

Includes Britain's biggest independent review based buyers' guide

HI-FI CHOICE

THE WORLD'S NUMBER ONE GUIDE TO BUYING HI-FI

AUGUST 1993 £2.95 US\$6.95



EXCLUSIVE!

Pioneer's 'super' DAT player — the best digital recorder yet?

WIN!

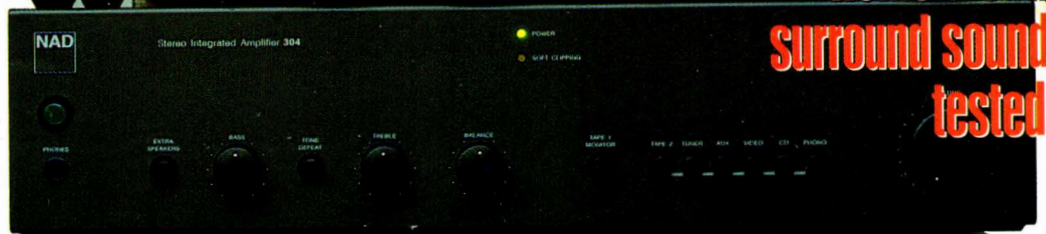
Acoustic Energy speakers worth £2,500!

Try the new BBC blank audio tape: **FREE!**



Home theatre special:

surround sound speakers tested and rated



IT'S A KNOCKOUT!

Surprise Best Buys in our 17 amp test — see page 44





*For us,
the realistic
reproduction
of music
is the essential
premise.*

The critics agree.

"Try to imagine the CD player
market without Marantz.

Impossible, isn't it?

Rather like the Beatles
without John Lennon,
a vital driving force
would be missing."

Audiophile, May 1993.

**See your nearest dealer for
a demonstration.**

**LONDON, GREATER LONDON,
SOUTH WEST AND WALES**

LONDON E1	071 247 0567
TIME & TUNE	
LONDON E7	081 470 3499
P.R.C.	
LONDON N1	071 226 5500
GRAHAMS HI-FI	
LONDON N2	081 445 3267
ANALOG AUDIO	
LONDON N3	081 349 1166
HI SPEK	
LONDON N7	071 607 2148
BARTLETTS	
LONDON N19	071 263 1015
LONDON HI-FI	
LONDON NW6	071 794 7848
AUDIO T	
LONDON SE13	081 318 5755
BILLY VEE	
LONDON SW2	081 674 4433
SOUTH LONDON HI-FI	
LONDON SW5	071 244 7750
LISTENING ROOMS	
LONDON W1	071 631 1109
BRIANS	
GALAXY AUDIO	071 637 2624
HI-FI EXPERIENCE	071 580 3535
K.J. LEISURESOUND	071 486 8262
SPATIAL	071 637 8702
LONDON W2	071 723 4630
DEANS	
SOUND SENSE	071 402 2100
LONDON W5	081 567 8703
AUDIO CONCEPT	
LONDON W13	081 579 6315
BABBER ELECTRONICS	
LONDON WC2	071 379 7635
COVENT GARDEN RECORDS	
W.A. BRADY	071 379 4010
HARROW	081 863 0938
HARROW AUDIO	
HOUNSLOW	081 569 5802
MUSICAL IMAGES	
BATH	0225 465085
MOSS OF BATH	
BRISTOL	0272 240878
RADFORD HI-FI	
CARDIFF	0272 264975
AUDIO EXCELLENCE	
RADIOCRAFT SONUS	0222 231166
CHELTENHAM	0242 573012
HUTCHINSONS	
CHRISTCHURCH	0202 473901
H.A.T.V.	
CORNWALL	0209 714286
CAMBOURNE AUDIO	
HEADINGTON	0865 742044
AUDIO T	
HERTFORD	0992 583399
ULTIMATE AUDIO	
NORTHWOOD	0923 820877
NORTHWOOD AUDIO	
OXFORD	0865 790 879
OXFORD AUDIO	
CONSULTANTS	
FOOLE	0202 730865
MOVEMENT AUDIO	
SEVENOAKS	0732 459555
SEVENOAKS HI-FI	
TORQUAY	0803 606863
CHELSTON HI-FI	
TROWBRIDGE	0225 777799
P.R. SOUNDS	
TWICKENHAM	081 892 7613
RIVERSIDE HI-FI	
WELWYN GARDEN	0707 323610
VIDEO VISION	
WESTON SUPER MARE	0934 414432
PAUL ROBERTS	
WOKING	0483 771175
BARTLETTS	
WREXHAM	0978 364500
ACTON GATE AUDIO	
YEOVIL	0935 79361
MIKE MANNING	

marantz®
PURE HIGH FIDELITY

Telephone 0753 680868



CD-10
COMPACT DISC PLAYER

HI-FI CHOICE

Editorial

FAX: 071 323 3547

Editor Simon Davies

Consultant Editor Paul Messenger

Art Editor Andrew Ryan

Deputy Editor Jason Kennedy

Production Editor Janet Moorhouse

Reviews Editor Alan Sircom

Sub Editor Lisa Nickson

Contributors Barry Fox, Alvin Gold, Dan Houston,
Jimmy Hughes, Paul Miller

Photography Chris Richardson

Advertising

TEL: 071 631 1433 FAX: 071 636 1640

Group Advertisement Manager Christine Reid

Advertisement Manager Ian Westwood

Assistant Advertisement Manager Rob Debenham

Senior Sales Executive Julian O'Kelly

Production

TEL: 071 631 1433 FAX: 071 580 6430

Production Manager Mike Robinson

Advertisement Production Sharon Drumm

Circulation

TEL: 071 580 6163 FAX: 071 636 5668

Circulation Director Sean Farmer

Mail Order Manager Julia French

Publisher Andy Benham

Dennis Publishing Ltd

Publishing Director Bruce Sawford

Creative Director Jimmy Egerton

Managing Director Alistair Ramsay

Chairman Felix Dennis

PUBLISHED by Dennis Publishing Ltd, 19 Bolsover Street, London W1P 7HJ

Tel: 071 631 1433

Company registered in England.

Origination Those nice people at Graphic Ideas.

Printing Riverside Press, St Ives Plc.

Distribution Comag UK Ltd, Tavistock Road, West Drayton, Middlesex

Tel: 0895 444 055.

A



PUBLICATION

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.

READER DIFFICULTIES

Hi-Fi Choice welcomes any technical questions, although these can only be discussed within the pages of the magazine. Regrettably, Choice is not in any way able to offer telephone assistance.

PERMISSIONS & REPRINTS

Material in Hi-Fi Choice may not be reproduced in any form without the written permission of the publisher. Please address such requests for re-use of copyright material to
Andy Benham, 19 Bolsover Street, London W1P 7HJ

SUBSCRIPTION ENQUIRIES

Hi-Fi Choice is available on subscription. The standard rates are (UK) £22.95 (1yr), £37.95 (2yr); rest of Europe £32.95 (1yr), £62.95 (2yr); rest of world £49.95 (1yr), £79.95 (2yr).

