and an uncluttered record level meter/counter readout. Off-tape monitoring helps confirm that recordings are proceeding as expected. The TD450 also has a CD Sync button to operate the play, pause and stop functions on a Harman/Kardon CD player connected using a rear panel link (many other brands of deck will co-operate too). In use, the CD Sync circuit is activated and record mode starts as soon as the CD player starts; it stops at the end of the disc.

The deck will pause when the tape runs out, and restart when the tape is reversed, or alternatively a selection of tracks can be pre-programmed on the CD player to avoid interrupting the last recordable track on tape. At any point, pressing pause on the cassette deck will also pause the CD, and both will similarly restart in unison.

These facilities are undoubtedly of some help, but stop a little short of the all-encompassing dubbing features found on many mini systems with auto-reverse mechanisms.

In particular I would have liked an automatic procedure for restarting tracks interrupted by the end-of-tape side changeover — though this can be done manually, of course.

HARMAN/KARDON TD450 - VERDICT

SOUND ★★★★★
VALUE ★★★★★
PRICE **£349.99**

- ▲ Despite some irritating flaws this design has integrity, and offers a quality midband.
- ▼ Bass response is rather shallow, and operating this deck is rather like driving in the dark without lights, since its drawer-loading mechanism does not give the visual access of front-loading designs.

✉ Gamepath Ltd, 25 Heathfield, Stacey Bushes, Milton Keynes MK12 6HR
☎ (01908) 317707

NAD 614 £269.95

The NAD 614 is a straightforward two-head deck, with a basic range of features, including Dolby B and C, Dolby HX Pro and a simple tape-memory counter. The display includes an unusual vertical record-level meter, which though not a new idea, does make it easier to take in the required information quickly. The meter range is limited to just 28dB, and the readout goes red above +5dB. Although it doesn't differentiate between tape types, this is a sensible ceiling for most better Type IV tapes, but rather generous for Type Is and IIs. The display is otherwise well designed, and the key operating controls are sensibly grouped by function.

Special features include CAR (see box-out), and Play Trim, which is a NAD speciality that has been taken up by others, notably Yamaha. Play Trim gently tilts the frequency response, applying a little bass boost and treble cut or vice versa, ahead of the Dolby replay processor. This is to allow old tapes, or tapes made on recorders with a different alignment, to play with a neutral tonal response without compromising Dolby replay integrity. A dull sound and mistracking Dolby processing often result when tapes made on one machine are replayed on another; Play Trim is the solution.

A pair of sockets on the rear panel can be connected to other similarly equipped NAD components, allowing synergistic operation using a single system remote control, which is usually supplied as standard with NAD receivers. Note that there is no headphone

socket, which is an unhappy omission from any cassette deck, though the NAD is not unique in this respect.

NAD's recent cassette decks have been less than inspiring, but the 614 marks a welcome if belated return to form. The NAD was well set up, and accurate tonally with all three tape groups, which is a precondition if the Dolby circuits are to do their job without audible mistracking and noise

NAD SPECIAL FEATURES

The NAD 614 does not hold the user's hand when it comes to dubbing compact discs, but it offers one feature of particular value for those who make compilation tapes for use in-car. This is a compression circuit called CAR (Compensated Automotive Recording, would you believe), which addresses the problems caused by high ambient noise levels in cars. Normally noise smothers fine detail and quiet passages, posing a particular problem for classical and acoustic material, which roam over an enormous dynamic range. Standard chart material by contrast often covers little more than 10 – 15dB, making extra compression unnecessary.

CAR lifts low-level sounds by about 12dB, with some additional 'loudness' boost at the frequency extremes to compensate for the additional apparent loss of output at these frequencies. In fact the effect of this processing is similar to what happens when you play a Dolby recording without Dolby replay processing (many people instinctively do that anyway to maintain audibility in quiet passages), but without the unwanted muddling of the sound that non-Dolby playback causes.

CAR is also beneficial to recordings destined for personal stereos, as it allows a sensible replay level and reduces the danger of excessive sound pressure levels through volume peaks.

pumping. What's more the transport is good enough to provide pitch integrity that withstands even the most critical piano music test. If memory serves, this NAD's transport is also mechanically quieter than previous models'. Best-case results overall were with Dolby C and metal (Type IV) tapes, which made recordings with an almost rail-like stability. The Dolby C circuit was not as transparent as Dolby B or (better) no Dolby at all, but the additional reduction in tape hiss is enough to outweigh the minor losses in this case. Chrome bias (Type II) performed almost as well with the NAD, and offers the best value for money for most requirements.

The 614 is a quintessential NAD product: sensible as a pair of Doc Martens, with some practical features — still miss that headphone socket, though! There is nothing flash about the 614, but it does have a satisfyingly solid feel, and positive controls that are few in number and well organised in layout. The deck is slick and mechanically quieter than NADs of the past. My only criticism is the price, which seems a little steep.

NAD 614 - VERDICT

SOUND ★★★★★
VALUE ★★★★★
PRICE £269.95

- ▲ Solid, workmanlike and ungingmicky player with a solid, workmanlike sound to match.
- ▼ A little pricey by the standards of its class.

✉ The Audio Club, NAD Building, 401-405 Nether Street, London N3 1QG
 ☎ (0181) 343 3240



ON TEST: CASSETTE DECKS

PIIONEER CT-S550S £249.95

A full three-header with real-time off-tape monitoring, the Pioneer is also equipped with Dolby S noise reduction, while Super Auto BLE circuitry automatically sets bias, sensitivity and equalisation. In this deck, an elaboration of the system called Super Auto BLE XD extends the process by thrashing the tape with high-level signals (at -5dB ref. OVU) to explore its signal-handling capacity under pressure, then throttling back record bias when recording at high levels. This forces the tape to behave consistently as levels increase, without the drooping high-frequency output normally expected.

If this sounds familiar, well spotted. On paper, XD sounds very much like Dolby HX Pro, and the small print confirms that Dolby HX Pro is suspended when XD is invoked. The crucial difference is that where Dolby HX Pro keeps total bias constant by allowing for the self-biasing effect of the music signal's high-frequency content, XD reduces the total bias at high levels, operating more like a supercharged Dolby HX Pro circuit, without raising distortion. Which is curious since underbiasing tapes will increase distortion and vice versa. The practical effect, however, was to make ferric recordings much sharper and livelier, and straight HX Pro soft and bland. As expected the effect is all but inaudible with Type II chrome bias tapes, and (especially) Type IV metals.

A further proprietary technology, FLEX (Frequency Level Expander System) adjusts replay equalisation to give an energy spectrum at different frequencies that corresponds to the statistical norm for music. The no-brain version is that FLEX gives a lift to recordings made on low-grade cassette systems, or to old cassettes — and it works.



Other features include a remaining time counter (this is calculated after the tape has been in play mode for a few seconds), multi-track search, and a good level display with switchable range — a gimmick as the wider range only covers 26dB. Wind speed is slow.

PIIONEER SPECIAL FEATURES

Much thought has gone into making this deck helpful in typical home recording situations. Features include timer standby, which can be used to record radio programmes (come back *Hitchhiker's Guide to the Galaxy*, all is forgiven). There is also a 'system control' feature which allows a Pioneer system remote control to operate the cassette deck directly. A wire link between the various system components relays instructions from the system amplifier or receiver.

The CT-S550S specifically supports CD dubbing, using a wire link to any Pioneer CD player (single or multi-disc) that is fitted with the appropriate CD Synchro control socket. The basic method involves setting record level on the cassette deck once a blank tape and CD have been inserted. Then you select record pause, followed by CD Synchro. The recording is paused when the disc comes to an end, and resumes when the disc is replaced. At the end of the tape side, the CD player enters a pause at the start of the current track, ready for the tape to be reversed or replaced. In both cases however there is a one-minute time limit before the component in pause is thrown into stop mode.

Musically the Pioneer is good, but with an important caveat. The transport is clearly a high-class design, which helps recordings sound sharp, clean and stable. The XLE circuitry helps produce an accurate response with well extended bass and treble; ferric tapes make an impressive showing thanks to BLE XD. One caveat is that the deck can sound rather mechanical and processed, with a clear diminution of soundstage depth and scale, and a loss of transparency and sweetness in the treble.

The Pioneer has its limits then, but it is a natural for those with large or old tape collections, for those who want to use ferric tapes extensively, or where higher bias tapes are not such a priority.

PIIONEER CT-S550S - VERDICT

SOUND ★★★★★
VALUE ★★★★★
PRICE £249.95

▲ Class-leading feature/£ ratio; stable, tonally accurate sound; makes great use of cheap ferric tapes.

▼ Loss of transparency through record/playback electronics chain.

✉ Pioneer High Fidelity (GB) Ltd, Pioneer House, Hollybush Hill, Stoke Poges, Slough SL2 4QP
(01753) 789500

SONY TC-KE500S £229.99

The TC-KE500S is the junior brother of the TC-KE600S reviewed in issue 158 — both the result of a project led by Sony UK, to design cassette decks optimised for sound rather than features. That doesn't mean the TC-KE500S is under-endowed, though, as it boasts Dolby S (with B, C and HX Pro of course), three heads and tape calibration, as

well as a number of hidden features including a FET input playback amplifier designed to reduce playback noise. The transport is a simpler two-motor design than the three-motor unit used in the TC-KE600S, and as a consequence offers slow wind speeds.

This is one of the select few three-head decks in this report. Dedicated record and playback heads can each be optimised for

their individual rôles — combination heads compromise between conflicting technical requirements — and recordings can be checked as they take place. Attractive metering, a headphone socket and remote control receiver are included, though the handset, model RM-J710, is £25 extra. Search facilities are limited to a device called Multi-AMS, which will search out tracks up to 30 away from the current position.

Though potentially more accurate than most auto tape-tuning aids, the Sony's record level calibration circuit (see boxout) performed below par. The process gave ambiguous results when trying to optimise bias with Type IV metal tapes, and the final settings for all tape groups were consistently outperformed by the default settings using TDK tapes closest to the IEC standards (AR, SA and MA). Metal (Type IV) tapes for example were over biased and sounded a little dull after tuning, but chrome bias (Type II) tapes sounded bright.

Ease of use is not the Sony's strong suit. The tape calibration circuit is not only suspect in its alignment, it is also awkward to use, and it lacks any back-up memory. Once



one tape has been aligned, subsequent tuning of another tape from a different tape group will cause the original setting to be dismissed — other brands' auto-alignment circuits remember one setting for each of the three tape groups. In general, the Sony's control system is only adequate.

In the end, the deck was assessed without tape calibration, and at last the designers' efforts bore fruit with a not particularly analytical or dynamic, but smooth, solid and intelligible sound quality. Tape noise was low, even without the ministrations of Dolby S, but the latter provided the icing on the cake, with less noise modulation and a more refined, consistent sound, especially with metal tapes. There was an occasional sug-

gestion of the thickening of textures associated with flutter, but it proved difficult to pin down, and may have had another cause. Metal tapes are recommended for optimum sound quality with this model.

SONY TC-KE500S - VERDICT

SOUND ★★★★★
VALUE ★★★★★
PRICE £229.99

▲ Consistently enjoyable, though not especially analytical music-making ability with Type II and IV tapes; well implemented Dolby S.
 ▼ Sony should rethink the tape calibration system; build quality could be better.

✉ Sony UK Ltd, The Heights, Brooklands, Weybridge, Surrey KT13 0XW
 ☎ (0181) 784 1144

SONY SPECIAL FEATURES

Your money pays for performance engineering, so forget CD-dubbing features. There's not even a remote-control wire link, so recordings from CD must be made in the time-honoured manual way.

While most features here are designed to optimise sound-quality, the tape alignment system is quite user-unfriendly. Unlike most other models tested, the Sony has a record-bias calibration and record-sensitivity system built in, but adjustment requires the operator to match bar-graph displays, first to each other, then to a fixed marker — auto set-up circuits from other brands are slicker.

Sony has labelled the sensitivity setting as record level, which is plain wrong. The sensitivity setting matches signal levels internally to ensure proper Dolby tracking, while record level adjustment is made afterwards. So there are two front-panel controls with the same labels. Bizarre!



TECHNICS RS-AZ6 £229.95

The last time we looked at cassette decks, (HFC 158) the Technics RS-AZ7 was the star of the show. The RS-AZ6 is a simplified version of the same deck, but still with the same key selling point — the 'amorphous-Z' (AZ) thin-film playback head (see box).

This is a three-head deck with real-time off-tape monitoring. Also part of the package is an automatic tape tuning system called ATC, which adjusts record bias, equalisation and sensitivity in about 30 seconds, and worked accurately with all three tape groups. There is a memory counter and track search feature, and a headphone socket with associated volume control. The record level meters are good quality and wide-ranging.

Ostensibly there are few differences between this model and the RS-AZ7, apart from the omission of a timer standby facility and 'Direct Play', which on the senior model connects the output of the AZ head pre-amplifier directly to the output sockets, without passing through the bias trap and Dolby noise reduction circuits that are otherwise

always in circuit, whether Dolby is selected or not. Finally, where the RS-AZ7 uses a number of selected audiophile grade components in critical areas, the AZ6 does not.

The RS-AZ6 may look drab, and the minor control layout is a little cramped, but it works very well — although you need to select 'tape' source during playback. Fast-wind speeds are fast, taking about half the time that most decks need to wind a C90, and this includes a slowing-down period just before the end to avoid tape stress.

Output from this thin-film head machine is a couple of decibels below the norm. The next point noticed on audition was the consistent sound of this deck before and after recording: the deck is unusually transparent, even when monitoring while the recording was being made, which was assessed by switching between source and 'off tape' using the amplifier monitor switch, not one on the cassette deck. Metal tapes produced a noticeable 'loudness' contour off tape, with a slightly distant midband and prominent frequency extremes, but treble quality

was unusually detailed and refined, and the bass was an order of magnitude more tuneful and extended than that of most other cassette decks, even though a conventional head is used in the record cycle. Great stuff.

The use of metal tapes is an absolute prerequisite if you want the best from this machine; chrome bias tapes like TDK SA result in a greater performance hit than usual. Regrettably ferric tapes were a dead loss, with a soft, rather inconsistent treble.

TECHNICS SPECIAL FEATURES

Thin film heads aren't new, but were only introduced to domestic audio in DCC, Philips' failed compact cassette competitor. Magneto-resistive amorphous thin-film heads (in which resistance changes with altering magnetic fields) have a number of important properties, including low source impedance, which means much less noise than other head types create. Also, the Technics head is not subject to the usual contour effects which limit bass extension and cause wild variations in higher bass.

The RS-AZ6 has separate record and playback heads because thin film heads haven't reached the stage where they can be used for recording. Because record and playback heads are discrete they suffer little interaction — unlike the conventional 'Siamese' construction which puts the record and playback heads inside a single housing. The RS-AZ6 sounds virtually as good monitoring off tape during recording, as it does when playing back.

TECHNICS RS-AZ6 - VERDICT

SOUND ★★★★★
VALUE ★★★★★
PRICE £229.95

▲ The cleanest, most transparent cassette deck at the price — but it has grunt when required.
 ▼ Not quite as refined or transparent as the next model up, the RS-AZ7.

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

CONCLUSION

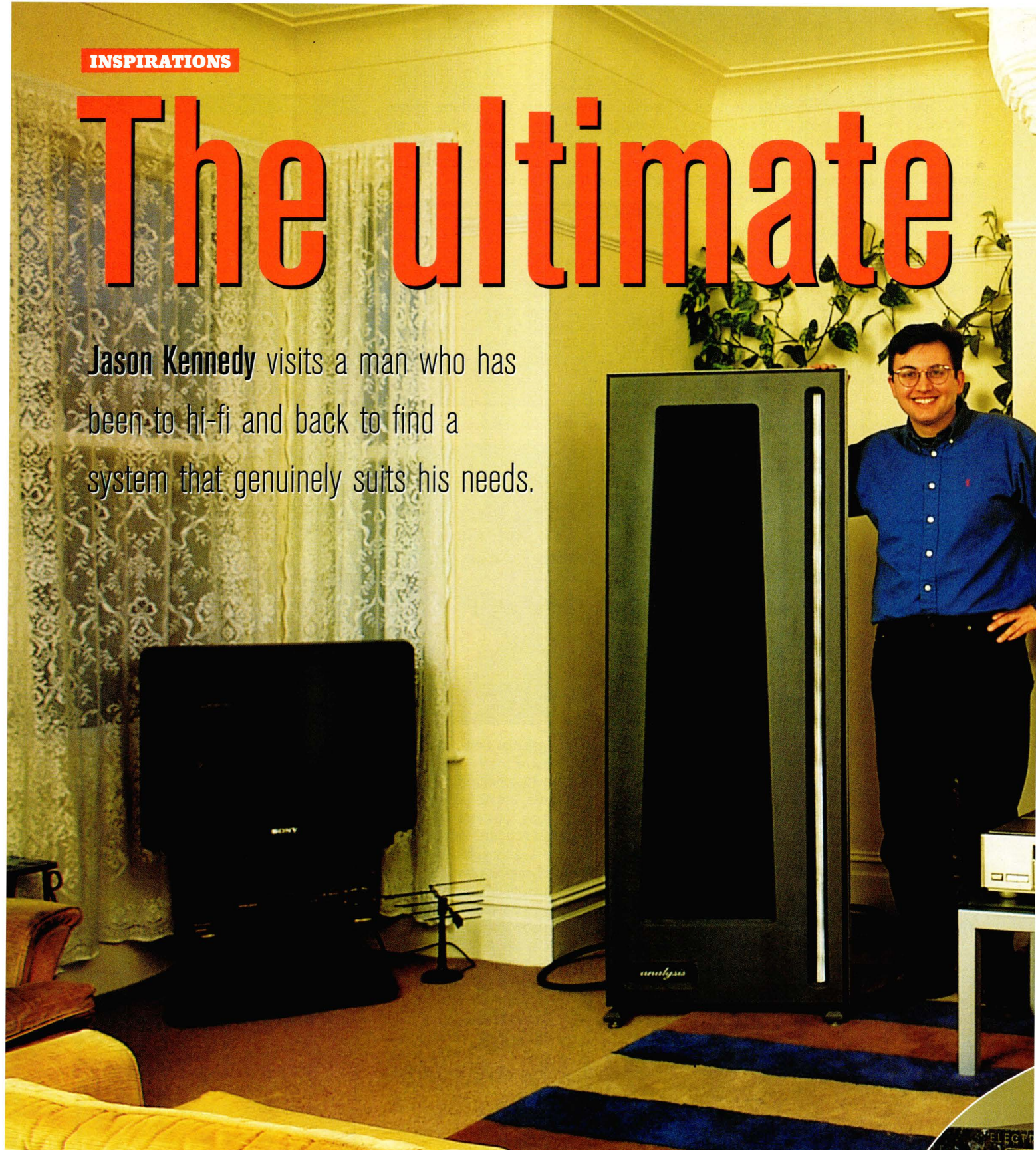
All but one of our six contenders turned in broadly similar performances, the exception being the Technics RS-AZ6 (Best Buy), which sounds more like a CD player than a cassette deck, thanks to its special 'thin-film' playback head.

Although neither the Sony TC-KE500S nor the Harman/Kardon TD450 are formally commended, they only trip up because of a poor tape set-up feature and minor sonic blemishes in the Sony, and flawed

ergonomics in the Harman/Kardon. The NAD 614 (Recommended), nudges ahead thanks some valuable features for those who make up tapes for cars and personal stereos — it's easier to use as well. The Denon DRM-650S (Recommended) is a well-thought-through deck that's easy to use and capable of excellent recording quality, while the Pioneer CT-S550S (also Recommended) is the obvious choice for folks who have large existing tape collections.

The ultimate

Jason Kennedy visits a man who has been to hi-fi and back to find a system that genuinely suits his needs.



Looking at Zahir Jafferji's current hi-fi system gives few clues to the epic and expensive journey he has undertaken taken to assemble it. The ultra-simple combination of clearly select yet not particularly ostentatious components hides one of the more extensive forays into the world of high-end hi-fi that I've come across.

Zi, as he prefers to be called, got the bug at the tender age of 16 while in America, buying a semi-typical state-side system of

AR turntable, Nakamichi cassette deck, Audiotone amplifier and Professional Monitor loudspeakers, the latter being big multi-driver power houses. This system was largely destroyed when he moved back to the UK, but the Nak at least survived and remained in action until a fit of minimalism saw him giving the deck to his lucky Dad. When Zi's record collection fell to the same fate — although I believe the beneficiary this time was a friend — one thing that became

clear, and explains the lack of clutter in the living room, is a disinclination to hoard. I don't think the guy even has a drawer of accessories and hi-fi gubbins.

The loss of the American system left Zi with the most basic set-up he has owned: a Walkman and a pair of active Bose speakers, but driven by magazine-induced paranoia as he was, that rig didn't last long and was quickly replaced



stress buster

Zi Jafferji's source of sonic solace: a £10,000 cure for audio psychosis!

CD Player: Pioneer PD-95 (£2,500)

Amp: Electrocompaniet ECi-1 SF (£2,400)

Speakers: Analysis Omega (£4,500)

Cable: AudioQuest Jade/Clear 3 Hyperlitz (£1,000+)

with an Arcam system of Alpha/Delta persuasion and ProAc Studio 100 loudspeakers. But it wasn't long before the bug kicked in again — this time with more funds in hand, the winner was Roksan. Zi loved the look and sound of the DP1 CD player and complemented it with the sophisticated grunt of a matching pre/power amplifier. He lived with some 'big sound, little box' ProAc's to begin with, but ended up using a pair of vintage Tannoy Lancasters with Gold Spot

Pioneer's £2,500 PD-95 saw off competition from Krell, Wadia and Marantz.

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720 Spadina Avenue, Suite 100A, Toronto, Ontario, M5S 3C9. Tel: (416) 596 7657.

In New Zealand: Avalon Audio, 587 Mount Eden Rd., Auckland. Tel: (649) 638 9000.

In South Africa: Hi-Fi Specialists, Durban Road 155, Bellville. 7535. Tel: (21) 946 1441.

In USA: Audiophile Systems Ltd, 8709 Castle Park Drive, Indianapolis, IN 46256. Tel: (317) 849 7103.



Zi chose these Greek Analysis Omega ribbon speakers for their full-bodied sound. Right: outboard crossover boxes.

◀ dual concentrics after a chance encounter when encouraging a wealthy relative to take the plunge on a pair of Rega Kytes. He didn't say whether the relative actually bought the Kytes; just that it was quite a job to persuade him to spend £200 on loudspeakers!

The Tannoys introduced Zi to dynamics and naturalness that he'd not encountered before. However, their shortcomings at low frequencies were a limitation, even with Radford MA15 monoblok valve amps hand-tweaked by tube-wizard Graham Tricker. Zi has done a fair bit of tube dabbling and enjoyed the open sweetness of triodes, but preferred the balance and balls of push-pull designs. In fact what led him to the £2,400 Electrocompaniet ECi-1 SF currently installed, was a desire to find an amp with push-pull-type sound but plenty of power.

The components listed above are the ones that spent quite a while in Zi's system. I got the impression that there were plenty more that came and went rather quickly; in fact during the course of the interview Zi referred to nearly as many components as your average reviewer would cite. He had clearly become obsessed, consuming both American and British magazines and visiting dealers as often as most of us go to the supermarket. What his long-suffering girlfriend had realised early on, eventually became clear to him. He was in a state of audio psychosis — he wasn't happy until he'd tried the flavour-of-the-month component according to the magazines. The situation clearly had to stop, and it did. Zi took a holiday from hi-fi throughout 1994, selling his system and taking a sojourn from magazines and dealers. He took this time to eval-

uate what he, rather than reviewers and dealers, found to be the most important aspects of musical reproduction. These he narrowed down to a sense of integration, a feeling of melliflueness in the music, and a sound that presented all the information in a coherent, focused manner. He didn't want detail, imaging or dynamics, he wanted a system that was undemanding and yet informative, undistorted and with full bandwidth.

High-end harmony

It seems that this yearning for a sense of harmony led to the integrated yet high-end components he ended up with: the £2,500 range-topping Pioneer PD-95 was selected after Zi auditioned alternatives from Krell, Wadia and Marantz. None, it seemed, could match the PD-95's sense of effortless musicality. The Electrocompaniet was chosen for its combination of tube-like sound and its hefty 80 amp current capability; although Zi originally teamed these two units with Boston Lynnfield L300 loudspeakers he knew that effortless power was a critical factor in achieving the Grail he sought.

The £4,500 Analysis Omega ribbon loudspeaker is a Greek design that Zi felt offered Apogee sound for around half the price. Again this selection was divined after considerable research — it would seem that most of the panel speakers in the country have entertained this dedicated enthusiast. But electrostatics failed to win him over, their tendency to suit a single sweetspot listener and their inability to provide real bass welly in the average living room being the

main limitations in Zi's opinion. It would seem that the Greek ribbons are perfect for his requirements: they are indeed surprisingly wide in dispersion, despite being rather large for the room, and provide full bandwidth sound at the low volume levels demanded of urban existence.

The cabling is AudioQuest: Clear 3 Hyperlitz on the speakers and Jade interconnect. As the penultimate model from a range that Zi keeps going back to, this speaker cable is the third AQ that he's used. He can't find anything that suits him better.

What Zi has ended up with is one of the most relaxed and effortless non-tube systems I've heard. As a result it can seem dull at first but after a while you realise that the absence of the high frequency distortion that emanates from an awful lot of speakers (we have come to accept this as part of the music). I had a similar result with the Electrofluidics Sonolith speakers — a lot of people thought they had no high frequencies until their ears adjusted to treble without the tweeter zing.

Zi's musical tastes tend to err on the laid-back side as well and it would not seem too much of a leap to presume that his preference for sonic mellowness has something to do with his job in credit control. I would imagine that trying to extract money from those who don't have it or won't pay it is even more stressful than being a hi-fi reviewer! Which, not so oddly, is what this particular audio junkie wants to be. But only as long as it didn't rekindle the flame of audio anxiety, leaving him stranded in a sea of alternative sonic solutions... ▲

Looking for the

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

"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"

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.

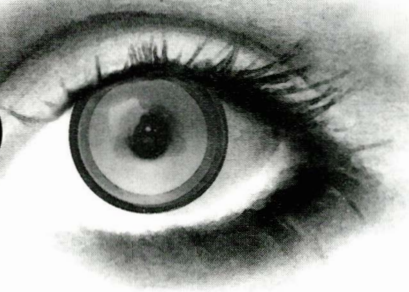
If you go into a shop and demand a particular CD player, on the basis that it got seven stars (out of five) in last month's magazines, the shop will probably simply take the line of least resistance and sell it to you. (Or switch-sell you to a similar price alternative, if he's fresh out of stock of 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 decision making process.

Putting together a successful hi-fi

real thing?



specialist dealer if you are searching for real hi-fi satisfaction

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

"if music is an essential ingredient in your daily diet, you owe it to yourself to become a member of the discriminating minority"

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 are 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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All hands

STATE OF THE MARKET

In the process of preparing this review I made a few phone calls to manufacturers and dealers to enquire after the health of the turntable market in the UK. The story seemed to be that budget turntables are selling quite well, albeit not as fast as a few years ago. Grahams Hi-Fi in North London commented that its decks were gathering some dust, but added that sales of decks in the £300-odd price category continued against all odds. No-one seemed entirely sure who is buying these decks but it appears to be either people replacing old equipment and/or upgrading from a basic set-up, or people who have bought a mini- or midi-system and wish to add a turntable. It might also be pointed out here that Rega decks have appeared carrying NAD and Akai badges as those companies address the existing turntable market by buying in products, and the Innovations catalogue now features a £60 Bush turntable aimed at that category of buyer.

Further up the price scale, things seem to be very, very slow. No one was prepared to be specific, but the impression is that decks above £500 are selling in small numbers and almost entirely to existing dedicated enthusiasts who have promised themselves a Linn/PT/whatever for years. It also seems that the place to go for such decks is increasingly the very small, specialised dealers, many of whom are true analogue die-hards themselves and stock turntables almost as an act of faith. As for true high-end decks, I heard several reports that the SME 20 still sells, but little else. A shame, since a fine turntable is a wondrous thing.

When it comes to vinyl itself, for classical music forget it; a handful of audiophile specialities is all you'll find. But most pop releases still come out on vinyl, alongside what Radio 1's Mark Radcliffe calls 'Costly Disc'. Many DJs seem to prefer vinyl both for its sound and its predictability; even on Radio 3 I still hear the occasional give-away click of a dirty LP, as opposed to the stammer of a dirty CD.

Richard Black finds out what's happening in the world of turntables, takes a look at some budget models, and finds that it's still worth investing in this much-loved format.

Fifteen years after its launch, CD's much-heralded 'supremacy' over LP has still to be conceded by many vinyl lovers. In fact it's surprising just how many people seem to equate true audiophilia with analogue automatically, and even among the non-audiophile classical music brigade — who according to legend gave up LP about 10 minutes after buying their first CD player — one still encounters the wistful refrain: 'Of course, CD sound's not as good as LP when all's said and done...'

Although LP sales are still pretty healthy in certain fields (indie pop particularly), CD continues to grow overall, and many's the record shop that now only stocks silver discs. So why buy an LP turntable now? Principally to play an existing record collection. Even if most of us aren't about to add significantly to our collection, that's no reason not to hear what we have at its best.

Indeed there is still quite a selection of turntables available, so it seems quite appropriate for *Hi-Fi Choice* to feature a few. In this case it's three budget models that are likely to appeal to folks with CD-only all-in-one systems, first-time

THE CAST LIST

Moth Kanoot	£329
Pro-Ject 2	£299
Rega Planar 3	£274

on decks

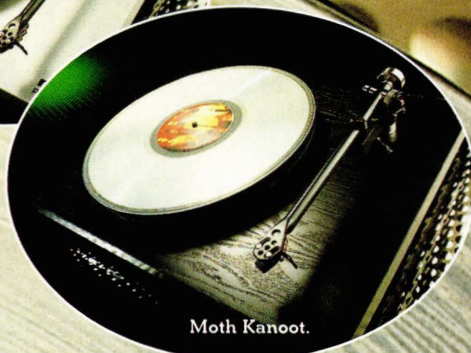
Rega Planar 3.



Pro-Ject 2.



Moth Kanoot.



upgraders replacing some trusty Dual, Garrard or even Amstrad (arrgh!) — or simply as replacements for deceased platter-spinners. Not to mention first-time buyers, if there are any these days....

One of these decks is supplied with a cartridge as standard, and the other two at least save you the bother of choosing an arm. Just a brief word on cartridge selection, then: the days when one had to worry about matching cartridge compliance and arm mass are essentially gone, certainly in the budget sector, as things are now largely standardised. And experience suggests that most of the cartridges around in the £20-up category are very competent. Try not to spend less than that; a little more will certainly buy you some refinement, but I don't recall hearing any bad cartridges in the £20 to £100 bracket. Practically all budget cartridges are moving magnet, i.e. high output, and therefore suited to normal MM turntable inputs on most amps.

Finally, do make sure your amplifier has a turntable input, which should be marked 'phono' or MM or even 'turntable'. If not, you may need a separate phono amplifier, such as the excellent Moth 30 Series, priced at £200, which I used in this test.

A FEW ALTERNATIVES

There are still quite a few budget turntables around to compare with the three covered here. Most notable, perhaps, is that great survivor, the Dual CS505 (now in Mk IV form), the real 2CV of hi-fi, priced at £250. When I reviewed it about six years ago I found things to criticise, but looking back now my real memory is of my first '505 in 1982, which at the time sounded like the epitome of hi-fi. Still, it's gone up a fair bit over the years and at £214, Rega's cheaper Planar 2 undercuts it and arguably outperforms it. Certainly if you want upfront, lively presentation, the Planar 2 is worth a listen. Another one to watch is the new Systemdek 1/960, which comes in at £500 and has an acrylic platter.

Of decks listed in our *Directory*, Thorens' TD166 (£300) is the cheapest true suspended subchassis model and with its 'refined and solid sound' makes a good case for following that route. Like Dual and Rega decks, Thorens' products are renowned for hassle-free ownership and use, and operation of any of these units is no more bother than playing a CD. Even less trouble is Thorens' semi-automatic TD280 (£210), which, like the CS505, will lift the arm for you and switch off at the end of a side. Given the encouraging results with the Pro-Ject 2 here perhaps we should also look at the 1 (£200) and the 0.5 (£170).

Sadly, you might have trouble finding a dealer who can demonstrate more than one or two of these decks, but it's worth the effort, and hearing a few demonstrations can be interesting and rewarding.

Dual's trusty CS505 mkIV — the "Deux Chevaux" of hi-fi! →



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MOTH KANOOT

◀ It's smart enough, but they don't come much more basic than the Kanoot. Simply take a rectangular slab of Medite, mount a bearing and sub-platter assembly in the centre, add motor and switch at rear left and arm at rear right, then plonk on a simple folded Perspex lid (this is open at the sides, which I can't say strikes me as a good idea if one wants to keep dust out). The arm is the highly-regarded RB300 from Rega in its 'OEM300' incarnation, the bearing and sub platter appear also to be Rega and are of good quality, while the motor is the usual small synchronous type, running directly from the mains and fixed rigidly to the turntable base. The platter is also made of Medite, and unusually the drive belt goes round the periphery of the platter itself, rather than the sub-platter. It's a round section belt, running in a grooved pulley on the motor (two different pulley sizes providing the speed change from 33 to 45rpm), and as it goes round one can see it riding up and down on the pulley, which is guaranteed to introduce speed instability (wow and flutter).

The review sample suffered from motor noise, audible from six feet away and inevitably breaking through into the audio signal picked up by the cartridge. We are assured that this is not typical, but even so I would prefer to see the motor resiliently mounted as is more common, given that all

such motors are inherently somewhat noisy. The only mechanical isolation is provided by three slightly compliant rubber feet, also of Rega origin. A Nottingham Analogue 'Spacemat' of light foam material tops the platter.

Moth sells the deck without a cartridge. I used an Ortofon 520 which seemed very happy, and indeed would make a good partner for most budget decks. Because there is no height adjustment built into the Rega arm, Moth provides a selection of spacing washers which can be fitted under the arm base to alter its height. This is not such a painful operation as it might sound and is quickly accomplished. Setting up takes very little time, but as with any turntable it is worth applying some thought to siting. Especially in a deck like this one with very limited suspension, external vibration can be a big problem, causing not only smearing of the sound but in extreme cases (such as footfall) groove skipping. A wall-mounted shelf helps provide isolation from major jolts, and the use of a proprietary isolation platform (such as the Townshend Seismic Sink) is strongly recommended. This is

essentially what I used for the review.

Unfortunately, all the isolation aids in the world could not disguise the fact that the Kanoot does indeed suffer badly from pitch instability, clearly audible not only with the demanding sounds of piano or organ, but with most other instruments and even voices on occasion. In addition, its sound was decidedly coarse, showing little attempt to sort out the strands of complex music, and imparting a woody tone to percussive sounds in particular. Surface noise seemed louder than with the other decks, and only in the simplest pieces of music (such as solo violin) did the deck give a reasonably good account of itself in terms of detail and neutrality. As the most expensive deck of the three, it seems of questionable value. ▶▶

MOTH KANOOT - VERDICT

SOUND ★☆☆☆☆
VALUE ★★☆☆☆
PRICE £329

▲ Very simple design.

▼ Very poor wow and flutter, confused sound.

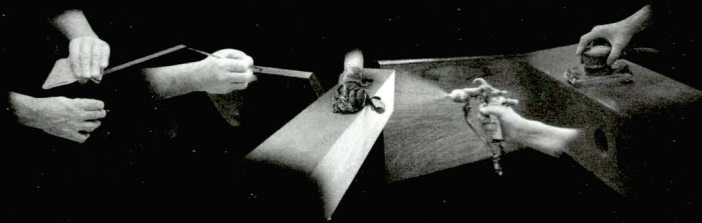
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 Bedford MK45 3HT

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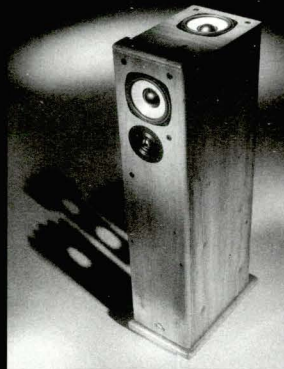
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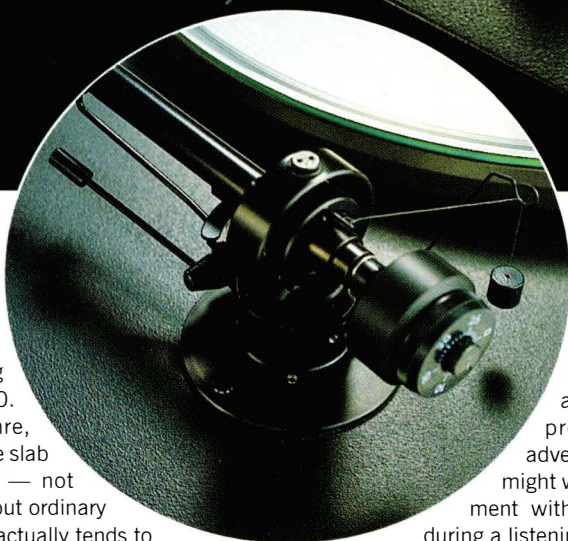
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PRO-JECT 2

Hailing from the Czech Republic, this deck comes in the middle of a range extending from £160 to £450. Typical of its genre, it's built on a single slab of particle board — not Medite this time, but ordinary chipboard, which actually tends to have rather better resonance-damping properties. The usual small mains motor is suspended on rubber bands and drives the plastic sub-platter via a flat belt. Speed change is effected by removing the platter and moving the belt to the other position on the motor pulley. The captive bearing seems secure enough.

Unusually, a combination of metal platter and glass mat is used, with an additional felt mat on top. The arm is apparently Pro-Ject's own, with sapphire gimbal bearings. Operation is fully manual. Instead of a captive arm lead, Pro-Ject has fitted a pair of phono sockets at the rear of the deck, allowing the user to upgrade the modest supplied lead at a later date. Vibration isolation comes courtesy of four very compliant feet which give quite good decoupling both verti-

cally and horizontally. The lid is made of a very hard plastic and is rather prone to ring; adventurous users might wish to experiment with removing it during a listening session.

As the Pro-Ject turntables are distributed by Henley Designs, which (having once been Ortofon UK) also represents Ortofon, it is no surprise to find an Ortofon cartridge supplied as standard. In fact there is the choice of a 520 moving magnet or MC1 Turbo moving coil (but with very high output, similar to that of a MM). The review deck arrived with an MC1 and since I had a 520 handy I was able to try both options.

To dispose of that particular variable first, the MC1 is certainly a very strong, upfront and indeed at times bright performer, but I rather preferred the more civilised tones of the 520. It's certainly a comparison worth trying if your local dealer will oblige. However, with either cartridge the Pro-Ject 2 comes across as a very capable deck.

Give it some complex details and it will make a creditable job of sorting them out; give it a distinctive tone, as of piano or a singer, and it will reproduce faithfully with only a little of that coloration that is the true bugbear of turntable design. In a track from Prokofiev's *Love of Three Oranges* suite, the bass drum was clearly defined and believably integrated with the rest of the orchestra, while in Ronald Center's *Dona Nobis Pacem* the organ could be more clearly distinguished from the voices. I also noticed that surface noise was less obvious than with the other two decks. As for rhythm and drive, it certainly kept up with the Bhundu Boys with alacrity. On the debit side there was still some woodenness to the sound, and imaging and 'air' were not truly first-rate. On the whole, though, a fine performance, especially considering the price — hence a Best Buy swing-tag to go.

PRO-JECT 2 - VERDICT

SOUND ★★★★★
VALUE ★★★★★
PRICE £299 (INC. CARTRIDGE)

- ▲ Great detail, rhythm and integration.
- ▼ Slight coloration and imperfect imaging.
- ✉ Henley Designs Ltd, Chalfont St Peter, Buckinghamshire SL9 9UG
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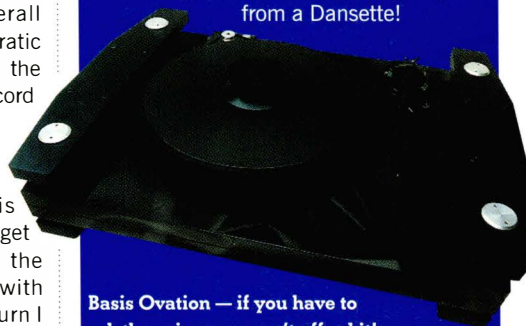


LOONY TUNES!

