

# HI-FI CHOICE

THE FINEST HI-FI MAGAZINE IN THE WORLD



SEPTEMBER 1993 £2.95 US\$6.95

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Why we were bowled  
over by Musical  
Fidelity's new amplifiers  
CRS 3

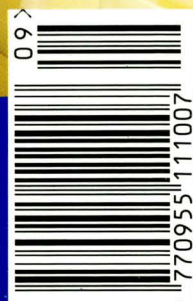
**BIG SCREEN SOUND**  
Capture it with Lucasfilm  
THX home cinema

**REVEALED:**  
one of the best speakers  
we've ever heard  
Giant 22 model test starts on page 56

WHARFEDALE

## BUYER'S GUIDE

- The UK's definitive review based hi-fi listings
- Over 20 pages of products tested and rated
- Our reviewers choose *their* Best Buys







*For us,  
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Hi-Fi News, March 1993.

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## PRODUCTS AND EDITORIAL SUBMISSIONS

*Hi-Fi Choice* welcomes all information on new and upgraded products and services, for possible coverage within the news and reviews pages. However, the publisher respectfully points out that the magazine is not obliged to either review or return unsolicited products. The editor is always pleased to receive ideas for articles, preferably sent first in outline form, with details of the author's background, and - where available - samples of previously published work. He cannot, however, accept responsibility for unsolicited copy and would like to point out that it may take time for a reply to be sent

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Back issues of the magazine are also available, please refer to page 96 for full details.

## THE GET OUT CLAUSE

While every care has been taken in the preparation of this journal, the publishers cannot be held responsible for the accuracy of the information herein, or any consequence arising from it. Readers should note that all judgements have been made in the context of equipment available to *Hi-Fi Choice* at the time of review, and that 'value for money' comments are based on UK prices at the time of review, which are subject to fluctuation and are only applicable to the UK market.

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# Award in your ear . . .

**N**ext month's *Choice* will be something of a first for a British hi-fi magazine. We will be revealing — exclusively — the best hi-fi on sale in Europe as judged by members of the European Imaging and Sound Association, EISA.

Every year, EISA's European Awards Panel draws on the expertise of staff members on specialist audio and video magazines from thirteen European countries to select the best new photo, audio and video products on the market.

This year, *Hi-Fi Choice* is delighted to join their ranks as the only UK hi-fi magazine on the judging panel. Back in June, we met our colleagues on the EISA Audio Panel to deliberate and cogitate before arriving at our pick of the best hi-fi equipment Europe can offer. And what a gathering it proved to be.

With experts from around Europe arguing vigorously for products that they had rated highly, the meeting was a highly charged affair. Not for EISA the cosy familiarity of like-minded reviewers from a single magazine gathering to pick old favourites.

It proved both gruelling and instructive, and served to highlight the different emphasis placed by other European markets on the ergonomics or facilities offered by a particular product. The minimalist approach favoured by so many British specialists, and well-liked by UK hi-fi buyers, does not always find favour in other markets. That's not to say sound quality isn't important. It is. But the German buyer, for example, expects top quality sound with all the bells and whistles.

On balance, though, there was a remarkable degree of consensus over the final selection of products, and the *Choice* team came away happy in the knowledge that a fair number of our Best Buys had been further endorsed by our colleagues on the European Awards Panel. As to what

those products are, you'll just have to wait until the October issue of *Hi-Fi Choice* hits the shelves on Friday, September 10.

One of the factors that led to *Hi-Fi Choice* being chosen to represent the UK on the EISA judging panel is our powerful combination of technical and subjective product testing.

Both have their virtues. Laboratory measurements serve to highlight potential strengths and weaknesses in a piece of kit, but can never take the place of a listener's ears — which is why we use lots of them in our blind listening panel tests. Not content with one person's views, we canvas a number of opinions to assess a product's true abilities.

It's a system that works well, as is highlighted by our giant speaker test this month. One sample of the brand new Mission 751 failed to impress our listening panel, while a second pair was clearly far superior. Thanks to his technical assessment of the speaker, Paul Messenger was able to identify the problem and Mission promptly took steps to ensure that it was put right, to the benefit of all its customers.

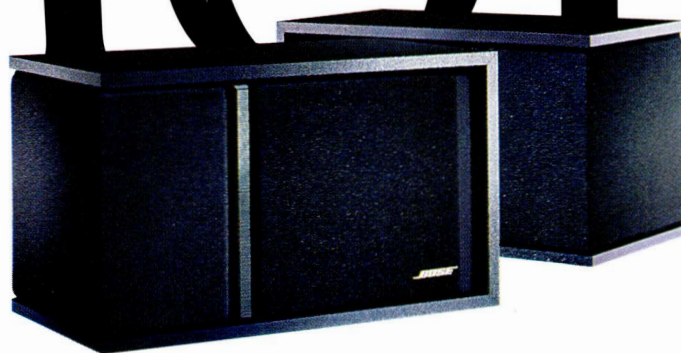
Without Paul's technical measurements, however, our listening panel would have been disappointed with the new Mission 751 without knowing why. Mission would in turn have felt aggrieved, and below par 751s would have continued to find their way into demonstration rooms. You can read the full story on page 76, and Paul's own views on page 128. Just remember, you read it first in *Hi-Fi Choice*.



## Simon Davies previews the European Imaging and Sound Association awards.



# GET MORE



*The 301® Series III speaker system*

## With Bose® Speakers.



Fig 1. Live Performance

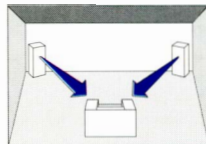


Fig 2. Conventional Speakers

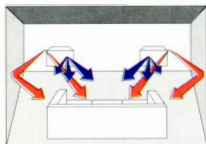


Fig 3. Bose® Direct/Reflecting® Speakers

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of their sound directly into the room (figure 2), giving you full stereo only in a small area between the speakers. Bose® Direct/Reflecting® speakers recreate a natural, lifelike balance of reflected and direct sound that conventional speakers cannot match (figure 3). You hear full stereo throughout your listening area.

When You Listen To Stereo



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\* Offer ends 31st August 1993



# HI-FI CHOICE



## The Front End

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The latest hi-fi news from around the world, plus a chance to win a VIP day at the races with Goodmans.
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The good, the bad and the boring. If you don't want to read the reviews, this is the quick way to find a winner.

### Thanks to the listening panel

As ever, our grateful thanks for all the time and hard work put in by the loudspeaker listening panel. This month the ears were provided by Alan Sircom (*Hi-Fi Choice*), Ken Weller (Tannoy), David Inman (van den Hul UK), Russell Kauffman (Monitor Audio), Andy Whittle (Rogers), Geoff Hill (Goodmans), Brian Smith (Presence Audio) and Alan O'Rourke (Ruark).

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Win a complete NAD system or one of three 304 amplifiers in our fabulous £2,500 competition.



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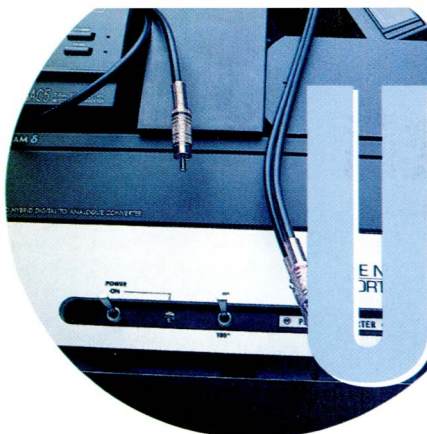
Another *Choice* exclusive! Our review of the Philips DCC/30 portable DCC player starts in *Sessions* on page 19.

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# Update

CHOICE NEWS FROM AROUND THE WORLD

## Tiny Goodmans enters the AV arena

Goodmans has developed a brand new speaker, the *Arena*, that measures just eight inches tall and is intended for use in audio and AV applications which demand high quality sound but compact dimensions.

The design uses Goodmans' Inductive Coupling Technology, first seen in car audio and stereo TV applications. ITC has enabled the company to build a full frequency miniature with high power handling and low distortion characteristics. The *Arena* is a crossoverless design that features a midrange driver with a central tweeter for improved directivity.

The cabinet is injection moulded to cut down on weight, and the *Arena* boasts a paired-down price as well — £89.95 a pair when the speaker goes on sale in September.

Two larger models have also been launched, the £160



Well, hellooo . . . Goodmans hopes to prove size isn't everything with the *Arena* speaker, which promises eight high quality inches.

*Mezzo* and £200 *Magnum*. Both models feature polypropylene cone bass-mid units (160mm in the *Mezzo*, 200mm in the *Magnum*) and ferro fluid damped and cooled 19mm metal dome tweeters. Rear

firing bass reflex ports are used to enhance low frequency output, and the *Magnum's* bass/mid unit has been designed without a crossover to further improve bass drive. ☎ (0705) 492 777

## Sanyo in-car positions itself on the grid

Sanyo has been busy on the in-car front with a tiny multi-disc CD changer that is compact enough to fit in a glove compartment.

The £310 *FXD-C100* six-disc changer boasts a 1-bit DAC and eight times oversampling rate along with an anti-shock mechanism. Another feature is Sanyo's FM modulator/CD commander, the *CDI-100*. This acts as a wired remote control unit for the changer.

Sanyo's top radio/cassette units, the £330 *FXR-55RD* and the £290 *FXR-42RD*, feature RDS EON.

Sanyo also hopes to have a digital sound processor, the *DSP01*, available soon. ☎ (0923) 246 363

## Win a VIP day at the races with Goodmans!



Goodmans will be unveiling its new *Arena* speaker for the first time at the Donnington Park race circuit on Sunday, September 12, and you and a friend could be joining them for an action-packed day out!

The company is sponsoring the Celebrity Car in this year's Ford Fiesta Credit Challenge race series, which shares the same billing as the fast and furious British Touring Car Championship. The penultimate round of the season has been chosen for the launch of the *Arena*.

To win a VIP day at Donnington for two, including circuit admission, paddock transfer, grandstand seats and a buffet lunch, simply tell us how tall the *Arena* speaker is. Write your answer, along with your name, address and a daytime telephone number, on the back of a postcard or sealed-down envelope and send it to: Goodmans Competition (HFC2/993), Computer Mailing Services, PO Box 249, London WC2H 0HS. Normal competition rules apply, and entries must be received by first post, Monday, September 6.

## 3DO hits the US shelves

The Panasonic *FZ-1 REAL 3DO* Interactive multiplayer, seen at the Chicago show and discussed in Barry Fox's column last month, will go on sale in the USA in October.

As yet it is not known when this games, photo CD and CD player (the only competition for Philips' *CD-i*) will be on sale in Britain, or if it will be exactly the same as the American version. The price of the *FZ-1 REAL 3DO* is thought to be around \$700, although this has yet to be finalised.

## Crusader evolution

To take advantage of tempting new components, Ruark has upgraded its three way *Crusader* loudspeaker to *MkII* form.

The £1,495 *Crusader MkII* has two new drivers. The tweeter has a 28mm hand-treated fabric dome and an aluminium voice coil. The bass driver has been modified for increased speed, dynamics and greater control. Such changes necessitated the updating of the crossover for improved integration, which now uses air cored inductors throughout. The *Crusader MkII* offers a 6ohm load with 88dB sensitivity. ☎ (0268) 728 890





# Nakamichi adds on amps and tuners

Nakamichi has added to its existing range of products with two new amplifiers and a tuner. Both the £650 *IA-1* and the £550 *IA-2* integrated amplifiers have full remote control which will also operate all Nakamichi CD players, tuners and cassette decks that are connected to the amp.

The amplifiers can be fitted with optional series/parallel adaptors and decoding interfaces that allow control over virtually all Nakamichi products. This will make them particularly suitable for multi-room installations.

The *IA-1* is capable of 80W per channel. It also has a separate CD direct input that sends the signal directly to the volume control.

Offering slightly less power — 50W per channel — the *IA-2* is similar in other respects to the *IA-1*.

Both amplifiers feature Harmonic Time Alignment circuitry which attempts to get to grips with the negative effect that feedback has on timing. Nakamichi found that when the audio signal and its portion of harmonic distortion are correctly time aligned, the former masks the latter. The company claims to have

achieved this by using a low and constant amount of negative feedback.

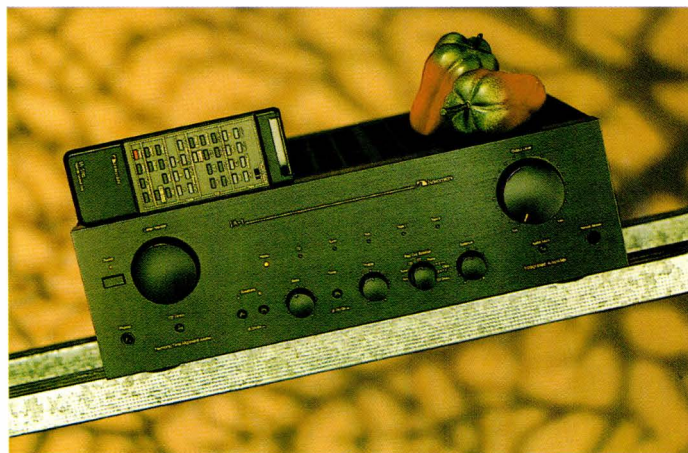
The *ST-2* FM-only tuner aims to provide high quality radio reception at a time of increasing congestion on the airwaves. Nakamichi claims that the tuner is easy to use and especially good at picking up signals from distant transmissions. Tuning is either automatic via seek up, seek down buttons, or manual with a rotary control. It can remember and

digitally display up to 30 pre-set stations.

In its endeavours to minimise background interference noise as much as possible, Nakamichi has designed the *ST-2*'s digital circuitry so that it is active only during tuning and not during normal listening.

The *ST-2* also incorporates an isolation buffer in the output stage to prevent high-frequency noise in the audio signal.

☎ (0903) 750 750



Nakamichi's *IA-1* integrated amplifier is peppered with features.

## Technics' long life personal CD player

Technics' *SL-XP150* personal CD player boasts long battery life and sturdy construction.

The £120 model weighs 265gm without batteries and features twin DACs, 24-track random access programming and a heat resistant polycarbonate resin construction. It comes with stereo in-ear headphones, hi-fi connection cord and a mains adaptor/battery recharger.

Technics has also launched the £300 *RS-TR777* and £360 *RS-TR979* twin cassette decks. Both feature the company's auto tape calibration system and double speed rewind and fast forward.

The advanced auto tape calibration facility ensures the best possible alignment for the cassette being used. It does this by means of a microcomputer which uses 64-step high resolution calibration to give accurate Dolby performance and optimal frequency response.

The double speed rewind feature takes 45 seconds to wind from one end



of a C60 tape to the other. When nearing the end of the tape, a microprocessor re-adjusts to normal speed to prevent the ends of the tape from stretching.

The *RS-TR777* features auto lift-up eject which pushes the cassette towards the hand as the drawer is opened.

Tape editing is possible on one deck with the *RS-TR777*, whereas the *979* can record and quick auto reverse on both decks. Both have end to end repeat, 24 hour series playback. ☎ (0344) 853 943

Newcomers from Technics include the *SL-XP150* CD personal (below) and the *RS-TR777* twin cassette deck (above).



## In Brief

Nelson equipment supports are to be distributed by Tripos Ltd. Made by Nelson Metalcraft, it comes as no real surprise that the range includes the *Half Nelson* wall mount, and the *Full Nelson*. The stems of the stands can be cut to any length for just one shelf, of either glass or MDF, or long enough to accommodate a complete system. ☎ (0224) 322 520

*Harmony-30* is a speaker designed to withstand the elements while you enjoy your B-B-Q, laze by the pool or dig the garden. The £60 speaker has a 30W power rating and is encased in a plastic dome that can withstand the hazards of ultra violet rays or rain. This is on top of a pole that can be extended to give the speaker a height of 925mm, or retracted to 600mm. The *Harmony-30* is available in green or white and comes with nine metres of PVC insulated cable. ☎ (0825) 765 478

Richer Sounds has asked us to point out that the Ariston *Elite* turntable, reviewed in last month's Sessions, is available through Richer stores nationwide as well as via the Hi-Fi Direct mail order scheme. ☎ (071) 827 9827

Goldring Products Ltd is keeping the vinyl flame alive by injecting some interest in the shape of a low cost moving magnet cartridge, the £25 *Elektra*. The cartridge has fully enclosed mounting lugs. A replacement stylus will cost £16. ☎ (0284) 701 101



Isis Records in collaboration with Quad has released *Isis CD004*, a recording of Henry Purcell Suites played by Martin Souter on a Tisseran harpsichord from 1700. The CD features a rare and complete recording of Purcell's *Choice Collection*. ☎ (0865) 726 553

Patil has just introduced the Allsop *DCC Cleaning System*, one of the first DCC cleaning products to hit the market — and this when the players themselves are still wet behind the ears. It is the only cleaning product approved for use by Philips in all DCC machines. It uses absorbent felts and soft brushes with an IPA based cleaning solution to clean the moving parts. It is auto reverse and contains two sets of replacement pads. ☎ (0494) 441 736



# P.E.M. DD Converter? No self-respecting CD Player should be without one!



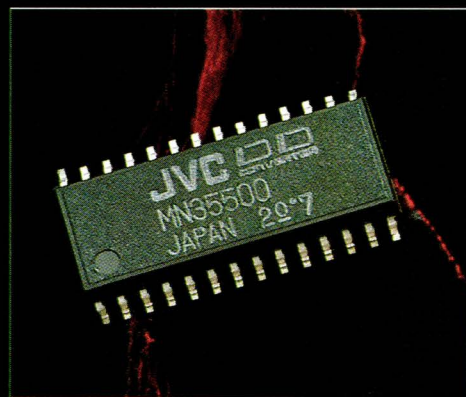
XL-Z464 CD Player

Pulse-Edge-Modulation-Differential-Linearity-Errorless-D/A. Quite a mouthful, you must agree, but as one-bit digital technology goes, it's the proverbial bees knees.

One-bit D/A (Digital to Analogue) converters eliminate the faults that conventional "multi-bit" players suffer from. For example, distortion, glitches and poor linearity at low levels. However, some noise still remains, especially when musical nuances are at their most subtle.

## *Get the Very Best from your CD's*

JVC's new XL-Z464 CD Player has no such vices, equipped with the very latest in D/A converter know-how, the advanced one-bit P.E.M. DD with V.A.N.S. (a 4th order noise shaper), can deliver up to four times normal resolution, giving better expression of performance across the sound spectrum with no interference at low, subtle music levels.



Every bit a winner.

Obviously... **JVC**



## Arcam reveals all new Alpha 5 range

The **Alpha 5 Series** is the latest budget range from Arcam. It consists of three units; the £230 **Alpha 5 amplifier**, £220 **Alpha 5 FM tuner**, and £450 **Alpha 5 CD player**. Also new is the £330 **Alpha 6 amplifier**. The slimline designs are all modelled along similar lines to the Arcam **Delta 290** series, so components can be mixed and matched between the two ranges.

The **Alpha 5** integrated amplifier features high speed direct coupled MOSFET output stages and has a power rating of 40W rms into 8ohms. It has six inputs; a moving magnet phono stage, four line and one tape. Outputs include two for tape decks, two sets for speakers and a socket for headphones. It has tone controls, but these can be bypassed.

The **Alpha 6** boasts the same circuitry and look as the **Alpha 5** but warrants the extra £100 with its higher power rating, 50W into 8ohms per channel, a 25 per cent larger

the phono input to give an extra line input.

The **Alpha 5 CD player** incorporates Philips' TDA1541A 16-bit DAC with improved layout and compo-



The **Alpha 5 CD player** is part of a new budget range from Arcam.

toroidal power transformer and a motorised volume pot. This allows full remote control with handsets that are supplied with most Arcam CD players or the Arcam System Remote Control. A rear panel switch can be used to bypass

changes over the **Alpha Plus** that it replaces. The fluorescent display can be switched off, and the DAC circuitry remains permanently powered up so that no warm up time is necessary. ☎ (0223) 440 964

## Voyeur — first Video CD action film

The latest departure in home-leisure electronics has evolved from domestic karaoke systems. CD systems that play specially recorded material for karaoke have been taken a stage further so that they (or slightly modified versions) can play feature films.

The 'Video CD' format will follow an international standard that, it is hoped, will be used on modified CD players, computers with CD-ROM drives and MPEG decoders, and CD-i machines with a Full Motion Video extension. The disc will be compatible with all broadcasting standards worldwide, and offers 74 minutes on a standard five inch disc. As yet the format is still in the very early stages, but with the rate of development across the AV industry it won't be long before modifications for CD players are available to turn them into picture as well as sound machines. In the meantime, CD-i girds its loins for the looming threat of 3DO.

*Voyeur* is the first interactive film made specifically for CD-i. It is a thriller along similar lines to Hitchcock's *Rear Window*, in which the viewer can simply watch the action play out, as with a conventional feature film, or choose to become a player his/herself. The plot is based around a presidential mansion, and the viewer can click on windows to watch different scenes that occur in the mansion in real

time, and the decisions taken by the viewer determine the outcome of this interactive thriller. With an unknown assassin to contend with, even the voyeur can be bumped off if the wrong decisions are made.

The film uses real actors. The stars are Robert Culp and Grace Zabriskie, with the action shot against a special effects blue screen then combined with 3D computer graphics. ☎ (081) 689 2166



Well, hellooo (2) . . . *Voyeur* lets viewers interact with the action.

## In Brief

**Cable Talk's** latest design is the **Concert 2**. The speaker cable is a twisted pair of 6N (99.9999 per cent pure copper) conductors in a 12.5mm diameter dark green jacket. It costs £5.95 per metre. ☎ (0483) 750 667

**Celestion** is sponsoring the Electronic Image section of the British Film Festival, running 4th-21st November at the National Film Theatre. This section of the show is a platform for the latest work in video and electronic technology. A £500 home theatre system from Celestion, with speakers and Dolby Pro-Logic surround sound processor, will be in the festival's viewing office. (NFT ☎ (071) 928 3535; Celestion ☎ (0473) 723 131).

**Orelle** now has a speaker to complement its range of electronics. The £800 **Orator** is a reflex loaded design with a sloping front baffle. It's a stand mount, free space model with 88.5dB sensitivity and is available in Black Ash or Walnut veneer.



Orelle has also been busy on the CD player front. The **CD-160** has had a make-over to bring it into line with contemporary fashion trends. The re-styled **160 MkII** retails for £800.

Another new CD player design, the £1,000 **CD-260**, has been launched into the high-end fray. ☎ (081) 810 9388

**Kelvin Audio Cables'** new **K120** loudspeaker cable is designed and made in the UK. It consists of 56 strands of 0.3mm diameter copper covered in Ti2 PVC insulation, available in black or white. The cable measures 8.75mm wide by 5.3mm thick and costs £2.40 per metre. ☎ (03552) 26522

**Viravox's** horn-loaded **System 191** places the listener inside the mouth of the speaker, as the listening room's dimensions effectively form the final expansion of the horn.

The **191** claims a bandwidth of 30Hz to 18kHz, is finished in a walnut veneer, weighs more than 100kg and stands over a metre tall. It also has a price-tag to match its hefty measurements — £5,260. ☎ (081) 952 5566





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The Award Winners



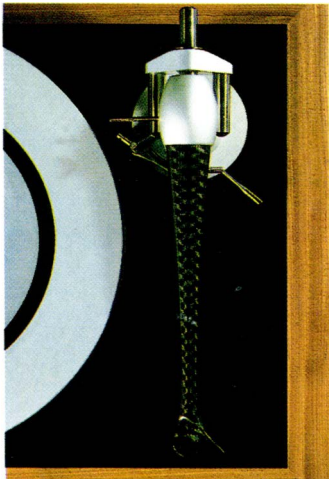


## JVC goes for MD and DCC

JVC Japan has taken the digital recording plunge and is to produce both DCC and MD players. It's in the process of introducing a portable DCC player, palm top MiniDisc recorder and micro component systems compatible with both formats.

The XM-D1 is a miniature MD recorder with a pop up display for title information (in katakana or roman letters, Tokyo-side), bitstream A/D and D/A conversion and remote control. The XM-D1 will sell for approximately £600 in Japan.

The ZD-1 is a portable, non recording DCC player offering two and a half hours of playback on one charge and the ability to play analogue cassettes as well. It will be selling for under £400 in Japan to begin with, but it would be surprising not to see both these machines over here in Autumn. ☎ (081) 450 3282



## Wilson Benesch's high technology tonearm

**Turntable specialist Wilson Benesch has finished the £975 A.C.T. One composite carbon fibre tonearm.**

Both the arm and turntable subchassis use carbon fibre as a main material because of its better stiffness to mass, and superior damping characteristics compared to metals.

The whole arm, from bearing interface to headshell, is formed from a single piece of this material. The bearing is also unusual. Based on the principle of Kinematic location, it is similar to a uni-pivot except that it uses balls instead of a point, yet has the same multi-plane freedom.

☎ (0742) 830 088

## Sony's contribution to improving road safety

Road safety conscious Sony claims its new in-car range is easy to operate and features surround sound comparable to that obtained at home.

The top of the range £550 XR-U800RDS features a digital signal processor to compensate for the drawbacks of the listening space. The ergonomics of the head unit take into account the difficulties of operation on the move with two separate displays and control buttons that have a rubberised feel.

The tuner features RDS (Radio Data System) that displays station name, time, programme type and travel information, and EON (Enhanced Other Networks) functions. A joystick remote control commands the key operations. A more affordable alternative in the series is the £410 XR-U500RDS, which is

similar to the 800 but does not have DSP.

An optional £320 XDP-U50D digital sound



Part of Sony's new safety conscious in-car range: the XR-U800RDS and joystick remote.

processor allows the driver to choose between ten preset surround sound modes and up to five adjustable listening position presets to provide the most balanced sound for any passenger.

Ten-disc autochangers are also included in the range. The £600 top-of-the-range CDX-U606 features ESP (Electronic Shock Protection) which ensures uninterrupted music even on bumpy rides. ☎ (0784) 467 000

## Turntables from Akai

Akai has introduced two new turntables for incorporation into its mini system range.

The company believes it is important for people to be able to play their vinyl record collections, rather than forcing them to consign LPs to the attic and fork out for replacement CDs.

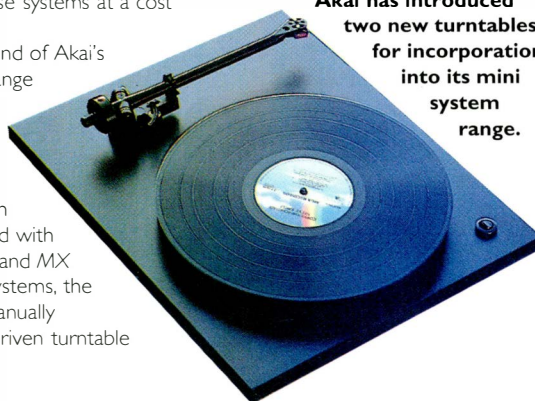
The AP MX570 turntable is available on the MX92T, MX570T and MX670T mini systems as an option instead of a CD player, or as an extra on these systems at a cost of £100.

At the top end of Akai's record player range is the £180 AP A950 turntable. Designed in conjunction with Rega, to be used with Akai's MX 750 and MX 950 CD mini systems, the AP A950 is a manually operated belt-driven turntable

with both 45 and 33 rpm speeds. It features Rega's popular RB-250 one piece tonearm with anti-skating bias control. The cartridge is based on Audio Technica's AT95E.

A mini stand is available, the RV UM5, produced by Alphason Specialist Audio for £100, so that the deck can be incorporated into the appropriate mini system. ☎ (081) 897 6388

**Akai has introduced two new turntables for incorporation into its mini system range.**



## Diary dates

● The Internationale Funkausstellung consumer electronics exhibition runs from 17th August to 5th September 1993 in Berlin. ☎ (071) 486 1951

● The annual Hi-Fi Show at the Heathrow Penta (Ramada) Hotel will take place from 9th-12th September 1993. One of the main attractions could prove to be a shoot out between DCC and MD. Hourly demonstrations of the two formats will take place on Saturday and Sunday. ☎ (081) 781 6046

● The excitement mounts as Live '93 draws ever closer. The largest consumer electronics show ever seen in this country is to be held from 16th-20th September at the Grand Hall, Olympia.

News of who is going to be represented at the show is now leaking out, along with tantalizing snippets of products to be revealed.

All the big names in hi-fi will be there; Bose and Kenwood are both looking towards the outdoors with an environmental speaker from the former and an environmental sound system from Ken-



**One to search out at Live '93. Arcam's slimline Series 5 tuner, CD player and amplifier.**

wood. Others turn their attention indoors with many companies showing, for the first time, their latest home entertainment systems. The integration of hi-fi and AV moves further along the way with Celestion, Rotel and Tannoy among the many who will be demonstrating the power of sound and vision. In-car entertainment provides the opportunity for interesting displays, with companies like Goodmans loudspeakers featuring the new Ford Mondeo.

Telecommunications will form a large part of the show and infiltrate the hi-fi area in the shape of Linn's Keltik-Activ, which cuts the sound from the hi-fi every time the phone rings. Of course, away from innovations and gimmicks, solid audiophile equipment will be the bedrock of the hi-fi section, with a new amplifier promised by Denon, and new ranges from Arcam and Roksan on display. ☎ (071) 782 6000







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# Don't miss next month's Special Awards Issue of Hi-Fi Choice



## GETTING IT TAPED

Does the advent of Digital Compact Cassette spell the end of the road for conventional tape decks? Alvin Gold and Paul Miller pitch the new Philips DCC-600 against nine top analogue tape decks in the ultimate test of recording quality.

## BUDGET AMP SHOWDOWN

One of the most competitive areas of the amplifier market is at the crucial £200 mark. In the October issue, Paul Messenger gets to grips with the latest contenders including Arcam's *Alpha 5*, the Marantz *PM-44SE*, the Technics *SU-A600* and Denon's *PMA-350II*.

## CELESTION/ADCOM PRIZES WORTH OVER £3000!

Your chance to win a complete Adcom/Celestion hi-fi system, or one of five pairs of Celestion speakers, in a great competition you can enter for the price of a stamp and a postcard!

## EXCLUSIVE! The Hi-Fi Choice/EISA Awards 1993

They're here! The Awards you've all been waiting for! Next month, *Hi-Fi Choice* will be revealing the best hi-fi products in Europe, as judged by the European Imaging and



Sound Association or EISA. Each year, EISA draws on

the expertise of members from 13 European countries to pick the very best audio and video products on the market. *Hi-Fi Choice* has been chosen to represent Britain on the EISA jury, and in our October issue we will be revealing — in an exclusive feature — the best products in ten different categories, including best CD player, best amplifier, best speaker, best system and most innovative new technology. Don't miss it!

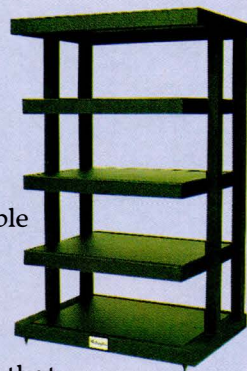
## 'SUPER' DAT GOES LIVE

We've been putting the Pioneer D-07 'super' DAT player to the acid test and recording some live sessions in order to discover just how good this latest technical innovation from the Land of the Rising Sun really is.



## FREE! EQUIPMENT STAND SUPPLEMENT

Are you giving your hi-fi system the support it deserves? In our FREE 16 page October supplement, we will be picking the best turntable tables, equipment racks and isolation platforms that money can buy in a mammoth *Hi-Fi Choice* test.



It's all in the October issue of *Hi-Fi Choice*, on sale Friday, September 10, 1993.

(All contents subject to change due to circumstances beyond our control)

# HI-FI CHOICE



# YOUR REFERENCE POINTS FOR THE BEST HI-FI

Reference Point is a sound partnership between Pioneer and a nationwide network of specialist hi-fi dealers, selected because they're the most reputable independent experts. Visit any Pioneer Reference Point dealer for the best advice and service.

**AVON**

Paul Roberts, Bristol 0272 429370  
Paul Roberts, Bristol 0272 250760  
Paul Roberts, Weston-Super-Mare 0934 414423  
Radford Hi-Fi, Bristol 0272 428248

**BEDFORDSHIRE**

B & B Hi-Fi, Luton 0582 459915  
Richards Audio Visual, Bedford 0234 365165

**BERKSHIRE**

B & B Hi-Fi, Bracknell 0344 424556  
B & B Hi-Fi, Maidenhead 0628 73420  
B & B Hi-Fi, Newbury 0635 32474  
B & B Hi-Fi, Reading 0734 583730  
Frasers Hi-Fi & Video, Slough 0753 520244  
Frasers Hi-Fi & Video, Wokingham 0734 794998

**BUCKINGHAMSHIRE**

B & B Hi-Fi, High Wycombe 0494 535910

**CAMBRIDGESHIRE**

Cambridge Hi-Fi, Cambridge 0223 67773  
The Hi-Fi Company, Peterborough 0733 341755  
University Audio, Cambridge 0223 354237

**CHESHIRE**

Hamlets Audio Visual, Cheadle { 061-428 5278  
061-428 6367  
Hamlets Audio Visual, Stockport 061-476 3500  
Tomorrow Studios, Chester 0244 320414  
Tomorrow Studios, Warrington 0925 36215

**CORNWALL**

ETS Electrics, Helston 0326 573285  
ETS Electrics, Penzance 0736 64274  
H.B.H. Woolacotts, Bude 0288 352269  
Truro Hi-Fi, Truro 0872 79809

**CUMBRIA**

Kenneth Gardner, Kendal 0539 721953

**DERBYSHIRE**

Roy Smith Electrical, Chesterfield 0246 234953  
Stuart Westmoreland, Derby 0332 367546

**DEVON**

Bernard Smith, Barnstaple 0271 43503  
Radford Hi-Fi, Exeter 0392 218895  
Radford Hi-Fi, Plymouth 0752 226011  
Upton Electronics, Paignton 0803 551320

**DORSET**

Movement Audio, Bournemouth 0202 529988  
Movement Audio, Poole { 0202 730865  
0202 721983

**ESSEX**

Chew & Osborne, Epping 0992 574242  
Chew & Osborne, Saffron Walden 0799 523728  
Classic Sound & Vision, Southend-on-Sea { 0702 461634  
0702 600130  
Hi-Spek Electronics, Brentwood 0277 226303  
Peter Foulkes, Colchester 0206 767428  
Peter Foulkes, Maldon 0621 853148  
Twenty 20 Audio Visual, West Thurrock 0708 891818  
Waters & Stanton, Hockley { 0702 206835  
0702 204965  
Waters & Stanton, Hornchurch 0708 444765  
Woolmans, Basildon 0268 285922  
Woolmans, Ilford 081-514 7231

**GLOUCESTERSHIRE**

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Robbs, Gloucester 0452 419777

**GREATER MANCHESTER**

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Clearlone Hi-Fi, Manchester 061-835 1156  
Hamlets Audio Visual, Ashton-u-Lyne 061-343 5127  
Tomorrow Studios, Sale 061-962 4651

**HAMPSHIRE**

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Cristavision, Fareham 0329 288660  
Now That's Hi-Fi, Portsmouth 0705 811230  
Sinclair Youngs, Basingstoke { 0256 28623  
0256 21307  
Southampton Hi-Fi Centre, Southampton 0703 228434

**HERTFORDSHIRE**

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David Orton Ltd, Hitchin 0462 452248  
Herts Hi-Fi, Hoddesdon 0992 441172  
RadioLux, Watford 0923 229734

**HUMBERSIDE**

Superfi, Hull 0482 24051

**ISLE OF WIGHT**

Russells, Newport 0983 523864

**KENT**

Howes of Southborough, Tunbridge Wells { 0892 528682  
0892 537288  
Kimberley Hi-Fi, Bexleyheath 081-304 3272  
V J Hi-Fi, Folkestone 0303 568660  
V J Hi-Fi, Margate 0843 226977  
Whitstable Tele-Radio, Whitstable 0227 272028

**LANCASHIRE**

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Kenneth Gardner, Lancaster 0524 64328  
Norman Audio, Blackpool 0253 295661  
Norman Audio, Preston { 0772 53057  
0772 555769  
P & A Audio Video, Ormskirk 0695 573456  
Romers Hi-Fi, Blackburn 0254 887799  
Tomorrow Studios, Wigan 0942 37977

**LEICESTERSHIRE**

Mays Hi-Fi, Leicester 0533 625625

**LINCOLNSHIRE**

Superfi, Lincoln 0522 520265

**LONDON**

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Brians Hi-Fi, W1 071-631 1109  
Covent Garden Records, WC2 071-379 7427  
Hi Spek Electronics, N3 081-349 1166  
Hi-Way Hi-Fi, W2 071-402 2441  
Kama Electronics, W1 081-323 2747  
Light & Sound, E6 081-472 1373  
Myers Audio, E17 081-520 7277  
Spatial Audio, W1 071-637 8702  
Stereo Regent Street, W1 071-287 2458  
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**MERSEYSIDE**

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Musical Images, Hounslow 081-569 5802  
T.A.S., Eastcote 081-866 4911  
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**NORFOLK**

Adcock & Sons, Watton 0953 881248  
Martins Hi-Fi, King's Lynn 0553 761683  
Martins Hi-Fi, Norwich 0603 627010

**NORTHAMPTONSHIRE**

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**NOTTINGHAMSHIRE**

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F.L. Smith Electrical, Worksop 0909 479770  
Forum Hi-Fi, Nottingham 0602 622150  
Superfi, Nottingham 0602 412137

**OXFORDSHIRE**

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Winney Audio Centre, Winney 0993 702414

**SHROPSHIRE**

Shropshire Hi-Fi, Shrewsbury { 0743 232065  
0743 232317  
W. Owen, Telford 0952 613818

**SOMERSET**

Paul Roberts, Taunton 0823 270000

**STAFFORDSHIRE**

Purkiss Hi-Fi, Hanley 0782 265010  
Universal Electronics, Cannock 0543 502118

**SUFFOLK**

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System Sound, Sudbury 0787 72348

**SURREY**

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Cosmic, Addlestone 0932 854522  
Tru-Fi, Leatherhead 0372 378780  
Tru-Fi, Redhill { 0737 766128  
0737 767404  
Weybridge Audio, Weybridge 0932 851121

**SUSSEX EAST**

Smythe & Barrie, Eastbourne 0323 29192  
Sunderland Electronics, Brighton 0273 774113

**SUSSEX WEST**

Cristavision, Chichester 0243 775444  
Sunderland Electronics, Worthing 0903 201187

**TYNE & WEAR**

Bill Hutchinson, Newcastle-upon-Tyne 091-230 3600

**WARWICKSHIRE**

Carvels of Rugby, Rugby 0788 541341  
The Hi-Fi Company, Leamington Spa 0926 888644

**WEST MIDLANDS**

Bridge Hi-Fi, Walsall 0922 640456  
Coventry Hi-Fi, Coventry 0203 440529  
Naam Hi-Fi Vision, Birmingham 021-633 4944  
Naam Hi-Fi Vision, Coventry 0203 632086  
Superfi, Birmingham 021-631 2675  
Universal Electronics, Wolverhampton 0902 23741  
W.M.E.C., Rowley Regis 021-559 1412

**WILTSHIRE**

In-Phase Audio, Swindon { 0793 520948  
0793 526393  
P R Sounds, Melksham 0225 708045  
P R Sounds, Trowbridge 0225 777799

**WORCESTERSHIRE**

David Waring Cameras & Hi-Fi, Worcester 0905 27551

**YORKSHIRE NORTH**

Maxwells, Northallerton 0609 773535  
Scarborough Hi-Fi Centre, Scarborough 0723 374547  
Vickers Hi-Fi, York 0904 629659

**YORKSHIRE SOUTH**

Superfi, Sheffield 0742 723768

**YORKSHIRE WEST**

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Amrik Electronics, Leeds 0532 752285  
Bill Hutchinson, Leeds 0532 427777  
Eric Wiley, Castleford { 0977 553066  
0977 566774  
Superfi, Leeds 0532 448075

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LRG Sound & Vision, Belfast { 0232 732452  
0232 451381

**CO. ANTRIM**

LRG Sound & Vision, Larne 0574 272757  
Nicholl Bros, Ballymena 0266 49616

**SCOTLAND****GRAMPIAN**

Holburn Hi-Fi, Aberdeen { 0224 585713  
0224 572729

**MID LOTHIAN**

Bill Hutchinson, Edinburgh 031-667 2877

**STRATHCLYDE**

Bill Hutchinson, Glasgow 041-248 2857

**TAYSIDE**

Robert Ritchie, Montrose 0674 73765

**WALES****CLWYD**

Lloyds TV, Video & Hi-Fi, Wrexham 0978 364168  
Owens, Colwyn Bay 0492 530982

**GLAMORGAN**

Quinns Audio Visual Systems, Swansea 0792 773644

**GWENT**

Hi-Fi Western, Newport 0633 262790

**GWYNEDD**

Owens, Bangor 0248 362951



# Choice Sessions

The latest products, the best recordings and our own points of view on the most interesting developments to hit the hi-fi scene. Concise reports by the Choice team.

## CAR HI-FI

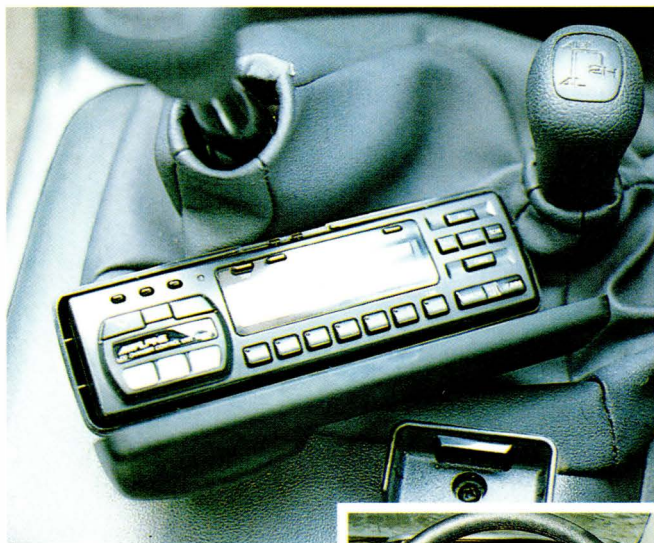
### Alpine Frontera

A couple of months ago, Alpine persuaded me to spend a weekend with its impressively endowed Vauxhall Fronterasaurus.

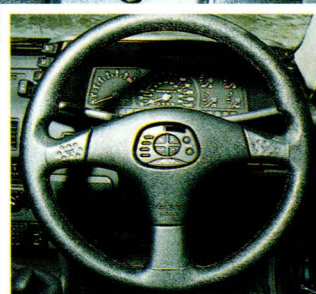
Apart from being an ostentatious example of street car desire, this automobile contains more Alpine audio equipment than you can shake a stick at — over six grand's worth of DSP-oriented kit. The complement includes three class A power amps, a pair of digital crossovers and two pairs of reasonably discreet loudspeakers.

For all its excess, the system doesn't look too much for the car's limited interior. The cartridge-based disc changer is pretty accessible behind the driver's seat and the removable panel on the head unit discourages villains. But you don't get a stack of electronics, a subwoofer and much else behind the back seat of a *Frontera Sport*, so the gear in the boot takes some disguising. The Momo steering wheel with its built-in controls is also a bit of a giveaway.

Listening to a few in-car favourites in this vehicle was very agreeable. It may not have been the most natural sounding set-up but it was refined and clean. The disc transport seemed to be totally jog-proof on rough London streets, and the system



Alpine's detachable control panel nestles between the Frontera's twin sticks. Right: the Momo remote wheel.



UNIVERSAL REMOTE

### One For All 6

The *One For All 6*, a master remote able to take the place of up to six infra-red hi-fi or AV remote control handsets, seems like a great idea. Available at most high street electrical stores for £50, it certainly cuts down on the number of black boxes cluttering up the coffee table. However, unless you live in a household with more than one video, as well as satellite or cable TV, the *One For All 6* could seem like

overkill. For homes with a lesser array of programme sources, *One For All* offers smaller capacity versions.

The *One For All 6* can be used to control a TV, video recorder, satellite receiver, CD player, LaserDisc player, cable converter box, amplifier, tuner, cassette deck, DAT player, turntable — in fact any six products operated by an infra-red remote control.

As the *One For All* is already equipped with the operating codes for the most popular audio, TV and AV products, there's no need to use the original remote control during set up or, indeed, ever again. This is a bonus if you want the *One For All 6* to replace a lost or broken handset.

Set up is very easy. You look up the three-digit code for your source in the manual, press the appropriate 'type' button at the top of the remote, followed by the ABC function buttons and the numeric code. Repeat the procedure for up to five other items, and you're away.

An indicator light at the top of the remote flashes green when a command is sent, or as confirmation of a new set up. It also flashes red during set up and source selection, and yellow when flummoxed. The indicator is useful but it seems unnecessary for it to be tri-colour.

Events never go according to plan, of course. The first *One For All 6* I looked at refused to work and version two had great difficulty in coming up with the correct codes for the office CD player, a Dual CD 1080 RC.

There are contingency plans in such an event, and I worked my way through the lot before having to call the *One For All* helpline. This service — based in Ohio in the States — is

**The all for one One For All. Solidarity to the handset, power to the index finger.**



could be used at high levels without discomfort.

I say not the most natural sound, but that's in comparison with esoteric domestic hi-fi. By car hi-fi standards it was considerably better than average, the bass extending adequately without getting out of control (if the sub was turned down) and the mid and treble exhibiting only a nuance of class A sweetening. Overall, it was an impressive sound, the music flowing freely. Lynyrd Skynyrd's *The Last Rebel* was particularly enjoyable with enough kick and subtlety to make the most of the system's abilities.

If this is what DSP can do for in-car entertainment, I'll certainly be waiting when it filters into the real world.

Jason Kennedy

Alpine Electronics of UK Ltd,  
13 Tanners Drive, Blakeland,  
Milton Keynes, MK14 5BU.  
☎ (0908) 611 556

### VERDICT

Alpine Frontera

▲ **PROS:** Good imaging; refined sound; street cred.

▼ **CONS:** Too much kit for comfort; joy rider's dream.

▶ **£22,000**

#### SOUND QUALITY



#### VALUE FOR MONEY





available from 2pm to 3am British time, and is manned by operators with a multitude of codes and combinations to suggest. If all else fails, the remote can be returned to the manufacturers, with a list of the brand names and model numbers it is to control, for brainwashing.

Once these set up problems had been overcome, the handset proved to be well laid-out, with logical operation procedures. There is no need to refer to the manual again as all the functions are straightforward. You just have to remember to select which device you want to operate first via one of the six 'type' keys on the remote.

As more products enter the home with infra-red sensors, the desirability of products like the *One For All 6* will increase. It adds great versatility, such as turning the TV volume down and switching the CD player on while the video rewinds. Its convenience and value in a home entertainment oriented household is unquestionable.

Lisa Nickson

Strand Europe Ltd, Strand House, Black Bush Business Park, Yately, Surrey GU17 7GE.

☎ (0252) 861 000

## VERDICT

One For All 6

▲ **PROS:** Convenient; cuts down on clutter.

▼ **CONS:** Too much a Jack of all trades.

▶ **£49.99**

PERFORMANCE

■ ■ ■ ■ ■

VALUE FOR MONEY

■ ■ ■ ■ ■

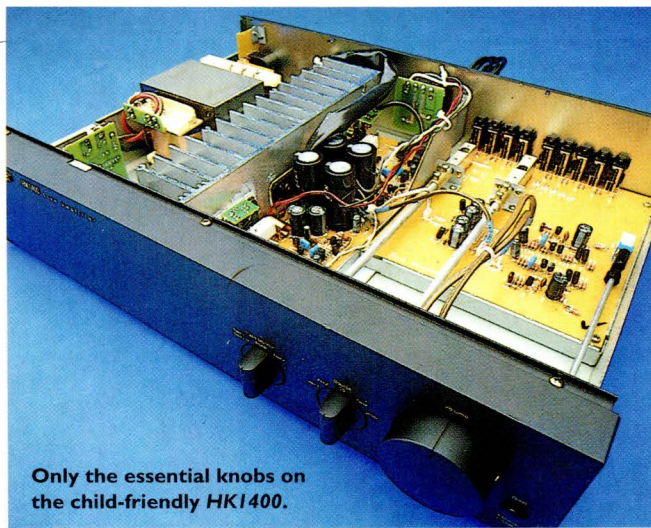
AMPLIFIER

## Harman Kardon HK1400

Upholding the argument of the 'less is more' audiophiles, Harman Kardon's new £399 line-only *HK1400* amplifier has nothing but the bare necessities on the front panel.

Still following H K's ultra-wide bandwidth philosophy, it has only a volume control, a -10dB attenuator button (to control a high gain line input), a source and a record selector. The look is simple and elegant.

The new project started 18 months ago, with two identical



Only the essential knobs on the child-friendly HK1400.

amplifiers on the test bench. Although it is based on an existing model, there are so many changes that it is essentially a completely new amplifier design. Even the volume control on the 40W *HK1400* has been positioned after all the preamplifier stages, so that preamp noise is reduced at lower volume levels.

H K insists on using speaker binding posts at the rear of all its amps. These can accept 4mm banana plugs, but the plugs fit at right angles and are not easy to work with. It is suggested, however, that these posts are safer than 4mm sockets, as there is no gaping hole for children to push metal objects into.

I used the *HK1400* principally with an AVI S2000 MC CD player, Silver Sounds cables and Rogers *Studio 3* speakers on Partington *Trophy* stands, while the £350 Nakamichi *IA-3* (Recommended in issue 121) was pressed into service as a worthy benchmark. The *HK1400* gave stirring service, with superb imagery and detail. Both amplifiers had a good, neutral tonal balance, but where the Nakamichi erred on the side of laid-back restraint, the *HK1400* was vivid and alive, projecting an admirably solid soundstage in front of the speakers.

Rhythmically, it was no slug-

gard, and it possessed a fine sense of drive when needed. Although on paper the *HK1400* is a 40W amplifier, it had plenty of grip and control. It lacked some grace and subtlety, but was never uncouth.

This all combines to make it a superb amplifier for general purposes listening, although fans of choral music may prefer something a little more refined.

The Harman Kardon *HK1400* sounded like an amplifier from one of the quality specialists, rather than one from a large, multi-national electronics company. It is not the amplifier for every system — its 40W output and lack of phono stage put paid to that — but with its solid, powerful and enjoyable sound, I believe that the *HK1400* will be a major player in the £400 arena.

Alan Sircom

Harman Audio, Unit 2, Borehamwood Ind Pk, Roxley Lane, Borehamwood, Herts, WD6 5PZ.

☎ (081) 207 5050

## TUNER

### Meridian 204

Meridian's *604* FM tuner proved a most effective performer in our recent tuner test (issue 120). The only problem is that it's very expensive, and much of the £1,350 price is due to the unique analogue-to-digital

interface which is really for those using Meridian's own digital-input active loudspeakers.

However, Meridian also has another tuner, the more compact, analogue-only *204*, which sells for a more realistic £660. We reviewed it over five years ago (issue 55), but long-life models like this tend to evolve and become more refined over time, so a return visit was overdue.

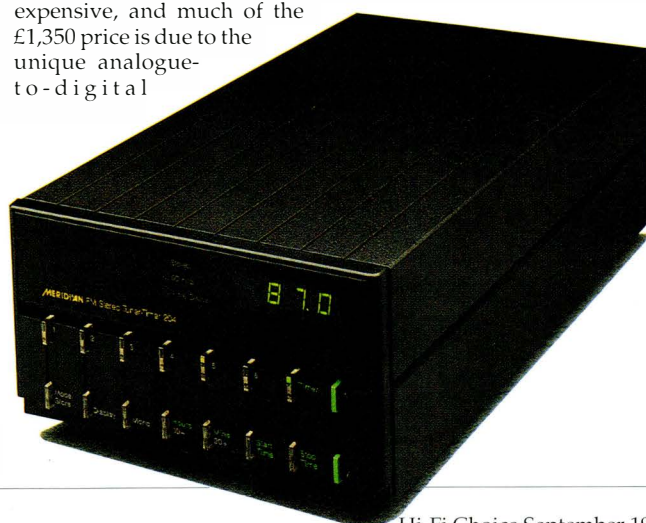
This brief re-encounter makes no attempt to cover all aspects of the *204*'s performance. Rather, it addresses the burning question: how close does the *204* get to big brother on sound quality, and does it therefore offer *604* class sound on the cheap?

The short answer is, unfortunately, that it doesn't, but arriving at that conclusion wasn't quite as simple as writing it down. My first impression was actually that the *204* had the smoother, better integrated and more coherent sound, even if it was a shade dull with it.

Direct comparison with the *604* revealed the superiority of the more expensive model in terms of dynamics, bandwidth and time coherence. The *604* produced a more expressive and invigorating sound. But the real difference showed when experimenting with an embarrassingly costly, high quality Siltech interconnect. This made little improvement over a standard cable with the *204*, but allowed the superior focus and coherence of the *604* to shine.

Ultimately, you do get pretty much what you pay for. But the *204* is still a very tasty little device, the more so because it's so delightfully neat and compact. It may not have quite the same powers of analysis, nor the ergonomic slickness, of the

Following in the family footsteps; the neat and compact Meridian 204.



## VERDICT

Harman Kardon HK1400

▲ **PROS:** Powerful sound; fine imagery; clear and detailed.

▼ **CONS:** Speaker terminals only just take 4mm plugs.

▶ **£399.00**

SOUND QUALITY

■ ■ ■ ■ ■

VALUE FOR MONEY

■ ■ ■ ■ ■



# The highest fidelity. Naturally.

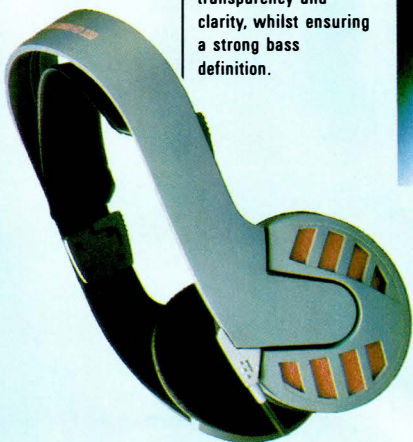
## HD 580

Top of the range dynamic headphone using new duofoil diaphragm which virtually eliminates sound colouration.



## HD 320

Part of the new generation of dynamic hi-fi stereo headphones, the HD 320 has ergonomic styling with a sound quality that is designed to optimise transparency and clarity, whilst ensuring a strong bass definition.



## HD 560 II

"A detailed and open headphone with the ability to recreate the power and depth in a piece of music."

*Hi-Fi Choice*  
Oct 91.



Immerse yourself in the music. No distractions, just pure sound reproduction.

It's no coincidence that Sennheiser headphones are acclaimed again and again in the hi-fi press.

We set new standards of sound reproduction and quality at the leading edge of acoustic

technology. Supremely comfortable and near-unbreakable, the headphones are specially designed for easy replacement of parts.

With accurate, detailed response and rich pure tone, recreate the eloquence of the instruments, the vitality of the vocals. Whatever your taste in music you'll appreciate the transparent natural sound quality, balanced by a wide dynamic range.

Now prove it. Try out our headphones for yourself.

You'll be convinced. Naturally.



## HD 340

A headphone which produces a roomy and detailed sound whilst incorporating high quality in its design making it lightweight and comfortable to wear.

 **SENNHEISER**

Sennheiser UK Ltd, Freepost, Loudwater, High Wycombe, Buckinghamshire, HP10 8BR. Telephone 0628 850811. Fax 0628 850958



# Choice Sessions



An appealing CD player for under £300; the feature-full PD-S702.

more expensive model, but it is less critical of the components used in the rest of the system. It also gives a smooth and homogenous sound, very much in the Meridian tradition.

Paul Messenger

Meridian Audio Ltd, 13 Clifton Road, Huntingdon, Cambridgeshire, PE18 7EJ.

☎ (0480) 434 334

## VERDICT

Meridian 204

▲ **PROS:** Ultra-compact; sweet sounding tuner.

▼ **CONS:** Can sound slightly soft; a bit expensive.

▶ **£660.00**

**SOUND QUALITY**

■ ■ ■ ■ □

**VALUE FOR MONEY**

■ ■ ■ □ □

CD PLAYER

## Pioneer PD-S702

The devaluation of sterling and its weakness against currencies like the Yen has tended to push Japanese CD player prices up. But it's still possible to buy a good machine for under £300. The new Pioneer PD-S702 retails for £299.95, and offers a neat blend of useful features and facilities, excellent cosmetic finish, plus good sound quality.

Years ago, products grew more complex-looking as they went up in price — something to do with perceived value. Not today. The PD-S702 has 39 but-

tons compared to just 11 on the more expensive PD-S802. The latter has almost all the features of its cheaper brother, but only accessible via the remote handset. Pioneer clearly feels people in this market want something that looks feature-laden.

Built around Pioneer's clever StablePlatter transport — which sits the CD upside-down on a turntable — and featuring Pioneer's unique 1-bit Legato Link DAC, the PD-S702 isn't short on innovation. It even includes features like display-off and a set of fixed audio outputs for improved sound quality. Yet it's not aimed at the budget audiophile, who'd be better-off spending an extra £50 on the aforementioned PD-S802.

The PD-S702 proved very satisfying to use. Its track access time is fast, and it's clear, logical control layout makes for easy operation. Your fingers tend to find the right button instinctively. It sounded pretty good too: clean, firm, and very open tonally, with a good solid bass response.

The treble was quite bright, but not in an unpleasant sense, and the balance was lean and articulate rather than rich and warm. Compared to the more expensive PD-S802, the PD-S702 sounded slightly contained and less lively. The bass was deeper and firmer on the dearer model, giving it a greater sense of authority and control. But the PD-S702 wasn't blown away by any means. It was just a little less detailed.

The PD-S702 isn't out to shake the world. It's just a sim-

ple, unpretentious and well-designed CD player that's easy to use and enjoyable to listen to. An excellent blend of price, performance and facilities, it should appeal to a wide range of users — though check out the PD-S802 if funds permit.

Jimmy Hughes

Pioneer LDCE Ltd, Pioneer House, Hollybush Hill, Stoke Poges, Slough SL2 4QP.

☎ (0753) 789 789

## VERDICT

Pioneer PD-S702

▲ **PROS:** Well designed; easy to use; lots of features.

▼ **CONS:** Slightly contained and subdued sound.

▶ **£299.95**

**SOUND QUALITY**

■ ■ ■ □ □

**VALUE FOR MONEY**

■ ■ ■ □ □

A/V AMPLIFIER

## Marantz PM700AV

I have to admit it. I don't spend every evening listening to my records. There are times when the TV proves too great a distraction. The Orb may help to unite me with the cosmos but Roseanne cannot be missed.

I've used a pair of speakers and stereo amplification to get a good sound from the medium for some time, but the recent availability in these parts of

proper AV amplification has meant that I've gone the whole hog and set up a Pro-Logic Surround Sound system.

At the heart of this is the £450 Marantz PM700AV remote control amplifier, which has a few alternative sound distribution options (hall, wide, matrix) alongside Dolby Pro-Logic.

In true AV tradition, it has a broad range of socketry, including S-video and phonos for video and sound inputs. The speaker terminals are a bit poor though. You can't use banana plugs and there's a profusion of nasty spring-clips for the effects channels. It's worth noting that there's no specific output for a subwoofer, so if you want to use one it will have to sit in line with a pair of satellites.

I have been using the Marantz with a pair of Castle Chesters at the front, a JBL Micro for the centre dialogue channel and an old pair of AR satellites for the rear effects. These work reasonably well, though a better centre channel and deeper bass wouldn't go amiss.

In Dolby Pro-Logic mode, the PM700AV made a decent job of most everything I listened to. It reveals differences in source material quite effectively, and never sounds offensive. If anything, it is a little safe.

Compared with a Pioneer A-400 (£280) it sounds restrained and a little waffly in the bass — more comfortable and smooth. There has to be some penalty for

**A room full of Roseanne, care of the PM700 AV amplifier.**





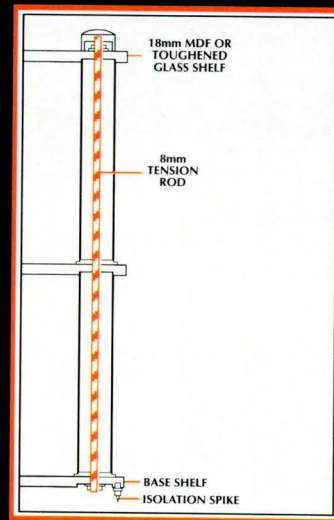
# ALPHASON

## WHAT'S IN AN ALPHASON RACK?



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Alternatively Telephone (0942) 897308



# Choice Sessions

all those effects. Compared with a Yamaha *DSP-A1000* (£900) AV amp, the Marantz lacked subtlety and dynamics but, given the price discrepancy, it made a very good showing.

Jason Kennedy

Marantz Hi-Fi UK Ltd,  
Kingsbridge House, Padbury  
Oaks, 575-583 Bath Road,  
Longford, Middlesex UB7 0EH.  
☎ (0753) 680 868

## VERDICT

Marantz PM700AV

- ▲ **PROS:** Good facilities and sound; value for money.
- ▼ **CONS:** Crude remote volume and nasty speaker sockets.
- ▶ **£449.90**

### SOUND QUALITY



### VALUE FOR MONEY



DCC PERSONAL

## Philips DCC130

Philips' new £400 *DCC130* portable DCC player provides just over a gramme's-worth of electronics for every pound spent. At a hefty 490gm when loaded with its rechargeable battery, the *DCC130* is a transportable player rather than a truly portable one.

An hour's charging should keep the player working for two-and-a-half, Philips claim a fully-charged battery will last three hours. Lift up the (flimsy) tape lid and you'll see the new, static 18 channel DCC playback head. It gives two-sided bi-directional playback without needing to rotate, and does away with a separate analogue playback head. This makes the head simple to manufacture, and should improve the quality of analogue playback, according to Philips.

The front panel matrix LCD is clear, with a 'scrolling' feature to display track details and text. All the essential transport-control buttons are on the front panel, too, as well as on a nifty remote control built into the headphone lead. This has only three buttons, but by pressing the large one various times, you can access almost all of the



The future of sound on the move? Great — if the price is sliced.

*DCC130*'s functions. There are no input sockets as the *DCC130* is strictly playback only.

The sound of the *DCC130* creates good first impressions. Slip in a copy of U2's *Zooropa* album, and you'll be surprised at the size, scale and coherence of the performance through headphones. Switch to Robert Cray's *I Was Warned*, and the deck makes a passable scaled down attempt at an angry Fender Strat and Marshall stack.

Who is prepared to pay such a sum for quality sound they can use on the move? For the present, the *DCC130* is a technological wonder, a novelty for digital dilettantes. However, Philips claim that thanks to cheaper manufacturing techniques (such as the new head and second-generation PASC chip incorporated in the *DCC130*) the price of all DCC products will halve in 18 months. So the only conclusion must be: watch this space . . .

Stan Vincent

Philips Consumer Electronics Ltd,  
City House, 420-430 London Road,  
Croydon, Surrey CR9 3QR.  
☎ (081) 689 2166

## VERDICT

Philips DCC130

- ▲ **PROS:** CD-quality mobile sound; compact software.
- ▼ **CONS:** Price; questionable tape lid durability.
- ▶ **£400.00**

### SOUND QUALITY



### VALUE FOR MONEY



## AMPLIFIERS

### Denon PMA-350/II

Denon's diminutive *PMA-250/III* is one of the most popular integrated amplifiers below £200, offering good performance

at a reasonable price. But it lacks punch and dynamics by comparison with some bigger and more expensive designs. So Denon has sought to rectify the situation with the new *PMA-350/II*.

Costing a very reasonable £219.99, and conservatively rated at 50W per channel into eight ohms, the *PMA-350/II* is aimed at the serious audiophile on a tight budget. Yet it isn't a 'stripped' minimalist machine. It offers a range of facilities including tone controls, provision for two tape decks with monitoring and dubbing, plus a tone-defeat button to give a shorter, more direct signal path.

Also included are a phono stage (magnetic cartridges only), plus two speaker outputs. Internal switching is via audio-grade relays, and the speaker selector and headphone socket are wired with oxygen-free copper. Unusually, for a Japanese amplifier, a toroidal mains transformer is used giving reduced stray hum fields.

Denon claims that specialised audio grade components are specified in critical areas, chosen after careful auditioning. Signal paths have been kept short, and the whole circuit is on a single board to reduce the need for extra wiring. This makes for cheaper construction and improves sound quality.

Certainly the new *PMA-350/II* produced a tight, detailed sound. Comparing it to the cheaper *PMA-250/III*, and using a Pioneer *PD-S802* CD player,

**The PMA-350II; good sound, good price, good buy.**





# Choice Sessions

the bigger amp's superiority in terms of scale and dynamics was very evident. The bass was firm and solid, while the treble sounded clean and secure. The balance proved fairly forward, yet the sound wasn't lacking in subtlety or finesse.

The Denon is also equipped with an improved phono stage, and on LP the difference was the same as with CD, the '350 sounding noticeably 'bigger' and more vivid than the '250. At any given volume, the more expensive amp seemed to be slightly louder and more positive; richer and more alive.

Clearly, the Denon PMA-350/II is a very good buy at £219.99, and difficult to better at the price. You'll have to spend perhaps £50 more on something like a Pioneer A-400 or JVC's AX-A662BK to gain any improvement. It looks like Denon have come up with another winner.

*Jimmy Hughes*

Hayden Labs Ltd, Hayden House, Chiltern Hill, Chalfont St. Peter, Bucks SL9 9EW.

☎ (0753) 888 447

## VERDICT

Denon PMA-350/II

▲ **PROS:** Detailed, punchy sound; lively and engaging.

▼ **CONS:** Slight lack of refinement.

▶ **£219.99**

**SOUND QUALITY**



**VALUE FOR MONEY**



## HEADPHONES

### Beyer IRS 790

Freedom is what the IRS 790 is all about. I began by plumbing them into my office TV, and could work without tripping over headphone wires. With the mains powered infra-red transmitter perched on top of the TV at one end of the medium size room, I could move unrestricted, only rarely encountering a dead spot giving poor reception.