Please address all subscription enquiries to Hi-Fi Choice Subscriptions, Tower House, Sovereign Park, Market Harborough, Leicestershire LE16 9EF.

Back issues of the magazine are also available, please refer to page 92 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

This edition ©1993, Felden Productions. ISSN No. 0955 111 5.

Member of the Audit Bureau of Circulation.

EDIT POINT

Alive and well-kicking

“Hi-fi is dead. The market is being driven by audio/visual (AV) and multimedia products right now.”

Thus spake many a sage at the 1993 International Summer Consumer Electronics Show held in Chicago this June. As you will read in our show report on page 9, and in Barry Fox's column on page 41, the talk was all about the dominance of AV and multimedia products in the American and Canadian markets, and how this spelt the end of hi-fi as we know it here in the UK as well.

Balderdash. As more and more people turn to top-notch sound systems in order to get greater enjoyment from videos and LaserDiscs, they will be switched on to the pleasure of listening to music — be it in the form of a music video, film soundtrack or, just possibly, the album of the video or film. I lost count of the number of A/V demonstrations I attended which spawned a discussion about the music that had been heard — not the picture or the effects, the music.

Small wonder, then, that hi-fi specialist manufacturers still spend huge sums on research and development to further advance and refine audio products in line with the technological breakthroughs being made in other areas of the market.

You only have to consider the amazing advances made in the quality of digital sound reproduction in recent years. Today's budget CD players are capable of producing a sound quality unheard of at the price a few years ago. Where equivalently priced budget turntables would leave listeners eager for more, the latest entry-level CD players offer a standard of reproduction that was the preserve of the well-heeled analogue enthusiast in the recent past.

Not content with better and better sound at an ever lower price, the likes of Sony are now

hard at work on 'super' CD. With advances in laser technology and the use of double density CDs, rumours of oversampling rates two or four times greater than they are now, with 20-bit quantization, are fast becoming a reality. In time, this could mean music reproduction an order of magnitude better than what we are used to at the moment — super sound indeed.

Even closer to hand is the write-once recordable CD (CD-R).

Industrial recorders are already available — at a price — but many observers believe that you and I may soon be able to own one for less than £1,000. Only a little further down the line will be the rewritable CD recorder — CD quality recordings with the convenience of a domestic cassette deck.

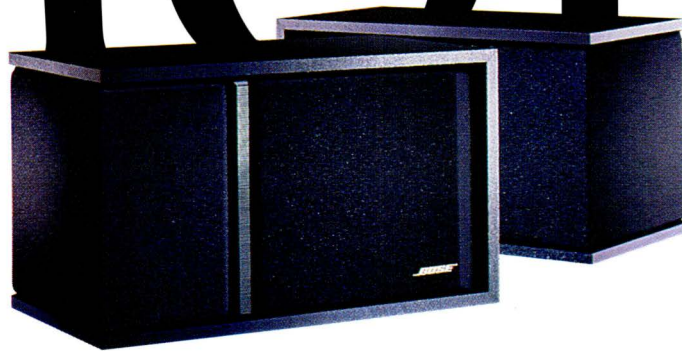
But if you need more tangible proof of the continuing quest for superior sound, look no further than our exclusive review of the Pioneer 'super' DAT player on page 12. This amazing machine doubles the standard DAT sampling rate of 48kHz to 96kHz in order to make even better recordings with a format that, only a year or so ago, was hailed as the ultimate in home recording technology.

As long as this commitment to research and development continues in the digital domain, the rest of the hi-fi world will have to follow suit. Far from heralding the end of hi-fi as we know it, the current explosion of interest in video and multimedia technology can only serve to improve the breed.



Simon Davies reports that hi-fi technology is alive, well and advancing apace.

GET MORE



The 301® Series III speaker system

With Bose® Speakers.

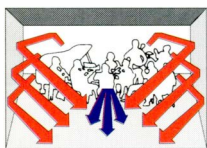


Fig 1. Live Performance

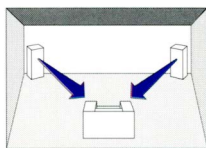


Fig 2. Conventional Speakers

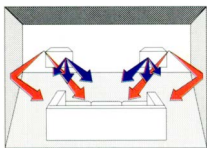


Fig 3. Bose® Direct/Reflecting® Speakers

- **MORE STEREO
MORE LIFELIKE
SOUND**

During a live performance most of the sound you hear is reflected off the walls, floor and ceiling (figure 1). Only a small amount travels to you directly. Conventional speakers send most

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.

- **WIN A FREE
WEEKEND IN
PARIS**

Hear the difference Bose technology makes and you could win a free holiday in Paris*. No purchase necessary.



When You Listen To Stereo



Don't Get Stuck In One Spot

- **FREE HOLIDAY VOUCHERS**

For a limited period of time Bose are offering you the chance to claim holiday vouchers up to £100 in value on selected qualifying purchases*. For full information on this exciting offer and details on your nearest participating dealer call the Bose Freephone NOW! Act now and **GET MORE** from BOSE.

Ask for a demonstration and details today!

CALL NOW ON FREEPHONE BOSE 0800-317533



HI-FI CHOICE

The Front End

- 4** **Update**
Chicago CES show report plus the latest from the world of hi-fi.
- 12** **Sessions**
Scoop! A first look at the Pioneer 'Super' DAT player and more.
- 30** **Help!**
Let the *Choice* team of experts solve your system problems.



Exclusive! *Hi-Fi Choice* is the first UK magazine to test the Pioneer D-07 'super' DAT player.

- 35** **Write On**
Your chance to air your views. A free *Hi-Fi Choice* sweatshirt awaits.

Columns

- 1** **Edit Point**
Simon Davies looks at what the future holds for hi-fi.
- 41** **21st Century Fox**
Barry Fox pushes back the leading edge of the hi-fi industry.
- 120** **Personal Messages**
Paul Messenger walks the tight rope between speaker sensitivity and amplifier power.

Competition

- 38** **Acoustic Energy Competition**
Win superb speakers or quality cables in our £2,500 Acoustic Energy competition.

44 AMPLIFIERS

A guide to what to look for in an integrated amplifier and how it can transform your hi-fi. Plus a handy introduction to the comprehensive *Choice* tests.

- 49** **The Reviews**
17 new integrated amplifiers are scrupulously tested by Jason Kennedy and the *Choice* review panel, with full measurements supplied by Paul Miller.

- 70** **Conclusions, Best Buys and Recommendations**
Which amplifier will be hounded by eager buyers, which is best of breed, and which is supreme champion.

- 78** **HEADPHONES**
Loudspeaker-free listening fun for one and all, as Alvin Gold looks at the modern headphone, designed for the hi-fi as well as the personal stereo.

- 80** **The Reviews**
A dozen of the latest stereo headphones, fully assessed by the king of the cans, Alvin Gold.