From the sublime to the ridiculous: if none of these decks take your fancy, perhaps Sir or Madam would care for a Platine Verdier? Something in the region of £25,000, apparently, and you don't even get an assembled turntable, as the motor is separate and can be mounted several feet away if you make up a drive cord (silk thread, ideally) long enough.

Actually, super-expensive, over-the-top turntables seem to be a bit like exotic drugs — everyone has heard of some, maybe met someone once who had seen one, but can't quite put their finger on the details. I definitely once saw a photo of a Transrotor, a German deck about a yard across looking like a space station, all bright chrome tubes, and apparently currently listed at about £20,000. I am indebted to my Belgian colleague Werner Ogiers for a list of funny-money turntable makes, several of which I hadn't heard of — Merrill Heirloom, En Vogue, Quasar, Schelp, Basis Ovation? I suspect some 'makes' are just one enthusiast producing one-offs to order like the huge Yamamura turntable of yore (which I did see in the flesh), but Rockport Technologies in the USA is serious enough and produces a deck with a nominal price, I'm told, of \$65,000. Nearer home, SME's Model 30 Mk 2 comes in at nearly £10,000 including arm, while a Reference Stratosphere will set you back some £6,000.

Many of these decks are ultra-heavy affairs with solid metal platters and acres of granite and other special materials. Some of them work, some don't. It's a fascinating field, and a long, long way from a Dansette!



Basis Ovation — if you have to ask the price, you can't afford it!

CONCLUSION

It seems almost ungracious to be disparaging about any turntable these days, but differences between decks are far from subtle and when one comes along that outshines its colleagues in the way the **Pro-Ject 2** did here, it would be less than honest to conceal the result. I would still recommend that you audition the **Rega Planar 3**, not least because it is a departure point for so many hi-fi upgrade paths; but in this company, and indeed any comparable company — Pro-Ject can hold its head up very high indeed.

REGA PLANAR 3

One of the true stalwarts of the UK hi-fi scene, this classic deck in many ways resembles the Moth described above, but has belt drive to the sub-platter, a suspended motor and a lid which encloses all four sides and is both smartly and functionally made of 'smoked' acrylic. The platter is of thick glass, with a felt mat. Essentially unchanged from the past (the counterweight on the RB300 arm has been changed from tungsten to less dense stainless steel, but that seems to be all), the deck was reviewed previously in *HFC 48*, about a decade ago!

The silver finish of the review sample is from a range of available colours (£15 extra over black) and is apparently quite popular as it matches some modern mini-systems better. Rega supplies the deck without a cartridge, although the review sample came with a Rega Elys (£85) fitted. I listened to it both with this and with an Ortofon 520, to give some consistency; in fact the two don't seem to be miles apart.

Like the Moth Kanoot, the Planar 3 has a round section belt and although in this case I couldn't actually see the belt 'walking' up and down the pulley I very quickly became aware of some pitch instability on piano recordings, always the first to demonstrate this effect. Different flaws irritate different people, but wow and flutter drives me bananas very fast.

Apart from that, the Planar's sound is quite good on the impact and immediacy fronts, though not so strong on the subtlety. I felt the most successful track I played was from a Bhundu Boys record, which seemed

suitably vigorous and enthusiastic, though even here I would have preferred a little more insight into the Boys' often complex sound. On a rather aged copy of Shostakovich's second piano concerto surface noise was brought up more than I am used to hearing, and although the orchestra had some good body to it the imaging was rather one-dimensional and the overall effect was not what it can be. Solo operatic tenor seemed more sibilant than with the Pro-Ject, while a violin and piano record became a little muddy and indistinct.

It should of course be said that Rega Planars have sold in telephone-number quantities. Build quality is exemplary — a reference among budget decks. Nevertheless, comparison of the Rega with the Pro-Ject 2, and of both with my reference Pink Triangle (which in turn I have compared many times with master tape) shows that in some departments at least, the state-of-the-art in turntable design has moved on in the last few years.

In the light of this review I regret we must downgrade the Planar 3's Best Buy status to Recommended. This will be reflected in next month's Directory. — Ed ▲

REGA PLANAR 3 - VERDICT

SOUND ★★☆☆☆
VALUE ★★★★★
PRICE £289 SILVER/£274 BLACK

▲ Quite lively and involving.

▼ Slightly coarse; some pitch instability.

✉ Rega Research Ltd, 119 Park St, Westcliffe-On-Sea, Essex, SS0 7PD

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Broadly Speaking

Paul Messenger (listening test) and Paul Miller (lab test) put 15 speakers through their paces, at prices all the way from £300 to £800!



KEF RDM1 p.79

THE CAST LIST		
MODEL	PRICE	PAGE
Acoustic Energy AE109	£329.95	65
Audio Gem Emerald	£540	77
B&W 305	£349.95	67
Castle Avon	£699.90	85
Celestion A1	£699	87
Heybrook Heylios	£339	69
KEF RDM One	£499	79
Mission 753 Freedom	£798	89
Musical Technology Kestrel SE	£299.95	71
Naim Intro	£596.90	81
Sequence 400	£329	73
Silverado Raider	£695	91
Tannoy 637	£549.90	83
TDL T-LINE 3	£749.95	93
Wharfedale MFM-3	£349.95	75



Silverado Raider p.91

We selected these speakers to cost between £200 and £800, our brief being to thoroughly appraise the broad marketplace above the entry-level sector.

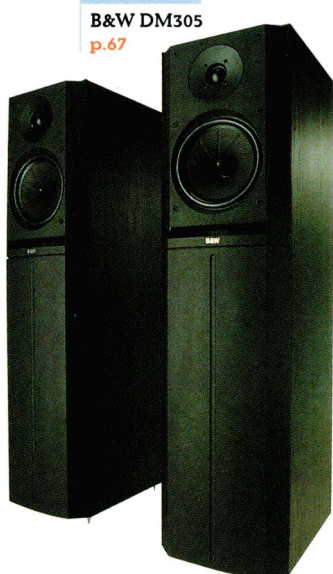
£200-£800 splits up pretty naturally into £200-wide chunks, giving us three reasonably sized sub-groups, with six models under £400, four priced £400-£600, and a further five between £600 and £800. As it turned out our cheapest entrant came in at £300, but was fitted with enough optional extras to take it up into the next price group.

(To reflect our greater emphasis on price-based sub groups, you'll find our reviews are now printed in order of their colour-coded price group, then by brand name, rather than just by brand name as was formerly the case. To find a specific model, use the purely alphabetical Cast List printed above. *Ed*)

Price is a flexible and obvious speaker yardstick, but size is an equally relevant discriminator. Floor-standers continue to domi-

nate the scene while stand-mount speakers remain the minority, comprising just four of our 15 contenders this time around (a similar proportion to the last group in issue 160). Value comparisons between floor-standers and stand-mounts are complicated by the potential cost of stands for the latter.

The stereotype speaker includes two drive units and a crossover network to split the signal between them, mounted in a box that needn't cost several hundred pounds if it is small and made from vinyl-covered chipboard. But there are infinite variations on the basic theme, and loudspeakers do sound



B&W DM305 p.67



Tannoy 637 p.83



Audio Gem Emerald p.77



Acoustic Energy p.65



Musical Technology p.71

very different from one another. Good speakers may not rescue a system with poor sources and an indifferent amp, but that doesn't diminish the speaker's pivotal rôle at the aural and visual centre of any system.

You'll have to make up our own mind about aesthetics. Do you prefer a compact stand-mount, or a one-piece floorstander? Will you settle for a vinyl wood-print, or are you prepared to pay a sometimes hefty premium for real-wood veneers? Some models offer that option; others can be made to order in a range of even more exotic finishes like piano-lacquer. The choice is up to you. However, don't forget that 'real wood veneer' covers a multitude of sins, from the truly classy to the not-much-better-than-vinyl.

And here are just a handful of the more obvious variables the speaker designer has to juggle: size of enclosure, diameter of main driver cone and number of main drivers, size of magnet, and size of port (if ported). No two speaker recipes ever leave the oven sounding the same, as you'll find out when you get your teeth into our reviews. PMe

Wharfedale MFM-3

p.75



Celestion A1

p.87



TDL T-LINE 3

p.93



Mission 753 Freedom

p.89



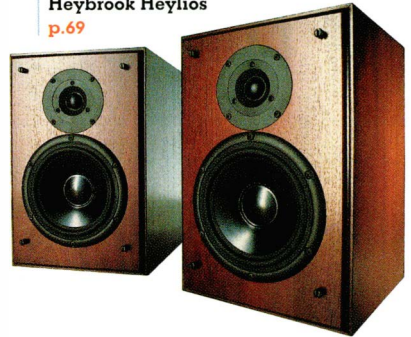
Naim Intro

p.81



Heybrook Heylios

p.69



ON TEST

EQUIPMENT & MUSIC USED

The speaker stands used with the bookshelf models were Slate Audio and Kudos S100. The main reference system used for the blind hands-on work consisted of the usual collection of Mana-supported Naim and Linn components, viz: Linn LP12 turntable, Naim ARO tonearm, Linn Arkiv cartridge, Naim CDS CD player, NAT01 tuner, NAC52 pre-amp and NAP135 power amps. Speaker cables were Naim NACA5 and Nordost SPM.

With 15 speakers waiting in line, the 'blind' listening tests were spread over two separate days, allowing a number of repeats. Thanks are due to panellists David Inman (Castle), Robin Marshall (Mission), Gary Mardell (Mordaunt-Short), Russell Kauffman (Morel, Densen), Steve Taylor (Acoustic Energy), Andy Whittle (Rogers), John Mansell (Rega), Karen Galton-Ferra, plus *Choice* operator Jason Kennedy.

Music used during the testing included excerpts from the albums listed below. BBC Radios 3 & 4 were also used extensively during the hands-on work

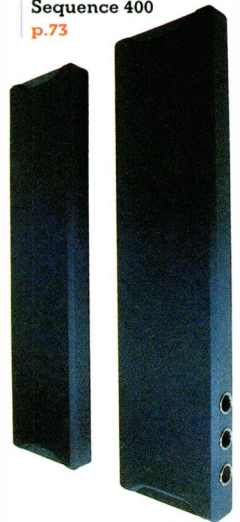
WHAT MUSIC DID WE USE?

- Leftism—Leftfield
- Refugee Camp—Fugees
- The Prodigy Experience—The Prodigy
- Live At The Point—Christy Moore
- Mingus—Joni Mitchell
- Symphony No. 6—Sibelius/Maazel/VPO
- There Is Sweet Music—Cambridge Singers/Rutter
- Quartettsatz in C minor—Schubert/Allegri



Sequence 400

p.73



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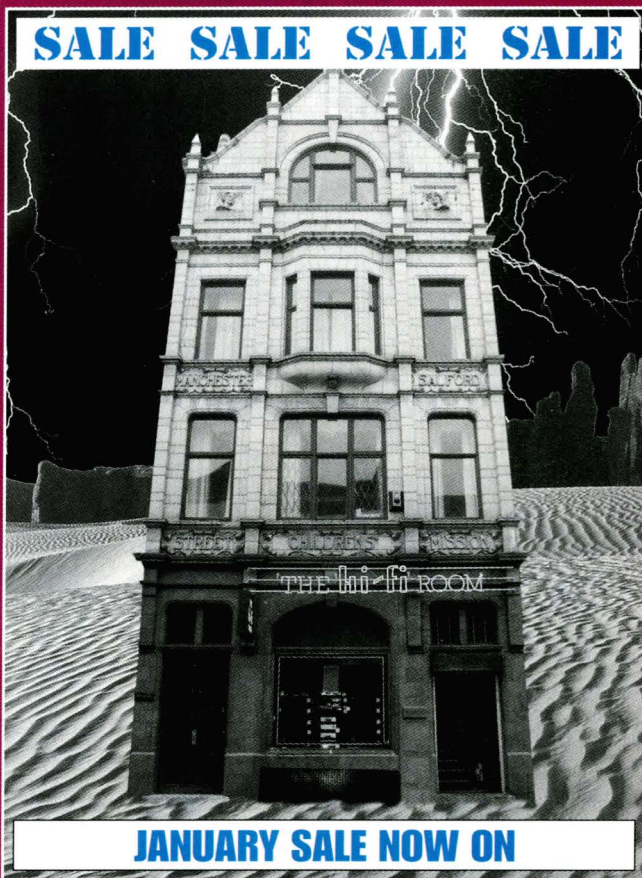
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Acoustic Energy AE109

Judging by the evidence of the new 100 series, Acoustic Energy is going for it. The Big Push, that is, to try and take this hitherto relatively upmarket specialist brand firmly into the mainstream; to compete head-on for volume sales with bigger, longer established and better known brands.

And judging by the £330 AE109, the company stands every chance of success. For good or ill, superficial perceived value is a vital ingredient in achieving serious sales volumes, and it's here that this model particularly excels, due in no small part to the fact that it's manufactured in Malaysia, I suspect.

This attractively slim and compact floor-stander is no beer-budget special. The 'rosewood' vinyl looks better than many, and you get a second small main driver to deliver some extra low-end punch and headroom. A fixed plinth improves appearance, spike retention and overall stability, and the whole thing feels immensely solid, weighing in at a massive 22kg.

The last point isn't due to exceptional cabinetwork or build, it must be said, but rather to the fact that the speaker comes already mass-loaded, with ballast in a cavity near the base. Numerous manufacturers make this available as an option, but leave it

up to the user to find the ballast and guess how much to add — what percentage ever get around to it, I don't know. All credit due to Acoustic Energy then for biting this particular bullet and taking the task out of the customer's hands.

One thing that's sure to tip the commercial scales in AE's favour is simply that these speakers look very good. The styling cues borrowed from AE's prestige models confer a touch of class, while two 100mm cone drivers keep the front fashionably narrow yet still supply a punch equivalent to a 140mm cone.

Close-to-wall siting gives far too much mid-bass, but when placed clear of walls, the 109 has impressively even delivery from 40Hz up to 200Hz. The mid-band decade (200Hz-2kHz) is essentially flat but a little lower in level, while the treble continues to roll off gently and smoothly thereafter. The overall room balance is therefore smooth and progressive, but slightly rich and dull in character.

Sound quality

The listening tests gave slightly disappointing results. Its rather dull and shut-in character works against the 109 at the relatively modest levels used during the panel tests.

Freed of the constraints needed to preserve a panel's ears through a long day's listening, however, the 109 showed a very different side to its character. Winding up levels starts to bring the sound to life, and reveals the positive side of the speaker's character. It simply enjoys being driven hard, and responds by delivering the sort of solid, powerful bass that's hard to find at twice the price.

These boxes don't go really deep, and there is a bit of cabinet honk and some boxy effects higher up. But the twin drivers are agile, and the heavyweight box provides a solid foundation and wide dynamic working range. The result won't suit every taste, but dance music fans are going to find the 109 a whole lot of fun.

Conclusion

Unquestionably the AE109 is fine material value for money, and one of the better-looking compact floor-standers you can buy, but the key question is how well its rich and laid-back balance will suit your taste and system. This speaker likes to be worked hard, but will emphasise its wide dynamic range by delivering impressive bass slam and power for the price. *PMc*



VERDICT

SOUND ★★★★★

VALUE ★★★★★

PRICE £329.95

▲ Great styling and perceived value; likes being driven hard.

▼ Can sound a bit rich and dark; not so great at low levels.

✉ Acoustic Energy Ltd, 16 Bridge Road, Cirencester, Gloucester GL7 1NJ

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THE LAB REPORT

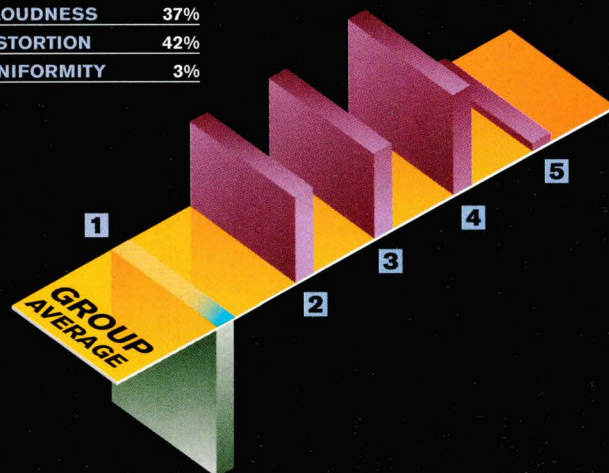
A composite bass-loading technique is used in the AE109. A large, rear port provides reinforcement at 43Hz (coinciding with a minimum 4.16 Ohms impedance) with what appears to be a relatively gentle second-order bass roll-off, but a fairly sustained output right up to 140Hz or so. The two front-mounted ports are linked to the upper of its two polymer-pulp bass/mid drivers and supply a broader, low-Q output with -3dB points that extend from 33Hz-115Hz, contributing to 'woomy' bass.

Sadly, higher frequency resonances that coincide with dips in the axial response above 1kHz also 'leak' from these ports. Otherwise, distortion generated by the drivers themselves is low at around 1 per cent through bass and midrange, falling to just 0.25 per cent through the treble. The speaker shows some reinforcement at around 200Hz and again at 2kHz but the upper mid is slightly depressed in comparison, suggesting that a position clear of rear and side walls is preferable.

Sensitivity is high enough at 89dB, but the load never rises above 15 Ohms (average 8.4 Ohms) given a dip to 4.8 Ohms at 3.6kHz (with attendant phase angle) following the high-pass arm of its three-way crossover. *PMi*

HOW IT COMPARES

1	EASE OF DRIVE	-64%
2	RELATIVE LOUDNESS	37%
3	MAXIMUM LOUDNESS	37%
4	AUDIBLE DISTORTION	42%
5	OFF-AXIS UNIFORMITY	3%





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B&W DM305

It would seem the most natural thing in the world for B&W to take the moulded front and back panels from its successful little 'entry level' DM302 model (a Best Buy in issue 156, EISA Award winner in issue 158), and graft them onto the front and back of a floorstanding enclosure. At first sight that appears to explain the logic behind this £350 DM305, but in turn it begs the question why an extra two feet of woodwork (plus spike kit, packing etc) cost over £200 more than the miniatures.

We're talking woodprint vinyl chipboard and plastic trim here, not some fancy veneer; the styling cues are all very similar, and the 305 remains a two-way system. However, closer scrutiny reveals a number of substantial differences, in a larger and radical new main driver, as well as the cabinet loading technique.

This isn't, therefore, the cheapest compact two-way floorstander around; nor has it the prettiest skin. But the styling does present a very sleek appearance, thanks to a neat and discreet grille treatment, plus a moulding that extends the line of the driver mounting panel right down to floor level, thus avoiding a top-heavy appearance.

The main driver uses the cast-frame metalwork from the 600 Series, which is a worthwhile plus, but the more interesting

feature is the 120mm paper cone. Inspired by an ancient Lowther driver, a number of ridges are moulded into the profile in order to improve the stiffness and resistance to break-up. These run at a spiral angle from near the centre to near the edge, so as to block both axial (bell) and radial modes.

The bass loading is interesting too. There's a small slot-shaped front port just below the main driver, which loads the smaller, upper chamber, while a larger rear port loads the bigger lower chamber. The two chambers are separated by an internal acoustic resistance, which will help control main driver excursion.

There's also the Prism factor. The honeycomb-shaped moulding that comprises the top section of the rear panel is not just a neat nesting site for household insects. The spiky intrusions (seen from inside) deflect the sound energy from the back of the main cone in all directions, rather than reflecting it directly back through the cone.

The room responses suggest free space sitting, and even so show an exuberant mid-bass. The balance trends elsewhere look well-judged overall but suffer some unevenness.

Sound quality

Consistently good blind listening test results have become something of a B&W hallmark, and this 305 proved no exception to the rule, with consistently good scores on two separate presentations.

The finely judged balance and decent bass extension are obvious plus points, and while the 305 showed a fine ability to distinguish between different quality recordings, it wasn't always entirely consistent.

The midband sounds beautifully open at modest levels, but has a tendency to get

progressively edgier when you drive it hard. It's generally very good, but the treble could be sweeter and the bass more threatening — it's certainly there, but doesn't get you on the edge of your seat, or lead you into submission.

Conclusion

It's remarkable just how much performance in sensitivity and bandwidth B&W has managed to squeeze out of this budget floorstander. It looks smart and sounds good, especially at lower levels, and comfortably deserves a Recommended swing-tag. *PMe*



VERDICT

SOUND ★★★★★☆
VALUE ★★★★★☆
PRICE £349.90

▲ Fine sensitivity and bass extension; lively performer.

▼ Bass is a bit diffuse; sounds best at lower levels.

✉ B&W UK Ltd, Marlborough Rd, Churchill Ind Est, Lancing, W. Sussex BN15 8TR
 ☎ (01903) 750750

THE LAB REPORT

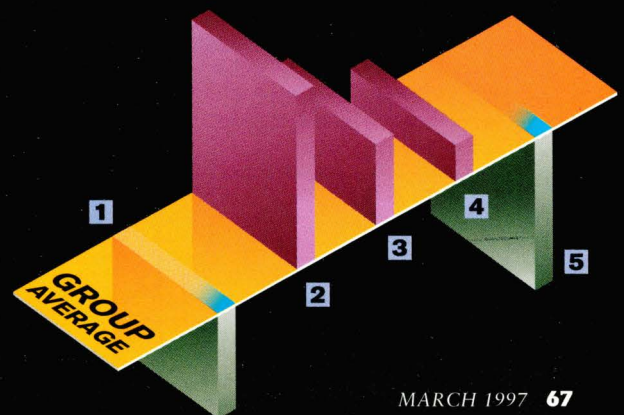
This large but surprisingly lightweight cabinet supports a proprietary bass/mid unit, with built-in 'wave-spoilers', and a 26mm soft dome tweeter. The latter is responsible for a high treble boost that rises a good 5dB above the midband output from around 9-17kHz. The lower treble and midrange is generally smoother in balance, both on and off-axis, suggesting good driver integration.

B&W's lightweight, 'Prism System' cabinet construction certainly helps keep unwanted resonances at bay — a nearfield analysis of the rear port showed that any output above the 50Hz tuned-frequency is well controlled, with any midband colorations suppressed by at least 25dB, and bass extended to around 38Hz in a typical room environment.

Distortion is consistent too, at typically one per cent across the majority of the audio range (up to 96dBA), and though its 90dB sensitivity is 1dB below specification, you can expect to achieve sound levels in the order of 105-106dB in the average living room. The speaker load drops below 8 Ohms from 95-470Hz, reaching a minimum of 4.3 Ohms at 208Hz, which qualifies it for a nominal 6 Ohms rating without the extreme phase angles detected in earlier B&W designs. *PMe*

HOW IT COMPARES

1	EASE OF DRIVE	-45%
2	RELATIVE LOUDNESS	73%
3	MAXIMUM LOUDNESS	34%
4	AUDIBLE DISTORTION	15%
5	OFF-AXIS UNIFORMITY	-65%



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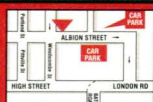
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Heybrook Heylios

Surrounded by a clutch of similarly-priced floorstanders, this new £339 Heylios bookshelf model from Heybrook looks decidedly old-fashioned, though marketing departments are more likely to describe it as 'classic' or 'traditional'. Nor should this be seen as a criticism — 'classic' speaker formats have become so for good reasons, and the laws of acoustics will continue to ignore the dictates of current fads and fashions.

More than the fact that this is a stand-mount, the nostalgic feel comes from a shape that is wider than it is deep, from a sombre and rather anonymous though indisputably real rosewood finish, and from the beading which softens and picture-frames the edges. In all, it's a very pretty exercise in understatement, and should blend in well with the traditional-style furniture available down the high street.

Stand-mounts may be losing commercial ground to floorstanders, hampered by the requirement for additional ironmongery, but they still make sense from a performance point of view. Minimising the surface area and hence distortion contribution of the box is one obvious advantage, and there's also greater flexibility to optimise the enclosure volume and dimensions to match the main driver, while a proper separate stand should

always work better than the typical speaker spike kit.

The main driver here uses a moulded plastic frame and a doped paper cone of about 120mm diameter, while the tweeter has a 25mm soft fabric dome. Twin rear ports reflex-load the enclosure, which is internally damped by three different techniques — bituminous damping pads on the box walls, a further lining of polyester fibres, plus a light fill of long-hair wool.

The in-room responses look very promising, the port tuning giving impressive bass extension, while the whole bandwidth is held within modest limits. Slight leanness through the lower midband, alongside mild forwardness through the upper-mid, are the most noteworthy characteristics.

Sound quality

I was the only panellist who didn't think much of the Heylios; the others put it high on the list of the day's favourites. We all get it wrong from time to time, and the necessity of conducting the subsequent hands-on work allows the luxury of being able to correct an initially false impression.

This is an excellent little speaker — one which goes a long way towards reinforcing my belief that good bookshelf-type loudspeakers will tend to outperform a floorstander of equivalent price. Despite (or perhaps because of) its relatively small size, it delivers bass as deep as anything in its



class, and manages to make it sound quick and clean at the same time.

In character the Heylios is a little on the thin and forward side of neutral. It's a little cold, and some might prefer a sound with some more warmth and richness. Voices are very expressive, if a bit coloured, with slight edginess and a touch of 'quack'.

The Heylios partnered our lower cost components well, sounding clean and firm through the bass, and lively, quick and dynamic in the midband, despite some coloration. It's just a little bright, but open with it, and seems to work well at whatever level you choose to play.

Conclusion

The Heylios might not be the height of current speaker fashion, but its classic proportions and presentation continue to make a great deal of sense, delivering fine sound quality from a compact and attractively finished enclosure — at a Best Buy price. *PM*

VERDICT

SOUND ★★★★★☆
VALUE ★★★★★★
PRICE £339

▲ Fine bass — shows just how good a compact stand-mount can be.

▼ A bit thin and forward, with some mid coloration.

✉ Heybrook Hi-Fi Ltd, Clemo Road, Liskeard, Cornwall PL14 3NH
(01579) 342866

THE LAB REPORT

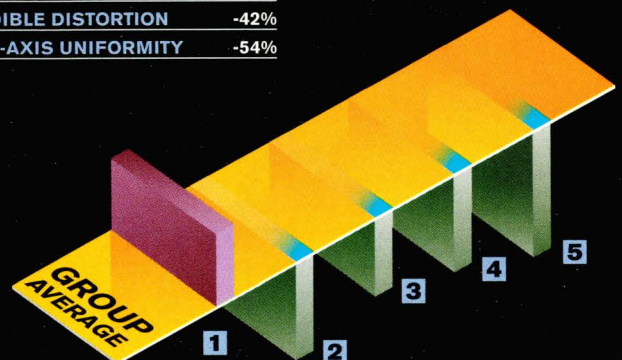
With third-octave averaging, the Heylios's response looks smooth enough, given a generally uptilted treble. However, a narrowband analysis shows its upper midrange is rather erratic, generally depressed and features a substantial blip just below the 3.25kHz that Heybrook specifies for its first-order crossover point. Evidently, the drivers could be better integrated. Otherwise, my near-field analysis shows a very broad, low-Q bass output from both miniature ports, centred on 60Hz (the impedance plot suggests 36Hz) but extending usefully down to 20Hz (-6.5dB).

The port output dies off at 380Hz but there are mid-frequency resonances that reappear beyond 500Hz (typically -17dB below main port output). The impedance minimum of 5.9 Ohms is very broadly distributed from 150-450Hz, and though the 'average' is only 8.7 Ohms over the entire bandwidth, at least the phase angles are kept within 30 degrees.

Distortion is a little high at typically 1.6 per cent (re. burst 96dB output) with a strong third harmonic that decreases in significance through the treble, which is altogether smoother-looking. This sort of distortion pattern has been 'engineered' before, notably by Epos, providing the speaker with the sort of character that can make it stand out in a crowd. *PM*

HOW IT COMPARES

1	EASE OF DRIVE	30%
2	RELATIVE LOUDNESS	-41%
3	MAXIMUM LOUDNESS	-33%
4	AUDIBLE DISTORTION	-42%
5	OFF-AXIS UNIFORMITY	-54%



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Musical Technology

Kestrel SE

The Kestrel was tested and rated a Best Buy two years ago in its original form, but now Musical Technology has introduced an improved version of this cute little speaker to sell alongside the original. An SE suffix represents a significant number of detail changes, while the starting price is now £300 — £35 more than a non-SE model of similar spec.

However, there are several optional extras, to the point where our review samples would actually ring up £494.90 on the till — a £29.95 metal plinth, £15 for the bi-wire terminals, plus a further £150 for an exceedingly luscious and desirable Burr Yew real wood veneer.

Whatever the class of finish, this is still a very neat and attractive loudspeaker, but quite small, too. In enclosed volume and main driver diameter it's among the smallest floorstanders, though it's equally valid to regard the Kestrel as a near-miniature (10.2 litre internal volume) which doesn't require additional outlay on a pair of steel stands.

Somewhat reminiscent of a cute variation on Tannoy's Sixes, the enclosure is actu-

ally pentagonal in plan cross-section. The advantage of a semi-regular shape such as this (over a rectangular section box) is that internal reflections are better dispersed, while non-parallel faces help avoid focusing internal standing waves. The V-back means that the soundwave travelling back from the rear of the cone can't be directly reflected back through the cone, though the depth available to absorb this energy is limited.

Changes introduced for the SE include the use of a cast alloy rather than pressed steel main driver chassis, a larger, bumped-back magnet, and low-loss polypropylene capacitors feeding the tweeter. A foam bung is now supplied to damp the port output if room conditions demand it.

No complaint about the grille frame, which does its job with commendable discretion. The heavy (optional) metal plinth provides a degree of mass-loading and spike fixing. Even though the footprint is not particularly generous, and the ironmongery a bit sharp and exposed, the extra stability is worthwhile.

The room measurements show some similarities to the original Kestrel, but some noticeable differences too. Once again placement poses a dilemma — the limited bass output

favours some wall reinforcement, but the narrow front provides such wide dispersion that midband unevenness results — experiment for the best compromise. The SE appears to have less bass output than the original, while the new tweeter gives a seamless transition through the crossover region, rather than a noticeable dip at 2kHz.

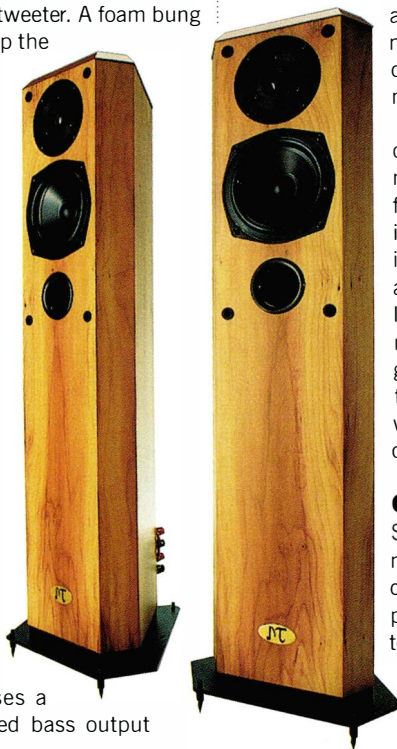
Sound quality

Two separate presentations gave pretty consistent, but not positive results for the Kestrel SE. It isn't a bad speaker, but does sound a bit thin — the one adjective that cropped up more often than not — and could definitely do with a bit more bass oomph.

The plus side is that it's quite articulate through the midband, especially on female voices, and the bass is quite nimble and light on its feet. But dynamics were also disappointing, and the lack of warmth and richness makes no attempt to disguise the small sound of this speaker; conclusions which the hands-on tests did nothing to dispel.

Conclusion

Slightly lighter bass and more presence energy have created a blend which proved rather less satisfactory than the standard model under our conditions. For the smaller room, it could be worth checking out. *PM*



VERDICT

SOUND ★★☆☆☆

VALUE ★★☆☆☆

PRICE from £299 (tested at £494.90)

▲ Articulate and agile; a great looking and very compact little floorstander.

▼ Thin, lightweight and dynamically disappointing sound.

✉ Musical Technology, Unit 10 Howard Ind Est, Chilton Road, Chesham, Bucks HP5 2AU
(01494) 793137.

THE LAB REPORT

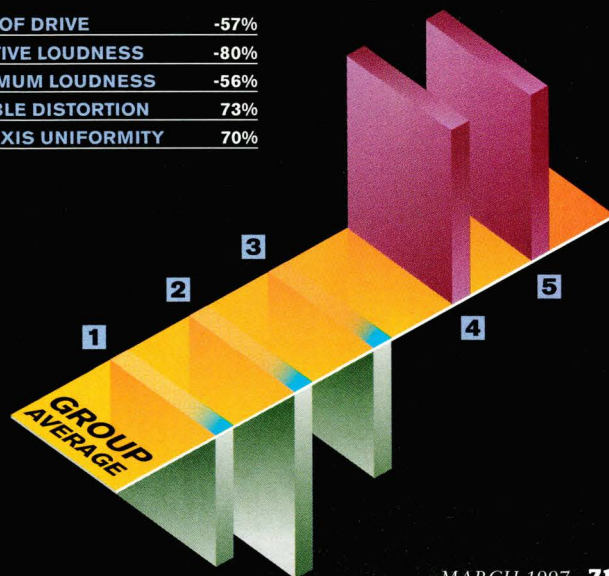
By bucking the trend towards higher and higher sensitivity, the Kestrel's engineers have been able to work towards reducing distortion (a fabulously low 0.4 per cent through the bass and 0.7 per cent midband at 96dB), ensuring a smooth response and above-average bass extension. That's the theory, anyway. In practice, the pentagonal profile of the cabinet certainly helps reduce any internal standing waves, as the clean 55Hz output of the reflex port evidently demonstrates. Furthermore, bass is good to 33Hz before taking into account the effect of rear-wall mounting.

With a sensitivity of just 85.7dB/1W/1m and a maximum output of around 100-101dB, the Kestrels will never blow your socks off. Weak amplifiers take note: the Kestrel's impedance trend is also influenced by its fourth-order 2.1kHz crossover which prompts a 4.3 Ohms minimum at 2.4kHz, along with an attendant phase angle.

Unfortunately, the driver integration is not as good as expected, with the response being broken into three raised 'clumps' between 300-800Hz, around the crossover region at 1.4-3.4kHz and above 10kHz. Analysed in third-octave bands using pink noise, the response looks rather more uniform (on and off-axis) so perhaps these anomalies will be less obtrusive under 'real' listening conditions. *PM*

HOW IT COMPARES

1	EASE OF DRIVE	-57%
2	RELATIVE LOUDNESS	-80%
3	MAXIMUM LOUDNESS	-56%
4	AUDIBLE DISTORTION	73%
5	OFF-AXIS UNIFORMITY	70%



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Sequence 400

The hi-fi press has given a lot of publicity recently to a new type of 'flat panel' speaker, which works very differently from conventional speakers. Much of the enthusiasm is down to the expectation that said flat panels will be usable when hung against a wall.

That has yet to be proved, but in all the excitement it's easy to forget that a 'hang-it-on-the-wall' speaker using conventional drive unit technology has been around for over four years. *Choice* tested the original Sequence 30 back in issue 114, albeit with rather mixed results.

Now there are several different Sequence models — even an ultra-slim, bolt-on-the-wall subwoofer (which would seem less useful, as a subwoofer can normally be tucked out of sight). May Audio has taken over the company and undertaken some significant redesigning, though I have to admit it came as a surprise to hear that the drivers used in this model are actually the same as those featured in the Audio Gem Emerald (see p77).

This £330 400 is the largest and most expensive of three similar-looking models. It's a metre tall, fairly narrow (25cm), and exceedingly slim (7cm); the clever supplied brackets keep the total depth below 8cm. An

optional (£49) accessory allows free space sitting, but as the room measurements confirm, this speaker has been aligned with wall-mounting primarily in mind.

The black stocking-mask finish of the supplied sample didn't offer much camouflage against my white wall, and the large frontal area makes it more obvious. The beige option would have been more discreet, but I'm surprised May isn't offering magnolia or white alternatives. The bi-wire terminals are gold-plated but proved difficult to tighten properly.

The combination of around 10 litres internal volume and a 90mm diameter main cone is typical of many small bookshelf speakers, and the Sequence 400 delivers a broadly comparable performance, notwithstanding its unusual shape. Wall-hanging delivers decent in-room bass down to 45Hz, the overall balance stays within modest bounds, but the lower midband is rather lean.

Sound quality

The 400's naturally easy and open balance got it off to a good start in the listening tests, even though the lack of any real bass weight was obvious enough. As one panellist put it: "A bit mid-forward, but the only thing that really spoils this is the lack of low-end. Easy-going, comfortable and listenable."

It's not a great speaker by any means,

and does lack grip and authority when confronted by the complex polyrhythms of some contemporary tunesmiths. The *Prodigy Experience* didn't prove hugely rewarding, for example, and the 400 was clearly outclassed by the Audio Gem Emerald, despite possessing almost identical drivers.

But it didn't choke, give up, roll over and die either, even when given a fair amount of welly. The bottom-end continues to lose poise and gets increasingly congested when you pour

on the power, but the fine voicing remains a strength throughout, though ultimately this speaker works better if not pushed too hard.

Conclusion

Speaker design is all about the art of compromise, and increasingly about fitting loudspeakers into our increasingly cluttered lifestyles. For both those reasons the Sequence's bold hang-on-the-wall initiative deserves several bonus points, and a Recommended flag. There is compromise here, but it's handled very adroitly. *PM*

►►

VERDICT

SOUND ★★☆☆☆
VALUE ★★★★★
PRICE £329

▲ Clever, ultra-slim hang-on-the-wall design; doesn't sound bad either.

▼ Bass doesn't really cut in terms of weight or information; black is not good camouflage.

✉ May Audio Marketing (UK) Ltd, Aireside Mills, Cononley, Keighley, W. Yorks BD20 8LW
☎ (01535) 632700

THE LAB REPORT

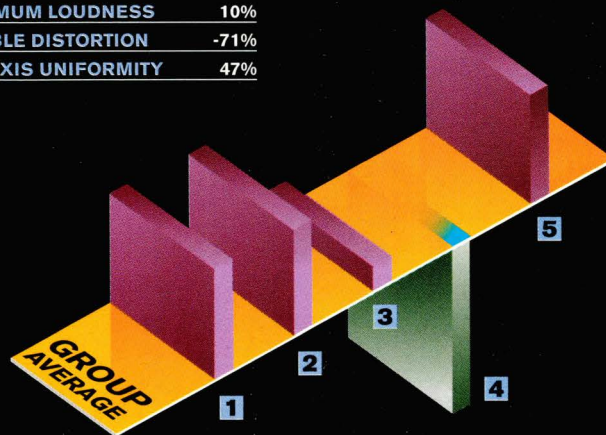
Mounted on a wall using Sequence's metal bracket (designed to couple the bass/mid unit's magnet assembly to the wall), the 400's third-octave response looks decidedly lumpy with obvious peaks at 125Hz, 1kHz and 12-16kHz — within the bass, mid and high treble, respectively. This irregular response worsens off-axis and was confirmed using a narrowband analysis which highlighted a tremendous 1kHz peak (typically +5.5dB above the mean output) and ensuing cancellation (-12dB at 1.4kHz). From here to 6kHz the response is noticeably 'rippled' and precedes another marked cancellation at 11kHz (-16dB).

Distortion is also high, second only to the Celestion, in fact, at some 2.2 per cent through the midband, though at least the 400 is decently sensitive at 89.2dB/1W/1m. The three side-mounted ports, meanwhile, augment its bass with a very broad, low-Q output centred on 75Hz (the system resonance equals 50Hz). This extends usefully down to 31Hz but also persists as high as 190Hz in the upper bass.

Spurious resonances as high as 920Hz (-4.5dB) also emanate from the ports, which correlate with similar patterns on a complex-looking impedance plot. This plot, with its 6.2 Ohms minima, bears a striking resemblance to the Audio Gem Emerald, which apparently uses the same complement of drivers... *PM*

HOW IT COMPARES

1	EASE OF DRIVE	47%
2	RELATIVE LOUDNESS	46%
3	MAXIMUM LOUDNESS	10%
4	AUDIBLE DISTORTION	-71%
5	OFF-AXIS UNIFORMITY	47%



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Wharfedale MFM-3

Wharfedale seems to have a wider range of speakers than some smaller brands have models. Some tend to be of the 'loadsabassinyerface' variety ('commercially balanced' is the usual euphemism) but the new, recently-introduced MFM models definitely have serious hi-fi pretensions.