The IRS 790 is not the cheapest cordless model, or even the most practical. I remember with



#### Headphones that grow on you but won't tie you down.

particular fondness a radio-based model from Ross which gave me the freedom of my house and garden, not just the room in which the transmitter was sited. The Beyer, however, is easily the best. Most of the alternatives in my experience either sound worse, suffer atrocious black spots, or are bulkier. In any case, slave transmitters for other rooms can be added to extend the radius of action.

The IRS 790 is not beyond reproach. It is not the sharpest or cleanest headphone around; it is on the warm and woolly side, with a loss of mid/top presence and articulation that can

make the sound seem rather heavy and dull. This said, it is utterly without serious vice. There are no resonances, no edginess, no boom or overhang. The treble, though recessive, is utterly neutral, and the bass/mid balance has real poise and class. Physically too the Beyer is impressive. The structure is remarkably unimicrophonic, and although nominally semi-sealed, the felt earpads give the IRS 790 a sumptuous feel, and do little to obstruct sound from the outside world.

Just one small vice: the headphones are rather heavy (two MN1500 batteries are accommodated, as well as the other electronics), and the inwards pressure on the ears is not always enough to prevent them falling off altogether. On a hard floor, this invariably caused the battery covers and batteries to make their own way under the heaviest piece of furniture in the vicinity. Still, no permanent damage was done.

Unimpressive on first exposure, the IRS 790 is a product of integrity whose appeal I found grew with time.

*Alvin Gold*

Beyerdynamic GB Ltd, Unit 14, Cliffe Industrial Estate, Lewes, Sussex. ☎ (0273) 479 411



The world on a dial — radios suitable for the international traveller.

## VERDICT

Beyer IRS 790

▲ **PROS:** Smooth sound; low background noise.

▼ **CONS:** A little heavy physically and sonically.

▶ **£169.79**

**SOUND QUALITY**



**VALUE FOR MONEY**



## WORLD RADIOS

### Sony ICF-SW77 Grundig Yacht Boy 230

The joys of a good world radio are often forgotten among the hi-fi cognoscenti, who feel that radio begins and ends with stereo FM. Although not hi-fis as such, there is a great deal of satisfaction in picking up broadcasts from around the world. However, with such a variety of world radios available, it's easy to become confused.

Take the £79.99 Grundig Yacht Boy 230. This is cast in the classic transistor radio mould, with the minimum of user functions, needle tuning and no presets. It has 16 wave band — FM, LW, MW and 13 SW bands — covering 2.30MHz-26.10MHz. There is also a clock with two alarms, which can be set to local time zones. This makes it ideal for the international traveller.

The £399.99 Sony ICF-SW77 descends from an entirely different breed; the radio-ham's receiver. Far larger and heavier than the Grundig, the Sony has a sophisticated paged memory system which allows time and frequencies of broadcasts to be stored easily. It also has world clock and alarm functions which, although more sophisticated than the Yacht Boy 230's, are also more complex to access.

At first, the Sony is counter-intuitive. Unless you are really into receivers of this type, I would devote time to studying the manual, with the receiver by your side. Familiarity with the receiver has its rewards, however, as the Sony ICF-SW77 has superb pulling power, grabbing far-off distant stations and



cutting through the mush. With its bigger speaker, it is also the better sounding of the two radios, but given the large difference in price this is only to be expected.

If I were stuck on a desert island, with a radio and an unlimited supply of batteries, I'd welcome the Sony. It would link me with the most distant corners of the globe. But there is something about the simplicity of the Grundig that appeals. It doesn't intimidate the user with technology, and it's accessibility makes it a real winner.

Alan Sircom

Grundig International Ltd, Mill Road, Rugby, Warwickshire CV21 1PR. ☎ (0788) 577 155

Sony UK Ltd, Sony House, South Street, Staines, Middlesex TW18 4PF. ☎ (0784) 467 000

**VERDICT**  
Grundig Yacht Boy 230

▲ **PROS:** Easy to use; good timer functions.

▼ **CONS:** Limited short wave pulling power.

▶ **£79.99**

**SOUND QUALITY**  
■ ■ ■ ■ ■

**VALUE FOR MONEY**  
■ ■ ■ ■ ■

**VERDICT**  
Sony ICF-SW77

▲ **PROS:** Excellent receiver; good pulling power.

▼ **CONS:** Expensive; initially hard to use.

▶ **£399.99**

**SOUND QUALITY**  
■ ■ ■ ■ ■

**VALUE FOR MONEY**  
■ ■ ■ ■ ■

CABLES

**Lieder cables**

Five years ago, if somebody had suggested that I recommend a set of hi-fi cables that cost as much as a return flight to America, I'd have told them to seek specialist help. Times change, however, and today I



find myself impressed with the excellent solid silver stranded Lieder cables, from the Netherlands.

There are two speaker and four interconnects in the range. We tested the most expensive *Cadens* speaker cable, at £125 per metre, and *The Song* interconnects, at £300 for a one metre pair, terminated with fancy WBT plugs. The distributor, Kronos, recommends using the £50 per metre *Adante* speaker cable for bi-wiring, or in less than high-end systems. The remaining interconnects are the £199 *Le Chanson*, the £259 *Heit Lied* and, for those money's no object types, the £450 *Le Canzone*.

Lieder cable has great clarity

and when partnered correctly, it is transparent — a direct connection between CD and preamp, or amp and speaker.

There is simply no cable sound to the Lieder cable. It just plays music. Imagery is tight and focused, but still with a capacious soundstage. There is no sense of dynamic compression and the music is as coherent and as rhythmic as the equipment used with it. Most impressive is its ability to unveil the sustain and decay of individual notes that usually fails to get past the phono plug. If there is a quibble it's with the tonal balance. This can make the wrong system

**Cadens cable with *The Song* interconnects; their absence is sorely missed.**

sound bass light.

Otherwise, the Lieder cables are excellent, the price justified by the performance. I missed the cables once I removed them from my system and that's high recommendation I can think of.

Alan Sircom

Kronos Distribution, 35 Farlough Road, Newmills, Dungannon, Northern Ireland BT71 4DU.

☎ (08687) 48632

**VERDICT**  
Leider cables

▲ **PROS:** Neutral; perfect for high-end systems.

▼ **CONS:** Can reveal hidden nasties in your system.

▶ **£ various**

**SOUND QUALITY**  
■ ■ ■ ■ ■

**VALUE FOR MONEY**  
■ ■ ■ ■ ■

RECORDING

**Trittico**

Music by Albeniz, Grieg, Giannini, Jojo, and Nelhybel Dallas Wind Symphony. Frederick Fennell Reference Recordings: RR-52 (2LPs); RR-52 CD.

Awesome describes this recording of power and sonority. Using RR's unique High Definition Compatible Digital process (HDCD), it offers stunning sonics and a completely natural, believable ambience.

The album gets its name from *Trittico*, a work in three movements by Czech composer Vaclav Nelhybel written in 1964. It's a colourful piece that makes use of piano and celesta, winds, brass and percussion. The climax at the end of the third movement is breathtaking.

Albeniz' *Feast Day in Seville* is actually a piece for piano taken from a suite called *Iberia*. But although marvellous when played on the keyboard, the music cries out for larger forces. Starting quietly with a catchy Spanish tune, it builds to a huge climax. Yet the clarity of the recording is such that you can still hear important woodwind de-

tail below the brass and percussion. On CD, the sound hardens slightly at peak moments. Only very capable equipment will survive the onslaught.

Norman Dello Joio's *Variants on a Mediaeval Tune* is actually a lot more jolly than its title suggests. The tune is, in fact, *In Dulci Jubilo*, and Dello Joio writes five variants that emphasize the warmth of the concert band. Not as showy as the previous pieces, the *Variants* still culminate in a powerful finale.

Grieg's *Funeral March for Rikord Nordrack*, rarely recorded, could hardly have richer sonority than here.

Vittorio Giannini's four movement *Symphony No 3* is the most serious and ambitious work on the

album. Lasting over 23 minutes, it's also the longest. Fennell's performance is hard to beat, though there is just a suspicion of the players sight-reading once or twice.

As the total programme lasts over 62 minutes, Reference has wisely spread the music over two LPs with sides one and four (*Trittico* and *Feast Day*) duplicated. Incidentally, the set is autocoupled, side one is paired with four and so on.

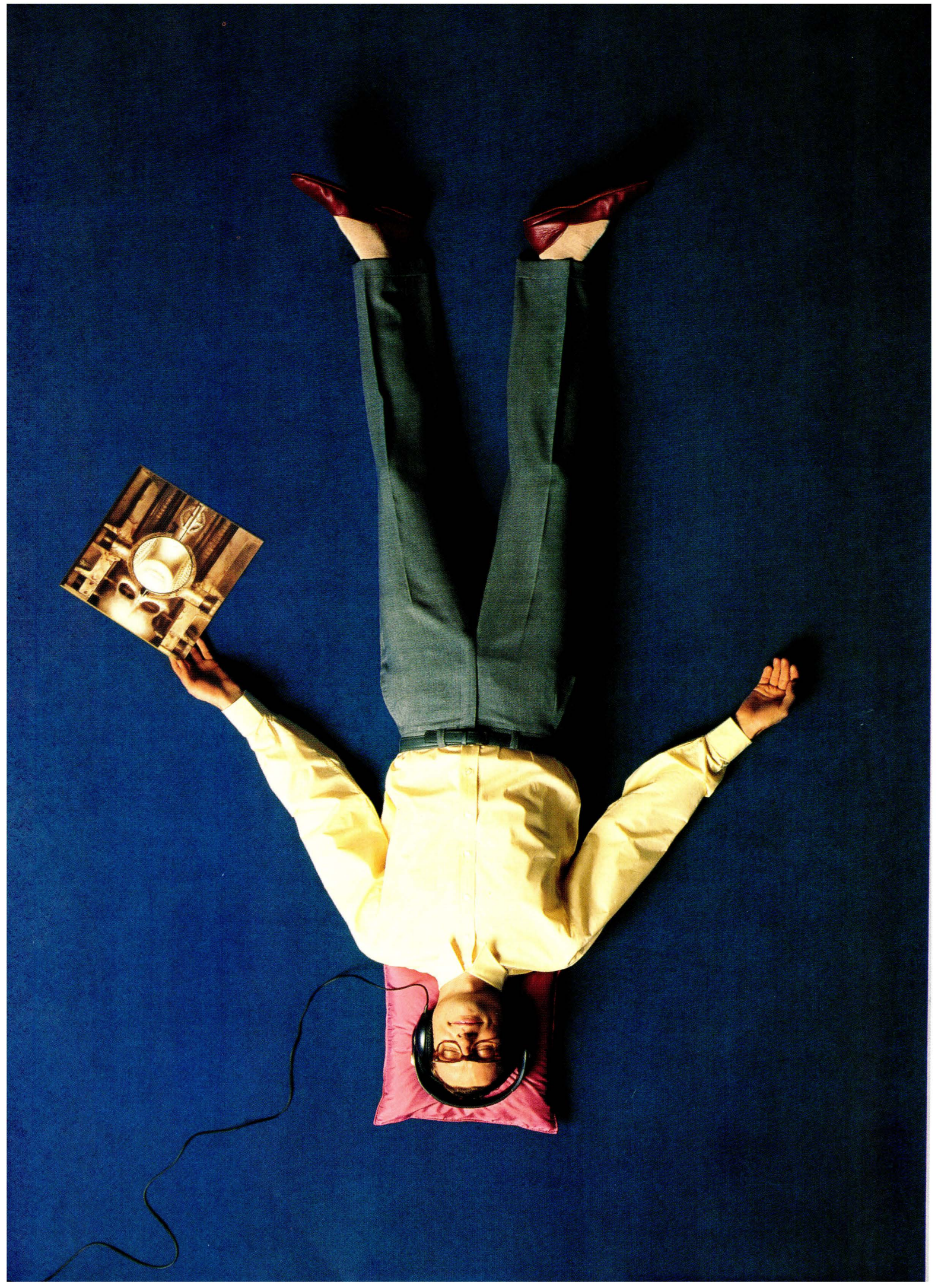
The LP is taken from analogue tapes; the CD is all digital via RR's HDCD process. The vinyl is a little sweeter and more open-sounding during heavy climaxes. But otherwise, the CD wins for sheer power and dynamics. What it sounds like played via RR's special HDCD decoder I just can't imagine. If it im-

proves over replay via a good CD player, the effect must be awesome. Isn't that where we came in?

Jimmy Hughes









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and three dimensional depth unheard in amps at this price.

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But don't waste any more time listening to us. You could be experiencing the SUA600.



**Technics**  
For music lovers.



*Alvin Gold takes a close look at Musical Fidelity valve amps, forgets the cause, and is blown away by the effect.*

# Musical Fidelity

## *F22 preamplifier & F15 power amp*

**T**here was only one word for it when I first saw this preamp and power amp in the flesh. Wow! Corny I know, but you don't stop to think about such things at the time.

I think I said the same thing the first time I heard them running. I was using Martin-Logan *CLSzII* electrostatics, though later I was also to use some new SDAcoustics speakers, Mission 753s and others. I did have one failure. A driver transistor blew, a standard part used in a standard way and, according to the engineer from Musical Fidelity, a one off. For the rest of the time, the amps have been bullet proof. I worry though. The power amp runs very hot, and although I understand that the self-limiting nature of the circuit's current delivery means that output protection is unnecessary, and that protection circuits are undesirable as they muck up the sound, I still wonder.

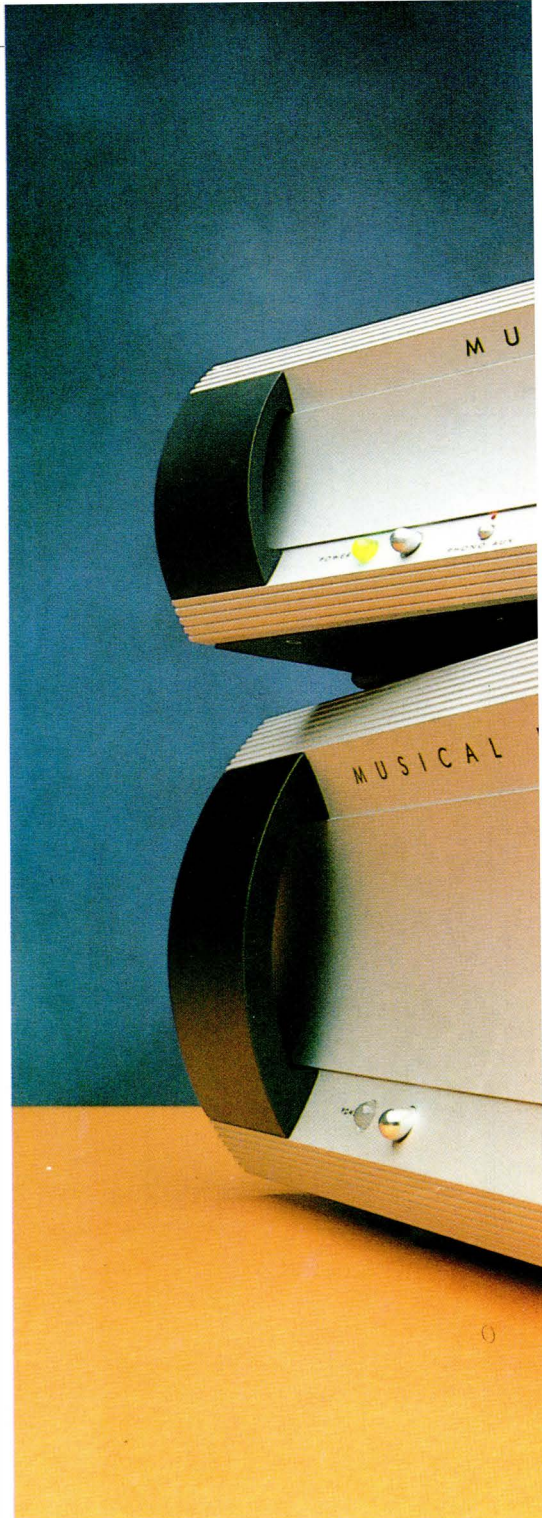
Musical Fidelity definitely got it right this time with the best bit of aesthetic design this side of its *A1* integrated amp. All the main metalwork, including the incredible power amp heat sinks, are custom tooled for the

*F* range. But these replacements for the long running *MVX* and the *P270* are more than just good looking. The £999 preamplifier, which has six inputs, is valve driven, remote controllable (volume and input) and has normal and true balanced outputs. In addition, there are two add on PC boards to extend its flexibility. One is a £100 phono board. The other, which I have been using, is a DAC board with a standard electrical S/PDIF input. It costs £200, which doesn't reflect the power supply already built into the preamplifier.

The power amp (£1,899) is equally off the wall. It has a tube front end which supplies about 80 per cent of the gain, and a bipolar output stage, generating 100 plus watts per channel in Class A (almost credible given how hot the amp runs). In valve amplifier fashion, no more is available for sub-8ohm loads.

Attempting to get some technical background from Anthony Michaelson is like trying to extract a tooth from a fairy. You know what it's like with fairies. You have to grip the ruddy thing by the throat, and

**"This amp is brilliant. I had it running along side some very exotic amplifiers indeed . . . costing several times as much, and it just blew me away."**

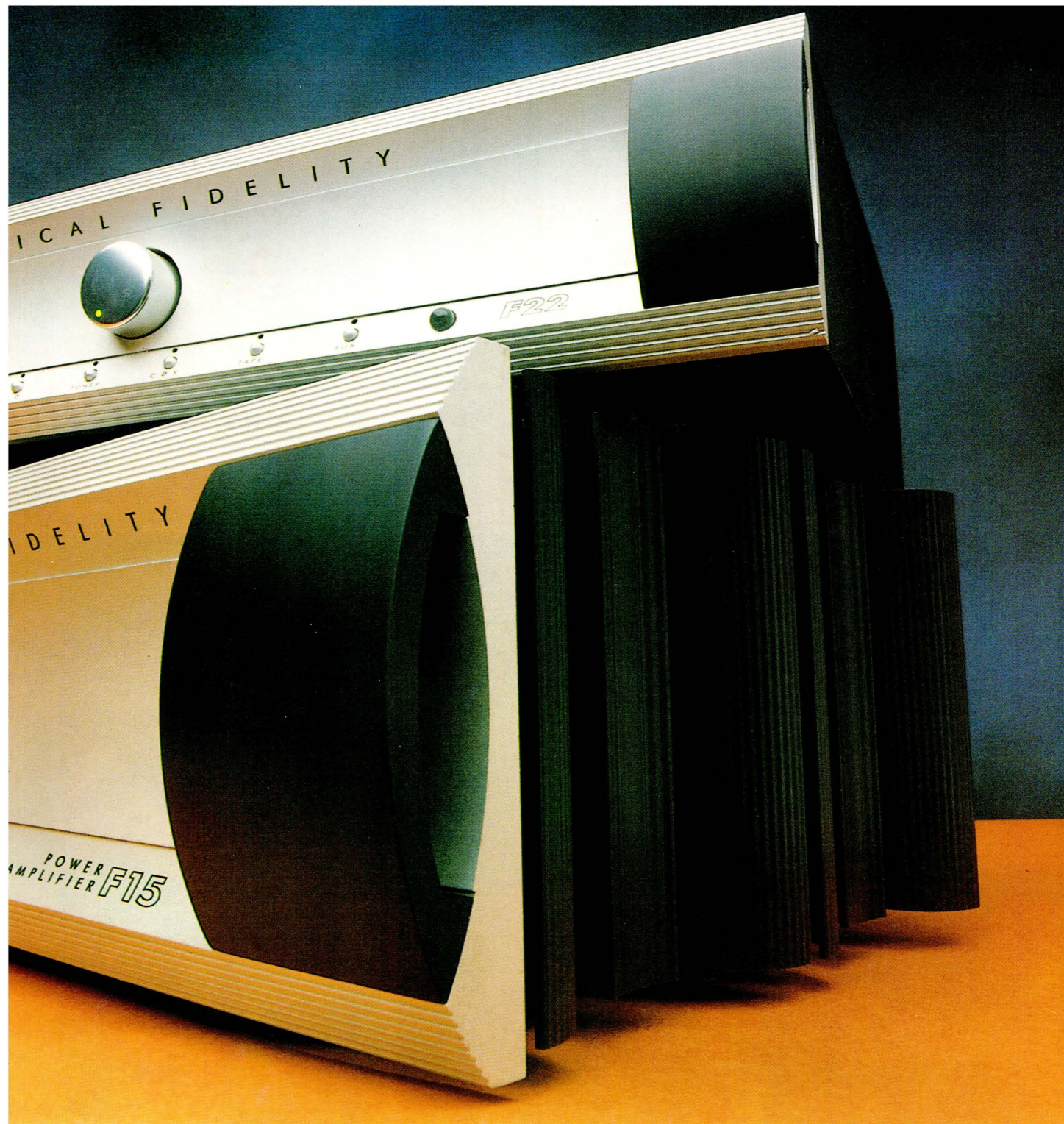


then it slips through your fingers like a soap bubble. "Who gives a toss what's inside an amplifier?" he said. And why spoil a good story with boring old facts?

### Ability before technique

Except this one: this amp is brilliant. I had it running alongside some very exotic amplifiers indeed, including Audio Research kit costing several times as much, and it just blew me away. I tried hard to pick holes in its sound, with limited success. There is a little more 'give' than a top rank transistor amp. Imagery is not quite as precisely positioned or as stable. The midband has a warmth and translucency that says





**No Fifties kitsch here; it's all silver and black with acres of heatsinks. Extremely hot property in more ways than one.**

valves, but the bass stubbornly refuses to follow suit: it is deep and attractive, but it comes on with the 'grip' and tunefulness of a good bucket of transistors. The treble should have been slightly soft and veiled if it was to be true to the breed, but again the sound has tremendous presence and detail. Most disconcerting. Most unvalve-like, but fantastic to listen to.

I have reams of notes about specific recordings, but what they boil down to is the most astonishingly natural vocal quality and instrumental timbre, and a kind

of soundstage presence that says 'this is really happening.' The amp also has the warmth and vivid colour of a valve design, but none of the waste and spread.

If there is a limitation, I discovered it driving the Martin-Logans, which in truth are really a plot designed to support the US monster amp industry. But the limit was purely level related. It went loud. Sometimes it even went very loud, but it balked when asked to play extremely loud. Within its limits though, it was utterly at ease, and sounded as though it was a part of the speakers, which have rarely sounded less mechanical and smooth. The trace of upper midband glare that I had grown to accept as part of the

Martin-Logan package just vanished.

I found the preamp the more impressive of the two, because there are so few first rank preamplifiers around. The reality is that they're well matched and are equal contributors to the whole.

The digital board was very interesting. This is also a high class circuit. It is different in character to the rest of the preamp though. It has a more stable and literal sound, with less grace and polish, and some of that glare crept back into the picture. At £200, though, it's a snip, and could make sense if you have a CD player with a good transport and a duff converter. Or even quite a good converter.

There are things I don't like. The



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## STATEMENTS

unused power amp input should be fully isolated, and the case fixing screws are too soft and ready to burr. More significantly, extra preamplifier gain or input sensitivity on the power amp would not go amiss with low sensitivity speakers (Musical Fidelity's own are quite high sensitivity). But that's about it.

Musical Fidelity's objective was a

valve preamp that everyone could use, and the truth is that you could use it for years and not know it was powered by valves. The uncompromisingly modern lines and massive heatsinks make it look even more like a transistor amp than most transistor amps. It's surreal. Everyone and his mother are climbing on each other's shoulders to make their valve

amp look more like a classic Fifties valve amp. With the Musical Fidelity you just can't tell what makes it tick. "We just wanted a black box." Anthony told me, and that's what he got. With bells on.

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# van den Hul *Grasshopper Mk III GLA*

*Jason Kennedy discovers the beauty of live recordings courtesy of van den Hul's most recent Grasshopper cartridge incarnation.*

Not many high-end components have the staying power of van den Hul's *Grasshopper* cartridge. It's been in production now for nine years and has remained an established reference over that time, only its price shading it from the limelight. It bears comparison with exclusive motor cars such as the Ferrari *F40*; both are hard to come by and offer the state-of-the-art at a punishing price. The *Grasshopper Mk III GLA* version looked at here costs £3,200. Not a sum to trifle with, but as it should run for two and half thousand hours (three and a half years at two hours a day, every day) between services, it's a lot cheaper to run than a Skoda, let alone an *F40*. The cartridge's *GLA* suffix indicates its low output (0.425mV) and the fact that alnico magnets are used — a material it shares with my usual choice of transducer, the Audio Note *I0*.

The *Grasshopper* is an unusual looking beast. Its skeletal appearance, apart from being the inspiration for the name, means that there's no excess material to resonate. The drawback with this approach is that it makes what is already a very delicate instrument even more unapproachable. Setting it up is a nerve racking experience. Stories of other reviewers having broken them in the process run through your mind, as you realise that it doesn't have a stylus guard. However, with the aid of a trusty *SME IV* the job isn't that bad, and once you manage to attach the leads and set the low tracking weight (between 1.35gm and 1.5gm for this high compliance design) it's possible to sit back and wait for it to run in.

As a result of the over damped suspension that the *Grasshopper* starts life with, it takes about 50 hours to run or burn it in properly. According to its maker, the *Grasshopper* works well into impedances from 40ohms to 47kohms depending on the material you are listening to. In classical terms, the smaller the group of musicians, the lower the impedance should be. Which is hardly a practical way of going about things. I've only come across one step-up transformer/phono stage which can be easily adjusted over a wide range of impedances,

the Audio Note *AN-57c*, and found that with my largely non-classical collection, a 25ohm impedance worked well. This said, the input impedances of transformer and active stages don't always tally as far as sonic results go.

The *Grasshopper* was not an easy cartridge to get on song. Much fiddling was required and several phono stages were experimented with, but it was worth the effort. The sonic reward that it produced was quite remarkable. It excelled in virtually all respects; timing, coherence, imaging and, most particularly, bandwidth. Rarely have I heard a source component that could plumb the depths and scale the heights like the *Grasshopper*. The bass took on power and dynamics that made the alternatives seem lightweight. Its resolution of high frequency ambience made such an excellent job of the atmosphere on live recordings that I found myself digging out as many examples of the type that I could find.

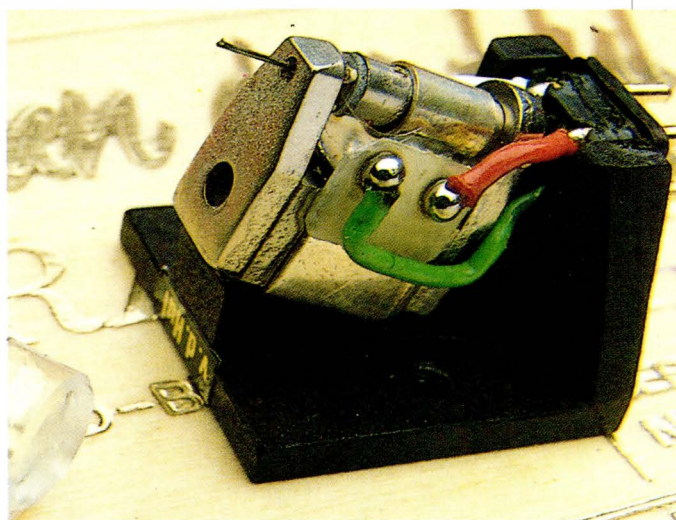
I started to hear what Paul Messenger loves in the Little Feat's *Waiting for Columbus* and got totally engrossed in Mr Zappa's Helsinki concerts (*YCDTOSA vol 2*) to name but two. Paul has often enthused about the superiority of live over studio albums, but it wasn't until I heard this sort of extension and power that I fully appreciated why. Hopefully, something else will come along to show me more, but I can't imagine it will be soon.

There were times when the treble could sound a little over exposed, but I am as inclined to blame the tonearm and tweeters in my system as I am the cartridge. The *Grasshopper* was a problem in this respect. The potential for outclassing its ancillaries made accurate criticism very difficult.

There were times when it seemed to lack a sense of three dimensionality and palpability but equally, times when these factors were presented in full architectural glory. It

is not a tolerant device — you can't get away with scratched records as easily as with an *I0* — but if it's going to resolve high frequencies this well it can't ignore noise.

The power and drive that it injected into substantial pieces was unusually effective, giving the music so much drama and foundation that one feared for the structure of the house. It is an extremely agile cartridge with impressive instrumental separation and a wide tonal palette. The *I0* may be easier to live with, but the *Grasshopper* could prove impossible to live without.



**The *Grasshopper Mk III GLA* rolling through the years; a classic cartridge. Once heard, it's hard to live without it.**

The van den Hul *Grasshopper Mk III GLA* is undoubtedly one of the finest cartridges built today, and in the context of a *Voyd* it can extract more music from the grooves of an LP than one would credit. The price is potentially problematic, it has to be said, but compared with state-of-the-art CD players it's not so outrageous. What's more, it isn't going to be superseded next year.

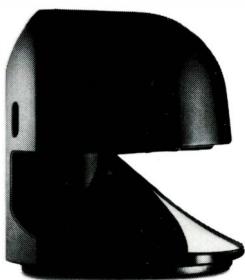
*van den Hul UK, PO Box 304, Maidstone, Kent ME16 8TS.* ☎ (0622) 721 636





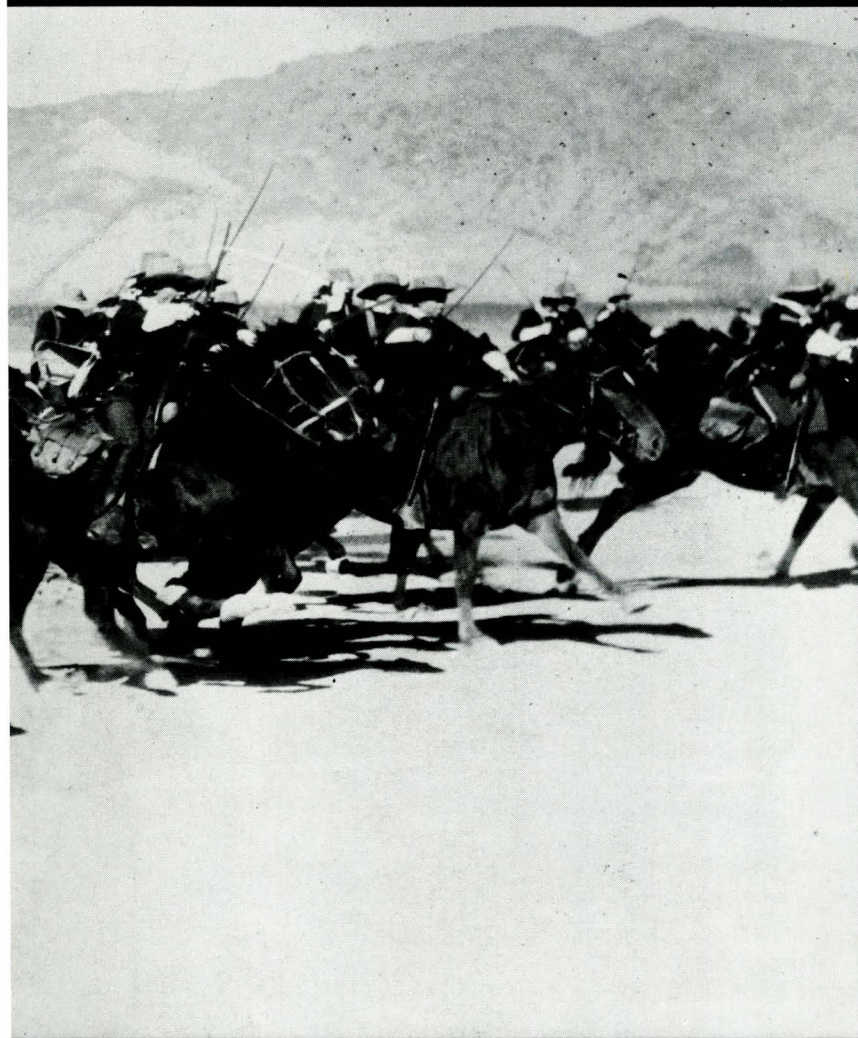
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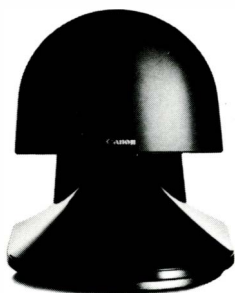
limited central "hot spot." Anyone outside that spot receives a sound image biased towards one or other of the speakers. Which is bad enough when you're listening to hi-fi, but is downright weird if your brain is seeing a central image on a screen and expecting the sound to appear from the same source.





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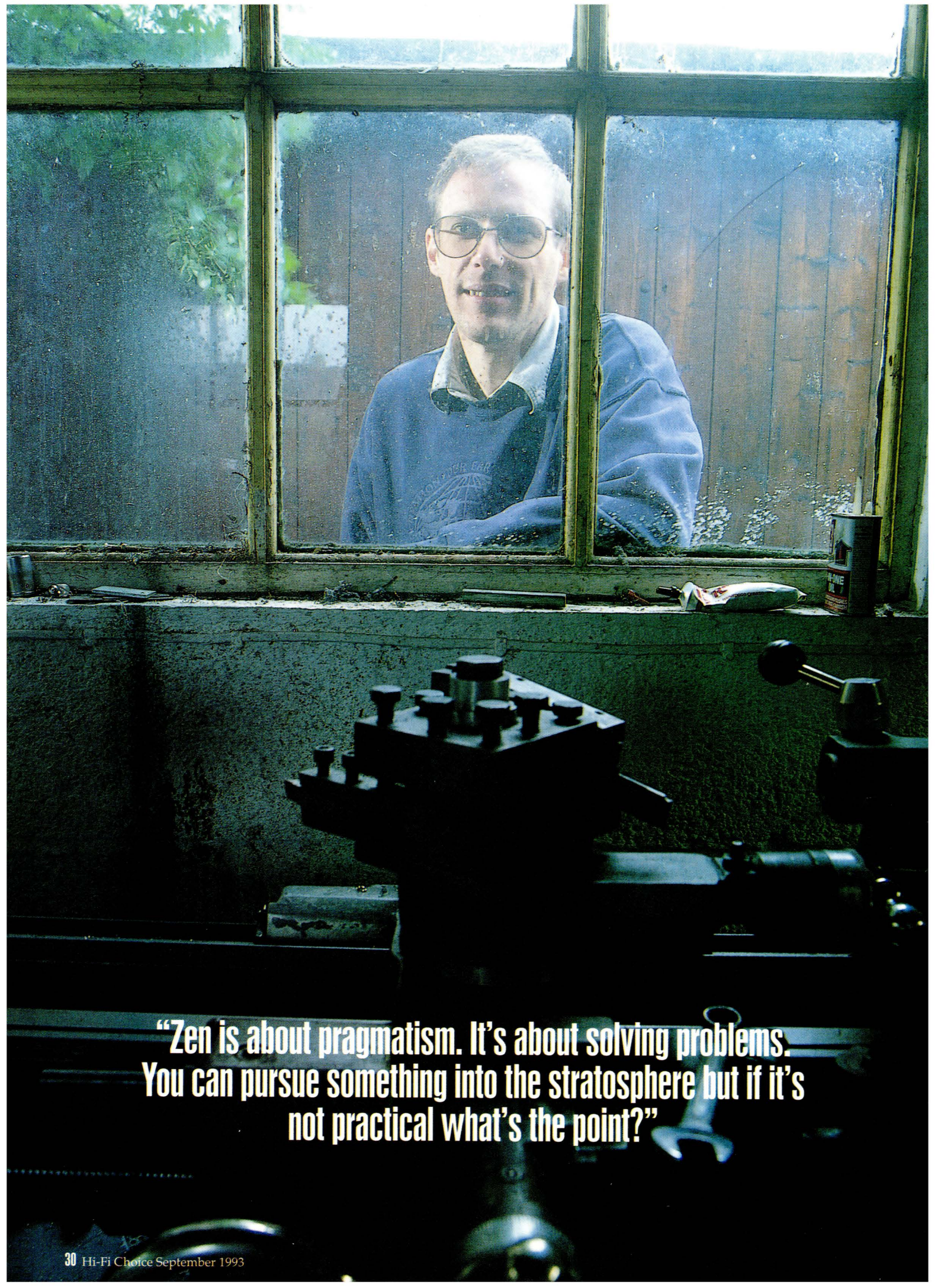


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**“Zen is about pragmatism. It’s about solving problems. You can pursue something into the stratosphere but if it’s not practical what’s the point?”**



# Zen and audio art

*Zarathustra turntables are more than just record players, they are audio embodiments of Zen. Jason Kennedy seeks the path.*

**W**ay back in issue 72 (July 1989), I reviewed a finely made British turntable with a stylish Dutch tonearm. That deck was the Zarathustra S4, and the arm was a Pluto 5A. The latter is no longer represented in this country, but Simon Yorke — pictured left in the workshops of his company, Zarathustra Designs — is going strong and has recently completed a new flagship model.

Britain's only Zen turntable manufacturer is based in what was once a mining village near Durham. Simon Yorke is a philosophical chap who is as much interested in Zen and art as he is in hi-fi equipment. He founded the company in 1984 in Durham, since when it has been established in Scotland and Germany.

Simon's first Zarathustra turntable was called the *Series One* which gradually evolved through *Series Two* and *Series Three* variations into the *Series 5*, which was produced for Mark Levinson's Cello brand in the United States. The *Series 4* was, and still is, a more affordable version of that. It currently sells for £3,000, including outboard power supply.

To Simon Yorke, the Zarathustra is not just a turntable — it's a work of art. Just as some artists use oil paint, perspex or wood, his mediums are stone, slate, glass and stainless steel. Instead of producing art which is purely aesthetic, he makes art which is functional.

## Zen, Zand, Zend

The sculptural aspects of Simon Yorke designs are nowhere more distinct than



**The first Zarathustra Series 6. Note the twin drive motors, chunky suspension columns and turquoise stone.**

## What is Zen?

Technically, Zen is a Japanese school of Buddhism. It teaches that contemplation of one's essential nature to the exclusion of all else is the only way of achieving pure enlightenment.

When I asked Simon to explain what Zen is, he was initially nonplussed by the scale of the question. He eventually honed it down to: "Zen is direct pointing to reality. If you see life exactly as it is, devoid of any preconceptions, you won't have any problems." So it's more of a personal philosophy than a technique of building turntables. It gives him a holistic approach to design and construction.

in the substantial *Series 6*, with its tailor-made slate-topped table. Simon has used what's known as the golden ratio (an aspect ratio for a rectangle where the longer side is 1.618 times the length of the shorter side) to give this deck and its support an elegance and presence that will, so he claims, enhance the pleasure of listening to records played on its platter.

The *Series 6* is certainly a tour de force of engineering and artistic excellence. The first model has been built specifically for Chinese Canadian Albert Fok and is inscribed with his name and the name he chose for the turntable — Zend. (This apparently means 'commentary', or 'interpretation' if you take its Persian root — Zand). The deck is essentially custom made, Simon working through the design with Albert via a fax machine. It uses two free-standing motors that drive an idler bearing, which in turn drives the 18kg platter.

The three chunky suspension towers house equally substantial springs that are tuned to a cut off frequency of 1.8Hz, giving it a lovely slow bounce, and a good chance of eliminating any low frequency energy that gets through the stand.

The suspension is connected to the composite subchassis which supports the armboard and bearing. As one might expect, there has been no compromise on



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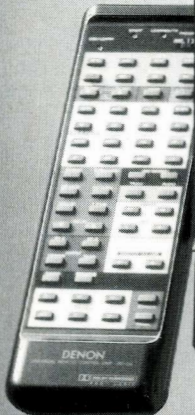
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## “All of his designs have a quality that sets them apart from the norm, but the S6, with its slate-topped table, has a distinct presence.”

the bearing, which is of substantial proportions and made to extremely fine tolerances. The whole design, including power supply, is finished in a fine matt silver, an effect achieved by sandblasting the stainless steel that is used extensively throughout the design.

The support table is worth a second look as well. Each leg contains a piston-style damping system, and the cross members are totally decoupled from the uprights with rubber bushes. The lack of metal to metal contact means that you effectively have four independent supports for the Italian slate platform.

### The art of engineering

When we listened to the S6, it was equipped with one of Simon's uni-pivot arms and a Denon DL103 cartridge. Although the latter proved something of a limitation in such exalted company, there was no denying the extraordinary sense of an instrument, or instruments, in the room. The sheer tangibility of the sound was very convincing. Rarely does one hear such articulate and open bass coming from a pair of ageing Spendors.

The tonearm, with its turquoise stone set into the tip, is one of many variations on a theme that Simon has been developing. As well as uni-pivot arms he intends to make linear tracking models which will probably be a rolling chassis rather than air bearing type. Such variety is because each has its particular strengths; the linear design is well suited to high compliance cartridges, while the uni-pivot is more capable at low frequencies and can cope with the high energy of low compliance designs.

Simon works on the designs in his electronic and engineering workshops, drawing up parts for others to make with a CAD (computer aided design) system or, preferably, his trusty drawing board. The components are then precision made by engineering companies nearby in Sunderland and Scotland. He finishes the parts and completes all the assembly work himself.

### Form and function

Simon Yorke is dedicated to the art of analogue audio but that's not all. "I'm very much into Zen," he told me. "Zen is about pragmatism. It's about solving problems. You can pursue something into the stratosphere but if it's not practical

what's the point?" He also has a strong creative urge. "I'm an artist first and foremost and I got into engineering and electronics to satisfy the needs I have as an artist, not the other way round."

He believes strongly that function should follow form. "You look at a Krell amplifier. A Krell amplifier screams machismo at you. It's got handles on it which are completely useless because you have to lift it from underneath, great big barbed heat sinks, and slotted steel plates — it's military hardware. What the Krell is all about is stonking amounts of current." Simon's turntables look pretty substan-

tial too — but elegant with it. They are all about delicacy and power and combine both elements in their design.

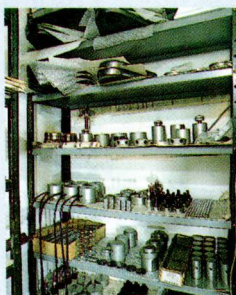
While neither Zen nor art would appear to be critical elements of audio products, it's not hard to see their influence on Zarathustra designs. What's more, the results I achieved with the S4, and the discoveries I made during my visit, would seem to vindicate the approach. Simon thinks that, "the equipment itself is capable of changing the way you feel about the music you're hearing." Whether it's a case of flashing lights or matt silver golden ratios, he's definitely got a point.

## Zarathustra — definitely not made by robots

A look at the component parts as, step by step, they are carefully crafted into the unique Zarathustra turntables.

### 1. Skeletons in the cupboard

The stock cupboard. These shelves contain the parts for forthcoming S4 and S6 turntables. Ash composite subchassis sit

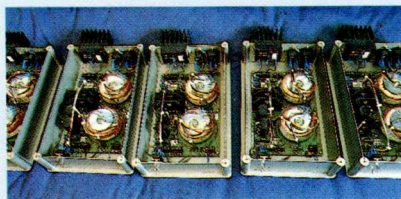


bubble wrapped on the top. They will have stainless rods inserted into their sides which are connected to the suspension housings, and

bearings and armboards bolted on. Elsewhere you can see motors, bearings, and a couple of S6 idlers.

### 2. The production line

This is about as close to a production line as you'll find at Zarathustra; five finished power supplies await their turn on the test bench. Simon is not only concerned about aesthetics and sound. Reliability is of great importance too. Everything is rigorously tested before leaving the workshop.



### 3. Tonearm testing

A tristar S4 makes a good test bed for new tonearm designs. Here, we see a couple of variations on the uni-pivot theme

equipped with Decca and Denon cartridges. The deck on the right is a new, large spring variation on



the S4 theme that has recently been introduced as a result of development on the big S6 turntable.

### 4. The finished article

The refined and simple lines of a Simon Yorke uni-pivot tonearm. Note the SME-fit armbase and the neat little turquoise stone at the tip. The cartridge mounting is also unusual, offering an extra plane of adjustment for the truly dedicated.





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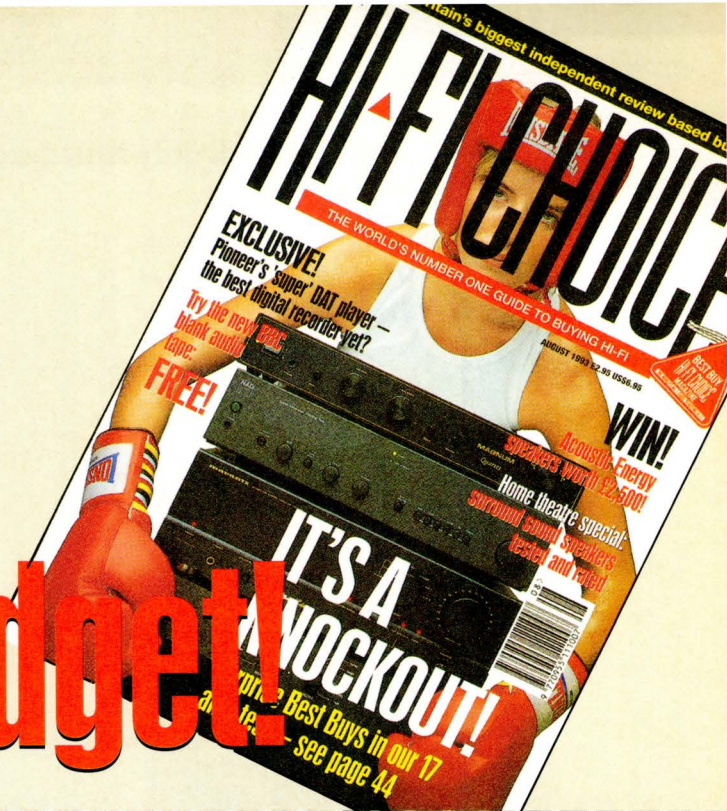
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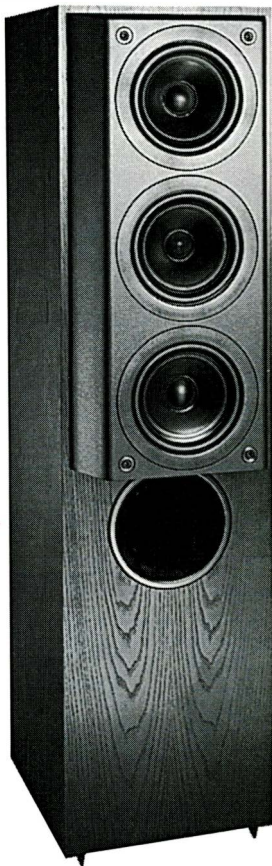
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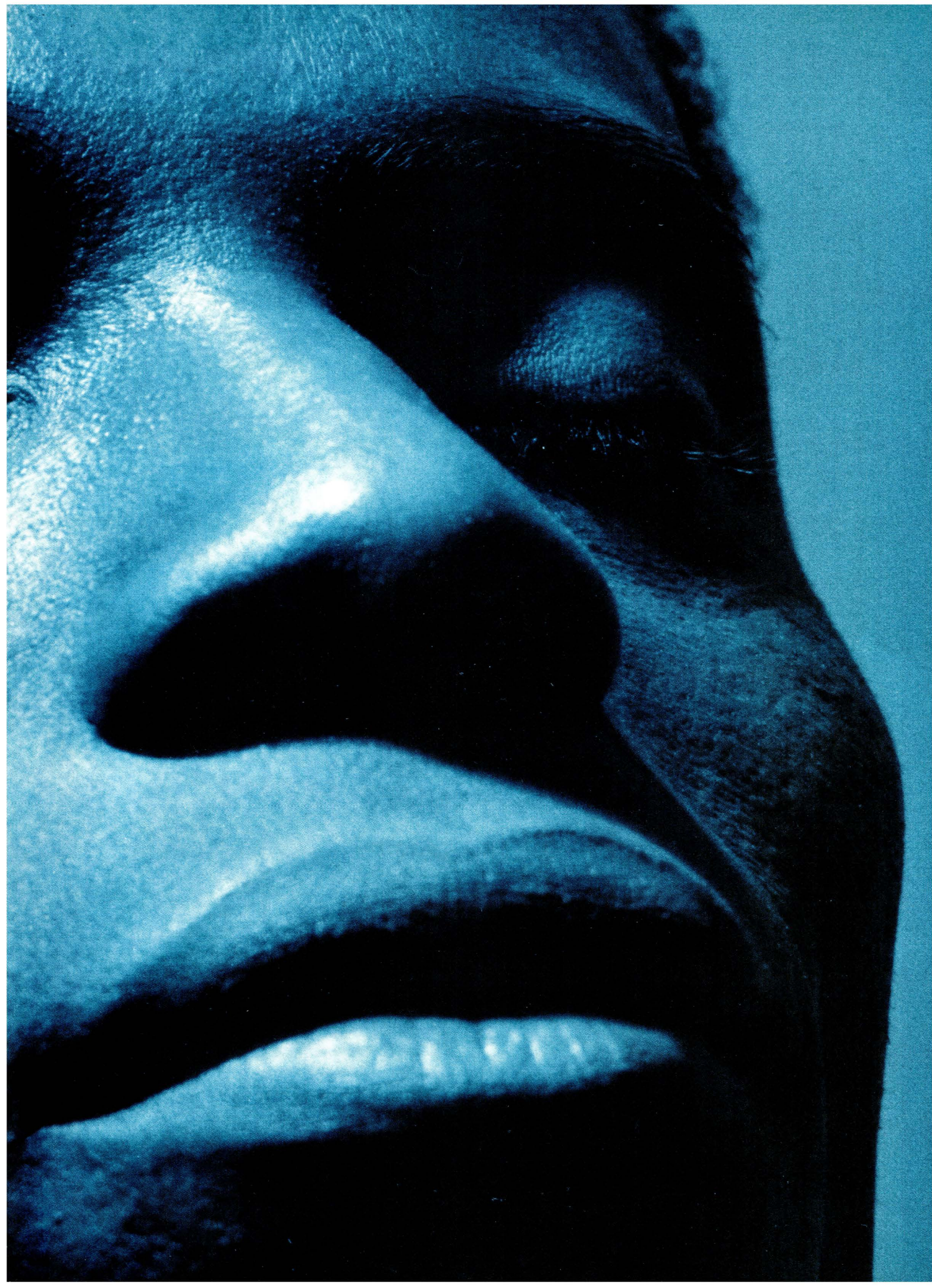
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## How to enter

Write your answers to the five questions, along with your name and address, on the back of a postcard or sealed-down envelope.

Send your completed entry to: NAD Competition (HFC/993), *Hi-Fi Choice*, PO Box 249, London WC2H 0HS.

Entries must be received by first post on Monday, September 20, 1993.

## Competition rules

The Editor's decision is final and no correspondence will be entered into. Winners will be notified by post. The competition is not open to employees of Dennis Publishing Ltd, NAD Electronics Ltd, their suppliers, agents or associates. The competition is open to UK residents only. No cash alternative will be offered. Submission of entry will be taken as acceptance of the rules. Proof of posting cannot be accepted as proof of receipt. Please notify us if you do not wish to be informed of any special offers or promotions.

## Questions

- How many watts does the 208 power amplifier deliver into an 8ohm load?  
a) 150 b) 250 c) 350
- What chipset is used in the 502 CD player?  
a) MASH b) PDM c) 16-bit
- Which NAD product was called 'cracking' in a recent *Hi-Fi Choice* group test?  
a) 304 b) 335 c) 504
- Which well-known film maker has put his name behind THX?  
a) Steven Spielberg b) George Raft c) George Lucas
- 'Play trim' optimises the performance of the 602 cassette deck to suit what?  
a) blank tapes b) prerecorded tapes c) preamplifiers









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## Density problems at the top table

**Q**I listen to classical music on an SME Model 20 turntable with an SME V arm and Kiseki Black Heart cartridge. This is connected to a DPA 50S pre/power combination and Quad ESL-63 Professional loudspeakers, using DPA Black Slink and 100S cables.

I feel that the system produces a dense and non-transparent tone scale, which creates the feeling that there is no breath of air. When you add the marvellous detail and almost physical presence of the instruments, the result is near to brutality and pain.

It may sound like a paradox, but I actually like the cartridge itself. All things considered, the SME manifests its qualities in a ruthless manner, despite experiments with damping control and arm height. Therefore, I've considered buying a new turntable, in roughly the same class, to combine with the Kiseki, DPA and Quad.

I am after a combination with the same overwhelming realism, but with more air, subtlety and nimbleness. Do you think that a Zarathustra S4/Pluto 5A is near to that goal?

Ivailo Yordanov,  
Sofia.

**A** We don't really think the fault lies with the SME. However, the addition of a Townshend Seismic Sink would be of great benefit to its overall performance. Although many feel that the DPA/Quad combination was one of the world's finest, the sheer detail can be overbearing. If that is the case, it doesn't matter what turntable you use. The sound will be broadly similar.

Instead of the DPA combination, try the Conrad-Johnson PV11/MV125 pre/power duo we tried in last year's

## Query of the month How to do bass properly

**Q**Please help me with my dilemma. My system comprises an Arcam Alpha Plus CD player, Linn Intek amplifier and Epos ES11 speakers on dedicated stands. The room is four by three metres with a chipboard floor.

The problem is too much bass extension. I have experimented at some length with speaker positioning, using both Blu-tack and spikes, with limited success. Speaker cable is Mission Solid Core, and it is the only one I have used so far which significantly dampens bass response.

I am now resorting to foam bungs to block the speaker's reflex ports. These were supplied by Epos as a possible solution and represent the biggest improvement so far. However, I am concerned I may be upsetting the balance of the speakers in some way, as they were clearly designed to operate best with the ports unplugged.

Funds do not permit me to change any components at this time. The CD player and amp worked fine with my old Mordaunt-Short speakers, but I felt an upgrade would improve the sound further. Please help me to enjoy my music again.

David Sangster  
Hertford, Herts.

**A** The foam bungs supplied for the Epos speakers are designed to eliminate overbearing bass caused when these speakers are placed against a load-bearing

wall. It is not a perfect solution, but it is a step in the right direction.

Although such a modification alters the tonal balance of the speakers, it is not so dramatic that it completely undermines the positive qualities of the ES11s.

However, your full bass is probably due to some kind of room anomaly. Such problems are most likely to cause trouble at low frequencies. In designing, building and furnishing rooms, we are all gifted acousticians, but only in the frequency range which matches that of the human voice. Outside this range, all manner of difficulties occur.

Without changing major components in the system, few options exist. Soft furnishings are remarkably effective at soaking up stray low frequencies. The RoomTunes system should also work in this case, and a set of CornerTunes and EchoTunes are less intrusive than heavy furnishing. Finally, if you have not already done so, it is worth rearranging the speakers so that they are as far as possible from the rear wall. If you can, try firing them across, instead of down, the room.



Collection, or even the same PV11 preamp with something like the Quicksilver Silver Mono power amplifiers, untested in Choice, but oft recommended as the ultimate partner for the Quad Electrostatic in the American magazines.

You may like to consider the amps used by the SME turntable designer, Alistair Robertson-Aikman: an LFD

**The Basis Ovation is well worth considering as an option for the full Perrier effect.**

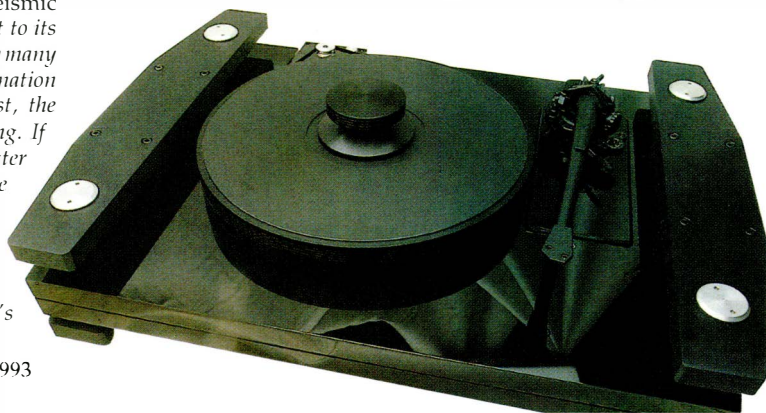
battery-powered phono stage into an Audio Research preamp and a pair of Krell monoblocks — he uses Quad speakers too.

If, after hearing this, your feelings about the sound remain the same, then the turntable may be at fault after all. The Zarathustra combination you mention, together with designs like the Voyd Reference, the Basis Ovation (also tested in last year's Collection), or the as yet untested Kuzma Reference or VPITNT II, would be worth auditioning.

## Bring on the penguins

**Q**G'day Hi-Fi Choice. I've got a problem and I was hoping you could help. My system consists of a Marantz CD52 CD player, a Marantz CV-55 LaserDisc player and a Sony DTC-55ES DAT player. These are linked to a QED passive preamp and a Rotel RB-960BX power amp. This is connected, via AIR UTZ1 and Sony 1177 cables, to a pair of Stax Signature/SRD7SBmkII headphones and a pair of Sensei party loudspeakers. The latter were purchased at the age of 12, so please don't disown me!

I need something better. I assume these amps should only be used as bed warmers and the speakers suck and suck bad. I'm just afraid of the large amounts of cash I will have to spend for better components. Please suggest the amps, speakers and cables needed





# HELP!

to improve this system, for \$5,500. Or should I just get the valve energiser from Stax?

I am trying to bolt down the path to audiophile heaven by following the principles of a passive preamplifier, to reduce noise and interference, with separate channel power amps, for more power to the headphones.

Bash me with some positive news please, or I'll be swimming with the penguins down on Phillip Island if things can't be improved.

**Clive David Hill  
Melbourne, Australia.**

**A** If you don't look at the CD player before changing the amps, you may want to start learning to speak penguin, as the sound of the system is largely governed by the quality of the front end. Even changing over to a Rotel RCD-965BX will make a significant difference, and one that will improve as the rest of the equipment improves.

Although a passive preamp is a good option, there is no reason why a well-designed line driver amplifier will not work as well. What you lose in absolute clarity is made up for with the higher gain and the ability to drive longer pre-to-power amp cables. An obvious option here is the Audiolab 8000C preamp, partnered with a stereo 8000P amplifier or a pair of 8000M monoblocks, although good quality products in your price range also exist, from companies such as Audio Innovations, Naim and Exposure. However, the Audiolab monoblocks would work well with a passive preamp, such as the Audio Synthesis Passion, if your heart is really set on that road.

Loudspeakers to suit the system depend on what system you decide upon! Try looking at models like the Audio Note AN-E, the Castle Winchester, the Heybrook Sextet, KEF's 104/2, Linn's Kaber, the Magneplanar MG1.4, Naim's SBL, the Shahinian Arc and the TDL Studio 1M. All very good, they each produce music slightly differently.

We appreciate that this is a very long list, but your location and the final system will automatically halve it in practice. Finally, we are not sure of the international availability of our Recommended cables, such as Silver Sounds. Furukawa cables are likely to be available, and the FS-2T35P speaker cable, and FD-1010 interconnects for CD and FA-2010 for analogue surces would work very efficiently. Hopefully, this will prevent the Penguin option.



**Pick up a Rotel RCD-965BX CD player instead of a penguin.**



**The Rega RB300 is ultimately more suitable for today's cartridges.**

## New life in the old system?

**Q** I have a Rega Planar 3 turntable, Arcam Alpha CD player, original Naim Nait amplifier and a pair of elderly single-wired Linn Kan speakers on their original stands. Aside from the Alpha CD player, the system has remained unchanged for many years.

Recently, I had my Rega R100 stylus replaced. The salesman suggested that I should upgrade my turntable shortly, by replacing the old S-shaped arm with the new RB300 arm. Also, he recommended changing the stands over to the ones for the Kan II. Do you think the changes suggested are worthwhile? As the products are ageing, would it be prudent to put the money toward upgrading the whole system? I listen to mostly classical music.

**T Lawrence  
Northampton.**

**A** There is nothing wrong with keeping the system that you cur-

rently own. There is little to break down in the Rega that cannot be replaced. Unless your original arm has bearing damage, we can see no real reason to replace it with a new RB300, though this is slightly better, and ultimately more suitable for the cartridges in use today. But if you are happy with the silver S-shaped arm / R100 combination, stick with it.

Changing the stands over is a different matter. The latest speaker stands are considerably more rigid than the original Kan stands, and have been known to transform many an early Kan, showing just what the speaker is capable of. Such a change is more than justified.

## Low cost upgrade without tears

**Q** I have a basic Arcam Alpha CD player, connected directly to a Linn Intek amplifier. I see that Arcam offers an upgrade to Alpha Plus performance for £100 and would be grateful for your advice as to whether or not this gives a

worthwhile improvement in sound quality. Also, would fitting by the dealer be included in the price and, if not, is it likely to be expensive? Finally, would it make more sense to keep the player in its present basic form and put the money into something else such as a starter-level DAC, or a second-hand preamp at around £200?

**Chris Daly  
Hatch End, Middlesex.**

**A** Although Arcam offers an upgrade to the Alpha, it is not as fundamental as the upgrades to the Delta CD player, and we would suggest leaving the player as is. It does make the player fractionally smoother, however, and if you feel that will improve your system then go for it.

With regards to other low-cost upgrades, try a pair of Townshend Seismic Sinks or even Mana tables before looking at adding a D/A converter. This is because the Alpha is a very good integrated player, but is not well-known for its success with after-market DACs. If you must add a DAC, try the Audio Alchemy DDE, as its performance seems to suit both the CD player and amplifier.

## Just the same with a different name?

**Q** Since I became a Hi-Fi Choice reader, I've fallen into a dark pit of confusion. Not to say that I haven't been enlightened and elated by some of your issues.

Unfortunately, I'm a hi-fi neophyte, lost in the world of equipment. I find your Directory a mine of useful information, but I have a problem: are the UK models different from those in Canada, or do companies only change the model number — such as the Conrad-Johnson PV-10 preamp, changed to the Canadian PV-10a?

**Michael Csernak  
Quebec, Canada.**

**A** Although some companies produce 'badge engineered' products for different countries (to avoid clashes of product names or 'unfortunate' translations), and the bigger companies can afford to make products aimed at specific markets, the majority of products differ little across international boundaries. However, with the variety of different mains voltages and safety regulations from country to country, subtle changes do occur in a product. Generally, though, the differences are not large enough to warrant significant study.



**Consider low cost upgrades to improve the Arcam Alpha CD player.**





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# HELP!

In the case you mention, the Conrad-Johnson PV-10a is the latest version of the successful PV-10 preamp, which has changes far beyond mere cosmetics. We hope to be looking at the product in the near future, but private listening tests suggest that it is every bit as good as its predecessor.

## Does car cable dull system sound?

**Q** My present system consists of a Rotel RCD-965BX CD player, Audiogram MB1 amplifier and B&W LM1 speakers, the latter sited on top of some old speakers. I use the interconnect supplied by Rotel and the speaker cable is Monster Auto Hotwires. There aren't any supports involved, as the amp is sitting on the top of the CD player. My room is eight by five metres.

I am satisfied with this system, but it is obvious that it can be improved a lot. I tried some cables, but could not hear any serious improvements. I think my system lacks drama and a lot of bass. I would like the bass to be tight and well-controlled.

My budget is £600 for the speakers only, but would reach to £1,000 if the improvement is worth it. Any suggestions on cables and supports are also welcome.

**Kostas Topaloglou  
Platamonas, Greece.**

**A** If you are after really tight bass, the Audiogram is not the amplifier for you. Its strength is its pleasing soft-focus presentation with a full, but loose and bloomy, bass. However, your first problem is the speaker cables. The Monster cable is designed for in-car use, as it has a small surface area for short lengths. Use of such a cable in a domestic system is not



**An Audio Innovations Series 700 will tame aggressive sounds and have enough welly.**

*recommended, as it is unlikely to work well in long cable runs. We suggest a cable with a more powerful bass, such as van del Hul The Wind, especially when used in combination with The Source interconnects.*

*Changing the B&W speakers for Epos ES14s would be an obvious next step, although they have a reputation for system dependency. On the other hand, the floorstanding Linn Keilidh, with optional ceramic plinth, has the same bass depth, but is less system sensitive. At the next level, speakers like the TDL Studio 1M or the Heybrook Sextet would be a good choice. Finally, it is worth considering dedicated tables or even isolation platforms, which will add the finishing touches to the system.*

## Toning down the brightness

**Q** My system consists of a Philips CD850 CD player, Onix OA21S integrated amp and Ruark Talisman speakers. I like the clear, open sound and especially the tight, well-controlled bass produced by the speakers.

However, sometimes the treble is too aggressive, particularly

on brass and speech. Assuming that I want to keep the speakers (which I still like very much), what amplifier would you recommend to slightly reduce the brightness? I am tempted by a valve amplifier, but are they powerful enough for a big symphony?

I also want to improve the sound of my CD player, but I do not want to replace it. Which DAC would you recommend?

**Liew Choon Kiong  
Singapore.**

**A** Although adding a valve amplifier to your system may seem like a fine idea, if you like to listen to big orchestral works at high volumes, it may not have enough power to drive your speakers properly. However, an amp like the Audio Innovations Series 700 should be powerful enough in most cases, though we would prefer to see it partnered with a speaker like the Audio Note AN-J or AN-E.

If you want to stay with the speakers and don't mind being transistorised, then check out the Exposure range of pre/power amplifiers.

Adding a DAC to the CD850 may not be the panacea you seek, as the transport may be the weakest link in a good system. There are two op-

tions; either go for a cheap and cheerful converter, like the QED Digit or the Audio Alchemy DDE, or opt for a high-quality DAC which reclocks the signal from the transport, such as the Pink Triangle Ordinal. The latter would be a good match for the CD850.

## AV — the final frontier

**Q** My system comprises a Sony CDP-X339ES CD player, with a Audiolab 8000C/P pre/power amplifier and a pair of Rogers Studio 1t loudspeakers. I also have a new 28inch Sony television and a Sony videorecorder, both of which are Nicam devices. I wish to link the TV and video to the hi-fi, and would like to add surround sound to the system, possibly at a later date.