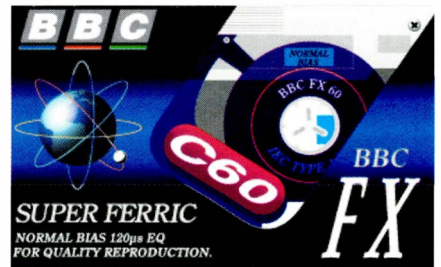
- 89** **Conclusions, Best Buys and Recommendations**
Find out which headphone is best for the hi-fi, which is best on the move and which will cosset the ear lobes.



More amplifiers than you'll ever need, all fully tested.

Cover Offer

- 37** **BBC audio tape offer**
Find out how to claim your free BBC FX 60 cassette and where you can buy more.

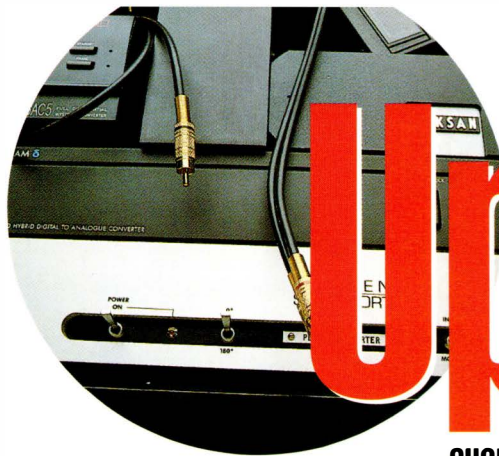


Features

- 22** **Statements**
Exclusive UK test! The new £5,000 Boston Lynnfield 500L loudspeaker.
- 26** **Aspirations**
This month, we visit the home and hi-fi of politician and media pundit, David Mellor.
- 74** **Surround Sound Speakers**
A look at serious audio/video speaker systems, with the accent on keeping the costs low.

Choice Matters

- 11** **Coming Up**
In September, *Hi-Fi Choice* has an exclusive offer on DCC players and a superb NAD competition. Plus, the latest loudspeakers are put through their paces.
- 43** **Choice Subscriptions**
Get your copy of *Choice* delivered to your doorstep.
- 90** **Reader's Offers**
The latest audiophile recordings and most excellent accessories.
- 102** **The Choice Directory**
A comprehensive list of all the current products that *Choice* has tested, with our own (not the manufacturer's) comments.



Update

CHOICE NEWS FROM AROUND THE WORLD

Marantz slims for the lifestyle market

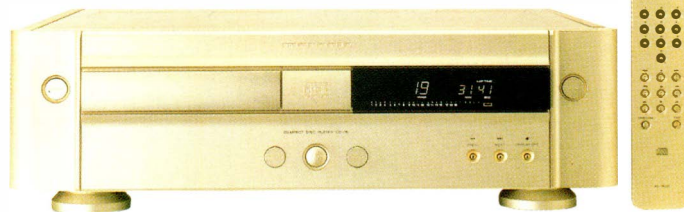
Marantz is broadening its range to include lifestyle and AV products alongside new separates. The Marantz Slim Series will arrive in the UK in September. It is the beginning of a new style-oriented range made up of a receiver, cassette deck and CD player housed in full width, but approximately half average height, cases. Available in a cool 'amber' metal finish with motorised fascia flaps, or a less expensive and softer black finish, the Slim Series costs from £260 per piece.

New AV products include the £600/£250 AV/MA-500 Dolby Pro-Logic preamp and monobloc power amps, five of which combine to make up the standard 420mm component width. More radically, the company has branched out into the 'V' side of the equation with a £600 MV-633

Nicam hi-fi VCR with dual standard playback capabilities. It is even considering a portable LCD TV projector, but this has yet to be confirmed.

Marantz' separates range has been re-styled with curved metal facias to improve the sense of quality. The ten latest standard components are finished

Marantz' look for the summer conveys curvaceous quality in a pretty shade of amber.



in this way. The 43, 53 and 63, replace the existing 42, 52 and 62 models and start at £200 for the PM-43 amp or CD-53 disc player.

There are a couple of interesting specialist products as well: the £4,000 CD-15 single box CD player equipped with a pair of matched DAC7 chips; and the £400 SX-72, a digital scratch remover for noise-free LP playback.

☎ (0753) 680 868

Pioneer widens the frequency range

Pioneer's new separates for 1993 have been designed to reproduce a wider range of frequencies.

First seen last year in the Legato Link series of CD players, 'wide range' means greater high frequency extension in order to create a more natural and relaxed sound. The system has proved so successful that Pioneer has now produced 'wide range' cassette decks, DAT players and amplifiers.

Possibly the most significant application of the 'wide range' philosophy is in Pioneer's successor to the popular A-400 amplifier — the A-400X. At £300, (£20 more than the original, which is still available) it incorporates a 'wide range' Linear Circuit designed to increase bandwidth and reduce noise. It also has an IEC mains socket, but is minus the headphone output.

The '02 Series CD players incorporate a laser pickup with built-in RF amp, a smaller optical assembly and the option to switch off the display. The cheapest Stable Platter model is the £230 PD-502, and Legato Link

appears in the £300 PD-702 and above, including the £1,100 PD-77.

The 'wide range' concept and Dolby S have been introduced on the two top cassette decks, the £1,000 CT-95 and £680 CT-920S, the bandwidth of which is said to be increased to 30kHz.

A frequency boosting system called

FLEX has been used on the £200 CT-S320 tape deck and the three-head, £250 CT-S420 to improve the sound of old or poor recordings. Pioneer will also be launching the £1,100 D-07 'super' DAT recorder in September, but you can learn all about it now in our scoop first test in *Sessions*, on page 12. ☎ (081) 575 5757



The PD-S802 with Legato Link; 'wide ranged' for a more relaxed sound.

User-friendly digital speaker launched by Meridian

The £2,950 DSP5000 digital speaker from Meridian is a three-way acoustic reflex system with a separate 18-bit 64 times oversampling Delta-Sigma converter with twin phase-lock loop, designed to be easy to use.

Each speaker features an electronic panel in the rear of the cabinet that includes two digital inputs — at 32kHz and 48kHz sampling rates. The digital and conversion electronics, constructed using advanced surface-mount techniques and partitioned four-layer printed circuit boards, are housed in the speakers. This means that a pure digital signal can be sent from the source to the



Meridian's digital speakers cut down on cables and user hassles.

DSP5000s, reducing the chance of signal degradation.

A dedicated remote control simplifies operation, and enables adjustment of the system for balance and listening axis control, room-position correction (optimising the sound for free-standing or wall-mounting), and even provides a favourite tone-settings memory.

Each drive unit is powered by a 70W power amp, which gives the DSP5000 an output over 108dB, at one metre, on music material. A rosewood finish costs an extra £120. ☎ (0480) 52144

Modern new look for Naim Nait 3

Naim has unveiled a slimline successor to the chunky *Nait* amplifier, the £500 Naim *Nait 3*.