Mid-Field Monitors is the expanded acronym, and the two less expensive examples of a four-model line-up are now available. The £250 MFM-1 is the bookshelf-size variation, and this £350 MFM-3 the floor-standing equivalent, so when you consider stands the cost of both will probably be similar — as will performance presumably, since drive units and front mouldings appear to be identical. Two more MFM models are on the way: the 5 with one extra bass driver in the same box as this 3, and a 7 with two extra bass drivers in a larger dual-chamber enclosure arrangement.

You'll need torch and magnifying glass to decipher the text of the colour leaflet, which alleges said mouldings are made from an acoustically inert mineral-loaded plastic (code-named Audio Stealth!). The speaker has a striking appearance, especially the large elliptical flare around the silk-dome tweeter, which helps control directivity,

while the shaping around the main driver should also avoid abrupt baffle-edge discontinuities. The grille-mounting slots are very discreet, but the depth of the mouldings does create a slightly top-heavy appearance.

The main driver has a mineral-filled plastic cone 125mm in diameter, and the enclosure is loaded by a large diameter rear port tuned to 50Hz. An effective spike kit is supplied, large washers maintaining the mechanical integrity.

Room-averaged responses show that the port output is rather too enthusiastic, and that output rolls off fairly rapidly below that point. However, the broad midband decade is mostly very smooth, continuing pretty smooth and flat thereafter too, suggesting the 'monitor' soubriquet might not be misplaced.

Sound quality

Good listening test results, with only one dissenter in the ranks; the MFM-3 did a very good job of appealing to the panel's sensibilities, partly by not causing offence. "Pleasant balance, nothing obtrusive, a bit laid back... good all-rounder syndrome,"

was how one listener summed it up.

Smooth and well-controlled treble level has been finely judged resulting in a slightly conservative balance, the better to avoid showing up any limitations in partnering hi-fi electronics. The bottom end is somewhat less well-founded: "a bit flabby with inarticulate bass... doesn't bounce along... lacks body," according to one listener. Other panelists were rather more positive, but the fact remains that the bass isn't the smoothest, most extended or authoritative around, and the dynamic range isn't enormous.

Conclusion

This speaker has some strong virtues, most noticeably in the excellent neutrality of its midband voicing. This does much to justify the Monitor bit of the name, and certainly comes much closer to traditional hi-fi ideals than other recent Wharfedales. While Recommendation is clearly appropriate, this speaker's bass performance is less impressive, and there remains a lurking suspicion that the smaller MFM-1 on a stand might well offer a rather better all-round performance for similar outlay. *PMe*



VERDICT

SOUND ★★★★★
VALUE ★★★★★
PRICE £349.95

▲ Lovely midband voicing and a well controlled treble unlikely to offend.

▼ Bit bland for some tastes, bass lacks weight and grip.

✉ Wharfedale Loudspeakers Ltd, 30, St Peters Road, Huntingdon, Cambs PE18 7DG
 ☎ (01480) 431737

THE LAB REPORT

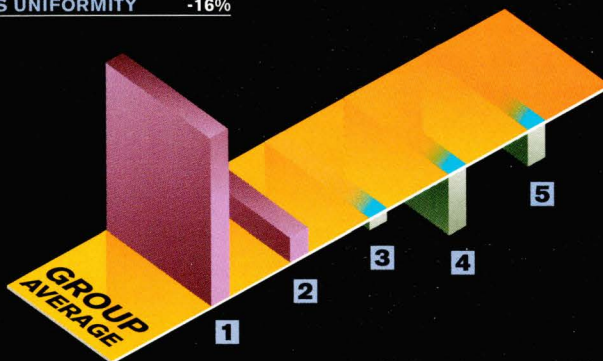
One of the key features of Wharfedale's MFM-3 monitor is its so-called 'Audio Stealth' mouldings — an acoustically dead material that is fashioned into the curvaceous baffle of the speaker. Ironically, while performing the burst distortion measurements, it was discovered that this baffle 'buzzed' quite fiercely in response to dynamic (music-like) signals around 200Hz and above 94dBA. More glue required!

Otherwise, a very large rear-firing port offers a substantial reinforcement at 53Hz (close to the system resonance at 49Hz) which, in practice, rolls-off at a steady 12-14dB/octave and helps yield a practical -6dB bass response of some 36Hz. The overall response of the MFM-3, however, shows a preference for the upper mid and treble, rising some +6dB from 2kHz to the peak of its treble output around 14kHz.

There's also a slight bass hump around 250Hz (which becomes 'boomier' as you move off axis) and a notch at 1.8kHz, both of which are likely to have a greater subjective significance than the very sharp -11dB cancellation observed from the elliptically horn-loaded soft-dome tweeter. The speaker load, meanwhile, is a safe 8 Ohms nominal impedance with a 12.2 Ohms average and 6.7 Ohms minimum at 200Hz. Sensitivity is 'average' for the group at 88.4dB/1W/1m. *PMI*

HOW IT COMPARES

1	EASE OF DRIVE	71%
2	RELATIVE LOUDNESS	10%
3	MAXIMUM LOUDNESS	-4%
4	AUDIBLE DISTORTION	-27%
5	OFF-AXIS UNIFORMITY	-16%



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Audio Gem Emerald

A relatively new company founded by Vic Sapsford when he left Castle in 1992, May Audio has already enjoyed success distributing other people's loudspeakers, and is now introducing two new models under its own Audio Gem brand. There's no conflict of interest: Totem is a top quality but decidedly upmarket range from Canada, while the hang-on-the-wall Sequences (see page 73), now owned and partly re-designed by May, have their own unique niche. The Audio Gem design fits marketplace stereotypes much more closely.

This Emerald is the floorstander, priced at £540. It's among the prettier and more compact examples of the breed, taking up no more space than a stand-mounted miniature. The veneer and finish aren't the classiest around, but they're attractive enough, and radiused edges soften the lines most effectively. A matching plinth, complete with hunky 8mm spikes, comes as an integral part of the package, aesthetically, acoustically and mechanically, ensuring good stability and providing the resistive termination to the quarter-wave tuning system used to load the bass driver's 90mm doped paper cone.

Quarter-wave loading is not common these days, though Castle has used it to good effect in its popular Chester and Harlech

models. No surprise then to find the Audio Gem following a similar path. Like the transmission line, it's not the most space-efficient solution, but that in turn makes it particularly well suited to the combination of small main driver (90mm diameter cone) and floorstanding enclosure — competitors using similar size drivers with conventional box-loading usually resort to blanking off the bottom half of the enclosure.

The room measurements suggest a little wall reinforcement might be beneficial, but too much is inclined to make the mid-bass too heavy, and the midband less even, too. Ultimately, even though absolute extension isn't bad, the Emerald is rather bass light, especially in the upper bass (100-200Hz). Above that point the mid-band is very well ordered, with a gentle, down-tilted transition from main driver to tweeter.

Upon reflection it's not such a conundrum. This essentially small loudspeaker clearly didn't quite have the clout and muscle needed to keep up with some of the larger speakers in this test group, which were auditioned on the first day. By the same token, it certainly has the sheer class to see off any of the lower-priced competitors which made up the cast list for day two.

It is, in short, a class act, but a rather lightweight one, capable of bringing plenty of life and a measure of dynamic vigour and tension to its reproduction, but lacking some of the weight, warmth and richness which bring full body and scale to the proceedings.

Though dry, the bass is tight, agile and goes satisfactorily deep, while voices have an attractively open, airy quality, along with a slightly nasal and pinched character. The treble might have been open and detailed, but it could have been smoother and sweeter too.

Conclusion

Better looking and more compact than much of the competition, the Emerald is a bit lightweight, but lively and thoroughly entertaining. Recommended. *PMc*



VERDICT	
SOUND	★★★★☆
VALUE	★★★★☆
PRICE	£540
▲	Good looking, compact, with a lively and entertaining sound.
▼	A bit of a lightweight — bass is tight but rather dry.
✉	May Audio Marketing (UK) Ltd, Aireside Mills, Cononley, Keighley, W. Yorks BD20 8LW
☎	(01535) 632700

Sound quality

Auditioned on both days, it elicited results quite contradictory and confusing at first sight. The Emerald trailed the field home on day one, but led the pack in on day two.

THE LAB REPORT

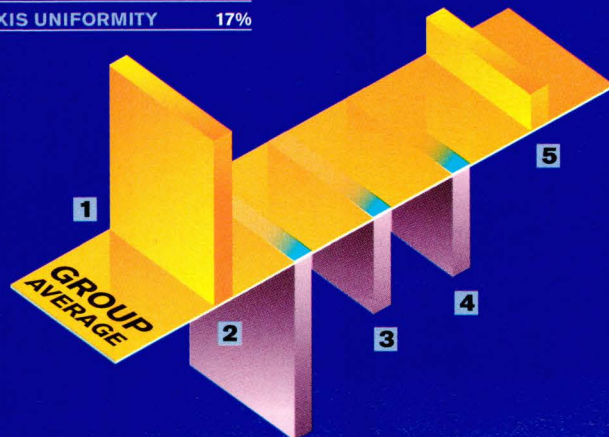
Although the Emerald's internal labyrinth is designed to emulate a quarter-wave transmission line, the rather untidy output of its slotted 'port' arrangement is not unlike that of Castle's Avon, with a broad reinforcement around 58Hz (system resonance equals 45Hz) joined by spurious 'noises' between 220-350Hz that are only 3dB lower in level. These correlate with a series of blips on what is a highly complex impedance trend, with a modest 6.2 Ohms minimum, but riddled with discrete resonances.

The overall sensitivity matches Audio Gem's specification at 88dB and this, coupled with the modest stature of its bass/mid unit, probably accounts for the 1.5-2 per cent distortion incurred through the bass, under dynamic conditions, up to 96dB. However, even the treble distortion is a little higher than average (though not especially high) at 0.6 per cent, thanks to a dominant send harmonic.

A narrowband response showed three distinct notches in the Gem's axial output at 1.45kHz, 3.2kHz and 6.2kHz, though its third-octave response looks even enough, albeit with a hint of 'fizz' between 8-16kHz. Listen on-axis, and this particular Gem may glint a little too brightly, so try toeing-in the boxes by up to 20-30 degrees for a 'flatter' overall balance. *PMi*

HOW IT COMPARES

1	EASE OF DRIVE	71%
2	RELATIVE LOUDNESS	-75%
3	MAXIMUM LOUDNESS	-40%
4	AUDIBLE DISTORTION	-43%
5	OFF-AXIS UNIFORMITY	17%



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KEF RDM One

Tiny, shiny and unquestionably stylish, KEF's new £500 RDM One is the latest in a long line of high-class mini-monitors from this well-established Maidstone-based manufacturer. KEF's current flagship Reference Series models — four of them, covering a wide range of price, size and driver complement — are all floor-standers, which clearly leaves room for compact stand-mount designs built to similarly high standards. Hence the three-strong Monitor Series.

Only two are new designs, the third being KEF's version of the legendary BBC LS3/5A (a truly venerable design which on my guesstimate might well be celebrating its 30th birthday soon). The two newbies are very different, as a glance at the leaflet pictures and specs shows. Bright red, elegantly contoured and substantial side-cheeks make a bold contemporary design statement (which the timorous can avoid via grey or cherrywood options.)

The eight litre RDM one is the smaller of the two, using a new (fourth) generation two-way Uni-Q driver undersealed box loading. (RDM Two has a ported box half as big again, and magnetic shielding for AV applications.) Uni-Q is a variation on the co-axial

theme, placing a tiny 25mm fabric dome tweeter with compact high-power rare earth magnets, in a conventional polypropylene cone main driver. KEF's particular coaxial arrangement places the acoustic centres of the two drivers at the crossover frequency in the same position in space, ensuring a smooth and seamless transition — amply confirmed by the far-field room measurements.

These also show that KEF has opted for midband sensitivity at the expense of bass output. The former is quite high for such a small sealed-box system, but the latter gets progressively lighter below 250Hz, with or without wall reinforcement, even though ultimate extension is quite good.

Sound quality

This bass-light character proved a stumbling block in the listening tests, was a consistent source of criticism throughout three separate 'blind' presentations, and remained obvious throughout hands-on work.

Midband perspectives are very good, bringing a naturalness and sweetness to voices that is very appealing. Colorations seem mostly euphonic, and subtle inflexions come through with delicacy and expression. The top-end is restrained and a little shut in, giving a slightly nasal character.

Dynamics were considered less appealing, the sound suffering from a lack of impact and attack which panellists found ultimately unsatisfying: "a sleepy and

detached sort of sound... it certainly doesn't offend, but neither is it exciting me."

Hands-on listening with both upmarket and budget systems only confirmed the decidedly 'middy' sound. It's a high-quality midband in most respects: unusually smooth and essentially coherent — even the dynamics seemed reasonably convincing. But it's also a little exposed by the lack of support from below and above, so the sound as a whole remains rather small in scale, lacking richness and attack. Applying power in larger than normal chunks also led to a certain amount of congestion.

Conclusion

A fine midband from a very attractively compact but pricey speaker, the RDM One is primarily let down by its lack of bass, which was certainly inadequate for our largish room. A smaller room should provide greater natural bass reinforcement, but it's difficult to avoid the conclusion that this design has been biased a little too much in favour of midband sensitivity. *PM*

VERDICT

SOUND ★★★★★
VALUE ★★★★★
PRICE £499

▲ A smooth, even and quite lively midband; cute, trendy styling.

▼ Not enough bass — low, mid or upper; lacks warmth and richness.

✉ Kef Audio (UK) Ltd, Eccleston Road, Tovil, Maidstone, Kent ME15 6QP.
 (01622) 672261

THE LAB REPORT

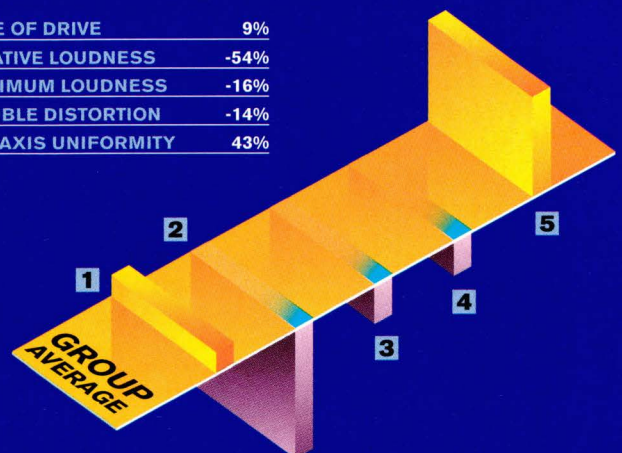
This is a relatively small box with an internal volume of no more than eight litres, and so the high 2.5-3 per cent distortion measured under dynamic conditions (at 96dB) is, perhaps, not so surprising. Distortion certainly improves once the axial, ferrofluid-cooled tweeter takes over above 2kHz or so, falling to just one-tenth the figure suffered through the bass.

There's a slight peak in bass output at an early 170Hz with a gentle 6-8dB/octave roll-off thereafter, giving a -6dB point of 78Hz, which is close enough to KEF's 75Hz specification but still highly unlikely to put the wind up your trouser flaps! Sensitivity, by contrast, beats KEF's miserly 87dB spec at 88.4dB while the speaker load is easy enough with strong positive swings to 43 Ohms and a tolerable minimum of 4.9 Ohms around 160Hz.

Furthermore, and despite a slight notch following the crossover point at 2.1kHz, the RDM One's bass/mid response looks very smooth indeed. There is, however, a 10dB axial cancellation at 7.25kHz linked to the physical disposition of the Uni-Q tweeter, though this recovers to yield a strong output up to 17-18kHz. Strong treble then, without the bass to match. *PMi*

HOW IT COMPARES

1	EASE OF DRIVE	9%
2	RELATIVE LOUDNESS	-54%
3	MAXIMUM LOUDNESS	-16%
4	AUDIBLE DISTORTION	-14%
5	OFF-AXIS UNIFORMITY	43%



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The Naturally Neutral Chain

Naim Intro

Designated Intro and selling at £596, Naim's new 'entry level' speaker is pitched well above the normal budget sector. Indeed, it is considerably more complex and elaborate than any budget speaker, or any other model in this test group for that matter, thanks to its separate-box construction.

One of two superficially very similar models, Intro is essentially a low-cost version of the £987 Credo, using vinyl finish for the cabinet, a less elaborate crossover and a less costly main driver. Both owe some design debt to the longstanding and ongoing SBL, by housing the vibration-creating main driver in its own compact and mechanically isolated enclosure.

Intro/Credo, however, mounts this smaller box directly on top of a larger floor-standing enclosure, which expands the total enclosure volume considerably, and also accommodates the tweeter. The two boxes are acoustically connected through large holes in their connecting faces. Three little plastic pegs decouple and locate the upper box, and are very precisely dimensioned to create a slit gap between the two boxes, and this acts as a (relatively small) reflex port. A metal strip in the base provides secure spike attachment and a measure of controlled decoupling (to avoid exciting the floor).

It's not the prettiest speaker around — the need to accommodate Naim's eight inch cast-frame main driver with its largish 140mm doped paper cone, has resulted in a rather boxy-looking shape, alleviated somewhat by the grille and badge treatment. A single pair of terminals is fitted, though a couple of 'blanks' allow the speaker to be upgraded to active drive if desired.

The room-averaged responses are unusual, running contrary to the normal trend of a gently falling output as frequency rises. Here the balance above 250Hz is a little uneven but falls within good +/-3dB limits, but output below 250Hz is about 4dB down (on average). Furthermore, the bass is not particularly even, tending to be too strong around 50Hz, and rather lacking in the upper bass (100-200Hz), so specifying optimum siting is not easy.

Sound quality

Rather to my surprise, given its very forward balance, the Intro came comfortably top of the lists on the first day's listening. Obviously the fact that the driving system uses mostly Naim electronics can be expected to work in its favour to some degree, but even so there was no disguising the panel's enthusiasm for Intro's strengths, or its willingness to put up with the speaker's idiosyncrasies.

This is a bright and forward speaker, and some will find the whole experience too edge-of-seat and demanding for comfort, especially since the lightweight bass doesn't provide any sort of disguise. But its ability to create realistic dynamic tension and a seriously wide dynamic range proved seductive. "A dose of gritty realism," one panellist said, "live balance — as in dangerous."



Mindful of the 'Naim factor', I spent some time with Intro connected to a Rega CD player and amplifier, only to find it made a great match — possibly better, in some ways, as it seemed a little less aggressive, though still a little edgy, and remained thoroughly involving.

Conclusion

This speaker does accept some compromise in natural timbres and tonal balance, and the Intro's rather strong forwardness won't be to every taste. But it does offer a wide dynamic integrity and range, which makes for a vivid and exciting experience, and vindicates the separate-box construction technique. While it naturally benefited from 'Naim system symbiosis', results were still good with a less-costly Rega front end. *PMc*

VERDICT

SOUND ★★★★★☆
VALUE ★★★★★☆
PRICE £596.90

▲ Very involving and exciting with wide dynamic range.
 ▼ Thin, forward and a rather edgy experience; not for the fainthearted.

✉ Naim Audio Ltd., Southampton Road, Salisbury SP1 2LN
 (01722) 332266

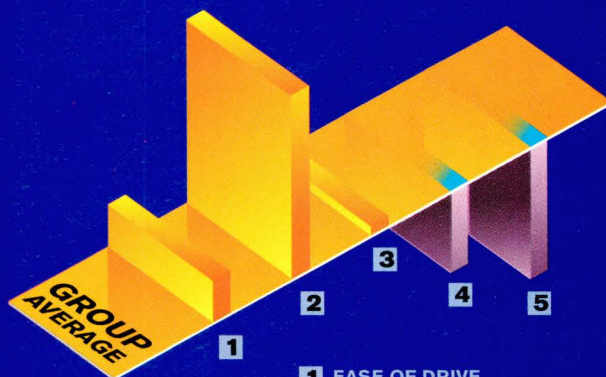
THE LAB REPORT

The unusual, two-cabinet construction of the Intro leads to a fairly impressive -6dB LF point of 52Hz with the entire cabinet structure mounted clear of room boundaries. With rear-wall reinforcement this improves to 35Hz (system resonance occurs at 34Hz), though some internal resonances are now reflected at 175Hz and 300Hz on the impedance trend.

The Intro's on-axis response (measured between bass and treble units) shows a clearly-defined and up-tilted trend, rising by +6dB almost uniformly from 500Hz to its peak in the far treble at 15kHz. It's also significantly more sensitive (91.8dB/1W) than Naim gives it credit (89dB/1W). Listening above the top-mounted bass/mid unit tends to reduce the perceived brightness, but the response, overall, becomes very erratic. Retaining your listening position, but toeing in the speakers by up to 20 degrees may achieve a better all-round result.

Distortion is consistent, rather than particularly low, at 0.7-1.3 per cent across the audioband and is dominated by a 'safe' second harmonic instead of characterful odd-harmonics. Naim quotes a 6 Ohms minimum impedance which is true enough of the bass and midrange, but it does drop to 5.1 Ohms around 7kHz following the high-pass arm of the crossover. *PMi*

HOW IT COMPARES



1	EASE OF DRIVE	18%
2	RELATIVE LOUDNESS	78%
3	MAXIMUM LOUDNESS	4%
4	AUDIBLE DISTORTION	-33%
5	OFF-AXIS UNIFORMITY	-55%



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Tannoy 637



One step up from the 635 floorstander covered in our last speaker group test (issue 160), this £550 637 has a similar shape but a rather larger enclosure and an extra bass driver, loaded this time by a sealed box rather than reflex port.

Tannoy's current Profile Plus models share much in common, but differ from their rivals in two key respects. The first and most obvious is that the enclosures are an irregular shape, with curved edges to the front panel and a profile which narrows towards the back. This arrangement offers several advantages over the conventional rectangle, inside and out. Internal standing waves are better distributed across a wider range of frequencies, the rounded front edges help avoid an abrupt discontinuity in the sound distribution outside, and extending the depth of the enclosure at the expense of width, enhances overall stability.

The other key Tannoy feature is the dual-concentric driver, which mounts a horn-loaded tweeter down the throat of a conventional cone bass/mid driver. This means that the full range of frequencies all come from the same source, making the integration of tweeter with main driver that much easier.

The 637's dual-concentric driver has a 150mm plastic cone, while a similar size

bass driver is used to augment the low frequency output, holding out the promise of good sensitivity, headroom and bass extension. This is plenty of speaker for the money, with a generous-sized enclosure that feels solidly built, even if the total weight of 15kg is unexceptional for the bulk.

A plastic moulding forms the base, cleverly accommodating the spike kit, bi-wire terminals, the crossover network and a compartment for adding ballast. The enclosure is finished in black or rosewood vinyl wood-print, a single wrap covering front, back and sides with a well-shaped MDF top insert.

The room responses confirm the expected good bass extension, but show an unusual characteristic with an obvious discontinuity at 500Hz — the bands above and below this point were both quite flat, but the over-500Hz band was roughly 4dB lower in level throughout.

Sound quality

The 637 turned out to be a 'quite' loudspeaker, one panellist starting three out of four sentences with the word. It was even-handed enough not to ruffle anybody's feathers, but didn't get anybody particularly going either. As one panellist put it: "A very smooth performer (too smooth?) which won't offend — and won't excite." It's perhaps unfortunate that this proved to be the immediate after-lunch presentation, the 637 not proving the ideal palliative to potential post-prandial torpor.

It delivers plenty of scale with full and fruity bass extension, but there's some thickening and loss of texture too, unexceptional dynamic range, and a reluctance to keep up with some rhythmic subtleties.

Big Tannoys have responded well to

extended hands-on listening in the past, but that didn't seem to happen here. Bi-wiring does help open things out at the top end in particular, but also further reveals a less than distinguished bass. I didn't even enjoy winding up the volume much, and it didn't sound as loud as I'd expected.

Results were a little more promising with Rega front end components — the 637 sounded notably unstressed and delivered a big, smooth and weighty sound, but again fell a bit flat in impact.

Conclusion

Despite a thoroughly promising list of ingredients, this big Tannoy never really won the panel's hearts. Perhaps the rather bass-heavy balance is the problem, or maybe it would work better in a really large room. *PMc*

VERDICT

SOUND ★★★★★

VALUE ★★★★★

PRICE £549.90

▲ Plenty of speaker for the money, with abundant bass.

▼ Too much bass maybe leaves the rest behind; ultimately unexciting.

✉ Tannoy Ltd, Rosehall Ind Est, Coatbridge, Strathclyde, ML5 4TF

☎ (01236) 420199

THE LAB REPORT

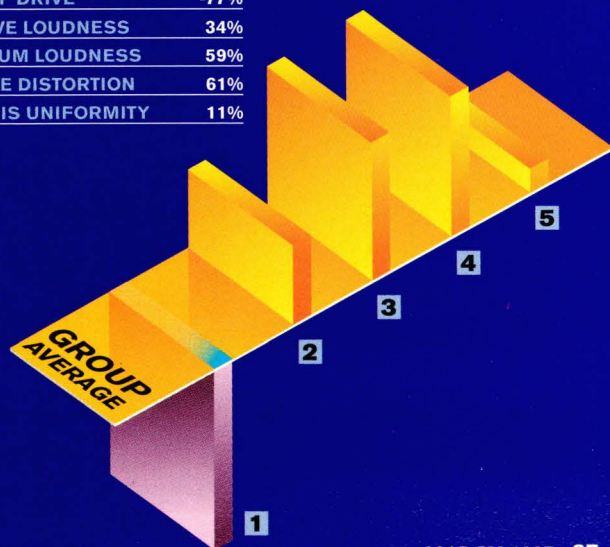
The 637 is very sensitive indeed at 90.6dB/1W; then again with an average impedance of 8.9 Ohms, its load is far tougher than Tannoy suggests, even reaching a minimum of 2.7 Ohms from 115-220Hz. Tough (though not necessarily over-powered) amplifiers are a must to sustain peaks as high as 108-109dB in-room. Low distortion is possible, typically 0.5-0.6 per cent, despite the sealed-box alignment. The bass output peaks at around 70Hz and is good to around 40Hz (-6dB) in a freestanding position.

However, the third-octave in-room response highlights a rather heavy-looking upper bass from 100-500Hz together with a treble 'sting' between 10-15kHz that rolls away as you move off-axis. I would certainly recommend the 637 be positioned well away from rear and side walls and *not* toed-in.

Measured on-axis, the speaker's response looks pretty smooth through the 400Hz and 2.5kHz crossover points, though there are three prominent 'dips' at 1.4kHz, 5.8kHz and (particularly sharp) at 17kHz. The last two notches are due to phase cancellation effects suffered by the dual-concentric tweeter and, as such, their effect (if any) will depend very substantially on your listening position. *PMi*

HOW IT COMPARES

1	EASE OF DRIVE	-77%
2	RELATIVE LOUDNESS	34%
3	MAXIMUM LOUDNESS	59%
4	AUDIBLE DISTORTION	61%
5	OFF-AXIS UNIFORMITY	11%





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Castle Avon

Castle's new £700 Avon sits one rung down the ladder from the splendid Harlech — a Best Buy in our last speaker group test (issue 160). In size it's a replacement for the long-standing and highly successful Chester — one of the first compact floor-standers, and a Best Buy way back in 1991 — bringing on board the latest 'soft-look' styling, but it differs from both predecessors in several important respects.

The quarter-wave bass loading used in the Chester and Harlech is here replaced by a more conventional reflex-ported arrangement, though the port itself is concealed within the base of the tower. Its output emerges from a small gap left between the enclosure and a substantial matching plinth (with unusually good footprint and spike arrangements).

Rather more interesting is the main driver, which uses a 125mm diameter cone moulded from a woven carbon fibre and resin composite. We've had carbon and carbon fibres used as fill material in plastic and pulp cones before, but this is the first commercial example of a woven long-fibre carbon application to the author's knowledge (though there are close analogies to B&W's Kevlar, with its woven polyamide fibres). Carbon-Fibre Composite (CFC) ought to be

an excellent material for the job, as it combines high stiffness with low weight and energy storage.

In other respects the Avon follows firmly in Castle's tradition of excellent workmanship, with high-class wood veneer in a choice of seven standard finishes, plus luxury Santos Rosewood or Yew for an extra £140. The 25mm soft dome tweeter is mounted below the main driver, and offset to distribute baffle standing waves — to maintain symmetry the speakers are built in mirror-image pairs, with Castle's asymmetric grilles paired to match. Solid build is confirmed by a 20kg total weight, which is high for such a compact design.

Room measurements indicate that the Avon should perform best when sited clear of walls, whereupon it delivers a well-balanced result, with good low bass extension, some mid/upper bass leanness, and a slight notch in the presence region.

Sound quality

Mostly positive but also somewhat mixed results greeted the Avon's listening test. Two panellists were particularly taken by the open and airy midband: "Compelling vocal... clear diction... sweet and unstrained... easy, informative listening". Two others were less convinced: "Needs some more life please... a little too restrained for its own good perhaps?"

No question, the Avon does have a delightfully open midband, though it also sounds just a bit forward, thin and bright — more because of a basic lack of warmth and richness than any imbalance elsewhere. The result is quite persuasive when played quietly, but can become a little relentless when the volume is advanced.



Ultimately, the bass is a little disappointing. It's clean enough, and pretty well damped too, but not particularly deep, crisp or even, and not all that well integrated with the rest.

Conclusion

The move towards woven carbon fibre composite for the main driver cone would seem to be a positive one, judging by this speaker's compelling voice rendition. Whether that's the factor responsible for a less than convincing bass performance, or whether it's the change from quarter-wave to reflex loading is harder to answer, but the Avon doesn't quite hit the spot as effectively as some of its stablemates. *PMe*

VERDICT

SOUND ★★★★★☆
VALUE ★★★★★☆
PRICE £700

▲ Great voice reproduction from new CFC cone; lovely woodwork

▼ Bass doesn't quite glue in with the rest; overall sound a bit thin

✉ Castle Acoustics Ltd, Park Mill, Shortbank Road, Skipton, N. Yorks BD23 2TT.
 ☎ (01756) 795333

THE LAB REPORT

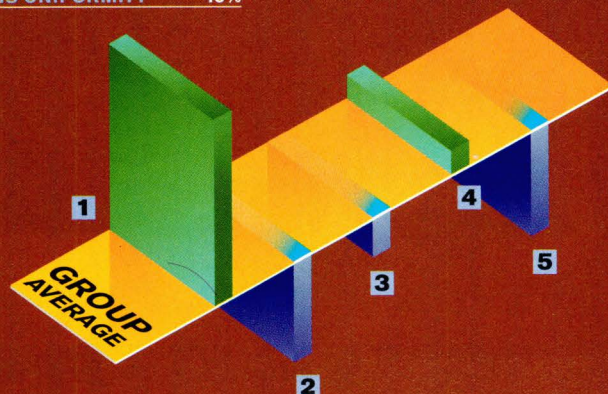
Not all of the Avon's substantial cabinet is available to its novel carbon-fibre bass/mid unit and soft-dome tweeter, for a lower portion of the structure is internally divided to protect the crossover network from pressure variations and also to support a substantial, downward-firing reflex port that exits via a slot around the base of the cabinet.

In common with the TDL and Audio Gem speakers, the output of the slotted port is rather messy, offering bass reinforcement right down to 35Hz (the system resonance occurs at 34Hz while the main driver begins rolling off below 85Hz) but with plenty of spurious 'noises' up to 500Hz and beyond.

The overall system sensitivity is below the modern average at 86.3dB, but Castle has evidently sacrificed a little volume to maintain a very easy-going 8 Ohms impedance trend and well integrated, smooth response. In fact the Avon probably has the 'flattest' response of any speaker in this survey, only betraying a small peak at 5.3kHz to show that its engineers are at least human! I would not recommend listening too far off axis, however, because the Avon's treble output will start to wilt. *PMI*

HOW IT COMPARES

1	EASE OF DRIVE	81%
2	RELATIVE LOUDNESS	-41%
3	MAXIMUM LOUDNESS	-15%
4	AUDIBLE DISTORTION	11%
5	OFF-AXIS UNIFORMITY	-43%



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Celestion A1



Celestion speakers sent this reviewer's way in the past few years have not been a particularly inspired bunch. Even though some were worthy performers and good value for money, excitement has not been a key ingredient.

Such an accusation could not be levelled at this new A-series range of models, intended to suit home cinema as well as hi-fi applications and represented here by the very substantial (and beautiful) bookshelf-sized A1. It's the smallest and least expensive of three new As, but a £700-minimum price tag pitches it well above the budget sector. The A2 floor-stander comes in at £1,200, meaning the A1 is still cheaper even allowing for decent quality stands.

At around 20 litres internal volume, it's one of the larger stand-mounts around, especially when you add 25mm for each of the thick MDF panels from which it's built. That the whole thing weighs in at 13kg — more than many of the floor-standers assembled here — is further evidence of the very solid build. Our sample was the rosewood version, which carries a £100 premium, but the quality of workmanship in these German-built cabinets is truly exceptional, with solid wood-edge pieces giving a very classy appearance.

Advanced technologies were part of the design processes. Finite element analysis helped create the 25mm titanium dome tweeter, while laser interferometry was used to place the internal box bracing for best effect. The main driver has a cast chassis and 125mm injection moulded cone, and Faraday rings are used to stabilise magnetic flux.

The room-averaged responses show the A1 should be kept well clear of walls; even in free space the output is a little mid-bass heavy. Elsewhere the trend is commendably smooth, if not entirely neutral, with some emphasis around 750Hz, and some lack of presence, 2-4kHz.

Sound quality

As the room responses predict, the A1 sounds weighty and decidedly laid-back, but this immediately obvious character doesn't obscure a great deal of underlying class. There's no denying that some of the panel would probably have preferred a rather more up-front and immediate presentation, but most were happy enough to relax and get into the warm and expansive sound the A1 creates.

Its particular trick was the ability to sound big and weighty, yet avoid getting grumbly at the same time. The midbass can get a bit heavy on some material, and this was not to every listener's taste, but it remains unstrained and drives along with fair speed and good headroom.

The treble is certainly sweeter than most, with just a touch of sibilant splash, while the sound as a whole is quite transparent, giving good stereo depth and detail.

Hands-on listening with various components confirmed the rich, heavy, almost fruity balance, but good scale and dynamic range with some tension and flow, and low cabinet coloration, make for a design that's entertaining as well as easy on the ears.

Conclusion

This is a very impressive loudspeaker. Such quality doesn't come cheap, true, but this speaker has class; from superb presentation through to some very tasty high-tech drivers. The laid-back presentation might not be to every taste, but it does ensure the sound will never offend or irritate, yet the speaker is inherently good enough to avoid becoming bland or boring. *PMc*

VERDICT

SOUND ★★★★★☆

VALUE ★★★★★☆

PRICE FROM £700 (TESTED AT £800)

▲ A very classy stand-mount in every sense, with a generous, expansive sound.

▼ Might be a bit too laid back for some tastes.

✉ Celestion International Ltd, Eccleston Road, Tovil, Maidstone, Kent ME15 6QP

☎ (01622) 687442

THE LAB REPORT

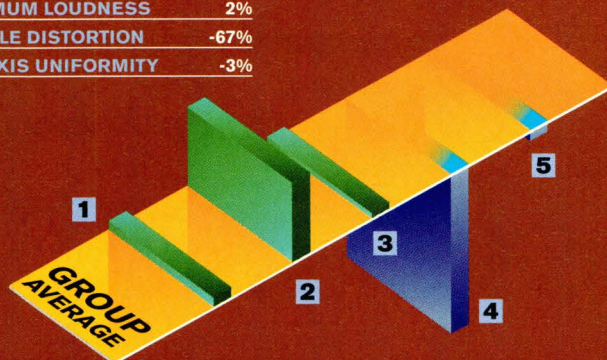
One principal feature of the A1 is the surprisingly high 3-4 per cent distortion incurred through the all-important midband (pulsed at 96dBa). This extended spray of harmonic products contrasts with the more moderate 1-1.5 per cent incurred under the same dynamic conditions through the bass and very low 0.2 per cent produced by its two-piece titanium tweeter. Surprising, if only because low distortion and a wide dynamic range are two very specific claims made for the A1.

Otherwise, its performance benefits from a generally smooth response and a highly extended treble (with no obvious discontinuity caused by the protective alloy casting). The impedance swings from 41 Ohms (max) to 5.2 Ohms (min) over the audioband, with moderate phase angles, but also shows an unexpected kink at 3.2kHz, presumably close to the crossover point. Far from a difficult load, nonetheless.

The 88.5dB sensitivity actually betters Celestion's specification, while its claim for an 'outstanding bass response' is at least partially justified by the excellent engineering of its reflex port. This provides a clean boost at 44Hz, with a 10-12dB/octave roll-off, and no higher frequency resonances to further colour the midband of its injection-moulded bass/mid driver. *PMi*

HOW IT COMPARES

1	EASE OF DRIVE	5%
2	RELATIVE LOUDNESS	36%
3	MAXIMUM LOUDNESS	2%
4	AUDIBLE DISTORTION	-67%
5	OFF-AXIS UNIFORMITY	-3%



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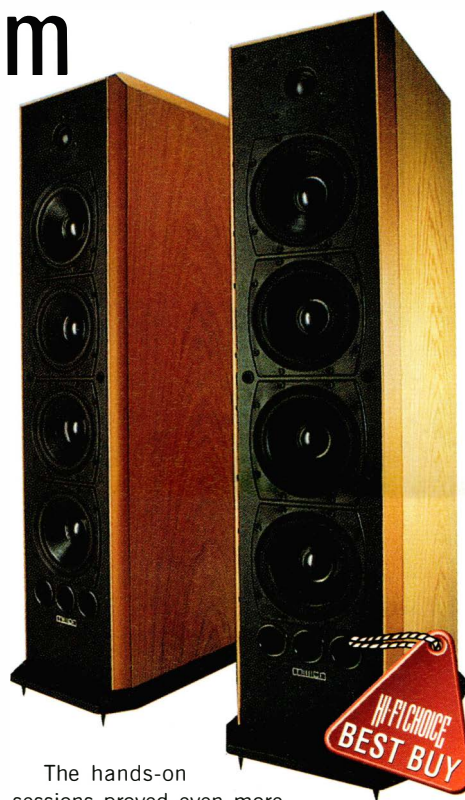
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Mission 753 Freedom



It doesn't feel like nearly five years since Mission's 753 first burst onto the market.

It was an instant hit (Recommended in *Choice* issue 114), and provided the strongest kick up the backside yet for the luxury compact floor-standing loudspeaker concept. Given the interval, the arrival of this new £798 753 Freedom comes as no more of a surprise than the fact the overall package looks so similar — no point in changing a successful formula.

One of the most obviously impressive features is the row of four identical drivers which takes up most of the front panel. In fact they're used as two pairs: the upper pair covers bass and midrange from a small sealed sub-enclosure, while the lower two supply the extra bass grunt (as does the triple port array at the bottom).

Why use four drivers where two would do? Because they can be smaller in diameter for the same cone area. That in turn permits a narrower cabinet, which is very much the modern fashion. The heavily chamfered edge to the beautifully veneered sides helps emphasise the slimline look and creates a stylish masterpiece. Visitors invariably picked it out, wanting to know what it was and how much it cost.

The most obvious change from the original 753 is a new silk fabric dome tweeter in place of its plastic predecessor. A moulded plastic plinth replaced the wooden original some years back, while the rest of the features are much as before. It's built substantially throughout, and weighs 22kg.

The ingredients might look very similar, but the recipe has certainly changed. Room measurement comparisons show that the midband output is 2-3dB stronger than before, while treble output above 5kHz is 2-3dB less. The result is richer and duller than before, but this is no bad thing, as the original was brighter than average. The realignment looks an easier load to drive, especially at high frequencies, and the speaker is now better suited to wall reinforcement — a gap of about a foot behind gave best results in our room. There's still a lingering disappointment, however, that such a potential-looking design doesn't deliver really deep bass, output falling off rapidly below 50Hz.

Sound quality

'Delicate' was the term that kept cropping up in the listening test notes, rather contradicting the 'party animal' soubriquet I came up with during the hands-on work. But the 753 Freedom is the sort of speaker that springs such surprises, and in doing so probably comes closest to the 'all-things-to-all-men' ideal than anything else in its price range.