What is the difference between all the Dolby systems and THX? Are they all inter-compatible and do you need a special video recorder? Both the TV and video are rented, so I do not want to do anything that could damage either unit.

**P Stewart  
Edgebaston, Birmingham.**

**A** The simplest way to get into AV is to connect the phono outputs of the video recorder into a spare line input of the Audiolab preamp. Remember to place the TV in between the speakers, but keep the speakers far enough apart to avoid the colour problems created by the unshielded speaker magnets. Generally, the distance used to separate speakers for good stereo is enough to avoid fringing effects. If possible, remember to remove the speakers in the television, or at least mute the on-board speakers when using the hi-fi. Otherwise, good stereo image location will be impossible.

The next stage is to add a decoder with built-in amplifiers, such as the Yamaha DSP-E200, plus centre and rear channel speakers like the Mordaunt-Short HE Pro Logic package.

There are three basic AV systems; Dolby Surround, Dolby Pro Logic and THX. Dolby Surround has been largely surpassed by Pro Logic, which uses a centre speech channel and more sophisticated electronics. THX is a similar system to Pro Logic, but with rigidly specified and standardised components that are licenced to carry the Lucasfilm/THX banner. Currently, there are no complete THX systems in the country, and the THX licenced components available are good, but very expensive.



**A Yamaha DSP-E200 decoder is an early step down the road to a full house home entertainment system.**



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22nd June 1993

Nigel Harradine  
West London

Dear Sir,

I am writing to you, to inform you that I have recently purchased several items from your Chiswick shop.

The reason for this letter is that I have never had such freedom and pleasure buying anything in my life.

Your staff are all friendly and very helpful. One person in particular has put himself out to help me non stop. That person is Gordon, it is because of his help, that you can be assured of seeing me in your Chiswick shop very soon, ready to sit, listen and purchase any new items I may like the sound of.

I would also like to thank you for giving me the chance to improve my system without having to feel as though I'm being forced to buy because it's there.

Thank you once again for your help and staff. I would appreciate it if you showed Gordon this letter, as I'm looking forward to my next listening session and cup of coffee.

Yours gratefully,

*Nigel Harradine*

Nigel Harradine

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## Explain how to do what you do, to me

Apart from reviews, I would like to see more articles in *Hi-Fi Choice* dealing with how to use equipment. In particular, I feel pictures would help explain more clearly how you set up equipment for bi-amplifying. A list of amplifiers that are suitable for use in bi-amp mode would also be most useful.

A series of 'how to' articles, coupled with pictures and helpful diagrams, would go down well with a lot of us mere mortals who aspire to better sound quality.

**Mr Jasat, Bately, West Yorkshire.**

*We agree whole-heartedly, Mr Jasat, and future issues of Hi-Fi Choice will be featuring more easily understood guides to getting the most out of particular items of hi-fi equipment. Ed.*

## Making the most of the airwaves

I read with interest the tuner reviews published in the July 1993 issue of *Hi-Fi Choice*. I became even more interested when I realised that the listening tests had been carried out in Brighton, as I live in the area and own one of the tuners being tested — the Rotel RT-950BX. I was therefore able to make some real comparisons with the comments made by Paul Messenger.

My Rotel tuner can receive all the stations listed in your review in full stereo. I don't want to comment upon your review of this tuner specifically, but I would like to make the general point that the aerial array used for the tests was probably not appropriate for its situation.

When living in a hilly area such as Brighton, if you want to listen to fairly low power transmitters

## Letter of the month

### Off the peg hi-fi

As a hi-fi rookie, can I suggest that you run more features on what I call 'off the peg' systems. It would be a welcome change from hi-fi separates, most of which cost the earth — in my opinion.



Though I've always been a music lover, mainly reggae and classical, I had to make do with an ageing Akai ghettoblaster until earlier this year, when I happened to hear a few hi-fi systems being demonstrated. In a matter of minutes, I had the hi-fi bug. From January to April I did nothing but read hi-fi magazines and listen to systems, including separates. My budget was £500 and whatever I bought it had to have a cassette deck, as I have a large collection of tapes. The knowledge I had gleaned from your fine magazine and my own ears made me choose the Technics SC-CH550 system.

I've had it for two months now, and I'm very happy with it. I've placed the speakers on small home-made plinths of solid wood, with some self-tappers screwed through so that they sink into the floor. I've also changed the bog standard speaker cables to Sound Lab multi-strand audio cable.

Overall, these simple additions have tightened everything up, and all my old cassettes sound brand new again. I never knew there was so much music on them!

**Mr C S May, Scunthorpe, South Humberside.**

*We make a point of evaluating separates and 'off the peg' systems, Mr May. Our last test of CD mini systems, for example, was in issue 113. However, our tests also reflect market trends, and top separates systems offer such good value at the moment that many traditional 'off the peg' system buyers are mixing 'n' matching their own combinations of equipment. We'll be looking at this development more closely in a future issue of Choice. Ed.*

about 80km away, one expects to need a tuner such as the Rotel. However, a few more pounds for an extra element on the aerial must also be worthwhile. The case for using such an aerial is even stronger with the more esoteric equipment. These comments

apart, reading *Hi-Fi Choice* remains a high point of my month.

**Francis Griffin, Brighton.**

*Our tuner reviews included two quite different forms of listening test. The Brighton 'air check' tests deliberately used a modest aerial in a difficult site in order to assess each tuner's*



The Rotel RT-950BX needs a large aerial to sound good in hilly areas.

capabilities in digging out weak, distant signals and distinguishing them from much stronger local ones. The main 'sound quality' assessments were done at a much 'cleaner' site from an RF point of view, using a 23-element antenna to give an impeccable quality signal from the main Wrotham transmitter.

The Rotel RT-950BX's strength is its sound quality rather than its RF discrimination, so I would certainly agree that most Brightonians will need to feed it from a large aerial to get good reception from London transmitters. Paul Messenger.

## So many speakers, so little time

Early last year I needed to upgrade my loudspeakers, and I was looking at models in the £500-£650 range. I was introduced to the KEF 103/4s and bought them, though I'd not seen any reviews.

I found them to have good imagery, uncoloured vocals and clear treble. Since then, I've read two reviews — one in an American audio magazine and one in a British hi-fi journal.

Naturally, I was pleased to read that other people appreciate the quality of these speakers too. Since you saw fit to include the 105/3s in last year's *Collection*, I would be interested in your comments on the 103/4s.

This aside, having been a regular reader of *Hi-Fi Choice* for over three years, I would like to say that the magazine just keeps on getting better. My only criticism, like Mike Jenkin's letter in issue 119, concerns *Aspirations*: could you please choose systems which are a hi-fi enthusiast's dream. By that I mean genuine high-end equipment instead of mid-price gear in a luxury or unusual setting.

**Colin Hickson, Wargrave, Berkshire.**

*The KEF 103/4s have not been tested in Choice, so we cannot comment on their performance.*

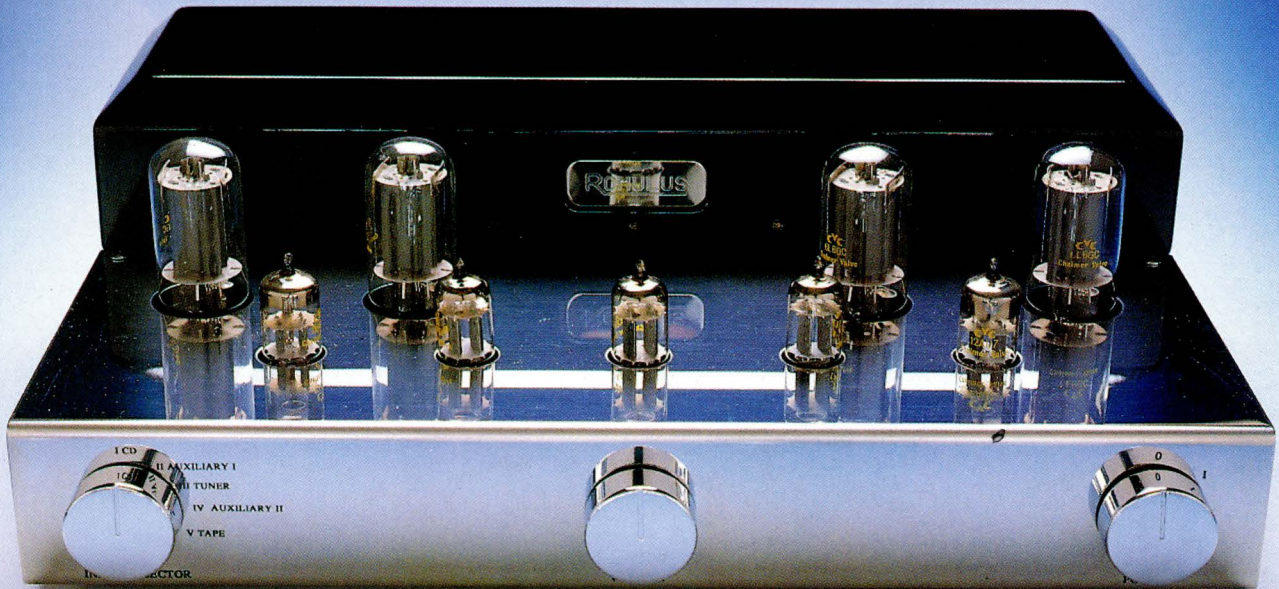
*As to the Aspirations feature, we can only repeat that if people make us aware of interesting systems, we will do our best to feature them. If you have a set-up worthy of consideration, write to The Editor, Hi-Fi Choice, 19 Bolsover Street, London W1P 7HJ and mark your envelope 'Aspirations'. Ed.*



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# The shape of things to come

I walk past George Martin's superb new Air Lyndhurst recording studio every day. So how could I miss the sign which was steering record industry executives and engineers into a demonstration of Super Bit Mapping (SBM) arranged by Sony? And how could I resist signing in and sitting down?

The Sony experts were there to make the recording industry people an offer they will find hard to refuse. Sony is offering free licences to record companies which want to use SBM, to improve the sound of CDs, without breaking the existing Red Book standard for CDs and CD players. Sony won the day by bravely running comparative tests for balance engineers, and answering all technical questions frankly and fully.

Can this be the same company that did such an unconvincing job of launching Mini Disc? No. The SBM sessions were run by Sony's professional and broadcast division from Basingstoke, not the consumer marketing people from Staines.

The CD standard specifies that the digital code on all discs must use 16-bit words, running at 44,100 words per second. All CD players conform to this standard. But modern studio recorders code sound into 18 or 20-bit words. Decca uses 18-bit recorders, of its own design.

Mitsubishi sells a 20-bit stereo tape deck for around £15,000. Most studios are waiting for the launch, later this year, of a 20-bit stereo recorder from Sony which uses a magneto-optical disc. This will cost around £25,000 pounds. Multitrack 20-bit recorders will follow, at even higher prices.

Until recently, most studios down-converted to 16-bits by truncating, or throwing away, any extra bits. This adds a hissy noise to the sound on the CD. Several companies have proposed better ways of down-converting, to minimize noise, but some are not fully compatible with existing CD players.

Sony's SBM is fully compatible with existing 16-bit CD players. After 20-bit recording, a converter box in the studio re-shapes the noise caused by losing 4-bits of code when reducing to 16-bits, to take advantage of the human ear's natural deficien-

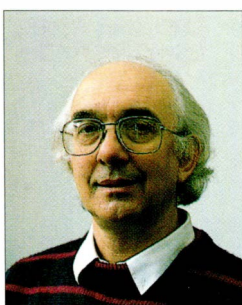
cies. The raw noise is 'white', with equal energy at all frequencies. But the human ear is more sensitive to quiet sound in the speech frequency band, between 3KHz and 5KHz. So the SBM noise shaper converts noise energy in this frequency to noise energy at higher frequencies, where the ear is less sensitive.

Sony's tests used the sound of music, and subtle effects like water dripping on metal, in three ways. Sound was played from an original 20-bit recording, after crude truncation to 16-bits and with sound noise shaping. Without exception, every engineer present in the packed studio judged the noise-shaped sound to be very close to the 20-bit original, and far clearer than the truncated sound.

Sony has filed patents, and trademark applications on the technology and SBM logo. Record companies can now apply to Sony for a free licence to use the trademark on CDs made using Sony's SBM down converter. They need not mention the name Sony. In the short term, Sony gains only from the sale of a relatively few SBM converters to recording studios, at £10,000 each. But in the long term, Sony gains by turning the industry onto the idea of 20-bit recording, because Sony is the major supplier of 20-bit studio recorders and these sell for much higher prices than the converter.

Watch out this autumn for a big bit battle between Sony's SBM and something called 4D with High Bit and Authentic Bit Imaging from Deutsche Grammophon (DG). In the continuing absence of any coherent technical information from DG, it is hard to unravel exactly what 4D/ABI/HB is, what it does, and how it differs from SBM and from what DG's sister company Decca has been quietly doing at West Hampstead for many years.

The DG people, who rather grandly call themselves Tonmeisters, could have learned a lot from doing as I did and going along to Sony's show. Although I had to gatecrash, DG was invited but didn't turn up. The German company's parent, Polygram, did attend, though. It will be fascinating now to see whether Polygram uses the Tonmeisters' system, or SBM.



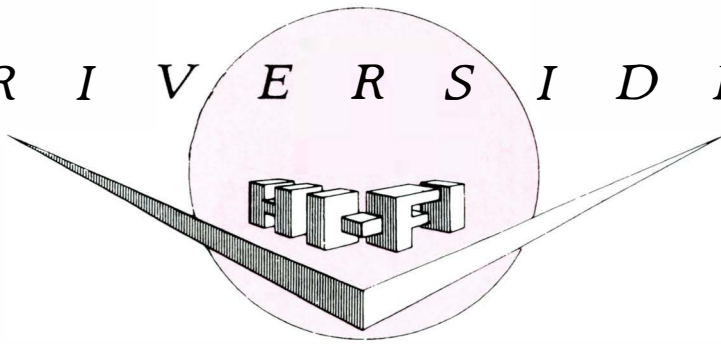
**Barry Fox takes a sneaky listen to Super Bit mapping from Sony and comes away impressed.**



The recording industry awaits the launch of Sony's 20-bit recorder, the PCM-9000, with baited breath. It's on sale soon.



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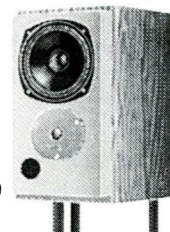
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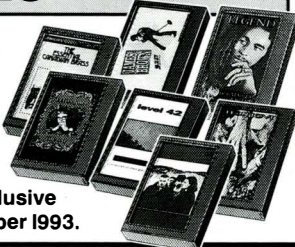
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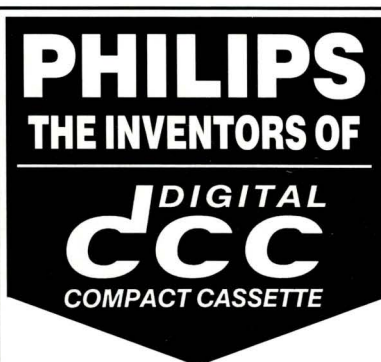
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# The THX experience

*Experience the extraordinary with Lucasfilm THX home cinema. Alvin Gold explains how the system works, how to create it at home, and reviews NAD's excellent 208 THX compatible amplifier.*

In stark contrast to the plethora of earlier multi-dimensional systems — in particular QS and CD4, which briefly flowered and then died in the Seventies — THX can deliver sound of breathtaking realism. You will be overwhelmed by the almost palpable threat of the water all around in *The Abyss*, and of the awful nuclear cataclysm of *Terminator 2*. Or, as the editor prefers it, THX is so amazing you can hear the rust breathe on the hull of *Red October* as it charges beneath the ice pack.

To those raised on traditional two-channel high fidelity, however, home theatre generally, and THX in particular, are a nightmare. Dolby Stereo (the engine of home theatre) is a technical dog's dinner that can't even encode a direction in space unless it lies in the room's front quadrant. It doesn't even pay lip service to the ideals of accuracy that are every hi-fi designer's goal.

Some suspicion of THX is therefore understandable, but there's no escaping the fact that people become excited in the

presence of a good THX demonstration, which can far exceed the standard of presentation at 99 per cent of commercial cinemas. THX makes noises so captivating that I have seen some of my most

Logic, and it introduces techniques that play no part in Dolby.

The grand idea behind THX is deceptively straightforward. It is to reproduce at the listening position the sound heard

by the film director at the final sound production stage. This means a tight control over all the important variables effecting sound, including speaker placement and tonality, distortion, bandwidth, noise levels, headroom and more. Implicit in the standard is that the sound pressure levels achieved on playback match those heard at the recording stage, which translates into a maximum specified 105dBA.

The THX system design aims to eliminate as many uncontrolled variables as possible, including the sound of that final acoustic. Looking just at domestic THX (though cinema THX is very similar in principle) sharp directivity is important in the front quadrant of the room centred on the screen, which is covered by three speakers — left, centre and right.

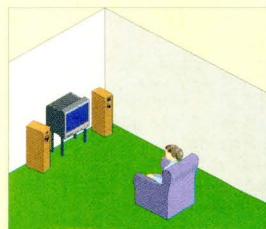


**B&W addresses the problems of THX home cinema with a dedicated speaker system.**

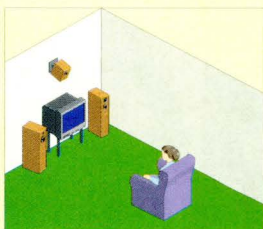
cynical colleagues emerge from demonstrations slack-jawed in awe and surprise. In short, THX really does work.

Created by George 'Star Wars' Lucas' Lucasfilm Ltd, THX is based closely on Dolby Pro Logic, both designed to reproduce Dolby Stereo material. However, THX is more tightly specified than Pro

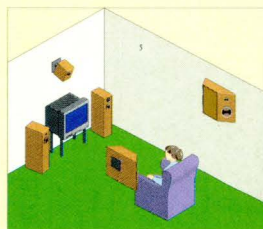
## How to create THX cinema sound at home



**1** In an ideal world, using a front projection TV, the main front speakers would be positioned just outside the edge of the screen, which should be 60 inches or more wide. In practice though, position as with normal hi-fi speakers, with the tweeters at ear level.



**2** The centre, or dialogue, speaker generally sounds best used just above and slightly behind the TV screen, with the tweeters pointed at the listener's ears. The centre speaker should be similar in sound to the side front main speakers, and should not be used in pairs.



**3** Arguably, the most satisfactory arrangement for THX surround speakers involves using a single pair of dipolar (that is, THX approved) side/surround speakers, positioned on the wall but well above ear level, roughly opposite the main listening area.



**4** Subwoofers should be difficult to locate by ear. Central positions are still best though, and two subwoofers are better than one. Positioned at different distances from the nearest walls, resonances tend to cancel each other out, giving a smoother bass response.



**5** A typical complete THX system. The equipment rack (shown at the rear of the room, on the right) consists of a THX processor, a signal source (LaserDisc is preferred because of its superior quality) and a minimum of three stereo or six mono amplifiers.



To allow several people to watch at once, horizontal dispersion is wide, but vertical directivity is sharply curtailed to avoid room resonances and colorations, and to reduce the level of early reflections from the ceiling (carpeted floors 'muffle' reflections) which would impair dialogue. Re-equalisation, which involves gentle treble roll-off, is applied to the front channels to produce a spectral balance that conforms to the THX standard.

The side and rear speakers are also much more stringently specified than is the case with plain vanilla Dolby Pro Logic. A THX side speaker is dipolar in construction, radiating forwards and backwards with a figure of eight pattern along the sides of the room. The effects speaker is then positioned at the sides of the listening room, and what the listener experiences is a diffuse soundfield.

The signal is bandwidth limited and equalised, to give an 'aural fingerprint' — this is also known as 'timbre matching' — that is similar to the front speakers. 'Decorrelation' applies small random pitchshifts separately to the left and right hand versions of the mono surround channel, so that no central image forms at the centre or rear of the listening room. One or two subwoofers are normally used with THX systems to give the required low frequency response.

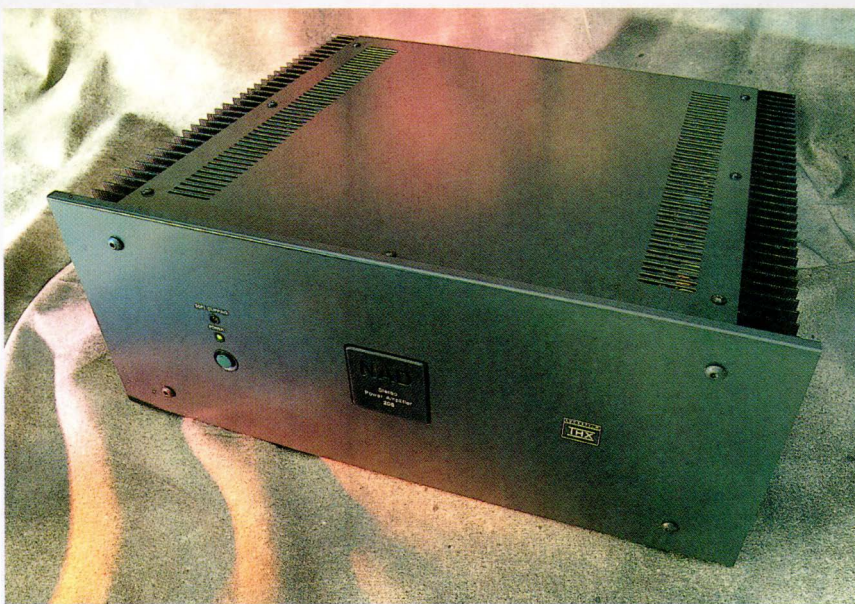
In the end though, THX works because it fulfils a basic purpose; it recreates what the film maker intended as closely as possible, leaving aside such imponderables as the realism of the original recordings. The formats mentioned earlier, such as SQ, were hardware solutions to a barely understood problem, foisted on the market by vendors who had a poor appreciation of the abilities and limitations of their inventions. Ultimately, THX is attracting real interest because it is a software driven standard which is entirely subservient to the intentions of the film director.

### What to play on a THX system

You will look in vain for THX software at your local record shop. You may, however, find some Dolby Stereo or Dolby Surround titles, such as the RCA *Classic Film Scores* series featuring Charles Gerhardt and the National Philharmonic Orchestra. These work well through a THX system.

Television is an embryonic but increasingly significant source of Dolby recorded material. *Northern Exposure* is made in Dolby Stereo (I'm counting the months), as is the latest *Star Trek* series. Many others will, hopefully, follow suit.

The main source for most THX systems, however, is the 5,000 plus catalogue of Dolby encoded films made since *Star Wars*. A few titles are labelled as THX movies, which usually means the title was mixed by Lucasfilm at the Skywalker Ranch in California, but all Dolby Stereo (or Surround) material is suitable for THX.



## NAD 208 THX approved amplifier

Full THX certification is only granted to amplifiers that deliver a specified power output, with a defined sensitivity and absolute phase. Frequency responses, signal-to-noise ratios and stability also have to meet targets, but all compatible with the normal demands of high fidelity.

The NAD 208 stereo power amplifier promises to fulfil the THX requirements without costing an arm and a leg. For just £800, you get a handy 250W per channel (count 'em) with a disproportionately high short-term peak voltage current yield, to cope with musical peaks and difficult loudspeaker loads. The NAD can be operated at full output into sub-one ohm loads, which means it should be quite happy driving some shorted-out loudspeaker cables!

High power at low cost has been achieved by a technique that NAD employs in a number of its amplifiers. It involves using two sets of output MOSFETs, with different voltage supplies, the larger of which is used to fill in at high levels only, with short-term power supply backing. The circuit is sophisticated in concept and execution, but where corners can be safely cut, they have been. Component quality is excellent, and the amp is protected by a complex 'envelope' circuit, designed to prevent damage through abuse without effecting sound quality or power output. But little has been wasted on the case design or the (still substantial) heatsinks.

Facilities include balanced and unbalanced inputs (the latter is the more dynamic sounding), soft-clipping and a bridging circuit to turn the amp into a 500W monoblock with a monstrous 1.5kW of short term 'dynamic' power into eight ohms.

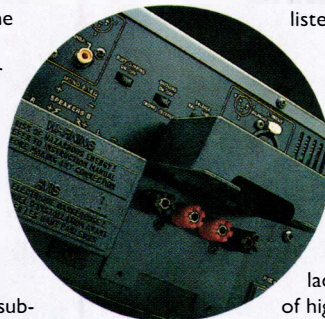
If the 208 doesn't quite fulfil its promise, it never put a foot wrong at any volume level on test, no matter how difficult the

load was electrically, or revealing sonically. It sounded sharp and clear — a little too sharp at times — though in a THX system, re-equalisation tends to draw attention away from this. The level of detail was high and dynamics forceful, and not just at high levels, where power output became the dominant factor, but at relatively low listening levels too.

The bass was powerful and well damped, and although it was a little lean in character, THX system requirements come to the rescue once again, as the trend is to have a heavy bass with typical subwoofers.

Good as it is, the 208 lacks the musical wherewithal of high-end amplifiers which, it seems, it is meant to emulate. It lacks the authority and range of a Krell, the well-rounded analysis and finesse of an Audio Research, and most of all, hasn't got the smoothness or the transparency of either.

The NAD has a slightly manipulative air. Stereo perspectives seem to subtly, almost imperceptibly, alter as the music changes, and it is slightly too breathless and pushy compared with other truly powerful designs. But it doesn't cost silly money, and in value terms the 208 is pretty impressive.



### VERDICT

**PROS:** THX compliant; cheap for the specification level; balanced input option; basically decent sound quality.

**CONS:** Rather lean in character, a little sharp and unatmospheric; can occasionally sound synthetic.

£799.95

#### SOUND QUALITY



#### VALUE FOR MONEY





# *On test:* loudspeakers

*Paul Messenger gets to grips with 22 loudspeakers in his quest for the ultimate final link in the hi-fi chain.*

**L**ast link in the hi-fi chain, apart from the listening room itself, is a pair of speakers. Every hi-fi system needs at least one pair to make itself heard. This

much is obvious; trouble is, nobody wants speakers which take up precious lounge space, so all too often they end up tucked away in the wrong places and half hidden behind furniture.

This is dumb. You don't put the telly behind the sofa because that makes it difficult to watch. Much the same applies to hearing proper stereo sound from a pair of loudspeakers. These display sound just as the telly shows pictures, and it's just as important to put them in the right place.

It all comes down to how and why they work, which is

actually quite straightforward (and a whole lot simpler than a TV set). Sound consists of vibrations carried to the listener by molecules of air. To turn the electrical version of

the music signal which the hi-fi system amplifier delivers, into sound which the ears can hear, requires a vibrator/motor system (voice coil in magnetic field) connected to

some form of diaphragm (usually a cone or dome) to shake the air — that is, a loudspeaker.

For hi-fi purposes, this should ideally respond evenly to all the frequencies the ear can hear, from the deepest sub-bass of around 20Hz (20 vibration cycles per second) up to the highest audible frequencies that approach 20,000Hz (20kHz). A single loudspeaker drive unit will either have difficulty moving enough air to give decent bass power, or be unable to move fast enough to give decent treble output.

Most commercial hi-fi speakers therefore use two drive units: a main

## How the listening tests were done

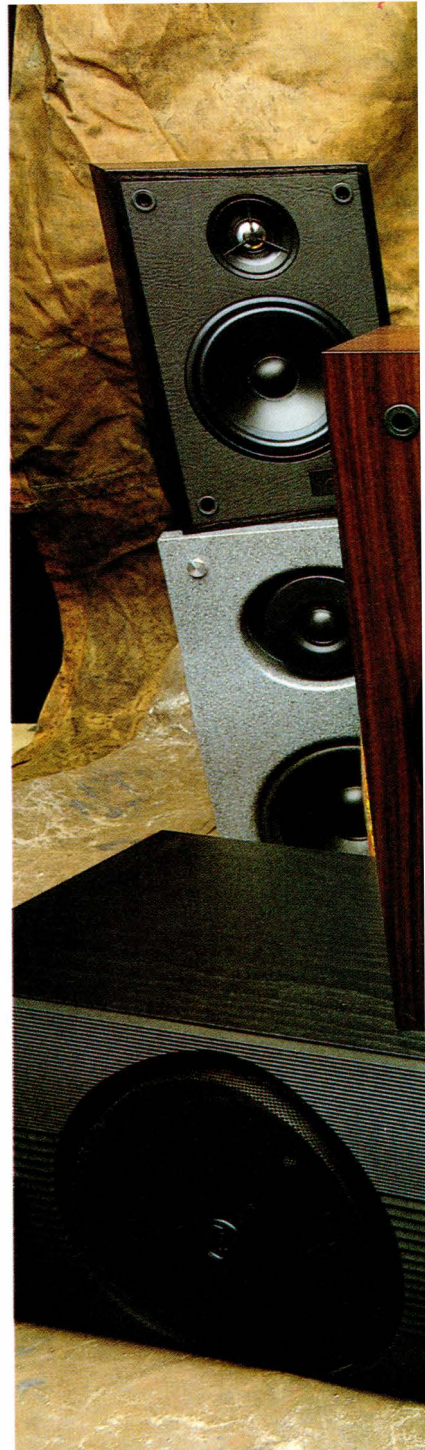
A crucial part of *Hi-Fi Choice* reviews is the blind, panel listening test, so-called because the panel is unaware of the identity or price of the model under audition.

The speakers are installed a pair at a time behind an acoustically transparent curtain on sites predetermined from the measurements to give optimum in-room balance. They undergo half-hour presentations, covering as broad a range of music and speech as possible and split evenly between vinyl and CD sources.

Care is taken to try and match the relative volume of each loudspeaker, though differences in frequency balance, bass extension and room drive unavoidably get in the way. Grilles are removed if possible to take account of the mild influence of the black net curtaining.

The main drive system comprises Naim amplification (*NAC52* and *NAP135*), backed up by Linn and other alternatives. Vinyl disc sources include Linn *Sondeks* with Naim *ARO* and Linn *Ekos* tonearms, Linn *Arkiv* and Audio Note *IO* cartridges. CD replay comes courtesy of Linn *Karik/Numerik* and Naim *CDS* players.

Bookshelf speakers were mainly used on Linn *Kan*, Foundation *Designer*, Heybrook *HBSI*, Epos *ES11* and Slate Audio stands. Most of the work was done with multi-strand Naim *NACAS* cable.



open-back cone type for the bottom two-thirds of the audio range, and a smaller sealed-back tweeter unit for the treble (the top third). A crossover network of electronic components divides the input signal between the two.

At the bass end of the band, it's essential to keep the vibrations coming from the front of the cone separate from those coming from the back, so the whole thing is wrapped up inside an enclosure. This can be sealed, or may contain a port, which helps to reinforce bass output (at some expense to phase coherence).

That's the thumbnail loudspeaker, but for stereo





### The cast list

B&V 2003	£189.95
Cabasse Skiff	£1,500.00
Castle Trent II	£189.90
Celestion 3	£129.00
Dynaudio Contour I.3	£1,249.95
Goodmans Maxim	£119.95
Heybrook Quartet	£555.00
Infinity Reference 30	£399.95
Jamo 307	£299.99
JPW Mini Monitor	£59.00
Legend II	£199.99
Marantz DS220	£299.00
Mission 75 I	£299.90
MA MA1200 Gold II	£1,199.00
Origin Live OL-2A	£469.00
Rega EL8	£298.00
Pioneer S-4UK	£250.00
Rogers Studio 7	£880.00
Ruark Templar	£479.00
Totem Model One	£995.00
Tannoy 607 MkII	£219.99
Wharfedale CRS3	£129.99

sound you need two. The stereo effect is fragile, relying on 'phantom' images created by both speakers working together. They need to be identical, and, if possible sitting in very similar acoustic surroundings. Getting solid stereo images is a major reason for using a proper pair of stands which provide the necessary stable platform.

Loudspeakers show much greater variation and range of choice than other hi-fi components, so choosing the right one to suit your pocket or purpose represents a bit of a challenge. You can spend a thousand pounds on an exquisite little miniature, or half that on a huge

boom box. Most people settle for something in between.

The choice may be enormous, but most of the contenders tend to fall into a few typical stereotypes, as reflected in the cross-section represented by our test group.

As far as sales are concerned, the least expensive are inevitably the most popular, which means the small budget 'miniatures', typically seven litres in volume. We've gathered about half a

dozen such tinies for this group test, and several are by no means budget. These usually need to be quite close to a wall to help reinforce the limited bass. They don't go really deep anyway, or particularly loud. But the little main driver and enclosure

also offer some positive advantages over larger designs.

Next size up is the 14 litre (approximately) 'bookshelf' model, which accounts for another ten or so of our test 22.

Like the miniature, this also requires decent stands to work properly, but usually needs to be kept a foot or two out from the wall to avoid midbass boom, and consequently benefits from less midband coloration. Sensitivity and loudness capability are both improved over the miniature.

Five of the candidates are (broadly speaking) compact floorstanders, the latest 'type' to become a force in the market. These are larger and more expensive than the seven and 14 litre types, but not necessarily by as much as one might expect. This is because, in the first place, part of the box is sometimes blocked off

### Ratings

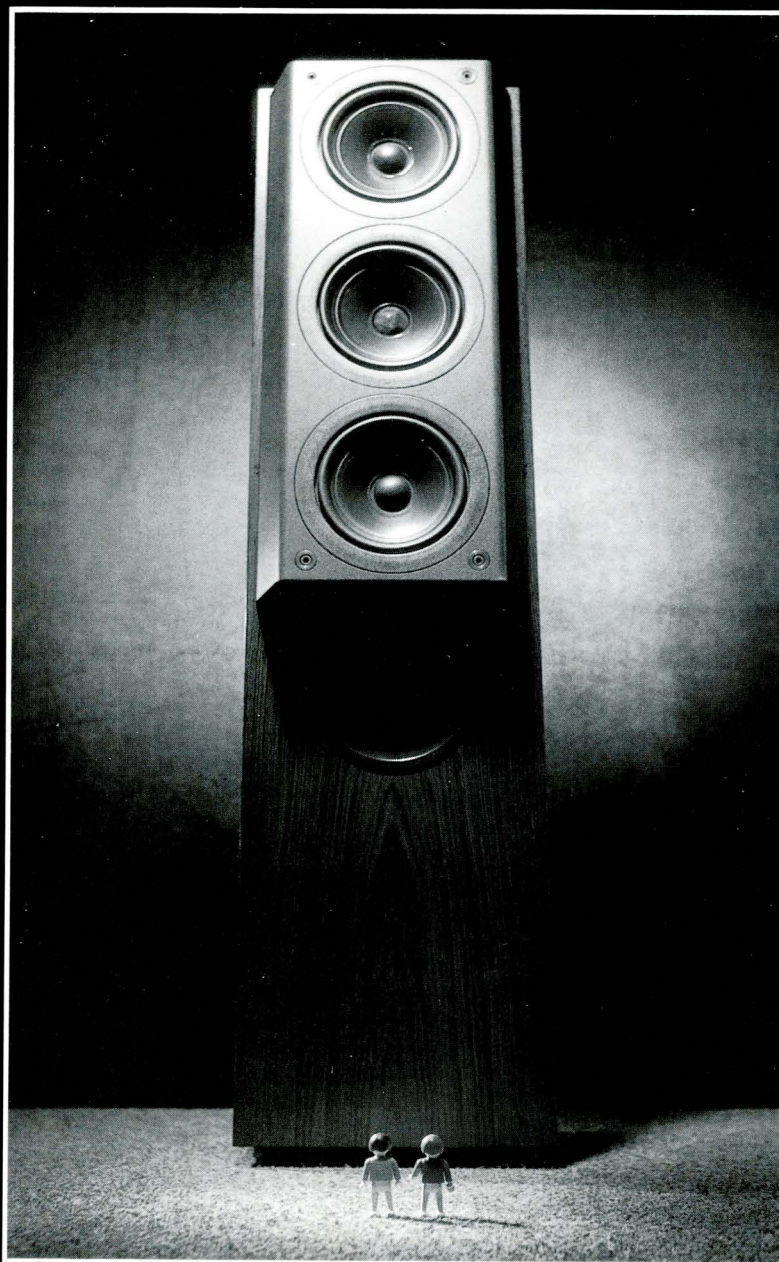
Excellent	■ ■ ■ ■ ■
Very good	■ ■ ■ ■ □
Good	■ ■ ■ □ □
Average	■ ■ □ □ □
Poor	■ □ □ □ □

These ratings are a simple guide to the sound quality and value for money of each loudspeaker.



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(allowing mass/damping material like sand to be added) and, in the second because there's no need to find a further £100 for stands. The performance can be similar to the bookshelf model, or rather greater, depending on which configuration is chosen.

Whichever type of speaker suits best, it will be available in a wide range of prices, depending on the quality of engineering, presentation and

finish. To some extent you do get what you pay for, in terms of content at least, though the whole is always rather more than the sum of the parts. The range of choice will offer substantial variations in performance across a wide range of parameters. A good pair of speakers is an essential component in the hi-fi chain, but bear in mind that the better the speaker, the better it will show up imperfections earlier on in the chain.

## What the Laboratory Reports mean

Every speaker has a distinct frequency balance which says much about the way it will sound. This, and the relative voltage sensitivity, is measured in the same room as the listening tests, using a far field technique averaged across seven microphone positions (after Colloms). The disadvantage of adding the room characteristics to those of the speaker is offset by true relevance to the real world situation.

A single isolated in-room response has little value, but consistency over several years has built up a large database of comparative information. Measurements are made with the speaker close against a rear wall and a metre out into the room; intermediate positions produce intermediate degrees of midbass reinforcement.

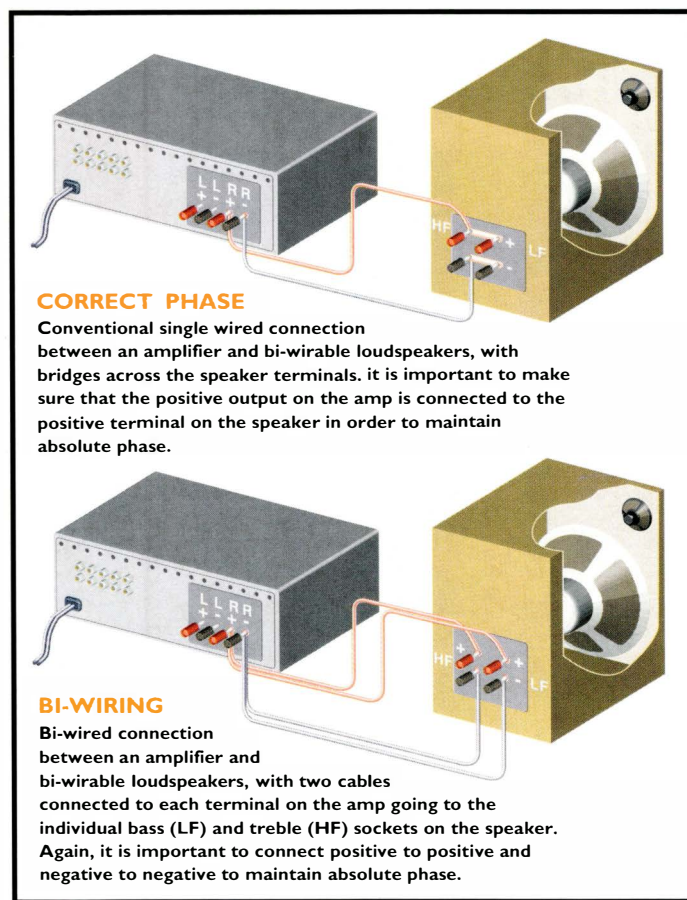
A perfectly flat straight line is not expected, since low frequencies are heavily modified by reflections and room modes. Nevertheless, the ideal balance should be as flat and smooth as possible. Gentle variations are preferable to sharp discontinuities; prominences are more irritating than dips; and a gentle high frequency roll-off usually sounds perfectly acceptable.

## Swing tags

Products that make the grade are awarded *Hi-Fi Choice's* unique Best Buy or Recommended accolades. This sets them apart as being capable of a higher standard of fidelity than average, at a particular price point.

A product carrying the Best Buy swing-tag is significantly better than the alternatives in its price band. It is of excellent quality and very good value for money. Watch out for this logo. It is your guarantee of quality.

Recommended products are also very good, but not in quite the same league as Best Buys. Despite being runners up, they are definitely worth considering, as they may prove to be more compatible when assembling a first class system.



### CORRECT PHASE

Conventional single wired connection between an amplifier and bi-wirable loudspeakers, with bridges across the speaker terminals. It is important to make sure that the positive output on the amp is connected to the positive terminal on the speaker in order to maintain absolute phase.

### BI-WIRING

Bi-wired connection between an amplifier and bi-wirable loudspeakers, with two cables connected to each terminal on the amp going to the individual bass (LF) and treble (HF) sockets on the speaker. Again, it is important to connect positive to positive and negative to negative to maintain absolute phase.

## How loud will a loudspeaker go?

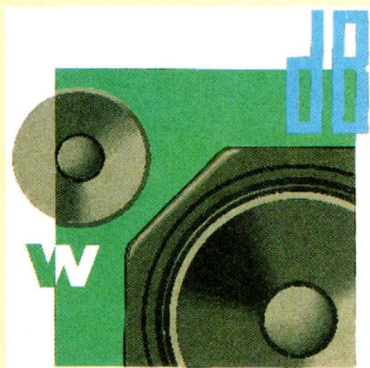
If you really want to annoy the neighbours and rattle a few window panes, the natural temptation is to look for a speaker capable of handling loads of watts. Which is exactly the wrong way to go about it. The sensitivity rating of the loudspeaker is actually much more the key to the loudness capability of a hi-fi system.

A 3dB increase in sensitivity, say from 86dB to 89dB, means that the speakers will sound twice as loud for the same volume control setting of the same amplifier. (Note that all our ratings are conservative, comparative and averaged across the bass and midrange.)

The snag is the impedance. A 4ohm loudspeaker actually draws twice the current (and hence power) as an 8ohm design for the same volume control setting, so its true sensitivity in terms of conversion efficiency is actually 3dB less. The other trick which can be used to enhance sensitivity is simply to let the bass roll off a bit early, which of course is a shame.

## Why you need stands

Fact: a £100 pair of miniatures on a £100 pair of stands will sound better than a pair of £200 speakers stuck on a convenient bookshelf. Whatever its specific sonic character and interaction with the speaker, stands ensure that both speakers are at the right height, and that both have identical mechanical support.





# Celestion 3



**N**ot the first Celestion speaker to carry the 3 logo, this latest £130 version looks superficially very similar to its successful predecessor, Recommended way back in issue 78. It is, however, a very different design, featuring a reflex ported enclosure in place of the sealed box loading of the original.

A more recent point of reference is the relatively new 1, which rated a Best Buy at the beginning of this year (issue 104) but which is, in fact, a somewhat less expensive package, and clearly aimed at a rather different kind of customer.

The 3 is certainly larger than some miniatures, and feels more beefily built besides. The drivers follow current Celestion practice and use a moulded plastic frame, which makes sure the baffle cosmetics look nice and tidy if the grille is left off. The grille itself is an innocuous affair.

The main driver has a pretty substantial magnet to drive a small 100mm paper cone with a wide, soft surround. The tweeter has a 25mm silver dome, probably of plastic, with protection and phase compensation provided by three horizontal bars. Coarse but well-tightened woodscrews fix the drivers to the 12mm chipboard box. Ported at the rear, the single terminal pair feeds a fairly simple hardwired crossover that connects to the drivers using tag clips.

### Sound quality

Although one listener was happy enough with the sound of the 3, the rest of the panel was decidedly underwhelmed by its generally uninspiring performance.

The lack of obvious specific colorations and the good overall balance and smoothness are points in this speaker's

favour. There's also a fair measure of weight for a modest size model. But these plus points can't make up for the stodgy lack of liveliness and indifferent timing, factors which make listening through the presentation of the sound into the music itself distinctly hard work.

### Conclusion

It's hard to believe that both the 1 and the 3 emanate from the same company and design team. Whereas the former sounded lively and entertaining in its rather crude way, this larger, more upmarket model is more sophisticated in the true and uncomplimentary meaning of the word. It's even-handed to a fault, and can only really be recommended for insomniacs.

Celestion International Ltd, Foxhall Road, Ipswich IP3 8JP. ☎ (0473) 723 131

## Verdict

- ▲ **Well engineered; could make up for an aggressive system.**
- ▼ **So laid back and boring it's in danger of falling over or asleep.**
- ▶ **£129.00 RRP**

**SOUND QUALITY**

**VALUE FOR MONEY**

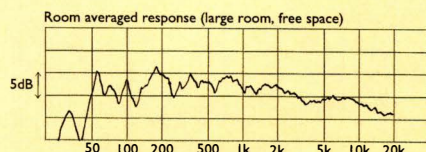
## Laboratory Report

Given the change in the bass loading technique, comparison with the original 3 is particularly interesting. The newer version certainly has more midbass output, which is welcome enough, but has also managed a marginal increase in sensitivity too. What's more, the design team has accomplished both of these without sacrificing an inherently benign and easily driven impedance that is unlikely to embarrass even the least able amplifier.

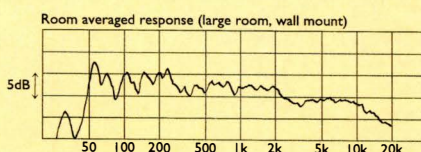
Whereas the original 3 demanded close-to-wall siting, this new model is much less critical and is actually very tolerant of location. The responses are pretty smooth for a budget speaker, especially close to the wall where the gently down-tilted overall trend from bass to treble tends to resolve into three distinct steps. The net effect is likely to be a conservative and laid back sound.

### TEST RESULTS

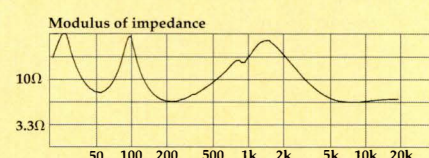
Size (h x w x d)	30.5 x 18.5 x 22cm
Weight	4kg
Recommended amplifier power	20-80W
Recommended placement	1ft from wall
In room averaged response limits 50Hz-10kHz	±5dB
Large room/space LF roll-off (-6dB ref midband)	50Hz
Large room/wall LF roll-off (-6dB ref midband)	48Hz
Large room output at 20Hz (ref midband)	below -15dB
Estimated midrange sensitivity (ref 2.83V, 1m)	87dB
Impedance characteristic (ease of drive)	very good



Placed clear of walls the mid is smooth but bass is light and treble a bit dull



Close-to-wall siting gives smooth but determinedly down-tilted overall balance



Impedance stays at or above 6ohms, and represents an easily driven load



# Goodmans Maxim



The original *Maxim* first appeared nearly 30 years ago, stunning the hi-fi world by showing what could be achieved from a tiny box. The name was then revived in 1986 as the *Maxim 2*. Its *Maxim 3* replacement entered the commercial equation only last year (reviewed in issue 106) but was arguably less successful than its predecessor, which partly explains its relatively short lifespan.

In fact, this new *Maxim* owes a great deal to its predecessor, despite a few obvious cosmetic changes.

The tough little box is the same shape as before, with the same baffle treatment that tucks the drivers up neatly under a fabric laminate, but renders the reviewer unable to assess build without creating cosmetic mayhem. The box has changed in detail, the ported 15mm chipboard rear panel being inset to help stiffen the now

unbraced 12mm wrap, while the baffle appears to be 15mm MDF.

The driver complement looks the same too (although it's not, see later), with a 90mm plastic main cone driven from a respectable magnet, alongside a small 20mm metal dome tweeter. Both are hardwired to a simple crossover with some better than basic components.

### Sound quality

Although the *Maxim* didn't repeat the giant-killing act carried out by two of the cheapies in this report, it did respectably enough in an overall group context, favourably impressing half the panel.

Measurements notwithstanding, the bass doesn't really seem to carry any more weight or power than others of its ilk. The smoothness and low coloration help establish an accurate and precise soundstage

with little boxiness, but there's some lack of life and overall time coherence. It's a neutral and self-effacing sound which offers plenty of detail, but which is also somehow rather ungenerous and lacking in vigour and enthusiasm.

### Conclusion

Smotherer than its predecessor and with more bass, this latest *Maxim* looks a good proposition for those willing to forego the pleasure of high ultimate loudness. It's not one of those occasional miniatures that performs way out of its price class. But it does offer a well-balanced set of strengths and few weaknesses considering its price, sufficient to retain Recommendation.

Goodmans Loudspeakers Ltd, 3 Ridgeway, Havant, Hants PO9 1JS.  
☎ (0705) 492 777

## Verdict

- ▲ **Small budget design; smooth sound, with extended bass.**
- ▼ **Sounds small and ungenerous; needs a decent amplifier.**
- ▶ **£119.95 RRP**

**SOUND QUALITY**  
■ ■ ■ □ □

**VALUE FOR MONEY**  
■ ■ ■ □ □

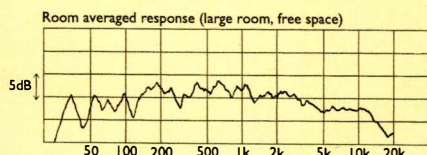
## Laboratory Report

This may look very like the *Maxim 3*, but the measurements show it is a quite different loudspeaker — much smoother and with more bass. The bass driver takes significantly more current (and hence power) from the driving amplifier than before. Since the overall sensitivity remains a relatively modest 85dB, the consequences are a substantial improvement in both bass output and extension. Further clues are seen in a slight reduction in the fundamental driver/box resonance (from 95Hz down to 85Hz), probably due to a rise in cone mass, and a re-tuning of the port output to around 45Hz (down from 65Hz).

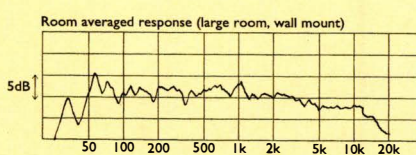
The very positive net result is unusually good extension for a miniature, good tolerance of positioning and a most impressively smooth overall balance, albeit with a gentle mid-to-treble down-tilt.

### TEST RESULTS

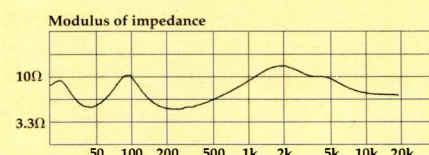
Size (h x w x d)	26x17x20cm
Weight	3kg
Recommended amplifier power	20-70W
Recommended placement	quite close to wall
In room averaged response limits	
50Hz-10kHz	±4dB
Large room/space LF roll-off (-6dB ref midband)	30Hz
Large room/wall LF roll-off (-6dB ref midband)	30Hz
Large room output at 20Hz (ref midband)	below -13dB
Estimated midrange sensitivity (ref 2.83V, 1m)	85dB
Impedance characteristic (ease of drive)	quite demanding



Nice even balance but a bit bass light when clear of walls



Close-to-wall placement helps to fill out the bass a bit; good extension for box size



Impedance lower than earlier Maxims; amp ought to have reasonable 4ohm drive capability





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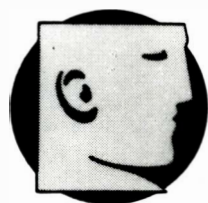
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# JPW Mini Monitor



I was quite reluctant to include this JPW model in the test, simply because it's manufactured exclusively for a single retail chain, Richer Sounds. It's a successful chain, with shops around the country and a mail order operation. But its reputation is based on sales per square foot and competitive pricing, rather than real enthusiasm for demonstration.

However, independent retailers aren't particularly interested in £60 speakers anyway, never mind taking the time to demonstrate such a low profit item. Besides, JPW's budget speakers have impressed in the past, so I was intrigued to see how this ultra-small and light contender could stand up to the competition.

Small dimensions and lightweight construction are by no means disadvantageous characteristics for a loudspeaker. Although bass extension and weight are

inevitably lacking, the small front panel promotes good stereo.

Componentry could hardly be other than very basic. The main driver has a 95mm doped paper cone in a pressed frame, while the tweeter is a version of the inexpensive but very well-respected Audax unit that has been used in many successful miniature speakers.

The black textured finish box is built from 12mm chipboard, lightly filled with a strip of wadding. The drivers and simple crossover are all hardwired, which is a plus point at any price.

### Sound quality

The *Mini Monitor* has a decent enough balance and fine overall clarity, along with good basic timing and imaging. However, there's not much in the way of weight, scale, welly or drive. The sound is detailed

and informative enough, but lacks drama, excitement and solidity. Despite a slight spittiness, voices are clean, clear and naturally balanced, with a lack of coloration that would be creditable at several times the price.

### Conclusion

This is a pretty decent little loudspeaker that sells at a price that's very impressive indeed, and well worth a Best Buy swing-tag. While it doesn't really have the grunt to do justice to a full hi-fi system, it's an obvious budget choice for a bedroom system, as extension speakers elsewhere around the house, or as the rear channels in a full surround sound AV system.

JPW Loudspeakers Ltd, Ocean Quay, Richmond Walk, Plymouth, Devon PL1 4LL.  
☎ (0752) 607 000



## Verdict

- ▲ **Very, very cheap, and also pretty competent.**
- ▼ **No real bass or welly; a bit squashed and uneven sounding.**
- ▶ **£59.00 RRP**

**SOUND QUALITY**  
 ■ ■ □ □ □  
**VALUE FOR MONEY**  
 ■ ■ ■ ■ ■

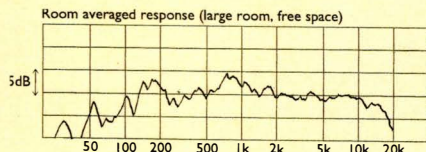
## Laboratory Report

Given the cost constraints, some performance limitations are only to be expected, and no one could call the Mini Monitor a star performer, especially where smoothness is concerned. Unusually among miniature speakers, this is a sealed box design, which is by no means a bad thing. Certainly it gives the (presumably low cost) amplifier a rather easier low frequency load to handle, and also gives useful bass extension for the box size, albeit at some expense in power handling.

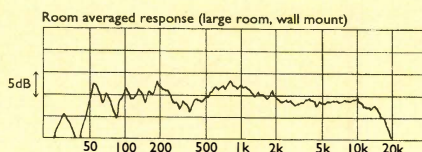
Sensitivity is a fairly modest 85dB and the bass-to-mid response is rather uneven, though the overall trend is pretty well-balanced when the midbass is reinforced by close-to-wall siting. The main midband is a little lean and the upper mid a shade prominent but the crossover looks very well integrated and the treble reasonably smooth and well judged.

### TEST RESULTS

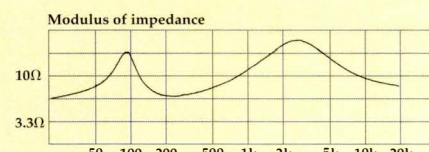
Size (h x w x d)	27x18x17cm
Weight	2kg
Recommended amplifier power	20-60W
Recommended placement	close to wall
In room averaged response limits	
50Hz-10kHz	±4dB
Large room/space LF roll-off (-6dB ref midband)	50Hz
Large room/wall LF roll-off (-6dB ref midband)	50Hz
Large room output at 20Hz (ref midband)	below -13dB
Estimated midrange sensitivity (ref 2.83V, 1m)	85dB
Impedance characteristic (ease of drive)	fair



Free space siting is not a serious proposition bass-wise; sensitivity is modest



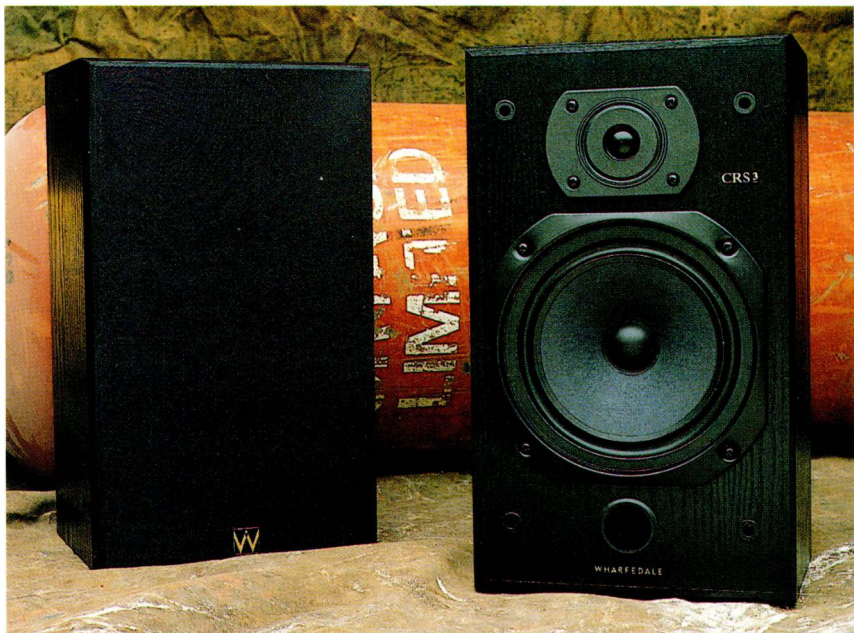
Close-to-wall placement results in a very respectable in-room balance above 50Hz



Impedance should be easily driven by budget (and surround sound) amplifiers



# Wharfedale CRS3



filled with absorbent damping felt. The single terminal pair feeds a minimalist crossover that connects by tag clips to the driver terminals.

The main driver has a modest magnet and pressed steel frame, plus a 127mm paper cone and thin plastic surround. The tweeter has a small 19mm soft plastic dome with slight horn amplification.

### Sound quality

Occasionally a real cheapie does remarkably well under our blind listening conditions. It happened with the D30 and now the CRS3 has repeated the trick, impressing the panel less for any absolute superiority but more for the way its various attributes have been carefully balanced to give a fine net result overall.

There are limitations, including a degree of bass boxiness and voice band coloration that falls well short of the sophisticated. But its enthusiasm makes ample compensation, the speaker sounding less compressed than some miniature rivals, giving a reasonable impression of dynamics alongside good basic timing.

### Conclusion

Although it's now called a CRS3, this speaker remains very similar to its Best Buy Delta 30 and 30.2 predecessors, and just as obviously deserves to continue carrying this magazine's whole-hearted endorsement. It may not be the prettiest or most fashionable box around, but sound per pound there's nothing to match it.

Wharfedale Loudspeakers Ltd, Sandeas Way, Crossgate, Leeds LS15 8AL.  
☎ (0532) 601 222

Wharfedale's cute little *Diamond* redefined the miniature loudspeaker during the Eighties, and is now in its fifth generation. But of all the baby Wharfedales that have come the way of this reviewer in recent years, the cheaper, larger and less glamorous *Delta 30.2* was the one that most impressed, registering a confident Best Buy in issue 98.

The even less intriguingly named CRS3, which is the subject of this review, is very evidently its replacement. It's still the unfashionably ugly duckling, although at least we're spared the D30.2's rather violent graphics. The actual price-tag is a little vague, with as much as £130 appearing on some lists. However, a senior company spokesman picked £90 as a 'typical going price', while admitting you can find it for even less down at Dixons this month.

Whatever the exact figure, it's still surprisingly low considering the box is larger and just as substantially built as models costing half as much again — and considerably more so than the little £60 JPW included in this test group.

Its problem, commercially speaking, is that it's such an unfashionable shape — singularly wider, higher and shallower than the current market norm. It's tidily enough finished in woodgrain vinyl, with discreet graphics beneath a decidedly unpromising wooden frame grille. Chuck this away, and put up with the fact that the drivers are surface-mounted.

Basic it may be, but there's nothing much wrong with the ingredients that make up this package, or the solid way it's all been put together. Tight but coarse-pitch woodscrews secure the drivers to a front-ported 15mm chipboard box, lightly

## Verdict

- ▲ **Enthusiastic, and above all communicative; a real bargain.**
- ▼ **Looks boring and sounds a bit coloured and uneven.**
- ▶ **£129.90 RRP**

**SOUND QUALITY**  
 ■■■■■□  
**VALUE FOR MONEY**  
 ■■■■■■

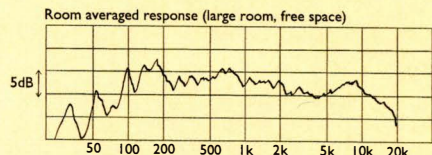
## Laboratory Report

Even disregarding its ultra-competitive price, the CRS3 turns in a pretty impressive set of test results, with a fine overall balance when sited close against a wall — even if it does show a certain amount of midrange and treble unevenness. The presence and lower treble output is a little lacking, while the main treble peaks up rather at 8kHz (just as the impedance dips).

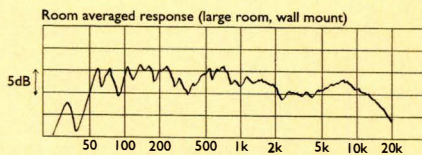
Sensitivity is a generous 88dB/W, and that is a genuine watt since the load presented to the presumably budget amplifier is fundamentally benign, despite dropping quite noticeably at high frequencies. Even though the fundamental driver/box resonance is at a highish 100Hz, tuning the port to 50Hz — an octave below this — helps give quite respectable bass extension, albeit at some cost in low frequency power handling.

### TEST RESULTS

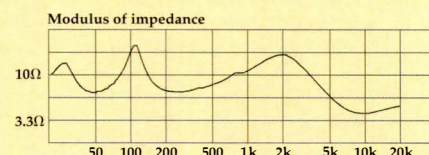
Size (h x w x d)	38x22x18cm
Weight	4.5kg
Recommended amplifier power	15-60W
Recommended placement	close to wall
In room averaged response limits	
50Hz-10kHz	±5dB
Large room/space LF roll-off (-6dB ref midband)	55Hz
Large room/wall LF roll-off (-6dB ref midband)	50Hz
Large room output at 20Hz (ref midband)	below -16dB
Estimated midrange sensitivity (ref 2.83V, 1m)	88dB
Impedance characteristic (ease of drive)	fairly good



Balance is bass shy when sited clear of walls; treble a shade exposed



Wall reinforcement gives fine in-room balance above 50Hz; slightly peaky treble



Basically easy to drive, high frequency dip could embarrass some cheap amps



# B&W 2003



**B** &W's new 2000 series of budget bookshelf speakers made its debut in issue 118, with the tiny £120 2001, which managed a Recommendation. This issue's entrant is two steps further up a four-rung ladder, costs £190, occupies roughly twice the volume and weighs more than half as much again.

It is, in short, the classic large bookshelf package, brought into the Nineties by tooling up for volume production with a large, plastic-moulded baffle. The fifth year might regard the styling as rad, but those of more advanced years might consider the assertive baffle curve and stripes, and the inset porthole grilles, naff. A word of warning — no attempt should be made to remove the perforated plastic grilles.

Whatever its effect upon the appearance, there are sound acoustic and mechanical reasons for adopting this particu-

lar plastic moulding solution. The shape and striations help avoid baffle standing waves and promote good dispersion, while internal webbing gives structural stiffness.

Whereas the 2001 uses a 30mm metal dome tweeter, this larger model has a 25mm soft plastic dome device. The main driver has a 115mm doped paper cone with soft surround, built into a rather shallow and occlusive plastic basket with a small magnet. A single terminal pair feeds a simple hardwired crossover which connects via spring tags to the drive units.

### Sound quality

The neutral balance certainly helps the 2003 give a good account of itself, but only one member of the listening panel showed any real enthusiasm for the even-handedness of the package as a whole. The other listeners noted the punchy and

upfront presentation, but complained that vocal intelligibility remained below par.

The bass has weight and extension, but it's also box-bound, squashed and lacking in vim and vigour, showing little comprehension of the verb to boogie. Neither dynamics nor dynamic range seemed in any way convincing.

### Conclusion

This looks superficially an effective enough package at a competitive price. The neutral frequency balance is a major strength, but the dynamic and timing aspects of the musical presentation are disappointing. It's all front, with an effective and immediate 'grab-you' appeal which quickly palls.

B&W Loudspeakers Ltd, Marlborough Rd, Churchill Industrial Estate, Lancing, West Sussex BN15 8TR. ☎ (0903) 750 750

## Verdict

▲ **Decent size box; clever baffle; neutral balance; unusual styling.**

▼ **Poor dynamics; indifferent timing; unusual styling.**

▶ **£189.95 RRP**

### SOUND QUALITY

■ □ □ □ □

### VALUE FOR MONEY

■ ■ ■ □ □

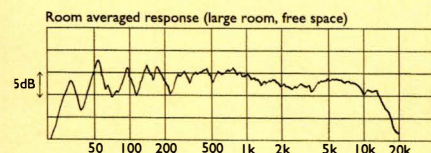
## Laboratory Report

Following the example set by its baby brother, the 2003 has an unusually well-balanced response for what is a fair-sized speaker by today's standards. It's clearly better balanced if kept at least 2ft out from the wall, whereupon the in-room response stays within tight limits from 30Hz up to 15kHz, with just a mild broad loss of energy through the upper mid/lower treble. One reason for the relatively good bass extension is that the port is tuned to around 40Hz. This takes place well below the natural 70Hz driver/box resonance.

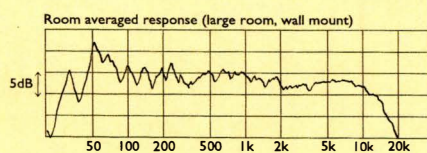
Sensitivity measures a very respectable 88dB from our 2.83V voltage source, though that is not an indication of higher than average conversion efficiency as the rather low impedance will extract considerably more current from the driving amplifier than a traditional 8ohm load.