The new 432mm width case contains an amplifier with more power (30W per channel into 8ohms), the ability to use dedicated moving coil or moving magnet circuit boards (rather than relying on facia switching), and the provision of five high level inputs — electronically selected. The *Nait 3* can also be used as a preamplifier only, with or without a separate power supply, when the time comes around to upgrade.

A matching FM tuner, the *NAT 03*, is also available at the same price. Based on the established *NAT 02* design, the *03* uses a toroidal transformer and carefully laid out circuitry to provide optimum reception. Tuning is via a rotary potentiometer, with frequency displayed digitally on the facia.

The £405 *NAC 92* preamp and £396 *NAP90/3* power amp are also part of the new slimline range. The power amp offers 30W per channel output into an 8ohm speaker load (almost 60W into 4ohms), while the preamp has five high-level inputs. The first of these can be fitted with a selection of optional moving magnet



The black and green newcomers from Naim have a bold new look.

or moving coil phono matching circuits. Two of the inputs have full tape output and monitoring facilities, and input one has RCA sockets, while the other connections are made via Naim's lockable DIN sockets.

The *NAC92* is designed to be used specifically with the *NAP 90/3*, which itself replaces the *NAP 90*. Both the *92* and the *90/3* are compatible with all other components in the Naim range. ☎ (0722) 332 266

Goldring endorses Perfect Sound CD Control

Goldring products believes that it can solve the problem of keeping CDs in pristine condition.

Perfect Sound CD Control (CDC) is a £15 treatment which supposedly prevents loss of data on the CD surface caused by smears or scratches, as well as controlling optical disc refraction, which can all result in sound degradation.

Although the formula is a closely-guarded secret, CDC doesn't contain silicones or oils. When sprayed onto the surface of the CD it forms a film which, it is claimed, will fill in any gaps in the digital information. When this is wiped off, the CD should sound better, with greater accuracy and improved dynamics, in addition to being cleaner.

☎ (0284) 701 101



New Technics amp takes on the world

Technics unveils a new 'world' amplifier, and provides tantalising glimpses of forthcoming attractions.

The latest range of hi-fi components from Technics looks impressive. In this country, the biggest impact is likely to be made by a new amplifier which should shake up the status quo in Arcam/Alpha/Pioneer A-400 territory. The model concerned — the £200 Technics *SU-A600* — has been conceived as an amplifier able to compete in markets the world over without modification, save for mains voltage. It does have a strong UK design element, however, and early listening results proved encouraging.

The amplifier's performance may be due in no small part to the new Technics Master series audio grade capacitors and 'R' core mains transformer. The latter is sourced outside the huge Matsushita empire but represents a real step up from the usual frame transformers, and even appears to offer some advantages over the toroidal types favoured by many British specialists.

Also new on the technology front is Technics' enhanced S-Advanced MASH D/A converter with a claimed 20 bits accuracy and fourth order noise shaping giving absurdly low in-band noise and minimum distortion. It has found its way into the new, and very pretty, *SL-P2000* (£1,000) CD player which also boasts Virtual Battery Operation for reduced power supply noise. The *SL-P2000* does not go on sale until September, but two other new CD players from Technics, the *SL-P740* (£250) and *SL-PS840* (£420), are available now.

Last but not least, as reported in these pages last month, Technics is to launch its long-awaited portable DCC (Digital Compact Cassette) player, the *RQ-DP7*, in September. With a target price of £400, it's a key component if DCC is to achieve mass-market appeal. This was underlined by some provocative DCC vs Mini Disc (MD) listening comparisons staged by Technics which we will be reporting on more fully in a forthcoming issue of *Hi-Fi Choice*. ☎ (0344) 853157

In Brief

Sennheiser headphones will be flying high at supersonic speeds. The company's *HD25* has been chosen for use on Concorde when the aircraft is fitted with a new CD-based in-flight sound system. Originally a studio monitor headphone, the *HD25* now features in Sennheiser's range of consumer products. The supersonic Sennheisers will be specially modified to meet BA's requirements. ☎ (0628) 850 811

The Powerplant in Brighton has had its shop window made over by Patrick Kennedy in an attempt to increase its pulling power. Patrick specialises in hi-fi furniture and storage systems. ☎ (0273) 858259



Chord is celebrating the installation, by Abbey Road Studios, of seven of its *SPA 1200* amps to power the main *Studio Monitors*. ☎ (0622) 764 506

Comet and Dixons are to expand the distribution of Philips DCC machines in the UK, by increasing the number of outlets which stock them. This will boost DCC distribution from 500 to 1,000 stores. ☎ (081) 689 2166

BADA's Bonding scheme is off the ground. BADA will guarantee any transaction entered into with any member who can't take the economic strain and folds still holding customer deposits. BADA will ensure that the customer gets his/her purchase and all the BADA trimmings. ☎ (071) 226 4044

Polk Audio is introducing the £800, USA born, *RM 3000* three-piece speaker system into the UK. The satellites can be used separately as rear channel speakers in a surround system or, when teamed together with the subwoofer, as a home cinema loudspeaker set up. The speakers come in black, white and granite finishes. Stands and brackets are extra. ☎ (0727) 827 311

The Sound of Silence.



AX-A662BK

Crosstalk, noise interference, signal degradation. All dirty words as far as we're concerned. That's why the JVC AX-A662BK amplifier has no such vices.

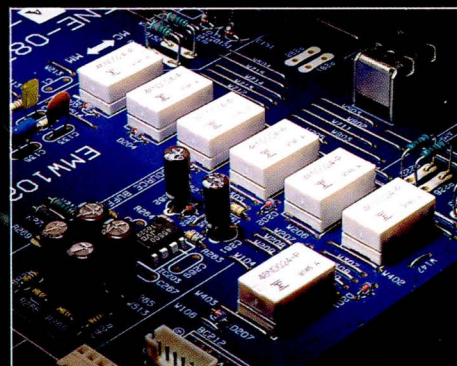
Featuring separate heat sinks and 'Advanced Super A' circuitry for left and right channels coupled with the dramatic reduction of internal wiring, this amplifier is virtually free of such problems.

Designed for the Digital Age.

The benefits? A very special amplifier that delivers a powerful punch, but manages to preserve a certain delicacy and subtlety at low signal levels.

As one Hi-Fi magazine put it - 'The JVC AX-A662BK produces a tidy, neutral, articulate sound with a refined and clean presentation, but is powerful without being unpleasantly assertive'.

Silence is Golden



Obviously... **JVC**

Update

Made in the UK speaker range from Harman Kardon

Harman Kardon is attacking the fiercely competitive European speaker market with three midrange speakers designed and built in the UK.

The £170 LS0200 is the smallest speaker in the range. It features a 180mm Elac paper bass driver, a 34mm Audax tweeter (which is common to all the designs) and has a rated power handling capacity of 50W.