Our experienced panellists had their niggles — the restrained treble was the favourite — but still gave the 753 consistently good marks. It isn't the last word in transparency and air, or bottom-end weight, but the broad midband is dynamically lively and attractively coherent, with a fine sense of timing, and precise stereo image focus.

The hands-on sessions proved even more rewarding. The 753 accepted power and responded with gusto, bringing some real dynamic tension to the proceedings, and never sounding short of headroom. It worked particularly well with a less expensive Rega CD player and amp, the sound seemingly more open and less boxy.

Conclusion

Still the best-looking example of the stereotype it virtually created, this new Freedom variation on the 753 should keep Mission busy for years to come. It may not have the delicacy of more purist two-way designs, but finds a blend of dynamic authority with balance that should suit modest systems. *PM*

VERDICT

SOUND ★★★★★☆

VALUE ★★★★★☆

PRICE £798

▲ Still a great looking package, fine dynamics, now with improved tweeter.

▼ A bit band-limited — bass could go deeper and treble is restrained.

✉ Mission Electronics, Stonehill, Huntingdon, Cambs PE18 6ED

☎ (01480) 451777

THE LAB REPORT

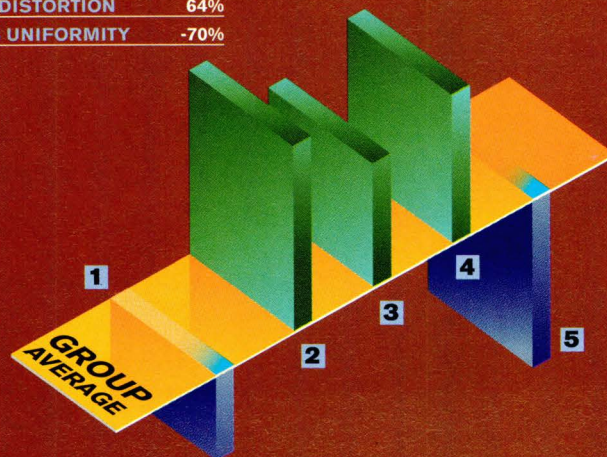
The most startling feature of the 753 Freedom is its array of four 130mm plastiflexed-paper, long-throw bass/mid units which achieve high sound pressure levels without compromising their linearity. For example, the entire system is capable of delivering clean peaks in excess of 109dBa in the average living room (!), while more importantly it incurs the lowest distortion of any speaker in this entire survey (typically just 0.3 per cent at 200Hz/96dBA).

However, despite Mission's 'transverse-folded' cabinet design, a nearfield analysis of one of the three reflex ports revealed a sharp quarterwave resonance at 195Hz, just -4.5dB down from the high-Q port output at 47Hz. I cannot see how such an anomaly has escaped Mission's attention, particularly as there's a corresponding 'blip' at 195Hz on its impedance trend.

Otherwise, this is a nominal 6 Ohms speaker load with a minima of 4 Ohms at 134Hz and an accurately specified 89.8dB/1W sensitivity. Its response is very even from 300Hz to 7kHz but there's a +2/3dB recovery both in the far treble (10-15kHz) and bass (100-250Hz). Off-axis, the response falls away quite markedly (-10dB from 500Hz-10kHz, re. 30 degrees horizontal), suggesting the 753s should not be toed-in too far, in case the balance becomes too dim. *PMI*

HOW IT COMPARES

1	EASE OF DRIVE	-35%
2	RELATIVE LOUDNESS	80%
3	MAXIMUM LOUDNESS	53%
4	AUDIBLE DISTORTION	64%
5	OFF-AXIS UNIFORMITY	-70%



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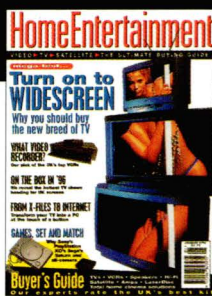
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Silverado Raider

Sounding more like the title of a Western movie than a pair of speakers, the Silverado brand was an unknown quantity before the arrival chez Messenger of some well-travelled review sample Raiders. This relatively new manufacturer has only a handful of UK dealers at present, and devotes most of its efforts towards the supply of overseas markets.

As the smaller of two Silverados, the Raider is a compact bookshelf-sized stand-mount, substantially built and beautifully finished, so as to justify a fairly hefty £695 price tag. Our pair came in high gloss lacquer black, which looks very smart and discreet, but surface finish is a Silverado speciality, all done in-house, with a wide choice of alternatives including metallic and even a hand-painted marble effect (at extra cost).

Solidity is this speaker's middle name. The total weight, at 10kg, is heavier than several of the floor-standers assembled for this group test, while the total density (weight per unit volume) is the highest of all. That's down to thick woodwork, two internal braces, and a ceramic polymer lining, all held together with mitre-locked joints.

The fully sealed box ensures a gentle low-frequency roll off for the Morel main driver, an unusual design which uses a large (75mm) voice coil to drive a 115mm plastic cone/dome diaphragm, rear radiation from

the area within the coil escaping through the vented centre of the magnet structure.

The in-room responses were held within exceptionally tight limits throughout the audio band, though there's some unevenness through the broad midband. A degree of wall reinforcement — say about a 25mm gap between speaker and wall — ought to be beneficial in maintaining full output down to around 50Hz, though as ever there's a degree of trade-off between bass reinforcement and midband smoothness, especially with narrow, wide-dispersion designs such as this, so experimentation is advised.

Sound quality

The Raider attracted a rather mixed response from our listening panel. The mid-band received pretty universal praise for its delicate and expressive voices and fine dynamic range: "Interesting! Good voice — smooth and well-textured. I can hear the words clearly, and it reveals the production — good dynamics."

However, there was general criticism that the top end was a bit too strong: "Slightly over-eager top, waters down the bass performance, robbing it of warmth and fullness." The bass end is undoubtedly a little dry, but has good extension and sounds quite lively and agile, if not particularly powerful.

It was only after the review work had been completed and the speaker had already left the premises that I discovered it

had been originally supplied with partnering speaker cable. Cable matching can affect perceived treble balance significantly, so further experimentation in this area could well enhance the Raider's sound.

Conclusion

While this is undoubtedly a beautifully made and immaculately finished speaker, it is also quite expensive. The sound quality has several good things going for it, especially through the midband, and the overall stereo imaging and sound perspectives are very natural. On the debit side, sensitivity is several decibels below the typical competition, yet the amplifier load is also distinctly demanding, a combination which will limit the practical attainable loudness and favours the use of exotic amplification. As such, the Raider looks well suited to its rôle as an exquisitely built compact speaker for the discriminating audiophile. *PM*

VERDICT

SOUND ★★★★★☆
VALUE ★★★★★☆
PRICE £695

▲ Relaxed and natural sounding. A coherent performer.
 ▼ Lousy sensitivity, lousy amp load.
 ✉ Silverado, 128 Clitherow Avenue, Hanwell, London W7 2BX
 ☎ (0181) 567 0260

THE LAB REPORT

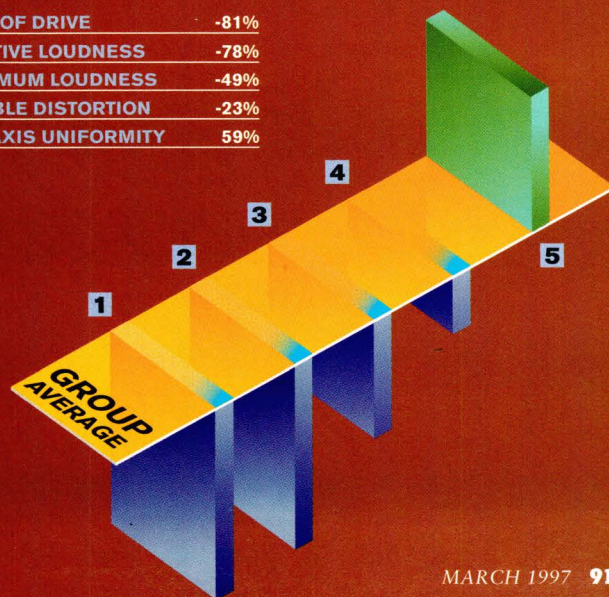
When Paul suggested that the Raider suffered from a debilitating combination of low sensitivity and a low impedance, he was being generous. In practice its impedance averages out at just 4.1 Ohms across the entire audio bandwidth, reaching a maximum of just 5.3 Ohms and a devastating minimum of 2.57 Ohms at 160Hz. Ordinarily, such a vicious trend might be rewarded with a high sensitivity, but the Raider's 85.3dB/1W/1m means only amplifiers of high power and high current output will be suitable. A typical amplifier/Raider combination is unlikely to achieve clean SPLs in excess of 100dBA.

Nearfield analysis indicates very steep bass roll-off below 88Hz, falling 20-24dB/octave in what looks closer to a fourth-order than the second-order alignment typical of a sealed-box system. Upper bass/lower midrange looks rather lumpy with ripples in the response from 500Hz-1.7kHz, while the 'presence' region is reinforced by three axial peaks from 1.8-3.7kHz. By comparison, higher treble octaves look comparatively smooth.

Distortion is a little lower than the other small boxes in this test, namely the KEF and Heybrook, and is mainly second harmonic in character. Otherwise, the Raider strikes me as an unnecessarily difficult loudspeaker for most amplifiers to drive. *PM*

HOW IT COMPARES

1	EASE OF DRIVE	-81%
2	RELATIVE LOUDNESS	-78%
3	MAXIMUM LOUDNESS	-49%
4	AUDIBLE DISTORTION	-23%
5	OFF-AXIS UNIFORMITY	59%



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blah blah 25 pints blah
blah vasectomy...*

*Oh Marie, you've
been surfing those gossip
websites instead of
ironing again!*



Inside Issue 3

Who's doing who

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Pix: Photodisc

Issue 3 on sale Thursday 13th February

TDL T-Line 3

The TDL brand has long been synonymous with transmission-line bass loading, a technique which offers a number of advantages over conventional sealed or ported box loadings, albeit at some cost in cabinet complexity.

Choice has tested some of the upmarket Studio models (luxury wood veneer, full transmission line enclosures and metal diaphragm drivers), and the budget RTL models (vinyl finished with reflex transmission line loading), but the T-Line is a new series of models which fits in between the two.

At £750, this T-Line 3 is the larger of two T-Line models, featuring RTL-style loading (for superior sensitivity), and a real wood cabinet (though not by any means a luxury variety), in a package the size and weight of the Studio models, but at a considerably lower price.

The veneer might be a bit short on class, but there's certainly plenty of engineering content here, with 22kg of weight per speaker. The T-Line 3 has two cast frame main drivers, each with 125mm polypropylene cones, plus a 25mm metal-dome tweeter. It stands nearly a metre tall, and is unusually deep too, but slicing the outer edges of the driver frames has helped keep the width (and hence visual impact) down to

a modest 20cm. The shape, and the fitted plinth with well-founded spikes, ensure exceptional mechanical stability.

A deep and reasonably smooth bass when mounted well clear of walls is some vindication of the RTL implementation, but the average room responses also show a significant relative lack of output through the upper midband and presence, plus a rather exposed treble proper — an unusual characteristic which was bound to be reflected in the listening tests.

Sound quality

The laid-back balance of this speaker proved distinctive, and a key factor which dominated the listening test findings, more so perhaps because the model preceding them had a much more forward presentation.

The voting didn't do the T-Line 3 any favours, most finding the rather distant perspectives robbed music of some of immediacy and life, and made it harder to keep attention focused. One panellist noted that the sound was atmospheric with the right music, but that a balance this gentle could become boring.

Hands-on tests give sufficient time to adjust to balance anomalies, and behind its mask the T-Line 3 revealed a number of good qualities, with decent timing and fine dynamic range, though the impression remained that dynamics themselves lacked vigour and impact, especially in the mid-band. The deep, clean bass is a worthwhile plus, helping to create a decent sense of scale. Voices sound a bit pinched and nasal, but with strong, well-defined sibilants and consonants.

Conclusion

The T-line 3 seems pretty good material value for money, but I'll leave it to the reader to decide whether this particular wood veneer finish hits the aesthetic spot. The sound balance is also perhaps a matter of taste: it didn't fit particularly well with our systems or our listeners' preferences, but if you feel your system could do with more weight and sparkle, speakers such as these could fit the bill very well. *PMe*



VERDICT	
SOUND	★★★★☆
VALUE	★★★★☆
PRICE	£749.95
▲	Good material value, sound has plenty of weight and sparkle.
▼	Midband is recessed and lacks dynamic vigour.
✉	TDL Electronics, PO Box 98, High Wycombe, Bucks HP10 9SH.
☎	(01628) 850111

THE LAB REPORT

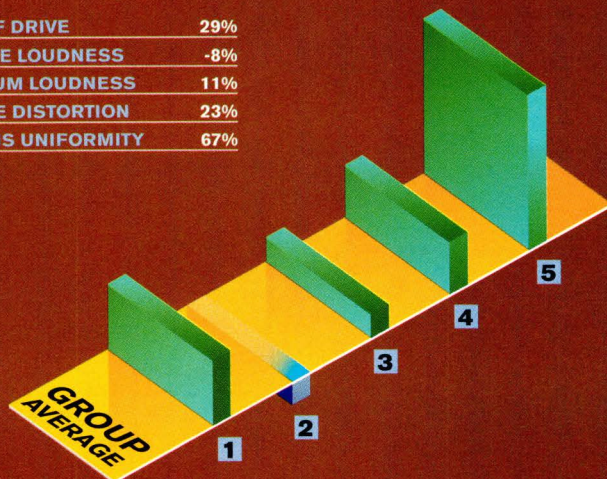
By using what it describes as a 'truncated transmission line', the TDL T-Line 3 attempts to combine the efficiency of a conventional reflex design with the bass extension of a transmission line's labyrinth. Analysis of the resistively-loaded port(s), however, reveals a principal reinforcement at 65Hz (with a system resonance of 30Hz) but with further harmonic peaks, of identical amplitude, appearing at 200Hz and 330Hz, respectively.

These are likely to muddy the overall musical picture, even though distortion, particularly through the upper bass/lower midrange, remains encouragingly low at just 0.6 per cent. And this, remember, is under dynamic conditions a good +9dB above its measured 87.2dB/1W sensitivity. Incidentally, the speaker load is pretty reasonable, with its 6 Ohms minima deferred until well after the crossover point at 7kHz, and the sub-8 Ohms dip from 85-650Hz never falling lower than 6.4 Ohms.

The speaker's response trend is also on the light side, the third-octave plot demonstrating a slight recession from 300Hz-1.3kHz allied to an emphasis of the upper mid/treble from 1.6kHz-13kHz. This trend becomes more obvious if you listen off the main horizontal axis, and ties-in very firmly with the results of Paul's listening tests. *PMI*

HOW IT COMPARES

1	EASE OF DRIVE	29%
2	RELATIVE LOUDNESS	-8%
3	MAXIMUM LOUDNESS	11%
4	AUDIBLE DISTORTION	23%
5	OFF-AXIS UNIFORMITY	67%



Conclusions

Fifteen new loudspeakers, pitched between £200 and £800 per pair, provide plenty of variety in size, driver complement and presentation. Four stand-mounts and 11 floorstanders, and not a single lemon amongst 'em. Are speakers gradually getting better? Or is it just that there are fewer bad ones around? Probably the latter.

Two (the Musical Technology and KEF) were perhaps a little small for our 40-square-metre test room, while two (Tannoy, TDL) might have been happier in a rather larger room, but by and large the room-match seemed pretty good. The fine detail of delivering even, deep in-room bass continues to elude the majority, though its

achievement is no guarantee of overall success. Good bass is nice, but a good mid-band is certainly more important.

The statistics of our group actually make quite interesting reading. Three of the group used sealed-box bass loading — the two smallest, and one of the largest. The vast majority are ported systems, mostly of the simple variety, but with some interesting variations from TDL, Naim, and B&W, while Audio Gem's quarter-wave Emerald is also a focus of intrigue.

The main drivers show a number of variations in material and size. As far as the cone diaphragms themselves are concerned, the majority still use the most traditional material of all — paper — usually

with light damping applied. Five use moulded plastics, one a carbon-fibre matrix (Castle), and one a thin metal diaphragm (Musical Technology).

Tannoy's 637 has the biggest diaphragm area with two 150mm cones, but in sealed box-mode with no additional port contribution. Mission's 4x100mm ported is not much smaller overall, while TDL's 2x125mm array is backed by a very large port area. Naim's single 140mm driver is roughly equivalent to Acoustic Energy's 2x100mm array in area terms, but no fewer than seven of the speakers have cones in the 115-125mm diameter range, leaving just three under-100mm tinies.

GROUP A (£200-£400)

Acoustic Energy AE109	£329.90
B&W 305	£349.95
Heybrook Heylios	£339
Musical Technology Kestrel SE	£299.95
Sequence 400	£329
Wharfedale MFM-3	£349.95

By pure chance, all of our £200-£400 models actually cost £300 plus, and the £300 Musical Technology Kestrel SE carries that price tag only in its most basic form. The group was therefore pretty well focused in price, though not in performance variations.

The stand-out model proved to be the pretty real-wood stand-mount from Heybrook,

the Heylios, which has ample bass drive with minimal cabinet drone.

But if loud bass is your bag, check out the elegant AE109. The mass loading holds everything steady, and the twin drivers and ports really punch their weight.

While it's true the Sequence 400 didn't punch its weight, this hang-on-the-wall speaker must be seen as a special case, and works very well through the midband, as well as taking up little space.

From a distance it wouldn't be difficult to mistake the B&W 305



Musical Technology

for the Wharfedale MFM-3, or vice versa. Sonically they're very different indeed, rather reflecting the stereotypes of their technologies, the paper-cone B&W being livelier and more immediate, but much less smooth than the plastic-cone Wharfedale.

The mild disappointment was the Musical Technology Kestrel SE, which sounded thinner and even more lightweight than the original. It's still a very pretty little speaker, arguably best suited to the smaller room.

GROUP B (£400-£600)

Audio Gem Emerald	£540
KEF RDM One	£499
Naim Intro	£596.90
Tannoy 637	£549.90

A significant step-up in price, as all four members of the mid-price group were clustered into the upper £500-£600 half thereof. It was a group of quite dramatic contrasts, from the tiny but exquisitely-finished KEF to the bulky, vinyl-finished Tannoy and Naim models.

These two might be a similar size, weight

and price, but they represent a huge contrast in sonic character. Match up their mid/treble levels and the Tannoy is 6-10dB stronger through most of the bass region, which is an enormous difference. Arguably neither is 'right', both are a little extreme, and true neutrality probably lies somewhere in between, though the vividness and excitement of the Naim

proved very persuasive, and its 'decoupled box' approach is rather clever.

The little KEF is probably better suited to small rooms, to help compensate for its lack of bass and shore up a very smooth and even midband. The Audio Gem could well be the best all-rounder in this group, though like the Naim this speaker is a little on the light and dry side of neutral. The compact dimensions and real wood veneer are further plus points.



Kef RDM One

GROUP C (£600-£800)

Castle Avon	£699.90
Celestion A1	£699
Mission 753 Freedom	£798
Silverado Raider	£695
TDL T-LINE 3	£749.95

Another jump in price, as our five £600-£800 selections start at £695. All these models feature luxury finish of one sort or another as a matter of course, though the individual quality varies somewhat. Two are stand-mounts and three floorstanders, but the smaller models are by no means outclassed,

and the contrast between competing models is again very marked.

Indeed, trying to choose between the Celestion A1 and Mission 753 Freedom posed one of the dilemmas of the test. Each has fine qualities, yet they have very little in common. Ironically the smaller Celestion actually gives the 'bigger' sound,

while Mission's new heavyweight has more up-front immediacy.

There's a similar contrast between the weight and slightly distant perspectives of the TDL T-Line 3, and the delightful vocal delicacy of the more forward Castle Avon. Silverado's pretty little Raider is probably one of the most neutral speakers around, but is also rather picky about its partnering components.



Silverado Raider

BEST BUYS

Can a good stand-mount speaker be more than match for today's trendy floorstanders? Few speakers in recent memory have done more to convince me than



Heybrook Heylios

Heybrook's new £339 Heylios. Tasteful traditional styling and understated real wood veneer belie this baby's ability to get down and boogie when the

occasion demands. The perfect speaker doesn't exist, but the compromises here have been most artfully drawn to give fine performance at a very realistic price.

Elaborate double-box construction and cunning fine-detailing of the £598 Naim Intro undoubtedly contribute to its superb dynamic



Celestion A1

range and information retrieval. The very up-front presentation and general lack of warmth won't appeal to every taste, but the Intro does take you places off-limits with more conventional models.

There's a true generosity of spirit about the beautiful £700 Celestion A1. The sound might be a little too heavy and laid-back for some tastes, but it has the virtue of always sounding relaxed and easy-going, while still delivering a muscularly dynamic performance.

The £798 Mission 753, now in Freedom guise, is still the best looking speaker in its class. A new and less strident tweeter has brought a singular improvement by better focusing attention on the dynamic and coherent broad midband.



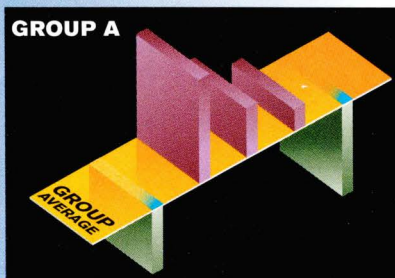
Mission 753 Freedom



Naim Intro

UNDERSTANDING OUR BAR-GRAPHS AND GROUP AVERAGES

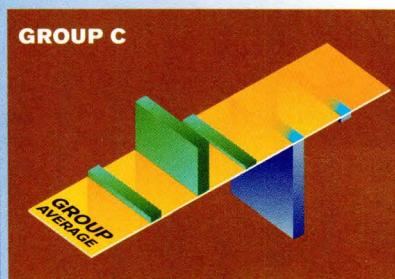
GROUP A



GROUP B



GROUP C



There are huge differences between a speaker that costs £200 and one that costs £800. For this reason we have divided our 15 speakers into three groups to extract meaningful 'group averages' for our bar-graph lab-test summaries. The three groups (A, B and C) are summarised left (page 94), but just so that you can tell which player is in which group throughout the reviews, here is the key to the colour codings shown above:

Group A	(£200-£400)
Group B	(£400-£600)
Group C	(£600-£800)

Using this information, you can work out with which of its peers each speaker is being compared. Our aim is to assess every product's measured performance in the context of its closest rivals.

The bar-graphs themselves are derived from measurements performed by our Technical Editor, Paul Miller, using instruments controlled by his own award-winning, PC-based 'Virtual Instrument' software. Actual measured parameters are weighted and statistically processed to give the bar-graph values, relative to the group averages explained above. For more information, e-mail Paul Miller at 100576.3021@compuserve.com .

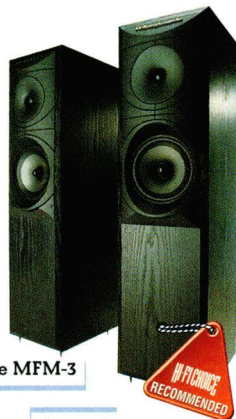
RECOMMENDATIONS

The mass-loaded, twin-driver Acoustic Energy AE109 is a lot of speaker for £330. If you like driving bass and like it loud, this is a very tempting prospect.

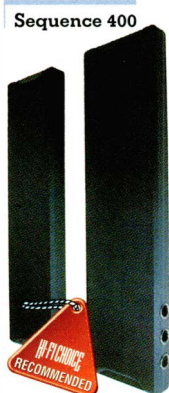
For the ultimate in hang-on-the-wall discretion, the £330 Sequence 400 should not be ordered in black. But if you really want to get your speakers out of the way, it still does a mostly decent job of sound reproduction.

Same price (£350), same size and quite a lot in common cosmetically: the B&W 305 and Wharfedale MFM-3 have got to be aimed at

the same target customer group. That they sound so dissimilar makes it all the more intriguing. The Wharfedale is smooth and very controlled, while the B&W offers more of everything — including, alas, rough edges.

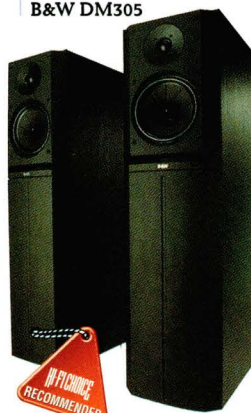


Wharfedale MFM-3



Sequence 400

HI-FI CHOICE



B&W DM305

HI-FI CHOICE RECOMMENDED



Audio Gem Emerald



Acoustic Energy

HI-FI CHOICE RECOMMENDED

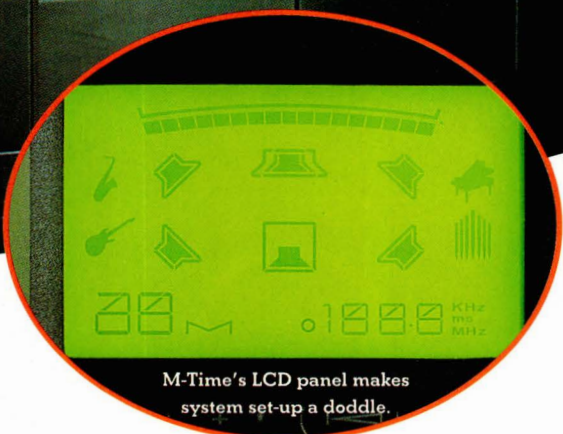
WIN!

COMPETITION

MIGHTY MISSION MASTERPIECE*



MUST BE WON!



M-Time's LCD panel makes system set-up a doddle.

AWARD-WINNING MISSION M-TIME CONSOLE AND 734i SPEAKERS, WORTH £3,000, MUST BE WON!

One of the shining stars in the Verity Group's hi-fi constellation, Mission is renowned around the world for high-quality loudspeakers that are ideal for both hi-fi and home cinema. But last year, Mission pulled off a technology coup with the groundbreaking M-Time home entertainment console which, just a few months after its launch, was voted the European Home Theatre System of the Year 1996/97, by a prestigious European award panel. The £2,500 M-Time is the star prize in this month's super-generous giveaway.

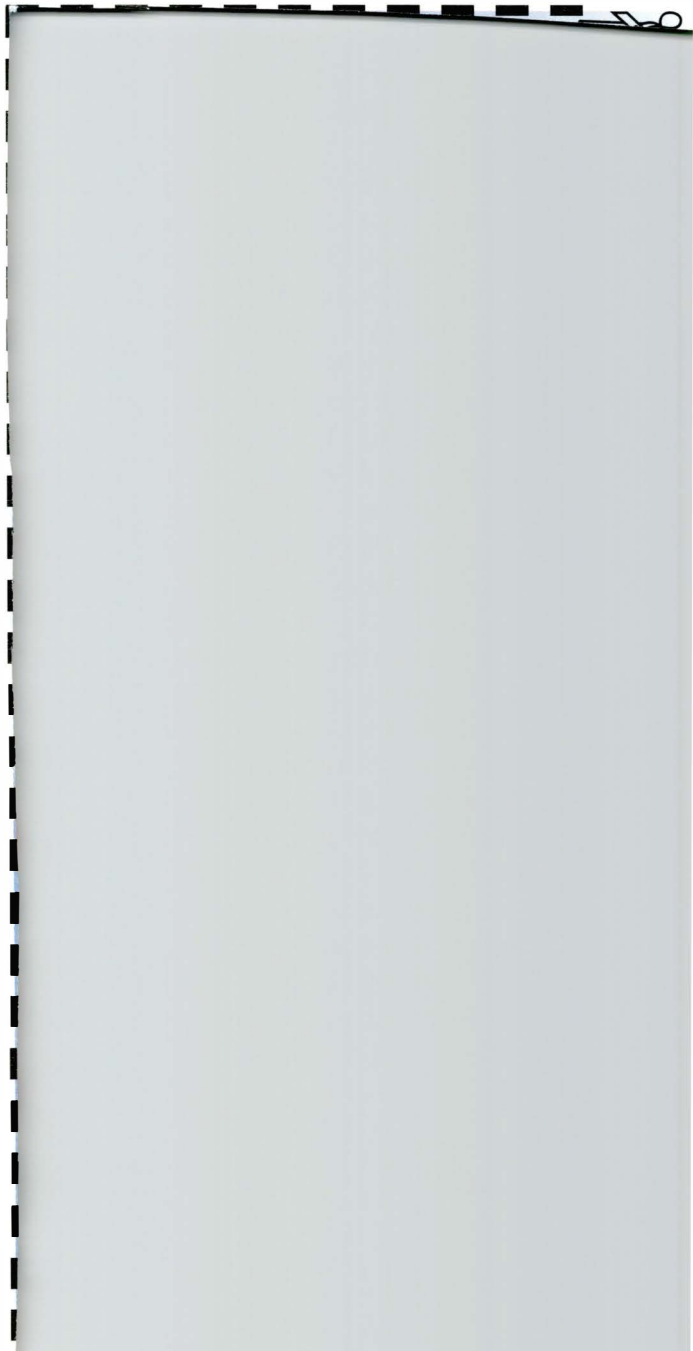
M-Time is the ideal support for any TV with a 22inch or larger screen. It contains everything you need to transform a Nicam telly and VCR into a top-quality surround-sound system. M-Time contains a Dolby Pro-Logic AM/FM receiver and power amplifiers (100W to the centre front, left and right speakers, 40W to both rear speakers and 120W to each of the subwoofers) plus a built-in centre-channel and two subwoofer speakers. All is concealed within the compact M-Time console, which comes complete with a pair of Mission's 73S speakers for surround duties.

All that's needed for a complete AV/hi-fi system is a pair of main speakers – and these too are up for grabs, in the form of the new £500 Mission 734i floorstanders. These 40-litre boxes build on the strengths of the popular Best Buy 733 speaker, adding an extra 170mm polypropylene bass driver to match the identical mid/bass unit and 25mm, ferrofluid-cooled, silk-dome tweeter. This design is efficient, with a claimed sensitivity of 90dB and eight Ohms impedance. Mission's own polymer/MDF composite-moulded front baffle keeps resonances at bay.

All in all this is the perfect pair of speakers for both hi-fi and home cinema applications, and the very best complement for the mighty M-Time.

So take a minute to complete the entry form with your correct answer, and you could be on the way to home cinema and hi-fi heaven!

*** NOTE: THE TV SET SHOWN IS FOR ILLUSTRATION PURPOSES ONLY, AND DOES NOT CONSTITUTE A PART OF THIS COMPETITION PRIZE.**



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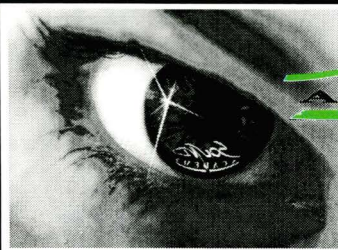
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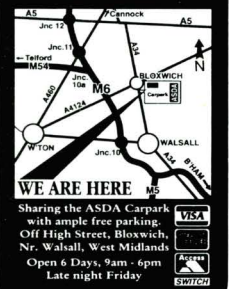
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- Revox B150 integrated amp. Excellent condition. £200 ono. Manchester (0161) 747 5189.

- Spondor SP1 speakers, teak, Jamo modified stands, little use, £285. (01273) 430739 day/(01408) 783363 eve.
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All We Like Sheep

In hi-fi, 'follow my leader' isn't the best game in town. In the first part of a two-part article, **Dave Wiley** has some advice on how not to buy a system.

Consider an everyday kind of person who already owns some sort of music-playing system, perhaps a portable. He (or she!) has reached the stage in life when better-quality audio equipment is required. Specifically this means a quality separates hi-fi system, and since there are literally hundreds of components to choose from, the first thing to do is 'get some advice'.

This process usually involves talking to a knowledgeable friend, followed by extended reading of the specialist hi-fi press. Such research enables our prospective buyer to find out about the kind of products available, and more importantly, to sort out the highly regarded 'wheat' from the less well regarded 'chaff'. This process continues for a while until our prospective buyer is able to draw up a 'short-list' of highly recommended components that fall within the appropriate budget.

The ideal scenario

Suitably prepared, our heroic prospective buyer heads off to visit a few dealers and hear a few systems. After one or two competent but uninspiring demonstrations our hero is beginning to get a little bored. The next dealer he speaks to is very friendly and seems quite helpful. On seeing the short-list he even complements the customer on his excellent choice of components; suggests that, in his opinion, these particular components make a particularly good combination; sets up the system, plays a few tracks, explains that as this set-up is really popular; and because of that offers to sell it at a special package price, including free cables. Suitably impressed, our hero pulls out his credit card, and the deal is done. Easy isn't it!

Back in the real world

Actually it's not that simple. Let's look again at this process and see what is really happening. When asked for advice by a friend, most enthusiasts will initially recommend their personal favourite component or system, then in order to establish credibility will suggest auditioning a few more components that are currently considered to be 'hot'. That is, they are currently getting favourable comments and good reviews in the specialist press. Pressed further, hi-fi guru will suggest that more information can be obtained by reading a few hi-fi magazines. Often he may go so far as to lend our hero some appropriate publications. And it comes as no surprise to find that many of the components mentioned are heavily featured in the press.

In reality our enthusiastic friend has no personal experience of the equipment he recommends; like our hero is doing now, hi-fi guru just reads the reviews. On this occasion, most of the items that find their way onto the short-list exhibit certain tendencies and characteristics that are not really appropriate to our buyer's listening style and musical taste. The dealer, of course, finds high-profile, well-

reviewed product easy to sell, and sees no reason to suggest that the buyer consider less-well-known but better-suited components. After all they are not on the short-list; why confuse the issue?

The 'friendly' salesman is just being very professional and positive in his attitude, and the 'particularly good combination' he recommends just happens to be in stock, whereas many of the other components on the short-list are back-ordered two or three weeks. The special package deal is a device to close the sale straightaway, and to dissuade the customer from thinking further about the alternatives. Anyway, chances are the dealer needs to clear his stocks of the amplifier and CD player, as much-improved models are due next month. The free interconnects look impressive but sound mediocre and the speaker cable is unterminated — 'just bare the ends and off you go' will be the cheery advice!

Disparity begins at home

Getting the equipment home and set up is pretty easy; initially the sound is impressive. Unfortunately in a short while it becomes obvious that the sound is not as good as it seemed originally. String tone is steely, saxophones sound harsh and abrasive, and piano or vocals are a no-no. He doesn't realise that his components are all highly praised for their ability to produce a tight, driving sound on rock and electronic dance music, but fail miserably otherwise. All of the chosen components have a slightly bright, forward nature, and while individually each would sound fine with a sympathetic system, used with each other they produce the problems described above.

Our hero decides it can't be the equipment's fault; this must just be a hi-fi *quid pro quo*. But after a few months he's playing less and less music and watching more television. What's to be done?

Executive decisions

Few people actually talk to a dealer about the problems they're having. Some are helped; most are just assured that everything is all right and sent on their way. A very small number seeks further assistance by writing to magazines or visiting specialists.

If this sounds far-fetched you should listen to the people who visit or 'phone my shop asking for advice. The conversation usually starts: "I've got this new system but I don't think I'm really getting the best out of it. It's all very good equipment, had great reviews but..."

Unfortunately once you're in this position it's both difficult and expensive to cure your problems, and of course the really sensible answer is to buy the right system in the first place. I'll reveal how to do this in the second part of my article next month! ▲

Dave Wiley is the proprietor of hi-fi dealership The Sound Organisation, based in London SE1. Views expressed are those of the author alone and do not reflect the editorial policy of Hi-Fi Choice magazine.

ILLUSTRATION BY BRETT RYDER



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 page 106). This listing is updated 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 on page 114). Here you will learn which items have been singled out for our famous Best Buy and Recommended awards, which 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 (starts on page 131) 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.

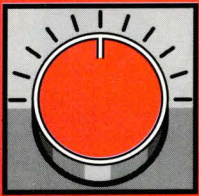
Using Best Buys and Recommendations to buy hi-fi.

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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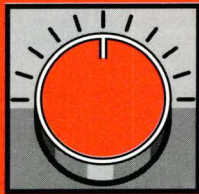
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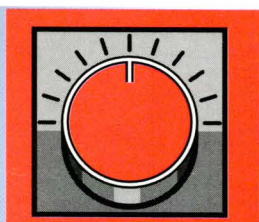
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Lumley Reference LV1.5	895
Lumley Reference LV1	1,000
Lumley Reference WAP1	1,150
Lumley Reference L/R PV1.5	1,350
Lumley Reference PV1.5	1,500
Lumley Reference PV1	1,700
Marantz AC-500	700
Marantz EC-500	900
Marantz SC-23	1,000
Mcintosh C712	1,479
Meracrus Ingredi	925
Meridian 501	695
Meridian 562	765
Meridian 501V	875
Meridian 562V	995
Meridian 502	1,295
Michell Iso/Hera	575
Michell Argo	730
Michell Argo/Hera	885
Michell Iso HR	895
Michell Argo HR	1,339
Michi RHC-10	795
Michi RHQ-10	1,150
Michi RHA-10	1,150
Micromega Tempo P	1,250
Monrio ADM	625
Monrio PLUR1-L	960
Musical Fidelity F25	1,500
NAD 118	1,000
Naim Audio NAC92R	599
Naim Audio NAC72	690
Naim Audio NAC 102	998
Onix OA36L	999
Onix OA36	1,100
Quad 77PR	850
Quad HAL	998
Roksan ROK-12.5	1,250
Rose RV-23S	525
Shearpe Phase 6 Pre	895
Shearpe Phase 1 Pre Ref	1,399
Sonic Frontiers SFP-1	1,095



Harman/Kardon HK610 This punchy little integrated amp is a great way to start a budget system.