### TEST RESULTS

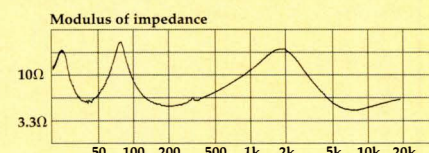
Size (h x w x d)	43x21x25cm
Weight	5kg
Recommended amplifier power	15-100W
Recommended placement	2ft from wall
In room averaged response limits	
50Hz-10kHz	±4dB
Large room/space LF roll-off (-6dB ref midband)	30Hz
Large room/wall LF roll-off (-6dB ref midband)	28Hz
Large room output at 20Hz (ref midband)	below -16dB
Estimated midrange sensitivity (ref 2.83V, 1m)	88dB
Impedance characteristic (ease of drive)	quite demanding



Free space placement shows a very even in-room balance with slight presence loss



Close-to-wall siting over-emphasises midbass, but remain even elsewhere

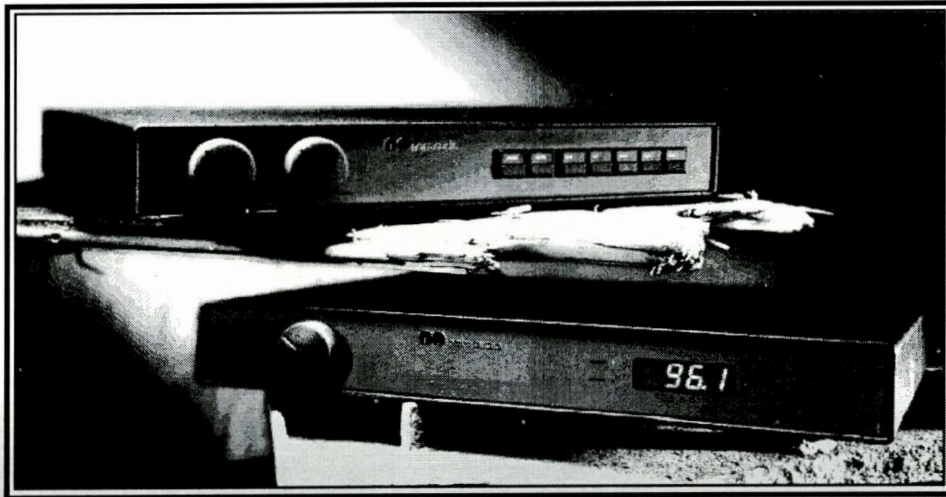


Lowish midband impedance, so choose an amp with good 4ohm drive capabilities



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# Castle Trent II



Little more than a year ago, a pretty speaker called the *Storm Grey Trent* priced at £130 came in for review and subsequent Recommendation (issue 102). In the meantime, Castle has come under new management, and a new *Trent* has appeared, this time in a lovely rosewood-type real wood veneer but priced at a more substantial £229. For the poverty stricken, a version with less tasty veneer is available for £190.

Surface finish apart, this model looks similar to its predecessor, but closer inspection reveals some significant changes. The most important of which is that the main driver now uses a plastic rather than a paper cone.

There is a grille but not, I suspect, one intended for serious use, so it's a pity the mounting lugs are so obvious. The main driver is rebated into the baffle but the

tweeter is surface-mounted. The former has an undisguised pressed steel frame and a handsome magnet with which to drive the 100mm plastic cone, while the latter is an example of Castle's own unusual annulus type tweeter. Both are fitted using rather coarse woodscrews which were fairly tight. Bi-wire terminals are mounted directly onto a large PCB which accommodates the fairly simple crossover components.

### Sound quality

The *Trent* received a mixed reception from the listening panel, with praise for the natural, even balance but some criticism of a slightly dull and flat quality, obvious lack of weight, power and drive, and a rather uningratiating treble character.

The overall marks were certainly ample to justify its modest price, and the

sound has some drama and liveliness with pretty good timing. The clear and open midband is its greatest strength, but there was always the feeling that it's a solid rather than inspired performer. The *Trent* tries hard and almost makes it, but it remains a bit time-smeared, gentle and shut in — a bit boxy and lacking in drive.

### Conclusion

The *Trent* is certainly pretty enough and competent enough to justify formal Recommendation. However, there remains a lurking suspicion in my mind that it could be made better still, and that the changeover from paper to plastic cone might not have been entirely positive.

Castle Acoustics Ltd, Park Hill, Shortbank Road, Skipton, N Yorks BD23 2TT.  
☎ (0756) 795 333

## Verdict

▲ Well presented; a good sound at a competitive price.

▼ A bit small and dull sounding; treble could be sweeter.

▶ £189.90 RRP

### SOUND QUALITY

■ ■ ■ □ □

### VALUE FOR MONEY

■ ■ ■ ■ □

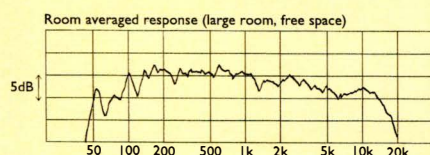
## Laboratory Report

You don't get any real bass from this compact design, which cuts off pretty rapidly below 50Hz (even more so than its predecessor). This is largely because the port system is tuned to a relatively high 70Hz, a factor which will promote power handling at the expense of extension. However, you do get an easy amplifier load and a generous 88-89dB sensitivity, which is a fair exchange.

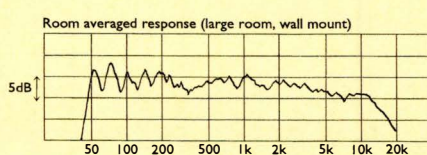
Some wall reinforcement is mandatory here, whereupon the *Trent* delivers a fine in-room balance that holds within tight limits from 50Hz right up to 13kHz, the overall trend characterised by a relatively mild mid-to-treble down-tilt. The balance is certainly smoother than most, including its predecessor, with obvious improvements in integration around the crossover region and slightly better maintained upper treble than before too.

### TEST RESULTS

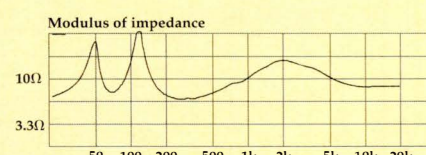
Size (h x w x d)	33.5 x 18 x 20cm
Weight	4kg
Recommended amplifier power	15-70W
Recommended placement	close to wall
In room averaged response limits	
50Hz-10kHz	±4dB
Large room/space LF roll-off (-6dB ref midband)	50Hz
Large room/wall LF roll-off (-6dB ref midband)	50Hz
Large room output at 20Hz (ref midband)	below -16dB
Estimated midrange sensitivity (ref 2.83V, 1m)	88dB
Impedance characteristic (ease of drive)	very good



Away from walls midband is very even but the bass very dry and restrained



Close-to-wall position helps boost midbass and improve overall balance



Despite good sensitivity, impedance stays above 6ohms and will be easy to drive



# Legend II



**L**egend is a pseudonymous sub-brand of Philips. With a research budget rivaling the GDP of many small countries, the labs have a tendency to come up with interesting products which don't fit in with current marketing strategies. This cute little speaker doesn't really mesh with Philips' current German oriented hi-fi separates, so the Legend is being marketed as a separate entity.

Visually, it's all baffle. The review pair didn't come with grilles, so I had no option but to take note of — and derive a modicum of pleasure from — the extremely substantial and aesthetically dominant moulded front panel. It's cunningly curved for sound acoustic reasons, and finished in rather indifferently simulated granite. It looks interesting enough, but tends to make the rest of the box seem a bit of an afterthought.

Getting at the innards proved beyond the capabilities of my normally adequate tool kit and so I had to rely upon the manufacturer's blurb. Certainly the crossover has high-power air-cored chokes, but the PCB basis and tag connections don't get any extra audiophile brownie points.

Blandly finished in black textured vinyl, the box is beefy enough, with 17mm wrap and 15mm back. The main driver has a 125mm cone, allegedly of glass fibre, with a thin surround, while the tweeter has a 25mm soft plastic dome.

### Sound quality

The listening panel was well-impressed by the Legend, placing it comfortably at the head of the class for its size and price. Its flaws and limitations — the lack of bass weight and three-humped character — were clearly identified under blind condi-

tions, but not considered serious defects in the context of the engaging dynamics and its persuasive communication.

A touch bright for some tastes and systems perhaps, the sound can become a bit splashy and spitty on certain material. But it's also unfailingly open, lively and unboxy, maintaining convincing dynamic contrasts at high and low sound levels.

### Conclusion

An artful combination of tradition and high technology, the Legend hovers between Best Buy and Recommended status. I'm going to shove it into the former group because of its fun factor — its ability to make music making entertaining.

*Philips Consumer Electronics Ltd, City House, 420-430 London Road, Croydon, Surrey CR9 3QR. ☎ (081) 689 2166*

## Verdict

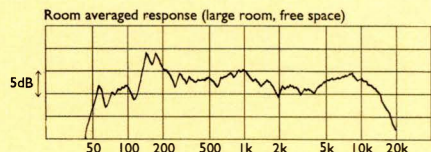
- ▲ **Loads of fun; plenty of good entertainment; very fair price.**
- ▼ **A bit coarse and coloured; can sound a bit too bright.**
- ▶ **£199.99 RRP**

**SOUND QUALITY**  
 ■■■■■■  
**VALUE FOR MONEY**  
 ■■■■□

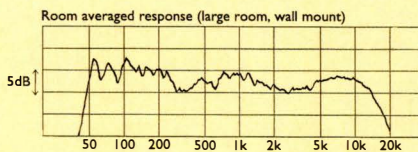
## Laboratory Report

Sensitivity is a useful 88dB. More importantly, and this is a genuine 88dB which is uncompromised by a fairly mild (predominantly 6ohm) impedance. However, there is the expected trade-off in bass extension, which doesn't extend much below 50Hz in-room. This is because the port is tuned to a highish 70Hz, which by way of compensation will provide useful control over the 85Hz natural driver/box resonance.

Clearly favouring a site quite close to a wall in order to reinforce the midbass, the balance stays within good  $\pm 4$ dB limits between 50Hz-15kHz, but shows more than a touch of 'three-humped' character. This is bound to add a measure of coloration, even though in this case the net broad-spectrum balance — the relative quantities of bass, mid and treble decades — should be about right.



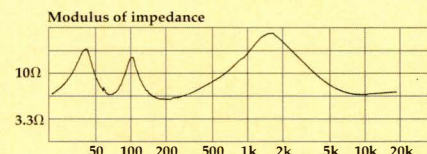
Clear of walls bass is light and lower mid and treble both a bit strong



Close-to-wall site gives slight bass heaviness and three-humped character

### TEST RESULTS

Size (h x w x d)	37x21x30cm
Weight	6kg
Recommended amplifier power	15-70W
Recommended placement	1ft from wall
In room averaged response limits 50Hz-10kHz	$\pm 4$ dB
Large room/space LF roll-off (-6dB ref midband)	50Hz
Large room/wall LF roll-off (-6dB ref midband)	48Hz
Large room output at 20Hz (ref midband)	below -16dB
Estimated midrange sensitivity (ref 2.83V, 1m)	88dB
Impedance characteristic (ease of drive)	good



Impedance is easy enough to drive, staying at or above 6ohms throughout



# Pioneer S-4UK



A standard bookshelf-size ported two-way design, this Pioneer speaker looks neat enough, following current fashion by being narrower than it is deep, but all is decidedly anonymous and understated. There's a neat grille with a fairly unobstructive moulded surround, while those who prefer to leave the speaker unclothed will note that both drivers are neatly rebated — though the main driver's pressed frame is undisguised.

The speaker is actually manufactured at Pioneer's capacious Spanish speaker factory, and hits the UK market-place carrying a £250 price-tag, which seems a trifle high for a simple vinyl woodgrain box of this size. The justification is doubtless the audiophile less-means-more-so-costs-more argument, and to be fair this is a tough little box. It's built from 20mm stock throughout. The main driver has a decent

size magnet to drive the little 100mm paper cone too, but there's no box bracing, and if the wadding and crossover were any more minimalist they'd disappear.

What you're really paying for here is simplicity and build quality, plus the knowledge that this design has been developed by someone who cares, and who places audiophile values ahead of more transitory market trends. The drivers are secured by well-tight bolts, while the 'crossover' consists of just a single capacitor.

### Sound quality

The panel reacted rather negatively to the S-4UK, finding it a confusing speaker with an odd mixture of strengths and weaknesses which resulted in varying reactions from track to track.

The relative lack of treble gives a somewhat shut in quality to voices, but the

rather hyped upper midband gives extra bite to leading edges. It's a combination that sounds initially appealing but proves rather insistent and fatiguing over time, with some ever present nasality. Dynamics are fair and the dynamic range is pretty good, but the port output is more notable for its enthusiasm than its intelligibility.

### Conclusion

An odd mixture of good and ill, the hyped midband did rather let down the S-4UK under our listening conditions. And although I didn't have an A-400 amp to hand, I can't help feeling that the speaker's tailoring could well help compensate for some of the amp's limitations.

Pioneer Hi-Fi (GB) Ltd, Pioneer House, Hollybush Hill, Stoke Poges, Slough SL2 4QP.  
 ☎ (0753) 789 500

## Verdict

▲ **Lively and explicit; vivid detailing and good dynamics.**

▼ **Pricey; lacks balance; hyped upper mid can get tiresome.**

▶ **£250.00 RRP**

### SOUND QUALITY

■ ■ □ □ □

### VALUE FOR MONEY

■ ■ ■ □ □

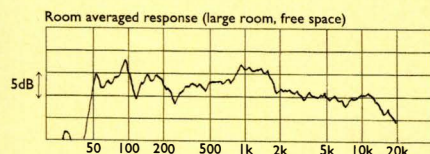
## Laboratory Report

The basic outline specification is pretty much par for the course, though bass extension cuts off sharply below 50Hz because the port has been tuned to 65Hz in order to help control the excursion of the little cone (which, curiously, has a natural box resonance at a surprisingly low 70Hz). Sensitivity is a very respectable 88dB, especially since this is achieved alongside a mild and easily driven impedance.

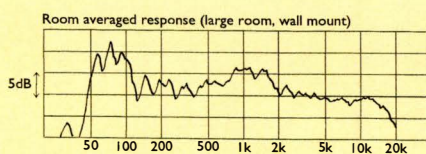
The comparison of close-to-wall and free-space siting clearly favours the latter, and the overall balance holds within respectable enough limits. However, this speaker does have a problem, and this is that an octave of the upper midband (600Hz-1.6kHz) is quite dramatically (3-4dB) over-exposed, with potentially serious subjective consequences. The latter might have been rather less obvious had the treble output been some 3dB higher.

### TEST RESULTS

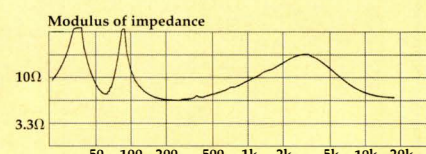
Size (h x w x d)	37x21x28cm
Weight	6kg
Recommended amplifier power	20-80W
Recommended placement	2ft from wall
In room averaged response limits	
50Hz-10kHz	±5dB
Large room/space LF roll-off (-6dB ref midband)	50Hz
Large room/wall LF roll-off (-6dB ref midband)	50Hz
Large room output at 20Hz (ref midband)	below -15dB
Estimated midrange sensitivity (ref 2.83V, 1m)	88dB
Impedance characteristic (ease of drive)	very good



Clear of walls, bass cuts off below 50Hz and upper mid is rather exposed



Wall reinforcement adds bass boom to upper mid prominence



Impedance holds comfortably above 6ohms throughout the band



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# Tannoy 607 MkII



order to get as much as possible out of the tweeters. Build and engineering content is good.

### Sound quality

The long and short of it is that the 607 sounded dull but got away with it, while the 607 II sounds positively gloomy and didn't. That's not to say it disgraced itself. It still has just about the best bass/mid combination around for under £300, giving lots of bass detail and little boxiness, with good dynamics and a fine sense of scale, openness, drama and power.

But the lack of projection and presence takes the edge off the excitement, which left several of the panel less than fully involved. The overall rankings proved significantly below those so recently achieved by the original 607.

Tannoy's hexagonal and difficult to stack Sixes have been a regular feature of my hallway this past couple of years, as we worked our way through the seven-strong range. Then, having seemed to get right through to the end of the line, Tannoy introduces the MkII variations, the first of which turned up just in time for this issue.

It's not easy to tell the MkIIs from their predecessors unless you know what to look for. The hexagon cabinet remains much as before, save for substitution of the previous tortoise-shell patterned laminate top surface by an altogether more sombre black, apparently chosen after extensive comparative listening tests.

Other changes include a significant modification to the metal dome tweeter fitted to the conventional (non-dual-concentric) models, which has now been

anodised to lighten, harden, stiffen and colour gold the moving element. The 607 II, which is the subject of this review, features some further specific crossover modifications and goes on sale at £220, where its predecessor (tested very recently in issue 118) cost £200.

Aside from these specifics, the package is effectively the same as before. The unique hexagonal cabinet not only looks attractive and distinctive, it also performs useful mechanical and acoustical functions, conferring rigidity without recourse to bracing, and de-concentrating the internal horizontal standing waves.

The plastic top and base are connected by a single brace coupled to the main driver magnet, and the enthusiastic have the option of adding mass loading within the hollow base. Grilles and mesh tweeter protection are both best left off in

### Conclusion

Although the various changes Tannoy has wrought to the 607 all appear to represent individual improvements, a loudspeaker design is more than the sum of its parts. The original 607 was particularly successful in emphasising its strengths and disguising its limitations, while this MkII version has let the mask slip a little, and is less well-balanced overall. The strengths are still there, sufficient to drag this competitively priced model firmly into the Recommended ranks. But it's recommended to those with bright rooms and/or systems, and not the full Best Buy rating so fleetingly enjoyed by its predecessor.

Tannoy Ltd, Rosehall Industrial Estate, Coatbridge, Strathclyde ML5 4TF.  
☎ (0236) 420 199



### Verdict

- ▲ **Lovely bass weight and dynamics; neutral midband.**
- ▼ **Shut in presence and dulled treble are a damper.**
- ▶ **£219.99 RRP**

**SOUND QUALITY**  
 ■■■□□  
**VALUE FOR MONEY**  
 ■■■■□

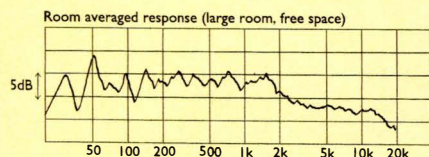
## Laboratory Report

Since the original 607 was fully tested only four months ago, the results for this 607 II should be directly and unambiguously comparable. The effect of the crossover change on the impedance trace is mild indeed, amounting to a very slight increase in the network/tweeter impedance. The balance change is also quite subtle, but significant nonetheless.

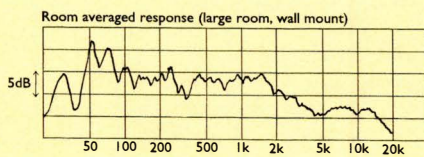
The responses are effectively identical below 400Hz, but above that point the new model has roughly 2dB less output than its predecessor. The midband is consequently flatter than before, with less tendency to peak up at 1-1.5kHz. The total net effect is a significant further dulling of an overall spectrum which has always been on the dull side of neutrality. This is largely thanks to its characteristic 6dB drop in output above 2kHz, which remains as before.

### TEST RESULTS

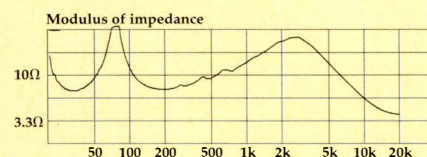
Size (h x w x d)	50x30(max)x24cm
Weight	7kg
Recommended amplifier power	15-90W
Recommended placement	clear of walls
In room averaged response limits	
50Hz-10kHz	±5dB
Large room/space LF roll-off (-6dB ref midband)	25Hz
Large room/wall LF roll-off (-6dB ref midband)	25Hz
Large room output at 20Hz (ref midband)	-10dB
Estimated midrange sensitivity (ref 2.83V, 1m)	88dB
Impedance characteristic (ease of drive)	fairly good



Lovely bass-to-mid balance but tweeter level is relatively very restrained



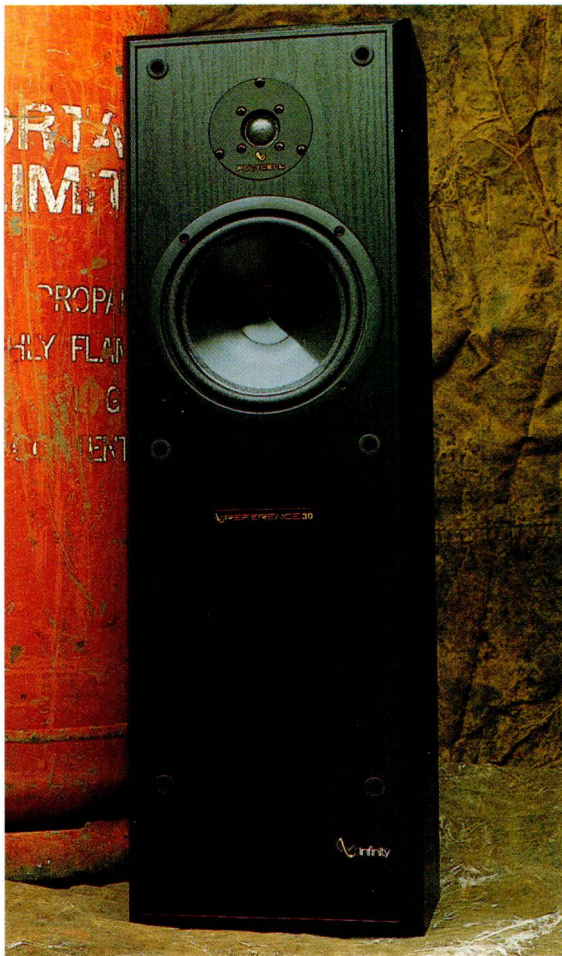
Close-to-wall siting causes boomy midbass and less even mid balance



Impedance easy enough to drive but amp needs good high frequency stability



# Infinity Reference 30



time since I examined any Infinity model. Then again, thanks presumably to the weakening pound, this American-built speaker has gone up substantially in price, from £330 to £400.

Even so, it's still a lot of speaker for the money, albeit distinctly econobox in terms of build and content. What you get here is a decent size main driver, capable of moving plenty of air without needing any assistance (or the accompanying phase distortions) of a port, plus an enclosure three times the volume of a bookshelf speaker so that the main resonance occurs at a lowish 60Hz. Extending the box down to the floor and providing spikes for the base saves the need to find another £100 or so for the stands,

I'm not entirely sure why this speaker has come back in for assessment, since I reviewed something that looked exactly the same a little over a year ago (issue 106) — and gave it a Recommended flag. I understand that it has undergone some improvement since then, which is one excuse for sending it back in again for review, and it's also quite some

though it must be said that the spike-coupling arrangement is entirely naff (as Gamepath will discover on opening the boxes) and the footprint rather restricted.

The full-length grille tends to turn the smartly sombre into the positively gloomy, but the speaker looks good enough without it, and the clever baffle edge postforming is a neat touch. The box is

20mm throughout, with at least two front-to-back braces and a healthy stuffing of wadding. Tight but rather coarse woodscrews hold the drivers securely, the main unit's pressed frame disguised by a plastic trim ring. The main driver has a 155mm diameter injection moulded plastic cone and foam surround, while the tweeter is a 25mm plastic foam dome.

## Sound quality

In a landscape of 50Hz cut-offs, the speaker that provides an extra octave or more of bass extension is bound to have a head start. Good weight and a fair measure of welly are not that common today, or in this test group either, so the 30's bottom end was much appreciated.

However, the picture painted is rather crude. It is also interspersed with a fair measure of coloration and untidiness, and sounds a bit time-smeared and dynamically constrained. A slightly aggressive streak helps it to sound open and informative when playing at lowish levels, but it does become coarser and untidier the louder it is played. It doesn't really have the sweetness and subtlety demanded by classical music fans.

## Conclusion

Even though the Reference 30 has changed, it is still essentially the same loudspeaker, and even though the price has gone up by a fair chunk, it is still worth formal Recommendation, if only because few can match this quality and extent of bass for the money. And although fashion shouldn't play much of a role in the reviewing process, such four-square vinyl woodgrain boxes as these give the impression of starting to approach their sell-bys.

Gamepath Ltd, 25 Heathfields, Stacey Bushes, Milton Keynes, Bucks MK12 6HR.  
☎ (0908) 317 707



## Verdict

- ▲ Big value box has lively sound with good bass extension.
- ▼ Cosmetically rather crude and coloured sounding.
- ▶ £399.95 RRP

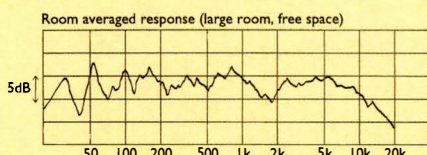
**SOUND QUALITY**  
■ ■ ■ ■ □ □

**VALUE FOR MONEY**  
■ ■ ■ ■ □ □

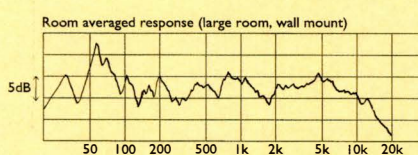
## Laboratory Report

New version it may be, but the measured performance of the Reference 30 has changed very little, if at all, on our relatively simple tests. That said, the main driver impedance is slightly higher than before, which is a minor plus. The best balance is found when placed well clear of walls, whereupon the speaker delivers fine extension down into the lowest audible octave, alongside a worthwhile measure of control through the tricky midbass region.

Sensitivity is good too, although one reason for this is the lowish impedance which will draw plenty of amplifier current, making it quite a demanding speaker to drive. The overall balance holds within quite impressively tight limits right across the frequency band, while at the same time showing considerable unevenness and untidiness along the way.



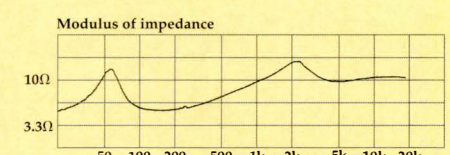
Fine sensitivity and bass extension; good overall balance but considerable unevenness



Close-to-wall site over-emphasises midbass and exaggerates unevenness

## TEST RESULTS

Size (h x w x d)	86x27x25cm
Weight	14kg
Recommended amplifier power	15-100W
Recommended placement	clear of walls
In room averaged response limits	
50Hz-10kHz	±5dB
Large room/space LF roll-off (-6dB ref midband)	25Hz
Large room/wall LF roll-off (-6dB ref midband)	25Hz
Large room output at 20Hz (ref midband)	-9dB
Estimated midrange sensitivity (ref 2.83V, 1m)	88-89dB
Impedance characteristic (ease of drive)	quite demanding



Impedance requires an amplifier with decent 4ohm power delivery



# Jamo 307



**E**nergetic Danish speaker specialist Jamo is introducing a new four-strong range of luxury finish models dubbed the '07 series, from which this little 307 is the smallest and least expensive.

It's basically a luxury miniature, seeking to justify an upmarket price-tag through superior standards of presentation, finish, build and engineering content. There's certainly no arguing with the impression of solidity which is created, nor the sensitive handling of acoustic elements.

Some of that favourable impression starts to fade under a closer examination, however. Rather than being CNC-routed from a massive block of MDF, the front panel turns out to be a sandwich of 10mm board with a shaped plastic moulding that gives the baffle edge postforming and the grille rebate. The flimsy machine-head woodscrews around the drivers showed

no tendency to grip, but rather went on rotating ad nauseam. The foam-lined wrap is a more substantial 19mm, elegantly finished in one of the better imitation veneers I've encountered.

The main driver has a decent magnet, pressed frame and 100mm plastic cone, while the tweeter uses a 25mm soft plastic dome. The rear panel is almost entirely made up from a large port and two separate terminal blocks, allowing a bi-wiring option to the PCB crossover which feeds the drivers through tag connections.

## Sound quality

The 307's performance elicited no great enthusiasm from the listening panel, one of whom described it as "short of drama". Competence may be a virtue, and there's no denying the basically neutral balance nor the well-formed stereo soundstaging,

but respectable sonics are no guarantee of good musical communication.

Several listeners commented upon a small box quality, and there was a general impatience with the way fine detail became difficult to interpret. There's a lack of both urgency and generosity, which at the end of the day makes the experience rather bland and uninviting.

## Conclusion

However pretty the cosmetics, beauty doesn't extend beneath the skin. The classy appearance of Jamo's 307 is not reflected in the sort of componentry and build — never mind the sound quality — necessary to justify a £300 price-tag.

Jamo UK Ltd, Jamo House, 5 Faraday Close, Drayton Fields, Daventry, Northants NN11 5RD. ☎ (0327) 301 300

## Verdict

▲ **Attractive appearance; very good soundstaging.**

▼ **Pricey; bland sound gives little to get excited about.**

▶ **£299.99 RRP**

### SOUND QUALITY

■ ■ ■ □ □ □

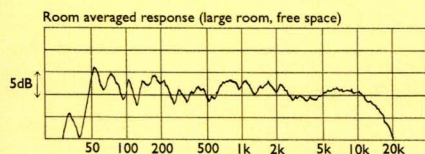
### VALUE FOR MONEY

■ ■ □ □ □ □

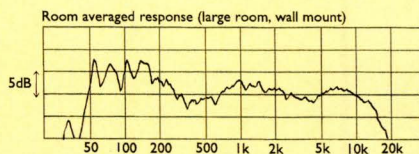
## Laboratory Report

Small boxes and drivers impose inevitable constraints, seen here in the combination of a rather modest 86-87dB sensitivity rating, a fairly demanding impedance characteristic and very little low frequency in-room output below 50Hz. There's also arguably too much midbass output under our measuring conditions, which is probably the consequence of a rather large port for the box size, tuned to a highish 70Hz.

Contradicting the instruction leaflet, the 307 certainly needs to be kept well clear of walls and the floor, and even then there's a couple of decibels of excess (50-80Hz). The balance above that point is rather uneven, with a broad upper-mid plateau (700Hz-2.5kHz), but it nevertheless holds within quite tight limits across the band. There's an overall gentle down-tilt from bass to treble which amounts to a figure of about 4dB in toto.



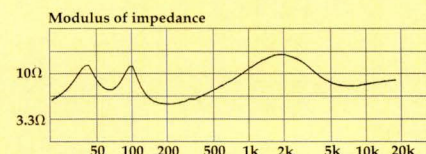
Decent overall free space in-room balance is marred by significant local unevenness



Close-to-wall placement over-emphasises bass and three-humped character

## TEST RESULTS

Size (hwxwd)	32x18x27cm
Weight	5kg
Recommended amplifier power	20-80W
Recommended placement	clear of walls
In room averaged response limits	
50Hz-10kHz	±5dB
Large room/space LF roll-off (-6dB ref midband)	48Hz
Large room/wall LF roll-off (-6dB ref midband)	48Hz
Large room output at 20Hz (ref midband)	below -14dB
Estimated midrange sensitivity (ref 2.83V, 1m)	86dB
Impedance characteristic (ease of drive)	quite demanding



Impedance is reasonable enough but midband is a little demanding



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# Marantz DS220



One of two Marantz speakers which were introduced about a year ago, we've been a bit slow in getting round to the £300 DS220. The small 110 (issue 114) was a bit of a mixed bag, suffering from some lack of bass and a degree of mid forwardness, both factors which this larger 220 is likely to address.

It's about 50 per cent bigger, heavier and more expensive than its baby brother, though you still only get two drivers, a crossover and a port. It may only be a two-way simulated vinyl woodgrain box, but Marantz has built in a touch of class. It's better vinyl woodgrain than most; the whole thing feels exceedingly substantial and solid (note the 8kg weight), and the way the horizontal edges have been heavily chamfered and the inset baffle edge has been picture-framed gives the whole speaker a very chunky, purposeful look.

The main driver has a 118mm paper cone driven by a very generous magnet, the pressed steel frame being secured by six feebly tightened woodscrews. The tweeter uses a JBL-style titanium dome with integral pleated surround. A very light fill of real wool performs the internal damping, while the unbraced, front-ported box is built up from tough 20mm panels. A high power PCB crossover is fed from bi-wire terminals and has tag connections.

### Sound quality

The 220 did respectably enough in the listening tests, without attracting undue criticism but with no enthusiasm either. The net feeling was that the speaker was competent, but not particularly inspired.

Good midband vocal expression is a plus point, reproducing leading edges pretty well and making a good stab at the dynam-

ics, even though the overall sound is a bit laid back and lacks crispness. However, the bass is rather rich and resonant, not truly extended or authoritative, and shows a regrettable tendency to drone on. This in turn leads to congestion and constrains the dynamic range.

### Conclusion

This is not a bad speaker by any means but neither is it a particularly inspired one. The 'too small' criticism levelled at the baby 110 could easily be reversed here in order to accuse the 220 of being a little too big for its own good. The decent size ported enclosure tends to make its presence all too obvious.

Marantz Hi-Fi UK Ltd, Kingsbridge House, Padbury Oaks, 575-583 Bath Road, Longford, Middx UB7 0EH. ☎ (0753) 680 868

## Verdict

- ▲ **Competent, performance from a chunky, handsome box.**
- ▼ **Bass rather rich and resonant; sounds heavy and laid back.**
- ▶ **£299.00 RRP**

**SOUND QUALITY**  
 ■ ■ ■ □ □ □  
**VALUE FOR MONEY**  
 ■ ■ ■ □ □ □

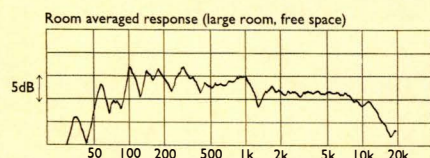
## Laboratory Report

Decent sensitivity is found alongside a very easily driven impedance characteristic, which will be good news for budget amplifiers. Given the box size, a lack of real bass extension is an inevitable consequence, but there is at least some sub-50Hz in-room output, thanks to the port being tuned half an octave below the point at which the natural driver/box resonance occurs.

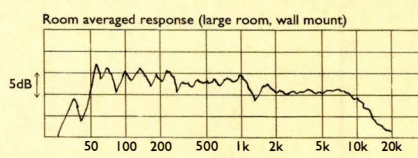
The balance clearly favours some close-to-wall reinforcement, but not too much, and although this does give a quite smooth overall balance, it also shows a steady down-tilt from bass to treble of around 5dB, together with a rather early ultimate treble roll-off. Rather more worrying, perhaps, is the obvious and presumably unwelcome crossover glitch which is registered at around 1.3kHz on our far-field in-room measuring technique.

### TEST RESULTS

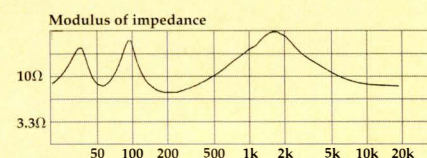
Size (hwxwd)	32x23x26cm
Weight	8kg
Recommended amplifier power	15-80W
Recommended placement	quite close to wall
In room averaged response limits	
50Hz-10kHz	±5dB
Large room/space LF roll-off (-6dB ref midband)	50Hz
Large room/wall LF roll-off (-6dB ref midband)	50Hz
Large room output at 20Hz (ref midband)	below -16dB
Estimated midrange sensitivity (ref 2.83V, 1m)	88dB
Impedance characteristic (ease of drive)	very good



Bass is rather light when sited clear of wall; odd crossover glitch at 1.3kHz



Close-to-wall siting gives a shade too much midbass reinforcement



Impedance is very easy to drive for all types of amplifier



# Mission 751



**B**aby brother to the best-selling floor-standing 753 (issue 114), a great deal is expected of this smaller stand-mount model, whose £300 price-tag puts it in the luxury compact class.

The net result is bound to miss out in terms of loudness and bass extension and/or sensitivity, but small boxes and simple driver arrays have their own advantages, and the little 98mm clear plastic cone main driver, with its decent size magnet, is claimed to be much more advanced than the low-cost driver array used in 753.

The neat grille is aesthetically and sonically optional. The textured, narrow wrap is 19mm MDF, while the veneered and heavily chamfered sides are 25mm thick, with additional bituminous mass/damping pads. Tight bolts hold the drivers in place, the eight for the main unit securing the pressed frame via a steel clamp

ring. Light foam lines the rear panel of the front-ported enclosure, hiding a good quality crossover with bi-wire terminals and hard-wiring throughout.

### Sound quality

When Mission heard that the 751 had registered a solid 22nd place out of 22 models, you didn't need telecommunications to hear the rumblings of concern. I offered to check another pair for sample consistency, and serial number 510005423 duly arrived for comparison with the original 510005421 review samples.

The new pair sounded substantially better, with much more coherence and a greater sense of urgency and drive.

There was no opportunity to 'blind test' the later pair, but there was no denying its clear superiority. It remains a small loudspeaker with a slightly small and

constrained sound, and it's not the liveliest or fastest performer around. But the bottom end stays tight, allowing space for the beautifully voiced and natural midband openness and clarity.

### Conclusion

The overall package is decent enough value for money, while the sound quality of the second sample certainly deserves Recommendation. Our evidence, however, is that the first samples are by no means untypical of production. Mission is now making strenuous efforts to ensure greater consistency, so I've decided to leave judgement in the pending tray, and retest the 751 in next January's edition.

Central Force Ltd, Mission Group, Stonehill, Huntingdon, Cambridgeshire PE18 6ED.  
☎ (0480) 451 777

## Verdict

▲ Can sound open and natural, with good coherence.

▼ Variations between two review pairs causes concern.

▶ **£299.90 RRP**

**SOUND QUALITY**  
See text  
**VALUE FOR MONEY**  
See text

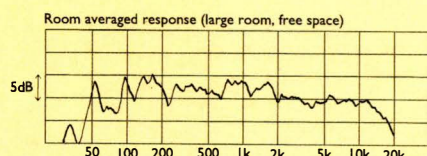
## Laboratory Report

As usual, I find Mission's sensitivity claims rather optimistic, the 751 actually registering a pretty average 86-87dB on our scaling, to which must be added an impedance below 60hms for much of the spectrum. The double trace (see 'Modulus of impedance' plot, below right) shows the significance of the sample variation mentioned in the main text. Although the natural driver/box resonance is a high 85-95Hz (depending on sample), the port is tuned to a much lower 60Hz, which is one reason why low frequency extension is quite good for the box size.

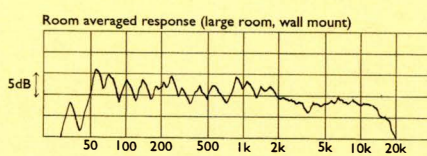
Optimally sited about 1ft out from a wall, the 751 delivers a very good in-room balance through the bass and midrange, with just a touch of forwardness at the top of the main driver's working range, plus a slight dip through the crossover point at 3-4kHz, and good ultimate treble extension.

### TEST RESULTS

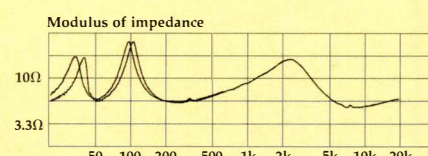
Size (h x w x d)	32x17x27cm
Weight	6.5kg
Recommended amplifier power	20-80W
Recommended placement	1ft from wall
In room averaged response limits	
50Hz-10kHz	±4dB
Large room/space LF roll-off (-6dB ref midband)	50Hz
Large room/wall LF roll-off (-6dB ref midband)	50Hz
Large room output at 20Hz (ref midband)	below -14dB
Estimated midrange sensitivity (ref 2.83V, 1m)	86dB
Impedance characteristic (ease of drive)	fair



Balance a shade bass light clear of walls; upper mid to lower treble a bit uneven



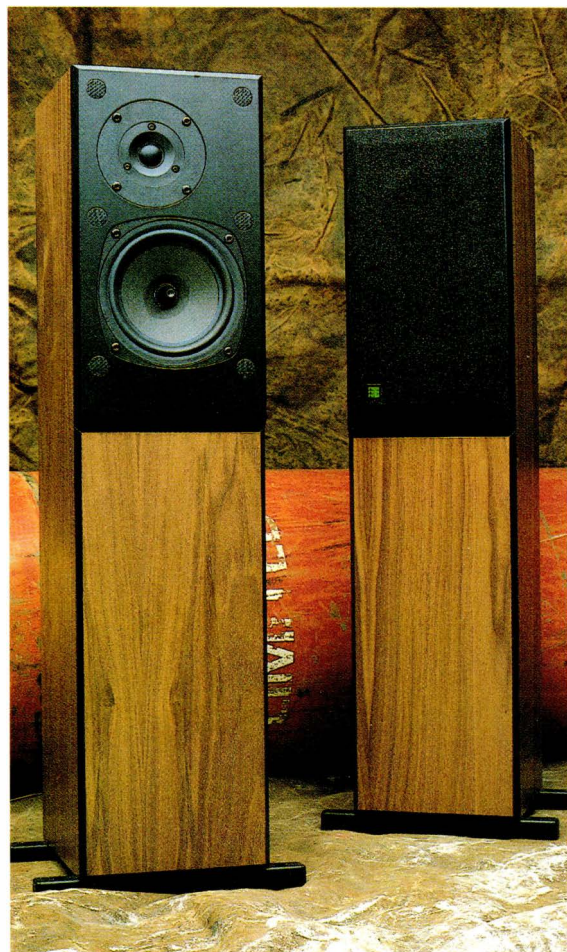
Close-to-wall positioning gives slight midbass excess; treble slightly dull



Impedance close to 60hms over most of range; note sample variation discussed in text



# Rega EL8



That, to a first approximation, is what Rega has done in creating this *EL8*. By floor-stander standards, it sells at a most competitive £300, especially since it enjoys a real wood veneer, albeit of a fairly basic nature.

It is just about the smallest floor-stander on the market, and the tiny light-weight main driver won't supply oodles of bass weight and welly. But tiny light-weight main drivers work better than bigger, heavier ones at the top of their operating range, which is arguably more important in information terms.

The *EL8* is slightly narrower and deeper than the *Kyte*, and loads the driver with about two and a half times the volume. This could leave a small

Even after removing the tight woodscrews I couldn't get the drivers out of the box, but did note that the main unit uses a cast frame and a 90mm paper cone, while the tweeter is a 19mm soft dome device. The box seems to be built from 15mm board, the rather primitive (but apparently effective) controlled leakage also acting as a brace about a third of the way up. The top section has a light fill of genuine cuddly wool.

## Sound quality

The panel was not entirely elated by this speaker's performance, one member showing positive disenchantment — presumably due to its 'differentness'. The others put me right, of course, with a string of good marks, so with the benefit of hindsight and some further experiments in other listening rooms I came to appreciate the *EL8*'s strengths.

It is, in fact, as Rega pointed out, better suited to smaller rooms and more modest systems, where the lack of bass power and room drive is proportionately less obvious than in my quite large room. Even in my listening room it remains an attractive performer, with fine dynamics and timing, while the dry bass is at least communicative, even though the treble remains a trifle exposed.

## Conclusion

In some ways a shade less coherent than its little brother, the *EL8* is nevertheless a most involving and communicative speaker, if a little lacking in bass power and weight. It also represents good material value for money, and clearly deserves Recommendation, especially for use in the smaller room and system.

Rega Research Ltd, 119 Park Street, Westcliffe on Sea, Essex SS0 7PD.  
☎ (0702) 333 071

**R**ega's splendid little £200 *Kyte* miniature was a Best Buy in issue 114, with a bright, breezy sound that was always entertaining, if a little short of gravitas. What could be more logical than to take the *Kyte*'s front baffle and fix it to the top of a compact floorstanding enclosure, using the extra box volume to generate a little more bass.

driver wallowing with insufficient control, so the rear/floor-ported box also contains an internal acoustic resistance partition to add a measure of control. The base of the box has a couple of lateral rails which hold some rather feeble spikes, with a clever plastic knob arrangement, conferring some lateral — though not a lot of fore-and-aft — stability.

## Verdict

- ▲ Communicative, if a little bright; quick and coherent.
- ▼ Could do with more weight and welly; silly spikes.
- ▶ **£298.00 RRP**

**SOUND QUALITY**

**VALUE FOR MONEY**

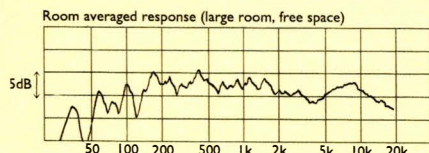
## Laboratory Report

The mid and treble is similar though not identical to the *Kyte*, but in this instance the midband is about 2dB lower in relative level, leaving the treble just that little bit more exposed. Sensitivity is a pretty generous 87dB in the context of the exceptionally mild impedance characteristic.

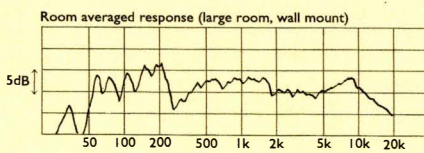
The main gains are in the bass, of course, *EL8* adding 2-3dB at most frequencies below 200Hz. However, although the bass is increased, it does look a shade detached on our measurements, perhaps due to the increased path length between port and driver. In practice, this means that careful experimentation will be needed to find the best position for the Rega floorstander in any room. Although the midbass is a shade detached and uneven, the fact that 35Hz registers a respectable -8dB is a worthwhile bonus.

## TEST RESULTS

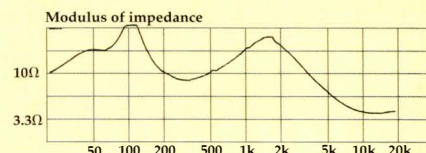
Size (h x w x d)	75x16.5x21cm
Weight	7kg
Recommended amplifier power	15-70W
Recommended placement	1-2ft from wall
In room averaged response limits	
50Hz-10kHz	±5dB
Large room/space LF roll-off (-6dB ref midband)	55Hz
Large room/wall LF roll-off (-6dB ref midband)	55Hz
Large room output at 20Hz (ref midband)	below -14dB
Estimated midrange sensitivity (ref 2.83V, 1m)	86dB
Impedance characteristic (ease of drive)	good



Balance is impressively flat but bass light when clear of walls; treble exposed



Bass fills out (too?) well when close to wall; experiment for optimum site



Impedance easily driven but amp needs good high frequency stability



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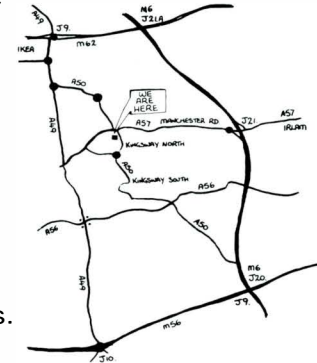
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# Cabasse Skiff



bookshelf size *Bisquine* (issue 110), I was enthusiastic to give the new, much larger £1,500 *Skiff* a try.

It uses very similar drivers to the *Bisquine*, the latter's main unit acting only as a bass unit here, loaded rather more optimally by this large, ported floor-standing enclosure. The tweeter's much the same too, the real difference being the incorporation of an extra driver specifically to cover the midrange. It is, indeed, the classic large three-way configuration. Conventional wisdom might question whether the potential advantages compensate for the extra complexity involved, but Cabasse clearly feels the concept is ripe for revival.

Some £1,500 is a high price for any speaker, but at least in this case you feel you're getting your money's worth. The whole thing weighs in at 27kg, all of which is solid driver and cabinet engineering.

The box is built from 19mm panels with only internal edge bracing and a generous lining of wadding. The bass and mid drivers are bolted (not too tightly) to a double thickness section of the baffle.

Serious drive units have cast frames and huge magnets, the bass driven from a 155mm paper cone and large short port. The paper cone mid driver has its own small subenclosure, while the tweeter uses a quite pronounced short horn. A complex PCB crossover uses good quality components but connects up internally using rather feeble tagged wires.

## Sound quality

There's something about high sensitivity designs that more normal speakers seem quite unable to match. It's a feeling of grip, headroom and authority; the way the speaker takes over the driving of the room, rather than the other way around. Certainly the *Skiff* was enthusiastically received by the listening panel, two of whom commented: "At last, a real loudspeaker!"

Despite the big enclosure, the sound has a lovely unboxy openness, with pretty tight timing, modest coloration, plus fine sensitivity and loudness capabilities. The bottom end doesn't boom or become detached, while the box contributions somehow have musical euphony. The dry bass and slightly forward presence does add a little too much 'bite' perhaps, and there is a shade less coherence and a bit more time-smear than the best two-way designs, but neither factor seems intrusive.

## Conclusion

In these days of creeping miniaturisation, coming across a real speaker like the *Skiff* comes as a lovely surprise. It somehow manages to combine the advantages of a three-way without suffering from the complexity involved. All that's needed to ice the cake is a proper spiking and/or frame arrangement. Heartily Recommended.

Cabasse Ltd, Shaw Croft Centre, Dig Street, Ashbourne, Derbyshire DE6 1GF.

☎ (0335) 300 311



Scarcely known this side of the Channel, Cabasse is one of France's largest and best established loudspeaker brands. It's little known because it's not been available in the UK until fairly recently, and the last couple of years has not been the easiest time to introduce a new and upmarket speaker brand. But having tried and Recommended the large

speaker, but at least in this case you feel you're getting your money's worth. The whole thing weighs in at 27kg, all of which is solid driver and cabinet engineering.

The box is built from 19mm panels with only internal edge bracing and a generous lining of wadding. The bass and mid drivers are bolted (not too tightly) to a double thickness section of the baffle.

## Verdict

▲ **High sensitivity; deep bass; bags of headroom; lots of fun.**

▼ **OK, so it's a bit on the big side; you can't have everything!**

▶ **£1,500.00 RRP**

### SOUND QUALITY



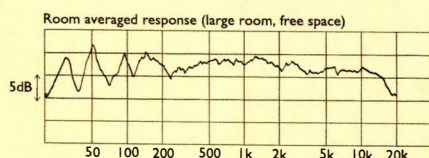
### VALUE FOR MONEY



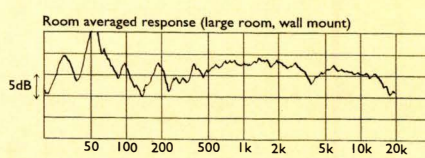
## Laboratory Report

The *Skiff* positively relishes the opportunities provided by a large enclosure and three very serious drive units, delivering splendidly high sensitivity — valve amp users please note — alongside fine and, more importantly, well controlled bass extension. The load does get a bit suspect around 100-200Hz (a common difficulty with three-ways), but the high sensitivity is ample compensation.

Furthermore, the whole in-room response trace, from 20Hz right up to 20kHz, room modes and all, is contained within a remarkably tight  $\pm 5$ dB window, with fine averaged energy balance between the three main decades. This remarkable result promises a level of neutrality which is rare among high sensitivity designs. Note, however, that this is very much a free space design, and should not be placed close to room walls.



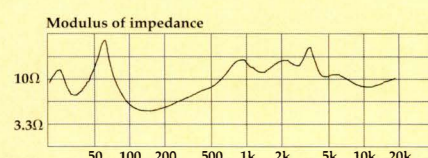
Lovely even overall balance with high sensitivity and fine bass extension . . .



. . . but avoid close-to-wall placement or bass will boom and mid will suffer

## TEST RESULTS

Size (h x w x d) 100x30x36cm  
 Weight 27kg  
 Recommended amplifier power 10-250W  
 Recommended placement cones clear of walls  
 In room averaged response limits  
 50Hz-10kHz  $\pm 4$ dB  
 Large room/space LF roll-off (-6dB ref midband) 25Hz  
 Large room/wall LF roll-off (-6dB ref midband) 25Hz  
 Large room output at 20Hz (ref midband) -9dB  
 Estimated midrange sensitivity (ref 2.83V, 1m) 92dB  
 Impedance characteristic (ease of drive) quite demanding



Usual three-way difficulties at lower crossover point; high sensitivity compensates in practice



# Dynaudio Contour 1.3



Although its UK reputation is as a raw driver manufacturer, it's only to be expected that Dynaudio also manufactures complete speaker systems. A number of these are now available in Britain, albeit at prices which perhaps imply that they're aiming primarily at the professional user.

The *Contour 1.3* is a case in point. It's pretty much the same size as such popular luxury compact bookshelf size models as the Epos *ES11* or Arcam *Delta*, yet it costs £1,250. You do, of course, get the Dynaudio drivers, and you also get an exceedingly solid cabinet that's beautifully finished in real wood veneer. But there's no avoiding the fact that £1,250 is a great deal of money to pay for such a small loudspeaker, especially in the context of the equally pretty and Dynaudio driver based Professional Monitor Co *LB1* that

was Recommended in issue 110. The *CoLB1* costs £1,000 and features a much more elaborate transmission line cabinet.

Expensive it may be, but there's no arguing with the excellent finish, presentation or build quality. The one minor aesthetic and acoustic quibble is that the drivers are surface rather than flush-mounted, presumably necessary for grille-use, given the latter's thick frame.

The hunky little enclosure is reflex-loaded by a rather large rear port, and built up from very substantial 20mm MDF throughout, further reinforced by a horizontal circumferential brace. Thick foam lines the faces and light fibrous material fills the inside, while a complex PCB with hefty components takes the signal from either a single conventional 4mm terminal pair or an OCOS co-axial connector, distributing it to the drivers via generous soldered

internal connections. Tight bolts confirm the fine build, the 115mm cone/dome main unit having a large magnet and voice coil (for high power handling) and a soft surround, plus a pressed steel frame, while the tweeter is a large 28mm clear fabric dome.

## Sound quality

As befits its elevated price, the *Contour 1.3* was pretty well received in the blind listening tests, earning praise for its fine dynamic range, good bass power and generally low coloration. At the same time, however, some expressed reservations over the overall coherence and transparency, finding the speaker an inconsistent communicator across the broad range of music used, and complaining of time-smear and a lack of timing precision,

with consequent information loss.

The bass is impressive from one so compact, but it is also inclined to drone on a bit. The dynamic range is good, and changes in level are tracked convincingly, but transients are not precise enough to create a proper impression of power. There's good control and solidity, but the treble does become easily congested.

## Conclusion

At the end of the day, this impressive performer isn't quite sure whether it's aimed at the professional user or the well-heeled audiophile. As a result it tends to fall between the two stools, needing black vinyl and flight case corners for the former, and more transparent sound for the latter.

Autek Ltd, 7 South Drive, Banstead, Surrey SM7 3BQ ☎ (081) 770 9553

## Verdict

▲ Good weight, power and drive from pretty and solid compact.

▼ Expensive; not really dramatic enough for audiophiles.

▶ £1,249.95 RRP

### SOUND QUALITY

■ ■ ■ □ □

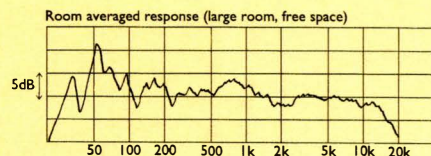
### VALUE FOR MONEY

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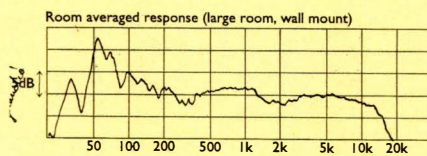
## Laboratory Report

Sensitivity is a very acceptable 86dB, given that it comes with very respectable bass extension for the box size. Do note, however, that the impedance is low, so the partnering amplifier (presumably also expensive) will need to have good current delivery capabilities (valve aficionados please note). Transistor fans can take heart from the exceptional power handling of the large diameter voice coil, which will enable respectable ultimate levels to be achieved with a high class amp.

The overall balance is very good, holding within close  $\pm 3$ dB limits across the broad span (100Hz-13kHz), and looking smooth, albeit with some gentle undulations. However, there's also a distinct tendency towards midbass richness even when sited well clear of walls. This last observation implies the speaker might be happier when it is working in larger rooms.



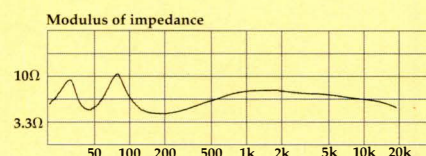
Good extension for box size but some midbass excess even clear of walls



Obvious and extravagant midbass excess when placed against a wall

## TEST RESULTS

Size (h x w x d)	38x20.5x29cm
Weight	8kg
Recommended amplifier power	20-150W
Recommended placement	high stands, well clear of walls
In room averaged response limits	
50Hz-10kHz	$\pm 7$ dB
Large room/space LF roll-off (-6dB ref midband)	28Hz
Large room/wall LF roll-off (-6dB ref midband)	28Hz
Large room output at 20Hz (ref midband)	-14dB
Estimated midrange sensitivity (ref 2.83V, 1m)	86dB
Impedance characteristic (ease of drive)	current hungry



Current hungry impedance characteristic requires amp with plentiful current reserves



# Heybrook Quartet



Slice one third off a *Sextet* (issue 102) and you end up with a *Quartet*. That, at least, is one possible logic behind the name. Certainly you get four instead of six drivers to the pair, but instead of a shallow floorstanding wall-mount enclosure, the *Quartet* is a chunky bookshelf size speaker. It's very much in the Heybrook tradition, albeit decorated in the very tasty *Sextet* style with pretty hardwood strips decorating the baffle, and with a luxury £555 price-tag to match. Another point of reference might be the not-quite-so-pretty £350 *Trio* (issue 118), which is similar in size and shape but actually a fundamentally different design.

Pretty in a slightly fussy way, the *Quartet* also has a matching stand. It costs a hefty £225 plus and has the same hardwood decoration on a narrower but still substantial wooden pillar, which may be

filled with mass damping if desired. There's a steel spiked top plate, which is good, and a wooden base, which is not, as the rather feeble spikes couldn't be properly tightened. Heybrook is aware of the problem, claims to have solved it, and apologised for sending me 'old' samples.

The narrow grille looks worth avoiding, the baffle with rebated drivers looking very pretty without it. The main driver has a big magnet, a 120mm paper cone and a chassis which is either cast or pressed from very heavy gauge steel, and is bolted rather loosely through a trim ring. The tweeter uses a 25mm fabric dome, and both are soldered to heavy cable from the quite simple, good quality hardwired crossover, fed from bi-wire terminals.

The box is massively built with 30mm baffle and 20mm sides, reinforced by two figure-8 horizontal braces and with bitu-

men damping pads. Reflex loaded by twin rear ports, the inside of the cabinet has a light fill of long-hair wool.

## Sound quality

For consistency's sake the *Quartet* was blind-tested using *HBS1* stands, and partly in consequence turned in a fine result which fully justifies the engineering and price. Subsequent sighted listening vividly demonstrated the substantial comparative inferiority of my *Quartet*'s stands in preserving coherence and dynamic range, although the full range of damping options were not explored.

At its best the *Quartet* does sound a bit forward with a little nasality, and can be a bit hard, even aggressive on the wrong material. But it also has fine pace and good driving power, even if bass is a bit thrummy at times, and the overall balance a little lacking in warmth and richness. The palpable coherence seems a fair exchange for the basic balance colorations, and the speaker has a real ability to monitor the source quality.

## Conclusion

Good looking and good sounding, the *Quartet* is the epitome of the modern luxury bookshelf speaker, deserving confident Recommendation even though the balance introduces a degree of character that will not suit every system. Such an endorsement, however, does not apply to the *Quartet* stand as supplied: unless you absolutely hate ironmongery, save £100 by using *HBS1* stands instead.

Heybrook Hi-Fi Ltd, Estover Ind Est, Plymouth PL6 7PL ☎ (0752) 731 313



## Verdict

- ▲ Fine sensitivity and a fast, exciting sound; pretty box.
- ▼ Silly stand; can sound hard, aggressive and a touch nasal.
- ▶ £555.00 RRP

### SOUND QUALITY



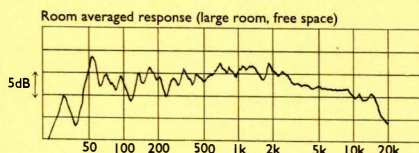
### VALUE FOR MONEY



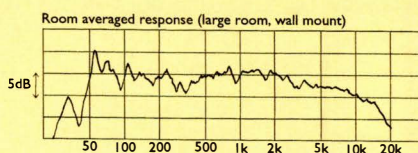
## Laboratory Report

The sensitivity is a very healthy 89dB, especially considering that the impedance is very mild and easily driven. There's some compensating trade-off in bass extension perhaps, but even this seems pretty respectable for the box size, with worthwhile in-room output at 30Hz (-6dB). The latter is aided by tuning the port to 50Hz, well below the natural driver/box resonance at 85Hz.

With some excess around 50Hz, bass alignment is not perfect, but a reasonable overall balance is obtained near or away from walls, with a 1-2ft gap looking the likeliest option. The response traces look reasonably smooth but not entirely flat, showing a little of *Sextet*'s character but to a milder degree — a little lean in the lower midband and rather prominent across a broad upper-mid plateau, 600Hz-2kHz, with a slightly muted treble.



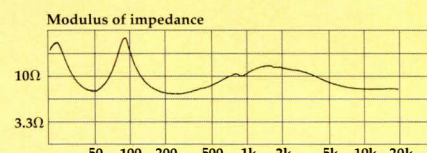
Clear of walls, balance has slight bass bump and forward upper mid; high sensitivity



Close-to-wall placement makes midbass a bit strong, leaves low bass a bit lacking

## TEST RESULTS

Size (hwxwd)	41x24x22cm
Weight	9kg
Recommended amplifier power	15-90W
Recommended placement	1-2ft from wall
In room averaged response limits	
50Hz-10kHz	±5dB
Large room/space LF roll-off (-6dB ref midband)	48Hz
Large room/wall LF roll-off (-6dB ref midband)	48Hz
Large room output at 20Hz (ref midband)	below -16dB
Estimated midrange sensitivity (ref 2.83V, 1m)	89dB
Impedance characteristic (ease of drive)	very good



Impedance is easily driven by amplifiers with limited current delivery



“**Sound:** The Totems passed all my usual subjective listening tests with flying colours. Pink noise was played to determine midband colorations and the optimum listening axis. Colorations were not evident, and the sound was natural over a wide listening area.”

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#### SPECIFICATIONS

- Dimensions: 313 x 167 x 227mm (12.5 x 6.5 x 9 in. approx size)
- Volume: 7.2 litres (internal)
- Weight: 4.1 kg (9 lbs approx.)
- Cross over point: 2.7 kHz electrical and mechanical
- Frequency response: <50Hz - 20 kHz ± 3dB
- Sensitivity: 87 dB/W/m. Maximum sound pressure 103 dB before dynamic compression
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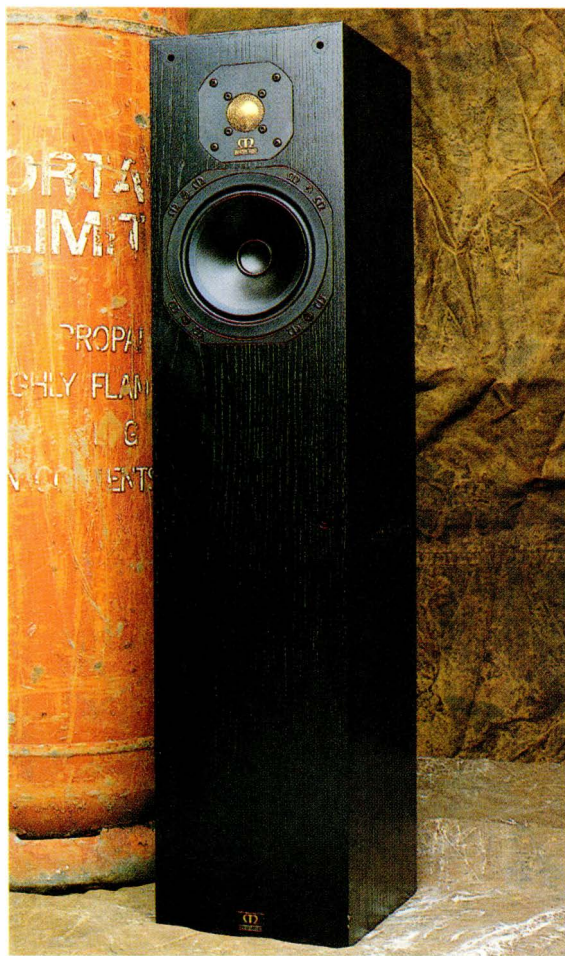
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# Monitor Audio MA1200 Gold Mk2



the same drivers and crossover network into a larger cabinet.

Even this cabinet is not as large as it seems, acoustically speaking, since the lower third is partitioned off. Which means that the 1200's working volume is only 20 per cent larger than the 800's, and that most of the £600 extra actually goes towards providing an integral 30cm stand. It's beautifully integrated aesthetically, and beautifully veneered all round too. It also permits mass damping to be added — which MA did, in spades.

Beautiful or not, this is still a lot to pay for a stand which provides a limited footprint and utterly inadequate spikes. Not only did the thread inserts in the cabinet bases start to

the most exotic real wood veneer your conscience will permit.

The black review samples really don't do it justice. The baffle is veneered, drivers rebated and metal tweeter dome mesh protected, so the grille is best ignored. The foam and bitumen lined box is 19mm MDF, fitted with a high rear port and bi-wire terminals. A simple hardwired crossover feeds the drivers via soldered cables. The main driver has a big magnet, a cast frame and a 120mm plastic cone, while the gold anodised tweeter dome is 25mm across. Both are tightly bolted in place

## Sound quality

The 1200 was well received by the listening panel, who admired the smooth, even and expressive voice band in particular. The good weight was appreciated, as was the fine stereo imaging, but there was some criticism of sibilance and a lack of projection, and as with the MA800 there was rather more respect than enthusiasm.

The sound is a little conservative and unambitious, while at the same time oozing a relaxing and easy-going charm. It's all a bit gentle and slightly dull, but the timing is pretty good for all that. Furthermore, all that mass damping does seem to keep the bass free from overhang.

## Conclusion

Not the most invigorating or lively sound around, the 1200 has charms of an altogether different nature, sounding essentially sweet and unflinchingly easy on the ears. In sheer value for money terms it is outclassed by the MA800, given that a good stand will cost half the difference in their respective prices, and probably be more effective sonically too. But for some the fine aesthetics will justify the premium.

Monitor Audio Ltd, Unit 34, Clifton Rd, Cambridge CB1 4ZW. ☎ (0223) 242 898

Monitor Audio manages to create a most extensive collection of models covering several distinct ranges by mixing 'n' matching between a relatively small number of drive units and cabinets. The floorstanding £1,200 MA1200 Gold in this test has much in common with the recently reviewed stand-mount 800 (issue 114), effectively fitting

turn almost as soon as one tried to tighten the nuts, but the ultra-heavy speaker dug the spikes up to their locknuts into my floorboards, and were blunted and bent after four weeks of being moved around.