The next step up in price and size is the £200 LS0300 which exchanges the Elac bass unit for a 170mm fibreglass type from Audax. Two of these drivers are used in the larger, floorstanding £300 LS0500 in a 'D'Appolito' array. The LS0500 comes with spikes for optimum performance. The LS0500 can handle 150W of power and the LS0300 some 75W. ☎ (0753) 576 911

Musical Fidelity amps get soaring sinks

Musical Fidelity's new F-Series amps are styled to combine form with function in a distinctly European package, according to designer Antony Michaelson.

The range comprises the F22 preamp at £999, the F15 power amp for £1,899 (rated at 100W per channel), and the F18 power amp (220W per channel) for £4,000.

Each amp has a distinctive concave front panel with a three colour LED display. The power amp heatsinks are unique to Musical Fidelity, and the company likens them to a 'soaring eagle', though which particular breed of eagle it doesn't say.

The F22 is a fully remote controlled tube preamplifier with either balanced or single ended outputs. All input switching is by individual relays. An additional PCB can be fitted to accommodate either a D/A converter or a moving magnet/moving coil phono stage (£200 and £100 respectively).

The F15 and F18 hybrid power amplifiers combine the best of tube and transistor electronics in an attempt to harness the warm, powerful sound of the valves with the precision and reliability of transistors. Both are similar in design, but the F18 justifies its doubled price tag with doubled power. In next month's issue of *Hi-Fi Choice*, we will be putting these claims to the test with a full review of all three amplifiers.

☎ (081) 900 2866



The PMA-350 MkII from Denon, an amplifier without compromise. (Beach and candle not included.)

New Denon amp tackles a knobbly problem

The £220 PMA-350 MkII is Denon's answer to the dilemma of having to choose between a bare bones amplifier with top quality sound and an amplifier with a more convenient array of features.

To provide the best of both worlds, Denon has taken its midrange PMA-350 model and completely redesigned the internal circuit board, upgrading it to MkII status in the process.

The 50W per channel PMA-350 MkII has six inputs, including a moving magnet phono stage. It also features switching between speakers and headphones, and the speaker outputs are suitable for bi-wiring. A full range of tone controls are provided, though these may be bi-passed if required.

☎ (0753) 888 447

McIntosh power amp gets THX approval

The £2,895 McIntosh MC7106 power amplifier is one of the first to be licensed for Home THX® Audio use.

Its six channels boast a power output of 100W each, and this power can be linked to a C39 or MX130 audio visual control centre to get the full McIntosh home theatre effect.

Another application is as a multi-room sound system, as any one, or all

three, pairs of channels can be bridged so that each will produce 300W into an 8ohm speaker load.

The amplifier has in-built regulators to monitor power, thermal and DC outputs. The LED indicators, which show the power output for all six channels through the traditional McIntosh glass front panel, can be adjusted for brightness.

☎ (061) 777 8522

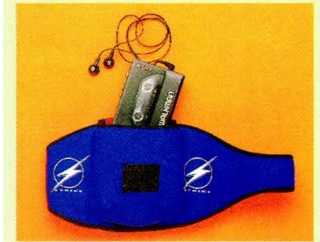


The display on the McIntosh MC7106 can be brightened or mellowed.

In Brief

REL's Stadium and Stentor subwoofers are to be distributed by Harman Kardon. A further three subwoofers from REL are in the pipeline at the moment. The expansion of the range of products distributed by Harman comes at just the right time, as from July the company will be relocated to a larger site in Borehamwood. This will make room for more growth. ☎ (0753) 576 911

Strike Ltd has made available a personal stereo belt for sporty listeners. Suitable for joggers and aerobics fanatics, the belt is made from a strong, stretchy, lightweight material. ☎ (0353) 663 388



Sony competition winners from the contest run in the March issue of *Hi-Fi Choice* are S M Turner, from Saltash, Cornwall; John Channing; from Tiverton, Devon; and P R Winstanley, from Bristol. Congratulations to all three.

The AVA, Audio Visual Association, has been established to service the young and swiftly-changing home entertainment industry. It is to distribute relevant industry information, organise seminars and demonstrations, and ensure high standards among its members. ☎ (0926) 430 933

Triangle's £175 Goliath active processor is being offered free with every £1,350 pair of Icare floor-standing speakers that Kronos Distribution sells. It is also being offered at a 50 per cent discount with other Triangle models. ☎ (0868) 748632

Magnepan's latest slimline dipole loudspeaker is the Magneplanar MG-10. It incorporates a quasi ribbon tweeter, is only one and a quarter inches in depth, and is expected to sell for £1,200. ☎ (081) 947 5047

Cleartone, the hi-fi and video group, has expanded its operation by acquiring Hortons Electronics, Naam Hi-Fi, (both in Birmingham), and David Waring of Worcester. ☎ (0204) 31423

Together, they've certainly made
the critics take note.

“NAD 502 CD Player, 302 amplifier and 802 loudspeakers ... For all round performance we'd have to go for the NAD System ... Best facilities ... Best for Rock ... Best value for money ... Best sound quality overall ... you'd have to try hard to beat the NAD System ... 100% rating for value ... NAD has done it again with a superbly cost-effective set-up ... Detailed, involving sound, stunning value for money.” *What Hi-Fi – March 1993*



THE 302 AMPLIFIER AND 502 CD PLAYER FROM NAD



BRITISH BY DESIGN

need we say more?

Show Report

Chicago CES plays host to multimedia

At the 1993 International Summer Consumer Electronics Show (SCES), the latest video and audio technology combined with computers to give rise to the new entertainment system on everyone's lips — multimedia.



The big news at this year's CES in Chicago was all to do with multimedia.

Not that there is anything new in the idea of linking CD-ROM based software with a TV to provide a combination of interactive media, including video, sound, graphics and text. Commodore has already done it, and Philips CD-I has been with us for a while.

No, it is the speed with which developments are taking place that had manufacturers and public alike fired-up in Chicago. Philips and Paramount Pictures announced that feature films will be released on the five inch CD-I format in the US and Canada this Autumn. Passive adult entertainment is now seen as an important adjunct to the games and educational side of CD-I, and the first titles to be released will include *Top Gun*, *Beverly Hills Cop*, and *Voyeur*. The CD-I movie discs are only 74 minutes long at the moment (a final standard has yet to be

agreed) so most films will be in two-disc sets at first.

Meanwhile, over on the Panasonic stand, the company was demonstrating its FZ-1 REAL (Realistic Entertainment Active Learning) 3DO Interactive Multiplayer.

The 3DO system is the main rival to CD-I, and this is the first machine to be based on the 3DO consortium's specifications.

In spite of some criticism (see *21st Century Fox*, page 41), 3DO was bullish about its interactive multimedia system's future. In particular, 3DO claims its double-speed CD-ROM drive will manipulate graphics and animation 50 times faster than conventional PCs and video games.

Away from the hype surrounding multimedia, home theatre was all the rage, with centre channel speakers on show from Cello, Jensen, Monitor Audio, Celestion, and KEF.