Sonic Frontiers SFL-1	1,395
Sonic Frontiers SFP-1 Sig	1,495
Sonic Frontiers SFL-1 Sig	1,795
Sumo Ulysses II	629
Sumo Athena II Line	767
Sumo Polaris III	950
Sumo Athena IIB/II LS	987
Sumo Athena III	987
Sumo Artemis UP	1,595
Sumo Artemis OP	1,695
Sumo Audiomeda III	1,810
Sumo Model Five	1,975
Talk Electronics Hurricane 1 P	550
Talk Electronics Hurricane 2	650
Talk Electronics Hurricane 2P	730
Talk Electronics Hurricane 3	900
Talk Electronics Hurricane 3P	1,000
Technics SU-C2000	700
Tesserac TAADA	1,500
Tesserac TALA	1,500
Tesserac TAHA	1,800
Thorens TTP-2000F	650
Thorens TRP-3000	1,500
Thule PR200	699
Tube Tech Seer Line	575
Tube Tech Seer Phono	649
Tube Tech Prophet	1,199
Unison Research Mystery One	1,750
Unison Research Phono One	1,995
Woodside SC27 Line	949
Woodside SC27 Phono MM	1,099
Woodside SC27 Phono	1,249
Woodside SC26 Line	1,557
XTC PRE-1	1,000
Yamaha CX-2	650
Over £2000	
Ayton Temper	2,495
Ayton Modus	2,695
Alchemist Control	4,995
ATC SCA2	2,499
Audio Research LS-3b	2,250
Audio Research PH-2	2,895
Audio Research LS-2 II	2,997
Audio Research SP9 III	3,290
Audio Research LS-2b II	3,398
Audio Research LS22	4,125
Audio Research LS-5 II	5,690
CAT SL1 Sig line	5,500
CAT SL1 Sig phono	6,000
Chord CPA 2200	2,298
Chord CPA 2800	3,090
Chord CPA 3200	3,352
Chord CPA 4000	6,025
Counterpoint SA-3000E	2,195
Counterpoint SA-5000E	3,995
Counterpoint SA-9	3,995
Credo LPR 001	2,815
DNM 3B Twin E	3,050
DNM 3B Primus E	3,630
DNM 3B Six E	4,780
EAR 802MC	2,599
EAR G88	6,999
Electrocompaniet EC-3MC SF	2,135
Gamma Acoustics Era Ref	3,999
Graaf GM13.5B	3,950
Jadis DP60L	2,800
Jadis DPL	3,190
Jadis DPMC	3,190
Jadis DEFY-P60	3,774
Jadis JPL	4,720
Jadis JPP-200	4,998
Jadis JP-30MC	5,978
Jadis JP-52	7,900
Krelli KRC3	3,198
Krelli KSL-2	3,331
Krelli KRC-2	4,190
Krelli KRC-HR	6,949
Krelli KRC	6,949
LFD Disc Preamp	4,499
Linn AV5103	4,950
Lumley Reference L/R M100	2,250
Lumley Reference L/R LS2	3,250
Lumley Reference L/R PS2	3,550
Lumley Reference L/R M140	4,250
Lumley Reference ST150	4,350
Marantz Model 7	3,500
Marantz SC-5	7,000
Mark Levinson 38	3,995
Mark Levinson 38S	6,495
Matisse Fantasy	2,300
Matisse Reference	3,500
Mcintosh C38	2,095
Mcintosh C22	2,099
Mcintosh C39	3,129
Mcintosh C40	3,239
Meracur Pretare	2,195
Meridian 601	2,750
Naim Audio NAC82	2,058
Naim Audio NAC52	3,190
Roksan ROK-L1.5	2,250
Sonic Frontiers SFL-2	3,795
Sumo Model Ten/M	4,200
Tesserac TAP-A	5,300
Woodside SC26 Line & Phono	2,233



Power Amps
Up to £500

AMC 2445	299
AMC 2030	449
Arcam Alpha 9P	400
Arcam Delta 290P	400
Creek A42	335
Crimson CS620C	450
Denon PMA-250SE	160
Harman/Kardon PA2100	400
LFD PA0 Powerstage	499
Marantz MA-500	250
Marantz SM-500	400
Marantz MM-500	450
Moth 30 Series Power	249
Moth 30 Mono/40	469
Myryad MA 127	450
NAD 912	199
NAD 214	370
NAD 916	500
Naim Audio NAP90/3	428
Rotel RB970BX Mkl	225
Rotel RB980BX	450
Talk Electronics Tornado 1	450
Technics SE-A1000	400

£501 to £2000

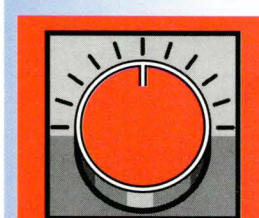
Alchemist Forsetti Pwr	1,309
Art Audio Quintet	1,393
Art Audio Quintet SE MB	1,500
Art Audio Concerto	1,669
Audio Innovations Ser 800	999
Audio Innovations First Audio	1,749
Audio Innovations Ser 1000	1,799
Audio Synthesis Desire	1,695
Audiolab 8000P	750
Audiolab 8000M	800
Aura PA-200	1,200
Aura PA-200 C	1,250
AVI S2000MA	849
AVI S2000MM	1,249
Bryston 2B-LP	639
Bryston 3B-ST PRO	987
Bryston THX3B	1,074
Bryston 3B-NRB	1,159
Bryston 7B-ST PRO	1,545
Bryston THX7B	1,605
Bryston 5B-ST PRO	1,610
Bryston 4B-NRB	1,756
Bryston 7B-NRB	1,815
Bryston THX4B	1,858
Bryston 8B-ST PRO	1,868
Chord SPM 400	1,290
Chord SPM 600	1,680
Copland CTA-501	1,599
Copland CTA-504	1,999
Counterpoint Solid 1EM	995
Counterpoint SA100E	1,495
Counterpoint Solid 1E	1,495
Counterpoint NPS-100E	1,995
Credo PMP 804	1,876
Crimson CS630C	800
Dawn Audio CMD 2 by 200	890
DNM PA1	1,750
DPA Enlightenment	995
ECA Lectern S	880
ECA Lectern HD	1,480
Electrocompaniet AW60B	1,185
Exposure XVIII Super	850
Exposure XVIII (pr)	1,599
Fase Evoluzione Powersource 2.0	860
Fase Evoluzione Powersource 1.0	1,670
Fase Evoluzione Powersource 1.0	1,670
Harman/Kardon PA2200	700
Harman/Kardon PA2400	1,000
Jadis DA5	1,997
LFD PA1 Powerstage	999
LFD PA2 Powerstage	1,599
LFD PA2M Powerstage	1,999
Linn LK100	650
Linn LK240	700
Lumley Reference ST40	1,250
Lumley Reference ST70	1,950
Lynwood Ruby	985
Magnum MF330	685
Marantz MA-23	1,800
Mcintosh MC7100	1,259
Meracur Clerc	1,095
Meridian 555	750
Meridian 505	795
Meridian 557	1,400
Michell Alecto Stereo	1,150
Michell Alecto Mono	1,989

Michi RHB-05	1,100
Michi RHB-10	2,000
Micromega Amp	1,250
Monrio Cento	1,495
Monrio HP1	1,995
Moth 30 Stereo/60	599
Moth 30 Mono/100	879
Musical Fidelity FX2	800
NAD 218THX	850
Naim Audio NAP140	722
Naim Audio NAP180	1,016
Naim Audio NAP135	1,576
Naim Audio NAP250	1,576
Onix OA601	699
Onix OA801	849
Onix OA701	899
Papworth TVA50	1,425
Quad 775A	600
Quad 707	800
Rega EKS	598
Rega Exon	598
Roksan ROK-S1.5	1,495
Rose RP-190 (Dual Mode)	550
Rotel RB990BX	625
Shearpe Phase 3	619
Shearpe Phase 3 Reference	689
Shearpe Phase 5 Mono	879
Sonic Frontiers SFS-40	1,695
Sumo Ulysses	629
Sumo Polaris III	950
Sumo Andromeda III	1,975
Sumo Model Five	1,975
Sumo Andromeda III	1,975
Talk Electronics Tornado 2	600
Talk Electronics Tornado 3	750
Talk Electronics Tornado 4	1,100
Technics SE-A2000	1,100
Thorens TTA-2000	550
Thorens TRA-3000	2,000
Thule PA200	1,798
Tube Tech Unisys Pwr Amp	1,099
Woodside SA240	1,199
Woodside MA100	1,733
Woodside STA50	1,880
XTC POW-1	2,000
Yamaha MX-2	750

Over £2000

Ayton Cordis 1.6	3,495
Alchemist Stereo	3,995
Alchemist Mono	8,995
Art Audio Tempo	2,499
Art Audio Quintet SE	2,500
Art Audio Maestro	3,524
Audio Innovations Ser 1000SE	2,499
Audio Innovations Second Audio	3,299
Audio Research D130	2,497
Audio Research VT60	2,645
Audio Research VTM120	2,645
Audio Research VT60SE	3,190
Audio Research VTM120SE	3,190
Audio Research D-200	3,248
Audio Research V35	3,355
Audio Research V70	4,480
Audio Research D-300	4,800
Audio Research VT130	5,994
Audio Research D-400II	6,600
Audio Research VT150	7,200
Audio Research VT130SE	8,145
Audio Research VT150SE	8,400
Audio Research V140	8,960
Bryston THXB	2,030
Bryston 8B-NRB	2,195
Chord SPM 800	2,155
Chord SPM 1000B	2,650
Chord SPM 1200	3,840
Chord SPM 200	4,890
Chord SPM 1600	4,890
Chord SPM 3000	7,960
Copland CTA-505	2,099
Counterpoint Solid 2E	2,495
Counterpoint NPS-200E	2,995
Counterpoint SA4	3,575
Counterpoint Nat Progress	4,125
Counterpoint NPS-400E	4,395
Counterpoint NPM-E	8,995
Credo LPO 804	2,456
Credo PMP 155	2,676
Credo LPO 155	3,714
Credo LPO 455	4,975
DNM PA2BE	4,250
DNM PA2BS	5,250
DNM PA2BS-1	5,650
DPA DPA500S	3,000
Dynavector HX75	2,195
Dynavector HX1.2	3,995
EAR 509 Mk II	3,499
EAR 519	4,699
EAR 549	6,999
Electrocompaniet AW100DMB	2,115
Electrocompaniet AW100DMB-SF	2,298
Electrocompaniet AW250DMB	3,983
Electrocompaniet AW250DMB-SF	4,215
Electrocompaniet AW180MB	4,673
Electrocompaniet AW180MB-SF	4,910

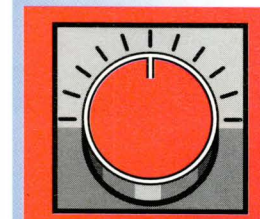
Exposure IV	2,199
Exposure XVI	4,000
Gamma Acoustics Aeon 211/VT4C	4,999
Gamma Acoustics Space Ref	9,999
Graaf 5050	2,150
Graaf GM 100	4,490
Graaf GM200	8,000
Jadis JA-30	2,880
Jadis DA8	3,333
Jadis JA300B	4,500
Jadis JA-80	4,956
Jadis DA7	5,290
Jadis DEFY-7	5,290
Jadis JA-200	7,759
Krelli KSA-50S	3,690
Krelli KSA-100S	5,843
Krelli KSA-200S	7,987
Krelli KSA-300S	9,500
Linn Klout	2,400
Lumley Reference M120	3,200
Marantz Model 8	3,500
Marantz Model 9	4,000
Marantz SM-5	5,000
Mark Levinson 29	3,450
Mark Levinson 331	4,499
Mark Levinson 27.5	5,395
Mark Levinson 332	6,495
Mark Levinson 23.5	7,399
Mark Levinson 333	8,495
Matisse Ref Monoblocks	7,800
Mcintosh MC7108	2,249
Mcintosh MC7150	2,295
Mcintosh MC7104	2,729
Mcintosh MC150	2,855
Mcintosh MC7300	3,195
Mcintosh MC7106	3,425
Mcintosh MC725	3,595
Mcintosh MTA-2000	3,765
Mcintosh MC2600	5,395
Mcintosh MC500	6,265
Meracur Tentare	2,245
Meracur Cantare	8,995
Musical Fidelity F16	2,500
Musical Fidelity F19	4,000
Papworth M100	2,645
Papworth M200	3,825
Roksan ROK-M1.5	2,250
Shearpe Phase 1 Pwr Ref	2,199
Sonic Frontiers SFS-80	2,895
Sonic Frontiers SFS-160	5,495
Sumo Model Ten	4,200
Tesserac TAMP-60	7,350
Tube Tech Genesis	2,599
Unison Research Smart 845	3,250



Surround Sound
Amplifier/Receivers

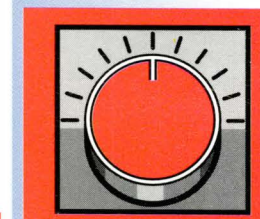
Arcam Xeta One	1,000
Audio Research SDA1	4,391
Denon AVC-1800	5,590
Denon AVC-2800	800
Exposure XXV	1,000
Grundig V1000DPL	360
Harman/Kardon AV1100	300
Harman/Kardon AV1150	400
Harman/Kardon AVR-21	500
Harman/Kardon AV1200	500
Heybrook 806	1,495
JVC AX-V6BK	230
JVC RX-416VBK	270
Krelli KAV500/2	3,485
Krelli KAV500/3	3,985
Krelli KAV500/4	4,485
Krelli KAV500/5	4,985
Marantz MM-500	400
Marantz PM-711AV	450
Mission AV-Master	650
NAD AV-316	450
NAD 216THX	470
NAD ASV 620	700
Onkyo A-SV610	600
Onkyo ASV 620	700
Parasound 806	1,495
Pioneer VSA 303	300
Pioneer VSA 805S	450
Rotel RB956AX	350
Rotel RSP960AX	400
Sony TA-VE700	350
Sony TA VE 800G	400
Sony TA-AV590	700
Sony TA VA 8ES	400
Sony TA-AV790	800

Yamaha DSP-A590	349
Yamaha DSP-A780	599
Yamaha DSP-A970	799
Yamaha DSP-990	900
Yamaha DSP-A2070	1,099
Yamaha DSP 3090	1,700



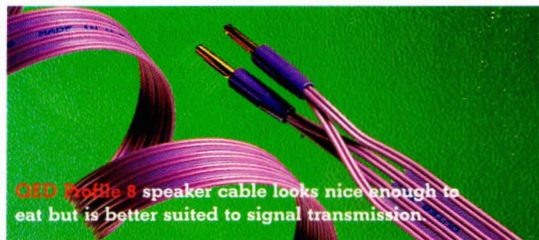
Surround Sound Processor

Arcam XETA 2	650
Audio Research SDPI	3,293
Exposure XX111	750
Exposure XX1	1,050
Heybrook 1000	995
Marantz AV-1030	330
Marantz AV1040	400
Marantz DP-870	600
NAD 117	470
NAD ED 901	700
Naim Audio NAV1	1,600
Onkyo SR11PRO	340
Onkyo ED 901	700
Parasound 1000	995
Pioneer VSP-200	250
Pioneer SP-D07	800
Sanyo HT F450	180
Sherwood ES5030R	200
Sony SDP E3000	230
Technics SH-AV500	280
Yamaha DSP-E390	250
Yamaha DSP-E580	450
Yamaha DSP-E1000	70



Surround Sound Receiver

Denon AVR-600RD	300
Denon AVR-900	350
Goodmans Delta 801	200
Grundig R14DPL	280
Grundig R1000DPL	400
Harman/Kardon AVR-10	380
Harman/Kardon AVR-20	499
Harman/Kardon AVR-25	699
Harman/Kardon AV-30	1,000
JVC RX-416VBK	270
JVC RX-616RBK	350
Kenwood KR-V5080	280
Kenwood KR-V6080	330
Kenwood KR-V7080	380
Kenwood KR-V9080	1,300
Marantz SR-66	300
Marantz SR-70	700
Marantz SR-96	1,300
NAD AV713	400



QED Profile 8 speaker cable looks nice enough to eat but is better suited to signal transmission.

Sherwood RV7050R	400
Sony STRD E405	280
TEAC AG-V600	400
Technics SA-EX300	250
Technics SA-EX500	350
Technics SA-EX700	450
Technics SA-TX50	1,000
Yamaha RX-V390RDS	299
Yamaha RX-V590RDS	449

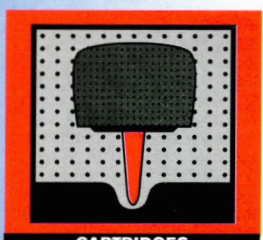


CABLES
Analogue Interconnects

Art Yam Church 5000	515.00
Cable Talk Improved 2/CD	26.00
Cable Talk Advanced 2	35.00
Cable Talk Improved 2/T	50.00
Cable Talk Studio 2	65.00
Cable Talk Professional 2	85.00
Cable Talk Broadcast 2	130.00
Cable Talk Reference 2	180.00
Cable Talk Signature Gold	300.00
Cambridge Audio Atlantic	10.00
Cambridge Audio Artic	20.00
Cambridge Audio Pacific	30.00
Cambridge Audio Studio Ref	40.00
Chord Chrysalis	30.00
Chord Cobra	49.00
Chord Siren	65.00
Chord Chameleon	68.00
Chord Solid	99.00
DPA Slink	41.00
DPA White Slink	75.00
Heybrook Inter/BS Blue STRK	49.95
Ixos 104	19.95
Ixos 103	44.95
Ixos 102	59.95
Ixos 101	99.95
Ixos 100.X03	149.95
Kimber Cable Illuminati DX50	350.00
Kimber Cable Orchid	750.00
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-D	151.00
Naim Audio SNAIC-5	47.00
Nordost Magic	30.00
Nordost Black Knight	50.00
Nordost Blue Angel	80.00
Nordost Blue Heaven	120.00
Nordost Red Dawn	250.00
QED P2 Gold	20.00
QED Incon P2 Screened	23.00
QED Incon P1 Screened	26.00
Roksan High Def 0.6M	75.00
Roksan High Def 1.0M	85.00
Roksan High Def 1.5M	95.00
Silver Sound SS3	49.00
Silver Sound SS2	99.00
Silver Sound SS1	199.00
Sonic Link Bonus 1m	15.00
Sonic Link Silver pink	30.00
Sonic Link Black	45.00
Sonic Link White	50.00
Sonic Link Brown	60.00
Sonic Link Violet HPMC	65.00
Sonic Link Violet	85.00
Sonic Link Violet HPMC	100.00
Sonic Link Blue Nickel	105.00
Sonic Link Vermillion	170.00
Sonic Link Red earth	260.00
Sonic Link Black earth	350.00
Sonic Link Blue earth	495.00
Sonic Link Rare earth	1,200.00
Sumo IC-50	37.00
Sumo IC-80	60.00
Trichord Pulsewire 75	150.00

Digital Interconnects	
Art Yam Church 5000	275.00
Audioquest Video 2	50.00
Audioquest Digital PRO	90.00
Cable Talk Digital 2	75.00
Chord Codac	33.00
Chord Prodac	50.00
DPA Digi-link	28.00
Ixos 105	24.95
LAT International DI-20-D	79.00
Monster Datalink 100	45.00
Moth Leyline Datalink	140.00
Nordost Moonglo	135.00
Nordost Moonglo-XLR	165.00
QED Digiflex	20.00
QLN Nordost Moonglo	130.00
QLN Nordost -XLR	165.00
Roksan High Def 0.6M	45.00
Roksan High Def 1.0M	55.00
Roksan High Def 1.5M	65.00
Sonic Link Silver Pink	15.00
Sonic Link Green	50.00
Sonic Link Green Earth	110.00
Sumo IC-100	73.00
Sumo IC-200	151.00

Speaker Cables	
Art Yam Church M2000	470.00
Art Yam Church 5000	795.00
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 Overture 2.1	4.00
DPA Black Sixteen	345.00
Electrocompaniet EC-K2	119.00
Gale XL315	2.00
Gale XL160-2	3.00
Grado 450CM	25.00
Ixos 607	1.99
Ixos 605	2.99
Ixos 606	7.99
Ixos 605/5	14.95
LAT International SS 80	21.00
LAT International BIWIRE	27.00
LAT International SS 1000	42.00
Linn K20	4.00
Linn K400	10.00
Linn K600	15.00
Lumley Reference Silver	35.00
Naim Audio NACA 5	5.00
Puresonic 7845	2.00
QED Qudos Bi-Wire	4.50
QED Profile 4x4	9.00
QED Profile Silver 12	15.00
Rega REGA	2.00
Silver Sound 12 Gauge	15.00
Silver Sound 10 Gauge	35.00
Silver Sound 8 Gauge	75.00
SME S2LB-4	37.00
SME S2LB-4	42.00
SME 4900A	62.00
SME 5900A	83.00
Sonic Link Nickel plated	3.00
Sonic Link Gold plated	5.00
Sonic Link Silver aero	18.00
Sonic Link Silver aero SX00x2	35.00
Sonic Link rare earth metal	90.00
Sumo SS-1000-D	323.00
Trichord Pulsewire 75/D	64.00

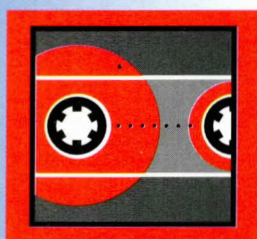


CARTRIDGE
Up to £100
Audio Technica AT-91 13

Audio Technica AT-95E	19
Audio Technica AT-110E	24
Denon DL110	70
Denon DL160	90
Denon DL103	100
Goldring Elan P	17
Goldring Elan	19
Goldring Elektra	29
Goldring 1006	59
Goldring 1012GX	65
Goldring 1012 GX Cartridge	79
Goldring 1022GX	99
Grado ZTE+1	27
Grado ZCE+1	37
Grado Z3E+1	47
Grado Prestige Black	49
Grado Prestige Green	59
Grado Prestige Blue	69
Grado ZFI+	82
Grado Prestige Red	99
Nottingham Analogue Tracer I	98
Ortofon VMS2	14
Ortofon OMP-5E	20
Ortofon OM-5E	20
Ortofon OM10 Super	30
Ortofon OMPRO-S	38
Ortofon OM Pro S	38
Ortofon 510	38
Ortofon OMDJ's	50
Ortofon OMPRO-S+2	60
Ortofon OM Night Club S	65
Ortofon 520	65
Ortofon OM20 Super	70
Ortofon OM Night Club E	70
Ortofon MC1 Turbo	70
Ortofon Concord PRO-S	70
Ortofon Concord DJ's	80
Ortofon OM30 Super	90
Ortofon Concord PRO-S +2	95
Ortofon OMNC+2	100
Ortofon MC10 Super	100
Ortofon 530	100
Pickering TE-15	20
Pickering VE-15	25
Pickering T-E	25
Pickering V15-DJ	28
Pickering TL-E	35
Pickering TL-2E	45
Pickering XV15-625E	50
Pickering XV15-150-DJ	50
Pickering TL-2-S	55
Pickering XV15-757S	60
Pickering XV15-625DJ	60
Pickering XV15-1800S	70
Pickering TL3S	80
Pickering XEV-300IE	95
Pickering XLZ-3500	100
Pickering TL-4-S	100
Pro-Ject 78rpm Kit	20
Rega Bias	39
Rega RB78	39
Rega Super Bias	59
Rega Elys	85
Shure SC35C	29
Shure ME95ED	38
Shure M70B	38
Stanton 500X II	34
Stanton 500EL	37
Stanton 680AL/X	56
Stanton 680EL/X	70
Sumiko Oyster	30
Sumiko Black Pearl	50
Sumiko Pearl	70
Sumiko Blue Point	100

Over £100	
Audio Technica AT-OC9	245
Audio Technica ART-1	944
Audioquest MC5	250
Audioquest 404L	599
Audioquest 404IMH	899
Audioquest 7000NSX	1,495
Denon DL304	200
Dynavector 50X	159
Dynavector 10X	189
Dynavector 23RS	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
Grado Prestige Silver	119
Grado Prestige Gold	149
Grado Signature Junior	149
Grado Signature 8MZ	250
Grado Signature MCZ	375
Grado Signature TLZ	650
Grado Signature XTZ	975
Koetsu Red T	1,550
Koetsu Red K Sig	1,998
Koetsu Urushi	2,297
Koetsu Signature	3,218

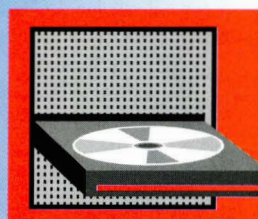
Koetsu Gold PR	5,498
Linn K9	125
Linn Klyde	500
Linn Arkiv	1,000
London Decca Maroon	259
London Decca Gold	299
London Decca Maroon Dp	339
London Decca Gold Dp	379
London Decca S Gold	399
London Decca S Gold Dp	479
London Decca Jubilee	999
Lyra Lydian	699
Lyra Clavis Da Capo	1,069
Lyra Parnassus	2,295
Nottingham Analogue Tracer II	175
Nottingham Analogue Tracer III	350
Nottingham Analogue Tracer IV	550
Ortofon Concord NC S	110
Ortofon OMDJ's +2	115
Ortofon OMNC+2	120
Ortofon Concord NC E	120
Ortofon MC3 Turbo	130
Ortofon MC15 Super II	130
Ortofon 540	130
Ortofon Concord NCS+2	150
Ortofon Concord DJS+2	150
Ortofon Concord NC+2	165
Ortofon Concord 2	170
Ortofon MC25E	180
Ortofon Concord 4	230
Ortofon MC25FL	249
Ortofon MC10 Supreme	300
Ortofon Concord 6	330
Ortofon MC20 Supreme	425
Ortofon MC30 Supreme	525
Ortofon MC2000II	750
Ortofon MC Rohman	1,000
Ortofon MC3000II	1,100
Ortofon MC5000	1,500
Ortofon MC7500	2,000
Pickering TL-3003	145
Pickering XLZ-4500	150
Pickering TL-4004	175
Pickering XSV-5000U	200
Pickering XLZ-7500-S	200
Pro-Ject 6/A30	1,000
Pro-Ject 6/A35	2,350
Reson Mica	150
Reson Aciore	199
Reson Recca	225
Reson Etille	299
Reson Lexe	899
Roksan Corus Black	130
Roksan Shiraz	970
Stanton 890AL/X	118
Sumiko BPS	250
Transfiguration SPIRIT	1,000
Transfiguration AF-1 MkII	1,595
Transfiguration TEMPER	1,950
Transfiguration Supreme	1,995
Van Den Hul MM-1	250
Van Den Hul MM-2	299
Van Den Hul DDT-II	699
Van Den Hul MC-10	799
Van Den Hul MC-One	999
Van Den Hul MC-ONE Super	1,150
Van Den Hul MC-Two	1,349
Van Den Hul The Frog	1,700
Van Den Hul Grasshopper IISLA	2,200
Van Den Hul Grasshopper IIGLN	2,999
Van Den Hul Grasshopper IIGLA	2,999
Van Den Hul Grasshopper IIICMN	3,000
Van Den Hul Grasshopper IIICHN	3,400
Van Den Hul Grasshopper IVGLA	3,450



CASSETTE DECKS
Up to £200
Aiwa AD-F450 120
Aiwa AD-WX727 170
Denon DRM-550 160
Denon DRW-580 200
Denon DRS-640 200
Dual CC8000 RS 200
Goodmans Delta 801 130
Grundig CCF3 200
JVC TD-W218BK 170
JVC TD-X372BK 170
JVC TD-R472BK 200
JVC TD-W318BK 200
Kenwood KX-W4080 160

Kenwood KX-3080	160
Kenwood KX-W6080	200
Kenwood KX-5080S	200
Luxman K-322	200
Marantz SD-53	200
Marantz SD-555	200
NAD TARW 311	20
Pioneer CT-S250	150
Pioneer CT-W205R	160
Pioneer CT-W505R	180
Pioneer CT-S4500	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
Technics RS-TR373	200
Technics RS-8X501	200
Yamaha KX-390	150
Yamaha KX-W392	180
Yamaha KX-490	199

Over £200	
Aiwa AD-F850	230
Aiwa AD-S950	300
Denon DRM650S	230
Denon DRM-740	270
Denon DRS-810	310
Harman/Kardon TD420	280
Harman/Kardon TD450	350
Harman/Kardon TD470	450
JVC TD-V562BK	220
JVC TD-W178BK	250
JVC TD-V662BK	270
Kenwood KX-7060S	330
Lux an K-373	400
NAD TA 6210	230
NAD 613	230
NAD 614	270
NAD 616	299
NAD TARW 411	270
Onkyo TA6210	230
Onkyo TARW 211	270
Onkyo TARW311	320
Onkyo TA 6310	330
Onkyo KR-609	350
Onkyo K-W606	370
Onkyo TARW 411	370
Onkyo K-611	460
Pioneer CT-S555	250
Pioneer CT-W803RS	300
Pioneer CT-S830S	500
Pioneer CT-95	1,000
Sony TC-KE500S	230
Sony TC-WE80S	250
Sony TC-KE800S	300
Sony TCK-661S	300
Sony TC-KAGES	500
TEAC W-850R	250
TEAC V-1030	250
TEAC W-6000R	450
TEAC V-6030S	550
TEAC V-8030S	650
Technics RS-TR474	220
Technics RS-AZ6	230
Technics RS-TR575	280
Technics RS-AZ7	300
Yamaha KX-W592	280
Yamaha KX-690	400
Yamaha KX-W952	599



CD PLAYERS
Up to £250
Aiwa XC-300 150
Cambridge Audio CD4 150
Denon DCD-625 200
Denon DCD-715 235
Denon DCD-825 240
Denon DCD-825 240
Dual CD1135RC 140
Dual CD1150RC 150
Dual CD1000RS 170
Dual CD1180RC 180
Eclipse Model 30 50
Eclipse model 50 60
Eclipse CD101 80
Grundig CDII 170
Harman/Kardon HD710 250
JVC XL-W184BK 120
JVC XL-V284BK 140



Pioneer CT-S830S This impressive recorder is expensive but still great value for keen recordists.

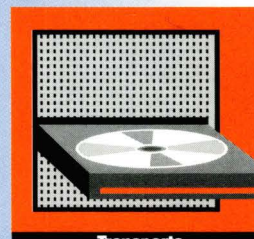
JVC XL-F116BK	180
JVC XL-F216BK	200
JVC XL-V574BK	250
Kenwood DP-M5570	250
Kenwood DP-5060	250
Luxman D-322	200
Marantz CD-57	230
Marantz CC-47	250
NAD 510	199
NAD 512	250
Onkyo DX-710	200
Onkyo DX-703	240
Philips CD711	120
Philips CD721	130
Philips CDC751	200
Philips CD741	200
Pioneer PD-104	130
Pioneer PD-204	150
Pioneer PD-M603	200
Pioneer PD-S505	200
Pioneer PD-F605	230
Pioneer PC-F25	230
Rotel RCD-930AX	180
Sony CDP-XE200	120
Sony CDPM-303	130
Sony CDP-XE300	140
Sony CDPCF-105	150
Sony CDP-XE500	160
Sony CDP-CE405	180
Sony CDP-XE700E	200
Sony CDP-C325M	200
Sony CDP-761E	250
TEAC CD-P1800	130
TEAC CD-P3450	150
TEAC CD-P3450SE	200
TEAC PD-D2200	250
Technics SL-PG380A	120
Technics SL-PG480A	140
Technics SL-PG580A	160
Technics SL-PG570A	170
Technics SL-PS670A	200
Technics SL-PS770A	250
Yamaha CDC-555	199
Yamaha CDC-655	249
£251 to £500	
Aiwa DX-C100M	500
AMC CD6	349
Arcam Alpha 5 Plus	480
Audio Innovations Alto	399
Aura CD100	450
Denon DCM-260	300

Denon DCD-1015	350
Grundig CDC14	300
Harman/Kardon HD7325	299
Harman/Kardon FL8450	300
Harman/Kardon HD730	300
Harman/Kardon HD7425	349
Harman/Kardon HD7525	400
JVC XL-2874BK	300
Marantz CD-67	270
Marantz CD-63SE	350
Marantz CD67SE	350
Marantz CD-63IIKI	500
Micromega Minium	350
Musical Fidelity E60	300
NAD 513	290
NAD 515	350
NAD 514	370
NAD 517	400
Onkyo DX-7210	260
Onkyo C721	290
Onkyo DX-7510	400
Onkyo CM715	450
Pioneer PD-S705	300
Pioneer PD-F805	330
Pioneer PD-F905	400
Pioneer PD-S904	400
Rotel RCD-965BX	300
Rotel RCD-970BX	375
Sony CDP-XE900E	300
Sony CDPXC-200	380
TEAC CD-5	350
£501 to £1000	
Arcam Alpha 8	520
Arcam Alpha 6	600
Arcam Delta 250	800
Creek CD42	600
Harman/Kardon HD7625	550
Harman/Kardon HD7725	800
Heybrook Signature II	989
Linn Mimik	875
Luxman D-373	550
Marantz CD-17	800
Meridian 563	795
Meridian 200	895
Monrio Privilege	995
Myrrad MC100	700
Naim Audio CD3	977
Orelle CD-100E A	649
Orelle CD100E S A	849
Orelle CD 100E V	999
Quad 77B	700



Meridian 508 20-bit Technological wonder that sets new standards for natural-sounding music.

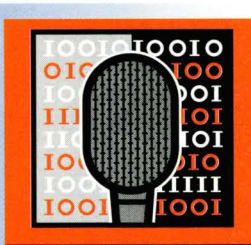
Quad 77M	900
TEAC VRDS-10SE	850
Technics SL-P2000	1,000
Thule CD100	849
Over £1000	
Audio Research CDI	3,290
Copland CDA-288	1,799
Copland CDA-277	1,800
Jadis JS-1	8,068
Krell CD-DSP MkII	5,000
Krell CD-DSPII 5000	5,000
Krell KPS-20i	9,990
Luxman D500XS	4,500
Marantz CD-17KI	1,300
Marantz CD-23	4,000
Mcintosh MCD7008	2,195
Mcintosh MCD7009	2,635
Meracur Auriga	1,295
Meracur Flagrare	2,495
Meracur Amago	3,995
Meracur Imagio	4,495
Meridian 506	1,100
Meridian 506	1,100
Meridian 606	1,350
Meridian 508	1,685
Micro-Seiki CD-M200C	3,695
Micro-Seiki CDM-200X	4,689
Mission Disc/Dacmaster	1,900
Musical Fidelity FCD	1,500
Naim Audio CD2	1,977
Naim Audio CDS	3,751
Roksan ATT-DP3P	1,595



Transports

Audio Alchemy DDS III	700
Audio Research CDTI	3,290
Audio Synthesis Transcend	1,395
Audiolab 8000CDM	1,400
Audiomeca Damnation	950
Audiomeca Damnation SE	1,100
Audiomeca Kreatura	1,299
Audiomeca Kreatura SE	1,450
Audiomeca Talisman	1,850
Audiomeca Mephisto	2,100
Cambridge Audio New CD-4	200
Cambridge Audio Dismagic One	300
Cambridge Audio CD6	300
Counterpoint DA-11E	1,495
Jadis JD2	4,990
Jadis JCDT	8,000
Jadis JDI	9,950
Krell KSP-20i/1	1,100
Krell MD-20	4,999
Krell MD-10	7,990
Krell KPS-20T	8,490
Krell DT-10	9,090
Linn Karik	1,850
Meridian 500	1,245
Meridian 602	1,750
Micromega Drive 1	700
Monrio Bitmatch	875
Orelle CD100E T1	549
Orelle CD100E T2	749
Pink Triangle Cardinal	875
PS Audio Lambda TR	2,250
PS Audio Lambda AT&T	2,778
Roksan ATT-DP3	1,295
TEAC VRDS-T1	550
TEAC VRDS-7	599
TEAC P-700	900
TEAC P-30	2,500
Theta Data Basic II	2,298
Theta Data Basic II AT&T	2,877
Theta Data BasicII S MDE	3,490
Theta Data III NTSC	5,345
Theta Data III NTSC/PAL	5,879
Thorens TCD-2000	900
W dia 8	3,195
Wadia 20	4,370
XTC CDT-1LE	1,250

DACs	
Arcam Black Box 50	480
Arcam Black Box 500	750
Counterpoint DA-10E	1,895
Linn Numerik	1,500
Pink Triangle Ordinal	837
Pink Triangle DaCapo	1,400
PS Audio UltraLink 2 HDCC	2,590
PS Audio Ref Link	4,550
TEAC D-T1	500
Trichord Pulsar Ser One	1,395



DIGITAL RECORDERS

Meridian CDR	4,500
Philips DCC730	250
Philips DCC170	250
Pioneer D-05	900
Pioneer PDR-05	1,300
Pioneer D-C88	2,000
Sharp MD-R1H	400
Sharp MD-MS100H	400
Sony MDS-SE7	300
Sony MDSJE-500	300
Sony MDS-S1	550
Sony MDS-503	550
Sony DTCZE-700	699
Sony MDA-JA3ES	700
Sony MXD-D1	800
TEAC R-9	1,200



HEADPHONES

Up to £40

Aiwa HP-X201	13
Aiwa HP-A360	13
Aiwa HP-X301	20
Aiwa HP-VX303	25
Aiwa HP-X705	40
AKG Rox	30
Audio Technica ATH-P1	10
Audio Technica ATH-P3	15
Audio Technica ATH-P5	20
Beyer DT111 Alpha	15
Beyer DT111 Beta	20
Beyer DT111 Gamma	25
Beyer DT211	34
Denon AH-C33	26
JVC HA-22	6
JVC HA-CD88	18
JVC HA-D525	20
JVC HA-F65	20
JVC HA-D626	25
Kenwood KH-535	15
Kenwood KH-757	20

Kenwood KH-959	25
Kenwood KH-1000	25
Kenwood KH-2020	40
Maxell EB-125	4
Maxell HP-200	6
Maxell EB-225	7
Maxell HBS-150	8
Maxell HP-300	8
Maxell EBS-325	9
Maxell EB-425	10
Maxell HP-700	10
Maxell HP-800	11
Maxell HBS-250	13
Maxell HBS-350	13
Maxell HP-1000	20
Maxell HP-2000	25
Maxell HP-3000	30
Pioneer SE-A10	8
Pioneer SE-A20	13
Pioneer SE-A40	20
Pioneer SE-A20V	23
Pioneer SE-M250	25
Pioneer SE-M350	30
Ross RE-233	5
Ross RIH-150	6
Ross RE-235	6
Ross RE-234	6
Ross RE-229	6
Ross RE-2030	6
Ross RMH-300	7
Ross RE-280	7
Ross RE-246	7
Ross RE-223	7
Ross RMH-500CD	9
Ross RIH-360CD	9
Ross RE-2060CD	9
Ross RMH-310TV	10
Ross RIH-550	10
Ross RIH-460CD	12
Ross RDH-200CD	13
Ross RDH-100CD	15
Ross RDH-300CD	17
Ross RDH-400CD	22
Sennheiser MX3	9
Sennheiser HD26	10
Sennheiser HD36	15
Sennheiser MX4	15
Sennheiser HD56	18
Sennheiser MX5	25
Sennheiser Vegas	30
Sennheiser Manhattan	30
Sennheiser HD60TV	40
Sony OPEN MDR-005EL	6
Sony MDR-E807	8
Sony MDR-007-MK2	8
Sony MDRW-08L	10
Sony MDR-009	10
Sony MDR-E817V	12
Sony MDR-A009	12
Sony MDR-V50	13
Sony MDR-E827 KIT	15
Sony MDR-15	15
Sony MDR-W24V	15
Sony MDR-E837	18
Sony MDR-E846MP	20
Sony MDR-009TV	20
Sony MDR-A34L	20



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.



Mordaunt-Short MS10i Officially declared "a kickin' little box" in Hi-Fi Choice, issue 156.