Such quibbles aside, this is still a very attractive looking loudspeaker, and the apparently high price disguises the fact that you don't have to pay any more for

## Verdict

▲ Beautifully even midband; lovely real wood luxury finish.

▼ Expensive; midbass heavy; poor spiking arrangements.

▶ £1,199.00 RRP

### SOUND QUALITY

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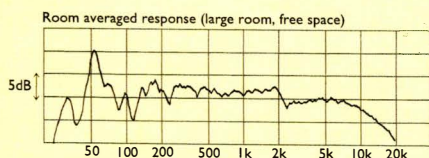
### VALUE FOR MONEY

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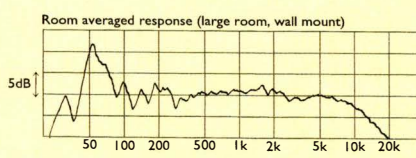
## Laboratory Report

Given the component commonality with the MA800 Gold, it's hardly surprising that the measurements are very similar — so similar, indeed, that it provides worthwhile validation of our methodology. The trouble is that the smaller (and much less expensive) 800 actually turns in rather better balanced results.

Again the load is very easily driven; again the midband is just about the flattest and smoothest on the market, and the crossover very well integrated. But sensitivity is modest considering the limited genuine bass extension. Even placed well clear of walls, the 48Hz-tuned port results in altogether too much output around 50Hz, and too little below 30Hz. The saving grace is that the averaged level 20-200Hz corresponds very well with the 200Hz-2kHz average. To all intents and purposes, therefore, the total perceived balance will be good.



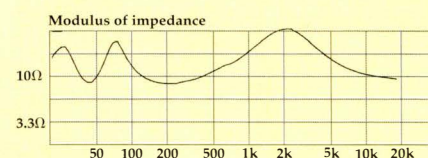
Lovely flat midband balance but detached and boomy midbass, even clear of walls



Close-to-wall, all is midbass and there's no real extension either

## TEST RESULTS

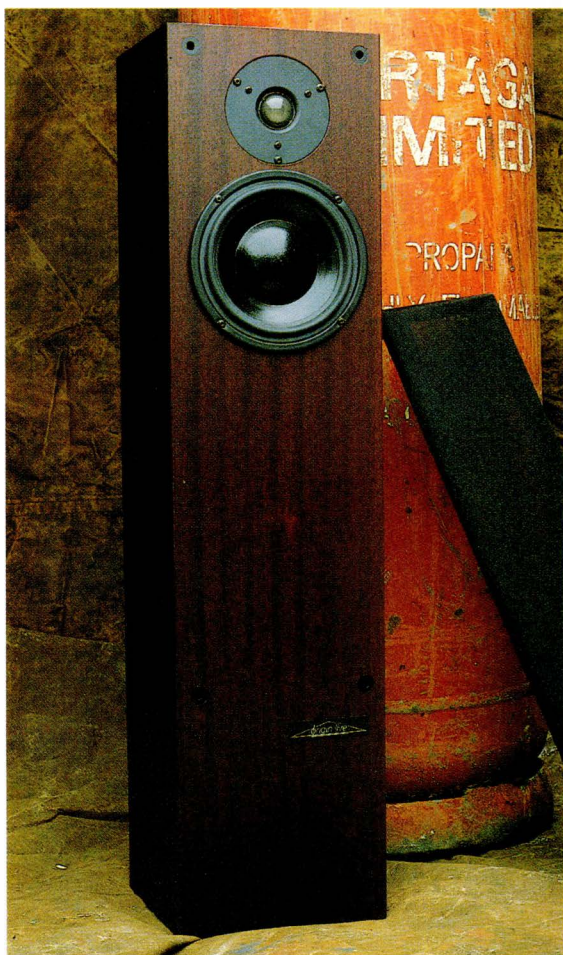
Size (h x w x d)	93.5 x 20 x 27cm
Weight	35kg (includes est. 20+kg mass ballast)
Recommended amplifier power	20-100W
Recommended placement	well clear of walls
In room averaged response limits	
50Hz-10kHz	±8dB
Large room/space LF roll-off (-6dB ref midband)	28Hz
Large room/wall LF roll-off (-6dB ref midband)	28Hz
Large room output at 20Hz (ref midband)	below -13dB
Estimated midrange sensitivity (ref 2.83V, 1m)	85dB
Impedance characteristic (ease of drive)	very good



Impedance is very easy to drive for all types of amplifier



# Origin Live OL-2A



**A**rguably the epitome of the small 'cottage industry' hi-fi manufacturer, Origin Live is the brainchild of engineer Mark Baker. The company started off making the Skyline range of equipment supports, but moved recently into loudspeakers. The £470 OL-2A which is subject of this review is one of four variations on two speaker designs.

in proper tightening, due to the tendency of insert threads to turn under torque.

The box is finished in a real wood veneer, and built up from solid 19mm MDF sections, reinforced by a massive internal nut and bolt arrangement between the sides. A cocktail of damping materials lightly fills the insides, while liberal splatters of solder and goo tend to

It's actually cheaper than the miniature OL-1 tested in issue 106, which seems a bit of a paradox. In fact, OL makes each of its two designs available in two versions, the A suffixed being the 'cooking' models while the unsuffixed cost £100-£130 more and have a higher specification and tighter tolerances.

This is a compact floorstander in every sense of the word. The lower quarter of the enclosure acts as a three-faced stand around a downward facing port — an intelligent arrangement which keeps unwanted port midband output well out of the way. Spikes provide floor coupling, albeit with a limited stability footprint, and, more seriously, considerable problems

reinforce the cottage industry message. Bi-wire terminals feed a well-rated hardwired crossover that links to the drivers with massive cables. Like the OL-1, the main driver is a Morel unit with a combination cone/dome diaphragm. This is 115mm in diameter, with a soft surround and a pressed steel frame, plus a fair size potted magnet driving a very large diameter voice coil.

## Sound quality

The OL-2A drew a rather mixed reaction from the listening panel. The presence is a little shut in with a touch of nasality, and the bass does have a tendency to drag its feet, as much in a dynamic as a timing sense, leading to some congestion and loss of texture. But the sound is basically open, quite transparent and delicate.

The accompanying leaflet warns against under-driving the speaker, and this factor was confirmed in the sighted tests, which showed the impressively confident way it responds to increasing power. The sound gets louder (predictably enough), but doesn't seem to change in character and doesn't start to sound uncomfortably 'loud', staying well together with fine dynamic tracking right up to amplifier clip — and indeed seeming to relish the situation.

## Conclusion

The OL-2A is a bit of a mixed bag, and I would like to see the spike arrangements follow the more substantial Skyline tradition. But it certainly seems a more competitive prospect than the OL-1, and has some impressive capabilities with genuine enthusiast appeal. Those seeking a compact floorstander and prepared to invest in a decent size amplifier should consider this one Recommended.

Origin Live, 87 Chessel Crescent, Bitterne, Southampton SO2 4BT. ☎ (0703) 671 237



## Verdict

▲ **Neat, compact floorstander; transparent; enjoys power.**

▼ **Not to every taste; a tad slow and needs a big amplifier.**

▶ **£469.00 RRP**

### SOUND QUALITY

■ ■ ■ ■ □

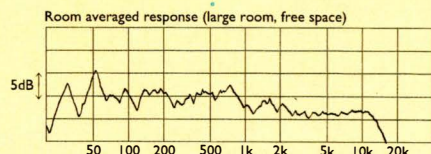
### VALUE FOR MONEY

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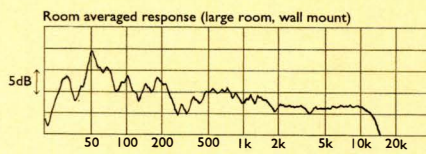
## Laboratory Report

Sensitivity is a rather low 84dB, but the impedance is mild and easily driven. The main driver has considerable power handling capabilities, so reasonable loudness can still be achieved with a powerful amplifier. And the pay-off comes in a very respectable bass extension for a ported system of this volume (thanks to 40Hz port tuning). Compared to the OL1, the 2A shows worthwhile gains in bass and treble extension and level, plus a marginal increase in sensitivity.

The response traces show that the best in-room balance is likely to be achieved with the speaker well clear of walls, whereupon the bass and main midrange are impressively flat. The treble is similarly flat, albeit -5dB in level on a far field measurement. The tricky bit comes in between, the region from 700Hz up to 2.5kHz showing some, but not undue, unevenness.



Impressively flat overall balance clear of walls; low sensitivity but good extension

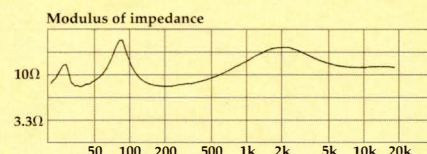


Balance becomes clearly too bass heavy if placed close to walls

## TEST RESULTS

Size (h x w x d)  
Weight  
Recommended amplifier power  
Recommended placement  
In room averaged response limits  
50Hz-10kHz  
Large room/space LF roll-off (-6dB ref midband)  
Large room/wall LF roll-off (-6dB ref midband)  
Large room output at 20Hz (ref midband)  
Estimated midrange sensitivity (ref 2.83V, 1m)  
Impedance characteristic (ease of drive)

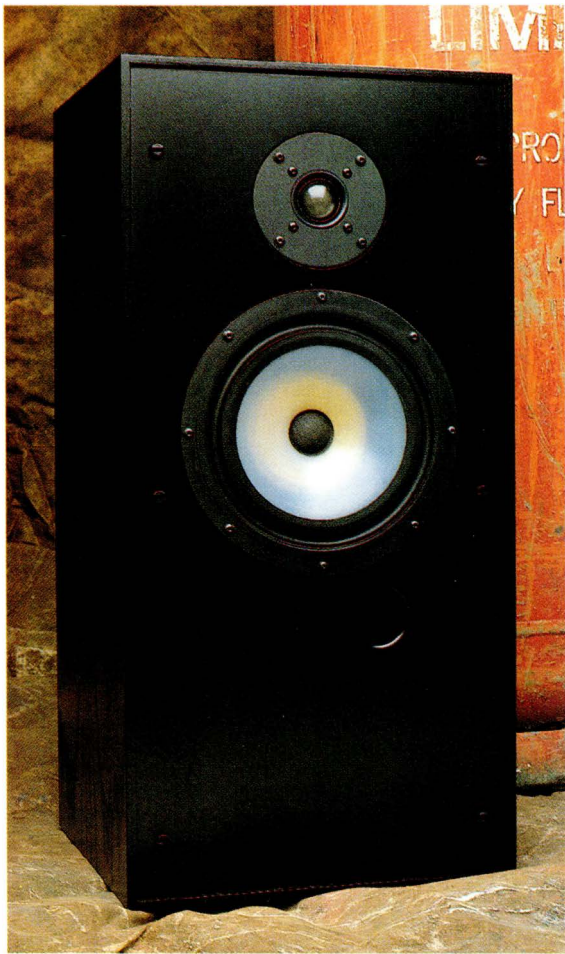
82x19x19cm  
10kg  
25-120W  
clear of walls  
±5dB  
25Hz  
25Hz  
-11dB  
85dB  
very good



Impedance is very easy to drive for all types of amplifier



# Rogers Studio 7



It's hard to believe, looking at it today, that the ancestor of this speaker was one of the first of a new wave which swept aside the old order of bulky boxes. Over 20 years ago, the classic two cubic foot BBC monitor was considered exceedingly compact for a serious loudspeaker; now it looks decidedly bulky and old-fashioned.

five of the faces, while a slim picture frame edge surrounds the narrow, well-contoured, inset wooden frame grille: leave it on unless you're a fanatic.

Futile attempts to remove the main driver merely shortened my temper and blunted my allen keys, but at least the six bolts are all tight, coupling the rebated cast frame firmly to the the textured baffle.

The £880 Studio 7 is Rogers' current inheritor of a tradition which began with the BBC LS3/6 and Spendor BC1 designs. These did much to establish credibility in the use of plastics for loudspeaker cones, and were also among the first speakers for which dedicated stands were made available. Now that stands are widespread, it's ironically exceedingly difficult to find one that properly fits this particular shape.

The box size has remained much the same, but everything else has gone through several generations of evolution, now using polypropylene cones with high temperature voice coils, and modern dome tweeters. Quality real wood veneers decorate

The clear plastic cone is 140mm across, with a wide, soft surround, while the tweeter uses a 30mm fabric dome.

The cabinetwork follows the 'thin wall' philosophy of the original LS3/6, a technique which uses large, fairly thin and heavily damped panels to move cabinet colorations from the midband down into the bass where they do less obvious damage. Nowadays, MDF is used in place of Finnish birch ply.

## Sound quality

In some ways, the sound may be said to follow the slightly old-fashioned trend. The rich and rather laid back presentation is certainly a little nostalgic. But it is also a reminder that this classic configuration is still very much a class act, capable of exceptional sonic subtlety and lovely midband transparency which thoroughly impressed the listening panel.

The sound is a little slow, lazy and midbass heavy, and I suspect some adjustment of bass tuning might work better in our listening room. But the fine combination of incisive bite without unwanted aggression is a rare virtue, and makes listening all the more pleasurable.

## Conclusion

One might suspect this bulky, bluff speaker was well past its use-by date. But there can be little doubt that this new Studio 7 represents a worthy modern successor to the classic LS3/6 tradition. Changes in fashion, the trend towards ever smaller, narrower and floorstanding enclosures have all tended to distract attention away from this particular configuration, and this review acts a reminder that virtue can be achieved through subtlety as well as drama.

Swisstone Electronics, 310 Commonside East, Mitcham, Surrey CR4 1HX.

☎ (081) 640 2172



## Verdict

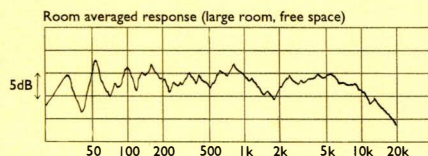
- ▲ Voice band virtues from a classic formula; a subtle design.
- ▼ Sounds lazy and bass rich; looks a little bit old-fashioned.
- ▶ £880.00 RRP

**SOUND QUALITY**  
 ■■■■□  
**VALUE FOR MONEY**  
 ■■■□□

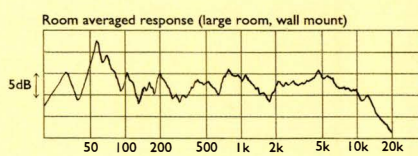
## Laboratory Report

The big box allows a combination of decent (though not wonderful) bass extension with good sensitivity and an easily driven amplifier load. The Studio 7 is capable of high power handling too, so realistic listening levels can easily be achieved with a powerful amplifier.

The 7 clearly needs to be kept well clear of walls and floor. Even so, the 50Hz output is rather strong in our room, although the net sub-100Hz energy is not excessive. Both the midband and treble are notably flat, albeit with a gradual but persistent downturn above 200Hz which is typical of the type, amounting to 4dB at 2kHz and 6dB at 5kHz and enlivened by a 3-4dB step at the crossover (2.5kHz). The trace is quite similar to my old bextrene-cone short-coil Spendor BC1, although the latter is actually rather smoother in bass and crossover regions.



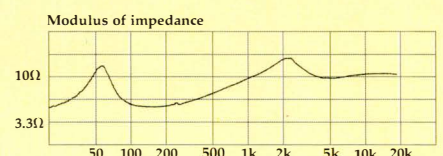
Free space siting shows slight bass heaviness with laid back but smooth balance



Close-to-wall siting is recipe for bass boom; slight crossover glitch

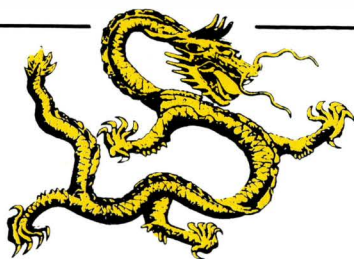
## TEST RESULTS

Size (h x w x d)	63.5 x 30.5 x 30.5 cm
Weight	14 kg
Recommended amplifier power	15-120 W
Recommended placement	low stand, well clear of walls
In room averaged response limits	
50Hz-10kHz	±6 dB
Large room/space LF roll-off (-6dB ref midband)	30 Hz
Large room/wall LF roll-off (-6dB ref midband)	25 Hz
Large room output at 20Hz (ref midband)	-13 dB
Estimated midrange sensitivity (ref 2.83V, 1m)	88 dB
Impedance characteristic (ease of drive)	very good



Impedance is undemanding and easily driven, showing quite complex equalisation





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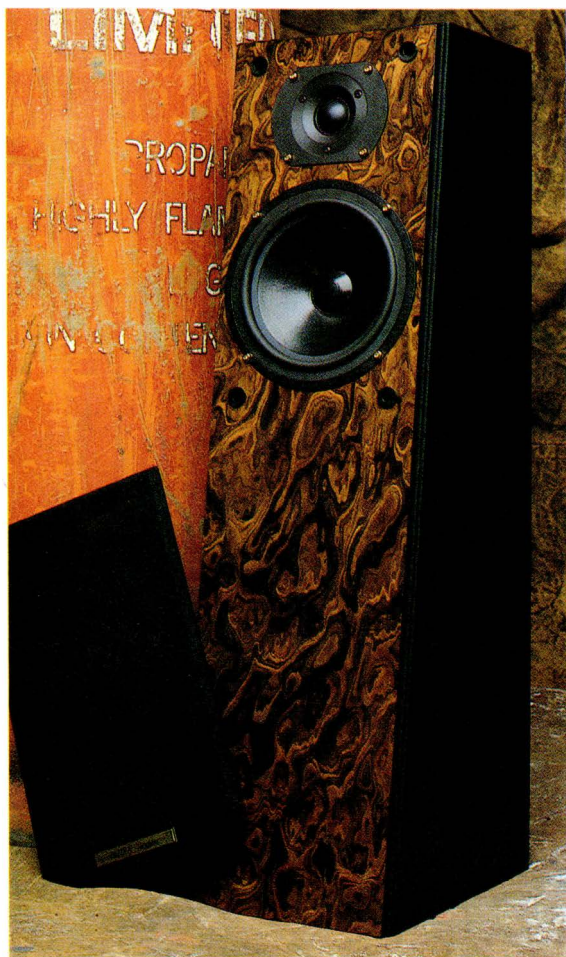
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# Ruark Templar



This new £475 *Templar* model follows a very similar design outline, but represents a simplified variation in order to achieve the £225 saving. In place of the *T2*'s box-section hardwood-veneered 20mm MDF baffle, the *Templar* has a conventional box made of 15mm MDF throughout. However, the worthwhile backward slant is retained, enhancing mechanical stability, helping to time-align the drivers and aiding acoustic projection upwards from the lowish source.

One factor that could split the family is the appearance of the front baffle. The other five faces are black textured vinyl, but the baffle is finished in an unspecified real wood on which is printed the pattern of something much fancier. It might be imitation burr walnut, but is much too Formica for my taste. There's no avoiding this baffle, as the neat and well chamfered grille only covers the top third or less.

Magnet apart, the main driver looks very similar to the *Talisman*'s, with 120mm paper cone, soft surround and cast frame, securely fixed and rebated in place with

brass machinehead bolts. The tweeter has a 29mm soft fabric dome. Only the top four fifths of the cabinet loads the main driver, the lower fifth being partitioned off, aiding stiffness, and enabling mass loading to be added. Besides the partition, there's a lateral brace and several strategically placed strips of wood, plus a good fill of wadding. A complex high grade hardwired crossover links up to the drivers with heavy gauge wire. Reasonable spikes are fitted, but only into sockets inserted in the wooden base at present.

## Sound quality

The *Templar* generated some mixed reactions in the blind tests, but was quite positively received by the majority. While some found the sound a little dull, others felt this aided the projection of midrange and voice detail in particular, giving an unforced quality that succeeds more through subtlety than punch or drama.

I have to admit I didn't get on too well with this model personally, either blind or in subsequent sighted work, the latter revealing a rather limited loudness capability too. The sound is well-controlled and impressively vice-free, which can have its advantages when coping with compromised sources (like the TV), but I found the lack of excitement rather frustrating.

## Conclusion

You can make your own judgements over the aesthetics, but I have to say I found the sound of this speaker too dull and lifeless, and distinctly more so than the *Talisman 2*. And the fact that this observation correlates closely with the measured balance differences between the two does tend to back up that judgement.

Ruark Acoustics Ltd, Unit 9, Anwood Industrial Estate, Arterial Rd, Rayleigh, Essex SS6 7UA. ☎ (0268) 728 890

Definitely part of the craftsmanship school of British loudspeaker manufacturers, Ruark might also be regarded as one of the pace-setters in the current trend towards compact floor-standing speakers, thanks largely to the redoubtable £700 *Talisman*, reviewed and Recommended originally in issue 90 and again, in *Mk2* guise, in issue 118.

something much fancier. It might be imitation burr walnut, but is much too Formica for my taste. There's no avoiding this baffle, as the neat and well chamfered grille only covers the top third or less.

Magnet apart, the main driver looks very similar to the *Talisman*'s, with 120mm paper cone, soft surround and cast frame, securely fixed and rebated in place with

## Verdict

- ▲ Compact floorstander; unboxy and forgiving sound.
- ▼ Dull balance; low sensitivity; lacks drama and excitement.
- ▶ £479.00 RRP

### SOUND QUALITY

■ ■ ■ □ □ □

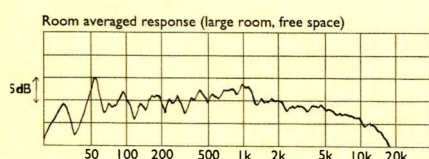
### VALUE FOR MONEY

■ ■ ■ □ □ □

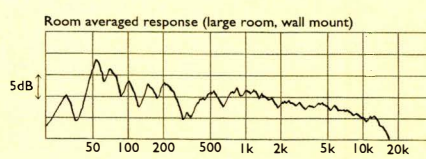
## Laboratory Report

Given that the *Templar* is essentially a stripped down derivation from the *Talisman* theme, the comparison is interesting and relevant. Bass loading differences notwithstanding, extension is very similar indeed, as is the impedance, but the *Templar* is 1-2dB less sensitive through the upper bass and main midband, 2-3dB through the upper mid, and as much as 3-4dB in the treble. Given these results, it's hardly surprising it sounds very different.

The balance is best suited to free space siting, and the response is very good indeed through the lower two thirds of the audio spectrum (20Hz-2kHz). The mild peak (700Hz-1.2kHz) is better controlled than with the *Talisman*'s more energetic main driver, but the *Templar*'s weakness lies in a tweeter which is about 2dB short of output at 2.2kHz, fading to -5dB by 10kHz.



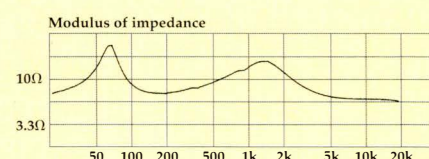
Good bass extension, slight presence forwardness but rapid ultimate treble roll-off



Wall reinforcement tends to introduce midbass boom; treble restrained

## TEST RESULTS

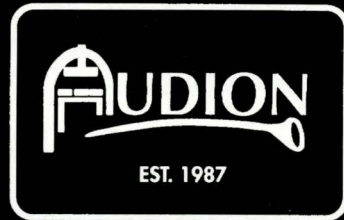
Size (h x w x d)	73 x 19 x 19-27cm
Weight	11kg (including some unspecified/supplied mass loading)
Recommended amplifier power	20-100W
Recommended placement	clear of walls
In room averaged response limits	
50Hz-10kHz	±5dB
Large room/space LF roll-off (-6dB ref midband)	25Hz
Large room/wall LF roll-off (-6dB ref midband)	25Hz
Large room output at 20Hz (ref midband)	-10dB
Estimated midrange sensitivity (ref 2.83V, 1m)	85dB
Impedance characteristic (ease of drive)	very good



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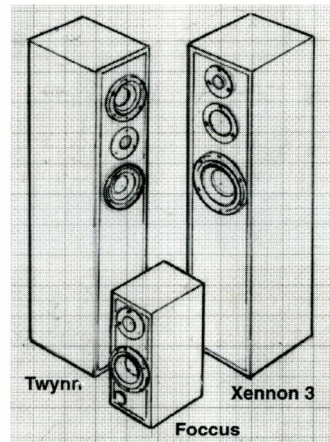
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# Totem Model 1



I nearly choked on my Eccles cake when I discovered how much these little beauties cost. I've since regained my composure, and will admit that this Canadian miniature is as pretty as any that I've seen this past few years.

The accompanying leaflet adopts the rather pompous slogan 'Listen and believe'. Believe me, Totem's *Model One* was going to have to produce something pretty special from behind the listening curtain if it was going to justify such a price-tag.

Not only were the details sketchy, but I was also informed that removal of the drive units was unwise, since they are sealed in place with a fluid compound which makes life rather awkward. Such informatory that I have gleaned is therefore uncorroborated hearsay.

The box feels strong, solid and dead, yet is by no means overweight, which is no

bad thing from an energy storage point of view. Mention is made of lock-mitre cabinet joints, internal cross-bracing and borosilicate damping (isn't that something to do with glass fibre?). A single pair of classy WBT terminals stick out at the back, just below a neatly integrated and quite narrow port.

No grille is supplied, while the 25mm metal dome tweeter has a mesh to protect against prying fingers. The main driver is one of Dynaudio's cone/dome devices, the radiating surface 100mm in diameter, driven from a large diameter voice coil.

## Sound quality

It came; it sat behind the curtain; and it conquered. The Totem didn't quite make it to the top of the list but it came uncannily close.

Obviously bass extension is limited,

while the balance is a bit bright and can sound a little untidy. But it's essentially fast, coherent and highly informative, with a fine sense of freedom and expressive dynamics, and good rhythmic timing too. Stereo imaging was praised for its openness and good off-axis performance. Slate Audio stands work exceptionally well.

## Conclusion

There may be a better miniature out there, but it has yet to come my way. Certainly the price is ridiculous, but the *Model One* is a capable giant-killer, clearly. Recommended and well worth investigation if size is a problem — or even if it's not, because this speaker's so much fun.

May Audio Marketing UK Ltd, 83 Main Street, Burley-in-Wharfedale, West Yorkshire, LS29 7BU. ☎ (0943) 864 930

## Verdict

▲ **Wonderfully communicative miniature; loads of fun.**

▼ **Horrible price and bass; needs good amplifier for high volume.**

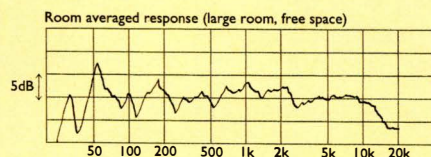
▶ **£995.00 RRP**

**SOUND QUALITY**  
 ■■■■■■  
**VALUE FOR MONEY**  
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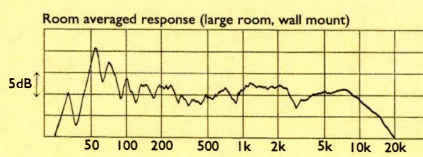
## Laboratory Report

If you're considering £1,000 a pair miniatures, it's only reasonable to assume your amplifier budget is at least as twice as big — probably more. And such amplification shouldn't have much trouble supplying the current needed to drive this low impedance load, although valve aficionados will need to take care.

Clearly aligned for siting well clear of walls, the Totem is pretty well balanced overall, though distinctly ragged along the way. Sensitivity is an adequate 86dB (power handling is high), while the ultimate bass extension is rather remarkable for such a small ported enclosure, the 30Hz room mode registering an impressive -3dB ref midband in-room. Output is a bit too strong at 50Hz, but fortunately this is a quite narrow and isolated peak that won't unduly unbalance the net energy level in that part of the audio spectrum.



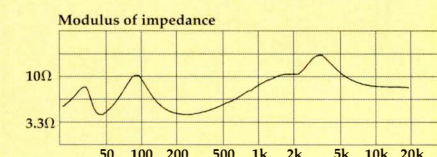
Free space siting gives good overall balance but some 50Hz boom and general unevenness



Back-to-wall siting is best avoided for the smoothest overall balance

## TEST RESULTS

Size (hwxwd)	31x16.5x23cm
Weight	4kg
Recommended amplifier power	15-100W
Recommended placement	high stand, clear of walls
In room averaged response limits	
50Hz-10kHz	±6dB
Large room/space LF roll-off (-6dB ref midband)	28Hz
Large room/wall LF roll-off (-6dB ref midband)	28Hz
Large room output at 20Hz (ref midband)	below -14dB
Estimated midrange sensitivity (ref 2.83V, 1m)	86dB
Impedance characteristic (ease of drive)	current hungry



Current hungry impedance demands an amplifier with good current capability





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# Loudspeakers: conclusions, best buys and recommendations

Our test group of 22 loudspeakers proved as interesting and instructive as any that I've done, and rather easier on the vertebrae too. The growing importance of compact floorstanding speakers is seen in the five new models that adopt this configuration, but the bulk (11) of the candidates on this occasion were pretty much the standard 10-20 litre stand-mount type.

Four of the rest are real tinies, covering a vast price range from £60 up to £1,000. This leaves just a couple of quite upmarket dinosaurs to remind us that when it comes to loudspeakers, good old-fashioned bulk still takes an awful lot of beating.

## Under £150

Budget speakers are by definition small speakers, and they don't come much smaller or any cheaper than the £59 JPW *Mini Monitor*. While hardly inspiring, its overall competence demands the Best Buy rating.

Much more remarkable, however, is the Wharfedale *CRS3* (£129.90). It may look out of date, but this Best Buy can deliver as exciting and communicative a performance as many models costing more than twice the price.

Goodmans' latest *Maxim* (£119.95) retains its Recommended flash, packing plenty of bass punch.

## £150-£250

Whether the Philips connection proves a help or handicap, there's no denying the sonic superiority of the £199.99 *Legend II*, even though this Best Buy is a bit more coloured and less

### Best Buy and Recommended Listing

**Under £150**

**BEST BUYS**

**JPW Mini Monitor (£59)** Short of welly, but a great surround speaker.

**Wharfedale CRS3 (£129.90)** Coherent and lively performer.

**RECOMMENDED**

**Goodmans Maxim (£119.95)** Well-balanced budget box.

**£150 — £250**

**BEST BUYS**

**Legend II (£199.99)** Lively; coherent; fine information retrieval.

**RECOMMENDED**

**Castle Trent II (£189.90)** Classy finish plus a perfectly respectable sound.

**Rega EL8 (£298)** More bass than the Kyte, but less coherence.

**Tannoy 607 II (£219.99)** Exceptional bass; treble sounds rather shut in.

**£250 — £450**

**RECOMMENDED**

**Infinity Reference 30 (£399.95)** Budget floorstander; balanced; good bass extension.

**Over £450**

**RECOMMENDED**

**Cabasse Skiff (£1,500)** Great sensitivity and bass; fine dynamic grip.

**Heybrook Quartet (£555)** Good sensitivity and a lively, forward sound.

**Origin Live OL-2A (£469)** Open, transparent and balanced sound; needs a big amplifier.

**Rogers Studio 7 (£880)** Looks rather old-fashioned but has a beautifully voiced sound.

**Totem Model One (£995)** This luxury miniature sets the benchmark standard for its size.



**The £129.90 Wharfedale CRS3.**

smooth than some of the alternatives.

The latest versions of the *Castle Trent* (£189.90) and *Tannoy 607 II* (£219.99) are both Recommended, the former for its fine finish and good overall balance, the latter for its rather superior bass and midrange.

## £250-£450

The two Recommended models here are both meritorious floorstanders, but for very different reasons. The ultra-compact £298 *Rega EL8* is delightfully agile, if best-suited to the smaller room and modest system. I'm still not sure if the £399.95 *Infinity Reference 30* has changed since it was last reviewed, but it is

good value and a lively, if rather crude, performer.

## Over £450

The compact, floorstanding *Origin Live OL-2A* (£469) serves up an interesting combination of relaxed openness with fine power handling, while the beautifully finished *Heybrook Quartet* (£555) sounds altogether more exciting.

The £880 *Rogers Studio 7* is a reminder of the subtleties of the BBC monitor, while the dynamic *Cabasse Skiff* (£1,500) demonstrates just how thrilling a full-size three-way design can sound. The tiny £995 *Totem Model One* may not look such good value, but its sound is a pure delight.

## Loudspeakers — best of the rest

Loudspeaker design tends to be more engineering than technology-led. Models may stay in the catalogue and remain fine value for money for many years. Notable cheapies from past review projects include the *Allison AL100*, *Celestion I*, *JPW PIV* and *Sonata* (all Best Buys), plus the *B&W 2001*, *Canon S-30*, *Heybrook Prima*, *JPW Minim*, *Jamo Cornet 50*, *Mission 760i*, *Monitor Audio Monitor One* and *Sony AMP-101ES* in the Recommended category.

The next group up in terms of price includes the *Acoustic Research MI*, *Heybrook HBI S3*, *Rega Kyte*, *Rogers LS2a/2* Best Buys, plus the *Allison AL110*, *Celestion 7*, *Faraday FS1*, *Infinity Reference 10*, *JPW PI*, *AP2* and *AP3*, *Mission Cyrus 780* and *781*, *Wharfedale 425* and *Zyp AI* Recommended models.

Between £250 and £450, the *Epos ES11*, *Linn Index* and *B&W 620* are three very different Best Buys. Recommended models include the *Arcam Delta 2*, *Bose 305*, *Canon S-50*, *Celestion I5*, *Harbeth HLP3*, *Heybrook Trio*, *JRT ADI Micro*, *Kenwood LS-770E*, *Monitor Audio Monitor 11*, *Mordaunt-Short MS5.40*, *Rega ELA*, *Rogers Studio 3*, *SD Acoustics SD3* and *Wharfedale 515*.

For the full range of £450 and over Recommendations (and there are quite a few of them), please refer to *The Directory*, which starts on page 106. Noteworthy examples of the new breed of high performance compact floorstanders include the *Castle Chester*, *Linn Keilidh*, *Mission 753* and *Ruark Talisman 2*.







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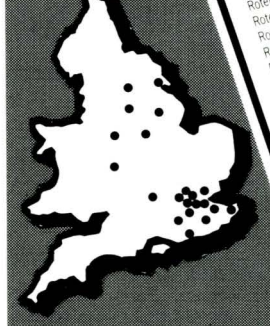
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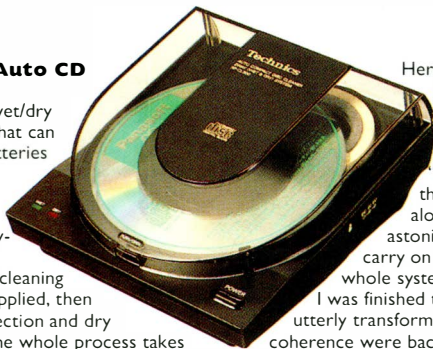
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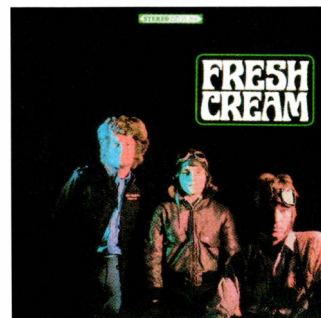
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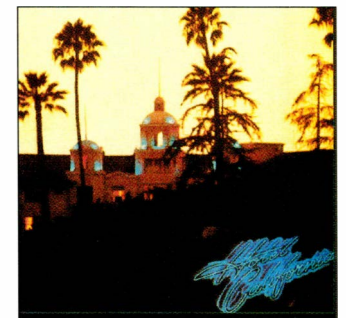
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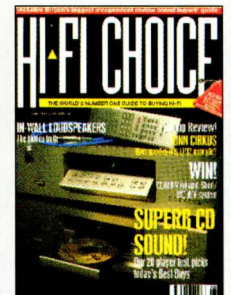
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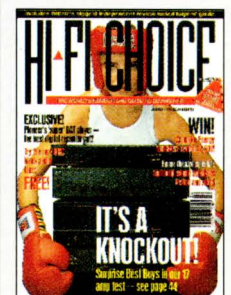


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**HADDA**  
HUTCHINSONS, 295-297 High Str, Cheltenham, Glos. GL50 3HL. (0242) 573012. Pioneer reference point, Technics, Dual, NAD, JWharfedale, Celestion, Marantz, Aiwa, Kenwood, Sennheiser. No appts necessary, free install, service dept. Instant credit up to £1000. Open Mon-Sat 9.15-5.30.  
R LEWIS & CO Ltd, 45 High Str, Stroud, Gloucestershire GL5 1AW. (0453) 762485/9. Bang & Olufsen, Denon, Dual, Mission, Mordaunt-Short, Pioneer, Sony, Technics, Yamaha, Celestion etc. In store dems, free install, service dept. Access, visa. Open 8.30-5pm 6 days.

## HAMPSHIRE

AUDIO SOUTH for further details see the Surrey entry.

**AUDIO T**, 4 Feathers Lane, Basingstoke, Hants. RG21 1AS. (0256) 24311, Fax (0256) 24430. Great hi-fi from Arcam, Audiobal, Cyrus, Denon, Meridian, Mission, Rotel, Yamaha and many more. Mon-Sat 9.30-5.30pm. 3 yr gntee on Hi-Fi. Free del & instal. 30 day upgrade scheme. Home dems. PX. Single speaker dem room. Free del. and instal.

**HADDA**  
HAMPSPERE AUDIO LTD, 2-12 Hursley Rd, Chandlers Ford. (0703) 252827/265232. Quality CD and analogue equipment. 5 dem studios. Large free car park. Thurs late eve.

**HADDA**  
JEFFERIES HI-FI (Portsmouth) 29 London Road, Portsmouth PO2 0BH Tel: 0705 663604. 2 Dem Rooms, closed Mondays. Late night Wed. Free Parking Bus route. Credit facilities. **HADDA**

## HEREFORDSHIRE

ENGLISH AUDIO, 95 Whitecross Road, Hereford HR4 0DG. (0432) 355081 Cyrus Centre, Pink Triangle, e. Audion, Systemdek, Heybrook, Michi, KEF Reference, Micromega, Nakamichi, Chord, Arcam, Musical Fidelity, Rogers, NAD, Rotel, Denon, Tannoy, Marantz, Mission, Stax, Dual, TDL, Albarry, JPW, Celestion, Ixos, SME, Ruark, Moth, Audio Technica and others. Single Speaker Dem room. Home trial. Free install. Service dept. Access, Visa, Credit arranged. Open Mon-Sat 10am-6pm.  
GOSPEL MUSIC AUDIO, 32A High St Kingston, Herefordshire. (0544) 230254. New Shop open: Castle Video, 1 Spa Centre, Station Crescent, Llandrindod Wells (0587 824 0200) Alphonso, Alison, Revolver, Luxman, Yamaha, QED, Audio Systemline, Wharfedale, Jamo, Micromega., No appts nec., home trial facilities, service dept. - 5.30 +evening dems.

## HERTFORDSHIRE

**ACOUSTIC ARTS LTD**, 101 St Albans Rd, Watford, Herts. (0923) 245250. Fax (0923) 230798 Absolute Sounds, Acoustic Energy, Audiobal, Chord, Denon, Marantz, Meridian, SME, TDL., Teac, Tues-Sat 9.30-6.00

**HADDA**  
**AUDIO FILE**, 27 Hockerrill St, Bishops Stortford, Herts CM23 2DW. (0279) 506576. 9.30-5.30 open 6 days. Dealer of the Year 1988/89. Linn, Naim, Quad, Cyrus, Arcam, Roksan, Denon, Epos, Rotel, KEF, ProAc. 0% credit.

**HADDA**  
HERTFORD MUSIC. Music is pleasure. good when choosing your system in our, appointments only demonstration rooms (and bar!) Home demonstrations encouraged. Systems form £1,000 to £15,000. Micromega, REL Acoustics, Acoustic Energy, Michell, Magnum, Diamond Acoustics, Beard, Lumley, Renaissance, etc. Access, Visa. Mail Order. Tel: (0992) 700 900  
RADLETT AUDIO, 141 Watling Street, Radlett, Hertfordshire, WD7 7NQ. (0923) 856497. Mark Levinson, Proceed, PRO AC, AVI & ATC, Martin Logan, Tube Technology, Teac, Roksan, Audiobal, Rotel. Home trial facilities, Free Install. Service Dept. Visa, Access 9-5:30 Mon-Fri 10-5:30 Sat  
**STUDIO 99**, 82 High Street, Harpenden. ((0582) 764 246. Linn, Naim, Meridian, Rega, Nakamichi, Mission/Cyrus, Quad, Creek, KEF, Bang & Olufsen, Yamaha etc. Quiet single speaker dem room. Appts nec. Home trial, free install. Service Dept. Visa/c, Access/c & finance terms. 9-5.30pm (Mon/Sat). Closed Weds. **HADDA**

## NORTH HUMBERSIDE

JUST AUDIO, 2A Foston Lane, North Frodingham, Driffield. Tel 0262 488700, call for details.

SUPERFI, 4 Dock Str, Queens Gardens Hull, HU1 3DL. (0482) 24051. See main entry under Nottinghamshire for full details.

## KENT

**ASHFORD, SOUNDCRAFT HI-FI**, ("BADA" LOGO) 40 High Street. Seeking music lovers, male or female any age, to share common interest in, musical Pro-aktiv Hi-Fi Systems, Multi Room or Home Cinema. Attractive unusual equipment in unusual setting, your place or ours, we guarantee lasting pleasure. Open Mon-Sat, Appointment Service or just pop in. Tel: 0233 624441. **HADDA**  
CANTERBURY HI-FI, 50 Burgate, Canterbury, Kent, (0227) 765 315 B&W, Denon, Kenwood, Cerwin-Vega, Yamaha, Technica, Rogers, Musical Fidelity, Sony, NAD. No appointments necessary. Free Installation. Service Dept. Access and Visa. Mon-Sat 9-5.30

**JOHN MARLEY HI-FI CENTRES**, 2 Station Rd, West Canterbury (0227) 769329. Also at Dover - (0304) 207562. Arcam, Aura, B&W, Heybrook, JPW, Pro-Ac, Pioneer, Rotel, Ruark, Tannoy, Technics. Dem and home trial fac. Mon-Sat 9-5.30 closed Thurs. Free install. Credit to £1,000. Access, Visa, Credit charge. Service dept.

**KIMBERLEY HI-FI**, 193 Broadway, Bexleyheath, Kent. (081) 304 3272. Pioneer, Technics, Kenwood, Denon, NAD, Aiwa, Tannoy, Mission, Wharfedale, B&W. Separate dem room, no appt nec. Free installation. Service Dept. Instant credit facilities. 9.30-5.30. No early closing.

**PANATEC SOUND & VISION CENTRE**, 83b High Str, Gillingham. (0634) 573141. B&W, Bose, Cambridge, Dual, Kenwood, Marantz, Pioneer, Philips, Sony, Tannoy, Technics, Wharfedale. Dem room facilities. 0% credit, Service Dept. Free Installation. Pioneer Reference Point Dealer.

**PANATEC SOUND & VISION**, 17 Week Str, Maidstone. (0622) 661488. See above for details.  
**VOLUME ONE**, 41 Upper Wickham Lane, Welling, DA16 3AD. 081 304 4622. Arcam, Dual, Epos, Exposure, Mordaunt Short, Monitor Audio, JPW, Marantz, Micromega, Nakamichi, Pink Triangle, Rotel, Royd, Ruark, Sony, Systemdek. Large demo room, no appt nec. Evening dems in shop by appt. Home trial & demo, free delivery & installation. Access & Visa, 10.00-6.00 Mon-Sat.

**V J HI-FI**, 29 Guildhall St, Folkestone. (0303) 56860. Mon-Sat 9-6. NAD, Yamaha, Marantz, Sony, Tannoy, Denon, Kenwood, Rogers, Musical Fidelity, Quad, Dem and home trial facilities, free install, credit to £1000. Amex, Diners, Visa, Access. Service dept.

**V JHI-FI**, 119 High Street Margate. (0843) 226977. For full details see our above entry.

## LANCASHIRE

**NORMAN AUDIO**, 131 Friargate, Preston, Lancs, PR1 2EE. Tel 0772 53057. Fax 0772 562731. Marantz, Pioneer, Yamaha, Audiobal, Arcam, Mission, Cyrus, B&W, KEF, Sendeor Catalogue. Home Cinema Dem room. No appt nec. Home trial facilities, free installation. Instant credit subject to status. Open 9.30-5.30, late night Wed till 8.00pm.

**NORMAN AUDIO**, also at 216 Church St, Blackpool, (0253) 295661, Fax (0253) 295722. **HADDA**

**JO KOCZUR LTD.**, 185 Yorkshire Street, Rochdale, Lancashire. (0706) 42107 Harman Kardon, Quad, Revox, Aura, Teac, JBL, Tannoy (including definition) B&W, Canon, Bose and many others. Dolby Pro Logic, A.V. System. Established over 25 years, qualified & experienced staff. Appts nec only after 5.30pm. Home trial, free install, service dept. Open Sat 9-5. Mon, Wed, Thurs, Fri 9-5.30pm. Closed Tues.

**ROMERSHI-FICENTRE**, 94-96 High Street, Rishton, Blackburn, Lancs BB1 4LQ. Tel: (0254) 887 799. I Fidelity, Technics, Pioneer, Marantz, Kenwood, Tannoy, B&W, Sony, Ruark, Mission. Single speaker dem room red for Pro Logic. No appts necessary. Home trial by arrangement. Free installation. Service dept. Access, Visa. Switch. Interest free credit on selected products. Open 9-5.30, Wed 9-1pm.

## LEICESTERSHIRE

**MAYS HI-FI**, 27/33 Churchgate, Leicester. LE1 3AL. (0533) 625625. Sony, Technics, Denon, Kenwood, Pioneer (Reference Point) Philips, B&W, Tannoy, Mission/Cyrus, Dual, Listening room, free install, service dept. Full range of credit facilities. Open Mon-Sat 9-5:30 Thurs 9-1:30

**LEICESTER HI-FI CO**, 6 Silver Walk, St Martins Square, Leicester LE1 5EW. Tel: (0533) 539753.

Fax (0533) 626097. Acoustic Energy, Arcam, Marantz, Micromega, Mission/Cyrus, Musical Fidelity, Nakamichi. Meredian, Rogers, Roksan, "and oodles more". 2 Dem rooms, home trial arranged, free install, service dept, Credit facilities, Access, Visa, Diners, Amex, 6 days 9.30-5.30. Bada Member **HADDA**

**LISTEN INN**, 6 Hotel Street, Leicester. (0533) 623754 (Fax) 0533 623758. Linn, Arcam, Royd, Heybrook, Creek, Neat, Mission, Cyrus, Audiobal, Quad, Denon, etc. 2 Dem Rooms. **HADDA**

**SOUND ADVICE**, The Factory, Duke St, Loughborough LE11 1ED. (0509) 218254. Shahnian, Rega, Naim, Linn, Royd, Yamaha, Rotel, Arcam, Nakamichi, JPW. 3 demonstration areas, no appts necessary, free installation, service department. Lombard credit charge, Access, Visa. Mon-Fri 9.30-6.00, Sat 9.30-5.30.

**STEREO SHACK**, 1-3 Guildhall Lane, Leicester. Tel 0533 530330. Aiwa, A.R., Denon, Kenwood, Jamo, Mission, NAD, Philips, Pioneer, Rotel, AV Speciality. Free Install Open 9.30 - 5.30 6 days. Credit available.

## LINCOLNSHIRE

**BOSTON HI FI CENTRE**, 65a Wide Bargate, John Adams Way, Boston, Lincs PE21 6SG. (0205) 365477. Quad, Nakamichi, Arcam, Marantz, NAD, Castle, Tannoy, Rogers, etc. Separate demostudio. Home trial. Free installation. Access, Visa. Tues-Sat 9-5 pm.

**STAMFORD HI-FI CENTRE**, 9 Red Lion Square, Stamford, Lincs PE9 2AJ. (0780) 62128. Pioneer, Technics, Cyrus-Mission, Rotel, NAD, Yamaha, Kenwood, Marantz, Quad, plus all major speaker manufacturers. Expert advice, comparator demonstrations, on two floors, part exchange Hi-Fi purchased for cash. No appointments necessary, home trial facilities, free installation, service department. Mastercard, Visa & credit charge, finance available. Mon-Sat 9-5.30pm, closed Thursdays.

**SUPERFI**, 271A High Str, Lincoln LN2 1JG. (0522) 520265. See main entry under Nottinghamshire for full details.

## LONDON

**ANALOG AUDIO**, 849 High Road, London N12. (081) 445 3267. Cambridge, Denon, Rotel, Yamaha, Marantz, Wharfedale, Teac, Mordaunt-Short, Cerwin Vega, NAD. Free install. Service dept. Instant credit up to £1000. Visa & Access. 9.30-6 6 days.

**AUDIO T**, 190 West End Lane, West Hampstead, London NW6 1SQ.

(071) 794 7848, Fax (071) 431 3570. Great hi-fi from Arcam, Audiobal, Cyrus, Denon, Meridian, Mission, Philips, Rotel, Proac, Micromega, Yamaha, and many more. Mon-Sat 10-6pm. 3 yr gntee on Hi-Fi. Free del & instal. 30 day upgrade scheme. Home dems. PX. 2 dem rooms. **HADDA**

**BILLY YEE SOUND SYSTEMS**, 248 Lee High Road, London SE13. (081) 318 5755. Arcam, Linn, Naim, Quad, etc. 2 dem rooms. Int. free credit. Access, Visa. Closed Thurs. **HADDA**

**CORNFLAKE SHOP**, 37 Windmill St ( just off Tottenham Court Rd), London W1. (071) 631 0472 (domestic). (071) 323 4554 (multiroom). Fax. (071) 323 4554 Fax. (071) 4367165. Tues -Sat 10-7 Rega, Roksan, Naim, Monitor Audio, Arcam, Nakamichi, Rotel, Epos etc. 3 dem rooms. (incl. home cinema) Friendly, professional service. Home trial facilities. Appointments preferred. Full delivery and repair service. Multiroom specialists. Access & Visa.

**COVENT GARDEN RECORDS**, 84 Charing Cross Road, London WC2 (071) 379 7635, Fax (071) 836 1345. London's premier digital audio centre. Photo CD, DCC, CD, & 16X9TV'S. Audiobal, B&O, Marantz, Mission, Cyrus, Philips, Pioneer, Rotel, Rogers, Quad, Sony, Technics, single speaker dem rooms, appointments suggested, installation service available. All major credit cards accepted. Mon-Sat 10am-7.30pm.

**DOUG BRADY HI-FI**, 14-18 Monmouth St. London WC2H 9HB. (071) 379 4010. Wide range of top specialist hi-fi from Britain, America and Japan. 3 dem rooms. Closed Monday. **HADDA**

**GRAHAMSHI-FI**, Canonbury Yard, 190a New North Rd, London N1 7BS. (071) 226 5500. Winner Sony/HFN Greater London Dealer Award 1986-1989-1990. Linn, Naim, Rega, etc. £400-£3000-£13,000. Open Tues-Sat **HADDA**  
**HI-FI & COMPONENTS**, 84 Battersea Rise, London, SW11 1EH. Tel: 071 2231 110. Denon, Harman Kardon, Tannoy, Kenwood, Rotel, NAD, Wharfedale,

Dual, Shure, Ortofon, Celestion, etc. Appts nec, Service Dept. Access, Visa, Diners, Amex, Open 10-6 Closed Wed.

**K.J. WEST ONE**, 26 New Cavendish St, London, W1M 7LH. (071) 486 826/63. Fax (071) 487 3452. Most established brands stocked. Two Hi-Fi and one Home Cinema dem studios. Appts nec. Home trial. Free installation. Service dept. Major credit cards. Interest free credit usually available - ask for details. Mon-Sat 10-6pm. (Late night Thurs till 7pm)

**MUSICAL IMAGES LTD**. 45 High Street, Hounslow, Middlesex. HA8 7JX. See under Middlesex & full page advert in the Product Directory.

**SOUND ORGANISATION LONDON**, 4 Pickfords Wharf, Clink Street, London, SE1 9DG. Tel 071 403 2255. Audio Research, Aura, Creek, Epos, Exposure, Heybrook, Koetsu, LFD, Lyra, Martin Logan, Micromega, Naim, Nakamichi, Rega, Rotel, Roksan, Royd, SME, SonusFaber. Interesting new equipment always under evaluation. 2x single speaker listening rooms. Appts preferred. Free Installation. Service Department. Open Tues - Sat. 10-6. Late dem by appointment.

**SOUND SENSE**, 350 Edgeware Road, London W2 1DX. (071) 402 2100. Alphason, B&W, Kenwood, Nakamichi, Celestion, Denon, Monitor Audio, Marantz, NVA, Sony ES, Yamaha. Appts preferred. Installations available. Access, Visa, Standard credit facilities. Mon-Sat 9.30-6.30.

**STUDIO 99**, 79-81 Fairfax Road, Swiss Cottage, London NW6. (071) 624 8855. Naim, Rega Quad, Meridian, Mission/Cyrus, ATC, Nakamichi, KEF, Yamaha, Arcam, Epos, Acoustic Energy, Bang & Olufsen, etc. 2 single speaker dem rooms. Service dept. Visa/c, Access/c & finance terms. 10-7 Mon-Fri, 10-6 Sat. **HADDA**

**SUPERFI**, 2-4 Camden High Street, Camden, NW1 0JH (071) 388 1300. See main entry under Notts for full details.

**UXBRIDGEAUDIO - CHISWICK**, 109 Chiswick High Road, Chiswick, W4 2ED (081) 742 3444 Fax (081) 742 3295. 2 Demo Rooms, Installations, 2 Year Guarantee, 7 day exchange. Major credit cards, Tues - Sat 10 - 6. See Middx entry for brands stocked. **HADDA**

**VOLUME ONE**, 41 Upper Wickham Lane, Welling. (081) 304 4622. For full details see entry under Kent.

**ZEBRA**, 18-24 Brighton Road, South Croydon CR2 6AA. 081 688 2093. Audio lab, Arcam, KEF Reference, Marantz, Mission, Micromega, Pioneer, Rotel, Sony, Tannoy, and large range of AV equipment. S2 Air Conditioned Demo Rooms. in a more casual environment. Service department. Mon-Sat 9.30-6.00. Access, Visa & instant credit up to £1000 subject to status.

## GREATER MANCHESTER

**CENTRAL RADIO**, 30-32 Shudehill, Manchester M4 1EY. Tel 061 834 6700. Technics, Kenwood, Pioneer, Aiwa, Marantz, Mission, B&W, Wharfedale, JBL, Thorens, Panasonic, etc. TV video, surround sound, AV systems, service dept, free delivery. Access, Visa, Switch finance. Mon-Sat 9-5.30.

**THE AUDIO COUNSEL**, 12 Shaw Road, Oldham, Manchester OL1 3LQ. (061) 633 2602. Linn, Yamaha, Rega, Rotel, Arcam, Micromega, EPOS, Creek, Nakamichi, Denon. 2 dem rooms. Free install. Visa, Access, Licenced credit brokers up to £1000 instant credit. 10.00-5.30 Tues, Weds, Sat; 10.00-7 Thurs & Fri. Closed Mon.

**MURRAY HI-FI**, 19 Middle Hillgate, Stockport. (061) 429 7666. Linn, Naim, Rega, Arcam, Yamaha, Royd, Epos, Creek, Nakamichi, Rotel. Full demo facilities, free installation & delivery, service dept. Full 2yr guarantee on all products. Access, Visa, Lombard Tricity, licenced credit broker. 10-6 Tue-Sat.

**SWIFT OF WILMSLOW**, 4-8 St Annes Parade, Wilmslow. (0625) 526213. Aura, B&W, Denon, Kenwood, Marantz, NAD, Pioneer, Rotel, Tannoy, Revolver, JPW. Open 9:30am-6:00pm 2 dem rooms. No pressure! **HADDA**

## MIDDLESEX

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upgrade scheme. Home dems. PX.2 dem rooms. A/V Dept. **BADA**

**HARROW AUDIO**, 27 Springfield Rd, Harrow. (081) 863 0938. Mon-Sat 9.30-5.30. A&R, Audiolab, Cyrus, Denon, Epos, Monitor Audio, Musical Fidelity, Nakamichi, Quad, Rotel, Tannoy, Thorens, Yamaha. etc. **BADA**

**MUSICAL IMAGES LTD.** 173 Station Rd, Edgeware (081) 952 5535, fax (081) 951 5535. Most brands available - see full page ad in the product directory. Interest free credit, ask for details. Demo Rms, Repairs & Service. Open Sunday and all week. A home cinema specialist. Mail Order. Part exchange.

**RIVERSIDE HI-FI LTD.** 422 Richmond Road, East Twickenham, Middlesex TW1 2EB. Tel. (081) 892 7613. Fax (081) 892 7749. A.R., Arcam, Audio Innovations, Castle, Dual, Denon, KEF, Luxman, Michell, Musical Fidelity, Micromega, Marantz, Nakamichi, Rotel, Spendor, Systemdek, Tannoy, Yamaha. One demo room, in-car demo for car hi-fi systems. Appts not always necessary. Home trial facilities. Free installation, service dept. Lombard Tricity, Access, Visa, Amex, Diners Club. Mon-Sat 9.30-6, Thurs, Fri 9.30-7. **SIGHT N SOUND**, The Treaty Centre, Hounslow, Middlesex TW3 1ES. 081 572 5418, fax 081 572 5417. Sony, Kenwood, Finlux, Toshiba, Philips, Sanyo, Grundig, Pioneer, Technics, Akai. No appts nec, free intall, service dept. Access & Visa, financing available. 9-6pm Mon-Sat.

## MERSEYSIDE

**W.A. BRADY & SON**, 401 Smithdown Rd, Liverpool L15 3JJ. (051) 733 6859. 'Largest choice of specialist Hi-Fi in N.W. £100-£20K'. All credit cards. 3 dem rooms. Closed Monday. **BADA**  
**P & A AUDIO (BIRKDALE) LTD** 31 Liverpool Road, Birkdale, Southport (0704) 68373. Arcam, Cambridge, Creek, Denon, Michell, Mission/Cyrus, Mordaunt-Short, NAD, Pink Triangle, QED, Revolver, Rogers, Rotel, Royd, Tannoy. 3 Single speaker demo rooms and Nicam surround sound dem room. Free delivery, installation (Merseyside) Service dept, Mon-Sat 9-5.30 Half day Tues, Access, Visa, Lombard.

**PETERS HI-FI** 11 Werburgh Sq, Grange Precinct, Berkenhead. (051) 647 5626. 9-5.30 closed Thurs. See Cheshire entry for full details.  
**PETERS HI-FI**, 8 High Street, Bromborough, Wirral. (051) 334 1874/2825. Open 9-5.30 6 days a week. See Cheshire entry for details.

## WEST MIDLANDS

**AMADAEUS SOUND & VISION**, 10 Boldmere Road, Sutton Coldfield, West Midlands Tel (021) 354 2311. Arcam, Audio Innovations, B&O, Carver, Castle, QED, Wharfedale, Yamaha, Cambridge Audio, Hafler. Single Speaker demo, appts preferred, service available, installations, B&O link install, home trials. Access, Visa, interest free credit available subject to status. 9.30-6pm 6 days.

**FRANK HARVEY HI-FI EXCELLENCE**, 163 Medieval Spon Street, Coventry. (0203) 525200. All major agencies. Free inst. Service dept. Part ex. 3 dem rooms. Mon-Sat 9.30-5.30. Wed til 8pm. **BADA**  
**GRIFFIN AUDIO LTD**, 94 Bristol Street, Birmingham. (021) 692 1359/(021) 622 2230. Arcam, Castle, Cyrus, Denon, Linn, Marantz, Naim, Quad, Rega, Rotel. Tues-Sat 10-6. **BADA**

**MUSICAL APPROACH**, 37 High Street, Aldridge, Walsall, W. Mids. (0922) 57926. Linn products, Arcam, Creek, NVA, Revolver, Onix, Epos, Marantz, Rotel, Quad & more. Dem facs. Home trial. Service dept. Credit facs available. Access, Visa. 9.30-5.30 Mon-Sat. 9.30-11 on Thurs.

**MUSIC MATTERS**, 351 Hagley Road, Edgbaston, Birmingham B17 8DL. (021) 429 2811. Roksan, Nakamichi, Arcam, Audiolab, Musical Fidelity, Mission/Cyrus, Meridian, KEF, Monitor Audio, Pink Triangle. 2 single speaker luxury demo rooms.

Appts nec, home trial facilities, free installation, service dept. Access, Visa, instant credit up to £1000, interest free credit available. Tue-Thur 10.30-6, Fri 10.30-8, Sat 10-5.30.

**NAAM HI-FI VISION**, 122-123 New Street, Birmingham. (021) 633 4944. Pioneer, Akai, Aiwa, Panasonic, Yamaha, Toshiba, Hitachi, Bose, Wharfedale, Sony. Demo facilities available, appointments preferred. Access, Visa, 10 month interest free credit. Amex, Lombard Tricity Creditcharge. Mon-Sat 9-6.00.

## NORFOLK

**AUDIO IMAGES**, 7 All Saints Rd, South Lowestoft, Suffolk NR33 0DL. Tel: 0502 582853. For full details see our main entry under Suffolk.  
**BASICALLY SOUND**, The Old School, School Rd, Bracon Ash, Norwich NR14 8HE. (0508) 70829. Arcam, Linn, Naim, Denon, Spendor, Exposure, Audio Technica, Creek, Rega, Epos, etc. 2 comprehensive dem rooms. Home trial. Free installation. Visa, Access, HP facilities. Tues-Sat 9.30-1, 2-5.30.

**MARTINS HI-FI**, 5 High Street, Kings Lynn. (0553) 761683. Est. 1968. Making good vibrations for 20 years **BADA**

**MARTINS HI-FI**, 85/91 Ber Street, Norwich. (0603) 627010. Est. 1968. Making good vibrations for 20 years **BADA**

## NORTHAMPTONSHIRE

**AUDIO CRAFT** 23-25 Dergate, Northampton, NN1 1TY. Tel: 0604 36291 Bang & Olufsen, Kenwood, Technics, Marantz, Celestion, Mordaunt-Short. No appts nec, Free Install, Service Dept. Open Mon-Sat 9-5.30pm  
**CLASSIC HI-FI + VIDEO**, School Lane, Kettering, Northants. (0536) 515766. Rotel, Musical Fidelity, Wharfedale, Yamaha, JBL, Cyrus, Nad, Pioneer, Marantz, Kenwood, Kef, Celestion, and many more. Home trial, free instal., service dept. Access, Visa, credit facs. 9.30-5.30pm.

**LISTEN INN**, 32 Gold Street, Northampton. (0604) 37871 (Fax) (0604) 601430. Linn, Naim, Rega, Epos, Royd, Mission, Cyrus, Arcam, Audiolab, Neat, Creek, Quad, Denon etc. 2 Dem Rooms **BADA**

## NOTTINGHAMSHIRE

**CHANTRY AUDIO**, Chantry Walk, 18-18a Eldon Street, Tuxford, Nr Newark, Notts NG22 0LH. (0777) 870372. Pink Triangle, DPA, Rotel/Michi, Micromega, NVA, Alchemist, Michell, Monitor Audio, Lumley, SME and much more! 3 dem rooms. Home trial, free installation, service dept. Access, Visa & credit facilities and mail order. Mon-Sat 9.30-6pm Sun & evenings home dem by appt.

**DEFINITIVE AUDIO**, (0602) 813562. For a carefully considered approach to building a true hi-fidelity audio system with components derived from the following manufacturers; Audio Innovations, Snell, Wadia, Micromega, Deltac, Voyd, Systemdek, SME, Revox, Ortofon, Pioneer. Demos by appt. Please phone for further details. Installation free of charge. Mon-Sat 10-7pm, Closed Wed a.m.

**NOTTINGHAM HI-FI CENTRE**, 120-122 Alfreton Road, Nottingham. (0602) 786919. Over 25 years experience, superb demo rooms, extensive range, free parking. Mon-Sat 9-5.30. **BADA**

**PETER ELLIS AUDIO**, 29 Kirkgate Newark, Nottingham, NG24 1AD (0636 704571) Quad, Castle, Arcam, QED, Sugden, Tannoy, Thorens, Marantz, Dennon, Teac. Demo Room, Free Install, Service Department.

Access, Visa, Mon-Sat 9-5.30 Close at 1:00pm on Thursday.

**SUPERFI**, 15 Market Str, Nottingham NG1 6HY. (0602) 412137. Kenwood, Technics, Denon, Aiwa, Rotel, Wharfedale, Mission, Marantz, NAD < Celestion, and many more. 2 single speaker dem rooms. Free install on systems, service dept. Access & Visa, Amex. Open 9-5.30, 6 days.

## OXFORDSHIRE

**ASTLEY AUDIO LTD.** 3 Marketplace, Wallingford.

(0491) 839305. Aura, B&W, Technics, Panasonic, Pioneer, Kenwood, Sony, Yamaha, Denon, Dual, Mission, Tannoy. Home trial, free installation. Service dept. Access, Visa, Amex, Diners. Instant credit. Tue-Fri 9-5.30, Sat 9-5. Records & CDs stocked.

**AUDIO T**, 19 Old High St, Headington, Oxford OX3 9HS. (0865) 65961, Fax (0865) 60415. Great hi-fi from Arcam, Audiolab, Cyrus, Denon, KEF, Meridian, Mission, Rotel, Sony, Yamaha and many more. Open Mon Fri 10-6pm, Sat 9.30-5.30. 3 yr gntee on Hi-Fi. Free del & instal. 30 day upgrade scheme. Home dems. PX. 2 dem rooms. A/V Dept. **BADA**

**OXFORD AUDIO CONSULTANTS LTD**, Cantay Hse, Park End Street, Oxford OX1 1JE. (0865) 790879 fax (0865) 791665. NAD, Rotel, Musical Fidelity, Pioneer, Marantz, Rogers, TDL, Thorens, Audio Research, Proceed. 2 Demo rooms. Service Dept, Home trial and free installation. Instant credit, Access, Amex, Visa. 10-6 Mon-Sat.