New audio/video (AV) electronics were plentiful, but JBL stole a march on many with an 'out of show' presentation of the new *Sound-Effects* range. Some 18 products in seven systems offer home theatre without the need for wires everywhere. The signal is beamed round the room using RF add-on modules and amps. The *Sound-Effects* range also allows a system to be built in stages, from a music-only set-up, using powered subwoofers and satellite speakers, through AV surround to an RF transmitter/receiver/



Panasonic's FZ-1 REAL 3DO Multiplayer (above) plays games, CDs and photo CDs; JBL Sound-Effects (left) has wireless AV capability; Arcam Alpha 5 range (bottom left) has bold new look.

NAD chose Chicago to show its first AV product, the 910 Dolby Pro Logic surround sound processor. It allows users to select up to three video sources, plus stereo sound, and boasts three DSP effects — club, hall and stadium. A prototype preamp/tuner, the 917, was also on show, using the same technology as the 910. Two new amps, the 302 and 304, also got an airing. For more on the 304, turn to our amp test on page 44.

The Brits were also there in force. Both Arcam and Mission unveiled new products in Chicago. For Arcam, it was the all new *Alpha Series 5*. The range is made up of four matching units, including the *Alpha 5* 40W amp, FM tuner and CD player. The fourth item is the 50W stereo (100W mono) *Alpha 6* amplifier. All four models share a new slimline design that matches Arcam's *Delta 200* Series.

In the Mission suite, three brand new speakers flanked the latest Cyrus range of electronics, first seen at Las Vegas CES (issue 116). They were the Mission *Cyrus 75 I Reference Compact Monitor*, the *752 Reference Tower* and the *76C* centre channel speaker.

One other surprise at the show was the popularity of accessories, particularly universal remotes. As the demand for AV equipment grows, the need for simplified remote operation grows too, with Gemini and One For All leading the way with seven and four new models respectively.



In Brief

From the show

Apogee was demonstrating its unfeasibly expensive four-way ribbon hybrid speaker with computer-driven active crossover, the *Studio Grand*, playing a truly moving Bloch *Kol Nidre*.

Counterpoint had a new DAC with replaceable, upgradable DAC boards, which makes it possible to perform almost instant A-B comparisons of different DAC technologies. More on this clever bit of kit in a future issue of *Choice*.

Noise Cancelling Technologies

Inc had a little gem in the first practical, domestic noise-cancelling headphone. Consisting of a small open-back headphone with a palm size battery-powered 'controller', the technology is good for about 10dB of noise reduction below 1kHz. It worked well too, allowing the volume setting to be reduced significantly in high ambient noise situations without any noticeable loss of intelligibility.

Rowland, erstwhile producers of conventional high-end amplification, chose SCES to unveil the *Model 8* stereo power amp which can deliver up to 100W per channel from a modified lead acid battery — or 250 presumably inferior watts using mains power. A real head turner but just take care not to short the output by accident!

PS Audio was generating a fair amount of interest with its *Reference Link LS*, a digital processor boasting state-of-the-art A/D and D/A technology that also functions as a line-stage preamplifier. It has both digital and analogue tape loops, no mechanical pots or switches in the signal path and micro-processor based remote control operation.

Wadia, Vimak, MAS and Krell were all demonstrating various D/A converter systems which included highly complex Digital Signal Processing (DSP) between the digital interface and DAC proper. This is typical of design in the States, where greater emphasis is placed on the digital filter as opposed to transport or DAC technology.

Forsell demonstrated there's nothing new, even under the Chicago sun, as its *Air Reference* CD transport with air-bearing CD drive appeared to use an inverted Philips CDM9 swing-arm laser to read the CD from above, Pioneer-style.

The truth,
the whole truth,
and nothing but the truth . . .



. . . so help me DPA!

It is a truth universally acknowledged, that clarity of sound allows true involvement with music.

Recognised Hi-Fi critics throughout the world have consistently praised DPA's products for their unrivalled clarity and transparency of sound reproduction. This inevitably leads to more profound musical experiences.

After years of development, the 200S pre and power amplifiers have been perfected. The amplifiers share the technology that has so inspired reviewer's praise in the past. The 200S combination at £1,250 gives state of the art performance at a reasonable price.

If you crave musical truth, contact DPA so we can help.

dpa

Don't miss next month's issue of HI-FI CHOICE

**Packed with
in-depth reviews!**



Hi-Fi Choice cuts the cost of DCC!

Next month, we offer UK readers the chance to buy DCC at a lower price than ever before. A special voucher will entitle you to £100 off the retail price of a Philips DCC600 at selected stores.

There are also major discounts on DCC tapes at HMV.

Plus: loudspeakers fully tested

We put 22 of the latest speakers through our definitive lab and blind listening tests. We'll also be explaining how Lucasfilm Home THX Cinema works and much, much more.



**September issue on sale
13th August 1993**



**Please reserve me a
regular copy of Hi-Fi Choice**

Yes! I would like to receive Hi-Fi Choice, the World's No.1 guide to buying hi-fi, every month so please would you make the following arrangements:



- Hold on to it so I can collect it myself
- Deliver it to my home office

Number of copies required _____

Name _____

Company name _____
(where applicable)

Address _____

Postcode _____ Phone No _____

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.



DAT RECORDER

Pioneer D-07

There are a variety of reasons why analogue recordings sound more natural than digital ones. One of the most important is the effect of frequencies that are theoretically above the threshold of hearing. When CD was unleashed back in 1983, it was assumed that a bandwidth extending from 20Hz to 20kHz would be more than adequate for audio reproduction. Unfortunately, this is not so. The reason why many still prefer the sound of vinyl is that its bandwidth extends beyond 20kHz.

The Pioneer D-07 DAT recorder offers the possibility of recording and playback with a 96kHz oversampling rate, double DAT's normal 48kHz, which extends the upper limit of its bandwidth to 44kHz; more than twice that offered by CD. To achieve this it has to run at twice the speed and, of course, 96kHz recordings can't be played back

on standard DAT recorders.

However, it's the first time that a genuinely wide bandwidth digital recorder has been available on the domestic market. At a projected price of £1,100 it's not cheap, but taking the relatively low cost of DAT stock into account, it's by no means unrealistic for the serious amateur recorder.

I have been giving it a spin, recording a few samples from my record collection and playing a demo tape that Pioneer supplied. The latter is a selection of Pioneer's own recordings made at both standard 48kHz and wide 96kHz. In every instance the wide option sounded more relaxed. With some material you got a greater sense of openness, but everything sounded more 'natural'.

Recording from LP, it was clear that the higher sampling rate made a cleaner, and significantly more relaxed job. Comparisons with the original revealed that a fair amount of 'presence' didn't make it onto

the tape, but Pioneer is not claiming to have increased the medium's capacity as far as resolution is concerned.