Sony MDR-E848	20
Sony MDR-CD170	20
Sony MDR-P1TV	25
Sony MDR-IF120	30
Sony MDR-CD270	30
Sony MDR-CD370	40
Technics RP-HT300	40
Vivanco SR60	3
Vivanco SR12	3
Vivanco SR52	5
Vivanco SR54	7
Vivanco SR14	7
Vivanco SR16	8
Vivanco SR120	15
Vivanco SR250	19
Vivanco SR150	20
Vivanco SR200	25
Vivanco SR300	30
Over £41	
AKG K301	80
AKG K222IR	100
AKG K222IR	100
AKG K401	120
AKG K333IR	150
AKG K501	150
AKG K333IR	150
AKG K444IR	180
AKG K290S	250
AKG K1000	700
Audio Technica ATH910PRO	90
Beyer DT311	57
Beyer DT411	69
Beyer DT331	82
Beyer IRH790	93
Beyer DT431	98
Beyer IRH 890	117
Beyer DT511	117
Beyer IRS790	130
Beyer DT531	135
Beyer DT770 Pro	152
Beyer DT100	152
Beyer DT801	172
Beyer DT990 Pro	187
Beyer DT811	200
Beyer IRS890	222
Beyer DT901	222
Beyer DT911	235
Denon AH-D210	45
Denon AH-D350	65
Denon AH-D650	80
Denon AH-D650	95
Denon AH-D750	130
Denon AH-D950	150
Ergo 1	120
Ergo Model 2	140
Grado SR80	110
Grado SR225	200
Jacklin Float Model 1	79
Jacklin Float Model 2	99
Jacklin Float ELS	399
JVC HA-D727	43
JVC HA-D910	65
JVC HA-D1000	250

JVC HA-F25	699
Kenwood KH-5000	70
Sennheiser HD445	45
Sennheiser HD455 II	55
Sennheiser HD465	65
Sennheiser IS360/UK	70
Sennheiser HD475	80
Sennheiser HD 480II-13	85
Sennheiser HD25SP	90
Sennheiser HD25 SP	90
Sennheiser HD535	105
Sennheiser IS450	120
Sennheiser HD545 Ref	125
Sennheiser HD250II	150
Sennheiser HD565 Ovat'n	150
Sennheiser HD265 Linear	150
Sennheiser HD25-13	160
Sennheiser HD25	160
Sennheiser HD25	160
Sennheiser HDC 451-1	166
Sennheiser HD 580 P'cision	200
Sennheiser HD600	250
Sennheiser LUCAS	280
Sennheiser IS850	859
Sennheiser HE60/HEV70	998
Sennheiser Orpheus	9,652
Sony MDR-IF120K	50
Sony MDR-CD470	50
Sony MDR-IF50K	70
Sony MDR-CD570	70
Sony MDR-LF320RK-MK2	80
Sony MDR-CD770	100
Sony MDR-CD770	100
Sony MDR-D77	130
Sony MDR-NC20	150
Sony MDR-NC10	150
Sony MDR-IF610K	160
Sony MDR-CD1700	200
Stax SR34	169
Stax SR Gamma	239
Stax SR84	259
Stax SR Lambda	349
Stax Gamma Pro	399
Stax Lambda Pro	449
Stax Lambda Nova Basic	449
Stax Lambda Sig	549
Stax Omega	1,695
Technics RP-HT400	50
Technics RP-HT600	60
Technics RP-HT700	70
Vivanco IR5700	50
Vivanco IR5000	50
Vivanco SR850	50
Vivanco SR650	50
Vivanco SR750	60
Vivanco IR6000	70
Vivanco SR900	70
Vivanco IR6500	90
Vivanco SR1000IFL	110
Vivanco IR7100	120
Vivanco IR7600	140
Vivanco SR2000IFL	140



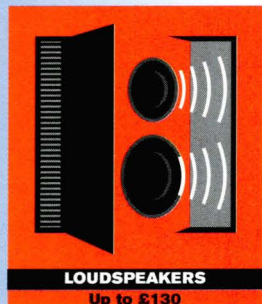
EQUIPMENT SUPPORTS
Speaker Stands

Deadrock 903	60
Deadrock 902	60
Deadrock 901	60
Harbeth HL-Stands	249
QLN Signature	75
Revolver RS1	70
Royd Royd	99
Sound Organisation Z037	55
Sound Organisation Z027	55
Sound Organisation Z026	55
Sound Organisation Z040	70
Sound Organisation Z055	72
Sound Organisation 2010	82
Sound Organisation 2018	84
Sound Organisation 2024	86
Soundstyle X016	100
Soundstyle X012	100
Soundstyle X024	105
Soundstyle X020	105

Equipment Supports

Audiophile S4T120	280
Audiophile Furniture Base	480
Audiophile S4T120P	560
Deadrock 701	60
Deadrock 703	130
Deadrock 704	190
Deadrock 705	230
Fi-Rax R4	321
Ixos 800	35
Ixos 701	40
Ixos 711	60
Ixos 802	70
Ixos 803	90
Ixos 802P	100
Ixos 703	100
Ixos 803P	110
Ixos 804	110
Ixos 713	130
Ixos 804P	140
Ixos 704	140
Ixos 705	170
Ixos 714	190
Ixos 715	230
Jamo TLS-1	40
Jamo ST-80	130
JPW MS2	45
JPW MS3	55

JPW MS1	80
JPW 3 Tier	80
JPW 5 Tier	100
Kenwood SR-CM7	45
Kenwood SR-WB7	100
Mana Acoustics Sound Frame	125
Mana Acoustics Mini Table	150
Mana Acoustics Sound Table	235
Mana Acoustics Reference Table	350
Mana Acoustics 2 Tier Amp stand	375
Mana Acoustics 3 Tier Amp Stand	450
Mana Acoustics 4 Tier Amp Stand	500
Mana Acoustics 5 Tier Amp Stand	600
Mana Acoustics 6 Tier Amp Stand	700
QLN A3	125
QLN Modulux	125
QLN A4	165
QLN A5	205
QLN A6	245
Sound Organisation Z022	60
Sound Organisation Z230	70
Sound Organisation Z021	75
Sound Organisation Z030	95
Sound Organisation Z060	115
Sound Organisation Z550	125
Sound Organisation Z038	130
Soundstyle X300	180
Soundstyle X053	200
Soundstyle X050	200
Soundstyle X305	210
Soundstyle X100	220
Soundstyle X058	230
Soundstyle X310	250
Soundstyle X120	250
Soundstyle X105	250
Soundstyle Select 6105	280
Stands Unique Tuned Speaker supp	220
Stands Unique Midi Sound Support	222
Stands Unique Midi Sound Tower	249
Stands Unique Sound Tower	249
Stands Unique Sound Tower 10	269
Stands Unique Sound Tower	269
Stands Unique Sound Support 10	299
Stands Unique High	349
Stands Unique Ultimate	449
Stands Unique Ultimate High	549
Stands Unique Ultimate Tower	649
Target B5	175



LOUDSPEAKERS
Up to £130

Allison Micro Monitors	95
Allison Black Gold Centre	99
Allison AL100	100
Allison Mini References	120
AMC WM50	120
B&W Solid HCM1S	125
B&W Solid HCM2	130
Bose XL1000	130
Celestion CC1	90
Celestion Little 1	99
Celestion Impact 10	129
Celestion CSC	129
Denon SC-M2	80
Gale Mini Monitors	60
Gale Centre 1	80
Gale Gold Hotshots	80
Gale Gold Monitors	90
Gale Ref Monitors	100
Gale Centre 2	120
Genexxa STS-50	25
Genexxa GX300	80
Genexxa GX330	80
GLL Arena HF	99
Goodmans Active 75	65
Interaudio XL1000	100
Jamo Studio-80	70
Jamo D-100	80
Jamo SAT-90	90
Jamo Studio-110	100
Jamo D-110	100
Jamo Cornet 20.IV	100
Jamo SAT-170	110
Jamo Artina	120
Jamo D-115	120
Jamo Cornet 30.IV	120
Jamo 28	125
Jamo SAT-200.II	130
JBL Cont of One	115
JPW Sonata Vinyl	100

JPW Sonata	120
JVC SX-SC1VBK	60
JVC SP-V50	80
JVC SP-X220TBK	100
JVC SP-X550BK	130
KEF Coda 7	129
Mission 73	100
Mission 731i	130
Mordaunt-Short MS05i	100
NAD 801	100
Pioneer CS-3030	120
Realistic Minimus 3.5	30
Realistic Minimus 21	30
Realistic Minimus 26	56
Realistic Minimus Pro-7	60
Realistic Minimus Pro-77	100
Revolver Beretta	100
Sony SS-E300	50
Sony SS-E500	80
Sony SS-86E	100
Sony SS-126E	130
TDL Nucleus 1	60
TDL NFM 1	120
TEAC LS-CT8	80
TEAC LS-X8	80
Technics SB-CS55	80
Technics SB-CS75	100
Visonik 5202	129
Wharfedale Centre Cube	49
Wharfedale Modus CUBE	60
Wharfedale Valdux 100	79
Wharfedale Valdux Centre	100
Wharfedale Diamond 7.1	100
Wharfedale Diamond 6R	109
Wharfedale Valdux 200	109
Wharfedale Modus Micro	109
Wharfedale Modus Centre	119
Yamaha NS-C80	99

£131 to £200

Acoustic Energy AE100	200
Allison Model 4A	170
All son AL105	170
AMC WM75	160
B&W DM302	140
B&W CWM5	150
B&W DM601	199
B&W Solid Monitor	200
Bose 101 M'ble Monitor	190
Bose XL2000	200
Boston 325	139
Boston CR6	149
Boston Runabout	169
Boston 335	179
Boston Satellites	179
Boston 351	180
Boston CR7	199
Boston Runabout II	200
Celestion CS135	139
Celestion 3 MKII	139
Celestion Impact Centre CH	149
Celestion MP1	149
Celestion Centre 2	189
Celestion Style 1	199
Celestion Impact 15	199
Cerwin Vega HED165	200
Denon SC-E313	160
Gale 2is	130
Gale 3s	159
Gale Model 4	200
Genexxa GX650	140
GLL Arena SW	139
GLL Imagio IC100	170
Grundig BX1	160
Harman/Kardon LS0200	149
Harman/Kardon LS0300	199
Heybrook Prima	139
Heybrook Solo	199
Infinity SM65	150
Infinity Reference 1i	150
Infinity Reference 11i	200
Interaudio XL2000	140
Interaudio XL3000	160
Interaudio XL4000	200
Jamo Studio-140	140
Jamo SAT-300.II	150
Jamo D-135	160
Jamo Studio-180	180
Jamo 38	180
Jamo Converta	180
Jamo D-165	200
JBL TLX111	140
JBL TLX121	170
JPW P1 Vinyl	150
JPW P1	170
JPW AP2	200
KEF Coda 8	189
KEF 60S	199
Kenwood LS-200G	200
Mission 73C	150
Mission 73Z	200
Mordaunt-Short MS10i	140
Mordaunt-Short MS20i	200
Mus Tec Kestrel SE	164
Naim Audio NA PX0	133

Atacama SE24 Support your local speaker!
And a pair of these are an ideal way to do it...



Audiovector 2X	850
Audiovector 3X	1,500
B & O Beolab 4500	1,300
B&W P5	875
B&W Matrix 805 V	995
B&W DM604	1,000
B&W P6	1,095
Bandor Bandora	1,140
Bandor Mora	1,260
Blue Room House Pod	895
Bose A'mass AM7	900
Boston VR40	1,000
Cas le Harlech	849
Castle Howard S2	1,199
Celestion SL600s	820
Celestion 300	1,099
Celestion 700SE	1,435
Cerwin Vega 1515	1,300
Clements Reference 1	995
Dali 850	1,100
DefinitiveTechnology BP8B	1,000
DefinitiveTechnology BP10B	1,500
Epos ES22	1,185
Gamma Acoustics Epoch Five	1,499
Harbeth HL-K6	1,049
Harbeth HL-Compact 7	1,499
Harbeth BBC LS5/12A	1,499
Heybrook Sextet	1,159
Impulse Kora	1,250
Infinity Kappa 6.1i	995
Infinity Kappa 7.1i	1,195
Jamo 7071	900
Jamo Concert 8	1,300
JBL L20	850
JBL L40	1,100

JBL L60	1,200
JBL L80	1,300
JBL L90	1,300
Jordan Watts JH400	820
Jordan Watts JH400M	970
JPW Ruby 3	1,000
JPW Ruby 4	1,300
KEF Model One	1,099
KEF Model Two	1,499
Keswick Audio Torino	899
Keswick Audio Figaro Evolution	899
Keswick Audio Milano	1,099
Keswick Audio Alto	1,299
Keswick Audio Amber	1,399
Linn Sekrit Aktiv	895
Linn Tukan Aktiv	1,050
Linn Keilidh Aktiv	1,250
Living Voice Auditorium	1,300
Lumley Reference LM3	895
Lumley Reference L/M3.5	1,050
Monitor Audio Studio 12	1,000
Monitor Audio 705PMC	1,400
Magneplan SMG-C SE	990
Magneplan MG-0.6 SE	1,370
Magneplan SMG-C SE	990
Magneplanar MG-0.6 SE	1,370
Mantecore Matisse	1,390
Meridian Argent 1	995
Mission Freedom 5	1,298
Mordaunt-Short Perf 820	1,495
Naim Audio Credo	987
Origin Live Sovereign	975
Pink Triangle Vertical	990
Polk LS70	1,200
Proac Tablette 50 SIG	899

Proac Response 1 SC	1,199
Proac Studio 150	1,399
Prof Monitor Co LB1	935
Prof Monitor Co AB1	1,496
QLN Signature	1,000
QLN Prestige	1,500
QLN Sig Splitfield	1,500
Rega XEL	1,040
Rogers Studio 7	899
Rogers C6/28	1,303
Roksan Ojan 3 Rosewood	995
Roksan Ojan 3X Black	1,195
Roksan Ojan 3X Rosewood	1,395
Royd The Albion	1,270
Ruark Broadsword II	899
Ruark Paladin	1,099
SD Acoustics SD5	1,395
Shahinian Compass	1,295
Sonus-Faber Minuetto	898
Sonus-Faber M Amator	1,498
Spendor 2040	899
Spendor 2040	899
Spendor SP2/3E	1,050
Spendor SP1/2E	1,390
TDL Studio 1M	899
Technics SB-M1000	1,500
Thiel SCS	1,379
Thiel 2	1,499
Thiel CS-5	1,499
Totem Model One	1,195
Triangle Antal	1,099
UKD-Opera Callas II	895
UKD-Opera Callas II	950
UKD-Opera Opera III	999
UKD-Opera Callas Gold	1,050
UKD-Opera Divina II	1,500
Vandersteen 2Ce	1,395
Visonik LB1	935

£1501 to £3000

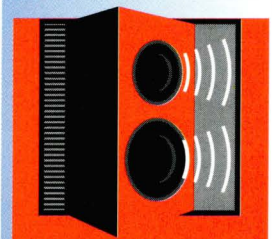
Acoustic Energy AE1 Sig	1,695
Acoustic Energy AE2 Sig	2,695
Allison I.C. 10	2,500
Amb Mod 3.2	1,780
ATC SCM20 Tower	1,999
Audio Physic Spark 2	1,749
Audio Physic Tempo	1,999
Audiovector 5	2,500
B & O Beolab 6000	1,550
B & O Beolab 8000	2,100
B & O Beolab Penta 3	2,650
B&W Matrix 804	1,595
B&W Matrix 803s2	1,995
B&W Matrix 802s3	2,795
Bandor Bandora/Mora	2,800
Bose 901 VI	1,650
Boston Lynfield 300L	2,000
Bravura Virtuoso	2,995
Celestion Kingston	2,500
Chord LS5/12A	1,593
Chord CEL 301	2,130
Chord CEL 201	2,840
Clements Reference 7	1,995

Credo SPB 003	1,820
Credo SPB 009	2,453
Dali Grand Coupe	2,500
Dawn Audio Symphony	1,995
DefinitiveTechnology BP2002	2,400
ECA Servo A.2	2,450
Epos ES25	1,655
Gamma Acoustics Epoch Ref Five	2,999
Harbeth HL-S8	1,999
Helius Syrius II	2,395
Helius Syrius I	2,850
Horning Aristophane	2,600
Impulse Lali	1,850
Jamo Concert 11	2,000
Jamo THX System	2,500
JBL Ti 1000	1,600
JBL L100	1,800
JBL Ti 2000	2,000
JBL Ti 3000	2,700
Jordan Watts JH1 + 1 Aspect	1,730
Jordan Watts JH1 + 1 Aspect K	2,310
Jordan Watts Aspect JH1 + 1	2,745
KEF 104/2 REC	1,799
KEF Model Three	1,999
KEF Model Four	2,999
Linn Kaber Passive	2,000
Linn Kaber Aktiv	2,640
Lowther Fidelio	1,999
Lowther Academy	2,399
Lowther Bel Canto	2,699
Lumley Reference LM2	2,500
Lumley Reference L/M 2	2,795
Monitor Audio Studio 20SE	2,200
Magneplan MG-10 SE	1,650
Magneplan MG-1.5 SE	1,780
Magneplan MG-2.7 SE	2,650
Magneplanar MG-10 SE	1,650
Magneplanar MG-1.5 SE	1,780
Magneplanar MG-2.7 SE	2,650
Martin-Logan Aerius	2,288
Martin-Logan Stylos	2,993
Mordaunt-Short Perf 860	1,895
Mordaunt-Short Perf 880	2,795
Naim Audio SBL Active	1,743
Naim Audio SBL Passive	1,876
Neolith NEO 1	2,999
Origin Live Conqueror	1,600
Pentachord P'column	1,649
Polk LS90	1,700
Posselt Albatros	2,200
Proac Response 2S	2,000
Proac Studio 250	2,249
Proac Response 2.5	2,700
QLN Reference	2,000
QLN Ref HDII	2,500
Rehdeko RK115	1,550
Rehdeko RK125	2,750
Richard Allan Magnum System 1	1,589
Rogers LS5/9	1,531
Rogers Studio 9	1,549
Ruark Crusader II	1,599
Ruark Equinox	1,849
Ruark Accolade	2,699
SD Acoustics SD1E	2,995
Shahinian Arc	1,675
Shahinian Obelisk	2,490
Silverado Silverado 1	1,995
Sonus-Faber Electa	1,790
Sonus-Faber Amator	2,992
Spendor SP7/1	1,990
Spendor SP100	2,099
Tannoy D500	1,999
Tannoy D700	2,199
Tannoy Sterling TW	2,200
TDL Studio Monitor M	2,449
TDL Studio	2,450
Thiel CS2.2	2,749
Totem Mann-2	2,795
Triangle Zays	1,650
Triangle Altinis	2,250
Triangle Extan	2,950
UKD-Opera Caruso II	2,350

Over £3000

Acoustic Energy AES	7,995
Allison I.C. 20	5,500
Amb Mod 5.0	9,550
ATC SCM50	3,499
ATC SCM100	4,149
ATC SCM50A	4,999
ATC SCM100A	5,699
Audio Physic Virgo 2	3,199
Audio Physic Terra	3,499
Audio Physic Avanti 2	6,399
Audio Physic Caldera	9,999
Audiovector 6	4,600
B&W Matrix 801s3	3,795
B&W Silver Signature	5,000
Boston Lynfield 500L	4,449
Bravura Accelerando	6,600
Chord LF5.12	3,620
Credo SPB 012	3,147
Credo SDP	5,353
Credo SDL 001	5,677
Dali Grand	4,000

DefinitiveTechnology BP2000	3,600
Fase Evoluzione Fase/Aria	3,100
Horning Agathon	3,555
Impulse Ta'us	3,100
Infinity ARS Epsilon	9,995
Jamo Oriel	7,000
JBL S2600	3,500
JBL Ti 5000	3,700
Jordan Watts JH2K	3,230
Jordan Watts Classic JH2KM	4,250
Jordan Watts Classic JH5K	4,875
Jordan Watts Classic JH5KM	5,860
Jordan Watts Classic JH10K	9,340
KEF 107/2 REC	3,999
Keswick Audio Zero 2	6,000
Linn Keltik Aktiv	6,000
Living Voice RW24 Basebin	9,500
Lowther Delphic	3,999
Lumley Reference L/M 2 Signature	4,500
Lumley Reference LM1	8,500
Monitor Audio Studio 50	4,000
Monitor Audio Studio 60	6,000
Magneplan MG-3.5 SE	3,800
Martin-Logan Sequel SL3	3,349
Martin-Logan Sequel II	3,399
Martin-Logan CLS IIz	4,555
Martin-Logan Quest Z	5,350
Martin-Logan Monolith IHP	8,730
Meridian DSP6000	9,400
Miller & Kreisel BP2000	3,600
Naim Audio DBL Active	7,414
Neolith NEO 2	3,499
Neolith NEO 3	4,999
Proac Response 3.5	4,250
Prof Monitor Co MB1	4,370
Prof Monitor Co MB1P	4,681
Prof Monitor Co BB5	6,270
Prof Monitor Co BB5P	6,754
QLN Artec 1600	4,500
Quad ESL63	3,450
Rehdeko RK145	4,250
Rehdeko RK175	7,750
Shahinian Hawk	4,950
Shahinian Diapason	8,350
Sonus-Faber Extrema	5,991
Spendor SP9/1	3,450
Tannoy Edinburgh TW	3,050
Tannoy GRFM TW	4,000
Tannoy Westminster TW	6,600
Tannoy Canterbury 15	7,720
TDL Ref Standard-M	4,999
Thiel CS3.6	3,899
Triangle Nemo Altair	3,850
Wilson WAP Puppy II	5,600
Wilson Puppy 5	7,290
Wilson WATT 5	8,800
Wilson WITT	8,888



Dedicated Centre Speaker

B&W Solid HCM1S	125
B&W CC3	150
B&W CC6	200
B&W Matrix	500
Boston CR1	100
Boston Centre 6	130
Boston Centre 7	200
Celestion Centre 2	189
DefinitiveTechnology C1jr	275
DefinitiveTechnology C1B	395
DefinitiveTechnology CLR1000B	595
DefinitiveTechnology CLR2002	695
DefinitiveTechnology CLR2000	845
Harman/Kardon SC305	150
Jamo Centre 50.11	80
Jamo Centre 40	100
Jamo Centre 18	150
Jamo Centre 160	180
Jamo Centre 200	200
JBL TLX103	
JBL MR	100
JBL MR Centre	100
JBL SC305	150
KEF 80C	129
KEF Model 90	259
KEF Model 100	359
KEF 200C	699
Kenwood CS-6	150
Keswick Audio Centrali	359
Monitor Audio CC300	300
Monitor Audio CC900	400
Monitor Audio CC70	600
Martin-Logan Logos	1,949



KEF 30B Packaged with the 60S surrounds and 80C centre, won two major awards last year.



Wilson Benesch Turntable Deploys high-tech carbon fibre in the name of harmonious sound.

Meridian M60C	1,125
Meridian M60C	1,125
Meridian DSP5000C	1,750
Meridian DSP5500C	3,095
Meridian DSP6000C	4,900
Miller & Kreisel S-85	400
Miller & Kreisel S-150C (THX)	800
Mission 73C	150
Mission 75C	248
NAD 808CC	170
Polk RM2500C	249
Polk CS250	250
Polk CS350	450
R A BG	95
Richard Allan Centre	59
Richard Allan Centre plus	99
Richard Allan Pod	149
Richard Allan Dimension Ctr Pod	199
Richard Allan Magnum Ctr Pod	299
Royd AV77	250
Sony SS CN15	40
Sony SS CN35	70
Sony SS CN65ES	130
Tannoy Profile 21	100
Tannoy Profile 622	179
Tannoy D750	999
Triangle Sat 1	375
Yamaha NS-C60	60
Yamaha NS-C105	80
Yamaha NS-C150	110
ZYP A1TAV	109

B&W AS6	500
B&W PCS8	750
B&W 800ASW	1,500
Boston S95X	305
Credo SDC 001	3,054
Jamo SW25	140
Jamo SW170.II	240
Jamo SW200.II	300
Jamo SW400E	330
Jamo SW300.II	370
Jamo SW505E	400
Jamo SW600E	530
JBL PS60	399
JPW Satellites	80
JPW Subwoofer	130
JVC SX-SC1VBK	60
KEF Model 20B	349
KEF 30B	499
KEF 40B	759
KEF AV1	2,499
Kenwood SW500	250
Linn AV5150	2,850
Mintor Audio ASW 7	700
Meridian Sub 1	1,500
Meridian M2500	1,595
Miller & Kreisel VX-7B	450
Miller & Kreisel VX-7MKII	450
Miller & Kreisel V-75 MKII	650
Miller & Kreisel V-125	800
Miller & Kreisel V-125 (THX)	800
Miller & Kreisel MX-70	900
Miller & Kreisel MX-100	1,500
Miller & Kreisel MX-150	1,500
Miller & Kreisel MX-200	1,800
Miller & Kreisel MX-300	2,500
Miller & Kreisel MX-5000	2,900
Mission 73PS	180
Mission 73AS	450
Mission 75AS	550
Polk PSW100	500
Polk PSW300	750
R A Reference	199
REL Q50	375
REL Q-100	475
REL Strata II	575
REL Storm	700
REL Stadium II	1,000
REL Stentor II	1,800
REL Studio II	4,000
Richard Allan Gold	149
Richard Allan Gold Subwoofer	199
Richard Allan Dimension Active	699
Richard Allan Magnum Active	999
Sony SA W101	230
Sony SA W301	330
Tannoy 625Affie	595
Triangle SATIII	650
Wharfedale Modus	180
Yamaha YST-SW40	140
Yamaha YST-SW80	180
Yamaha YST-SW150	280
Yamaha YST-SW200	400

Air Tangent Tangent 10B	7,777
Air Tangent Ref. Sig.	11,000
Audiomeca SL5	1,999
Decca LI Arm	49
Decca LIR Arm	99
Dynavector 507	2,200
Graham 1.5T	2,550
Helius Orion 4 Copper	549
Helius Orion 4 Silver	725
Helius Cyalene 2	1,495
Linn Akito	500
Linn Ekos	1,500
Manticore Musician	425
Manticore Magician 1	750
Manticore Magician 2	850
Moth Arm	109
Moth MKIII Stainless	146
Moth MkIII	174
Moth Moth 900	598
Naim Audio ARO	992
Nottingham Analogue Space	350
Nottingham Analogue Mentor	750
Nottingham Analogue Alien	1,200
Rega RB250	109
Rega RB300	174
Rega RB900	598
Roksan Tabriz	320
Roksan Tabriz Zi	420
Roksan Artemiz	895
SME 3009 Ser II Imp	250
SME 3009 S2 Ser II Imp	273
SME Series II 3009-R	416
SME Series II 3010-R	426
SME Series II 3012-R	458
SME Series 300-309	558
SME Series 300-310	571
SME Series 300-9 Gold	642
SME Series 300-312	649
SME Series IV	796
SME 300-309 Gld Ptt	1,024
SME Series IV Gld Ptt	1,261
SME Series V Gld Print	1,361
SME Series V	1,391
SME Series V Gold Ptt	1,649
Townshend Excalibur	1,499
Wilson Benesch ACT1	975
Zeta AS	469

Kenwood KT-2080	130
Kenwood KT-3080	180
Linn Kudos Sneaky	500
Linn Kudos	775
Linn Kremlin	2,600
Luxman T-353	200
Marantz ST-57	150
Marantz ST-65	200
McIntosh MR7084	1,550
Meridian 504	695
Meridian 604	1,350
Michi RHT-10	895
Micromega Minium FM	300
Micromega Tuner	700
Mission Cyrus FM7	400
Mission Musical Fidelity E50	300
Musical Fidelity E500	499
NAD T 4210RDS	180
NAD 412	190
NAD 414RDS	250
Naim Audio NAT03	566
Naim Audio NAT02	1,028
Naim Audio NAT01	1,645
Onix TU39	800
Onkyo T4210RDS	180
Onkyo T-409	230
Onkyo T-411RDS	260
Onkyo R-811RDS	420
Pioneer F-204RDS	140
Pioneer F-304RDS	190
Pioneer F-504RDS	250
Quad 77FM	700
Rega Radio	229
Rotel RT-990BX	500
Sony ST-SE200	100
Sony STS-E300	120
Sony ST-S261	140
Sony STS-E700	180
Sony STS-A3ES	250
TEAC T-R400	120
TEAC TB-X10	400
Technics ST-GT350L	150
Technics ST-GT550L	200
Technics ST-GT650L	250
Thorens TRT-2000	450
Yamaha TX-480L	120
Yamaha TX-590RDS	180

Technics SL-BD22	180
Technics SL-1210MKII	500
Technics SL-1200MKII	500
Thorens TD-180 AT91	190
Thorens TD-180/SV00	200
Thorens TD-280 IV/UK	210
Thorens TD-180 Stanton 500	219
Thorens TD-166 VI/UK/BC	300
Thorens TD-166 VI/UK/AT	370
Thorens TD-166 VI/UK/RB	400
Thorens TD-318 III TP50	500

Over £500	
Audiomeca Romance	1,675
Audiomeca J1	2,500
Audiomeca J1/SL5	4,250
Basis 2001	2,750
Basis Ovation II	4,800
Basis Debut Gold Std III	7,200
Basis Debut Gold Vacuum	9,500
DNM Rota 1	3,500
DNM Rota 2	4,800
Dual Silverstone	900
Dual Goldenstone	1,200
Impulse Moskito	695
Linn LP12 Basic	1,100
Linn LP12 Valhalla	1,200
Linn LP12 Lingo	1,750
Lumley Reference Strotosphere ST1	6,250
Manticore Mantra	950
Manticore Magister	3,990
Marantz TF-1000	6,000
Michell Mycro/arm	581
Michell Gyrodek	825
Michell Bronze Gyrodek	905
Michell Gyrodek/arm	971
Michell Orbe	1,950
Nottingham Analogue Spacedeck	600
Nottingham Analogue Illusion	600
Nottingham Analogue HyperSpacedeck 1,200	1,200
Nottingham Analogue Graphic	1,200
Nottingham Analogue Mentor	2,200
Nottingham Analogue Mentor Ref	4,800
Pink Triangle Export	948
Pink Triangle Anniversary	1,797
Pink Triangle Anni/DC PSU	2,173
Pro-Ject 6/Sumiko	850
Rega Planar 9	1,598
Roksan Xerxes 10	1,295
Roksan TMS	2,750
SME Model 20	3,240
SME Model 20/2A	3,941
SME Model 30	8,652
SME Model 30/2A	9,836
Technics SL-1200LTD	1,000
Thorens TD-146 V1 TP50	550
Thorens TD-2001 TP90	700
Thorens TD-520 SME	1,050
Townshend MKIII Rock	1,499
Well Tempered Record Player	1,850
Well Tempered Classic	2,980
Well Tempered Super	3,900
Well Tempered Reference	5,300
Wilson Benesch	1,550

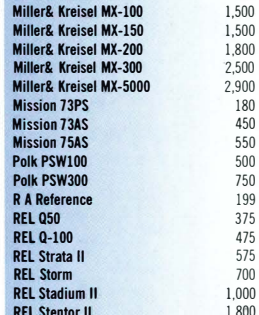


Dedicated Surround Speaker

B&W SCM8	550
Boston CRX	200
Boston 575X	349
DefinitiveTechnology BP1	395
DefinitiveTechnology BP2	595
DefinitiveTechnology BPX	1,095
Jamo Surround 40	60
Jamo Surround 50	70
Jamo Surround 100	90
Jamo Surround 200	180
Jamo Surround 300	280
Kenwood RS-05	80
Kenwood CM-SES	80
Kenwood CM7ES	100
Kenwood Omni 7	170
Martin-Logan Stylos	2,872
Miller & Kreisel SS-150 (THX)	750
Miller & Kreisel S-150	2,400
Mus Tec Merlin	200
Mus Tec HOBBY	250
Mus Tec Osprey	250
Polk M3 II	220
Polk M5	300
Polk LS 1/x Surround	449
Richard Allan Satellites	99
Richard Allan Dimension Cubes	139
Sony SS SR65ES	170
Triangle SAT II	250

Subwoofer

Aiwa TS-W9	170
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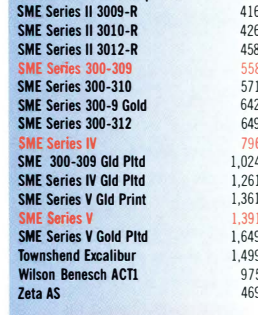


Subwoofer

B&W AS6	500
B&W PCS8	750
B&W 800ASW	1,500
Boston S95X	305
Credo SDC 001	3,054
Jamo SW25	140
Jamo SW170.II	240
Jamo SW200.II	300
Jamo SW400E	330
Jamo SW300.II	370
Jamo SW505E	400
Jamo SW600E	530
JBL PS60	399
JPW Satellites	80
JPW Subwoofer	130
JVC SX-SC1VBK	60
KEF Model 20B	349
KEF 30B	499
KEF 40B	759
KEF AV1	2,499
Kenwood SW500	250
Linn AV5150	2,850
Mintor Audio ASW 7	700
Meridian Sub 1	1,500
Meridian M2500	1,595
Miller & Kreisel VX-7B	450
Miller & Kreisel VX-7MKII	450
Miller & Kreisel V-75 MKII	650
Miller & Kreisel V-125	800
Miller & Kreisel V-125 (THX)	800
Miller & Kreisel MX-70	900
Miller & Kreisel MX-100	1,500
Miller & Kreisel MX-150	1,500
Miller & Kreisel MX-200	1,800
Miller & Kreisel MX-300	2,500
Miller & Kreisel MX-5000	2,900
Mission 73PS	180
Mission 73AS	450
Mission 75AS	550
Polk PSW100	500
Polk PSW300	750
R A Reference	199
REL Q50	375
REL Q-100	475
REL Strata II	575
REL Storm	700
REL Stadium II	1,000
REL Stentor II	1,800
REL Studio II	4,000
Richard Allan Gold	149
Richard Allan Gold Subwoofer	199
Richard Allan Dimension Active	699
Richard Allan Magnum Active	999
Sony SA W101	230
Sony SA W301	330
Tannoy 625Affie	595
Triangle SATIII	650
Wharfedale Modus	180
Yamaha YST-SW40	140
Yamaha YST-SW80	180
Yamaha YST-SW150	280
Yamaha YST-SW200	400

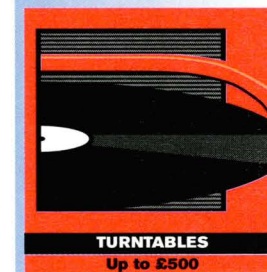
TONEARMS

Air Tangent IC	3,333
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TUNERS

Arcam Alpha 7	230
Arcam Alpha 8	280
Arcam Delta 280	399
Audiolab 8000T	800
Aura TU80	350
AVI S200MT	599
Day Sequerra FM Ref	5,937
Day Sequerra S B'dcast Mon	14,640
Denon TU-260L	120
Denon TU-215RD	150
Denon TU-425RD	200
Grundig T12	170
Harman/Kardon TU930	180
Harman/Kardon TU950	200
Harman/Kardon TU9400	299



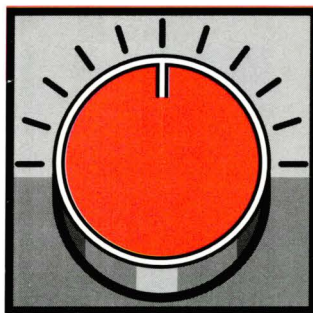
TURNTABLES

Up to £500

Akai AP A950	179
Ariston Pro-1200	160
Dual CS3700/3701	85
Dual CS435	130
Dual CS 435-1	150
Dual CS503-2	170
Dual 505-4 UK	250
Dual CS750-1	400
Dual Golden II	500
Genexxa Lab-710	60
Genexxa Lab-810	70
Grundig TT1	180
Kenwood KD-492F	100
Michell Q.C Gyro Power	389
Michell Synco	405
Michell Mycro	435
Moth Turntable	199
Moth Alamo	199
Moth Kanoot Mki Arm	279
Moth Kanoot MKIII Arm	329
NAD 533	220
Pioneer PL-J2500-C	80
Pioneer PL-990	130
Pro-Ject 0.5 (OM10)	160
Pro-Ject 1(510)	200
Pro-Ject Project 2 MC10	300
Pro-Ject Project 6(MC15)	450
Rega Planar 78	214
Rega Planar 2	214
Rega Planar 3	274
Rega Planar 3 Colour	289
Roksan Radius 3	470
Sony PS-LX56	70
Sony PSXL-150H	90
Sony PS-110	90
Sony PSXL-300H	150
Systemdek I/920	136
Systemdek IIX/900	230
Systemdek IIX/900/Moth	230
Systemdek IIXE/900Ap	388
Systemdek 960	500
Technics SL-BD20	160

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!





Amplifiers

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.

B
Best buy

R
Recommended

KEY	LINE INPUTS: Amount of input sockets for non vinyl sources such as CD players, tuners and cassette decks.	MC PHONO INPUT: If an amp has a vinyl phono input for moving coil (low output) cartridges.	POWER OUTPUT (W): Lab tested power output in Watts per channel.
	MM PHONO INPUT: If an amp has a vinyl phono input for moving magnet (normal output) cartridges.	REMOTE CONTROL: If an amp is couch potato ready.	RECEIVER: If an amp has a built in radio tuner.
		HEADPHONE SOCKET: If an amp is can friendly.	FACTSBACK NUMBER: The Factsback reference for ordering a fax copy of the review. Use the contents page to find the Factsback information page.
			BACK ISSUE: The issue of Hi-Fi Choice in which the original review appeared.