**WESTWOOD AND MASON**, 46 George St, Oxford. Tel: 0865 247783 Arcam, Rotel, Rega, Epos, Tanoy, Royd, JPW, Mission, Nakamichi, Denon, Aiwa, Naim, Quad, Aura, Teac. Open 9.30-5:00pm. Dem room. Closed Thur. **BADA**

## SHROPSHIRE

**AVON HI-FI**, 12 Barker Street, Shrewsbury, Shropshire SY1 1QJ. (0743) 55166. NAD, Quad, B&W, Arcam, Kenwood, Aiwa, Bose, Nakamichi, Revolver, Onkyo. Dem room. Home trial. Free install. Service dept. Access, Visa. £1000 instant credit. Mon, Tues, Wed, Fri, Sat 9-5.30.

**CREATIVE AUDIO**, 9 Dogpole, Shrewsbury. (0743) 241924. Arcam, Audiolab, Celestion, Cyrus, Denon, Epos, Kef, Meridian, Mission, Naim, Quad, Rega, Roksan, Rotel, Ruark, Tripod. Dem room. Home trial and free installation. Credit to £1000. Access, Visa. Tues-Sat 9.30-5.30. Service dept.

## SOMERSET

**MIKE MANNING AUDIO**, 110 Middle Street, Yeovil, Somerset BA20 1NE. (0935) 79361, Fax (0935) 32923, Mobile(0850) 325965. Naim, Roksan, Pink Triangle, A+R (Arcam), ATC, AVI, NAD, Pioneer, Rotel, Denon, etc. Dedicated listening lounge, for relaxed and unpressured demonstrations. Appts not usually nec. but best to phone first. Home trial facilities on request, free installation, service department. Instant credit, Access & Visa, etc. 9-5.30 closed Mondays.

## STAFFORDSHIRE

**GRANGE HI-FI LTD**, 153 Branston Rd, Burton-on-Trent, Staffordshire DE14 3DQ. (0283) 33655. Albary, Audio Innovations, Arcam, Castle, Denon, Pink Triangle, Marantz, Rotel, Rogers, Systemdek, SME, Tannoy, TDL. Dem fac, appts nec on Sat, Free install. Service dept Access, Visa. 9.00-5.30pm. Closed Mon & Wed afts. Closed for lunch 12.00-12.30.

## SUFFOLK

**AUDIO IMAGES**, 7 All Saints Rd, Pakefield, South Lowestoft, Suffolk NR33 6JL. Tel/Fax: 0502 582853. Quad, Triangle, Arcam, Castle, Rotel, Moth, JPW, Finlux, Audio Innovations, plus the amazing Rothwell range. Separate demo room, no appts nec. 10-6.30 Tue-Thur, 7pm Fri, 6pm Sat.  
**BURY AUDIO**, 47 Churchgate St, Bury St Edmunds, Suffolk, IP 33 1RG. Tel 0284 724337. Arcam, Furukawa, Heybrook, Infinity, Marantz, Meridian, Michell, Pink Triangle, Proac, Rotel, Target, Roksan, Shahinian, Quad Etc. 'Single Speaker Room'. No appointments necessary. Home trial fac. Free Installation. Service Department. Access, Visa, Switch. Open 6 days a week. Mon/Tues/Sat 9.30-5.30 Thurs/Fri 9.30-7.00. Closed Wed  
**EASTERN AUDIO**, 41 Bramford Rd, Ipswich. (0473) 217217. Quad Audio Lab, Denon, Dual, Marantz, Mission, NAD, Nakamichi, Technics, Arcam. Mon-Sat 9.30-6. **BADA**

## SURREY

**AUDIO SOUTH**, 24 (The Woolmead) East Str, Farnham, Surrey GU9 7TT. (0252) 714555. Audio Note, Deltac, JPW, Marantz, Rotel, Teac, etc. AV specialist. Dem room and evening appointments available. Home trial facilities. Free installation. Access, Visa. 10.30-6 Mon-Sat.

**COSMIC**, 244/256 Station Road, Addlestone, Surrey, KT15 2PS. (0932) 854522/851753/843769. Fax (0932) 841615. Most brands stocked, including Aiwa, Arcam, Denon, Mission Cyrus, NAD, Nakamichi, Pioneer, Quad, Rotel, Yamaha, etc. Open 7 days 9-6pm. Part exchange, large free car park, service dept, instant credit available, Access, Visa, Switch.

**DATASOUND**, 23 South St, Dorking, Surrey RH4 2JZ. (0306) 882897. Arcam, Celestion, Denon, Dual, Marantz, Mission, Musical Fidelity, NAD, Rotel, Tannoy. Dedicated listening room. Free install. Service dept. Up to £1000 instant credit subject to status. 9.30-5.30 6 days.

**INFIDELITY**, 9 High Str, Hampton Wick, Kingston Upon Thames, Surrey. Tel: (081) 9433530. Arcam, Creek, Epos, Heybrook, Micromega, Naim Audio, Roksan, Rega Research, Shaninian, TEAC. Single speaker listening room. Appts pref, free installation, service dept. Major credit cards. Closed Mon, Tue-Fri 10.30-7, Sat 10-6.

**PJ HI-FI - the Hi-Fi Shop**, 3 Bridge St, Guildford, Surrey GU1 4RY. (0483) 504801. 9-6 Mon-Sat. Linn, Meridian, Creek, Arcam, Quad, Revox, Musical Fidelity, Rotel, NAD, Nakamichi, Marantz. **BADA**

**RIVERSIDE HI-FI**, 422 Richmond Road, East Twickenham, TW1 2EB. Tel: (081) 892 7613. Fax: (081) 892 7749. See main entry under Middlesex.  
**ROGERS HI-FI**, 13 Bridge Street, Guildford, Surrey. (0483) 61049. Aiwa, Creek, Denon, Dual, JPW, Marantz, Rogers, TEAC, Pioneer, Systemdek, Tannoy. Demonstration facilities available, no appointment necessary. Free installation. Service department. Access/Visa. Instant credit up to £,000 subject to status. Monday-Saturday 9.30-6pm, later by appointment.

**SOUNDS EXCLUSIVE**, 1 Kent House, High Str, Cranleigh GU6 8AU. (0483) 268185. Michell (amplification & decks), Marantz, Ariston, Ortofon, AME, Sumo, Proac, Jamo, Origin Live, Kiseki. Demo room, appts preferred, home trial facilities, free install, service dept. Access, Visa. Open 9-5.30 Mon-Sat.

**SPALDINGS HI-FI**, 352-4 Lower Addiscombe Rd, Croydon, Surrey. (081) 654 1231/2040. 3 dem rooms and home dem. Free install, credit. Mon-Sat 9-6. Tues-8. Closed Wed. Service dept. **BADA**  
**SURBITON PARK RADIO**, 48 Surbiton Rd, Kingston-Upon-Thames, Surrey. (081) 546 5549. Quad, Castle, Dual, Denon, Kenwood, Rotel, Pioneer, QED, B&W, Tannoy. Demo facilities. Access, Visa. 9.30-5.00 Tues-Sat. Service dept.

**SURREY HI-FI**, 45 High Street, Godstone, Surrey RH9 6LS. (0883) 744755. Parking, easy access - just 2 mins off junction 6, M25. Tube Technologies, Rel Acoustics, Audio Lab, Quad, TDL, Nakamichi, KEF, Thorens, Rotel, Marantz, Denon, Michell, Tannoy, Top Line, Rel Acoustics, Single speaker demo room. Demonstration by appointment, free installation, service dept. Access, Visa, Mastercard. 0% Credit. Open 9-6, closed Wed.

**TRU-FI SOUND & VISION**, 10 Church Street, Leatherhead, Surrey. (0372) 378780. Sony, Technics, Panasonic, Mitsubishi, Ferguson, Aiwa, Pioneer, Sanyo, B&W, Mission. Free installation. Credit facilities. Access, Visa. 9.15-5.30 Mon-Sat. Closed Wed. Service dept.  
**ZEBRA** 18-24 Brighton Road, South Croydon CR2 6AA. 081 688 2093. See main entry under London.

## SUSSEX (EAST)

**JEFFRIES HI-FI**, 69 London Rd, Brighton, East Sussex, Tel 0273 609431. 2 Dem Rooms, closed Mon. Late night Wed. Free parking. Bus route. Credit Facilities. **BADA**

**JEFFRIES HI-FI**, (Poutrsmouth), 29 London Road, Portsmouth, PO2 0BH Tel: 0705 663604. 2 Dem Rooms, Closed Mondays. Late night Wednesday. Free parking. Bus route. Credit facilities. **BADA**



**JEFFRIES HI-FI**, 4 Albert Parade, Green Street, Eastbourne, East Sussex. Tel: 0323 31336. 2 Dem Rooms. Closed Mon. Late night Wed. Free Parking. Bus Route. Credit Facilities. **BADA**  
**THE POWERPLANT**, 66 Upper North Street, Brighton BN1 3FL. (0273) 775978. Roksan, Musical Fidelity, Marantz, Rotel, Yamaha, Tannoy, Audiolab, B&W, Micromega, Epos. JPW, etc. Comfortable single speaker facilities. No appts. nec. Home trial facilities, free install. Late night dems by request. Service dept. Credit facilities available on request. Tue-Sat 10-6pm.

## SUSSEX (WEST)

**AUDIO DESIGNS**, 26 High Street, East Grinstead, W. Sussex RH19 3AS. 0342 314569. Arcam, Audiolab, Cyrus, Epos, Linn, Marantz, NAD, Naim, Rotel, etc. Very comfortable listening room. No appts nec., Home trial facilities, free installation, service dept. Access/Visa. 9.30-6.00 Mon-Sat, late Tue. **BADA**

**BOWERS & WILKINS LTD**, (Est. 1945) 1 Becket Buildings, Littlehampton Rd, Worthing, (0903) 2 64141. 1 minute from A24 & A27. Free local parking, Aura, B&W (inc. Matrix), Castle, Denon, Mission, Nakamichi, Philips, Quad, Technics, Thorens, and many more in 3 Dem Rooms. Systems, Hi-Fi and Home Cinema. Service Dept., Installations. Open 6 days a week. Access, Visa, instant credit to £1000 subject to status.

**CHICHESTER HI-FI**, 7 St. Pancras, Chichester, W. Sussex PO19 1SJ. Tel: (0243) 776402. Linn, Naim, Rega, Creek, Nakamichi, A&R, Denon, Roksan etc. Tues-Sat, 10-1, 2-5.15 (closed Mon). **BADA**

## TYNE & WEAR

**RED RADIO SHOP AND HI-FI CENTRE**, 11 Olive Street, (Off Park Lane), Sunderland. Tyne & Wear SR1 3PE (091) 567 2087. Castle, Denon, JVC, Kenwood, Mordaunt-Short, Michell, Pioneer, Teac, Tannoy, Monitor Audio etc. A/V Dem room, large with comparator facility. No appts nec, Free install. Service dept. Interest free credit and no deposit 9am-5.30pm daily.

## WARWICKSHIRE

**CASTLE HI-FI**, 59 Smith Street, Warwick. CV 34 4HE. Tel (0926) 499963. A.R. B&W, LPW, Jensen in car, Marantz, usical Fidelity, NAD, Pioneer, Rogers, TDL, Yamaha, Dolby Pro Logic. Dem Room. No apt nec, Home trial facilities, Free Installation, Service Department. Interest free credit, Access, Visa, Chartered Trust. Open 10-6 6days a week.

**FRANK HARVEY HI-FI**, 163 Spon Street, Coventry, Warwickshire, CV1 3BD. Tel 0203 525200. Arcam, Mission, Cyrus, Musical Fidelity, Marantz, Rotel, NAD, Tannoy, Yamaha, KEF. Open 9.30-5.30 closed Thursday. **BADA**

**NAAM HI-FI VISION**, 78 Lower Precinct, Coventry CV1 1DX. (0203) 632086. NAD, Yamaha, Marantz, Pioneer, Kenwood, AR, Akai, Aiwa, Panasonic, Toshiba, Wharfedale, KEF. Demo facilities. Access, Visa, Amex, Lombard Tricity credit charge. 9.00-6.00 Mon-Sat. Closed Thurs.

**STRATFORD HI-FI**, 25 Henley Street, Stratford Upon Avon, CV3 3QW. Tel (0789) 414533. Please call for further details.

## WILTSHIRE

**THE AUDIO EXCHANGE**, 52 Morse Str, Swindon, Wiltshire, SN1 5QP. Tel: (0793) 539008. Acoustic Energy, Audio Innovations, Beard, Cerwin Vega, Impulse, Magnum, Micromega, Michell, REL, Sequence. AV and single speaker demo room. Home trial facilities, free installation, service dept. 9-7 six days a week.

**AUDIO T**, 60 Fleet St, Swindon, Wiltshire, SN1 1RA. (0793) 538222, Fax (0793) 487260. Great hi-fi from Arcam, Audiolab, Cyrus, Denon, Linn, Meridian, Mission, Rotel, Sony, Yamaha, and many more. Mon-Sat 9.30-5.30. 3 yr gntee on Hi-Fi. Free del & instal. 30 day upgrade scheme. Home dems. PX. 2 dem rooms. A/V Dept. **BADA**  
**PR SOUNDS**, 58 Castle Street, Trowbridge, BA14

8AU. Tel 0225 777799. Also at Melksham & Devizes. Pioneer, Technics, Kenwood, Denon, Marantz, B&W, Tannoy, JPW, Dual. Where music is a pleasure, personal service, no appointments necessary. Installations & much much more. Access/Visa £1000 instant credit. Open 9-6, 6 days.

## WORCESTERSHIRE

**NAAM HI FI VISION**, 27 The Cross, Worcester, WR1 3PZ. Tel 0905 726375. Denon, Marantz, NAD, Musical Fidelity, Acoustic Research, Harman Kardon, Sony, Technics, Akai. Appts necc for demonstrations. Installation 7 days a week up till 9 pm. Interest Free credit over £400. Open 9-5:30 Mon-Sat.

**WEST MIDLANDS AUDIO**, 158 Ombersley Road, Worcester WR3 7HA. (0905) 58046. Nakamichi, Naim, Rega, Absolute Sounds, Meridian, Arcam, Ion Systems, Roksan. 3 dem rooms for budget & high end audio. Appointments necessary. Free installation. Service Dept. Access, Visa, Amex, Diners, Lombard/Hitachi. Mon-Fri 9.30-8.30 by apt Sat 9-5.30.

**SPAINS HI-FI**, 2&2a New Road, Bromsgrove, Worcestershire. Tel: (0527) 72460. B&W, Denon, Kenwood, Marantz, Mission, Nad, Pioneer, Rotel, Sony, Tannoy and many more. Integral demo room/showroom for instant comparisons on hi-fi and AV equipment. Free installation, service dept & credit facilities, Access & Visa.

## YORKSHIRE (NORTH)

**THE AUDIO CLINIC**, 22 Lord Mayors Walk, York, Yorkshire, Y3 7HA. Tel: 0904 646309. Mission, Revox, Yamaha, JVC, Audio Innovations, Celestion, NAD, Musical Fidelity, Allison, Thorens. No appts nec, Home trial facilities, Free Installation. Service Department Access/Visa, Credit. Open 10-5:30 Mon-Sat.

**SCARBOROUGH HI-FI CENTRE**, 14 Northway, Scarborough, N. Yorks YO11 1JL. (0273 374547. Aura, Albany, B&W Matrix, Cyrus, Denon, Pioneer, Marantz, Cabasse, Tannoy, Laser vision and wide screen TV. Dem room, appointment preferred. Home trial facilities. Free installation. Service dept. Access/Visa/Credit charge/£1,000 instant credit/ Amex/Diners. 10-6 Mon to Sat.

**SOUND ORGANISATION YORK**, 2b Gillygate, York YO3 7EQ. Tel: (0904) 627108. Closed Mondays. Linn, Naim, Rega, Creek, Meridian, Arcam, Denon, Royd, Rotel and other well chosen makes. "You can't go wrong — we wouldn't let you". **BADA**

**VICKERS HI-FI**, 24 Gillygate, York. (0904) 629659. Audiolab, Harman-Kardon, Marantz, Musical Fidelity, Pink Triangle, Quad, Systemdek, Tannoy, Technics, & lots more. 3 demonstration studios (2 by appointment) superb showrooms, 2 year guarantee on all hi-fi products. Appts as above, home trial facilities, free installation, service department. Qualified and experienced staff, over 25 years experience. 12 months interest free credit. 10.30-5.30 Mon-Sat.

## YORKSHIRE (SOUTH)

**BARNESLEY HI-FI CENTRE**, 40-42 Sheffield Road, Barnesley, S. Yorks. S70 1HP. (0226) 205549 Fax (0742) 467207. Arcam, Quad, Audiolab, Mission Cyrus, Technics, Denon, Tannoy, Nakamichi, Dual, Rotel. Purpose built demo room, no appts necessary, free install, service dept, Access, Visa, varying finance packages. Open 9.30-5.30, 5 days (closed Thurs).

**HI-FI STUDIO**, Sunnyfields, Doncaster. (0302) 781387. Sugden, ProAc, Impulse, Teac, Ruark, Michell, AMC valve, Art Audio valves, Heybrook, Monitor Audio, Albany. Listening room demos. Home trial. Free installation. 2 yr guarantee on all equipment. Service available. Access, Visa. 10-8pm 6 days. Phone for further info. & FREE fact pack.

## YORKSHIRE (WEST)

**AUDIO PROJECTS**, 45 Headingley Lane, Leeds. (0532) 304565. A&R, Audiolab, Creek, Heybrook, Linn, Musical Fidelity, Naim, Quad, Rega, etc. Free

installation, home trial, 2 year warranty, appts preferred. Tues-Fri 9.30-6, Sat 2.30-5.30.

**AUDIOVISION (BRIGHOUSE) LTD**, 5 Bethel Street, Brighouse, (1 mile from junction 25, M62) W. Yorks. HD6 1JR. Tel 0484 713996. Largest range of Technics Hi-Fi in Yorkshire. Aiwa separates, Castle, Cerwin Vega, Mordaunt Short speakers. Panasonic Nicam TV's, VCR's and camcorders. Yamaha, Philips widescreen TV's, CD-Interactive Players. Dolby Pro-Logic AV Surround Systems. Reproduction Furniture. Telarc, CD- Audio, CDI and DCC. Demo's. Free expert install. Paneservice in-store service dept. Access, Visa, credit charge. Mon-Sat 9-5:30.

**CLEARSTONE** (Formerly Erricks), Rawson Square, Bradford, (Near John St Market). (0274) 309266. A&R, Linn, Quad, Exposure, Nakamichi, Mission, Denon, Kenwood. Private demo rooms, no apt nec, home trial facilities, free installation, service dept. Access, Visa, licenced credit broker. Mon/Sat 9-5.30 (Tue 10-5.30).

**DOUG BRADY HI-FI**, The Forge Cottage, 19 Crossgate, Otley, Leeds, West Yorkshire LS21 1AA. (0943) 467689. Naim, Arcam, Rotel, Pink Triangle, Meridian, Epos, Castle. Two dem rooms, free install, service. Access/Visa. Open 10-6pm Tues-Sat. **BADA**

**HUDDERSFIELD HI-FI CENTRE**, 4 Cross Church St, Huddersfield. (0484) 544668. B&W, Kenwood, Denon, Rotel, Arcam, Musical Fidelity, Quad, Audio Lab, Marantz, Mission, etc. Dem facilities — appointment reqd. Mon-Sat 9-5.30, Thurs 9-8. Closed Wed. Free installation, credit facilities. Access, Visa.

**IMAGE HI-FI**, 17 The Springs, Wakefield, WF1 1QE. (0924) 200272. Arcam, Linn, Meridian, Mission, Quad, Rotel, etc. 2 Listening Rooms - Free Parking, Del/L & Instal Mon-Sat 9:30 5:30pm **BADA**

**IMAGE HI-FI**, 8-10 St Annes Road, Headingley, Leeds, L56 3NK (0532 789374) Arcam, Linn, Meridian, Mission, Quad, Rotel, etc. 3 Listening Rooms. Free Dem & Instal. Mon-Sat 9:30 - 6:00pm **BADA**

## NORTHERN IRELAND

### BELFAST

**LYRIC HI-FI**, 163 Stranmills Road, Belfast. (0232) 381 296. Linn, Naim, Rega, Arcam, Denon, Rotel, Musical Fidelity, Revox, Mission etc. Mon-Sat 10-6, Late night Thurs. **BADA**

**ZEUS AUDIO**, 6 Hope Street, Belfast, (0232) 322522. Audio Innovations, Pink Triangle, Roksan, Marantz, Celestion, Linn, Meridian, Mission Cyrus, Ortofon, etc. Mon-Sat 10.00-5.30. Late night Thursday. **BADA**

## COUNTY DOWN

**ASTON AUDIO**, Unit 8, Kings Road Shopping Centre, Kings Road, Belfast. Tel: 0232 402220. Akai, Technics, JVC, Mitsubishi, Samsung, Toshiba, Panasonic, and many more. Demos available, Open Mon-Fri 10-8pm Sat 10-5pm

## IRELAND

### DUBLIN

**LAFAYETTE HI-FI**, 50 Wellington Quay, Dublin, Tel: 353177 0443. Technics, Denon, Marantz, Sony, Pioneer, Aiwa, Cyrus, Mission, Cerwin Vega. No appts nec, Free Install. Unique trade in service. Credit Cards welcome. Open 10-6 6 days a week.

## SCOTLAND

### AYRSHIRE

**LASER AUDIO** 9 West George Street, Kilmarnock, Ayrshire, KA11 1DH. Tel 0563 40292. Audiolab, Aiwa, Celestion, Cyrus, Denon, Dual, Mission, Philips, Pioneer, Rotel, Ruark, Systemdek and Tannoy. Dem Room, A/V on Dem. Appts Preferred, home trial facilities, Free installation, service

facilities. Access, Visa and written credit. Open Tues-Fri 10-5.30 Sat 9.30-5.30.

## GLASGOW

**STEREO STEREO**, 278 St. Vincent St, Glasgow G2 5RL. (041) 248 4079. Fax 0555 82358. Linn, Naim, Rega, Arcam, Creek, Epos, Castle, Shahinian, Denon and Sehring etc. 3 Single Speaker Demo Rooms. No appointments necessary. Home Trial Facilities. Free Installation. service dept. Interest free credit all standard facilities. Closed Tues Mon-Sat 10-6.

## GRAMPIAN

**HI-FI EXCELLENCE** 293 Union Grove, Aberdeen, AB1 6TD. Tel 0224 322520. Aiwa, Audio Innovations, Denon, Impulse, Infinity, Musical Fidelity, Rotel, Roksan, TDL. 2 large single speaker dem rooms. Appts necessary after 6.00pm. Home trial facilities, Free Installation, Service Department. Various offers. 3 Yr guarantee. Open 10-6.00pm 6 days.

**HOLBURN HI FI LTD**, 441 Holburn St, Aberdeen (0224) 585713. Arcam, Audiolab, B&W, Celestion, Denon, Dual, Epos, Heybrook, ION, Kenwood, Linn, Creek, Marantz, Meridian, Mission Cyrus, M.S., NAD, Nakamichi, Pioneer, QED, Quad, Revox, Rogers, Rotel, Ruark, Tannoy, Technics, Wharfedale, Yamaha. 9.30-5.30 Mon-Sat. **BADA**

**THE MUSIC STATION**, 49 Church Str, Inverness IV 1DR. Tel: (0463) 225 523. Beyer Dynamic, Celestion, Denon, Jamo, Kef, Kenwood, Mission, Pioneer, Rotel, Sony. Listening room service dept, free delivery to local area, part exchange, full range of credit facilities.

## TAYSIDE

**J.D. BROWN**, 28-36 Castle St, Dundee DD1 9NZ. (0382) 26591. Rotel, Denon, Pioneer, Technics, Aiwa, Mission, Castle, Mordaunt-Short, Monitor Audio, Bose, Infinity. All equipment ready for demonstration. No apt nec, free installation, service dept. Open 9.30-6pm six days a week, (close 5pm Sat).

## WALES

### CLWYD

**ELECTRO TRADER**, 19 Colwyn Crescent, Rhos On Sea, Colwyn Bay, Clwyd. North Wales LL28 4RN. (0492) 548932. Rotel, Yamaha, Harman Kardon, Teac, Alphason, Heco, Infinity, JBL, Musical Fidelity, Tannoy, Rotel, Michi etc. Dem room. Appts preferred. Home trial. Free install. Access, Visa. Open 9.30-1.00, 2.00-5.30 Mon-Sat.

**ACTON GATE AUDIO**, 4 Ruabon Rd, Wrexham, North Wales, Tel: 0978 364 500. Arcam, B&W, Marantz, Mission, NAD, Quad, Rega, Rotel, Tannoy, Yamaha, etc, Dem Facilities, A.V. on dem, Mail Order. No appts nec, home trial fac, Free install, Service Dept. Access, Visa. 9.30-5:30 closed Weds PM

## SOUTH GLAMORGAN

**AUDIO EXCELLENCE**, 134 Crwys Road, Cardiff. (0222) 228565. Great Hi Fi carefully selected and dem'd by friendly, enthusiastic staff. Closed Mon. **BADA**

## WEST GLAMORGAN

**AUDIO EXCELLENCE**, 9 High St, Swansea. (0792) 474608. Great Hi-Fi carefully selected and demonstrated by friendly, enthusiastic staff. Closed Mon. **BADA**

## GWYNEDD

**I&H GRIFFITHS & SONS**, 313 High St, Bangor LL57 1YA. (0248) 370655. Yamaha, Tannoy, Teac, Sony, B&W, SVC, Wharfedale. Demos available, no appts nec, home trial facilities, free installation, service dept. Access, Visa, Lombard credit charge. Mon-Sat 9-5.30, Wed 9-1. Audio Visual Specialists.  
**PETERS HI-FI** Victoria Buildings, Mostyn Avenue, Craigh-y-don, Llandudno. (0492) 876788. 1 Single speaker dem room. Open 9-5.30. Closed Wed. See Cheshire branch for details.



# The Directory



This is the legendary Hi-Fi Choice Directory, the only buying guide that is entirely based on comprehensive technical and subjective reviews. Each and every entry carries the weight of our exhaustive test procedures with regularly updated prices and specifications.

The *Hi-Fi Choice Directory* was conceived as a reference guide to all the audio products reviewed by *Choice* that are currently available. The products are split into categories, each with its own introduction containing information about the product type and its applications. They are particularly relevant to the uninitiated first time buyer and help sort out the order of priorities when buying a piece of equipment.

Each product along with its current retail price is placed in its respective category in alphabetical order. The prices of the products are updated on a regular basis, although it should be noted that our value ratings are based on the product's price at the time of review.

## Sound quality

This column contains the ratings for the standard achieved in our listening tests. The sound quality ratings range from Poor to Excellent. Their meaning and order are as follows:

P	Poor
A-	Average-
A	Average
A+	Average+
G-	Good-
G	Good
G+	Good+
VG	Very Good
E	Excellent

With P being the worst and E the best rating within a section.

One important point to remember is that these cannot be used to compare products from different categories. For example, a cassette deck rated Excellent in sound quality will not usually offer the same standard of fidelity as a similarly rated turntable or CD player.

## How to use this guide

Perhaps the most influential symbols in the *Directory* are the little red triangles ▲ found in the value column at the beginning of each entry where appropriate.

Products that make the grade are awarded the Best Buy or Recommended accolade.

▲▲ A product carrying the Best Buy swingtag is of excellent quality and good value for money in its price category.

▲ Recommended products are runners up, but still definitely worth considering within their price bands.

Please note however, that an expensive Recommended product will nearly always sound better than an inexpensive Best Buy. An ideal situation would be to choose suitably priced ▲▲ Best Buy or ▲ Recommended products from relevant categories and create a Best Buy system. But, due to the variety in tonal balance that exists in much audio equipment, and differences in taste, system building is unfortunately not that simple. These ratings make a useful guideline for shortlisting components, but only experiencing the actual combination will tell you whether it works for you.

## Finding that component

Before you shop, follow our top eight tips for better buying:

1. Check out the components' recommended retail prices in the *Directory*.
2. Find out as much as you can about the products you want by reading *Hi-Fi Choice's* reviews and lab tests.
3. Visit local dealers that stock some of the brands you want to hear and try to find one that seems sympathetic to your needs.
4. Don't discount a dealer's suggestions just because the products don't have rave reviews.
5. Take your own software (records, CDs, tapes) along for a demonstration of the equipment that the dealer recommends.
6. Listen at the sort of volume you would normally use at home — systems often sound more impressive when played loud.
7. If you are unsure about something or want to hear an alternative, just ask.
8. Audition a system for a reasonable amount of time, say three quarters of an hour or so, before making a decision.

Unless you have first generation masters of course.

## Comments

The Comments column contains a potted summary based on the original review, emphasising

the salient points of a product's character and sonic performance. The space available doesn't allow for great detail but we have attempted to put across the essence of the review. Obviously, important

information on compatibility or auxiliary equipment used in the test cannot be included, and we would advise you to refer to the original review for this.

Please note that these comments are those of our own reviewers and not, as is the case with some magazines, those of the manufacturer.

## Features

Product features are shown with a combination of figures and blob charts, with headings at the top of each column indicating the appropriate category, a blob indicating the existence of a particular feature.

There are different headings for each section and the more complicated categories are explained in the individual introductions. Where figures are used the unit of measurement is shown in the heading.

## Back issues

The final column contains a reference to the issue of *Hi-Fi Choice* which featured the complete review.

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# Amplifiers

The amplifier sits at the heart of the system, processing the outputs from all 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; separated pre- and power amplifiers, even separate power supplies, become increasingly common as one moves upmarket. At the upper end of the specialist market, valve amplifiers provide a popular alternative to the transistor types amongst enthusiasts.

There is a substantial difference between specialist (sound quality oriented) amplifiers and the consumer electronics style models. The former

are bleakly simple, avoiding all unnecessary features to provide the most direct signal path in the interests of best sound quality. The latter range from models with just basic tone controls and tape recorder switching, to those with elaborate facilities such as graphic equalisers, remote control (including volume), surround sound options etc. etc.

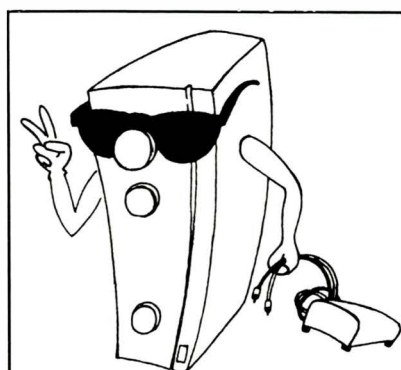
We include our measured power output (RMS, 8ohm load, 1 channel driven) – but again, paradoxically, this doesn't necessarily correspond to the loudness capability of the amplifier, which has as much to do with the elegance of the over-load characteristics within a given system (valve

amplifiers invariably sound more powerful than their rating would suggest).

Apart from output the facilities listing shows how many line (that is inputs besides those for phono cartridges) inputs a product has and includes tape inputs. The MM and MC blobs indicate which types of cartridge can be accommodated. Integrated, preamp and power amp indicate the type of amplifier reviewed, and in some instances that a pre/power combination has been tested. In such instances the price given is for both components. The remote control and headphone socket blobs indicate the existence of these facilities.

## Amplifiers

Product	£Price	Comments	Output W/8Ω	Line inputs	MM	MC	Integrated	Preamp	Power amp	Remote control	Headphone socket	Issue No.
Adcom GCA-510	349	<b>G</b> American power amp with line inputs and passive pot, highly detailed midrange but rather high price.	81	5			•					121
AMC CVT3030	460	<b>A</b> A well meaning and affordable attempt to mix transistors with valves, albeit one that only really shines with simple musical styles.	35	5	•							116
Aiwa XA-006	150	<b>A</b> Competent enough performer with plenty of facilities. A gutsy sound though one that's rougher via CD than MM.	67	5	•							92
▲ Akai AM-47	230	<b>G+</b> Plenty of widgets and an unexpectedly sharp, open and detailed sound. Looks ghastly but sounds strain free.	104	4	•							104
Akai AM-95	630	<b>A-</b> A revamped version of the older AM-93 with newer onboard bitstream DACs. Its sound is just too eager, however	110	6	•	•						109
Albarray AP4/S508	850	<b>A-</b> A disappointing sound from a pre/power amp that's hamstrung by a variety of technical oversights. Albarray has done better.	46	4	•			•	•			116
▲ Albarray PP1	400	<b>G+</b> Available with or without various MM/MC options, the 'basic' PP1 has an attractively warm, earthy sound.	48	4				•				104
Alchemist Kraken	444	<b>A</b> Class-A objet d'art that's far too sensitive to RF interference. Can sound cold and fierce as a result.	54	5	•	•	•					116
Arcam Alpha 3	200	<b>A</b> Generally lacklustre and bland sound offered on this occasion met with (unexpected) disapproval	53	3	•			•				104
▲ Arcam Delta 110/120	1300	<b>G</b> Performance is limited by power amp - in isolation the PDM-preamp offers a remarkably open and detailed sound	112	4	•	•		•	•			92
▲ Arcam Delta 290	450	<b>VG</b> Combines the dryness and restraint of Arcam's older models with a refreshing sense of detail, dynamics and musical colour.	99	5	•	•	•			•	•	116
▲ Arcam Delta 60	300	<b>G+</b> Very refined and highly detailed sound via MM and CD without any of the hardness ted via the MC stage	59	4	•	•	•					68
▲ Art Audio Quintet	988	<b>VG</b> Switchable triode/ultralinear output stage. In triode mode these are 15 of the sweetest watts around. Surprisingly gutsy	15/25							•		109
Audio Innovations Series 200	850	<b>G</b> Turns in a fuller and more substantial performance via MM rather than CD. Otherwise its sound can seem slightly bleached.	10	5	•			•	•			109
▲ Audio Innovations Series 300II	500	<b>G+</b> Under-powered and over-distorted yet capable of realising an open and captivatingly expressive sound. Sensitive speakers are a must	9	4	•			•				97
▲ Audio Innovations Series 700	999	<b>G+</b> Valve amp that can turn the roughest of digital sounds into music, both understated and graceful. Sensitive speakers are a must	24	5				•				116
▲ Audio Note Ongaku	43125	<b>E</b> A single ended, zero negative feedback, triode, line level integrated amp and a half. Probably the best amplifier in the world!	27	6				•				Col
▲ Audiogram MB1	500	<b>G+</b> It'll successfully tackle the most difficult of speakers and still provide a very warm, rich and euphonic sound.	46		•			•			•	116
▲ Audiolab 8000A	450	<b>VG</b> Recent mods have cured the slightly glassy treble, replacing it with a smoother and more solid style of music making	81	7	•	•	•					97
Audiolab 8000C/8000P	1100	<b>G</b> Very distinctive, almost stark neutrality that will not appeal to all listeners. Good value engineering, nevertheless	157	7	•	•		•	•			97
▲ Aura VA-100 Evolution	300	<b>G+</b> Might overheat when driving insensitive, low-impedance speakers but was applauded for its sense of scale and drama via CD	81	5	•			•				109
▲ Aura VA-50	220	<b>VG</b> Superficially similar to the cheaper VA-40 but with much more of the old MA-80's magic! Great sound from a slimline package	65	5	•			•				97
▲ Beard Audio CA35/P35mkII	1790	<b>VG</b> Good build quality and finish and a characteristic valve sound make a first class amplifier capable of great musical enjoyment	35	4	•	•		•	•			63
Beard CA506	1295	<b>G+</b> A versatile valve preamp, the bass sounded lively if a touch softened, while the treble was detailed but lacked a little sparkle		4	•	•		•				50
Beard M70	1995	<b>G+</b> A substantial British monoblok power amplifier, but not a great deal more impressive than the P35	70							•		50
▲ Concordant Excelsior	1040	<b>E</b> Styling might not inspire confidence, but sonically this preamp is tremendously vivid and detailed. Real high-end performance		3	•					•		77
▲ Conrad-Johnson PV-10	1250	<b>E</b> Fabulous preamplifier. Beautiful imaging, superb detail, plenty of gain on the phono stage; classy build quality too.		4	•					•		78
▲ Conrad-Johnson Premier 7	11000	<b>E</b> The 'Seven is designed without compromise, and is clearly one of the finest (valve) preamplifiers money can buy.		4	•	•		•				Col
▲ Creek CAS 4040 S3	220	<b>G</b> Now in mk3 guise the '4040 offers a dry but tidy sound via disc and one that's slightly leaner and better focussed on CD.	41	3	•			•				92



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NOW £499.95  
Mission 761, was £159.95  
NOW £129.95  
JBL TLX & LX Ex Demo Series, To clear  
Infinity Ref. 20, was £249.95  
NOW £149.95  
Infinity Ref. 40 was £399.95  
NOW £249.95

**Amplifiers:**  
Marantz SC/SM80 Pre+Pwr,  
was £999.00 NOW £589.00  
Marantz PM40SE Amp, was £249.90  
NOW £149.95  
NAD 1000 Pre-amp, was £179.95  
NOW £149.95  
NAD 2100 Power-amp, was £299.95  
NOW £259.95  
Rotel RA840BX4, was £249.95  
NOW £149.95

**CD Players:**  
Denon DCD590, was £179.95  
NOW £139.95  
Denon DCD690, was £199.95  
NOW £149.95  
Marantz CD62, was £299.95  
NOW £219.95  
Marantz CD72, was £399.95  
NOW £299.95  
NAD 5440, was £299.95, NOW £199.95  
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Yamaha CDX560, was £199.95  
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AMPS							
Kenwood KA3020	£295.95	£309.95	£345.95	£369.95	£409.95	£429.95	
Kenwood KA5040R	£349.95	£369.95	£419.95	£429.95	£459.95	£482.95	
Marantz PM40SE	£316.95	£335.95	£379.95	£399.95	£429.95	£460.95	
Pioneer A300X	£349.95	£369.95	£419.95	£429.95	£459.95	£489.95	
Rotel RA920AX	£299.95	£316.95	£359.95	£369.95	£409.95	£439.95	

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**Amplifiers**

Aiwa XA950	£229.95
Denon PMA480R	£219.99
Harmon Kardon HK6250	£279.95
Kenwood KA3020	£159.95
NAD302	£169.95
Pioneer A300X	£229.95
Rotel RA.930AX	£169.95

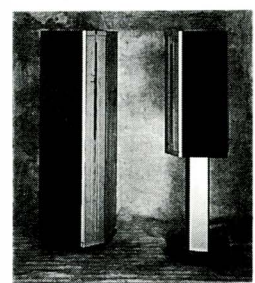
**CD Players**

Aiwa XC.750	£199.95
Denon DCD695	£199.95
Kenwood DP5050	£249.95
Marantz CD52mk2	£229.90
Pioneer PDS801	£329.95
Rotel RCD945AX	£229.95
Technics SLP5620A	£229.95

**Cassette Decks:**

Kenwood KX.2520, was £149.95	NOW £99.95
Kenwood KX.66HX, was £169.95	NOW £99.95
NAD 6100, was £299.95 NOW	£259.95
NAD 6340, was £219.95 NOW	£179.95
Marantz SD52, was £179.90 NOW	£139.95
Yamaha KX.360, was £199.95 NOW	£169.95

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Aiwa ADF410	£99.95
Aiwa ADF810 3HD	£229.99
Denon DRS810 3HD	£299.99
Denon DRW750 Twin	£249.99
Kenwood KX-5050	£229.95
Nakamichi DR3	£349.95
Sony TCK-611S 3HD	£299.95
Yamaha KX-650 3HD	£259.95

**Tuners:**

Denon TU260L	£119.99
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NAD 4225, was £159.95 NOW	£129.95
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## Amplifiers continued

Product	Price	Comments	Output W/R	Line inputs	MM	MC	Integrated Preamp	Headphone socket	Remote control	Power amp	Issue No.
Creek CAS 4140 S2	250	<b>A+</b> Running production changes inspired us to re-review this amp which now sounds thicker and 'blurred' compared to the original	41	3	•	•	•	•	•	•	109
Creek CAS 6060	500	<b>G</b> Looks like the old '5050 but employs the sort of big, meaty-sounding electronics used in the earlier '4040. Dynamic and impressive.	81	5	•	•	•	•	•	•	104
▲ Cyclone Catalyst	1995	<b>VG</b> Exceptionally load tolerant and very refined in delivery. Extra options available in future	74								80
▲ Denon PMA-250III	160	<b>A-</b> Pretty high resolution for the price, occasionally loses its grip but is generally engaging and enjoyable	55	3	•	•	•	•	•	•	121
▲ Denon PMA-350	190	<b>G</b> Bold claims were made at its launch but the sweet and inoffensive sound, though very pleasant, is not mould-breaking	88	5	•	•	•	•	•	•	92
▲▲ Denon PMA-450	250	<b>G+</b> Denon's latest integrated amp swept the board with its big, brassy if somewhat extravagant sound.	99	5	•	•	•	•	•	•	116
▲ Dual CV600RC	160	<b>G</b> A very lively, open and vibrant sound. Slightly sanitised via CD perhaps, but still damn good for a features-first integrated ampl	63	5	•	•	•	•	•	•	104
E.A.R. 549	5400	<b>VG</b> Valves imitating trannies give exceptional power delivery but not the delicacy and transparency one expects	200						•	•	60
▲ E.A.R. 802/509mkl	4200	<b>VG</b> Extremely well made and combining the sonic strengths of both transistors and valves this EAR combo warrants attention	100	6	•	•	•	•	•	•	63
EMF Audio Sequel	349	<b>G+</b> A fresh start for Mike Creek has resulted in the Sequel, a minimalist amp with a very refined but mildly restrained sound	47	4	•	•	•	•	•	•	109
Exposure XX	625	<b>A</b> Line only integrated with good sense of timing but limited hf extension. Likely to be very system dependent.	43	4	•	•	•	•	•	•	121
▲ Exposure XI/XII/VIII Super	1650	<b>VG</b> New preamp and improved power amp led to a smooth and refined sound, MM/MC less transparent than CD	61	5	•	•	•	•	•	•	80
▲ Grant G60AMS	1300	<b>G+</b> Neat and compact valve monoblok gave good sound on the 8ohm tap, better still on 4ohms. The midrange was particularly natural	60						•	•	57
▲▲ Harman Kardon HK6150	190	<b>G+</b> Based on the older HK6100 but with a more solid, punchy and expressive performance that attracted considerable praise	44	5	•	•	•	•	•	•	109
▲ Harman Kardon HK6250	250	<b>G+</b> Heavily based on the cheaper HK6150, this version offers slightly more power with a similarly gutsy and expressive sound	51	5	•	•	•	•	•	•	116
Harman Kardon HK6550	430	<b>A-</b> Follow up to 6500 is disappointing with grainy hf and limited depth. Quite powerful but ultimately not up to the mark	69	6	•	•	•	•	•	•	121
Harman Kardon HK6850	800	<b>G</b> This monster is derived from the HK6800 with a similarly deep and powerful sound but a rather steep price tag	101	6	•	•	•	•	•	•	109
Heybrook C3/P3	1379	<b>A</b> Heybrook has improved the manufacture of its power amp though flaws in the preamp's disc input remain	146	4	•	•	•	•	•	•	104
▲ Heybrook Signature	2014	<b>G+</b> A stunningly powerful and vivid-sounding combination which is equally impressive via vinyl or CD	148	4	•	•	•	•	•	•	109
JVC AX-A342	170	<b>A</b> A value-conscious budget amp offering plenty of power but a slightly untidy and inconsistent sound	77	5	•	•	•	•	•	•	109
JVC AX-R562	249	<b>A-</b> More fuss and bluster than detail and dynamics was how one listener concisely described this less than wonderful model	90	5	•	•	•	•	•	•	121
▲ JVC AX-Z1010	650	<b>G</b> One of the best behemoths: a big amp with a big, boppy and unuddled sound and a couple of ancient 16-bit DACs for good measure!	124	6	•	•	•	•	•	•	109
▲ Jadis JP30/JA30	10750	<b>E</b> French tubes. Beautiful build, nostalgic styling and delightful sounding midrange transcend limitations at frequency extremes	30	4	•	•	•	•	•	•	60
Kelvin AZI	700	<b>A</b> This latest Absolute Zero still sounds animated but also rather more synthetic and crude. It's also rather more expensive.	100	6	•	•	•	•	•	•	116
▲▲ Kenwood KA-3020	160	<b>G+</b> An unassuming little amplifier that turns in a remarkably balanced and entertaining sound. Lively, detailed and engaging	66	5	•	•	•	•	•	•	97
Kenwood KA-4020	200	<b>A+</b> On paper this a beefier version of the '3020 yet our listeners thought it sounded weaker, lacking richness and detail	103	5	•	•	•	•	•	•	97
Kenwood KA-4050R	250	<b>A-</b> Respectable but ultimately uninspiring model whose remote control is its main asset.	85	5	•	•	•	•	•	•	121
Kenwood KA-5040R	300	<b>A</b> A flexible amp that uses the old KA-5020 as a building-block. Unfortunately it lacks dynamics, sounding stifled and uninteresting	100	5	•	•	•	•	•	•	109
▲ Lecson Quattra	370	<b>G</b> Underpowered but with the flexibility of four independent power amps. Very deep, captivating sound with 3D soundstaging.	40	5	•	•	•	•	•	•	92
Lecson Stereo	230	<b>G+</b> Can reflect the full weight of a classical performance. Genuinely deep, detailed and enthralling sound	76	6	•	•	•	•	•	•	104
Linn Intek	448	<b>A+</b> Linn's no-nonsense Intek still lacks the authority and confidence to support its forward balance	55	5	•	•	•	•	•	•	104
Magnum Quartet A	329	<b>A-</b> An integrated model that incorporates four monobloks optimised for bi-wiring, but sound is sandy in the treble.	72	5	•	•	•	•	•	•	121
▲ Magnum A-Class	599	<b>G+</b> Lashings of rich and compelling music, trading a hint of lushness for stark accuracy. An unexpected find. Phono stage option	55	7	•	•	•	•	•	•	116
▲ Marantz PM-40SE	250	<b>G</b> The improved version of the basic PM-40 model has itself been updated to provide a bigger and more exciting sound	61	4	•	•	•	•	•	•	97
▲ Marantz PM-52SE	430	<b>G+</b> The SE premium pays for a degree of fluency that draws you into the music and keeps you there. Rather nice	95	6	•	•	•	•	•	•	121
Marantz PM-62	270	<b>A</b> Attempt to introduce remote control that has failed if the rather flat and uninteresting sound of this amp is any guide.	101	6	•	•	•	•	•	•	116
Marantz PM-72	350	<b>A</b> This is a very neutral, pleasantly detailed and even-handed performer but one that lacks a sense of emotion or expression	155	5	•	•	•	•	•	•	109
▲ Meridian 201/205	1285	<b>G+</b> A fine preamp with option of full system remote, plus competent monoblok power amplifiers with generally good performance	100	6	•	•	•	•	•	•	62
▲ Moth Series 30	587	<b>G+</b> A modular system capable of cracking results. The passive preamp and power amp combination warrant a Best Buy in their own right.	35	4	•	•	•	•	•	•	109
▲ Musical Fidelity Preamp/Typhoon	500	<b>G+</b> A combination that plays everything close to its chest but bridge the power amp and you'll witness an explosion of detail	62	6	•	•	•	•	•	•	116
Musical Fidelity Tempest	200	<b>P+</b> Basic but lusty amp has a disturbingly bright and forward sound, accentuating strings and percussive detail above all else	62	6	•	•	•	•	•	•	116
▲▲ NAD 302	160	<b>G+</b> A spritely and uplifting performance. Sounds loud but never intrusive or fatiguing.	39	5	•	•	•	•	•	•	116
▲▲ NAD 304	230	<b>G+</b> Equally effective with CD and vinyl this is another successful and entertaining NAD amplifier for your shortlist	50	6	•	•	•	•	•	•	121
▲ Nakamichi IA-3	350	<b>G</b> A minimalist outing for the cassette heroes that's very confident if a tad restrained	62	3	•	•	•	•	•	•	121
▲ NVA AP20	260	<b>G+</b> Utilitarian amplifier sounds gentle and restrained but is euphonic and utterly engaging. Optional phono stage	35	4	•	•	•	•	•	•	109
Onix OA-21S/SOAP	730	<b>G-</b> Via MM disc this amp comes alive with a fresh and vibrant sound though its CD input sounds utterly dead by comparison.	60	4	•	•	•	•	•	•	97
Onix OA22L	300	<b>A+</b> Nothing genuinely unpleasant about this amplifier, simply that its hurried and lacklustre sound fails to spark the imagination.	39	5	•	•	•	•	•	•	116
Orelle SA-020.2	419	<b>A</b> Potentially system dependent this split the panel but ultimately elicited only limited enthusiasm	86	6	•	•	•	•	•	•	121
▲ Philips FA-930	200	<b>A+</b> Radical styling hides a digital switching facility plus full remote control over what is Philips' best effort to date	99	5	•	•	•	•	•	•	109
Pioneer A-300X	200	<b>A+</b> This revamped version of the A-300 was also more confident sounding via CD than MM, yet our panel were still left unmoved.	55	5	•	•	•	•	•	•	116
▲▲ Pioneer A-400	280	<b>VG</b> Pioneer's design concept snaps into focus with an amp that seems to bubble with musical detail. A budget bench-mark	71	5	•	•	•	•	•	•	92
Pioneer A-676	300	<b>A-</b> A lusty amplifier at a modest price yet one that failed to inspire our listeners with its bland, indifferent sound	98	7	•	•	•	•	•	•	109
Pioneer A-777	450	<b>A-</b> A larger version (!) of the A-676 that offers more power but an equally sluggish and uninspiring sound	121	7	•	•	•	•	•	•	109
▲ QED A270CD/PA	370	<b>G+</b> Recent updates have bolstered the output of the A270 without adding to its colorations. The PA phono option is a touch expensive	61	5	•	•	•	•	•	•	97
▲ QED C300/P300	630	<b>G</b> A cost-effective combo, limited in its resolution but less beguiling as a result. Disc stage is sweeter but samey	58	3	•	•	•	•	•	•	85
Quad 34	388	<b>A</b> Well-built durable preamp, filtering and above average tone controls but was found lacking in sound quality (viz: detail/dynamics)	4	•	•	•	•	•	•	•	44
Rational Audio	175	<b>A+</b> Wacky Czechoslovakian amp offers a very open and fluid sound via CD but its MM performance depends on cartridge load impedance.	129	3	•	•	•	•	•	•	92
Ray Lumley Model 75	1995	<b>G+</b> Valve monobloks represent good value. What they lack in musical subtlety they make up for in sheer muscle.	75						•	•	78
Rega Elex	298	<b>A</b> Minimalist amplifier that sounds too forward, hard and unforgiving for its own good. Shows plenty of promise, however.	51	4	•	•	•	•	•	•	116
▲ Rose RV-23	425	<b>G+</b> Beautifully built British 'hybrid'. You can spend more to get a more transparent sound but it's hard to criticise at the price	3	•	•	•	•	•	•	•	77
▲▲ Rotel RA-930AX	180	<b>G+</b> This budget wonder captivated our listeners with its clean, vibrant and thoroughly involving sound	53	3	•	•	•	•	•	•	104
▲ Rotel RA-935BX	200	<b>G</b> A line only winner that lets a lot of music through and never lets things get out of hand. Could be a touch more enthusiastic	58	5	•	•	•	•	•	•	121
▲ Rotel RA-940BX	250	<b>G</b> Rotel's cheapest 'BX' amp prompted a mixed reaction, some finding it muddled while others thought it 'exceedingly musical'	53	5	•	•	•	•	•	•	109
▲ Rotel RA-960BX	275	<b>G+</b> If you like music to harbour a latent rather than blatant sense of power this amp's confident restraint could be just the ticket.	88	5	•	•	•	•	•	•	116
▲ Rotel RC-960BX/RB-960BX	350	<b>G-</b> Excellent standards of construction, flexibility and plenty of power under the bonnet, an ideal choice for the first-time buyer.	80	5	•	•	•	•	•	•	104



# Amplifiers continued

Product	£Price	Comments	Output W/R.C.	Line inputs	MM	MC	Integrated Preamp	Headphone socket	Remote control	Issue No.
Rotel RC-980BX/RB-980BX	700	<b>A</b> Plenty of watts per pound, sound is expansive but lacks a sense of poise, of control and fine detail - a disappointment	143	5	•	•	•	•	•	109
▲ Sansui AUX-417R	310	<b>G+</b> Unusually clean and precise with more subtlety than is usually attributed to remote control amps.	53	5	•	•	•	•	•	121
▲ Sansui AU-X911DG	800	<b>G+</b> At its best when used with the on-board MASH/PWM DAC where it sounds technically neutral but still emotionally charged	112	7	•	•	•	•	•	85
Sherwood AI-2210	80	<b>P</b> Lightweight in all respects this is better than you'd find on a midi and at least its reasonably painless.	47	4	•	•	•	•	•	121
▲ Sony TA-F440E	200	<b>G</b> A new budget amp based on tried-and-tested circuits. A fresh and up-beat sound with plenty of detail, can sound smeared via CD	109	5	•	•	•	•	•	104
Sony TA-F540E	250	<b>G-</b> An MC input but little else over the TA-F440E. Sounds more consistent from input to input but is still rather superficial	108	5	•	•	•	•	•	104
Sugden A21a	469	<b>G</b> The modern-day relative of Sugden's original Class A amp and one that offers a smooth, easy-going sound.	25						•	92
TEAC AX-1000	150	<b>A-</b> Initially entertaining but ultimately unsatisfactory and rather short on high frequencies	62	5	•	•	•	•	•	121
TEAC A-X5000	230	<b>A-</b> This amplifier is compromised by a grey and muddled sound that taxed the concentration of our listeners. Better via MM disc	107	6	•	•	•	•	•	97
▲ Technics SU-VX600	220	<b>G</b> The first 'tweaked' amp from Technics, its solid and sharply focused sound a taste of things to come.	90	5	•	•	•	•	•	104
Technics SU-VX720	250	<b>A+</b> Big and spacious sound either appears rough and blustery or impressively grand depending on the music at hand.	84	5	•	•	•	•	•	116
Technics SU-VZ220	100	<b>A-</b> Cheap, cheerful and pretty flexible to boot the SU-VZ220 quickly sounds thin, splashy and relentless when the going gets tough	50	4	•	•	•	•	•	109
Threshold FET 10e/SA-4	11852	<b>G+</b> Almost valve-like limpidity and excellent soundstaging are star qualities of the Threshold amps	100	7	•	•	•	•	•	Col
Wharfedale 2050A	250	<b>A-</b> Loud and potentially aggressive amp that is reasonably detailed and clear, but ultimately a bit much like hard work	70	5	•	•	•	•	•	121
Woodside ISA230	900	<b>A</b> Smooth and inoffensive valve amplifier if one that lacks the sparkle and euphony required for a truly entertaining sound.	27	5	•	•	•	•	•	116
Woodside SC26/STA35	2743	<b>G+</b> Synergistic pairing with a cool, controlled sound, good focus and transparency. More about poise than grunt	35	5					•	100
YBA Integre	1199	<b>G+</b> Audiophile spec French integrated with good resolution and nice phono stage.	57	4	•	•	•	•	•	121
▲ YBA 1 pre/power amp	7649	<b>E</b> Well finished pre/power amp offers front rank stereo staging and transparency, and is capable of driving the most difficult loads	85	5	•	•	•	•	•	62
▲ YBA 2 pre/power amp	3624	<b>G+</b> Superbly finished with very good space and transparency, slightly softened bass. Needs transformer for MC cartridges	70	5	•	•	•	•	•	56
YBA 3 pre/power amp	2350	<b>G</b> This duo produced see-through, ethereal stereo images that were more convincing towards the centre of the soundstage	56	4	•	•	•	•	•	72
Yamaha AX-550	260	<b>G</b> Neutral yet lacks the ability to involve on an emotional level	131	5	•	•	•	•	•	97
Yamaha AX-750	400	<b>A</b> Impressive handling, but two samples split the opinion of our listeners, one sounded squashed the other fast and articulate	149	5	•	•	•	•	•	104

## Cables

Cables are not accessories but an integral part of your system. You can make do without accessories but no conventional system will function without cables. Inevitably some cables are greater than others. The best cable for your system will only be found through trial and error, but hopefully by combining our recommendations with those of a dealer you will end up with something that suits both your pocket and your system. Generally speaking budget to spend about ten per cent of the total system cost on cables.

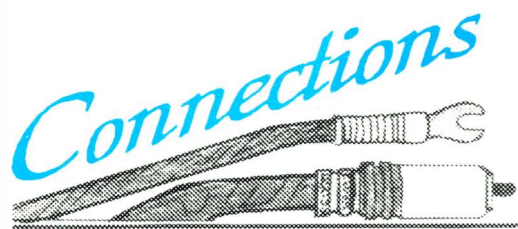
Analogue interconnects are the leads that connect source components to amplifiers and pre to power amps. The cables in this section are priced for a one metre terminated pair. Symmetrical indicates where a twisted pair of conductors are used. Coaxial means that there is a central 'hot' conductor and a shield that carries the negative signal. Stranded cables have multiple strands and solid core use individually insulated strand(s). Copper and silver indicates whether these metals are used as conductors. Digital interconnects connect CD transports

to DACs, and are traditionally coaxial with a 75ohm impedance. They come in optical and electrical varieties, the former being made of plastic or glass and the latter in coaxial or alternative configurations. The prices shown are for a terminated linear metre

Speaker cables are used between the amplifier and speaker. Our prices are for a terminated 5metre pair. Resistance and capacitance are indicated as low (L), medium (M) or high (H). High resistance cables aren't suitable for long runs. High capacitance is theoretically desirable.

## Analogue interconnects

Product	£Price	Comments	Symmetrical	Coaxial	Stranded	Solid core	Copper	Silver	Issue No.
Audio Note AN-A	29.50	<b>A-</b> A well-rounded and cuddly sound from a high-ish resistance interconnect. Lacks a sense of scale and dynamics	•			•		•	108
Audioquest Ruby Hyperlitz	70	<b>A+</b> A crisp, fast and articulate-sounding cable if one that's a little too pointed for our listeners	•				•	•	108
▲ Audioquest Lapis Hyperlitz	329	<b>E</b> An expensive cable that justifies its tag with a beautifully poised sound - natural, relaxed and very compatible.	•				•	•	108
Audio Technica AT620	28	<b>A</b> Plenty of cable for the money but its performance is distinctly lightweight, lacking depth and subtlety		•	•		•	•	108
Chord Chameleon	59	<b>A+</b> An unpredictable cable with an 'anomalous treble' that can sound harsh one moment and oddly recessed the next!		•	•		•	•	108



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# Analogue interconnects continued

Product	£Price	Comments	Symmetrical	Coaxial	Stranded	Solid core	Copper	Issue No.
▲ Chord Solid	115	<b>VG</b> What looks like a military RF cable actually provides a slightly forward but incisive and intimately detailed performance		•			•	• 108
▲ Cogan-Hall Intermezzo Ref	185	<b>E</b> A user-hostile cable with a tight, convincing bass allied to a very relaxed and involving mid/treble.		•			•	• 108
▲ Cogan Hall Intermezzo E-M	320	<b>G+</b> This bigger, thicker and thoroughly unwieldy 3-core version of the Intermezzo Reference actually sounds a little coarser		•			•	• 108
▲▲ DNM Interconnect	40	<b>VG+</b> Fresh, transparent and packed full of detail, this slither of a cable scored a direct hit with our listeners		•			•	• 108
Golding 'Studio Quality'	20	<b>A-</b> A bog-standard OFC coaxial cable that might otherwise be given away with a new amp or CD player. Cheap but nothing special			•		•	• 108
▲ Isoda Electric HA-08-PSR	199	<b>G+</b> This odd-ball cables utilises a mix of copper, brass and aluminium strands to achieve a very distinct sound		•			•	• 108
▲ Madrigal HPC	215	<b>VG</b> A very unusual cable design with a business-like approach to music-making that barely conceals its underlying 'fizz'		•			•	• 108
Magnan Type Vi	595	<b>A+</b> With a series resistance some 500-1000 times higher than average, the furry sound of the Type Vi will alter from system to system.			•		•	• 108
▲ Monster Interlink 500	60	<b>G+</b> Plenty of hype to keep the marketing bandwagon rolling plus a lively and lucid balance to cheer up the enthusiast		•			•	• 108
▲ Moth Ley Line Black	100	<b>G+</b> The cheapest of Moth's Ley Line series uses just two twisted conductors to achieve a very solid and confident sound.		•			•	• 108
Moth Ley Line Grey	200	<b>G+</b> The four twisted conductors of this cable actually mark a downturn in audio quality		•			•	• 108
▲ Panasonic RP-CA910	50	<b>G</b> This conventional coax employs plenty of hi-tech materials which encourage an even-handed balance. A good upgrade.			•		•	• 108
▲ Silver Sounds 12/2 and 12/3	99/150	<b>VG</b> Both these cables share a similarly open, transparent and dynamic sound though the latter is arguably the better integrated			•		•	• 108
Sonic Link Yellow	60	<b>A</b> An interesting non-copper cable with an up-front sounded described as 'heavy-handed and pushy'			•		•	• 108
▲ Sonic Link Violet	99	<b>G+</b> Another nickel-based cable but with a very much better-balanced sound than Sonic Link Yellow		•			•	• 108
Straight Wire Laser Link	50	<b>A+</b> Thanks to its high parallel capacitance this interconnect helps remove ultrasonic noise. Unfortunately it still sounds very odd!		•			•	• 108
Straight Wire LSI-Encore	90	<b>A+</b> A solid-sounding cable with a strong mid and bass but a disappointingly sat-upon treble		•			•	• 108
▲ Tara Labs Prism	36	<b>G</b> 6N-purity copper, aero-grade insulation and spaced solid-core conductors all add-up to a slightly bright but frisky sound		•			•	• 108
▲▲ Tara Labs Quantum CD	63	<b>G+</b> Praised by our panel for its lack of obvious vices, Quantum CD encourages a sweet and positive sound.		•			•	• 108
Tara Labs Quantum II	99	<b>G</b> Bass power and extension is the key to the sound of this unusual and hi-tech cable		•			•	• 108
▲ Van den Hul The Source	70	<b>G+</b> Accurately reflects the life of the music without detail forcibly from the speakers			•		•	• 108
Van den Hul MC D-102mKIII S	80	<b>A+</b> A rather coloured sound thanks to its full and resonant bass but spoiled overall by a dirty treble		•			•	• 108

# Digital interconnects

Product	£Price	Comments	Type	Plastic	Non-coaxial	Coaxial	75 Ω	Issue No.
▲▲ Audioquest Video Z	50	<b>E</b> The very best available with an expressive sound but generous price to sweeten the pill	Electrical			•		• 108
Audioquest Digital PRO	90	<b>A+</b> A silver cable with all the drive of Video Z but lacking its clean-cut transparency	Electrical			•		• 108
Audioquest Optilink Z	100	<b>A</b> Good level of midband detail but frequency extremes lack depth and extension	Optical			•		• 108
Bandridge AL560	20	<b>P</b> The disappointingly heavy and muddled sound of this basic fibre thwarts any recommendation	Optical	•				• 108
Chord Codac	34	<b>A</b> A connection with a stranded inner core and a sound that lacks integration	Electrical			•		• 108
▲▲ Deltac DigiLink	27.50	<b>VG</b> Can seem slightly impassive but there's no avoiding its exceptionally detailed sound	Electrical			•		• 108
Deltac Optilink	20	<b>P</b> Very similar to Bandridge AL560 with an equally naff sound	Optical	•				• 108
Kimber PSB DigiLink	24	<b>A-</b> An analogue interconnect inappropriately pressed into digital service. A visible deterioration in the digital signal results.	Electrical			•		• 108
Kimber KC-1 DigiLink	52	<b>A</b> This cable adopts a woven construction with the addition of a conductive screen. Music lacks detail and spirit.	Electrical			•		• 108
Kimber KC-AG DigiLink	222	<b>A-</b> An asymmetric cable using silver conductors that deviates from the 75ohm standard. Not ideal for digital applications.	Electrical			•		• 108
▲ Kimber Opti-Link	70	<b>G</b> Hardly cheap for what appears to be a bog-standard PMMA fibre, yet it sounds a little brighter and livelier than most.	Optical	•				• 108
▲ Monster Cable Datalink 100	45	<b>G+</b> A colourful coaxial interconnect with an equally colourful and up-beat sound. Very compatible.	Electrical			•		• 108
▲ Monster Cable Interlink LS100	45	<b>G</b> Well constructed stepped-index fibre with polished ends and rugged connectors. Slightly lean, fuzzy but engaging performance	Optical	•				• 108
Moth Leyline Datalink	140	<b>A-</b> A thin, coaxial version of Leyline Black with a rather hard and unforgiving character. Too expensive	Electrical			•		• 108
▲▲ QED DigiFlex	19	<b>VG</b> A top performance, low-loss 75ohm coax with a very open, almost liquid quality that allows its music to ease naturally across	Electrical			•		• 108
Sonic Link Brown Digital	35	<b>A-</b> A solid-core, twisted-pair interconnect that deviates from the 75ohm standard and provides an equally unbalanced sound	Electrical			•		• 108
Straight Wire Silver Link	60	<b>G+</b> A genuine attempt to get things right with a silver-plated, multi-strand coax. Yet it still sounds too dry and mechanical	Electrical			•		• 108
▲ van den Hul MC Videolink 75	30	<b>VG</b> An AV-cum-digital cable that comes very close to besting QED's DigiFlex. Still some emphasis of vocal sibilants, however	Electrical			•		• 108

# Speaker cables

Product	£Price	Comments	Resistance	Capacitance	Stranded	Solid core	Copper	Issue No.
▲ Audio Note AN-B	165	<b>G+</b> A very high capacitance Litz-style cable whose sound may well act as a taming influence in many systems	M	H			•	• 109
Audio Note AN-D	100	<b>A</b> Supplied in linear, non-polarised lengths that should be twisted into stereo pairs. Sounds rather gritty and forward	L	L		•	•	• 109
▲ Audio Note AN-SP	1270	<b>VG</b> Some 15 individually-insulated silver strands go to make up this very civilised but exceptionally detailed-sounding cable	H	L			•	• 109
▲ Audioquest F-14	44.50	<b>A+</b> Ideal for laying flat under carpets, F-14 encourages a slightly warm and vibrant sound	M	L			•	• 109
Audioquest Type 4	75	<b>A+</b> Four 18-gauge OFHC copper conductors wound in a Litz-fashion increases capacitance but restrain the cable's 'bite'	M	H			•	• 109
Audioquest Midnight Hyperlitz	260	<b>G</b> Very similar to Type 4 but with a delicate smoothness that contrasts with the brighter sound of cheap cables	L	H			•	• 109
▲ Bandridge LC7259 & LC7401	20/30	<b>A</b> Two very traditional figure-of-eight cables. The thinner version (LC7259) sounds lighter and coarser than LC7401	L	L		•	•	• 109
Bandridge LC8258 & LC8408	30/50	<b>A-</b> Two versions of the Silverflex series that, sadly, encourage very little sense of poise or decorum in their music	L	L		•	•	• 109
▲ Cogan-Hall Intermezzo Full-Range	465	<b>VG</b> Extra care must be taken to prevent shorting this user-hostile cable. Nevertheless it sounds superb!	L	L			•	• 109
▲ Deltac IS19	275	<b>G+</b> Shares the clear, neutral and transparent sound of the older 8S without the tremendous clarity of Gortex Black-16	L	L			•	• 109
DNM Rainbow	84	<b>A+</b> The high impedance of this simple ribbon cable has an influence on the treble response of some speakers. Lacks 'oomph'	H	L			•	• 109
Heybrook Heywire	66	<b>A</b> This well-meaning facsimile of earlier ribbon-style cables ends up sounding lumpy and uneven	H	L			•	• 109
Isoda Electric HA-20	400	<b>A+</b> This unorthodox cable employs a combination of copper, brass and aluminium strands. It sounds 'oddly impure'!	M	L		•	•	• 109
▲▲ Mission Stranded	20	<b>G+</b> This Swedish-made cable proved a real hit with our listeners - a slick performer and Best Buy upgrade	L	M		•	•	• 109



# Speaker cables continued

Product	£Price	Comments	Resistance	Capacitance	Stranded	Solid core	Copper	Silver	Issue No.
Monitor PC KC27/KC34	40/60	<b>A</b> Two heavyweight multi-strand cables with a thick and chesty (10027) or light and wispy (10034) balance. Take your pick	L	L	•		•	•	109
Monster Powerline 3 Plus	75	<b>A-</b> The archetypal 'old-style Monster Cable' that labours under a soggy bass and untidy treble	L	M	•		•		109
Naim NAC A5	44	<b>A-</b> Described as a 'dinosaur of a cable' by our listening panel, this stiff rod of wire has little application outside of a Naim system	L	L	•		•		109
QED Bi-wire 79-Strand	35	<b>A</b> Reminiscent of curtain track, this bi-wire version of 79-strand is unfortunately saddled with a 'loud, hard and untidy' balance	L	L	•		•		109
▲ Silver Sounds 12/2	300	<b>E</b> Tonally accurate and exquisitely detailed, this cable opens a very transparent window on the music	L	H			•	•	109
▲ Silver Sounds 16/4	200	<b>VG</b> A prime choice for bi-wire systems even if this cable does lack the full finesse of its sister 12/2	M	H			•	•	109
Sonic Link Grey	80	<b>G-</b> A spaghetti-thin cable composed of silver-plated OF-copper and PTFE insulation. Lacks bass impact and treble 'air'.	H	M			•	•	109
▲ Straight Wire Waveguide 1.5	20	<b>G</b> A conventional multi-stranded cable with a refreshingly up-beat, crisp but slightly lean-sounding balance	M	M	•		•		109
▲ Straight Wire Flex-4	50	<b>G+</b> Another very quick and dynamic-sounding cable from Straight Wire. A little short on subtlety but very engaging nonetheless.	L	H	•		•		109
Tara Labs Quantum III	238	<b>G</b> An imaginatively-named cable that encourages an equally colourful sound. Described as 'dark and fruity' by our panel!	L	H			•	•	109
van den Hul MC The Clearwater	50	<b>A</b> Despite its evocative title, the Clearwater turns out to be a disappointingly 'murky sounding' cable	M	L	•		•	•	109
van den Hul MC The Magnum	265	<b>A</b> Touted as vdH's most prestigious twinlead speaker cable, the Magnum sounds surprisingly soft and old-fashioned	L	L	•		•	•	109
▲ van den Hul MC The Wind	330	<b>VG</b> Blown-in from the continent, vdH's 'Wind' kicks up a storm with its lush midrange and bone-crunching bass!	L	M	•		•	•	109



## Cassette decks

The bad odour of copyright theft hangs around the compact cassette, but there is no doubt it is the world's most versatile and ubiquitous music storage medium. Buffs may wrinkle their noses, but are happy to use cassette decks to make up tapes for the car or personal.