It's good to see that some corporations are making an effort to bring higher fidelity to digital audio. However, if there's going to be a new digital standard, let's give it a higher bit rate as well and bring 'presence' back into the equation.

We will be taking the D-07 out into the field soon, so stay tuned for live results.

Jason Kennedy

VERDICT

Pioneer D-07

■■■■■ £1,100.00

PROS: Increased bandwidth; more relaxed sound.

CONS: Not a standard; double tape speed.



PIONEER HIGH FIDELITY
(GB) LTD, 1-6 Field Way,
Greenford, Middlesex, UB6
8UZ. ☎ (081) 575 5757

Pioneer's statement on the future of digital recording; the 96kHz D-07 DAT recorder.

CD PLAYER

Rotel RCD-945 AX

Few CD players have attracted as much of a following as the Rotel RCD-965BX. A confident David among the high-end Goliaths, the Best Buy Rotel can shine in surprisingly expensive systems.

Although the RCD-965BX is cheap in performance terms, set against low-cost players like the Marantz CD52II, the Rotel has a steep price tag. The new £229.95 RCD-945AX player looks set to bring Rotel CD players into a wider market.

Rather than simply cut corners with the more expensive player — making a pale 'bare bones' imitation of the RCD-965BX — the beer budget model was designed from the ground up. However, common to both players are the Philips transport allied to a PDM BitStream conversion chipset.

I believe that Rotel struggled hard to find a sound that followed in the footsteps of the RCD-965BX, yet doesn't undermine its performance. It had the same evenhanded tonal balance, that never stressed one style of music over another. Remarkably at the price, it was difficult to provoke into acts of musical aggression, only sounding like hard work when subjected to full-on Pixies thrash music.

It could sound too mannered and too intellectual for some tastes. It was not incapable of boogie, yet it lacked the slam-dance appeal of players like the Marantz. It was also a little shut-in sounding, with a slightly congested soundstage that was hard to push out of the boxes.

This was exaggerated at the frequency extremes, with cymbals lacking in spit and attack and kick drums lacking weight

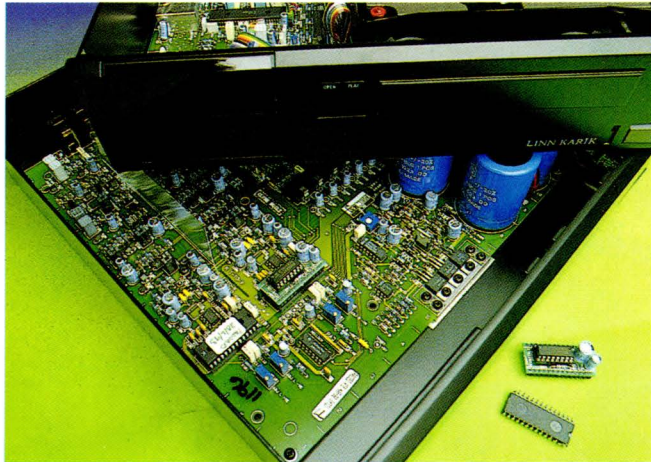
and force. This is far better than the pin-you-to-the-wall attack of many comparably priced players, however.

The RCD-945AX fulfills its design criteria well — it's a Rotel CD players on the cheap. It has the dry, smooth nature of its bigger brother, without becoming harsh. It is a touch restricted sounding, but it is an intellectual sounding player, at an undergraduate price.

Alan Sircom



The smooth and intellectual RCD-945AX brings Rotel CD players down to an entry level £230.



A chip change for Linn's Numerik digital to analogue convertor has given it new cleanliness and depth of detail.

VERDICT
 ROTEL RCD-945AX
 ■■■■■ □ **£229.95**

PROS: Good value; easy on the ear; even tonal balance.
CONS: Too mannered; also too shut-in.

GAMEPATH LTD,
 25 Heathfield, Stacey
 Bushes, Milton Keynes
 MK12 6HR.
 ☎ (0908) 317 707

DAC UPGRADE

Linn Numerik

Last month, Linn's ultimate two-box Karik/Numerik CD player received a somewhat equivocal response from our listening panel. A few panellists were impressed by the sense of electricity, vivacity and excitement while others, by contrast, were more concerned with the detached treble quality and 'dirty ambience'. This last point was linked with a feeling of hash or grubbiness that permeated the deepest recesses of the music.

And, oddly enough, one or two of Linn's own engineers were of a similar opinion. Hence this elegant upgrade, a simple revision that involves the replacement of existing PCM63P DACs for two new PCM1702s mounted on a small printed circuit board (PCB). This new chip employs a similar architecture to the PCM63P, but is evidently much more compact, as extra decoupling capacitors are used.

Out goes the 'dirty ambience' to reveal a new strata of detail lying undisturbed in the lowest reaches of the music. Returning to Spillane's *Shadow Hunter* exposes the same biting guitar and warm seductive tone of his voice, but it also reveals a subtle decay in those strings that was missing before. Now it is possible to enjoy both the sharp, inci-

sive thrill of the guitar alongside the deep and full quality of fret-less bass, without one disturbing the other. So its music is still touched by the dry and articulate balance that serves as a hallmark for many Linn products, yet this is enhanced by a new cleanliness and depth of detail.

And the cost of this revision? A hefty £119, though this sum does include the personal attention of your local Linn dealer who is required to perform the necessary jiggery-pokery. Hopefully, dealers who keep the Numerik upgrade in stock will allow existing owners the opportunity to evaluate its performance first hand. Try it and, likely as not, you'll be pleasantly surprised.

Paul Miller

VERDICT
 Linn Numerik Upgrade
 ■■■■■ □ **£119.00**

PROS: A much cleaner sound all round.
CONS: £129 is steep for a couple of chips.

LINN PRODUCTS,
 Floors Road, Waterfoot,
 Eaglesham, Glasgow G76
 0EP. ☎ (041) 644 5111

ACCESSORIES

Canare cables

In the world of cameras, if anything has the name 'Professional', it incurs a massive price hike. When it comes to audio, cables for the professional market seem cheap compared to most high-end extravaganzas.

The Japanese Canare Electric Co, distributed by Future Film Developments, makes a range of professional cables as well as connectors and patchbays. There are three speaker cables and a single interconnect that are suitable for hi-fi use.

The interconnect cable, GS-6, is an unbalanced (coaxial) keyboard or guitar cable, that comes fitted with solid looking phono plugs at £21.93 for a two metre pair. The three speaker cables all have what is called a 'star quad' configuration, said to reduce the effects of electromagnetic interference. These cables (all unterminated) range from £1.36 per metre for the 4S6, to £5.63 per metre for the most ex-

pensive 4S-11, with discounts for lengths over ten metres.

Being used to cables that cost many times that of the Canares, I was expecting to be disappointed. But, in fact, they are surprisingly good. For most people, the benchmark speaker cables at the price are QED 79 Strand and Linn's K20. Although the speaker cables did not have the dynamic and forward K20 character, they had a better sense of dimensionality and appeared detailed and refined.