INTEGRATED AMPLIFIERS

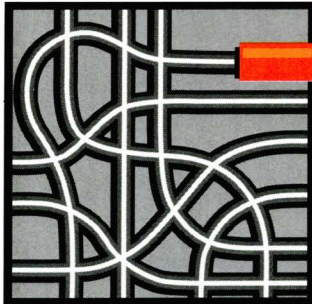
Product	Price(£)	Comments	LINE INPUTS	MM PHONO INPUT	MC PHONO INPUT	REMOTE CONTROL	HEADPHONE SOCKET	POWER OUTPUT(W)	RECEIVER	FACTSBACK NUMBER	ISSUE NUMBER
Alchemist Maxim APD30A	299	Vivid and colourful sounding amp that's just too bold and brassy	5	●				30	1737	154	
AMC 3050	220	Low-price NAD-alike amplifier that is polite and modest but rather wooden. Phono better than line	4	●				45	1738	154	
Arcam Alpha 8	350	Enjoyably soft-centred amp won't frighten the animals. Upgradeable via preamp output, and R/C (not supplied)..	5	●				50		162	
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 Innovations S700	1,199	Turns the roughest of digital sounds into understated and graceful music	5					25		116	
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 8000A	500	The 8000A remains a highly disciplined and mature sounding amp	5	●	●		●	60	1581	140	
Audiolab 8000S	650	Informative in every sense, only a slight lack of bite detracts. Perhaps Audiolab's best yet!	6				●	60	1740	154	
Aura VA100 II	330	Big, smooth yet slightly disjointed sound was equally familiar	5	●				70	1541	138	
Copland CSA-14	1,099	Great sound and looks, but watch out for high capacitance cables	4	●				60	1416	148	
Creek 4240	279	Bearing no relation to earlier Creek designs, this radical rethink is more successful via MM than CD	4	●				40	1127	134	
Creek 4240SE	350	At best, bland and plodding, at worst grainy, shouty and honky. Best on simple rock	5					35	1741	154	
Denon PMA-350SE	200	Reinvented in the minimalist tradition, the new SE model is a control freak, but can sound wonderful	5					50		162	
Denon PMA-450SE	280	Based on the original '450 and offers a fast, furious and entertaining sound	5	●				60	1258	142	
Denon PMA-725R:	350	Warm, bold, up-front presentation but musically unexciting	5	●	●	●	●	97	1802	157	
Densen Beat B-100	600	Low feedback amp with passive internal preamp gives a bold, pacey and thoroughly involving sound. Phono option listed.	5					60		162	
DeVa 125	249	Subjectively loud this throws an unlikely quantity of music at the audience, bouncy sense of rhythm	6					20	1464	149	
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	349	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	
Gamma Acoustics Gemini	699	Genuine single-ended triode design, but low power, mundane sound and poor build	3					12	1416	148	
Grundig Fine Arts V-11	160	Rhythmically dull. Never gets out of first gear	5	●				55	1803	157	
Harman/Kardon HK610	200	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		162	
Harman/Kardon HK1200	300	Big sound with little bite. Becomes confused with complex music	7					45	1804	157	
Harman/Kardon HK1400	400	Relaxed, confident sound is only troubled by the most dense of recordings.	5	●	●			40	1011	129	
Harman/Kardon HK640	450	Breezy, nimble sounding amp lacks grip and fortitude - it can sound artificial and insubstantial	6					55	1542	138	
John Shearne Phase 2	649	Either a natural-sounding superstar or nasal and hard to listen to — make up your own mind!	5					50	1744	154	
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-3060R	230	Classy engineering, but sound is over-dry, often frustratingly restrained and rather unsophisticated	5	●				45	1260	142	
Kenwood KA-5050R	350	A listenable but neither particularly communicative nor captivating amplifier	5	●				95	1012	129	
Kenwood KA-7090R	400	Power with responsibility here, but the Kenwood can sound lean and lacks transparency	6	●	●			85		162	
LFD Integrated Zero	499	Lively and brisk, but at the same time cold and unsympathetic	6					50	1584	140	
Linn Majik-I (Phono)	725	The cornerstone of Linn's modular hi-fi system is innovative, but sounds vague and confused	5	●	●			33	1013	129	
Magnum IA170	270	Gives a realistic sense of instruments playing within a very believable acoustic, preserves colour & dynamics well	6					96	1260	142	
Magnum Quartet	329	An integrated model that incorporates four monoblocks optimised for bi-wiring, but sound is sandy in the treble	5	●				36		121	
Magnum IA-200	465	Sweet, valve - flavoured solid state amplifier flatters where it doesn't cast light. Note: power output listed is peak	7					100		162	
Magnum Class A	599	Lashings of rich and compelling music, but the Class A trades lushness for accuracy.	4	●	●			60		116	
Minium Amp	350	Excellent musical performance but doesn't like high levels or low impedance speakers	6	●				40	1806	157	
Mission Cyrus IIIi	600	Beautifully presented, but mid-dominated balance and other anomalies were not liked on test. Upgradeable using PSX unit PSU.	6	●				50		162	
Musical Fidelity E10	300	Smooth and high-endish sound that is marred by a lack of dynamics and a touch of grain	5	●				40	1746	154	
Musical Fidelity A2	499	Lucid, transparent midband and a full upper bass are provided by this highly proficient A1 replacement	5	●				25		162	
Myryad MI 120	530	Despite an ultra-modern appearance, the old-fashioned cold, dry transistor sound	5					60	1747	154	
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 314	260	Lively if coloured presentation that is musically engaging and easy on the ear	6	●				53	1807	157	
Naim Nait 3	550	Distinctive and highly musical sounding integrated. Perhaps too distinctive for some tastes	5					30	1748	154	
Onix OA31	480	Eager to please, dynamic and fresh sounding, but it's grip is wafer thin	5	●	●			60	1587	140	
Orelle SA-100	449	A musically rewarding amplifier that grows on you. Trace of coarseness in treble	5					50	1749	154	
Pioneer A-300R	200	Its bright and breezy sound is a natural tonic to those of use worn down by the ongoing stress of life	5	●				50	1469	149	
Pioneer A-303R	200	Fresh and uncomplicated sound bests much of the audiophile competition	5	●				45	1129	134	

INTEGRATED AMPLIFIERS

Product	Price(£)	Comments	FACTSBACK NUMBER				RECEIVER	ISSUE NUMBER
			MM PHONO INPUT	MC PHONO INPUT	HEADPHONE CONTROL	POWER OUTPUT(W)		
Pioneer A-300X	230	This revamped version of the A300 sounds more confident via CD than MM, yet our panel was unmoved	5	●	●	●	40	116
Pioneer A-400X	300	On second audition, this amp was tonally unchanged but less compelling	6	●	●	●	50	1545 138
Pioneer A-503R	300	Best via MM disc, the dull and claustrophobic sound is otherwise deeply uninspiring	5	●	●	●	70	1544 138
Pioneer A-300R Precision	400	Sophisticated breathed-on variant of the A-300R is not an obvious winner, but it will slowly win you over with its subtle charms	5	●	●	●	35	162
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	650	Stylish remote driven amp, bright and lively. Tested in Sessions	4	●	●	●	50	139
Rega Elex	398	Minimalist amplifier derived from Elicit is a little uninspiring, though at least it is not badly behaved.	4	●	●	●	50	162
Rotel RA920AX	120	Commendable performance at the price. Tuneful, robust bass	4	●	●	●	32	1808 157
Rotel RA930AX mkII	150	Good phono stage with a realistic sense of space and dynamics but CD is less impressive	3	●	●	●	30	1470 149
Rotel RA970BX	250	Lively, fresh and perky with plenty of power, but not so clever with complex recordings	6	●	●	●	60	1546 138
Sherwood AX-7030R	400	Versatile, and with truck-loads of power on tap, this model is disappointingly coarse and uninvolved on audition.	5	●	●	●	95	162
Sonic Frontiers SFC-1	1,795	Smooth, sophisticated Canadian valve amp with a decent direct input and more features than average	6	●	●	●	50	126
Sony TA-F246E	200	Relaxed quality that seduces with its guile and subtlety, MM input is a tad laconic but CD is very tidy and composed	3	●	●	●	40	1471 149
Sony TA-F448E	250	Confused and coloured sounding, it needs a large dose of delicacy adding to its presentation	5	●	●	●	●	1809 157
Talk Electronics Storm 1	500	Good soundstaging and strong detail are provided by this unassuming and not especially powerful model	6	●	●	●	50	162
TEAC A-BX7R	700	Characterful balance mars an otherwise meticulously designed amplifier. Includes a balanced input, optional MM/MC stage.	5	●	●	●	50	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	162
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-490	250	Widgets aplenty, but unemotional sound evoked an uncertain response from panel	5	●	●	●	85	1473 149
Preamplifiers								
Alchemist Kraken/Pre	380	Quirky Class A design with an equally warm and colourful sound	4	●	●	●	●	124
Audio Innovations L1	369	Reviewed with S800 Anniversary — Explicitly detailed, conveys the message of the music as a whole	4	●	●	●	●	1300 145
Audiolab 8000C	520	Distinctive, stark neutrality that will not appeal to all. Good value engineering.	5	●	●	●	●	97
Audiolab 8000Q	1,000	Tested with 8000M monoblocks	6	●	●	●	●	1301 145
Conrad-Johnson PV-10A	1,250	Beautiful imaging, superb detail, plenty of gain on the phono input; classy build too. Tested in Sessions	4	●	●	●	●	1560 139
Conrad-Johnson Premier 7	11,000	The 7 is designed without compromise, and is clearly one of the finest (valve) preamplifiers money can buy	5	●	●	●	●	C91
Copland CTA-301MkII	1,349	Sweet sounding - but never gets bogged down in audio treacle	4	●	●	●	●	1630 151
Creek P42	279	Tested with bridged A42 power amps, an articulate and open combo with tight tuneful bass (optional phono stage & remote)	6	●	●	●	●	155
Cyrus Pre	650	Tested with Cyrus Power. High tech design Punchy, light footed character with a sense of substance and natural warmth	5	●	●	●	●	155
DPA DSP200S	495	Dramatic but detailed and transparent sound belies modest power rating (tested with DPA-200S)	6	●	●	●	●	124
EAR 802MC	2,599	Tested with £3499 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 tad overpowering in the midband. Tested in Sessions with XVIII Super	5	●	●	●	●	142
Jadis JP-30MC	5,978	French tubes, JP-30MC has beautiful build, nostalgic styling and delightful midrange. (tested with JA30)	5	●	●	●	●	60
Krell KRC-2s	4,190	This is an exquisitely refined and transparent design (tested with KSA-50S in Statements)	6	●	●	●	●	141
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 6 digital inputs	9	●	●	●	●	140
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	249	Tested with 100W monoblocks. While demonstrating solid, even balance it proved adept at delivering vital musical qualities	4	●	●	●	●	155
Musical Fidelity E200	599	Weighty, luxuriant but hardly scintillating. Tested with MF E300	7	●	●	●	●	1304 145
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
Rotel RC980BX	375	Tames enthusiastically recorded material with a laid back and occasionally smeared sound (tested with RB980BX)	5	●	●	●	●	155
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
Thorens TTP2000	500	Minimalist shoebox preamp, rhythmical, warm balance. Tested in Sessions with TTA2000	4	●	●	●	●	139
Woodside SC26 Phono	2,233	Synergistic with STA35, with a cool, controlled sound, good focus and transparency (tested with STA35)	5	●	●	●	●	100
YBA 3 Pre	1,250	See-through, ethereal stereo images, but more convincing towards centre of soundstage (tested with £1199 3 Pwr)	4	●	●	●	●	72
YBA 2 Pre	1,699	Superbly finished, good space and transparency. Needs transformer for MC cartridges (tested with £2150 2 Pwr)	4	●	●	●	●	56
YBA 1 Pre	3,750	Tested with £4250 1 Pwr - see power amp section for comments	5	●	●	●	●	62
Power amplifiers								
Acurus A150	1400	Price includes RL11 preamp with which it was tested. Powerful remote control US combo with a slightly forward inclination	1	●	●	●	150	151
Alchemist Kraken/Pwr	399	Hardly accurate, but entertaining nevertheless	1	●	●	●	60	124
Art Audio Quintet	1,393	Switchable triode, ultralinear output stage. In triode mode, these are 15 of the sweetest Watts around. Surprisingly gutsy	1	●	●	●	15	109
Audio Innovations S800 Anni	1475	Reviewed with L1 — Explicitly detailed, conveys the message of the music as a whole remarkably well	1	●	●	●	25	1300 145
Audiolab 8000M	750	Strong, controlled sound; confident bass, but colourless. Tested with 8000Q	1	●	●	●	125	1301 145
Audio Research VT60	2,645	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
Creek A42	279	Tested with bridged P42 pre in bridged mode. Articulate and open combo with tight tuneful bass	1	●	●	●	100	155
Cyrus Power	450	Tested with Cyrus Pre. Punchy, light footed character with a sense of substance and natural warmth (bridgeable)	1	●	●	●	50	155
DPA 200S	750	Dramatic but crisp, open sound belies power rating (tested with DSP-200S)	1	●	●	●	60	124
EAR 509 Mk II	3,499	Combining sonic strengths of transistors and valves, this amp warrants attention (tested with £2599 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	2,880	French tubes, JP-30MC has beautiful build, nostalgic styling and delightful midrange (tested with £5978 JP30)	1	●	●	●	30	60
Krell KSA-50s	3,690	Stretches the performance margins of difficult speakers - state of the art at the price	1	●	●	●	50	141
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
Moth 30 Stereo/60	549	Tested with 30 Passive. Modular system gives cracking results	1	●	●	●	60	109
Moth 30 Series Monoblocks	879	Tested with Active Preamp. While demonstrating solid, even balance it proved adept at delivering vital musical qualities	1	●	●	●	100	155
Musical Fidelity E300	699	Tested with E200. Weighty, luxuriant but hardly scintillating	1	●	●	●	100	1304 145
Musical Fidelity F18	3,999	Belongs to the rarified group of refined, high resolution amplifiers	1	●	●	●	220	1508 133
NAD Monitor 208	1100	Truly a beefy amplifier, but no mad cow!	1	●	●	●	250	124
Rotel RB-970BX MkII	225	Tested with RC970BX MkII in Sessions (see preamp section)	1	●	●	●	60	144

POWER AMPLIFIERS (CONTINUED)

Product	Price(£)	Comments	MM PHONO INPUT	MC PHONO INPUT	HEADPHONE CONTROL	POWER OUTPUT (W)	FACTSBACK NUMBER	ISSUE NUMBER
Rotel RB-980BX	475	Tames enthusiastically recorded material with a laid back and occasionally smeared sound (tested with RC980BX)	1			120		155
Sumo Polaris III	898	Tested with Athena IIB. Big, natural and tidy sounding with very natural reproduction of acoustic and electric instruments	1			164	1305	145
Thorens TTA2000	550	Tested with TTP2000 (see preamp section) in Sessions	1			35		139
Woodside STA35	1,323	Synergistic with SC26, with a cool, controlled sound, good focus and transparency. More poise than grunt (tested with SC26)	1			35		100
YBA 3 Power	1,199	Tested with 3 Pre - see preamp section for comments	1			45		72
YBA 2 Power	2,150	Superbly finished, but with slightly softened bass (tested with YBA 2 Preamp)	1			70		56
YBA 1 Power	4,250	Well finished pre/power amp with front rank imaging and transparency (tested with YBA 1 Preamp)	1			85		62



Cables

Cables are not 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 ten 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			
SYMMETRICAL: A twisted pair of conductors.	SOLID CORE: single or multiple individually insulated strands.	FACTSBACK NUMBER: The Factsback reference for ordering a fax copy of the review. Use the contents page to find the Factsback information page.	BACK ISSUE: 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.	COPPER: Material used for conductor.		
STRANDED: Multiple strands with no intervening insulation.	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	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		
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 tad 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 of 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 course 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	

CABLES (CONTINUED)

Product	Price(£)	Comments	CABLE TYPE					ISSUE NUMBER	DIG CABLE NUMBER
			SYMMETRICAL	COAXIAL	STRANDED	SOLID CORE	COPPER		
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 clear				●	●	1701	131
van den Hul Source HB	50	(Priced for 0.8m) 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 Video X	40	A decent level of detail, imparts a gentle lift from vocal to high treble that can sound a little splashy				●	●	E 1705	131
Audioquest Video Z	60	The very best available, with an expressive sound, but generously priced	●	●	●	●	●	E	108
Audioquest Optilink Z	120	Good level of midband detail but frequency extremes lack depth and extension						O	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						O	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	70	Hardly cheap for what appears to be a bog-standard PMNA fibre, yet it sounds a little brighter and livelier than most						O	108
LFD Digiink Copper	30	Slightly grainy highly compatible cable with coherent and forward dynamic quality				●	●	E 1708	131
Monster Interlink LS100	45	Well constructed stepped-index fibre with polished ends and connectors. Lean, fuzzy, engaging performance						O	108
Monster Datalink 100	45	Price for 0.5m. A colourful coaxial interconnect with an equally colourful and up-beat sound. Very compatible				●	●	E	108
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 75ohm 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 tad 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 anemic sound that bubbles gently with detail and is largely uncoloured and cautiously spacious	●			●	●	133	
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 Highflex LC2604	3.50	Substantial 6mm ² conductor produces weighty but ploddy music that lacks transparency	●			●	●	1714	133
Bandridge LC7409	3.85	Detailed and up-beat cable. A bit too steely for classical strings				●	●	1800	157
Cable Talk 4.1	4.25	Smooth and cultured sound that lacks fine detail and is a bit too restrained				●	●	1800	157
DNM LSCB500	5.95	High impedance can influence the treble response, but this was a winner on sound per pound. Bi-wire					●	1716	133
DPA Black Sixteen	90	Unflappable resolution of fine musical details, there's no dampening of dynamics simply oodles of taut information	●			●	●	1717	133
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. Slightly manipulative sounding				●	●	1800	157
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



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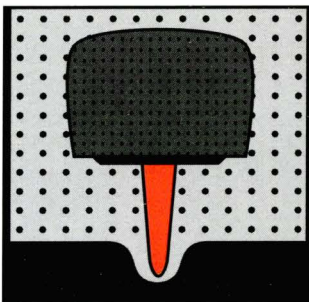
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CONNECTIONS

13 John Princes Street, London W1M 9HB (A division of Connection 90' Travel Ltd.)

CABLES (CONTINUED)

Product	Price (£)	Comments	SYMMETRICAL		STRANDED COAXIAL		SOLID CORE		COPPER		FAXBACK NUMBER		ISSUE NUMBER	
			MM	MC	MM	MC	MM	MC	MM	MC	MM	MC	MM	MC
Mission Quartet	7.90	Mixed, inoffensive sound, adds guttural resonance to vocals and could be generally more coherent. Bi-wire										1722	133	
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	
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 8	5	Sophisticated flat cable that lacks decent bass and get up and go										1800	157	
SonicLink AST50	1.95	It may look like bell-wire, but AST50 sounds detailed, ordered and balanced										1800	157	
Tara Labs Rectangular SCM	725	Price for terminated 2m pair. Dynamics are exquisite, luxurious smooth sound, brimming with unforced detail										1725	133	
Transparent Audio Musichord	11.42	Sweet, open and refined treble, a bit of breathy exuberance and can sound slightly lackadaisical										1728	133	
Transparent Audio Wave	22.84	Very close to the sound of 'no cable', one of the very best. Slightly softens treble detail										1728	133	
Tech+Link OFC79	1	Bargain basement cable that sounds cosy, but suffers from a wobbly bass										1800	157	
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	133	
XLO Pro Type 625	4	Lively but natural and relaxed sounding but a hint of congestion at frequency extremes										1726	133	



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.

Best buy

Recommended

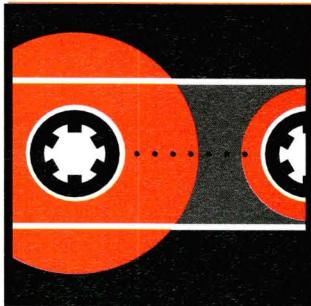
KEY	MM: Moving magnet cartridge with a normal output suitable for all vinyl disc amplifier inputs.	MC: Moving coil cartridge with a low output only suitable for high sensitivity vinyl disc amplifier inputs.	REPLACEABLE STYLUS: Most MM cartridges have a stylus that can be removed and replaced	OUTPUT (MV): Cartridge output in millivolts.	MASS (g): Cartridge mass can affect arm choice.	FACTSBACK NUMBER: The Factsback reference for ordering a fax copy of the review.	BACK ISSUE: The issue of Hi-Fi Choice in which the original review appeared.
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CARTRIDGES

Product	Price (£)	Comment	REPLACEABLE STYLUS		OUTPUT (MV)		FAXBACK NUMBER		ISSUE NUMBER		
			MM	MC	MM	MC	MM	MC	MM	MC	
Arcam C77	30	A sensible moving magnet package with good bounce at a competitive price.							4.0	6	48
Arcam C77MG	40	Punchy, with plenty of energy to liven things up. The solid body is well worth the extra £10.							4.0	6	67
Arcam E77MG	60	Our sample had a disappointing stylus, but gave a coherent, rich and laid back sound.							4.0	6	48
Arcam P77MG	73	Preferred to its cheaper partner thanks to a better tip. Channel balance poor							4.0		48
Audio Note Io IIV	1,395	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
Audioquest 404L	599	Slight harshness detracted from the performance of this otherwise clear-sounding and detailed cartridge.							0.5	6	84
Audioquest 7000NSX	1,495	Stunning stereo imaging and detail spoiled by poor tracking and high sensitivity to arms.							0.4	6	91
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 top notch bargain too.									103
Dynavektor Karat 17D2 mk2	449	Clean and controlled sound with taut, tuneful bass. Detailed and musically cogent.							0.15	5.3	158
Dynavektor XX-1L	998	Very clear, very detailed; a response lift around 20kHz seems to do no harm.							0.25	12	84
Dynavektor 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	65	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
Goldring 1042	120	Not terribly subtle, and not such good value alongside 1012 and 1022. Quite lively though.							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
 Grado Prestige Gold	150	Rich sounding with an unusually refined top-end for a moving magnet-type cartridge							4	6	158
Linn K5	65	Not as crisply focussed as the other Linn magnetics, but the K5 is smoother.							4.5	6	67
Linn K9	150	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	699	Superbly capable all-round musical performer that improves markedly when its body cover is removed							0.3	7	158
Lyra Clavis Da Capo	1,069	A stable tracker, and one of the finest cartridges we've heard							0.1	7	143

CARTRIDGES (CONTINUED)

Product	Price(£)	Comment	REPLACEABLE STYLUS MM	OUTPUT MC	FACTSBACK NUMBER MASS (MG)	ISSUE NUMBER BACK NUMBER
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	6
Ortofon MC10 Super	100	'What a delightfully sweet-sounding cartridge this is....' we said.	●	●	0.3 7	48
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 clos 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 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 both more detailed, accurate and convincing.	●	●	5.0 5	67
Roksan Corus Black	130	Recognisably related to the Corus Blue, but more civilised and smoother.	●	●	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	699	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	999	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	1,349	MC-Two rewards with a highly detailed yet fluid and musically convincing portrayal.	●	●	0.4 6	72
van den Hul G' hopper IIIGLA	2,999	Undoubtedly one of the finest cartridges available, it has tremendous bandwidth, energy and finesse.	●	●	0.4 6	122
Wilson benesch Matrix	689	Extraordinarily well balanced cartridge: neutral and detailed yet lively and rhythmically assertive.	●	●	0.58 6	158



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. The sort of facilities that are useful include tape monitor switching and Dolby S.

B Best buy **R** Recommended

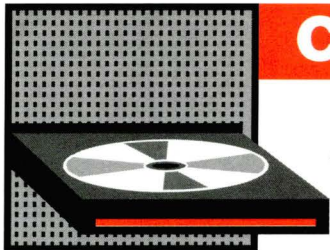
KEY

DOLBY C: A rather extreme noise reduction system not usually associated with high sound quality.
DOLBY S: A desirable derivative of the Dolby SR professional noise reduction system.
DOLBY HX PRO: System designed by B&O to extend headroom for cassette recording.
3-HEAD: If you want to monitor a recording whilst you are making it a third head is essential.
TWIN DECK: Contains two decks for dubbing and continuous play, in most instances only one deck will record.
AUTOREVERSE: Automatically plays both sides of the cassette.
AUTO CALIBRATION: The deck will automatically set up bias and EQ for any tape.
ADJUSTABLE BIAS: Bias can be manually set to suit the tape being used.
FACTSBACK NUMBER: The Factsback reference for ordering a fax copy of the review. Use the contents page to find the Factsback information page.
BACK ISSUE: The issue of Hi-Fi Choice in which the original review appeared.

CASSETTE DECKS

Product	Price(£)	Comments	DOLBY C	DOLBY S	DOLBY HX PRO	3-HEAD	TWIN HEAD	AUTOREVERSE	ADJUSTABLE BIAS	FACTSBACK NUMBER	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	158
Denon DRS-640	200	Drawer 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	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	Drawer loading deck, carefully designed yet lacking in subtlety on audition.	●	●	●	●	●	●	●	127	127
Grundig CCF3	200	Simple, sensible and well built twin, but lack of pitch stability compromises performance	●	●	●	●	●	●	●	1379	146
Harman/Kardon TD420	280	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	164
JVC TD-R472	200	Excellent auto-reverse deck which doesn't suffer the usual disadvantages and is very sharply priced	●	●	●	●	●	●	●	158	158
JVC TD-V562BK	220	Ultra-sophisticated transport at a silly price; sound quality is stable but slightly opaque.	●	●	●	●	●	●	●	123	123
JVC TD-V662BK	270	Assured, clean and agile sounding recorder, if not quite the most refined in its class.	●	●	●	●	●	●	●	1380	146
Kenwood KX-7060S	329	Although slightly dull sounding with prerecorded tapes, this is a well equipped and fine sounding deck.	●	●	●	●	●	●	●	1381	146
Luxman K-322	200	Gives best value results with lower bias tapes, helped by a successful Dolby C installation.	●	●	●	●	●	●	●	1382	146
Luxman K-373	400	Decent performance, but a little costly. Includes microphone inputs.	●	●	●	●	●	●	●	158	158
Marantz SD-63	300	Poor pitch stability is a major snag in an otherwise nondescript design.	●	●	●	●	●	●	●	158	158
NAD 613	230	Rough and ready, but enjoyable sound, though marred by mechanical motor noise.	●	●	●	●	●	●	●	158	158
NAD 614	270	Not cheap, but as integrity build-wise and sound-wise	●	●	●	●	●	●	●	164	164
NAD 616	300	Double deck whose music sounded shut in and prosaic, as though its energy content had been ironed flat	●	●	●	●	●	●	●	1648	152
Onkyo K-611	430	Cute drawer loading mini-size component with 3-heads and dual capstan transport.	●	●	●	●	●	●	●	1384	146
Pioneer CT-S500S	250	Great features, good with cheap low bias tapes, but slightly synthetic quality.	●	●	●	●	●	●	●	164	164
Pioneer CT-S830S	500	High class mechanism, if lacking in battleship externals, and superb sound.	●	●	●	●	●	●	●	1385	146
Sony TC-KE550S	230	Warm, enjoyable music making, but assisted tape setup routine gives inaccurate results.	●	●	●	●	●	●	●	164	164
Sony TC-KE600S	300	Mild setting-up problems notwithstanding, this UK-tweaked design has a smooth, open and un-cassette-like sound.	●	●	●	●	●	●	●	158	158
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.	●	●	●	●	●	●	●	164	164
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, whos only flaw is a trace of audible wow and flutter.	●	●	●	●	●	●	●	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; sonically 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 converter, or DAC. Although most players are contained in a single box, expensive players are usually two-box affairs.



Best buy



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 converter: 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.
BACK ISSUE: The issue of Hi-Fi Choice in which the original review appeared.

CD PLAYERS

Product	Price(£)	Comments	AES/EBU ELEC DIG OUT	OPTICAL DIGITAL OUTPUT	AT&T OPT DIG OUTPUT	BAL ANALOGUE OUTPUT	HEADPHONE SOCKET	VARIABLE OUTPUT	MULTI-DISC	FACTSBACK NUMBER	DAC TYPE	ISSUE NUMBER
 AMC CD6	349	Based on Rotel's RCD-965BX, but has a raunchier, beefier but less transparent sound	●			●				BS		124
Audio Innovations Alto	399	Refreshing piece of audio sculpture belies inconsistent audio behaviour	●			●				BS	1635	151
 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 CD6	300	A sharp, lively and articulate player, a real thoroughbred in fact, perhaps too sharp and lively for some systems	●					●		BS		159
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, middle range player - fast, fluid and lean	●		●	●				MB	1599	141
Dual CD1000RS	170	Old fashioned sound and appearance, though well suited to light classical music	●							BS	1562	139
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	250	Player of integrity, but can sound a tad hard and rough when extended, and is somewhat amplifier fussy	●							1bit		159
 Harman/Kardon HD7625	550	Crisply styled, well equipped and slick, sound quality is fast and assured, if slightly 'obvious'	●							MB	1761	155
 Harman/Kardon HD7725	800	This flagship implementation of RLS sounds impressively bold and dynamic	●			●				MB		124
 JVC XL-V284BK	140	Featuring a new set of bitstream innards, this flexible player has a refined, if occasionally unpredictable sound	●			●				1bit	1270	147
JVC XL-Z574	250	Strong resolving power and good midband and dynamics, but slightly raw and thin								1bit		159
 JVC XL-Z674BK	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-7060	380	Fleet-footed, but will appear bright in lightweight systems	●			●				1bit	1601	141
Krell KPS 20i	9,900	Fortright, edge of the seat sound with outstanding bass performance (tested in Statements)	●		●	●	●	●		MB	1734	155
Linn Mimik	875	Useful multiroom features matched to strong bass, but poor imagery and transparency	●							Hyb	1762	155
Luxman D-322	200	Well bred player sounds smooth and cultured without appearing grey or boring.								BS	1272	147
 Marantz CD-53	200	Looks identical to CD-63, but internal costs are cut, exposing a slightly ragged performer	●			●				BS	1565	139
Marantz CD-67	270	Dynamic, authoritative, and wide tonal response, but also shut-in and mid-forward balance	●			●			●	1 bit		159
 Marantz CD-17	800	Fabulous packaging and an excellent all round performer: smooth, detailed and consistent	●			●				BS	1763	155
Meridian 506	995	Crisp, clean and detailed player now seems a little flat and mechanical: a dated balance	●			●				Hyb	1764	155
Meridian 508	1,685	Excellent partner for Meridian digital systems, and one of the best neo-high end systems (tested in system)								DS		140
Micromega Minium	350	Dynamically weak and some roughness offsets the pleasing tonal balance, articulate mid and strong bass	●							1 bit		159
Mission DAD7	900	Pleasant but not particularly exciting, but this remains a classy, sharply etched performer	●							MB		145
Musical Fidelity FCD	1,499	Remarkably coherent and three-dimensional performer, and an inspiring piece of audiophilia	●					●		BS	1051	131
NAD 512	250	Simple, well focused presentation, and articulate with it, though hard nosed quality is not everyone's cup of tea	●							1 bit		159
 NAD 514	370	Boisterous sound, but undeniably attractive	●							BS	1639	151
 Naim Audio CD3	978	The idiosyncratically packaged CD3 is solid and highly articulate. Always has its feet on the ground though								MB	1765	155
 Nakamichi MB4s	350	Entry level Music-Bank player has plenty of dynamics and detail but little stereo depth	●			●				MB	1074	132
 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-100	500	Excellent information retrieval and convincing with a wide range of music. HF could be more natural though	●							MB	1628	151
 Orelle CD-100SE	549	Articulate and solid performer, with a simple, purposeful; interface and attractive pricing	●							MB	1766	155
 Philips CD-721	130	Surprisingly well sorted, articulate if slightly lossy and attractively presented sound. Captive signal lead								1 bit		159
Philips CD-740	170	One of several Philips players using hybrid DAC technologies. Still sounds insufferably boring, however	●			●				MB	1567	139
Pioneer PD-204	150	Generally easy on the ear, but can bite back, especially with complex high frequency music content. Well endowed								1 bit		159
Pioneer PD-S904	400	Too much legato - literally - in sound, but a very smooth performer	●			●				1bit	1641	151
 Quad 77	850	This player knows how to sing. Pity the control system is so buggy.								Hyb	1767	155
 Quad 67	875	Powerful, fluid and captivating sound reminiscent of Meridian's 206								BS		124
Rotel RCD-940BX	250	A sea change in transport and DAC technology lies behind this untidy-sounding and irritating player	●			●				MB	1535	137
Rotel RCD-975	849	Bright and superficially detailed, this deck can sound coarse and inarticulate	●							BS	1767	155
 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
Sony CDP-361	150	Bantamweight it capable and resolute machine with no serious shortcomings at the price								BS	1628	151
 Sony CDP-XE500	160	Fine all-rounder, and a good match for middle ranking systems. Jog dial works well, but display is messy						●		BS		159
 Sony CDP-761E	250	Tarted up CDP-561E with less wadgets and a slightly overcooked but nonetheless fine performance	●			●				BS	1267	147
 Sony CDP-XE900E	300	Refined and analytical disc scavenging tool, but there are some distinctive colourations making auditioning vital	●			●				BS		159
 Sony CDP-XA2ES	400	Strong-willed, heavyweight sound; not for the feint-hearted	●			●				BS	1642	151
Teac CD-P3200	150	A primitive looking CD player, housing 16-bit electronics delivering an equally primitive and uninspiring sound.								MB	1277	147
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 fine detail	●			●				BS	1769	155
Teac VRDS-10	770	A basic analogue stage compromises performance. Lacks bass energy	●			●				BS		119
Technics SL-PG480A	140	Full driving sound, but somewhat uneven in balance with a subtle, slightly harsh top end							●	1 bit		159

CD PLAYERS (CONTINUED)

Product	Price (£)	Comments	AES/EBU ELEC DIGITAL OUTPUT	OPTICAL DIGITAL OUT	AT&T OPT DIG OUT	BAL ANALOGUE OUT	HEADPHONE SOCKET	VARIABLE OUTPUT	MULTI-DISC	FACTSBACK NUMBER	ISSUE NUMBER
Technics SL-PS770A	250	A mellow sounding player that never quite rouses from its slumber to really tackle the music at hand	●	●						BS 1278	147
Thule CD100	849	A little muddled via single ended output, but the sound comes alive when balanced connections are used	●	●			●			BS 1770	155
Trichord Genesis	599	Modified Pioneer PD-S504 that's a bit like a Williams Renualt Clío — astonishing at the price (tested in Sessions)	●	●					● ●	BS 1753	155
Yamaha CDX-490	170	Big, blowsy sound, is undermined by lack of precision and focus					●		● ●	1 bit	159

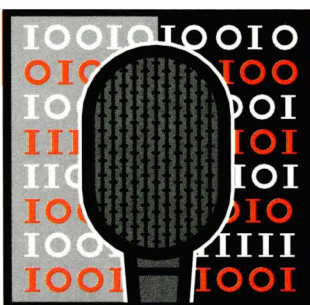
TRANSPORTS

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	1,450	Superb combo for those who like the sound of valves (tested with Elixir DAC in Sessions)	●	●						MB	141
Audiomeca Mephisto	2,100	Tested with Trichord Pulsar, the duo provides a highly composed and tactile sound	●	●						- 1320	144
Linn Karik	1,750	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
Mission Discmaster	1,500	Powerful performance - large and beefy without sounding fierce or aggressive (price includes Dacmaster)	●	●						- 1104	133
Pink Triangle Cardinal	875	Sound quality is warm but over-polished compared to PT Ordinal (tested with DaCapo and DC PSU)	●	●						- 1324	144
PS Audio Lambda	2,250	With Ultralink Two, sound positively sparkles with colour and resonant detail	●	●	●					- 1106	133
Roksan Atessa ATT-DP3	1,295	Not the most detailed or refined but capable of good excitement with the right material	●	●						1 bit	162
Teac VRDS-T1	550	Superb quality engineering is mated to tidy and composed sound (tested with D-T1)	●	●						- 1325	144
Teac P-700	900	Tested with D-700, low resolution sound is warm, bubbly and entertaining	●	●						-	120
Teac P-2S	4,000	The latest version of Teac's luxury P-2 transport sounds as over-engineered as it looks	●	●						- 1493	130
Theta Data Basic II	2,298	Uses a Philips CDM-9 Pro mechanism a works a treat with more lively DACs	●	●						- 1494	130
Thorens TCD2000	900	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 500	750	Sophisticated unit with Sync Lock and discrete DAC. Early samples sounded grubby and restrained								BS 1519	136
Audio Alchemy DAC-in-a-Box	230	This giveaway DAC may still rescue the oldest of players from obsolescence								MB	127
Audio Note DAC1	600	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	745	DAC was tested with Kreatura SE - see above								BS	141
Cambridge Audio DACMagic 2	200	Superb value DAC that makes the jump from good to outstanding if balanced outputs are used (tested in Sessions)						●		Hyb 1521	136
DPA PDM256	2,995	Highly advanced, with adjustable dither. but the different settings only lead to compromise								BS	133
Linn Numerik	1,400	A new 20 bit DAC and revised Karik transport have cleaned up; but sounds a tad dry and humourless.								MB 1323	144
Meridian 563	795	Warmer but no less detailed than the earlier 200-series, the 563 flies with a top rate transport								DS 1103	127
Mission Dacmaster	1,500	Powerful performance - large and beefy without sounding fierce or aggressive (price includes Discmaster)								MB 1104	133
Pink Triangle Ordinal	925	The cheapest dual-differential DAC7 converter available offers top-flight sound quality								BS 1524	136
Pink Triangle DaCapo	1,765	With Cardinal and DC PSU, the DaCapo is best with its 22bit option. It is warm but over-polished								BS 1324	144
Pink Triangle DC Supply	1,750	Battery power supply for Cardinal and DaCapo								- 1324	144
PS Audio UltraLink 2 HDCD	2,590	With Lambda transport, the sound positively sparkles with colour and resonant detail								MB 1106	133
PS Audio Ref Link	4,550	Consolidates reputation of PS Audio for high performance digital electronics						●		MB 1069	132
QED Digit Plus	139	Bearing in mind its expensive but very forgiving performance, the Digit is almost embarrassingly cheap								BS	113
Roksan Atessa ATT-DA2/DSS	1,145	Not the most detailed or refined but capable of good excitement with the right material.								1 bit	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 TDA2000	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

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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 four types to choose from: DAT (digital audio tape), MD (Mini Disc), and DCC (digital compact cassette) and CD-R (CD Recordable). DCC is backwards compatible inasmuch as the machines can play regular audio cassette. 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.



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 MASH, 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.

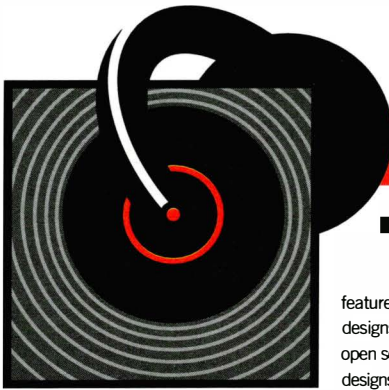
BACK ISSUE: The issue of Hi-Fi Choice in which the original review appeared.

DIGITAL RECORDERS

Product	Price (£)	Comments	FORMAT	DAC TYPE	ADC TYPE	PORTABLE	ELECTRICAL IN/OUTPUTS	FACTSBACK NUMBER	ISSUE NUMBER
Philips DCC170	250	Good sound quality for a portable that records as well, beating competition from MD in its group	DCC	BS	BS	●	● ● ●	1237	141
Philips DCC951	280	Offering 18-bit record and replay this does an impressive job in many ways but PASC is still a limitation	DCC	BS	BS		● ● ●	139	
Pioneer D-05	800	Second generation 96kHz DAT recorder can offer startling realism with the right software - ie first generation	DAT	BS	BS		● ● ●	1652	152

DIGITAL RECORDERS (CONTINUED)

Product	Price(£)	Comments	FORMAT	DAC TYPE	ADC TYPE	ELECTRICAL IN/OPTIONAL IN/OUTPUTS	PORTABLE	FAXBACK NUMBER	ISSUE NUMBER
Pioneer D-07	1,150	96kHz double sampling mode gives this deck a sense of naturalness missing from most DAT recorders	DAT	BS	BS	●	●	1089	133
Pioneer PDR-05	1,300	CD recorder that uses domestic blanks only (limited to 62 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
Sharp MD-M11	450	Slick MD personal with recording capabilities and rapid track access but less stunning sound quality	MD	BS	BS	●	●		139
Sony MDA-IA3ES	800	Full width MD recorder that makes a decent job of recordings but is less impressive with pre-recorded material	MD	BS	BS	●	●	1216	152



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.



KEY

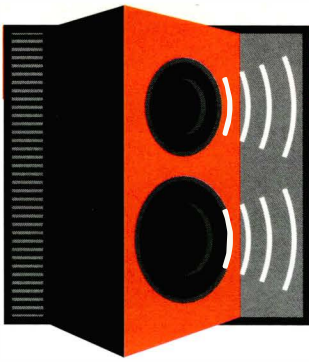
TYPE: Operating principle: D - dynamic, E - electrostatic.	CLOSED BACK: Keeps out external noise.	3.5MM JACK ADAPTOR: Can be used with mini-jack-equipped components such as personal stereos.	to find the Factsback information page.
SUPRA-AURAL: Style where a flat pad presses on the outer ear.	WEIGHT (G): Mass in grams	FACTSBACK NUMBER: The Factsback reference for ordering a fax copy of the review. Use the contents page	BACK ISSUE: The issue of Hi-Fi Choice in which the original review appeared.
CIRCUM-AURAL: Style which encloses the ear.	IMPEDANCE (Ω): Load offered to the headphone amplifier. The higher the impedance the louder the sound for a given amplifier output.		
OPEN BACK: Offers an open sound but lets in noise.			

HEADPHONES

Product	Price(£)	Comments	CIRCUM-AURAL TYPE	SUPRA-AURAL	OPEN BACK	CLOSED BACK	3.5mm JACK ADAPTOR	WEIGHT(G)	IMPEDANCE(Ω)	FACTSBACK NUMBER	ISSUE NUMBER
 AKG K240 Monitor	82	Something of a classic, these AKGs are very user-friendly in all respects; sonically on the warm side of normal.	D	●	●	●		240	600		63
 AKG K1000	646	One of the best dynamics on the market, hooks directly into speaker outputs.	D	●	●	●		270	120		99
 Audio Technica ATH910PRO	80	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	49	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 DT531	129	A good buy for serious, heavy-duty music making	D	●	●	●		245	250		144
 Beyer DT911	219	Probably too revealing for many headphone amps, these are very subtle and fine, if expensive cans.	D	●	●	●		275	250		111
 Donon AH-D550	80	A competent 'phone with integrity, but little panache or charisma. Hard headband causes brain strain.	D	●	●	●		200	35	●	1801 157
 Grado SR-80	110	Clear, open and dynamic with pedantically open mid-band. Crude physical design, rough frequency extremes.	D	●	●	●		60	8	●	1801 157
 Grado SR225	200	Warm, dark tonal coloured and ultimately lacking in clarity, but it true to the spirit of the music if not the letter	D	●	●	●		200	32		163
 Jocklin Float Model 1	75	Whilst very unusual in appearance, the Floats give remarkable sound quality and openness at a reasonable price.	D	●	●	●		400	200		55
 Jocklin Float Model 2	99	Helmet shaped, but open sounding and comfortable in long term, despite lack of adjustment.	D	●	●	●		400	200		63
 JVC HA-DS910	65	Broadly acceptable if unexciting design with low level losses and some colourations.	D	●	●	●		220	32	●	121
 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
 Pioneer SE-400D	37	Acceptable, if unexciting all-rounder, this supra-aural phone has good long-term comfort levels.	D	●	●	●		185	35	●	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		163
 Ross RDH-300CD	17	In-lead controls are the highlights of this shoddy, sometimes aggressive sounding design.	D	●	●	●		155	8	●	133
 Sennheiser HD445 II	40	Still the one by which others at the price are measured, though now slightly leaden sounding, with a cold treble	D	●	●	●		125	52	●	121
 Sennheiser HD455	50	Inoffensive, if nondescript sound, modular, but can become dislodged from head.	D	●	●	●		185	60	●	1801 157
 Sennheiser HD565 Ovation	140	Wide bandwidth design which is refined, expressive and extremely comfortable.	D	●	●	●		255	150	●	1801 157
 Sennheiser HE-60 & HEV70/UK998		Very nearly a superb electrostatic, with an aching pure midband, but top end is sibilant and edgy	E			Y		260	n/a		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	●	163 Stax
 Stax Lambda Nova Basic	449	Refined, articulate, yet with real presence -- and a notable bargain by electrostatic standards	E	●	●	Y		347	n/a		163
 Stax Lambda Pro	449	Tested with SRD-7B PSU, this is an industry reference, and is frighteningly revealing.	E	●	●	●		325	-		55
 Stax Lambda Sig	549	With SRM-T1. Electrostatic - the Signature must be the most transparent headphone available.	E	●	●	●		325	-		72
 Technics RP-HT700	70	Well-finished but physically crass and grubby sounding.	D	●	●	●		255	-	●	1801 157
 Vivanco SR606	40	Although slightly overblown at times, this model is easy on the ears and essentially enjoyable	D	●	●	●		225	32	●	1101 133
 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

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Hi-Fi Loudspeakers

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.