There is no problem 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 auto-

matically.) Lab performance and sound quality often go hand in hand, and are frequently somewhat dependent upon factory alignment. The mechanical integrity of the mechanism is another crucial factor, that is reflected in the price.

The columns on the right indicate when the facilities shown in the headings are available on a deck. Dolby B and C offer varying degrees of noise reduction and the HX Pro system gives significant treble improvements with femic (Type I) tapes. Dolby S increases the level of noise reduction with less signal degradation than B or C.

Three-head recorders allow you to listen to a recording as it's being made, a useful quality control function. Bias adjustment allows you to fine tune the deck to suit different types of tape when recording. Auto calibration is an automatic system for setting bias and Dolby levels. Twin deck offers the option to dub tapes or to play two cassettes simultaneously. Autoreverse is a useful convenience feature, but usually with some mechanical compromise. In the case of twin decks a blob is inserted in this column even if only one transport autoreverses.

## Cassette decks

Product	£Price	Comments	Dolby B	Dolby C	Dolby HX Pro	Dolby S	Auto calibration	Bias adjust	3 Head	Twin deck	Autoreverse	Issue No.
▲ Aiwa AD-F410	100	<b>A</b> Comparable to AD-F500 but cheaper: Good all round performance, well adjusted, useful basic and not so basic features	•	•	•							99
▲ Aiwa AD-F500	160	<b>G</b> Noise levels are a little higher than usual, but sound quality is otherwise very good - open, explicit and very neutral tonally.	•	•	•							93
▲ Aiwa AD-F810	200	<b>G</b> First class budget 3-head machine with a dual capstan transport that really works at reducing the 'fudge' factor	•	•	•							99
▲ Aiwa AD-WX929	200	<b>A</b> Superbly equipped twin deck that works and works well - remote control	•	•	•	•					•	117
▲ Aiwa XK-S9000	700	<b>G+</b> Fabulous build, clunky transport and sharp, refined sound quality with Dolby S or B and metal tapes	•	•	•	•	•	•	•	•		105
Akai DX-57	220	<b>G</b> Eschews fancy gadgets for a good transport and decent electronics. Sound quality is firm and tidy but avoid Dolby C.	•	•	•	•	•	•	•			105
Akai GX-65	300	<b>A</b> Fine ungimmicky middle ranking deck with simple, purposeful controls, works best with metal tapes. Performance fair to good	•	•	•	•	•	•	•			87
▲ Akai GX-95II	440	<b>G+</b> Sharp, clear and articulate sounding deck, with superb performance extending to frequency extremes	•	•	•	•	•	•	•	•	•	99

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## Cassette decks continued

Product	EPrice	Comments	Features							Issue No.
			Dolby B	Dolby C	Dolby HX Pro	Dolby S	3 Head	Bias adjust	Twin deck	
Akai GX-R35	220	<b>A</b> Middling sound quality at best with Dolby B; deteriorates with Dolby C	•	•	•	•	•	•	•	99
▲ Akai GX-W45	320	<b>A</b> Costly but musical high-spec dual deck, doesn't like modern high energy Type IIs and IVs. Good stability and clarity	•	•	•	•	•	•	•	111
▲ Arcam Delta 100	850	<b>E</b> Superb transport and a ripe, spacious sound. The Dolby S installation more successful than most. Some replay incompatibility	•	•	•	•	•	•	•	111
▲ Denon DRM-510	150	<b>A+</b> An amnesic Dolby switch and lack of timer standby detract from an otherwise strikingly successful deck with a good performance	•	•	•	•	•	•	•	99
Denon DRM-710	250	<b>A</b> Although this is a fair performing model, the design has lost some of the competitive edge of its predecessor, the DRM-700.	•	•	•	•	•	•	•	105
▲ Denon DRS-610	180	<b>G</b> Unique loading mechanism provides stability, and the deck has a crisp, clean quality. Occasionally anaemic bass.	•	•	•	•	•	•	•	111
Denon DRS-810	300	<b>A</b> Basically good deck with non-stressful material let down by an inability to deal with high energy tapes properly.	•	•	•	•	•	•	•	105
▲ Denon DRW-650	200	<b>A</b> This simply equipped model is a little fiddly to operate at times, but sound quality is generally workmanlike - good value	•	•	•	•	•	•	•	93
Dual CC800RS	170	<b>A-</b> Low(fish) cost auto-reverse deck. Delivers a punchy but ultimately rather crude impersonation of source material, thin, lightweight bass.	•	•	•	•	•	•	•	105
Harman Kardon DC5500	500	<b>A</b> Workmanlike sound quality offset by high price and inexplicable shortcomings like 'forgetful' Dolby switching and no timer support	•	•	•	•	•	•	•	117
Harman Kardon TD4600	600	<b>A</b> Original Dolby S deck has improved over the years and now sounds very acceptable. A strong, solid sounding deck - but expensive.	•	•	•	•	•	•	•	117
JVC TD-R452	180	<b>A-</b> Tidy, stable but ultimately rather soul-less experience. Auto-reverse is useful though.	•	•	•	•	•	•	•	117
▲ JVC TD-V1010	400	<b>E</b> Very high grade enthusiasts deck with almost CD-like resolution and stability, especially with Type IV tapes	•	•	•	•	•	•	•	111
JVC TD-X352	150	<b>A-</b> Disappointingly amorphous sound despite decent measured results.	•	•	•	•	•	•	•	117
▲ Kenwood KX-3050	160	<b>A</b> Acceptable sound quality marred only by a loss of midband analysis and slightly edgy treble.	•	•	•	•	•	•	•	117
Kenwood KX-5030	200	<b>A</b> Confusing mishmash of listening impressions caused by poor set-up afflicting metal tapes and Dolby C in particular. Promising otherwise	•	•	•	•	•	•	•	99
Kenwood KX-5530	190	<b>A-</b> Neat looking, well equipped deck, adequately engineered but somewhat lacking musically. Worth considering if auto-reverse is a must	•	•	•	•	•	•	•	105
▲ Kenwood KX-7030	260	<b>G</b> Fine, articulate middle price cassette deck whose only (mild) failing with some programme material is a just perceptibly synthetic glaze	•	•	•	•	•	•	•	99
▲ Marantz CP230	330	<b>A</b> This is a competitively priced portable recorder though not suited to replay of musicassettes	•	•	•	•	•	•	•	52
▲ Marantz CP430	400	<b>A</b> Uniquely flexible and compact package for outside work which at a pinch can double as a domestic cassette deck	•	•	•	•	•	•	•	87
Memorex SCT-5	150	<b>P</b> Poor example of a twin cassette deck where everything has been sacrificed on the altar of flexibility	•	•	•	•	•	•	•	87
▲ Nakamichi DR-1	780	<b>VG</b> Typically idiosyncratic Nakamichi with manual everything, Good azimuth adjustment and dynamic, authoritative sound.	•	•	•	•	•	•	•	117
▲ Nakamichi RX-202E	600	<b>G+</b> Fine, clear and articulate sounding player. Excellent with prerecorded material, but idiosyncratic and sometimes obstructive control	•	•	•	•	•	•	•	63
▲ Pioneer CT-339	150	<b>A</b> Auto BLE tape alignment is the most interesting feature. Sound quality is a little flaky.	•	•	•	•	•	•	•	105
Pioneer CT-676	250	<b>P</b> Dull, compressed and hard sounding deck, which is hamstrung by high measured transport flutter.	•	•	•	•	•	•	•	99
Pioneer CT-900S	500	<b>A</b> High spec and well built derivative of CT-93, but disappointingly lacklustre sound	•	•	•	•	•	•	•	99
▲ Pioneer CT-91a	550	<b>G+</b> Superb, near state of the art deck with excellent dual capstan transport and capable electronics. At the price, this one is a mould breaker	•	•	•	•	•	•	•	75
▲ Pioneer CT-93	800	<b>E</b> State of the art deck, built like something out of NASA's shuttle, with superb all round performance	•	•	•	•	•	•	•	99
▲▲ Pioneer CT-S410	200	<b>A+</b> Powerful selection of features, excellent ergonomics and the fine, explicit sound with metals, though some instability was noted.	•	•	•	•	•	•	•	111
▲▲ Pioneer CT-S510	240	<b>A-</b> Slightly highlighted balance, but open and detailed, and backed by a basic but excellent set of features	•	•	•	•	•	•	•	117
▲ Pioneer CT-S610	270	<b>G+</b> Exactly engineered and highly articulate up-market cassette deck. Imagery and dynamics are finely resolved	•	•	•	•	•	•	•	111
Pioneer CT-S910	500	<b>G+</b> Refined and able performer, strong detail and excellent imagery, but slightly laid back.	•	•	•	•	•	•	•	117
Pioneer CT-W601R	200	<b>A-</b> Mediocre performance attributable to flimsy build and less than stable transport. Frequency responses not wholly accurate.	•	•	•	•	•	•	•	111
▲ Pioneer CT-W650R	200	<b>A</b> There were some intermittent problems with the tape alignment system on the test sample, but the deck was otherwise good,	•	•	•	•	•	•	•	105
▲ Revox B215	1322	<b>G+</b> Fine, consistent and solid sound, excellent under the skin engineering and many useful features — but you're also paying for it	•	•	•	•	•	•	•	87
▲ Revox B215-S	1697	<b>G+</b> This is a superbly engineered deck with a classically fine performance that almost transcends the stereotypes.	•	•	•	•	•	•	•	75
Revox Professional Series C115	1083	<b>G</b> Not for the numbers freaks, it's unobtrusively musical, with a slightly wayward top and a very clean, extended bass	•	•	•	•	•	•	•	111
Sansui D-X111E	120	<b>P</b> Very high levels of flutter, and a shabby, hollow sound with metallic colorations and a severe loss of detail - is it necessary to go on?	•	•	•	•	•	•	•	105
Sansui D-X117WR	220	<b>P</b> Bass is thin and coloured, and the sound lacks dynamics, pitch accuracy and overall stability - the sound is neither stable nor solid.	•	•	•	•	•	•	•	111
▲▲ Sansui D-X211HXR	170	<b>G+</b> Clean, stable and open sounding recording quality distinguishes this player, - and auto-reverse too. Excellent value.	•	•	•	•	•	•	•	93
Sansui D-X311WR	250	<b>A-</b> Not wholly successful auto-reverse deck which suffers because it has tried to be all things to all people. Lack of clarity is main limitation	•	•	•	•	•	•	•	99
Sherwood DD-3010C	150	<b>P</b> Good range of features, let down by poor transport and iffy electronics.	•	•	•	•	•	•	•	117
▲▲ Sony (WMD6C) Pro Walkman	280	<b>G+</b> One of the finest sounding cassette decks on the market today. A mandatory Best Buy, which also fits in your pocket	•	•	•	•	•	•	•	60
▲▲ Sony TC-K520	180	<b>G</b> Fine, assured and detailed performer with a very well designed and straightforward user interface	•	•	•	•	•	•	•	87
Sony TC-K870ES	350	<b>A+</b> Good but not outstanding deck which proved slightly disappointing on audition. This model is no standard setter	•	•	•	•	•	•	•	99
TEAC R-9000	500	<b>G</b> Much better than average auto-reverse deck, well worth considering. Nicely engineered too	•	•	•	•	•	•	•	105
TEAC V-7000	480	<b>G</b> Intrinsically sharp, clear and solid sound spoiled by exaggerated detail with prerecorded material and losses imposed by Dolby circuits	•	•	•	•	•	•	•	99
▲ TEAC V-8000S	700	<b>G</b> Superb stability and real subtlety, this must be the best TEAC yet. The only disappointment was the Dolby C	•	•	•	•	•	•	•	105
▲▲ Technics RS-BX626 II	180	<b>G</b> First rate deck at a bargain price. Losses when recording are low and mostly benign, an all-round achiever	•	•	•	•	•	•	•	111
Technics RS-BX828 II	300	<b>G</b> Fine deck, with explicit detail and stability, but in the final analysis it doesn't go much further musically than the cheaper RS-BX626	•	•	•	•	•	•	•	111
▲▲ Yamaha KX-260	160	<b>A</b> Lively, entertaining deck that trades gadgets for a convincing performance at an attractive price point	•	•	•	•	•	•	•	111
Yamaha KX-360	200	<b>A</b> Performance has both dryness and precision. Good - but doesn't 'breathe,' and occasionally sounds unstable	•	•	•	•	•	•	•	111
▲ Yamaha KX-650	260	<b>G</b> Fine audio manners, especially in the midband and treble, mark this high class deck out from the crowd	•	•	•	•	•	•	•	99
Yamaha KX-W362	250	<b>A-</b> Almost a good deck, it is let down by audible levels of wow & flutter, apparent even with prerecorded material, audio circuits are good	•	•	•	•	•	•	•	111

**DON'T MISS NEXT MONTH'S GIGANTOSAURIC NEW ISSUE.  
THE OCTOBER CHOICE WILL FEATURE THE EISA AWARD WINNERS,  
GROUP TESTS ON CASSETTE DECKS AND AMPLIFIERS, AND  
A SUPPLEMENT ON THE LATEST EQUIPMENT STANDS.**



# CD players



Now over a decade old, this all digital music source is well established despite high disc prices and the opposition of some hi-fi enthusiasts. Compact Disc's strengths over conventional vinyl are complete freedom from surface noise, ease of use, and more robust software.

However, many vinyl enthusiasts still find CDs sound less involving than top quality vinyl. But, with the dominance of CD in the high street, even vinyl die-hards need a CD player today.

The columns on the right indicate when the facilities shown in the headings are available on a CD player: DAC type indicates the type of converter chip used in each player, 16, 18 and 20-bit are multi-bit types, all the others are bitstream variants. In much the same way that an amp's output is not indicative of its sound quality, the chip used in a DAC isn't the only determining factor in a CD player's sound, but it is an important one. Remote control is not yet universal, and we have included a tick box, more to show which

machines don't have one than which do. The existence of electrical and/or optical digital outputs is important for future upgrading with an outboard DAC, as a rule electrical outputs are the most desirable. Phase inversion in the digital domain is rare on one box players but can make quite a big difference if you've got golden ears. Headphone sockets are useful but beware of those without volume controls. Track entry keypads are those with calculator style buttons which makes track access much quicker.

## CD players

Product	£Price	Comments	DAC type	Remote control	Optical digital output	Electrical digital output	Phase invert	Headphone socket	Track entry keypad	Issue No.
▲ Aiwa XC-300	150	<b>A+</b> Cheap, cheerful and gratefully free of digital 'nasties', well-equipped but safe rather than thrilling on the sonic front.	Toshiba BS	•	•	•	•	•	•	107
Aiwa XC-750	180	<b>A</b> A refined version of the XC-700, sadly it has lost the magic of the original	SAA7350	•	•	•	•	•	•	119
▲ Arcam Alpha Plus	420	<b>G+</b> As its name suggests, this is the 1992-version of a classic 16-bit player with an all-round smoother sound!	16-bit	•	•	•	•	•	•	112
Arcam Delta 70.3	650	<b>G+</b> A distinctly rugged, beefy sound. Plenty of power behind individual instruments but lacks a feeling of involvement	7350 PDM	•	•	•	•	•	•	95
Audio Alchemy DDS/DTI/XDP/P52	2047	<b>A+</b> A multi-box combination with a Bit Stream DAC that is fundamentally more inspiring than its partnering transport.	DAC7	•	•	•	•	•	•	120
Aura CD-50	400	<b>G-</b> Based on an older Philips board with new CDM9 transport, this is a slim player with an innocuous sound	SAA7321	•	•	•	•	•	•	119
AVI S2000MC	999	<b>G+</b> A stylish, midi-width player with an exceptionally refined and comfortable sound. Lacks passion	20-bit	•	•	•	•	•	•	119
Cary Audio Design CAD-955	899	<b>A+</b> Rotel with add-on valve processor to filter-out any RF. Nice idea but sounds very dry and taut, lacking warmth and body.	16-bit	•	•	•	•	•	•	107
Creek CD60	500	<b>G</b> A big and confident sound from a player that's 'into' green. So it looks ghastly even if the internal design is very thoughtful.	16-bit	•	•	•	•	•	•	107
Denon DCD-1290	330	<b>G-</b> Looks like the business but sound is a real five-minute wonder. Its compelling fizz lasts about as long as a firework.	18-bit	•	•	•	•	•	•	107
Denon DCD-2560	600	<b>G</b> Beautifully built but decidedly sluggish, particularly through the bass. Vocals are more forward but can sound a little glassy	20-bit	•	•	•	•	•	•	95
Denon DCD-890	270	<b>G-</b> Similar to the DCD-1290 in its execution, sounds lively and powerful but lacks subtlety.	18-bit	•	•	•	•	•	•	112
DPA Digital T-V/PDM2mkII	3245	<b>G</b> An ingenious combination that includes a clock-feed from the DAC to CD transport. Capable of astonishing results	DAC7	•	•	•	•	•	•	120
Dual CD1080RC	200	<b>A-</b> Strange-sounding player with a top-heavy treble that does little to redress its lack of vibrancy and emotion	MASH/PWM	•	•	•	•	•	•	107
▲ EAD T-1000/DSP-1000	2195	<b>VG</b> A two-box player based on Pioneer's Stable Platter CD transport. Its music always sounds fast, furious and fascinating.	20-bit	•	•	•	•	•	•	120
Goodmans GCD-658	170	<b>A</b> A 6+1 magazine-loading autochanger with an exaggerated and often aggressive sound	Hybrid	•	•	•	•	•	•	117
Harman Kardon HD7450	260	<b>A+</b> Dominated by a budget decoder/oversampling IC. Good bass nevertheless but pop tracks can sound fizzy and tiring.	18-bit	•	•	•	•	•	•	107
▲ Harman Kardon HD7500II	300	<b>G+</b> Tonal integration is very good, packed with detail that's expressed with enthusiasm.	MASH	•	•	•	•	•	•	95
Harman Kardon HD7600II	400	<b>A+</b> HD7500II with a motorised volume control and extra-heavy casework. Lacks the transparency and sparkle of the cheaper machine	MASH/PWM	•	•	•	•	•	•	100
Harman Kardon TL8500	500	<b>A</b> This 5-disc carousel player sounds civilised enough but lacks the detail and finesse of its peers	MASH/PWM	•	•	•	•	•	•	117
JVC XL-M406	270	<b>A</b> A 6+1 disc magazine-based autochanger with a rather lean, bright and disappointingly synthetic sound	PEM	•	•	•	•	•	•	117
JVC XL-V152	130	<b>A</b> Based on earlier budget designs but minus a remote control. The voluminous but vague sound is equally familiar.	PEM BS	•	•	•	•	•	•	112
JVC XL-Z1050	500	<b>A</b> Technically advanced and luxuriously equipped, this player remains rather bland and unsatisfying on audition	PEM bitstrm	•	•	•	•	•	•	119
▲ JVC XL-Z452	180	<b>G+</b> Another lightweight player but graced with a surprisingly bold and detailed sound. Impressive stuff for the money.	PEM BS	•	•	•	•	•	•	112
▲ Kenwood DP-3040	180	<b>G+</b> The sophisticated sound of this budget player could teach Kenwood's costlier offerings a thing or two!	NPC BS	•	•	•	•	•	•	112
Kenwood DP-5040	200	<b>A</b> Better built and technically superior to the older DP-5030 but its untidy, detached treble quality proved a real disappointment	PLM	•	•	•	•	•	•	107
Kenwood DP-7050	320	<b>A</b> Kenwood's first sowing of Philips' Bit Stream technology has fallen on stony ground judging by its dry and awkward sound	SAA7350	•	•	•	•	•	•	119
Kenwood L-1000D	830	<b>G</b> A beautifully constructed and very stylish player that really only gives off its best when used in balanced	16-bit	•	•	•	•	•	•	100
▲ Kenwood DP-M6640	250	<b>G</b> This 6+1 CD multichanger is hardly the slickest available but it still sounds impressively open and detailed	PWM	•	•	•	•	•	•	117
▲ Linn Karik	1497	<b>VG</b> Based on Linn's original CD transport, this player sounds dry but very positive, detailed and engrossing	Crystal BS	•	•	•	•	•	•	119
Linn Karik/Numerik	2500	<b>G+</b> Partnering Linn's Numerik DAC with its Karik CD player (as transport) provides a dry, dynamic but also slightly dirty sound.	20-bit	•	•	•	•	•	•	120
▲ Marantz CD-52II	230	<b>G</b> Launched to usurp the position of its own CD-52SE, the '52II is less colourful but equally appealing	SAA7350	•	•	•	•	•	•	119
▲ Marantz CD-52IISE	300	<b>G</b> A new mains transformer plus the full complement of internal mods has recaptured the frothy if startling sound of the original '52	SAA7350	•	•	•	•	•	•	119
Marantz CD-72	400	<b>G+</b> A heavily-constructed player. This implementation sounds astonishingly solid and immediate but also rather too 'clean'	bitstream	•	•	•	•	•	•	107
Marantz CD-72SE	500	<b>G+</b> A recommendation just eluded the grasp of this superbly built player thanks to its very polished but restrained sound.	bitstream	•	•	•	•	•	•	112
▲ Meridian 206ΔΣ	995	<b>E</b> A new variation on the 206 theme with the most liquid and captivating sound to date	Crystal BS	•	•	•	•	•	•	119
▲ Meridian 208	1550	<b>E</b> State of the art CD sound combined with a decent preamp and full remote control	bitstream	•	•	•	•	•	•	83
Meridian 200/263	1390	<b>G</b> Now updated with Crystal Bit Stream technology, this popular duet has unfortunately lost much of the charm and poise of the original.	Bit Stream	•	•	•	•	•	•	120
▲ Meridian 602/606	3100	<b>VG</b> Meridian's top-of-the-range two-box player looks and sounds both distinctive and elegant, the perfect partner for a cultured system!	DAC7	•	•	•	•	•	•	120
Micro Seiki CD-M100	5541	<b>G</b> Extravagantly styled, finished and built. The good lab performance led to an only 'good' sonic display	16-bit	•	•	•	•	•	•	72
Micromega Logic	500	<b>G</b> A version of Philips CD624 with new op-amps and CD tray. Still, it sounds rather meatier, better integrated and more purposeful	SAA7321	•	•	•	•	•	•	100
Mission DAD5	300	<b>A+</b> Similar to Philips' 600-series: lively, plenty of space and full of 'bounce' but a little too eager to impress in the short term	bitstream	•	•	•	•	•	•	107
▲ Musical Fidelity CDT	500	<b>G+</b> Oddball player with a cheap top-loading transport and appalling digital gubbins yet saved by the euphony of its valves!	hybrid	•	•	•	•	•	•	112
▲ NAD 502	200	<b>G</b> This updated version of the 5425 has traded the spontaneity of its forebear for a more precise but mechanical style of music	MASH/PWM	•	•	•	•	•	•	119
▲ Philips CD920	150	<b>A+</b> A new budget player with an appalling technical record but a surprisingly clean if understated sound	SAA7341	•	•	•	•	•	•	119
Philips CD930	180	<b>G-</b> Featuring digital circuitry similar to Marantz's players but a sound that's a little too ripe and soft.	bitstream	•	•	•	•	•	•	112
▲ Philips CD950	350	<b>G+</b> Philips' top 900-series player is the first to employ its advanced DAC7 chipset. Sounds very crisp, clear and confident.	DAC7	•	•	•	•	•	•	112
▲ Pioneer PD-201	150	<b>G</b> A budget player with a genuinely fizzy and exciting sound. Hardly neutral but audacious and entertaining nevertheless.	PDM BS	•	•	•	•	•	•	112
Pioneer PD-75	800	<b>G+</b> A confident yet beautifully poised and relaxing sound from an equally luxurious package. Oodles of refinement	PDM BS	•	•	•	•	•	•	107
▲ Pioneer PD-M701	300	<b>G+</b> A 6-disc multichanger from the originators of the breed. A little untidy perhaps, but still sounds fresh, dynamic and exciting	PDM	•	•	•	•	•	•	117



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# CD players continued

Product	£Price	Comments	DAC type	Electrical digital output	Optical digital output	Headphone socket	Phase invert	Track entry keypad	Remote control	Issue No.
Pioneer PD-M901	400	<b>A</b> Another 6-disc multichanger based on the PD-M701 but with the addition of various 'Sound Field' options. Listening is hard work	PDM	•	•	•	•	•	•	117
▲ Pioneer PD-S901	400	<b>G+</b> The very refined but confident, crisp and powerful sound of the '901 snatches Pioneer's LLC concept from the jaws of defeat	PFM bitstrm	•	•	•	•	•	•	119
Proceed PDT3/PDP3	4598	<b>G+</b> The third in a series of unusual transport/DAC combinations and a pairing that retains a powerful, confident and rugged sound	20-bit	•	•	•	•	•	•	120
Revox B226S	840	<b>A</b> Top quality build and finish for the Revox system enthusiast. For high value sound look elsewhere	16-bit	•	•	•	•	•	•	76
Rotel RCD-955AX	280	<b>A</b> Repackaged version of the evergreen RCD-855. Our sample disappointed, lacking the clean, cohesive quality of the original	16-bit	•	•	•	•	•	•	107
▲▲ Rotel RCD-965BX	300	<b>E</b> An exceptionally refined bitstreamer: transparent, exquisitely detailed and powerfully emotive. A landmark player	SAA7323	•	•	•	•	•	•	100
Rotel RCD-965BX LE	380	<b>G-</b> This 'tweaked' version of the fabulous '965BX certainly sounds different, but different is rarely better	SAA7323	•	•	•	•	•	•	119
▲ Sansui CD-X217	230	<b>G-</b> Sansui has returned to its roots judging by the balmy and very comfortable sound that pours from this player	MASH/PWM	•	•	•	•	•	•	119
Sansui CD-X317	300	<b>A</b> Not in the same class as older CD-X311mkII. Same technology but the sound is neither as responsive or engaging	MASH	•	•	•	•	•	•	107
Sansui CD-X617	300	<b>A</b> This 'double-DAC' version of the CD-X317 is more impressive, sounding light and tizzy with pop but dull with classical CD's	MASH	•	•	•	•	•	•	112
▲ Sansui CD-X711	600	<b>G+</b> Luxury features, finish and sound from this classy Sansui; excuses required here	bitstream	•	•	•	•	•	•	83
▲▲ Sherwood CD-3020R	120	<b>G</b> Although this budget wonder has little respect for musical convention, what emerges is still remarkably entertaining	NPC bitstrm	•	•	•	•	•	•	119
▲▲ Sherwood CDC-5010R	200	<b>G+</b> This highly affordable 5-disc carousel player sounds unexpectedly deep, spacious and involving - a rare find	PDM	•	•	•	•	•	•	117
▲▲ Sony CDP-397	140	<b>G</b> The first CD player to be almost entirely composed of miniature surface-mount components. Unsophisticated but enthusiastic sound	PLM	•	•	•	•	•	•	112
▲▲ Sony CDP-597	180	<b>G</b> This lightweight version of the acclaimed CDP-797 is equally flexible but provides a slightly warmer and smoother sound	PLM bitstrm	•	•	•	•	•	•	119
▲ Sony CDP-797	200	<b>G-</b> Succeeds with its taut imaging, clean and impressive soundstaging. Can seem a little too lean or dry, however.	PLM	•	•	•	•	•	•	107
Sony CDP-X229ES	300	<b>G-</b> Built to the same standards as the CDP-X339ES but with a colder and less forgiving sound. Lacks a sense of integration	PLM	•	•	•	•	•	•	112
Sugden SDT-1	850	<b>A</b> Bearing in mind Sugden's SDA-1 converter lies at the heart of this player, its unpredictable performance is disappointing	16-bit	•	•	•	•	•	•	119
TEAC CD-P3500	170	<b>A</b> A well-meaning attempt to pare-down the CD-P4500 results in a similar looking player with a thoroughly uninspiring sound	bitstream	•	•	•	•	•	•	112
▲ TEAC CD-P4500	250	<b>G</b> TEAC's first genuine 1-bit player its sound described as having a certain 'organic warmth', very composed and easy-going.	SAA7350	•	•	•	•	•	•	107
TEAC VRDS-10	769	<b>A+</b> A basic analogue stage compromises the potential of TEAC's superb engineering and digital electronics. Lacks bass energy	DAC7	•	•	•	•	•	•	119
▲▲ TEAC P-700/D-700	1500	<b>VG</b> They may lack the resolution of high-end colleagues but still sound warm, bubbly and perpetually entertaining.	20-bit	•	•	•	•	•	•	120
▲ Technics SL-PG320A	140	<b>G+</b> A cheaper and remote-less version of the '420A with an equally dry but vivid, spacious and astringent sound. A good 'un	MASH	•	•	•	•	•	•	112
▲ Technics SL-PG420A	160	<b>G+</b> Offers an open, transparent and uncommonly fresh sound but a little of the 'magic' is missing.	MASH	•	•	•	•	•	•	107
▲▲ Technics SL-PG520A	200	<b>G+</b> A cracking player. Superb clarity and dynamics, thrilling but musically involving too	MASH	•	•	•	•	•	•	107
▲▲ Technics SL-PS620A	230	<b>G+</b> A costlier, tarted-up version of the SL-PG520A that loses very little in the way of clarity, sparkle or in compelling dynamics	MASH	•	•	•	•	•	•	112
▲ Technics SL-PS840	420	<b>A</b> A very refined but highly detailed and engrossing performance from just about the fastest, slickest player on the planet	MASH/PWM	•	•	•	•	•	•	119
Technics SL-PS900	350	<b>G-</b> Just about the quietest transport in existence and a sound that is equally unobtrusive, polite and refined	MASH	•	•	•	•	•	•	100
Woodside WS2	1095	<b>G+</b> Responded well to our jazz and classical selection but sounding bright and grainy with the pop CD's	16-bit	•	•	•	•	•	•	95
Yamaha CDX-560	180	<b>G</b> An advance on the CDX-450 the light, up-front if t entirely welcoming sound of this newcomer could shock the timid listener	18-bit	•	•	•	•	•	•	112
▲ Yamaha CDC-625	300	<b>G</b> A reassuringly solid 5-disc carousel player that sounds smooth, cultured and 'delicately proportioned'. Good value	Hybrid	•	•	•	•	•	•	117
▲ Yamaha CDX-660	249	<b>G</b> This cheaper iteration of the CDX-860 provides a similar mix of features with a slightly slower but heavier sound	PDM DAC	•	•	•	•	•	•	119
▲ Yamaha CDX-860	280	<b>G+</b> Probably Yamaha's best player to date: powerful and confident yet delicate and nimble when the occasion demands	PDM	•	•	•	•	•	•	112



## CD transports and DACs

A CD player can be split into two basic components, the mechanism which reads the information from the disc, called the transport, and an electronic device which turns the digital bitstream coming off the disc into an analogue audio signal, this is called a digital to analogue convertor or DAC. Although at the lower end of the market both of these are contained in a single box, the best CD players are usually two box affairs.

Although many of these units will be purchased as matching pairs, a DAC can also be

used to upgrade an existing CD player. For instance an early machine with a satisfactory transport but a dated convertor can be rejuvenated by adding an outboard DAC.

The columns on the right indicate the facilities available on a transport or DAC. Remote control is self explanatory. The existence of electrical and/or optical digital in and outputs is pretty fundamental to transports and DACs, as a rule electrical outputs are the most desirable. Class 1 transports are those with an output whose crystal clock accuracy is better than ± 50ppm (parts

per million), certain DACs won't lock onto (and thus can't be used with) transports with a lower clock accuracy. DAC type shows the specific convertor chip employed. In much the same way that an amp's output is not indicative of its sound quality, the chip used in a DAC isn't the only determining factor in a CD player's sound. Phase inversion in the digital domain can make quite a big difference if you've got a high resolution system and golden ears to go with it.

Entries for one make transport/DAC combinations are listed in the CD players section.

## CD transports

Product	£Price	Comments	Remote control	Electrical digital output	Optical digital output	Class 1	Issue No.
Kenwood DP-X9010	500	<b>A+</b> Compromised by jitter, RF noise and poor clock selection it encourages a dynamic but bright and edgy sound with most DACs	•	•	•	•	96
▲ Meridian 200	895	<b>G+</b> Broadly compatible and offering a light, fresh and very bubbly sound that is both natural, engaging and unfatiguing	•	•	•	•	96
TEAC P-2	3300	<b>G</b> Beautifully styled and constructed but sound is bleached and generally less inspiring than that of the P-10	•	•	•	•	96
Technics SL-PA10	470	<b>G</b> Has the unusual limitation of only optical output. Reassuringly solid and more immune to vibration than most	•	•	•	•	88

## DACs

Product	£Price	Comments	DAC type	Electrical digital input	Optical digital input	Phase invert	Issue No.
▲ Arcam Black Box 3	300	<b>G+</b> Top of a series of three decoders it can offer a high sonic standard with top class transports	Bitstream	•	•	•	88
Arcam Black Box 5	450	<b>G</b> Equipped with Sync Lock for D170.3. It gives off its best with a standard 75ohm transport like the TEAC P-10.	hybrid	•	•	•	113



# DACs continued

Product	£Price	Comments	DAC type	Electrical digital input	Optical digital input	Phase invert	Issue No.
▲▲ Audio Alchemy DDE v1.0	420	<b>VG</b> A very sweet and seductive sounding unit that gives good results with a wide range of CD players/transports	Bitstream	•	•	•	101
Audio Synthesis DSM-M	1234	<b>G+</b> A weighty but neutral and highly calculated performer, best suited to transports like the P-10, despite Sync Lock facility.	20-bit	•	•		113
Beard DAP-1	975	<b>A-</b> Clad in a wooden case this marriage of digital technology and valves has hit the rocks, a disappointingly flat sound	16-bit	•	•	•	113
▲ DPA Digital Bigger Bit	700	<b>G</b> With either P-10 or Meridian 200 transports it delivers a very taut and dynamic sound, bathed in an open acoustic	DAC7	•	•		103
DPA Digital Little Bit (Optical)	400	<b>VG</b> Works especially well with Meridian's 200 transport but does require the services of Deltec's 'Power' mains filter	SAA7350	•			101
DPA Digital PDM1 Series 3	1280	<b>VG</b> Bears technical comparison with both PDM2 and Bigger Bit but - in terms of sound quality - is great advance on the latter	DAC7	•	•		103
▲ ds/d Decode-1	495	<b>G</b> Elegantly designed bitstreamer with plenty of inputs, can sound too bright, immediate or artificial for its own good.	Bitstream	•	•	•	113
▲ Forte Audio Model 50	950	<b>VG</b> A typically big and full-blooded sound, infiltrated by a slightly euphonic quality but never hard or gritty.	DAC7	•	•		103
Meridian 606 DAC7	1350	<b>G</b> By refining the 203's sound further Meridian have also tempered its vibrancy and 'life'. Fickle with other transports	DAC7	•	•	•	101
Micromega Duo BSI	550	<b>G</b> Has a tendency to sound light, airy and 'fast' but it can also become a little hard or - fatiguing with some digital outputs	SAA7321	•	•	•	101
Micromega Microdac	300	<b>A+</b> Described as a modest but entertaining performer, achieving its sweetest balance with Arcam's D170.3 transport.	SAA7321	•	•		113
▲ Mission DAC5	299	<b>G+</b> Another modest DAC but one capable of a lean but clean and detailed sound that's typical of the DAC7 breed.	DAC7	•		•	113
▲ NVA DAC-ON	730	<b>G+</b> DAC-ON actually turns out to be a QED Digit linked to substantial external supplies. A ruse that undoubtedly improves its sound	SAA7323	•			113
PS Audio Superlink	1498	<b>G-</b> Does the business with Meridian's 200 but can sound bloated, smeared and even vaguely electronic other transports	18-bit	•	•	•	103
▲▲ QED Digit	139	<b>G+</b> Bearing in mind its expressive but very forgiving performance the Digit is almost embarrassingly cheap	SAA7323	•			113
Roksan ROK-DA1/ROK-DS4	995	<b>G+</b> A creditable affair, both expansive and expressive in character but rather also lean in balance.	Crystal	•			113
Stax DAC-Talent	1400	<b>G+</b> Natural, refined and never over-zealous, its also capable of sounding very spicy and dynamic. Can be a maturing influence	20-bit	•	•	•	101
▲ Sugden SDA-1	749	<b>G+</b> A pleasant surprise from the fuddy-duddies of audio, judging by its 'masses of high resolution detail and tremendous dynamics'	TDA1541it	•			113
Sugden Stenfort PDA-10	1200	<b>G+</b> Unfortunately this 'upgraded' SDA-1 is less impressive than the original, losing out on dynamics, airiness and subtle detailing	16-bit	•	•	•	113
Threshold DAC 1/e	3150	<b>G+</b> Can sound beautifully detailed with a marvellous sense of scale and sharp, solid images. Compatibility is unpredictable	MASH	•	•	•	103
Woodside DAC1	909	<b>G</b> Fine but slightly dated and costly package in performance terms - but flexible, musical and t well built	16-bit	•	•		87
▲ Woodside DAC2	510	<b>G+</b> Offering a sharp and dynamic sound, all the more captivating for its lack of graininess and 'tizz'. A reliable upgrade	16-bit	•			101



## DAT players

**D**AT, or digital audio tape, has been on the market for quite some time now but has never really 'made it' as a consumer medium, probably due to the fact that very little prerecorded software has been made available.

In the last year or so it has begun to carve itself a niche at the top end of the market replacing reel to reel tape recorders as the audiophile's

tape based medium.

The DAT standard specifies a 48kHz sampling rate, which is higher than CD, so direct copying in the digital domain is only possible on those machines with dual sampling frequencies, ie 48kHz and 44.1kHz. Some machines also record at 32kHz to give a longer recording time for a given length of tape, this is shown in the LP

mode column.

The optical and electrical in/outputs in the column headings are for digital signals, analogue in/outputs are universal. The AES/EBU and S/PDIF socketry is for connection to professional components and typically DAT machines with this facility have been made for the pro and semi-pro markets.

## DAT players

Product	£Price	Comments	LP mode	Remote control	Optical in/outputs	Electrical in/outputs	AES/EBU in/outputs	S/PDIF in/outputs	Issue No.
JVC XD-Z1010TN	1050	<b>A+</b> Ambitious but ultimately disappointing deck with an opaque musical delivery and more features than you can shake a stick at	•	•	•	•	•		111
▲ JVC XD-Z505	620	<b>G</b> Competent middle market DAT with uncomplicated (but still flawed) user interface, but good basic sound quality	•	•				•	105
Kenwood DX-7	500	<b>A</b> Sound quality is pretty fair, but a little rougher than the best of the breed. Controls are good, the display however is poor	•			•			94

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# DAT continued

Product	£Price	Comments	Remote control	Optical in/outputs	AES/EBU in/outputs	S/PDIF in/outputs	Issue No.
Kenwood DX-7030	700	<b>A-</b> Bland sounding deck that lacks low level clarity and imaging. Build quality is good however and ease of use ranks highly			•	•	99
Panasonic SV-3700	1111	<b>A</b> Slick, powerfully equipped, this pro DAT has a clear, quick and colourful sound somewhat lacking in weight and substance			•	•	111
▲ Sony DTC-55ES	550	<b>G</b> Broadly comparable to a middle ranking CD player sonically, the Sony is particularly well equipped and well priced.	•	•	•		93
Sony DTC-77ES	1000	<b>A</b> Superb engineering, many nice features (including off tape monitoring) but perceptibly slowed, thickened sound	•	•	•		105
▲▲ Sony TCD-D3	500	<b>G+</b> At the time of writing, this model represents the state of the art, and beats all comers.	•		•		94
Tascam DA-30	1199	<b>A+</b> Interesting pro DAT deck with solid, tangible sound quality which is nevertheless lacking in analysis	•			•	111



## Headphones

There are a variety of different approaches to headphone design. Amongst the more expensive models, electrostatic drivers are used in open-backed phones. The majority of these come with some form of transformer which usually takes the signal from the speaker terminals on the amplifier, but some can run from a pair of tape out sockets.

The more down to earth (see affordable) models feature dynamic, or moving coil, drivers in circular open or closed backed designs. The advantage of open backs seems to be a correspondingly open sound, but one can also of course hear external noises. Closed-back designs are useful in situations where it is necessary to block out background noise, but they aren't gen-

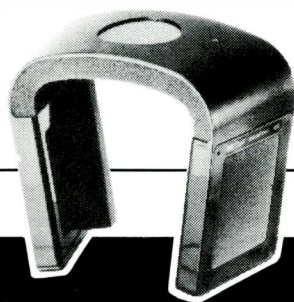
erally as good sonically.

Another means of distinguishing different types is the way they sit on your head. There are three styles: circumaural models enclose the ear and rest on the side of the head; supra-aural designs feature a flat pad which presses on the outer ear (pinna); and intra-aurals rest inside the ear itself, and are popular with personal stereos.

## Headphones

Product	£Price	Comments	Type	Open back	Closed back	Dynamic	Electrostatic	Issue No.
▲ AKG K1000	500	<b>E</b> One of the best dynamics on the market, hooks directly to speaker outputs and makes much of the competition sound lame	Extra-aural		•	•	•	99
AKG K135	33	<b>A</b> The K135s don't live up to the usual AKG standards, though they do have the ability to reproduce rhythm well	Supra-aural		•		•	63
▲ AKG K240 Monitor	60	<b>G</b> Something of a classic, these AKGs are very user friendly in all respects; sonically on the warm side of neutral	Circumaural		•		•	63
▲ AKG K280 Parabolic	90	<b>G+</b> A very revealing and unusual twin driver design that uses the same principle as a satellite dish to beam sound into the ear	Circumaural		•		•	63
▲ AKG K340	140	<b>E</b> Heavyweight cans in most respects, the K340 with its electrostatic tweeter is a very revealing headphone	Circumaural			•	•	75
AKG K44	40	<b>A</b> Good quality personal oriented phone, could have a better sense of space but is musically quite communicative	Supra-aural		•		•	99
▲ AKG K400	100	<b>VG</b> Comfortable over long sessions. Sound is exquisitely detailed, dynamic and uncoloured	Supra-aural		•		•	121
▲ AKG K500	119	<b>G+</b> Open and clear, they reproduced music with impressive definition, balance is on the light side but transparency is high	Circumaural		•		•	111
Aiwa HP-X30	31	<b>G-</b> A flashy personal stereo phone which alternatively could be used at home. A slight LF tonal preference colours the response	Supra-aural			•	•	75
▲ Audio-Technica ATH-308	26	<b>A-</b> Small cans with a fairly forward balance which helps perceived clarity but can become wearing over time, good for personals	Supra-aural		•		•	111
▲ Audio-Technica ATH-609	31	<b>A-</b> Warm feeling and sounding with impressive physical substance for the price, could be more relaxed and open	Circumaural		•		•	99
Audio-Technica ATH-611	51	<b>G</b> Same basic design as 609 but bigger thinner diaphragm makes this a more relaxed and informative headphone	Circumaural		•		•	99
Audio-Technica ATH-9000	246	<b>G</b> Electrets which connect to the amps speaker outputs, it sounds a little too smooth but would suit aggressive amps	Circumaural		•			111
▲ Audio-Technica ATH-910	70	<b>G</b> The closed-back 910s are an improvement on the 909s with a nice rhythmic quality rarely found with headphones	Circumaural			•	•	55
▲ Audio-Technica ATH-911	80	<b>VG</b> Nicely finished dynamic headphones with all the trimmings, plus a very clean and subtle sound	Circumaural		•		•	63
Bandridge EH910DD	50	<b>A-</b> Modestly successful mid/top, but dreadfully cloying, ploddy bass makes this model essentially unlistenable	Circumaural			•	•	121
▲ Beyer DT-211	25	<b>A</b> Good value compact, couth and enjoyable, esp in midband. Earpads not removable for cleaning	Supra-aural		•		•	121
Beyer DT411	49	<b>G</b> A reasonable but not very thrilling headphone that doesn't really offer enough at the price	Supra-aural		•		•	111
▲ Beyer DT911	179	<b>VG</b> Probably too revealing for many headphone amps these are very subtle and fine if expensive cans	Circumaural		•		•	111
▲ Beyer DT990	102	<b>VG</b> A significant pair of dynamic headphones; they have a smooth and yet revealing neutral sound that is hard to criticise	Circumaural		•		•	55
▲ Beyer IRS690	203	<b>VG</b> High quality infra-red headphones with soft comfy earpads and mellow but informative sound quality which is hard to dislike	Circumaural		•		•	75
JVC HA-D690	40	<b>A</b> Competent but rather undistinctive cans, a bit middle of the road and well suited to aggressive sources	Supra-aural			•	•	111

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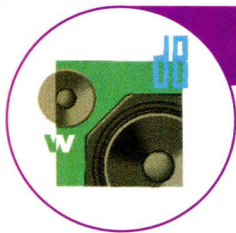
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# Headphones continued

Product	£Price	Comments	Type	Open back	Closed back	Dynamic	Electrostatic	Issue No.
JVC HA-D910	60	<b>A</b> Broadly acceptable if unexciting design with low level losses and some colourations	Circumaural			•		121
▲ Jecklin Float Electrostatic	399	<b>E</b> These electrostatics have an openness of sound rarely found in the breed, with good dynamic range to boot	Circumaural	•			•	55
▲▲ Jecklin Float Model One	79	<b>G+</b> Whilst very unusual in appearance, the Floats give remarkable sound quality and openness at a reasonable price	Circumaural	•		•		55
▲ Jecklin Float Model Two	99	<b>G+</b> Helmet shaped and pretty unflattering but open sounding and comfortable in the long term. te lack of adjustment	Circumaural	•		•		63
Kenwood KH-1000	20	<b>A-</b> First step up from a true mini: a near miniature which is cheap, comfortable and inoffensive	Supra-aural		•	•		121
Philips SBC3390	60	<b>A</b> Up front but rather aggressive headphone with lightweight, coloured sound. Not very comfortable	Supra-aural			•	•	121
Quart Phone 75X	70	<b>A</b> Unusually comfortable sealed headphone, though sound isolation poor. Hard, edgy sound quality.	Circumaural			•	•	121
▲▲ Sennheiser HD440 II	30	<b>A+</b> Still the one by which others at the price are measured, though now slightly leaden sounding, cold treble	Supra-aural	•		•		121
▲▲ Sennheiser HD 480II	50	<b>G</b> Not the most accurate cans on the market but amongst the most enjoyable	Supra-aural	•		•		111
Sennheiser HD 540II	100	<b>G+</b> A good but not great headphone that due to its high impedance and efficiency should work well with most sources	Circumaural	•		•		111
▲▲ Sennheiser HD40	20	<b>G-</b> Very light and comfortable headphones with an even sonic balance that will suit most sources. 6.3mm jack	Supra-aural	•		•		75
Sennheiser HD450II	40	<b>G-</b> Makes quite acceptable noises with a variety of outputs, could sound more spacious but is pleasantly relaxed	Supra-aural	•		•		99
▲ Sennheiser HD480 Classic II	60	<b>G</b> Same basic design as the 450 but improved sound quality as a result of aluminium coil and extra damping, natural with good bass	Supra-aural	•		•		99
▲ Sennheiser HD520	65	<b>G+</b> A very comfortable and musically capable headphone. If you've got this sort of bread to blow on cans, give 'em a blast	Circumaural	•		•		75
▲ Sennheiser HD530	75	<b>G+</b> One of the better dynamics in its group, the 530s create a sense of space that eludes most sub £100 cans, and they're dead comfy	Circumaural	•		•		75
▲▲ Sennheiser HD560 Ovation II	125	<b>VG</b> Characteristic slightly heavy sound, but still the benchmark at this price level. High class sound and comfort	Circumaural	•		•		121
▲ Sony MDR-CD1000	150	<b>G+</b> A fine sounding and comfortable headphone that's likely to work well with most sources	Circumaural		•	•		111
▲ Sony MDR-CD3000	300	<b>G+</b> Better than most of the headphone outputs around so hard to make the most of, potentially up there with the electrostatics	Circumaural		•	•		99
▲▲ Sony MDR-CD350	32	<b>G</b> Very impressive, possibly the most open sounding cheap closed back can around, lightweight in balance but transparent	Circumaural		•	•		99
▲▲ Sony MDR-CD550	50	<b>G+</b> A very competent headphone, creates a remarkable sense of space for a closed back design and sounds natural to boot	Circumaural		•	•		99
▲ Sony MDR-CD750	73	<b>G+</b> Reasonably comfortable and eminently listenable these Sonys have characteristically good bass power and relaxed hf	Circumaural		•	•		111
Sony MDR-CD850	100	<b>A+</b> Very comfortable, and reasonable sound - better than most sealed designs - though hardness intrudes	Circumaural		•	•		121
▲ Sony MDR-R10	2500	<b>E</b> State of the art design built to the highest standards. Sound quality reflects this care, being big, clear, sweet and refined	Circumaural		•	•		72
▲ Stax Gamma pro/SRD-X pro	583	<b>E</b> The Gamma pros are like a stethoscope for your hi-fi, revealing subtleties that many loudspeakers fail to resolve	Circumaural	•			•	63
▲ Stax Lambda Signature/SRM-T1	1370	<b>E</b> The Signature when combined with the SRM-T1 valve driver must be the most transparent headphone available	Circumaural	•			•	72
▲ Stax SR Gamma	219	<b>G+</b> The next model down the Stax range from the Lambda, the Gamma is an excellent headphone with little to criticise but the price	Circumaural	•			•	55
▲ Stax SR Lambda Pro/SRD-7SB	559	<b>G+</b> An industry reference, frighteningly revealing, bringing across more information than loudspeakers costing twice as much	Circumaural	•			•	55
▲ Stax SR Lambda Pro/SRM-1	1020	<b>E</b> Extracts layers of information that other headphones only hint at. The SRM-1 has more edge than the SRM-T1	Circumaural	•			•	75
Stax SR34	140	<b>G+</b> The electret driven SR34s are lively and rhythmic with good tight bass and a sweet midrange	Supra-aural	•				55
▲ Stax SR84	210	<b>G+</b> The stepping stone between dynamics and full electrostatics, these electret phones are revealing, open and highly enjoyable	Supra-aural	•				63
Technics RP-F10	100	<b>A</b> Another very comfortable sealed model, modest sound isolation and uneven sound favouring bass	Circumaural		•	•		121
▲▲ Vivanco SR808 Classic	55	<b>G</b> A new mid price reference from a new and interesting source. Good all round, no obvious shortcomings	Supra-aural	•		•		121
Yamaha YHD-1	46	<b>G</b> Stylish semi-folding design with a slightly forward balance that very nearly scraped a recommendation	Supra-aural	•		•		111



## Loudspeakers

Last item in the hi-fi chain, to some extent the loudspeaker is merely the slave of what has gone before, capable only of reproducing a signal as good as it is fed. Nevertheless the distortions (colorations and stereo effects) introduced by loudspeakers (and rooms) tend to be more immediately obvious than those anywhere else in the chain, so careful choosing according to taste is very important.

The average loudspeaker consists of a small-

ish enclosure, much of which may have begun life as part of a tree, plus a couple of drive units hidden 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. Variations on the above formula are specifically identified in the entries. 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 does it go), shown as 'bass from', for the given box size. After that such subtleties as coloration (or lack of it) and dispersion come into the equation.

Careful placement of the loudspeakers within the room is as important as the initial choice of model. See siting columns for guidance. For good stereo they need to be more or less the same distance from nearby walls. Models not ticked as 'floorstanding' will require rigid stands.