B Best Buy **R** Recommended

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.
BACK ISSUE: 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)	FREE SPACE	CLOSE TO WALL	FACTSBACK NUMBER	ISSUE NUMBER
Acoustic Energy AE109	330	Lots of mass-loaded twin-driver speaker for the money, especially for loud, driving bass	18,90,25	88	4	25	●	●	164	
Allison AL100	100	Loud and lively budget wall-mount is big and beefy, but lacks sparkle and refinement	24,33,19	90	4	30	●	●	94	
Allison AL105	170	Pretty enough in appearance; sonically the AL105 doesn't really make the grade at the price	24,37,21	90	4	45	●	●	78	
Allison AL110	220	Compact bookshelf model is a little dry and mid-forward, but bass is extended and solid	28,40,23	90	4	28	●	●	102	
Allison AL120	420	Pretty well balanced if slightly mid-forward, but sound quality is disappointing at the price	28,61,29	90	4	30	●	●	98	
ATC SCM20	1,499	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	●	●	164	
Audio Innovations Alto	329	Styling makes competition look old-fashioned, but sound is thin and cold	20,38,26	88	6	45	●	●	1653	152
Audio Note AN-J/B	799	Light damping and local unevenness adds some colouration, but doesn't spoil the very speaker	38,58,25	93	8	25	●	●	110	
Audio Note AN-E/B	1,299	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
Audiovector 3X	1,500	Superior time coherence, a wide dynamic range and exception bass/mid balance	19,32,98	89	8	20	●	●	1345	143
B&W DM302	130	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	15
B&W 305	350	Ridged paper cone gives lively sound, clever box, but a little uneven	22,87,31	89	4	40	●	●	164	
B&W CDM1	600	Gorgeous stand-mount delivers unusually good bass for its size	22,38,28	88	6	30	●	●	160	
B&W Matrix 805 V	995	Stylish, remarkable imaging, good balance and low colouration	33,33,21	87	8	30	●	●	98	
B&W Matrix 801S3	3,795	Lacks transparency and the drama of the best dynamics, but acoustically a tour de force	44,100,56	87	8	20	●	●	81	
Bose 305	430	Fine dynamic liveliness and a good room match counter strange imaging and treble	23,45,28	-	8	40	●	●	78	
Bose 401	500	Cheaply built but distinctively styled, the 401 suffers from heavy midband	30,30,76	-	4	28	●	●	110	
Boston Acoustics HD5	139	Pretty miniature lacks boxiness, but is short of drama and dynamic drive	16,25,18	89	8	30	●	●	110	
Canon S-30	180	Moulded design has lively coherence, with 'wide imaging stereo'	23,27,24	90	6	50	●	●	114	
Canon S-75	1000	Unique 'wide image' floorstander has great charm despite some sonic flaws	25,79,25	87	4	26	●	●	160	
Castle Isis	230	Expressive with a full upper bass, tonally colourful with a big, dynamic sound (tested in Sessions)	17,35,19,5	87	8	60	●	●	1729	154
Castle Durham 900	300	Lovely veneer and lots of engineering create a very upfront, coherent and exciting sound	22,40,23	90	8	60	●	●	1162	135
Castle York	370	Real wood compact has an engaging transparency: fine balance and timing, but could use some authority	26,43,22	89	8	50	●	●	110	
Castle Severn	500	Light and bright, but sound is open and communicative. Looks good too	23,77,20	88	8	47	●	●	1655	152
Castle Avon	700	Lovely box and lovely voices from carbon-fibre composite cone	22,91,28	85	8	22	●	●	164	
Castle Chester	700	A brilliant throwback, using a horn type approach to provide startling dynamics and coherence	23,91,25	90	8	44	●	●	98	
Castle Harlech	800	Handsome big-sounding floorstander, great value and dynamic midrange	20,96,33	88	8	28	●	●	160	
Castle Howard S2	1,100	Ably fills the gap between Chester and Winchester; has a rich, laid back balance	26,104,41	90	8	40	●	●	1078	132
Castle Winchester	1,650	Large for its bass extension but engagingly agile, open and airy	42,108,23	90	8	35	●	●	90	
Celestion 1	99	It sounds a bit scrappy and untidy, but its heart is in the right place	16,27,21	86	8	50	●	●	114	
Celestion 3 MKII	139	Smooth and polished by budget speaker standards, if a bit laid back for some tastes	21,31,18	88	8	45	●	●	1036	130
Celestion Impact 23	300	Big, cheap and loud. Sounds coloured and old fashioned, lacks subtlety	28,82,29	89	8	30	●	●	1656	152
Celestion 15	389	Big box and but short on subtlety and control though long on both enthusiasms	21,100,25	89	8	28	●	●	114	
Celestion Impact 25	400	Both capable and enjoyable these rock boxes are real contenders in the bang-for-the-buck stakes	27,82,29	90	8	43	●	●	1758	155
Celestion SL6Si	429	This stereotype luxury compact can sound a bit dull and congested; favours CD	20,38,27	84	8	30	●	●	94	
Celestion A1	700	Rich, warm and laid-back, but a true quality sound; lovely build	24,41,35	88	6	25	●	●	164	
Celestion 300	1,099	Splendid bass extension and fine panel-like openness, but dynamics and timing are suspect	21,97,33	84	8	20	●	●	118	
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
Dali 104B	370	Lively, rich sounding and communicative. Shame about bland styling and dull balance	22,86,27	93	4	28	●	●	1657	152
Dawn Audio Chorus FS	698	Compact floorstander with superb coherence but rather forward midband. Would suit smaller rooms best	26,88,21	89	8	30	●	●	114	
Electrofluidics Sonolith 2.2xi	5,999	Substantial polymer concrete cabinet with aluminium cones produces world class imaging and very serious bass	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	●	●	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 Model 4	200	Low cost floorstander; sounds a bit edgy, with detached bass	19,79,22	87	8	28	●	●	1780	156
GLL Imagio IC130	550	Lots of speaker for the money, but sound is decidedly dull and shut in	22,112,29	88	4	20	●	●	160	

HI-FI LOUDSPEAKERS (CONTINUED)

SEE WXX(X)CM
 SENSITIVITY (DB/M)
 FLOORSTANDER
 IMPEDANCE (OHM)
 BASS FROM (Hz)
 FACTSBACK NUMBER
 FREE SPACE
 CLOSE TO WALL
 ISSUE NUMBER

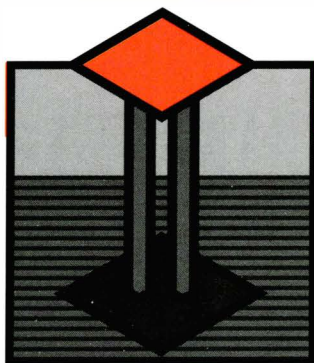
Product	Price(£)	Comments	19,30,18	82	10	80	●		
Harbeth BBC LS3/5A	699	Still a classic miniature, though not to every taste, and none the better for the recent update	19,30,18	82	10	80	●		66
Harman/Kardon LS0200	149	Laid back to a fault but entertaining nevertheless, and a big box for the price	21,35,30	87	8	30	●		1037 130
Heybrook Prima	139	Fine pace and timing, but balance is forward and bass is tight	20,29,18	87	6	50	●		110
Heybrook Heylios	339	Great all round performance in a pretty package at a sharp price	24,36,27	87	6	25	●		164
Heybrook Solo	199	Untidy bass and treble, but handles complex rhythmic material well	23,36,23	89	6	28	●		90
Heybrook Trio	373	HBS1 drivers in real wood enclosure give a sweeter and more forgiving sound	24,47,25	89	8	45	●		118
Heybrook Heylo	389	Good vocal reproduction, but sounds thin and bass seems an afterthought	23,73,19	●	88	8	30	●	1658 152
Heybrook Heystak	499	Elegant, highly detailed and level-headed sound, but could use injection of life	22,98,28	●	89	8	38	●	141
Heybrook Quartet	575	Solidly large bookshelf model with good sensitivity and a lively, forward sound	24,41,22	●	90	8	48	●	122
Heybrook Sextet	1,129	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
Infinity Kappa 6.1i	995	Good extension, but bass is fat and slow, and dynamics are unconvincing	31,95,25	●	89	6	25	●	1080 132
Jamo BX100A	370	A cracking output for their size these rock boxes can be a tad bright but have decent bass	31,5,54,28	91	8	40	●		1758 155
Jamo Classic 8	430	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 477	500	Very prettily styled, but build and sound quality are disappointing at the price	19,77,28	●	88	4	40	●	1549 138
Jamo 707A	900	Superb styling and cosmetics and decent balance apart from detached bass	26,38,104	●	90	4	25	●	1085 132
JBL Control One	115	Sub-miniature with forward midrange and real bass; price justified by build	24,156,14	87	4	100	●		90
JBL TLX70	400	Startling bass weight from party animal that is let down by rather bland high frequencies	27,88,28	●	88.5	8	50	●	1758 155
JBL L201	850	Pricy, 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 L90	1,300	A classic monitor which communicates with gusto and enthusiasm, though it can sound a tad crude	24,94,35	●	91	6	23	●	143
JBL Ti 1000	1,600	Performance compromised by over enthusiastic midbass output from port	20,30,13	89	4	45	●		118
Jordan Watts JH400	820	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 Sonata	120	Fine sound if limited bass and dynamic range, wood veneered at a silly price	23,32,22	87	8	70	●		71
JPW P1 Vinyl	150	Competent loudspeaker for the price, with a safe sound that won't disappoint	26,44,25	89	8	65	●		102
JPW P1	170	Longstanding design is remarkable material value (real wood etc) and sounds pretty too	26,44,25	89	8	65	●		1611 141
JPW AP2	200	Real wood finish, and performance is cleaner but similar to P1 Vinyl overall	26,44,25	89	8	65	●		106
JPW AP3	230	Good stereo and well balanced overall; character is well suited to vinyl replay	26,52,29	88	8	55	●		46
JPW Ruby 1	500	Very pretty but pricey luxury metal-cone miniature has good, if slightly edgy balance	19,32,21	87	6	55	●		1572 139
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 Q30	379	Fine focus from Uni-Q driver, but lacks drive and time coherence	19,73,30	88	6	44	●		126
KEF RDM One	500	Cute and tiny, nice midband but lack of bass warmth and weight	23,30,24	88	6	70	●		164
KEF Q50	529	Compact twin-driver floorstander with Uni-Q treble and a rather midbass, heavy overall balance	19,83,30	●	89	6	50	●	1573 139
KEF 104/2	1,799	A reference point for dynamics, best without KUBE, suited to many rooms.	28,90,41	●	92	4	50	●	60
Keswick Audio Aria II	329	Confident and dynamic sound, if a little crude and shut in	21,42,24	89	8	20	●		1405 148
Linn Kellidh Passive	700	Stunning timing and coherence, and awesome bass drive	20,83,28	●	87	4	22	●	1552 138
Linn Kaber Passive	1,800	Dry, bright balance emphasises dynamics and transients, but can sound unforgiving	20,90,28	●	87	4	25	●	118
Living Voice Airscout	14,750	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	27,000	Outstanding transparency and dynamics from remarkably solid and fast mega horn	64,160,90	●	108	8	40	●	138
Lumley Reference LM4	375	Metal diaphragm and wood veneer; balance uneven upper and has suspect timing	18,36,22	86	6	44	●		126
Lumley Reference LM3	895	Despite indifferent bass alignment, LM3 is fast, coherent, solid and informative	27,87,28	●	90	8	30	●	106
Meridian DSP6000	8,500	Sophisticated digital design, with a wide ranging, refined and detailed sound. Has onboard amplification	28,133,43	●	-	-	35	●	1226 140
Meridian DSP5000	2,995	State of the active loudspeaker art, a high grade design with unique capabilities. Has onboard amplification	21,90,30	●	-	-	35	●	1226 140
Mission 732	200	Attractive presentation but a rather dull and thick sounding speaker, and a tad pricey too	20,41,30	89	8	45	●		1613 141
Mission 733	300	Duller than before, though still an honest all-round package	20,5,87,30	●	87	8	45	●	1786 156
Mission 751	300	Gorgeous looking, very petite; boogies with a sting at the top	17,5,32,26	87	8	45	●		1788 156
Mission 734	430	Fine all rounder, and good value, but dynamically a bit lazy, and tweeter quality limited	21,84,33	●	90	8	43	●	1660 152
Mission 752	500	Brilliant style, engineering and sound	20,88,26	●	90	8	50	●	1553 138
Mission 753 Freedom	798	Great styling. New, more restrained tweeter reveals fine midband dynamics	21,90,31	●	89	4	40	●	164
Monitor Audio MA201	300	Lively and coherent with good power handling, but also a bit shut in and coloured	22,41,40	90	8	40	●		1164 135
Monitor Audio MA202	450	Uneven, informative and easy-listening floorstander delivers decent scale	22,89,27	●	90	8	50	●	1575 139
Monitor Audio MA700 PMC	500	Good looking luxury compact with all-metal diaphragms, lovely midrange, but occasionally edgy	22,35,26	89	8	45	●		1661 152
Monitor Audio MA703 PMC	800	Lovely but pricey floorstander has up-front, coherent 'shiny' sound	20,89,27	●	88	8	50	●	160
Monitor Audio Studio 6	900	Metal diaphragm compact has transparent midband but lacks vigour and drive	22,35,25	88	8	45	●		118
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 SW1	150	Prettily finished and inexpensive passive subwoofer is only really useful with sub-miniature speakers	24,58,26	90	8	40	●		128
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	1,695	Although a very neutral loudspeaker it can, with the right ancillaries, pack a serious punch (Statements)	26,86,35	●	90	6	35	●	1367 146
Morel 704/2	1,000	There's real potential here, but it's not fully realised	23,80,21	●	88	8	20	●	1350 143
Musical Technology Kestrel SE	300	Brighter and drier-sounding than standard Kestrel (and not the better for it)	20,84,19	●	84	5	50	●	164
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	596	Great dynamic range and info retrieval, but thin, lacks warmth	24,89,27	●	89	6	30	●	164
Naim SBL Passive	1,878	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 allround sound and value	20,85,18	●	84	8	25	●	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
Origin Live OL-2A	470	Fine dynamics and a good looking, well engineered package, though presence bland and treble restrained	19,80,19	86	8	45	●		1664 152
Origin Live OL-1	499	Luxury miniature has very good overall balance, sacrificing sensitivity for bass	20,30,19	86	8	25	●		106
Philips Legend FB720II	200	Liveliness, coherence and fine information retrieval justifies the odd looking baffle	21,37,31	90	6	50	●		122

HI-FI LOUDSPEAKERS (CONTINUED)

Product	Price (£)	Comments	SIZE WxHxD(CM)	SENSITIVITY(dB/W)	IMPEDANCE(Ω)	BASS FROM (Hz)	FACTSBACK CLOSE TO WALL FREE SPACE	ISSUE NUMBER
Pink Triangle Ventrical	896	If you are after Quad Electrostatic type transparency but can't afford the price . . . (Sessions)	15,80,32	86	11	●	142	
Pioneer S-4UK	250	Latest version now balances pretty well, with a coherent lightweight bass	21,37,28	88	6 50	●	1157 139	
Polk LS50	800	No enthusiast tweaks here, but powerful and beautiful balance	27,83,29	●	89 8 25	●	1155 138	
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	
PMC TB1	500	Superb transparency, subtle laid back sound, well worth seeking out	20,40,31	87	8 45	●	160	
PMC LB1	998	Delightful smoothness and transparency, though bass and treble are both limited	18,53,25	89	4 33	●	110	
PMC AB1	1,598	Lovely panel-like transparency, slightly shut-in balance, needs a big room	26,79,43	89	6 22	●	114	
Polk RT16	800	Bass rich, lively and powerful, but suspect top end; big and not very pretty	22,105,39	●	91 4 22	●	160	
QLN Qubic 222	400	Ugly but good value floorstander with loads of bass and a smooth balance	21,87,29	●	88 6 25	●	160	
Quad ESL-63	2,860	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	
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 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	
Rogers LS1	149	High grade miniature	20,20,30	87	6	●	1408 143	
Rogers AB1	499	Designed as partner for LS3/5a or similar miniatures	19,57,16	●	82 8	●	1354 143	
Rogers Studio 3	499	Pricy 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	
Roksan ROKone	600	Large stand-mount is musically very communicative if a little coloured	21,45,33	89	6 30	●	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	
Royd Minstrel	249	Not much wellie or loudness but fine coherence and timing, a bit bright	18,69,12	86	8 30	●	1167 135	
R yd Merlin	298	Invigorating and exciting design with plenty of upfront detail, but balance lacks warmth and a tad overpriced	20,31,18	86	8 33	●	1409 148	
Royd Doublet	450	Great value compact floorstander; lively and very informative, if a little uneven	18,93,19	●	90 4 28	●	160	
Royd The Sorcerer	595	Extremely musical and communicative speaker that fun to listen to. Aesthetics could use improving though	20,31,18	86	8 35	●	139	
Royd Abbot	665	Dynamic and fine transient qualities are hampered by a rather coloured mid-forward balance	20,81,30	●	90 8 43	●	118	
Ruark Templar	499	Striking baffle gives decent bass/mid but dull treble; could tame over-bright system	19,70,27	87	8 25	●	122	
Ruark Talisman II	749	Less ideologically committed than some, strength lies in fine all-round coherence	23,84,32	●	88 8 30	●	118	
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	399	New SD3 has the agility and charm of a quality miniature, good bass and low sensitivity.	20,38,30	87	8 25	●	106	
SD Ac istics SD5	1,235	Bass suspect but forward midband is delightfully smooth. Has ribbon tweeter	20,110,30	●	88 8 30	●	1081 132	
Shahinian Arc	1,675	Occasionally wonderful small floorstanding omni; bright but coherent and revealing	35,69,25	88	6 24	●	110	
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	600	Discreet slimline floorstander with delicately coherent, laid back sound	18,89,27	●	87 8 30	●	160	
Spendor S20	760	Maintains Spendor's tradition for peerless mid-to-treble coherence and perspectives.	22,38,26	84	8 25	●	102	
Silverado Raider	695	Beautifully built audiophile compact, neutral if bright, tough work for amps	20,40,25	83	3 30	●	164	
Sequence 400	330	Clever hang-on-wall panel is well voiced, though bass isn't too great	25,100,7	86	8 45	●	164	
System Audio 905	250	Fine coherence and remarkable dynamic freedom some something so small, though there's little real weight	15,27,21	89	8 60	●	1410 148	
Tannoy 631	149	Balanced, open, unboxy and quite lively, but lacks muscle	19,34,15	87	6 60	●	1616 141	
Tannoy 631SE	170	Very refined midband; maybe too laid back for some	13-19,34,16	86	7 45	●	1791 156	
Tannoy 632	189	Clever cabinet avoids boxiness and promotes focus imaging and bass	43,51,27	88	20 25	●	1168 135	
Tannoy 633/II	300	Impressive bass and balance from very compact floorstander. Upper midband could be cleaner	29,75,28	●	89 85 20	●	1665 152	
Tannoy 635	450	Beefy low-line floorstander packs real bass punch and an up-front balance	17-29,85,27	●	90 6 22	●	160	
Tannoy 637	550	Good value package but a rather heavy, thick, big-bass sound	17-29,84,27	●	90 3 20	●	164	
Tannoy 638	599	Big value vinyl big box has good balance and lots of loudness, but needs a good amp.	33,96,32	●	91 6 25	●	1558 138	
Tannoy D500	1,470	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	6,000	These awesome horn loaded speakers are remarkably controlled and impressive	large	●	99 8 38	●	C93	
TDL Near Field Monitor	100	Despite low price, this is an unimpressive performer, poor low frequency resolution and analysis being main flaws	18,30,17	87	8 50	●	1043 130	
TDL RTL2	300	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 Studio 0.5	499	Tiny floorstanding transmission line lacks coherence or the balance of Studio 1	20,62,30	85	8 40	●	94	
TDL Studio 1	699	Genuinely extended bass from a compact enclosure, very detailed but a shade clinical	23,77,33	86	8 25	●	78	
TDL T-Line 3	750	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	
Thiel SCS	1,379	Class leading coherence and communication, but can sound shut-in and dark	23,92,41	●	87 4 45	●	114	
Totem Model One	995	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	
Vanoni David 6001	163	Sharp styling, but the complex grillwork worsens a sound which starts off with too much top and not enough bottom	13,20,12	87	8 130	●	74	
Wharfedale Valdus 400	199	Goes very loud with a minimum of amplification, but the sound is very thick and uneven, with a heavy upper bass	25,80,26	●	91 8 30	●	1414 148	
Wharfedale Valdus 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	
Wilson benesch ACT1	6,400	Stylish, technically advanced and sonically as clean as a whistle this is a truly high end loudspeaker (Statements)	23,108,37	●	89 6 40	●	162	
ZYP AI	199	Cute metal cased micro-miniature is quite coloured but great fun	14,22,12	88	8 30	●	110	

SUBWOOFERS

Product	Price(£)	Comments	SIZE WxHxD(CM)	SENSITIVITY(OB/N)	IMPEDANCE(Ω)	BASS FROM (Hz)	FACTSBACK NUMBER	ISSUE NUMBER
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
Boston Acoustics SW10	450	A little thumpy but transparent with good timing and goes loud (active)	28,5,50,42	●		33		128
Celestion CS135	139	Compact hideaway passive sub lacks deep bass: for high sensitivity speakers	52,19,34	●	86	8 45	●	128
Infinity RS10	500	A very cute cube of an active sub but midbass is boomy with no real extension	34,34,34	●		38		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	2500	Works well, looks great, shakes the windows but costs a lot and is bulky	56,43,50	●		45		128
Living Voice RW24	9,500	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
Mordant-Short SW1	150	Fair value, can help sensitive small speakers but no serious extension to match upper bass	58,24,25	●	85	45		128
REL Q-Bass	350	Smashes the price barrier for deep bass performance	40,41,5,40	●		20		1670 154



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.

B

Best buy

R

Recommended

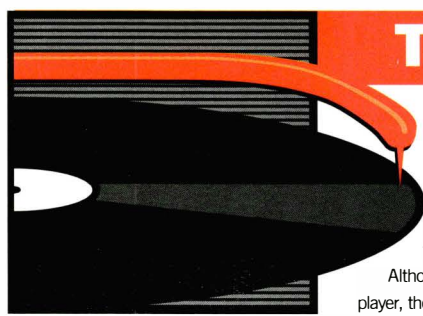
KEY

HEIGHT (CM): Height of stand or equipment shelf.	lead to increase mass, which affects sound.	rack or support.	copy of the review. Use the contents page to find the Factsback information page.
TOP PLATE SIZE (CM): Dimensions of top plate on speaker stand or equipment support.	WELDED: The better stands and supports are welded rather than bolted together.	SHELF TYPE: Material that shelves are made of on an equipment rack. Wood generally means MDF	BACK ISSUE: The issue of Hi-Fi Choice in which the original review appeared.
FILLABLE: Some speaker stands can be filled with sand and/or	NUMBER OF SHELVES: The amount of tiers on an equipment	FACTSBACK NUMBER: The Factsback reference for ordering a fax	

STANDS & SUPPORTS

Product	Price(£)	Comments	TOP PLATE SIZE(CM)	HEIGHT(CM)	FILLABLE	WELDED	NUMBER OF SHELVES	SHELF TYPE	FACTSBACK NUMBER	ISSUE NUMBER
Equipment Supports										
Audiophile Furniture Base	480	Easy to set up, well ordered sound		40					4	Wood 1633 151
Fi-Rax R4	250	Lively, exuberant sound, slightly weak bass							5	Glass 1633 151
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 Acoustics 5 Tier Amp Stand	600	Infinitely upgradable. Persuasive and thrilling glass and angle iron design that adds speed and bandwidth to components upon it					●	5	Glass	1633 151
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	40,84		●	5	Wood	1633 151
SoundStyle Select 6105	280	Respectable sonics, structurally solid and smart							5	Glass 1633 151
Stands Unique Sound Tower	249	Adds colouration, and lacks weight. Optional Isolation Platform		81	72,42				5	Glass 1633 151
Target B5	175	Free of colourations, 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	Stand 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 stands 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
Sound Style 2024	100	Three pillar triangular based design with high gloss finish. Enthusiastic sound suited to better systems		61			●	●		1373 146
Stands Unique HP	220	Real wood disguises high performance tuned technology		59	22,23					159
Sound Organisation Z124	80	Atacama style big pillar. A pleasantly balanced performer, tonally even with good timing and dynamics, but leaks sand!		61			●			1373 146
Sound Organisation Z129	110	Heavy four pillar design, extracts detail well and very little colouration together with an excellent sense of timing		74			●			1373 146
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	67.50	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

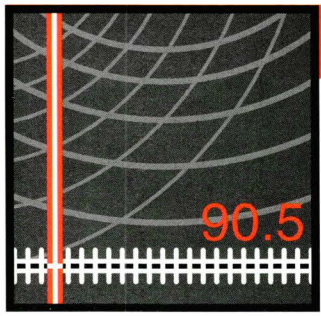
its construction and design have a significant bearing on sound quality. There are three basic types of arms listed in the key and each has its strengths, but pivoted designs are the most popular, for reasons both practical and economical.

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. BACK ISSUE: The issue of Hi-Fi Choice in which the original review appeared.

TONEARMS

Product	Price(£)	Comments	PARALLEL TRACKING	EFFECTIVE LENGTH (cm)	ADJUSTABLE HEIGHT	FACTSBACK NUMBER	ISSUE NUMBER
			▶▶▶▶▶	▶▶▶▶▶	▶▶▶▶▶	▶▶▶▶▶	▶▶▶▶▶
Alphason HR100S	490	S-shaped arm sounds smooth, but nevertheless reproduces transients with fine attack.	Medium	●	●	229	86
Kuzma Stogi Ref	1,000	Large, solid and well made arm, gives exceptionally clear sound with just a hint of brightness.	High	●	●	●	79
Linn Ekos	1,297	Superb, state of the art design which builds significantly on predecessor's strengths.	Medium	●	●	229	6
Moth Arm	95	The ultimate budget arm? Refined, sweet, detailed and natural.	Low	●	●	237	60
Rega RB300	139	Despite its modest price it sets exceptional standards and could be used on many high end turntables.	Low	●	●	237	60
Roksan Tabriz Basic	275	Targetted at the Xerxes, this is a good alternative to the Rega arm in many cases - a touch bright though.	Low	●	●	240	91
SME Series 300-309	657	Beautifully made and finished: fully adjustable and a highly neutral performer.	Low	●	●	238	79
SME Series IV	936	Superb engineering and finish with a finely balanced sound, impressive stereo focus and low colouration.	Low	●	●	233	60
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. PRESETS: Number of station frequencies that can be stored. RDS: (radio data system) was originally designed for in-car	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. REMOTE CONTROL: Couch-potato friendly. 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. BACK ISSUE: The issue of Hi-Fi Choice in which the original review appeared.

Tuners

Product	Price(£)	Comments	WAVEBANDS	PRESETS	SIGNAL STRENGTH METER	ROTARY TUNING KNOB	FACTSBACK NUMBER	ISSUE NUMBER
			▶▶▶▶▶	▶▶▶▶▶	▶▶▶▶▶	▶▶▶▶▶	▶▶▶▶▶	▶▶▶▶▶
Arcam Alpha 5 Plus	220	Selectivity modest and there is some susceptibility to front end overload, though basic sound quality is pretty good	FM,M,L	24	●	●	1254	142
Arcam Delta 280	399	Fine sound quality marred by mild synthesiser whine; RF performance only average. remote £60 extra	FM	20	●	●	●	120
Audiolab 8000T	750	Unusually combination of fine sound quality and RF performance (inc AM), and superb ergonomics	FM,M,L	39	●	●	1254	142
Denon TU-260L	120	Careful minimalist design promises a surprisingly open and vivacious sound.	FM,M,L	20	●	●	●	93
Harman/Kardon TU950	200	Sound quality is among the best in its price range, only exposing its rough edges at high playback levels	FM,M,L	30	●	●	1810	157
Harman/Kardon TU9400	299	This striking tuner exceeded our expectations. On stereo FM, it's HK's best yet	FM,M	24	●	●	1254	142
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
Magnum Dynalab FT101	825	Although fairly expensive given its minimum set of facilities, its excellent sound provided ample compensation.	FM	24	●	●	●	72
Micromega Tuner	700	Has digital output but even without the Micromega DAC, this provides exceptional sound quality. Looks good too.	FM	39	●	●	1810	157
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
Musical Fidelity E50	300	Sounds involving if coloured and with a subjectively larger than life presentation	FM	20	●	●	1810	157
Naim NAT01	1,645	There may be better sounding tuners in the world, but we have yet to hear one.	FM	24	●	●	1254	142
Onkyo T-430RDS	190	Pleasingly neutral, but rather undynamic and congested	FM/MW	30	●	●	1254	142
Quad FM66	554	Very pretty and compact but technically unadventurous. Sound is smooth, but only makes sense in Quad system context.	FM	19	●	●	1254	142
Sony ST-SA3ES	250	Clean, lean presentation but needs a quality aerial to its best	FM,M,L	30	●	●	1810	157
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
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.	BACK ISSUE: The issue of Hi-Fi Choice in which the original review appeared.
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TURNTABLES

Product	Price(£)	Comments	MANUAL	AUTO	SEMI-AUTO	SPEEDS	SUSPENDED SUBCHASSIS	EXTERNAL PSU	SUPPLIED WITH CARTRIDGE	FAXBACK NUMBER	ISSUE NUMBER
Alphason Sonata	835	Good sound in all areas - bass, clarity and neutrality all in top class (tested with HR100S MCS).	●						33		79
Clearaudio 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 CS503-2	170	Coarse and woolly sound - not inoffensive, but bettered by the CS-505-3.			●				33/45		91
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 Basic	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 Gyrodek	765	Sweet and natural sounding player, well matched to Rega RB300 arm	●						33/45		55
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 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 (with RB300 arm) sounds musical in a balanced and coherent manner, needs decent isolation	●						33/45		48
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 simply 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
Systemdek I/920/Moth	235	The motor is derivative of the Rega Planar 2 with a Moth arm. Uptempo, even bright at times but never lacks enthusiasm.	●						33/45		115
Systemdek 2X2	499	Neutral, flexible and dynamic deck that begs to be used with a good arm and cartridge.	●						33/45		159
Thorens TD166 VI/UK/RB	300	Refined and solid sound with well focussed 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
Thorens TD3001/UK	770	Excellent middle ranking esoterica, with strong all-round abilities rather than excellence in particular areas.	●						33/45		103
Voyd 0.5	3,940	Cross between standard and Reference Voyds. Superb finish, colourful and dynamic.	●						33/45		1328 144
Voyd Reference	6,962	Voyd's flagship, equipped with three substantial motors, is a strong contender for world's best.	●						33/45		91
Well Tempered Record Player	1,800	Intriguing and challenging. Musically it is not ideal, but has a limpid quality and a lack of artificiality that sets standards.	●						33/45		1180 136

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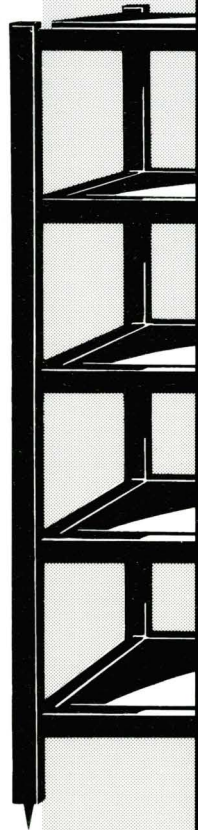
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NEXT MONTH'S ISSUE

LOOK WHAT'S HAPPENING IN APRIL'S HI-FI CHOICE!

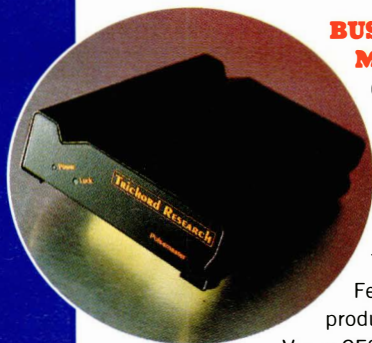
PRE/POWER AMPS ON TEST

We've got 14 mighty pre/power amp combos going head to head in the April issue. Among the top-notch contenders are premium packages from Arcam, Aura, LFD, Michell, Myriad, Naim, Quad, Rega, Talk Electronics and Thorens. Plus there are 'budget' combos from AMC, Magnum, Moth and NAD.

Don't miss this test if you're thinking of upgrading an existing amp or buying above-average from scratch!

BUST THAT JITTER AND MAKE YOUR HI-FI FITTER!

Our award-winning digital expert Paul Miller shares his latest intelligence on jitter, the insidious digital gremlin, and examines 'jitter busters' from Meridian, Monarchy, Theta and Trichord (pictured left). This feature was held over from our February issue to include the latest products showcased at the Las Vegas CES. (Report page 11. £d)



BIG BOX, SMALL PRICE

In the past year an exciting new niche has appeared in the speaker market: budget-priced floorstanders. These big-value boxes offer plenty of bangs for the buck, and it's a buyer's market as competing brands fight tooth and nail to offer the best price. We'll check out models from Cerwin-Vega!, Gale, Jamo (pictured right), Revolver and Tangent Acoustics.



INSTANT SYSTEMS

Mixing and matching equipment from different brands is one route to hi-fi nirvana, but sometimes a one-make system will be the preferred solution, whether for visual appeal, ease of use or philosophical integrity! We'll be listening to outfits from Naim and Quad (77 CD pictured left), so don't miss our write-up.



HIGH-PERFORMANCE HI-FI!

- Eikos is the first CD player from Tom 'Trichord' Evans's new company, Acoustic Precision. It's claimed to be a turbocharged beast of a player, and you'll read the world's first review in our April edition!
- In an age of mass manufacturing, Italian Sonus Faber speakers are still made like musical instruments, with solid wood and craftsman touches. However the new Sonus Faber Concerto model, priced at just under £1,100 per pair, brings hand-made quality within mortal reach! Read our opinion of it next month.

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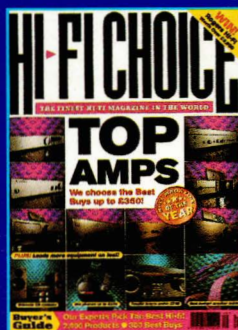
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— SEE PAGE 32 FOR DETAILS!

THE APRIL 1997 EDITION OF HI-FI CHOICE WILL BE ON SALE FRIDAY MARCH 7, 1997 — DON'T MISS IT.

BACK ISSUES

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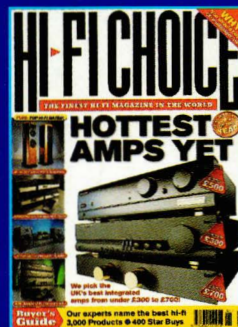
SEP 1996/ISSUE 157

- 8 Amplifiers £120 to £350
- 10 Speaker cables
- 10 Headphones, £50 to £150
- 5 Tuners £200 to £1,400



NOV 1996/ISSUE 159

- 14 CD players, £100 to £350
- 10 Speaker stands, £40 to £550
- 5 Turntables, £500 to £1,400
- SD Acoustics SD-1E speakers



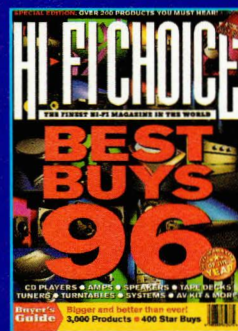
JAN 1997/ISSUE 162

- 14 Amplifiers, £200 to £700
- 5 Multi-CD players, £250 to £320
- 4 CD transport/DAC combos
- Meridian 502/557 pre/pwr amps



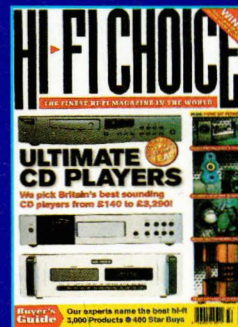
OCT 1996/ISSUE 158

- EISA European Hi-Fi Awards
- 5 Phono cartridges, £150 to £700
- 8 Cassette decks, £160 to £350
- Copland CDA-288 CD player



BEST BUYS '96/ISSUE 161

- Full listing of 1996 Best Buy, Recommended and Award-Winning equipment



FEB 1997/ISSUE 163

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Ultra Vivian Scene

David Vivian gets to grips with new and remarkably inexpensive speakers from Tangent Acoustics – and finds a great deal to recommend!

I have no argument with expensive hi-fi. In fact, I envy the people who can afford to buy it. If I won the lottery — and cost really was no object — then, hell, I'd blow £80k and laugh out loud as I signed the cheque. There's probably only one truism in hi-fi: the very best is very expensive.

But try this test. Pluck a £20 note from your wallet. If you can't afford to light a candle with it, then cost is an object. It's also a crucial factor when determining how intrinsically "good" an item of hi-fi hardware is. I remember interviewing Quad boss Ross Walker many years ago. He claimed any fool could design a great amplifier and sell it for £1,000. The trick was to do it for £300. And naturally, if you have two almost identical-sounding pieces of equipment but one costs £700 less than the other, it's the cheaper one that should get your juices flowing. Not just because more talent and intelligence went into its design but because its "goodness" has a solid social dimension.

Much as we may like to dream of personal sonic gratification, the case for hi-fi isn't furthered by expensive gear bought by the few, but by good-sounding affordable stuff bought by the many. That's where the battle lines are drawn, where midi, mini, micro and assorted hordes of cod hi-fi are repelled, or not.

It's the point at which real hi-fi must define and justify itself — the heart of the matter.

So do I get excited when a new pair of £60 boxes hit the street? Damn right. Especially when their low cost has been achieved not through the cynical marriage of flaky components and shoddy workmanship but by good old-fashioned business nous.

Peter Schmitz had one aim when he revived 12-year-dormant Tangent Acoustics: to make money by re-defining its value at the competitive budget end of the speaker market. He knew the best way to do this was by distributing direct and in bulk only to large outlets. That way, by shortening the production-to-punter path, he could sell cheap without compromising quality.

The £59.95 Monitor Three is the least expensive model in the four-strong Tangent range and, at less than half the price of KEF's best-selling Coda 7, it's almost absurdly affordable. But it has a sturdy 5.3-litre sealed MDF enclosure, decidedly up-market crossover, meaty close-tolerance binding posts, a copolymer ferrofluid-cooled tweeter; just recently it has gained improved crossover components and a stronger bass driver with a 22 per cent larger magnet. It looks and sounds anything but cheap.

bass doesn't go much deeper but it is faster and more fluent. Take the interplay between bass guitar and kick drum. The Five swings and funks in a way that the muscular but slightly hemmed-in Three can't manage.

Timing is more lucid and expressive — the Five lets go when it needs to, feels freer and less mechanical. It also manages to sound more detailed, vivid and exciting but also more natural and controlled. Don't confuse this with artificial "warmth"; it's just less matter-of-fact. For £80, it's little short of a miracle.

This brings us to the floor-standing Monitor Nine (its big brother Eleven, £30 more, is not reviewed here). The Nine's nether regions can be loaded with sand for a tauter bass, which is hardly a bank-breaking exercise, since the standard item weighs in at a modest £149.95. This for a 755mm-tall two-way reflex enclosure with a claimed 45Hz to 20kHz frequency response (+/- 3dB) and undemanding 90dB sensitivity. The Nine sounded up-front and dynamic from the off but easing up the volume injected just the right degree of life and pace. It's delivery is tactile, tightly focused and projected well beyond the boundaries of the cabinets — both in breadth and, more impressively, depth.

On Joe Sample's formidably funky *Ashes To Ashes*, the Nine's confident weight and presentation of fine detail were involving and alluring. It sounds open and airy yet full-blooded and assertive. Even better: it integrates extremely well but combines impressively controlled extension with energy and rhythmic drive.

In short, the Nine goes for it and doesn't trip up. It's a remarkably gutsy and dynamic performer. There's never the feeling that it's holding back or intentionally tailoring music to produce a particular effect. You get it all. Like its smaller brother, this speaker would most definitely say 'boo' to a goose. For the money, it's simply stonking and a potent advert for affordable hi-fi. The industry needs more companies like Tangent. ▲

Tangent Acoustics ☎ (0800) 828620



L-R: Tangent Monitor Three (on SE6 stand and floor), plus the floorstanding Nine and Eleven. Available in rosewood vinyl as shown for an extra £10 (Three, Five) or £20 (Nine, Eleven) more.

Spiked atop Tangent's SE6 24-inch stands (convincing Atacama clones for a cheeky £49.95), the Monitor Threes are lively, explicit baby budgeteers with snappy transients, decent resolution, fair imaging, a modicum of tonal accuracy and surprisingly stout bass for their diminutive size. For sure it's bass that's less obvious and weighty than from a speaker like KEF's Coda 7, but you soon appreciate that it's also less fat and amorphous. That said, bottom-register piano notes retain a pleasing sense of resonance, depth and timbral colour.

With the £79.95 Monitor Five — same box and drivers but with a front-facing reflex port, oxygen-free copper wiring for the crossover and gold-plated binding posts —

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