## Loudspeakers

Product	£Price	Comments	Size: HxWxD (cm)	Site in free space Bass from (Hz)	Site close to wall Sensitivity (dB)	Floorstanding	Issue No.
ATC SCM20	1461	<b>G+</b> Massively built, invariably informative but the rather forward presentation can be uncomfortable	44x24x31	28	82	•	86
▲ Acoustic Energy Aegis 1	452	<b>G</b> Rich and slightly heavy balance doesn't mask fine mid/treble coherence and transparency. Entry level for all-metal drivers	39x21x26	28	84	•	118
Acoustic Energy AE1	764	<b>G</b> Amongst the best miniatures around, shows exceptional mid focus and coherence, but is pricey and could be more agile.	29.5x18x25	48	84	•	102
▲ Acoustic Energy AE3	1650	<b>G+</b> Solid, authoritative and impressively accurate - if a shade ponderous and slow	63x26.5x37	23	85	•	86
Acoustic Research Pi 3	219	<b>A</b> Lively good value box has extra bass driver to give plenty of thump, but lacks refinement and extension	51.5x21x23	50	88	•	110
Acoustic Research AR M.5	129	<b>A-</b> Pretty enough but a bit too tiny for its own good, it's better suited to auxiliary surround sound duties	22x16x23	50	88	•	114
▲▲ Acoustic Research AR M1	199	<b>G</b> Cutely shaped miniature delivers splendidly unboxy bass and midrange, but is a little marred by a rather bright treble	27x20x26	30	85	•	110
Acoustic Research AR M2	269	<b>A</b> Not necessarily as agile or well balanced as the cute little M1, M2 is larger, louder and still attractively unboxy	41x24x36	28	89	•	118
▲▲ Allison AL100	100	<b>A</b> Loud and lively budget wall-mount is bigger and beefier than most of the competition, if lacking some subtlety and refinement	33.5x24x21.5	30	87	•	94
Allison AL105	170	<b>A-</b> Pretty enough in appearance, sonically the AL105 doesn't really make the grade at the £150 asking price	37x24x21	45	87	•	78
▲ Allison AL110	220	<b>G-</b> Compact bookshelf model is a little dry and mid forward, but bass is extended and solid	40x24.5x22.5	28	86	•	102
Allison AL120	420	<b>A</b> Pretty well balanced if slightly mid forward, but sound quality is a little disappointing for the price	63x28x27	30	88	•	98
Allison MS 200	220	<b>A-</b> Small and solid as a brick, this micro-miniature has limited bass and bright balance, but sounds agile and communicative	25.5x14.5x15	50	85	•	106



# Loudspeakers continued

Product	Price	Comments	Size: HxWxD (cm)	Site Sensitivity (dB)	Site in free space	Floorstanding	Issue No
▲ Apogee Caliper Signature	3998	<b>G+</b> Power hungry full range ribbon panels have remarkable transparency and delicacy, loudness and 'grunt' are a bit lacking	122x70x6.5	30	81	• •	81
▲ Arcam Delta Two	340	<b>G</b> Pretty luxury compact sounds a shade forward and coloured but has dynamic and lively bass for its size	37.5x22.5x27.5	40	87	•	94
▲ Audio Note AN-E	1300	<b>G+</b> Lovely coherence, great midband dynamics and transparency, extended bass and high sensitivity — pity it's so darn ugly!	80x36x28	20	91	•	106
▲ Audio Note AN-J	799	<b>G+</b> Light damping and local unevenness adds some coloration, but doesn't spoil the very lively, dynamic and coherent sound	58.5x33x24.5	25	90	•	110
▲ Audioplan Kontrapunkt	899	<b>G+</b> Sounds as sweet as it looks, dressed expensively in real wood with matching stands. not for bass or loudness freaks	31x24x13	48	83	•	86
▲ B&W 2001	120	<b>A</b> Cunningly concealing its (very real) limitations, this is just about the smoothest and best balanced miniature around	29x18x21	48	87	•	118
B&W 2003	190	<b>A-</b> Flashy and assertive ghetto blaster styling is not reflected in the rather bland, if well balanced sound	43x21x25	30	88	•	122
B&W 610	220	<b>A</b> Bass extension and impressive loudness credentials, but rather indifferent integration and coherence	49x23.5x30	25	89	•	102
▲▲ B&W 620	370	<b>G</b> Has well balanced, laid back and slightly lazy sound that is pleasantly easy on the ears; could do with its own spikes	74x23.5x30	25	89	• •	94
▲ B&W DM600	170	<b>A+</b> An impressively smooth overall balance, but sound is a touch bland with it	35x20.5x25	30	85	•	98
▲ B&W Matrix 801	3495	<b>G+</b> Lacks the transparency of the best panels, and the drama of the best dynamics, but is something of an acoustic tour de force	77/99x56x43	<20	86	• •	81
B&W Matrix 805	845	<b>G</b> Stylish, with remarkable imaging properties, good balance and low coloration, though less successful at musical communication	42x26x22.5	30	87	•	98
▲ Bose 305	390	<b>G-</b> A bit of an oddball, fine dynamic liveliness and a good room match more than make up for the strange stereo imaging and treble	28x45x23	40	88	•	78
Bose 401	456	<b>A</b> Cheaply built but distinctively styled semi-omni floorstander suffers from heavy midbass but still sounds lively and open	78.5x30x28.5	28	89	• •	110
Bose 901 MK6	1496	<b>A</b> The pre-equalised multi-driver 901 is cleverly engineered to deliver exceptional loudness	33x54x32	28	89	•	86
Bose Interaudio 3000XL	170	<b>A-</b> Lots of perceived value and well enough balanced, but low cost engineering results in a crude and unsubtle sound	46.5x29x23	45	89	•	71
Boston HD5	130	<b>A</b> Tiny and prettily shaped miniature has an attractive lack of boxiness, but is a little short of drama and dynamic drive	25x16x18.5	30	86	•	110
Brinkmann Endymion	395	<b>A+</b> Omnidirectional design with rococo styled urn-shaped ceramic enclosure. Distinctly bass light, but impressively coherent	48x29 (diam)	50	85	•	106
▲ Cabasse Bisquine	600	<b>G+</b> Classy French large bookshelf speaker has great coherence and dynamic grip, but a rather mid-forward overall character	48x26x30.5	30	91	•	110
▲ Cabasse Skiff	1500	<b>G+</b> Large floorstanding three-way gives great sensitivity and bass extension with fine dynamic grip	100x30x36	25	92	• •	122
▲ Canon S-30	150	<b>A+</b> Clever and unusual moulded design has attractive lively coherence, along with 'wide imaging stereo' effect	27x22.5x23.5	50	88	•	114
▲ Canon S-50	350	<b>A+</b> Only a small cone miniature at heart, the fascinating styling and extended sweet spot feature make it utterly original.	30x24 (diam)	48	84	•	102
▲▲ Castle Chester	650	<b>G+</b> A brilliant throwback, using horn-type approach to provide startling midrange dynamics and coherence.	94x23x27	45	87	•	98
Castle Durham	250	<b>A</b> Like the slightly larger York, the very pretty presentation is not reflected in a similarly sweet sound	40x22x24	48	88	•	118
▲ Castle Pembroke	400	<b>A+</b> Comfortably recommended, a sweet smooth sound with good overall balance of engineering-based performance	55x37.5x30.5	46	88	•	31
▲ Castle Trent II	190	<b>A</b> Very classy finish for the price, plus a sound that passes muster without setting anything much alight	33.5x18x20	50	88	•	122
▲ Castle Winchester	1499	<b>G+</b> Unconventional and beautifully crafted, large for its bass extension but engagingly agile and attractively open and airy	114x24x47	25	87	• •	90
Castle York	340	<b>A+</b> Pretty little real wood compact has an engaging transparency, good balance and fine timing, could do with more authority	43x22x26	30	86	•	110
▲▲ Celestion 1	109	<b>A</b> Pretty basic performance but at a very basic price — it all sounds a bit scrappy and untidy, but its heart's in the right place	27.5x16x21	50	87	•	114
▲ Celestion 15	389	<b>G</b> Big box and bang for your bucks, short on subtlety and control, but long on both enthusiasm and perceived vinyl wood grain	103x20.5x25.5	28	90	• •	114
Celestion 3	129	<b>A-</b> Now reflex ported, this budget miniature is neat enough all round but sounds terminally unexciting with it	30.5x18.5x22	48	87	•	122
Celestion 5	169	<b>A</b> Cunningly conceived and balanced, the 5 may be a little slow for some tastes, but is well suited to CD-oriented budget systems	35x20.5x26	30	89	•	90
▲ Celestion 6000	1510	<b>G+</b> A genuine full range audiophile quality speaker system — with Star Wars styling to suit a high tech environment	Two box system	30	82	•	C92
▲ Celestion 7	219	<b>A+</b> Good looking large bookshelf size wall-mount has lively up front presentation. Can sound a bit coarse, stand is critical	45x24.5x32	30	87	•	98
Celestion 9	269	<b>A</b> Nicely presented and fair material value, with impressively flat bass-to-mid balance	49.5x20.5x24	30	89	•	102
Celestion SL12Si	629	<b>A</b> Elements of fine sound quality, but this 'grown up' SL6 variation has a lumpy response alongside its improved power handling	53x20x27	50	85	•	66
Celestion SL600Si	820	<b>G</b> Has certain remarkable qualities that some will find irresistible, but needs careful system and room matching	27x20x23	52	82	•	68
Celestion SL6Si	429	<b>A+</b> This stereotype luxury compact can sound a bit dull and congested, but really opens up on Slate Audio stands; favours CD	37.5x20x25	30	86	•	94
Celestion 300	1100	<b>G</b> Splendid bass extension and fine panel-like openness and transparency, but dynamics and timing are suspect, balance very laid back.	100x21x31	<20	86	• •	118
Creek CLS 10	119	<b>A</b> Almost identical to the Goodmans Maxim 3, this neat miniature is very competently engineered, but not desperately exciting	26x17x21	50	85	•	114
Dali 102	230	<b>A</b> Attractive bookshelf model has fine midband focus and bass extension, but treble's a bit restrained and bass a bit detached	37x21x25	30	86	•	114
Dawn Chorus FS	698	<b>G</b> Compact floorstander with superb coherence but rather forward midband. Would suit smaller rooms best	91x26x21	30	86	• •	114
▲ Diamond Acoustics Reference III	895	<b>G+</b> Lovely free stander suffers from indifferent bass alignment, but is fast, coherent, solid and very informative indeed.	87x27.5x28	30	90	•	106
Dynaudio Contour1.3	1199	<b>G</b> Heavyweight luxury finish bookshelf model has good scale and weight but is pricey and a bit ponderous	38x20.5x29	28	86	•	122
▲▲ Epos ES11	350	<b>G+</b> Integral baffle/driver to give a remarkable combination of low coloration, transparency and speed; bass is a bit shy	37.5x20x25	45	86	•	94
▲ Epos ES14	515	<b>G+</b> Substantial stand mount delivers delightful midrange focus and delicacy with good bass control. System sensitive	49x22.5x29	25	85	•	98
▲ Faraday FS1	225	<b>A+</b> Concrete box on a budget, works surprisingly well despite cheap drivers, wood veneers here Direct sale only	47x27x28	45	86	•	114

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## Loudspeakers continued

Product	£Price	Comments	Size: HxWxD (cm)	Site in free space Sensitivity (dB)	Site close to wall Sensitivity (dB)	Floorstanding	Issue No.
Faraday FS5	589	<b>G</b> Pricey and ugly, but with its own sonic charm, thanks to substantial influence of the concrete enclosure has upon the sound	46x27x26	28	90	•	102
Faraday Siren	330	<b>A-</b> Interesting if ugly high mass concrete cabinet is let down by imbalance of ageing driver combination	46x27x27	48	87	•	94
Genexa SE100	150	<b>A</b> Tandy-stocked miniature is attractively lively, coherent and communicative, could do with more grunt and lower coloration	28x15.5x19	50	84	•	110
▲ Goodmans Maxim	120	<b>A</b> Budget miniature offers well balanced strengths and few weaknesses at a very realistic price; a bit feeble	26x17x20	30	85	•	122
Harbeth HL Compact	584	<b>A</b> Clean, neutral sound lacks resolution and gives rather unobtrusive though well differentiated stereo.	52x27.2x28.1	65	87	•	59
Harbeth LS3/5A	379	<b>A</b> Still a classic miniature, though not to every taste, and none the better for the recent update under our listening conditions	30.5x19x16	60	81	•	66
▲ Harbeth HL-P3	400	<b>G</b> Very limited loudness but impressive full-range scale from uncoloured and very well balanced but time-smearing sub-miniature	31x19x17	23	82	•	118
Heco Presto Superior 750	650	<b>A</b> Tall slim and attractive floorstander delivers a fine, even in-room balance but lacks transparency, coherence and dynamic drive	95x24x27	22	87	•	106
Heco Reflex 10	160	<b>A</b> Nicely balanced small bookshelf is a competent rather than exceptional package for the price, thanks to indifferent build.	32x21x23	30	90	•	102
▲▲ Heybrook HB1 S3	250	<b>G</b> Latest version of long established favourite delivers good liveliness and fine coherence for the price	47x29x24	30	88	•	98
▲ Heybrook Prima	120	<b>A+</b> Neat and discreet miniature delivers fine coherence, pace and timing, though balance is a trifle forward and bass a bit light	29x19.5x18	50	86	•	110
▲ Heybrook Quartet	555	<b>G</b> Beautifully presented and built large bookshelf model with good sensitivity and a lively, forward sound	41x24x23	48	89	•	122
▲ Heybrook Sextet	1079	<b>G+</b> Engagingly coherent and a highly analytical, partly due to distinct and always comfortable upper-mid forwardness	96x27x20	25	85	•	102
▲ Heybrook Solo	170	<b>A+</b> Discreetly styled, sounds a little untidy in both bass and treble but handles complex rhythmic material much better than most	36x23x22	28	87	•	90
▲ Heybrook Trio	349	<b>G</b> Same drivers as HBS1 in prettier real wood enclosure give a sweeter and more forgiving if less committed sound	47x24x25	45	89	•	118
Infinity Modulus	795	<b>A+</b> Carefully conceived and beautifully built. Undeniably attractive in the mid and treble, it failed to handle the bass as well	30x18x26	45	84	•	86
▲ Infinity Reference 10	180	<b>A</b> An engaging and lively sound from a prettily finished and substantial small bookshelf size model	36x23x23	50	87	•	98
Infinity Reference 20	230	<b>A</b> Well presented and balanced with good bass control, but somehow lacks convincing cohesion and agility.	46x27x24	27	88	•	102
▲ Infinity Reference 30	400	<b>G</b> Budget price floorstander has good overall balance and bass extension, but is rather coloured and uneven	86x27x24	25	89	•	122
Infinity Reference 50	550	<b>A-</b> Despite hi-tech drivers, good bass extension and sensitivity, this three-way suffers from a forward, coloured sound	86x26.5x25	25	89	•	98
Jamo 307	300	<b>A-</b> Beautifully styled bookshelf baby places more emphasis on presentation than basic engineering	32x18x27	48	86	•	122
JBL Control 1 Plus	250	<b>A</b> Sub-miniature with forward midrange and real bass; highish price partly justified by near-indestructible Pro build	23x15.5x14	50	89	•	90
JBL L1	450	<b>G</b> Good power handling, decent transparency and deep but current hungry bass from a compact and solid enclosure	40x21x25.4	47	87	•	121
JBL L1000	1500	<b>G</b> Ultra-engineered, beautifully crafted bookshelf model. Performance compromised by over enthusiastic midbass output from port	44x30x28	45	89	•	118
▲ JPW AP2	180	<b>A</b> Offers real wood veneer at a bargain price; performance is cleaner but broadly comparable to P1 Vinyl overall	43.5x25.5x26	45	86	•	106
▲ JPW AP3	225	<b>A+</b> Pretty good stereo and well balanced overall it had its own character which is well suited to vinyl replay	52x25x29.5	57	90	•	46
▲ JPW Minim	79	<b>A-</b> Very civilised but dynamically limited, the Minim is well suited to the smaller room and where limited loudness is acceptable	27.5x18x19.5	28	85	•	82
▲▲ JPW Mini Monitor	£60	<b>A-</b> Ultra cheap Richer Sounds special is lightweight and short of welly, but a snip for surround sound use	27x18x17	50	85	•	122
▲ JPW P1	155	<b>A+</b> Honest and basically articulate if not very sophisticated, resolution is good but can sound a little wearing in bright systems	44x25.9x26.1	60	89	•	59
▲▲ JPW P1 Vinyl	135	<b>A</b> A lot of highly competent loudspeaker for the price, with a safe sound that's unlikely to disappoint.	43.5x25.5x26	32	87	•	102
▲▲ JPW Sonata	115	<b>A+</b> Well balanced and integrated, offers fine sound if limited bass and dynamic range, plus real tree wood at a nearly silly price	32x23x20	55	86	•	71
JPW Sonata Plus	135	<b>A-</b> This luxury variation on the redoubtable Sonata theme features a metal dome tweeter, and isn't the better for it	32x23x21	30	87	•	90
▲ JRT AD1	500	<b>G+</b> A fair share of cosmetic deficiencies do little to spoil the impressive coherence and timing	59.5x28x36	28	86	•	86
▲ JRT AD1 Micro	389	<b>G</b> Delightful life and coherence, gives surprising impression of scale; some aggressive tendencies but very open to system tuning	28x17x21	50	87	•	94
Jamo Concert II	330	<b>A-</b> A respectable 'bookshelf' performer that needs free space siting but includes attractive cabinetwork and a neat grille	41x24x25	48	85	•	66
Jamo Concert V	500	<b>A</b> Compact, solid, nicely finished delivers unusually extended bass at the expense of lowish sensitivity; midband is laid back.	86x24x28	20	85	•	102
Jamo Concert VII	800	<b>A</b> Beautifully built, uses unusual double reflex bass system, unsuccessfully as far as low frequency resolution is concerned	96x28x31.5	25	87	•	94
▲ Jamo Cornet 50	150	<b>A+</b> Good value bookshelf size speaker has a rough and ready sound but good heart, engaging liveliness and fair timing	42x23x22.5	28	87	•	110
Jamo Silhouette	400	<b>A+</b> Tall, slim and rather elegant in its way, doesn't sound bad for a styling exercise, just a bit rich and polite	122x24.7x17	45	88	•	114
▲ Jordan JH400	504	<b>A+</b> Piano finish hexagon has single full range driver and controversial sound, with uneven balance but delightful mid coherence	33x24x30.5	50	83	•	106
KEF 101/2	549	<b>G-</b> Small high class wall-mount has a beautifully even, slightly dull balance, fine freedom from boxiness, but not much bass drive	33x26.5x26	50	86	•	114
▲ KEF 104/2	1495	<b>G+</b> A reference point for dynamics, preferred without KUBE, suited to many rooms. Good stereo, high sound level	90x28x41.5	50	92	•	60
KEF K120	169	<b>A</b> Physically pretty and sonically competent but undistinguished bookshelf size model has good sensitivity but limited extension	34x20.5x26	45	87	•	106
▲ KEF Q80	549	<b>A+</b> Uni-Q floorstander has good stereo and fine midband coherence, but bass lacks extension, drive and resolution	85x24.5x26.5	45	87	•	106
KEF Q90	700	<b>A</b> Generous floorstander has even balance and decent extension but fails to communicate excitement and involvement effectively	90x25x32	25	88	•	118
Kammerzell Ref Mini Monitor	425	<b>G</b> A beguilingly sweet sound with good pace and drive, but scale is restricted and presence a little dulled considering the price	27x17x24	50	85	•	94
▲ Kenwood LS-770E	260	<b>G</b> Impressively communicative bookshelf model has fine vigour, scale and dynamics, if not the smoothest sound around	48x27x25	25	89	•	106
▲ Kenwood LS-500G	500	<b>G</b> Japanese designed and built luxury compact delivers an invigorating and exciting sound; an interesting contrast to some lazier models	45x23x26	48	89	•	118
▲▲ Legend II	200	<b>G</b> Liveliness, coherence and fine information retrieval justifies the odd looking moulded baffle construction	37x21x30	48	88	•	122
▲▲ Linn Index II/KuStone	374	<b>G</b> Stand and speaker looks and sounds very good, good bass extension and control, fine dynamic range. Clean, clear if a shade slow	44x21x23.5	28	86	•	90
▲ Linn Kaber	1198	<b>G+</b> Dry, bright balance emphasises superb dynamic range and transient precision, but can sound unforbearing	89x19x29	25	85	•	118
Linn Kan II	530	<b>A+</b> Niche product for those prepared to tolerate its strong character for the sake of fine bass performance and near invisibility	30.5x18.5x16.5	35	82	•	78
▲ Linn Keilidh	579	<b>G+</b> Stunning timing and coherence and awesome bass drive, especially with ceramic plinth; sounds a bit shut in	83x20x27.5	22	87	•	114
Living Voice Air Partner	11990	<b>E</b> Formidable horn design with astounding transparency, dynamics and speed. Its idiosyncracies are compensated by sheer energy	165x64x92	40	101	•	117
▲ Magneplanar MG1.4	1090	<b>G+</b> Offers a very crisp and articulate sound, particularly revealing of upper mid vocal details	155x8x57	40	88	•	72
Magneplanar SMGa	688	<b>A</b> Tonally 'rich', in the right room it proved a satisfactory musical experience	122x48x4.5	56	85	•	46
Marantz DS110	200	<b>A+</b> Pretty near-miniature trades bass extension for sensitivity, delivering fine midband dynamics but little grunt	33x19.5x20.5	55	88	•	114
Marantz DS220	300	<b>A+</b> Nicely shaped and presented large bookshelf model sounds competent rather than inspired; a touch too heavy	37x23x26	50	88	•	122
▲ Martin Logan CLS II	4200	<b>G+</b> High resolution design, fussy about system set-up, demanding of ancillaries and software alike. It rewards the efforts though	60x28x7.5	45	86	•	72
Meridian Argent 1	995	<b>G+</b> Beautifully built, finished and shaped, has fine bass extension and virtual absence of 'boxiness'; needs a big amplifier	33x27x27	28	83	•	98
Meridian Argent 2	875	<b>G</b> Beautiful high-tech 'large compact' delivers extended, smooth and neutral sound with fair speed. Slate Audio stands essential	48.5x21x29.5	23	85	•	94
Meridian M30	950	<b>A</b> Pricy active speaker, easy on the ears and worth considering especially where space is at a premium	38.5x18x32	40	NA	•	46
▲ Mission 753	700	<b>G+</b> Gorgeous presentation and potential for open transparency. Floorstander with lots of drivers that gives lots of loudness	90x22x30.5	45	88	•	114
▲ Mission 760i	130	<b>A+</b> Attractive little wall-mount miniature has livelier dynamics and bass drive than most of its type, but sounds as little shut in	29.5x18x20	48	87	•	110
Mission 761i	180	<b>A</b> 760 theme adds an extra driver for easier amp loading and power handling. Slightly inferior to simpler, cheaper 760i	38x19x24	48	88	•	102



# Loudspeakers continued

Product	Price	Comments	Size: HxWxD (cm)	Site Sensitivity (dB)	Site in free space	Floorstanding	Issue No.
Mission 764i	480	<b>A</b> Generous and handsome floorstander looks fine material value for money, but good scale sound has lazy tendencies	89x25x32	22	86	• •	118
Mission 765i	680	<b>A+</b> Big heavyweight floorstander has good sensitivity and bandwidth, but somehow lacks agility, authority and dynamic grip	102x25x33	22	91	• •	110
Mission Cyrus 751	300	<b>G</b> Potentially promising high class baby suffered early production inconsistency: full retest scheduled soon	32x17x27	50	86	•	122
Monitor Audio MA1800	1350	<b>A+</b> Even when ballasted with lead shot the 1800 inclines towards upper bass richness and lacks genuine extension	106x22x32	30	88	• •	81
Monitor Audio MA700 Gold	400	<b>A</b> Luxury compact does a good job of voice reproduction, but sounds a bit lazy and off the tempo with faster, busier material	35x21.5x25	50	85	•	110
Monitor Audio MA1200 Gold II	1200	<b>G</b> Pricey but classy floorstanding variation on MA800 theme; beautifully voiced midband, heavy midbass	93.5x17x27	28	85	• •	122
Monitor Audio MA800	600	<b>G</b> Beautifully finished compact has a delightfully even and uncoloured midband transparency, sensitivity and bandwidth are limited	51.5x20x27.5	45	85	•	114
▲ Monitor Audio Monitor 11	330	<b>G</b> Tall, slim and attractive compact has an extra driver to help out in the bass, giving extra urge at some price in delicacy	52x20x24	48	87	•	94
Monitor Audio Monitor 14	400	<b>A</b> Suffers from excess upper bass, giving a thick, chesty coloration beneath a quite lively and well focused mid and treble	78x20x24	30	86	•	98
Monitor Audio Monitor 7	180	<b>A</b> Lively and punchy, looks pretty enough and is good value but is let down by an unruly and indifferently integrated tweeter	34x16.5x17	70	84	•	74
Monitor Audio Monitor 9	210	<b>A</b> Despite a much better treble balance than the 7, the 9 is less engaging and lively at low frequencies than its smaller sibling	37x20x21	30	85	•	78
▲ Monitor Audio Monitor One	150	<b>A+</b> Pricey but cute micro-miniature just about gets away with it sonically, though performance envelope is inevitably limited	24x15x16	55	85	•	106
Monitor Audio Studio 10	1200	<b>A+</b> All-metal driver diaphragms provide engagingly transparent midrange and treble, spoiled by over-strong mid-bass.	40x20x25	45	87	•	90
▲ Monitor Audio Studio 15	1600	<b>G</b> A little slow and lazy but better balanced than the smaller Studio models, the midband coherence and focus is superb	51x20x26	45	87	• •	102
Monitor Audio Studio 5	650	<b>A+</b> All metal diaphragm luxury miniature has splendid presence coherence but sound can be aggressive and lacks welly.	32x18x20	28	83	•	98
Monitor Audio Studio 6	800	<b>A+</b> Pretty but pricey metal diaphragm compact has clear and transparent midband but is ultimately lacking in vim, vigour and drive.	35x22x25	45	86	•	118
Mordaunt-Short 5.10	130	<b>A</b> Plenty of well engineered speaker for the money, and smoother than most of the competition, but lacks timing and enthusiasm	30.5x18.5x21.5	50	85	•	110
Mordaunt-Short 5.20	150	<b>A</b> Lots of speaker for your money, but not as smooth or well balanced as other M-S 5-series models	36x21.5x21.5	45	87	•	114
Mordaunt-Short 5.30	220	<b>A-</b> Good hi-tech material value for money, but a disappointingly dull and rather bland sound. Safe but uninspiring.	42.5x25x28	28	86	•	106
▲ Mordaunt-Short 5.40	299	<b>G</b> Elegant near-floorstander has an even balance that makes it very easy on the ears, yet also inviting and informative	64x21.5x26.5	28	85	•	110
Mordaunt-Short Classic 20	395	<b>G+</b> Luxuriously finished, beguiling mid transparency, bass is altogether less convincing	37x22x27	45	86	•	102
Morel Bassmaster 602	1200	<b>G+</b> Superbly built compact stand-mount, did well in listening tests but suffers (enjoys?) upper midband peak	24.5x40x22.5	25	84	•	114
Musical Fidelity MC-3	400	<b>A+</b> Solid and authoritative large bookshelf model gives fine stereo and decent dynamic drive but balance is rather shut in	47x26x28	25	88	• •	118
▲ NVA Cube 1	720	<b>G+</b> Attractive, semi-omni is very sturdily built, and gives an idiosyncratic but unusually open, spacious and informative sound	33x32x32	52	85	•	71
▲ NVA Cube 2	480	<b>G</b> A rude but exciting miniature, with unusually accomplished bass capabilities for its size	28.5x27x28.5	48	85	•	82
NVA Cubix	1400	<b>G</b> Too idiosyncratic for recommendation, the Cubix possesses remarkable bass extension for its size, but is tricky to optimise	60x32.5x32.5	28	84	•	78
Naim NA IBL	823	<b>G</b> This tiny floorstanding wall mount delivers outstanding dynamics, speed and detail, marred by pronounced upper mid forwardness	80x18x15-20	30	84	• •	94
▲ Naim SBL	1584	<b>G+</b> Impressive scale, full bandwidth, coherent, attractively discrete, coloured midband, very well balanced and agile	88x26.5x17-27	25	86	• •	102
▲ Neat Petite	525	<b>G+</b> Far from perfect, but one of the most entertaining and enjoyable speakers around, colorations notwithstanding.	30.5x20x18	33	86	•	102
Nobis DM7	560	<b>G</b> Pretty US bookshelf model has more than enough speed, timing and coherence to make up for a measure of coloration	38x21.5x28.5	25	85	•	110
▲ Origin Live OL2A	469	<b>G</b> Compact floorstander sounds open, transparent and evenly balanced; needs a big amp but enjoys hard driving	82x19x19	25	85	• •	122
Origin Live OL1	499	<b>G</b> Luxury miniature has very good overall balance, sacrificing sensitivity to achieve remarkable bass extension for the box size	30.5x19x21	25	82	•	106
Philips FB820	470	<b>A</b> Big-but-less-than-beautiful three-way is well enough balanced but lacks communication skills in the time domain	86x27x35	28	87	•	98
▲ Philips FB825	700	<b>G</b> Generous sounding and impressively uncongested, loudness and bass extension don't quite match plasticky looks	110x29x41	25	88	• •	90
Pioneer S-4UK	250	<b>A+</b> Carefully developed minimalist audiophile design has some vigour but suffers an intrusive upper mid peak	37x21x28	50	87	•	122
▲ Pro Mon Co LB1	998	<b>G+</b> Delightful smoothness and transparency, though bass extension and sensitivity are both limited	53.5x18x26	33	86	•	110
Professional Monitor Co AB1	1600	<b>G</b> Bulky stand-mount transmission line has lovely panel-like transparency, slightly shut in balance, and needs a big room	79x27x43	22	89	•	114
QLN Model One	700	<b>A</b> Model One exaggerates the Signature's rich and heavy midbass and lacks its velvet smoothness	35x25x27	28	85	•	82
QLN Signature	1100	<b>G</b> Luxury compact has a rather laid back and 'heavy' sound, but coloration is low and stereo imaging very good	37x18x36	30	83	•	78
▲ Quad ESL-63	2384	<b>G+</b> This classic electrostatic may not be punchy in the bass, but has strengths that some can't live without	92x66x27	34	84	• •	60
▲ Rega EL8	298	<b>G</b> Kyte drivers in compact floorstander give more bass but a shade less coherence; good for small rooms and budget systems	75x16.5x21	55	86	•	122
▲ Rega ELA	405	<b>G</b> Very compact floorstander with integral stand has serious coherence and dynamics, but a measure of brightness and untidiness	84.5x20x30	30	86	•	110
▲ Rega Kyte	198	<b>G</b> Has splendid timing and coherence, sounds very explicit and informative, if a bit bright and short of grunt	31x19x20	50	87	•	114
Richard Allan CD5	176	<b>A-</b> Neatly presented small reflex design can sound engagingly communicative, but is flawed sonically and technically	38x19x23	80	88	•	68
▲ Rogers LS2a/2	220	<b>G</b> Balance is a bit warm and rich but 2a/2 has delightful mid-to-treble coherence and transparency, and more welly than Mk1	35.5x23x22	30	84	•	106
Rogers LS4a/2	300	<b>A+</b> Civilised but a trifle lazy, this large bookshelf model hasn't quite the timing or agility to be particularly engrossing	43x25.5x25.5	25	86	•	110

## Audio Designs



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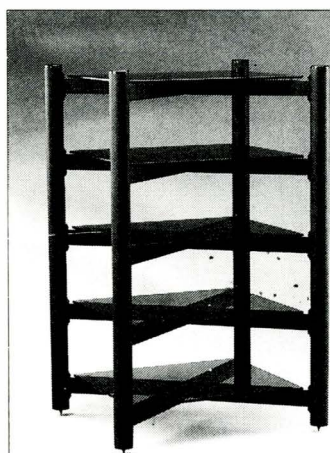
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## Loudspeakers continued

Product	Price	Comments	Size: HxWxD (cm)	Site Sensitivity (dB)	Site close to wall Bass from (Hz)	In free space	Floorstanding	Issue No.
Rogers LS6a/2	350	<b>G</b> Largish stand-mount is well built, measures well, good material value, but sounds a bit heavy and lacklustre	51x28x29.5	22	87	•	•	114
Rogers LS8a	450	<b>A+</b> A mixed bag, with plenty of scale and welly but lacking the subtlety, clarity and agility delivered by some rivals	89x25.5x25	48	91	•	•	102
Rogers Studio 3	450	<b>G</b> Pricey LS3/5A-derived wall-mount sub-miniature is excitingly coherent if a bit lightweight; no real loudness capabilities	31x19x17	30	83	•	•	118
Rogers Studio 1a	599	<b>G-</b> Classic BBC monitor sound sensitively updated – transparent and natural with fine stereo, but a touch 'heavy' in balance	63.5x30.5x30.5	36	87	•	•	66
Rogers Studio 7	880	<b>G</b> Latest variation on classic BBC-monitor theme looks old fashioned but has beautifully voiced, laid back sound	63x30.5x30.5	30	88	•	•	122
Roksan Darius	1895	<b>G+</b> Provides an exceptionally impressive combination of transparency and delicacy with fine information retrieval and speed	47x27x40	20	82	•	•	86
Royd Topaz	173	<b>A+</b> Cheerful, articulate and essentially communicative miniature can also sound a trifle scrappy and shut in; well worth trying	30.5x20.5x19	50	87	•	•	114
Royd Abbot	666	<b>A+</b> Engaging and dramatic dynamics and fine transient coherence are hampered by a rather coloured mid-forward balance	83x20x34	43	88	•	•	118
Ruark Swordsman Plus	299	<b>A</b> Real wood variation on the Swordsman theme looks and measures rather better than it sounds	38x20x28	27	84	•	•	98
Ruark Templar	479	<b>A+</b> Compact floorstander with striking baffle has decent bass/mid but dull treble; could tame over-bright system	73x19x27	25	85	•	•	122
Ruark Talisman 2	700	<b>G</b> Less ideologically committed than some compact floorstanding rivals, its key strength lies in fine all round compromise	86x25x31	30	86	•	•	118
SD Acoustics Ribbon	2295	<b>G+</b> Amplifier sensitive, Ribbon is a lively and loud hybrid marred by some colorations; some like it, others don't	152x30x(15-30)	30	91	•	•	81
SD Acoustics SD1	1650	<b>G+</b> A large scale, airy and unusually detailed system with excellent dynamics. A warmer balance than original model	123.5x38.2x32	50	90	•	•	60
SD Acoustics SD3	399	<b>G</b> Port firmly blocked, the new SD3 has the agility and charm of a quality miniature, with good bass extension but low sensitivity	38x19.5x29	25	83	•	•	106
SD Acoustics SD4	699	<b>G</b> Tall slim floorstander has fine balance, good bass extension and lovely open midband transparency	100.5x20x30.5	25	85	•	•	114
Sequence 30	200	<b>A</b> Radical slimline hang-it-on-the-wall design has performance comparable to a typical miniature, with reasonable overall balance	87x25x7	50	85	•	•	114
Shahinian Arc	1062	<b>G</b> Unusual and occasionally wonderful small floorstanding omni; too bright but exceptionally coherent and revealing	69x35x25	24	85	•	•	110
Snell JIII	770	<b>G</b> Dated styling belied by fine sensitivity and bass extension, and a lively if slightly untidy and not quite coherent sound	58x33x25	30	89	•	•	118
Sony APM-101ES	120	<b>A</b> Big hearted sound from small bookshelf model, sounds a little untidy at frequency extremes, so suits CD better than vinyl	39.5x22.5x23.5	52	86	•	•	71
Sony APM-121ES	170	<b>A-</b> Good perceived value, but balance has an artificial 'loudness', too rich in the bass and too strong in the treble	43x25x28	25	86	•	•	86
Sony APM-181ES	350	<b>A</b> Big, beefy, fat and bass heavy, has table strengths but lacks transparency and sounds better at lower levels	57.5x29x36	40	87	•	•	71
Spendor S20	535	<b>G</b> Maintains Spendor's tradition for peerless mid-to-treble coherence and perspectives. Bass is rather unconvincing.	38x22x26	25	83	•	•	102
Spica Angelus	1295	<b>A</b> A little bass shy and soft in the bass and lower mid, otherwise tidy, extremely lively and fluid, if uneven overall	116.8x53.3x26	50	86	•	•	60
Spica TC50	599	<b>G</b> This triangular-profile 'grown up' miniature is a shade boxy and laid back but has good rhythmic and musical integrity	40.5x33x29	55	88	•	•	71
Spica TC50SE	799	<b>G</b> A heavily UK-modified TC50, the SE sounds less boxy and more spacious, but lacks some of the urgency of the standard model	40.5x33x29	55	88	•	•	71
TDL Monitor	1999	<b>G+</b> Fine solidity and good accuracy, with great bass extension. Needs a big room and can sound a bit lazy and a shade tinkly	118.5x30x47	28	85	•	•	66
TDL Studio 0.5	450	<b>G</b> Tiny floorstanding transmission line has good agility but doesn't provide the coherence or even balance of Studio 1	55x20x30	40	85	•	•	94
TDL Studio 1	650	<b>G</b> Genuinely extended bass from a compact enclosure, very detailed but a shade clinical and detached in presentation	76x23x33	25	84	•	•	78
TDL Studio 1M	900	<b>G+</b> Transmission line helps bring the best from metal cone driver: lovely transparency and fine bass extension	81x23x33	<20	84	•	•	118
Tannoy 607 MkII	220	<b>A</b> Large bookshelf, smart hexagonal box has fine bass for the price, but treble sounds rather shut in	50x32x24	25	88	•	•	122
Tannoy Westminster	6000	<b>G+</b> These awesome horn loaded speakers are remarkably controlled and impressive, if only suited to a few pockets and rooms	Huge	38	96	•	•	Col
Technics SB-EX2	180	<b>A</b> Nicely presented, well built and decent size enclosure sounds solid but somewhat dull	48x23.5x27	20	86	•	•	98
Technics SB-RX50	650	<b>A+</b> A smooth and well balanced loudspeaker, its minor weakness being a mildly excessive low bass	48x30x26	40	86	•	•	46
Thiel SCS	1069	<b>G+</b> Luxury piano-gloss compact sets class-leading standards for coherence and communication, can sound a shade dark and shut in	40x22x23	45	87	•	•	114
Thiel CS1.2	1219	<b>G</b> Elegant compact floorstander has fine balance and dynamic range, but transient timing and dynamics are less convincing	94x27x27	30	86	•	•	118
Totem Model One	995	<b>G</b> Utterly delightful but exasperatingly expensive luxury miniature sets the benchmark for its size	31x16.5x23	28	86	•	•	122
Vandersteen Model One	1395	<b>G+</b> This compact American floorstander's elegant staggered baffle arrangement contributes to a refreshing freedom from boxiness	100x30.7x25.6	23	87	•	•	86
Visonik David 6001	173	<b>P</b> Sharp styling but the complex grillework worsens a sound which starts off with too much top and not enough bottom	20x12x13	130	87	•	•	74
Wharfedale 425	200	<b>A+</b> Large bookshelf size 505 heir shows fine control and a conservative balance ideally suited to quality systems on a budget	40x27x26	45	87	•	•	118
Wharfedale 515	260	<b>G</b> An update on the 505 theme, this is still more evenhanded, with better bass extension and smoother treble.	40x25.5x30	28	85	•	•	106
Wharfedale 517	400	<b>A</b> Half as big again as the 515, should offer an improvement, but somehow has a less effective overall subjective balance	53x26.5x34	25	86	•	•	110
Wharfedale Delta 30.2	100	<b>A</b> Has a bigger main driver than many, and so packs a bit more welly and loudness. Coloration is rather obvious, but timing is good	38x22x17	48	88	•	•	98
Wharfedale CRS3	110	<b>A+</b> Loads of fun — a remarkably coherent and lively performer at any price; pity it doesn't look prettier	38x22x18	50	88	•	•	122
Wharfedale Diamond V	130	<b>A</b> This miniature is smoother than most, but rather stodgy with it, inspiring little enthusiasm among our listeners	27x18x20	50	86	•	•	114
Yamaha NS 1000M	1100	<b>G+</b> Living up to its monitor label, and tonally well suited to digital material, it's superbly crafted and capable of high levels	67.5x37.5x32.5	40	90	•	•	46
Zyp A1	199	<b>A+</b> Cute metal cased micro-miniature is quite coloured but great fun, with surprising dynamics and fine wall-loaded room balance	22.5x14.5x13	30	85	•	•	110



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# Tuners



The radio medium operates at a much lower profile than TV, but in areas outside pop music the BBC service is the envy of the world. Live Prom concerts can rival all other sources from a hi-fi perspective.

Only the FM (VHF) bands give stereo hi-fi sound, though AM (MW & LW) are useful for certain transmissions in the UK.

Something of a hi-fi afterthought, tuners are often selected merely to match a chosen amplifier

cosmetically. However, the task they carry out is far from simple, combining the skills of RF (reception) and audio (signal processing) engineering. The importance of the former will depend on local reception conditions, but money invested in a high quality outside aerial system is well spent.

Tuners come in two basic types. Analogue models tune gradually (and usually manually) across the bands, and can have analogue or digital

displays; they are often preferred for sound quality, and are certainly best for AM bands. Digital tuners offer convenient automatic tune facilities and pre-set memories.

The 'Presets' column heading shows how many different frequencies a tuner can memorise for instant access. FM, LW and MW show which wavebands it can access. 'Signal strength meters' are useful for aerial alignment. 'Automatic tuning' means that a tuner can seek out signals for you.

## Tuners

Product	EPrice	Comments	Presets	Signal strength meter			Automatic tuning		Issue No.
				FM	LW	MW	Manual tuning	Issue No.	
Aiwa XT-003	110	<b>A-</b> Economically designed and built in the UK, but trade-offs have a marked influence on FM and AM sound quality.	30	•	•	•	•	•	93
▲ Akai AT-93L	280	<b>G+</b> By AM standards presentable (good) while FM delivers the goods	20	•	•	•	•	•	65
▲ Arcam Alpha 2	185	<b>A+</b> Arcam's cheapest tuner makes up for its lack of features with a sensitive front-end and mellow sound.		•		•	•	•	93
Arcam Delta 280	350	<b>G+</b> Fine sound quality marred by mild synthesiser whine; RF performance only average, remote £60 extra	20	•			•	•	120
▲▲ Audiolab 8000T	700	<b>VG</b> Unusually combines fine sound quality and RF performance (inc AM); superb ergonomics are a joy to use	39	•	•	•	•	•	120
Aura TU-50	260	<b>G</b> Tonally neutral, but with rather poor imaging and a certain woodenness to the sound.	16	•			•		109
Creek T40S3	250	<b>A</b> Analogue tuner. Sample was hampered by an obvious bass 'hump', production units are said to be cured		•				•	93
▲▲ Denon TU-260L	120	<b>G+</b> Bare minimum of features. Careful designwork promises a surprisingly open and vivacious sound, so don't overlook it!	20	•		•		•	93
▲ Denon TU-580RD	220	<b>G</b> Fine feature package including remote and RDS, plus excellent RF performance and decent sound quality	30	•		•	•	•	120
Harman Kardon TU9200	200	<b>A</b> The listening panel appreciated its liveliness, but found it a little muddled.	32	•		•	•	•	109
▲ Harman Kardon TU9400	270	<b>G+</b> Striking in appearance and with a sound to match, it comfortably exceeded our expectations. On stereo FM it's HK's best yet.	24	•		•	•	•	93
Harman Kardon TU9600	380	<b>G</b> Good bass and detail, and good - perhaps slightly enhanced dynamics	24	•		•	•	•	109
Kenwood KT-3050L	170	<b>A</b> Excellent RF performance and plenty of features including RDS, but did sound rather ordinary under our conditions	39	•	•	•	•	•	120
▲ Linn Kremlin	1779	<b>E</b> Controversially good sound at a very high price. The reviewer's saving up but you should check it out for yourself	80	•			•	•	120
▲ Magnum Dynalab FT101	795	<b>G+</b> Although expensive for its fairly minimum set of facilities, its excellent sound makes up for what it lacks elsewhere		•			•	•	72
▲ Marantz ST-40L	120	<b>G</b> Slow to tune but provides a meaty and dynamic sound on FM. AM too has a little extra bite to its performance	30	•	•	•		•	93
Meridian 204	660	<b>G</b> Pleasant sounding with a fine finish but does not make the grade at this price	18	•				•	55
▲ Meridian 604	1350	<b>VG</b> Unique digital convertor makes most sense in Meridian system context; smooth sweet sound with fine front end	30	•			•	•	120
▲ Naim NAT 01	1425	<b>E</b> There may be better sounding tuners in the world, but we have yet to hear one		•				•	50
Nakamichi ST-7E	765	<b>G+</b> Exceptionally good for weak-signal areas, and good all round	16	•	•	•		•	55
▲ Pioneer F-676	200	<b>VG</b> A tuner that's detailed and clean-sounding. Perhaps a little bright, but not unpleasant.	36	•		•		•	108
▲ Quad FM4	424	<b>G+</b> Fine sound, excellent ease of use, good build and finish and a more than satisfactory technical performance	7	•			•	•	50
Quad 66	519	<b>G+</b> Very pretty and compact but technically unadventurous. Smooth sound but only makes sense in Quad system context	19	•			•	•	120
▲ Rotel RT-930AX	160	<b>G-</b> A competent rather than exciting performer, with low audible interference though slightly compressed and muddled sound.	20	•	•	•		•	108
▲ Rotel RT-950BX	200	<b>G+</b> Fine fast and coherent sound quality for price, but RF performance only adequate and sample build was suspect	20	•	•	•	•	•	120
Sherwood TX-3010C	120	<b>A</b> Lots of features and fine RF discrimination for price. Sound is communicative but inconsistently tacky	30	•		•	•	•	120
Sony ST-S570ES	230	<b>A</b> A host of features, but the sound is muddled, compressed and lacking in frequency extremes.	30	•	•	•		•	109
▲ Technics ST-G70L	200	<b>G+</b> Another very polite and refined-sounding tuner but one that does retain just enough sparkle to keep your interest. Plenty of widgets	39	•		•		•	93
▲ Yamaha TX-950	260	<b>G+</b> Very clean and civilised, tonal balance, detail and clarity are all very good, lots of useful features	40	•		•		•	108



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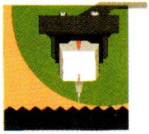
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# Turntables – cartridges



Cartridges fall into two groups: high output models, capable of working directly into most amplifiers and categorised as having a normal (N) output, and more expensive low and very low output models (L, VL). Stereotypically, low output cartridges use the moving coil principle of operation, have better mechanical integrity and tighter tolerances, and

give better performance but at much higher cost. With CD now the dominant medium many amplifiers are no longer equipped with the necessary phono input for a cartridge and a separate phono stage is necessary. Valve designs need either an extra head amp or transformer to cope with the low output of moving coil cartridges.

Cartridge/amplifier interfacing can be very

subtle, but even basic high output MM designs benefit in overall balance from optimised amplifier capacitance loading. The mechanical characteristic of cantilever compliance ('springiness') needs to be considered in the light of the effective mass of the tonearm, and to achieve a good match compare the effective mass requirements figures with the actual effective mass of specific arms.

## Turntables – cartridges

Product	Price	Comments	Arm effective mass (g)	Output	MM	MC	Issue No.
▲▲ Arcam C77	30	<b>A+</b> A sensible moving magnet package with good bounce at a competitive price	6-16	N	•		48
▲▲ Arcam C77Mg	40	<b>A</b> Punchy sound quality with plenty of extra energy to liven things up. The solid body seems well worth the extra £10	4-8	N	•		67
▲ Arcam E77Mg	60	<b>A</b> Our sample had a disappointing stylus, but gave a coherent, rich and laid back sound, with good 'scale'	3-8	N	•		48
▲ Arcam P77Mg	73	<b>A+</b> Preferred to its cheaper partner by virtue of a better tip. Channel balance could have been better	4-9	N	•		48
▲ Audio Note IO IIV	1395	<b>E</b> One of the best, giving 'an extraordinarily relaxing midrange clarity', needs a transformer	8-18	VL		•	100
▲ Audio-Technica ART1	850	<b>VG</b> This is a delicate and very fluid-sounding MC that tracks well, offers very low distortion and exceptionally good separation	9-18	L		•	72
▲ Audio-Technica AT-420E	36	<b>A</b> Better suited to pop recordings, this MM bears some of the sonic hallmarks of the Linn K5	7-14	N	•		67
▲▲ Audio-Technica AT-95E	20	<b>A</b> Clear, dynamic if richly balanced, the magnetic '95E is a definite Best Buy	8-14	N	•		48
▲ Audio-Technica OC-10	320	<b>G+</b> Good treble and good detail too, but some congestion and coloration reduces its informativeness.	4-12	L		•	103
▲ Audio-Technica OC-5	130	<b>G</b> For the price, it's unusually effortless and detailed, but it tends to become rather relentless and tiring after a while.	5-14	L		•	103
Audioquest AQ 404i-L	500	<b>G+</b> Slight harshness detracted from the performance of this otherwise clear-sounding and detailed cartridge	8-16	L		•	84
Audioquest AQ 7000	1300	<b>G+</b> Stunning stereo imaging and good detail at low levels are spoiled by less-than-perfect tracking and high sensitivity to arms.	6-20	L		•	91
Denon DL103	99	<b>A+</b> Good performance in bass and general 'life' is seriously let down by its spherical stylus which kills subtle details.	9-22	L		•	103
▲▲ Denon DL110	69	<b>G</b> Firmly recommended as a fine all-rounder, this high-output MC model is likely to perform well in nearly all circumstances	6-16	N		•	48
Denon DL160	90	<b>G</b> Although listeners just preferred the 110, its brother here proved a twin in lab tests and is still "thoroughly competent"	6-16	N		•	43
▲ Denon DL304	200	<b>VG</b> Uncolored, detailed, neutral, superb tracking; top notch altogether, and a top notch bargain too.	4-12	L		•	103
▲ Dynavector 17D2	298	<b>VG</b> Clear, detailed, neutral and generally very informative - excellent.	6-18	L		•	91
▲ Dynavector DV10X IV	138	<b>A+</b> Fine sounding and realistically priced, damping is recommended to ensure successful tracking ability	8-18	N		•	48
Dynavector XX-1	698	<b>G+</b> Good, but not immensely competitive at the price, and not helped by comparison with the low output version	7-15	N		•	84
▲ Dynavector XX-1L	698	<b>VG</b> Very clear, very detailed, no troubles with tracking; response lift around 20kHz seems to do no harm	7-13	L		•	84
Empire Benz Micro MC-Gold	150	<b>G</b> Nothing is obviously wrong, but nothing is stunningly right either. Safe, but perhaps a little too safe	7-17	L		•	103
▲ Empire Benz Micro MC-Silver	150	<b>G</b> Ultimately not the peer of the MC Gold is more appropriate to the sort of equipment it's likely to be partnered with	8-18	N		•	103
▲ Empire Benz-Micro MC-3	800	<b>G+</b> Offers a warmer and very transparent account of the music. Its tracking prowess is slightly limited	5-12	L		•	72
Glanz GMC-10LX	80	<b>A+</b> Bearing some of the hallmarks of the '10EH, the '10LX is still less competitive in the sonic stakes	7-15	L		•	67
▲ Glanz GMC-20E	129	<b>G+</b> Very good tracking, smooth sound and good detail. Very slight surface noise enhancement	5-10	L		•	91
▲ Goldring 1012	50	<b>G</b> Slightly harsh sound but plenty of life and quite good detail. Some very high frequency coloration apparent	6-12	N	•		85
▲ Goldring 1022	70	<b>G</b> As with 1012, a touch harsh; detail and transient purity improved, though, and it goes well with electric guitar!	5-11	N	•		85
Goldring 1042	90	<b>G</b> Not terribly subtle, and not such good value alongside 1012 and 1022. Quite lively, though	7-12	N	•		91
▲ Goldring Elan	20	<b>A</b> A lightweight and frisky-sounding MM that appears to be based upon the same body as the Nagaoka mm4	7-15	N	•		67
Goldring Elite	200	<b>G</b> The basics are right, and it will cheerfully tackle any source material, but its sound possesses a certain dirtiness	8-18	L		•	103
Goldring Eroica H	100	<b>G-</b> More confused and coloured than low-output LX, high output less of an issue these days	8-15	N		•	84
▲ Goldring Eroica LX	100	<b>G</b> Not the most subtle cartridge in the world; can sound edgy at times, but lively and informative	8-14	L		•	84
Goldring Excel	549	<b>G</b> Errs on the warm and heavy side of neutral. Strong bass lines are its forte, but resolution of subtle treble details is weak	6-13	L		•	72
Goldring Excel GS	600	<b>G+</b> True high end quality in its lack of colorations, but tracking seems indifferent and high levels tend to sound rough and edgy.	9-20	L		•	103



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# Turntables – cartridges continued

Product	£Price	Comments	Arm effective mass (g)	Output	MM	MC	Issue No.
Kiseki Blackheart	1995	<b>G</b> Demonstrated refined poise and a delicate but at once potent security, however, the price did seem a little on the high side	6-16	L		•	60
Kiseki Blue Goldspot	499	<b>G+</b> Good bass and imaging, but hints of spit and coloration let the side down slightly	8-15	L		•	84
Kiseki Lapis Lazuli	5000	<b>G+</b> Combining very sensible design concepts at a silly price, combines the detail of the MC3000 and the fluidity of the Clearaudios	4-12	L		•	60
Kiseki Purpleheart Sapphire	899	<b>G+</b> Rare, beautiful to look at and sweet to listen to, our review of this high-flyer conjured up images of Japanese art	5-14	L		•	48
▲ Linn K5	49	<b>A+</b> Not as crisply focused as the costlier Linn magnetics, the K5 offers a smoother presentation	7-16	N	•		67
▲▲ Linn K9	98	<b>G</b> Linn threw this model into the leading pack by beefing up the Basik's bodywork and adding a super stylus	6-15	N	•		Col
London Maroon	199	<b>A+</b> Now manufactured under the London brand name this Decca cartridge is as iconoclastic as ever	9-20	N	•		67
London Super Gold	339	<b>A-</b> Immediate and detailed, but very coloured, very nonlinear and questionable effect on records. Devotees swear by it	9-15	N	•		84
▲ Milltek Aurora	299	<b>G+</b> An overall feeling of relaxed ease characterised this clear and atmospheric Kiseki-built cartridge	8-16	N		•	Col
▲ Nagaoka MP10	19	<b>A</b> High frequencies sounded "shut-in" with this spherical-stylus model, but mid and mass were energetic, bouncy and punchy	5-13	N	•		48
▲ Ortofon 510	30	<b>G+</b> For the price, a good blend of virtues weight, clarity and neutrality	3-11	N	•		85
▲ Ortofon 520	50	<b>A+</b> Very sensitive to load capacitance this new Ortofon maintains the company tradition for a lively, effervescent SQ	7-16	N	•		67
▲ Ortofon 530	80	<b>G+</b> Very clean and assured sound; transients not quite perfectly pure but plenty of detail.	4-11	N	•		85
Ortofon 540	100	<b>A</b> Graced with FGII stylus but possessed of too high a compliance for broad arm matching. It could also sound a little unforgiving	3-8	N	•		67
▲▲ Ortofon MC10 Super	80	<b>G</b> "What a delightfully sweet-sounding cartridge this is . . ." we said	5-15	L		•	48
▲▲ Ortofon MC15 Super	100	<b>G+</b> A good all-rounder, with outstanding performance in detail retrieval, even if it can be very slightly bright and close-up	10-24	L		•	103
▲ Ortofon MC3 Turbo	110	<b>G</b> Not terribly subtle, but it obviously doesn't aim at that. The 3 Turbo is bright, cheerful and bouncy - take it as it comes!	10-24	N		•	103
▲ Ortofon MC3000 MkII	900	<b>E</b> Low levels of body resonance are a real ear-opener. Nothing to criticise elsewhere; one of the very best	9-16	VL		•	84
Ortofon MC5000	1500	<b>G</b> Review sample could not be fully run-in, limited tracking ability, bright and forward sound, though imaging is excellent	12-20	VL		•	91
▲ Ortofon Quartz	140	<b>G</b> Lively, quite detailed, and a touch bright, the Quartz has many qualities of the much dearer Quasar	3-12	L		•	91
▲ Ortofon Quasar	350	<b>G+</b> Many of the qualities of the MC3000, although a touch bright. Good detail and delicacy	8-15	L		•	84
Ortofon Quattro	210	<b>G+</b> Undoubtedly a competent performer. Generally neutral, but can be edgy and bright in loud passages.	6-18	L		•	103
Rega Bias	34	<b>A+</b> Difficult to mount in some arms due to its shallow build, the bias offers a gentile, refined SQ	4-10	N	•		67
▲ Rega Elys	74	<b>G</b> Clearly superior to the Bias, despite their common heritage, the Elys is both more detailed, accurate and musically convincing	8-15	N	•		67
▲▲ Revolver	20	<b>A</b> This modified AT-95E enjoys a very lively mid and treble even if the bass is somewhat 'slower' in comparison. A firm budget buy	8-16	N	•		67
▲ Roksan Corus Black	130	<b>G</b> Recognisably related to Corus Blue, but distinctly more civilised and smoother.	7-12	N	•		91
Roksan Corus Blue	75	<b>G</b> Roksan-specified modified Goldring 1012; slight harshness detracts from otherwise good sound.	7-12	N	•		91
▲ Shure ME97HE	55	<b>A+</b> It won't turn a sow's ear of a turntable into a silk purse, but will at least keep going and produce an acceptable result	8-20	N	•		48
Shure V15 VMR	220	<b>A+</b> Initial listening gave promising results, but extended familiarity gave the feeling of a lack of energy and a "shut-in" sound	5-12	N	•		38
▲ van den Hul MC One	975	<b>G+</b> This extended all the positive qualities of the '10 but added greater authority and scale worth it for the extra money	6-12	L		•	60
van den Hul MC One Super	1100	<b>G+</b> Slight softening on transients was the only real flaw, but it didn't quite seem to have that special touch one expects	8-15	L		•	84
▲ van den Hul MC Two	1300	<b>G+</b> Connected directly to any standard MM input it rewards with a highly detailed yet fluid and musically convincing portrayal	6-13	N		•	72
▲ van den Hul MC10	775	<b>G+</b> A neutral balanced performer giving transparent midrange, fine depth and focus with firm extended bass. Goshi!	5-10	L		•	60
▲ van den Hul MM1	275	<b>G+</b> If woody midrange coloration could be tamed, the excellent imaging and admirable security would make it excellent	7-15	L		•	103



## Turntables and tonearms

Specialist turntables are what high fidelity sound is all about. CD 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 (sub-£350) tend to be supplied with matching tonearm, and often include a 'starter' cartridge. Still better quality is found at higher prices

amongst the separate motor units and tonearms. Careful partnering and set-up is essential for these components, but 'sympathetic' combinations exist.

The columns show from left to right, 'arm effective mass' which relates to cartridge compliance and is explained in the 'Cartridges' introduction. 'Suspended subchassis' - decks which have some form of internal isolation, generally in the

form of springs but occasionally more solid materials such as rubber. 'Manual' and 'Automatic' refer to the operational tendencies of the deck/arm combination - automatic high end turntables are as rare as hens teeth. 'Cartridge' - if one is supplied. 'Belt drive' as opposed to direct drive is the preferred method in most quality decks. An 'Electronic PSU' offers switchable speed change and a 'smoother' power supply, and better sound.

## Turntables – integrated

Product	£Price	Comments	Suspended subchassis	Arm effective mass (g)	Manual	Automatic	Cartridge	Belt drive	Electronic PSU	Issue No.
▲ Alphason Sonata/HR100S MCS	1785	<b>G+</b> Good sound in all areas - bass, clarity and neutrality all in the top class and bettered by very few decks at price		13	•	•			•	79
▲ Dual CS-503-2	160	<b>A</b> Not wholly inspiring; generally coarse and wooly sound is at least not offensive, but easily bettered by the CS505-4		10		•	•	•		91
▲ Dual CS-505-4	200	<b>A</b> Consistent sounding and well isolated turntable. It is slightly lacking in balls, compensates with a consistently unmuddled presentation		10		•	•	•		103
▲ Dual CS430	120	<b>A-</b> Ragged, sometimes unpleasant cartridge mixes with a modest pleasing player in a very sharply priced package		5		•	•	•		67
▲ Kuzma Stabi/Stogi Reference	2000	<b>G+</b> Beautifully made solid oak plinth, the Stabi also sounds very clear, detailed and extended. Stogi Reference is very capable.		12	•	•			•	91
Linn Axis/Akito	535	<b>A+</b> A neat, attractive and well-made package which delivers a rather harsh sound with a 'one-note' effect in the bass		10	•	•			•	79
▲ Linn Basik	299	<b>A+</b> Strong midband analysis and imagery, clean if sharp treble is matched to a good if occasionally wooden bass		10		•		•		103
▲ Linn LP12 Basik/Akito	855	<b>G</b> Trails the full LP12 significantly, but pace, rhythm, timing etc. still in top class, and bass tauter than of old		10	•	•			•	103
▲ Linn LP12-Lingo/Ekos	2642	<b>G+</b> The classic reference is improved by the Lingo but charming character remains. Ekos is well made and suited to many decks		9	•	•			•	91
▲▲ Rega Planar 2	185	<b>G</b> A remarkable product at the price, surprisingly articulate and confident		11.5		•			•	48
▲▲ Rega Planar 3	250	<b>G</b> A long time leader in its category, the '3 (with excellent RB300 arm) sounded nicely 'musical' in a balanced and coherent manner		11.5		•			•	48
▲ Revolver Rebel	185	<b>G-</b> Quite lively and detailed but not the strongest on subtlety, with slightly lumpy bass. Motor breakthrough audible		12	•	•			•	91



# Turntables – integrated continued

Product	£Price	Comments	Suspended subchassis	Effective mass (g)	Manual	Automatic	Cartridge	Belt drive	Electronic PSU	Issue No.
▲ Roksan Radius/Tabriz zi	740	<b>G</b> Design is subtle, refined and easy on the eye. Musically it offers exceptional performance with a minimum of fuss		9						103
Roksan Xerxes 33/Tabriz zi	990	<b>G</b> At its optimum with a relatively inexpensive arm/cartridge unless upgrade to full Xerxes is contemplated. XPSII PSU		9						103
▲ Roksan Xerxes/Artemiz/Artaxerxes 2114		<b>E</b> Superb, highly integrated and synergistic in nature, suitable for use with any good MC. Will not suit all tastes, however		8						103
▲ Systemdek 1.920	235	<b>A-</b> The motor unit is derivative of the Rega Planar 2 with a Moth arm. Up tempo even bright at times but never lacks enthusiasm		12						115
▲ Technics SL-DD33	150	<b>A</b> As with the QD33 though better value. P-mount cartridge		7.5						48
▲ Technics SL-QD33	180	<b>A</b> Quartz controlled version of the DD is short on sound quality but not features. But it did have fair focus and some depth		7.5						48
▲ Thorens TD-3001/TP90SF	760	<b>G</b> Excellent middle ranking esoterica, with strong all round abilities rather than excellence in particular areas								103
▲ Thorens TD166 VUUK/RB250	280	<b>A-</b> Refined and articulate sound with well focused imagery, suitable for use with good MM and budget MC cartridges		11.5						103
Thorens TD2001	650	<b>G-</b> Similar to TD320 but much dearer - why? Sound is comfortable but not very detailed		15						91
▲ Voyd Reference	5950	<b>E</b> Voyd's flagship, equipped with three substantial motors, a Lexan platter and brute PS. A strong contender for world's best								C91
▲ Well Tempered WTAT	1690	<b>G+</b> Intriguing/challenging design. Musically it is not ideal, but has a limpid quality and a lack of artificiality that sets standards		7.5						67

## Motor units

Product	£Price	Comments	Suspended subchassis	Solid plinth	Belt drive	Electronic PSU	Issue No.
▲ Michell Gyrodec	697	<b>G</b> Sweet and natural sounding player, well suited to Rega RB300. Aesthetics, and the acres of clear acrylic are very distinctive					55
▲ Michell Syncro	325	<b>G</b> A happy blend of qualities endows the stylish Syncro with a blend of subtlety and force - the mailed fist in the velvet glove					67
Origin Live Oasis A	495	<b>G-</b> Rather coarse sound lacking resolving power - but lively sound may appeal. Industrial appearance					79
▲ Pink Triangle Anniversary	1495	<b>E</b> Possibly the most detailed, clear and neutral deck around. Likeness to master tape is uncanny					91
▲ Pink Triangle Export	890	<b>E</b> The PT T00 with built in PS. Retains features of great transparency and neutrality. Review sample had highish motor noise					91
▲ Pink Triangle Little Pink Thing	500	<b>G+</b> Semi suspended, leads the field for clarity and neutrality at the price. It also looks good. Excellent value					79
Revolver	200	<b>A</b> Nicely balanced, but unimpressive timing and lightweight bass made this deck rather average for the price					48
▲ Systemdek IIX/900	230	<b>G</b> A high performance budget turntable which is particularly strong at fine detail resolution and imagery					103
Systemdek IIXE/900AP	388	<b>G+</b> The acrylic platter'd IIXE is one of the most capable budget decks on the market, good resolution, dynamics and timing					103
▲ Voyd 0.5	3368	<b>E</b> Halfway between standard and Reference Voyds with the latter's platter and bearing. Superb finish, colourful and dynamic sound					72
▲ Voyd Valdi	955	<b>VG</b> Acrylic plattered twin motor deck is remarkably capable, revealing and neutral, for dynamics it's hard to beat at the price					79

## Tonearms

Product	£Price	Comments	Effective mass (g)	Height adjustment	Pivoted	Parallel tracking	Issue No.
▲ Airtangent 1B	3000	<b>E</b> A complex but superbly built arm for high quality systems, giving excellent stereo and resolution	7.5				60
▲ Alphason HR100S	490	<b>VG</b> S-shaped arm sounds smooth, but nevertheless reproduces transients with fine attack	10				C86
▲ Alphason Xenon	286	<b>G+</b> Trimmed down HR100S, has inferior bearings and a simpler finish. Sounds crisp and coherent	12.8				55
▲ Audio Technica AT-1130	141	<b>G</b> Well suited to most cartridges. Smooth and tonally neutral, if slightly lacking 'balls'	8.5				67
▲ Kuzma Stogi Reference	1000	<b>VG</b> Large, solid and well made arm, gives exceptionally clear sound with just a hint of brightness	12				79
▲ Linn Ekos	1297	<b>VG</b> Superb, state of the art design which builds significantly on predecessor Ittok's strengths	9				67
▲ Moth arm	95	<b>G+</b> The ultimate budget arm? Refined, detailed, sweet and natural	12				60
Naim Aro	780	<b>G</b> Unipivot designed for Linn LP12 and Troika, a little bright and congested but has a strong following	10.5				91
▲ Rega RB300	139	<b>VG</b> Despite its modest price it sets exceptional performance standards and could be used on many high end turntables	11.5				60
Roksan Artemiz	690	<b>G</b> Interesting design which worked a treat on the Xerxes deck. Fits Rega cut out	8				67
▲ Roksan Tabriz	190	<b>G+</b> Targetted at the Xerxes, this is a good alternative to the Rega arms in many cases - a trifle bright	9				91
SME 3009 Series III	319	<b>A+</b> Comprehensively adjustable and very well made - suited to higher compliance carts	5				48
▲ SME 309	568	<b>VG</b> Beautifully made and finished, fully adjustable, a highly neutral performer	10				79
▲ SME Series IV	828	<b>VG</b> Superb engineering and finish with a finely balanced sound, impressive stereo focus and low coloration	10.5				60
▲ SME Series V	1232	<b>E</b> Excellent in all respects, this arm arguably sets the standard for pivoted arms regardless of price	10.5				60

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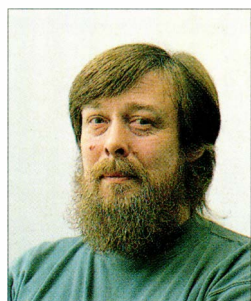
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# Pernicious and perturbing

Pressure on pages elsewhere in this issue left me with little space to expand on the overall findings of this month's speaker group test. This proved to be one of the more interesting in recent memory, providing a salutary lesson that there's still a great deal we don't understand about the subtleties of loudspeaker performance.

I've now been doing the *Choice* loudspeaker reviews regularly for four years, which is significantly longer than the typical product cycle time followed by most of the leading speaker specialist manufacturers. Given that many new designs are basically revisions and updates of



**Paul Messenger  
ponders four years  
of loudspeaker  
testing and a  
pre-war source of  
sample variation.**

already established models, the more recent group tests not only review the latest loudspeakers but also provide evidence for and against the long term consistency of the review methodology.

Happily, the signs so far are positive. Both measurements and sound quality judgements show pretty good correlation between the old and the new, though I'm not naive enough to believe I always get the right answers. Loudspeakers and their room and system interactions are so infernally complex that any single or multiple reviews are bound to be subject to some structural bias, while the judge-

## The design intention

One constantly exasperating aspect of the increasingly trendy and popular compact floorstanding loudspeaker is the pitiful way floor spiking arrangements are usually engineered. Threaded inserts with serrated outside edges are normally banged into pre-drilled, undersized holes in the woodwork of the base. As soon as you try to tighten up the locknut, these tear the wood and rotate, rendering the spike useless from a mechanical coupling point of view.

The steel plate (Royd, Ruark) or rail (Naim, Rega, Linn) approaches are obviously more costly to implement, but are much more satisfactory for consistency,

long life and predictability. However, I'm sure a low cost T-nut, as used to bolt (rather than wood-screw) drive units in place, could be adapted to work well with spikes, and certainly perform better than threaded inserts.

## Speakers, spiders and spikes

At least poor spiking is relatively easily detectable — and soluble, given the requisite will to do something about it. A different consistency problem highlighted during this group review looks potentially even more pernicious and perturbing. It cropped up during the Mission 751 review, which turned into something of a saga.

The original samples gave disappointing listening test results, and a second pair sounded substantially superior. The only discernible difference turned out to be a slight but significant variation in main driver compliances. Indeed, since the drivers concerned are sourced from Denmark, Mission is an innocent party, and reacted quickly to our discovery by immediately imposing extra quality control checks, so samples now reaching the shops should all be of the 'good' variety.

My concern is that this compliance variation is apparently pretty typical of general industry production tolerances, and the sonic consequences are liable to affect any reflex ported design (albeit to unpredictable degrees). The Mission problem was detected by our mutual alertness, but I've no means of knowing how many other models, now or previously assessed, might have performed below par because sample driver/port tuning missed the design intention.

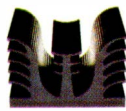
Sealed box systems are unaffected, because the enclosed air volume controls the driver compliance. Ported systems, however, rely mainly on a corrugated disc of resin-impregnated fabric called a spider to control the main driver compliance. The speaker's low frequency behaviour is a composite of driver and port, but the mechanical behaviour of the main driver is a complex interaction between its own natural spring-rate and the counter-spring mechanism of port/box. The latter is inherently highly accurate and controllable, but variations in main driver compliance are bound to have unpredictable consequences.

As long as people demand lots of efficient bass from small boxes, manufacturers will supply ported enclosures — 19 out of the 22 tested in this issue, for example. In order to ensure optimum performance consistency for the customer, what is surely needed is something more predictable and linear than pre-war origami.



**Mission's 751 has opened a can of worms for ported designs.**





THE F SERIES: F22-REMOTE CONTROL TUBE PREAMPLIFIER. F15-100 WATTS PER CHANNEL HYBRID STEREO POWER AMPLIFIER WITH TUBE BALANCED INPUTS. F18-220 WATTS PER CHANNEL HYBRID STEREO POWER AMPLIFIER WITH TUBE BALANCED INPUTS. FX-90 WATTS PER CHANNEL STEREO POWER AMPLIFIER.

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# The Critic's Choice

first tests



## Stripped-down Rotel amp's a £200 high-flyer

### Rotel RA-935BX

#### Amplifier: £200

**For** Builds on Rotel's budget amp reputation; detailed and forceful  
**Against** Won't suffer poor source equipment gladly; needs thorough running in to smooth its sound

#### Verdict ★★★★★

Something of a departure for Rotel, a no-compromise, minimalist amp for £200. Raw excitement is mixed with a tight, hard-hitting bass to create an amp that'll please lovers of a wide range of musical styles. Worth very serious consideration indeed

Is it a hotted-up RA-930AX? Is it a stripped-down RA-940BX? Actually it's neither. The Rotel RA-935BX is a rather different amp from the rest of the company's integrations. There's no phono board for a start, so turntable users will need to look elsewhere, and tone controls are also absent, while under the lid nestles a hefty power supply designed to increase the amp's current delivery capability for greater attack and slam.

Let the amp run in for a few days – a straight-from-the-box '935 sounds bright, harsh and unattractive – and the effect of the big power supply soon becomes clear. The RA-935BX may only deliver the same power (40W per channel) as the pricier RA-

940BX, but the simpler signal paths, allied to the greatly increased clout on offer, make this new £200 amp a considerably more punchy performer. Reviewing the RA-940BX last September, we wondered where all the excitement had gone. But with the new amp, there are no worries on that score – here we've a three-dimensional view of proceedings with none of the '940's "niceness".

If a track sounds lush and warm through the '935, that's because it's the way it's meant to sound. But load up a disc bubbling with energy and the amp drops down a gear and really motors.

Yet while the new Rotel provides weighty, highly mobile bass and crisp midrange and treble, with excellent definition in the upper reaches of drumkits for example, this isn't one of those amps that hurls the lot at you in a relentless fashion. Instead, the primary concern is the music and that's where your attention is focused. But if you want to listen more closely and find out what the bass-player or drummer is doing, the Rotel will give you all the information you're after.

However you're more likely to be hearing all this detail on a subliminal level, as part of an overall delivery of the music that's inher-

ently "right". Noticeable, too, when you listen closely, is the natural soundstage. Whereas some amps in this price band tend either to make the music sound a little "shut-in" or over emphasise certain performers, the Rotel leaves you in no doubt about their positioning, without drawing your attention to what it's doing.

Listen to a solo singer backed by an acoustic band or an orchestra, and there's a natural projection of the vocalist with the backing musicians spread behind. Every word is clear, with little fear of the music swamping the singing. Yet the atmosphere and balance of the whole is preserved. Whether it's Ute Lemper singing Kurt Weill's songs or Eric Clapton's *Unplugged* session, you're listening to the performance, not the recording.

What's more, the Rotel presents classical music with weight and authority. You wouldn't expect the Rotel to deliver "front row of the stalls" sound pressure levels with just 40W on tap, but within its limits it conveys hefty dynamics without struggling for breath. If you like your classical music on the Wagnerian scale, you should check out Rotel's value-for-money pre/power amps, but at sensible listening levels, the '935 will do very nicely.

Stripped-down it may be, but this Rotel still provides inputs for three line-level sources, two tape decks, plus separate record and listen selectors. The volume control is split for separate adjustment of the two channels and there are two sets of speaker outputs.

To be blunt, the RA-935BX is everything the RA-940BX should have been – detailed, musical and involving. As an alternative to the RA-930BX it makes sense, too – it's just £20 more expensive and the performance is in a different league. True, it won't perk up a laid-back system – it's extremely revealing of what you use as a source – but it has the makings of the perfect foundation on which to build a high-performance set-up without pushing your credit card into meltdown.

**"Load up a disc bubbling with energy and the Rotel amp drops down a gear and really motors"**

#### Rotel's RA-935BX

plays music as it's meant to be – crisp, detailed and inherently "right". There's no phono board, so rear panel inputs are line-level only



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