The interconnect cable is also very good for the price, having the same detailed, refined and dimensional character. It has a similar balance to well-respected budget cables like Tandy's Patchcord and QED's Incon, but has a more even bass performance and does not sound as grainy. Both the interconnect and the speaker cable represent superb value for money and would not disgrace more expensive systems.

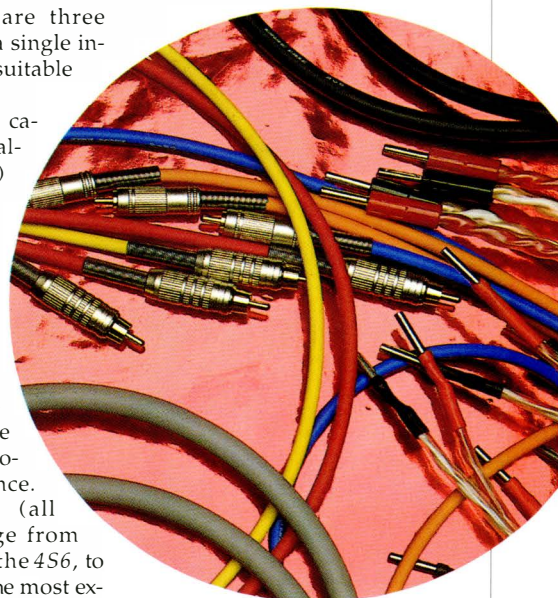
Alan Sircom

VERDICT
 Canare cables
 ■■■■■ □ **£various**

PROS: Well made; excellent value; refined sound.
CONS: Nothing really, at the price.

FUTURE FILM DEVELOPMENTS, 11 The Green, Brill, Aylesbury HP18 9RU. ☎ (0844) 238 444

High quality cables at an affordable price from newcomers Canare.



DENON • AVC 3020

THE POWER TO PERFORM

Cinema in your home with dynamic, natural sound.

The heart of this AV amp is a specially designed high spec Dolby Pro-Logic decoder with 'Time Link' digital delay for the rear channels giving an unsurpassed quality in surround sound.

This is backed up by a powerful 80 watts per channel output for L/R, 35wpc centre and 35wpc rear as well as a comprehensive array of video and audio inputs and a learning remote control system.



APRIL 1993

"A/V flagship we can heartily recommend"



WINTER 1992

"Even as a hi-fi amplifier, the Denon is entirely credible"

HI-FI NEWS
HOME THEATRE
MARCH 1993

"We were left with a very positive impression of the Denon, both for its supreme flexibility, and its sound quality."

DENON



For details of our other Best Buys and Recommendeds, please fill in this coupon and send to: **Denon, FREEPOST, Hayden House, Chiltern Hill, Chalfont St Peter, Gerrards Cross, Bucks SL9 9BS.** Tel: 0753 888447.

HFC 1

- Amplifiers
- Mini Systems
- Compact Disc Players
- Receivers
- Cassette Decks
- In-Car HiFi
- Tuners
- A/V Amplifiers

Name: _____

Address: _____

Postcode: _____

Tel. No: _____

DENON

Choice Sessions

JBL USA is back in black with the bichin' new *L1* loudspeaker.



LOUDSPEAKERS

JBL L1

The JBL *L1* is a compact (402x209x190/250mm) sloping baffled loudspeaker whose American manufacture is reflected in a £450 price-tag. A fine finish and curved grille make up for this highish price, but the driver complement — a 25mm ribbed metal dome tweeter and 125mm corrugated paper mid/bass unit — is nothing special. The only other important factors are the existence of a large reflex port in the back and a single pair of terminals.

I started off using the *L1*s with a 12W valve amp (Audio Note *Oto*) without two feet between them and the back wall. The result was bass boom of a most unpleasant nature. I had to drag them over three feet into the room before it subsided, and even then the low damping factor of the amp failed to fully control the *L1*'s exuberant bass. Hooking up a Pioneer *A-400* tightened things up to a satisfactory degree, though the smooth transparency of mid and treble was exchanged for something more obviously 'detailed' and occasionally fatiguing. This highlighted the speaker's good transparency.

Listening to a variety of tracks from both LP and CD, I enjoyed the *L1*'s speed and

power. It can stop on a dime over most of the band and makes impressive work of strongly punctuated rock like Lynyrd Skynyrd. However, the bass, which has been allowed to extend beyond sensible limits, colours matters and muddles music with a high low frequency content. It's not that the bass is bloated or out of control, it just lacks definition. The result is decent, articulate mid and high frequencies, underpinned by deepish but still vague bass.

As with most relatively affordable speakers, the JBL *L1* represents a trade-off. It offers good power handling, decent transparency and bass extension in exchange for overall tidiness and naturalness. At the price it's hard to recommend, but if you want a small speaker — and you've got the space — don't discount them.

Jason Kennedy

VERDICT

JBL L1

■■■■□□ £450.00

PROS: Go loud and low; never boring.

CONS: Need a lot of space; poor bass resolution.

▶ **HARMAN AUDIO, Unit 2 Borehamwood Ind Park, Rowley Lane, Borehamwood, Herts WD6 5PZ. ☎ (081) 207 5050**

AMPLIFIER

Musical Fidelity Preamp/Typhoon II

The *Preamp/Typhoon* was conceived as a beer-budget pre/power amp combination. Communication between the pre and power amps was based on the novel idea of using balanced connections (unfortunately using an XLR plug where a socket should be used and vice-versa — but a lead was supplied) with no unbalanced option.

The design allowed another power amp to be added, boosting power from 45 to 150W. Omitting the unbalanced circuit locked buyers into the complete amplifier as surely as buying a single-box integrated amplifier, while keeping costs in check. But there were complaints about the absence of phono facilities and its sound, which was described in these pages as having the feel of an 'unpolished diamond'.

I also discovered the hard way that the *Typhoon* doesn't suffer fools. As with other Musical Fidelity designs, there are no output protection measures, which can have catastrophic effects if the output is shorted.

Musical Fidelity has reacted generously to most of the criticisms. The *Typhoon* hasn't been touched, but the *Preamp* is a new animal under the skin. It is now

Separated at birth; the *Preamp* and *Typhoon* now with new smooth dynamism.

a conspicuously well built design which, in its basic configuration, still has six line inputs but which now accepts add-in circuit boards. You can choose an MM/MC phono board or a DAC board which has an electrical phono based input only.

The DAC option sounded clean and detailed, with a notably dynamic and coherent presentation, but it also sounded a tad jangly and dry by the best standards. It can be considered as an economical upgrade for the DAC built in to many low end one-box CD players.

The preamplifier is a great improvement. The sound retains its former dynamism, but is now smoother and more neutral, with the same bass warmth which, in most systems, is an asset rather than a liability. Treble quality especially is much improved both in presentation and in resolving ability.

Overall, this combination offers a new flexibility and polish over its established virtues, which can be summed up as the greatest possible bang for your buck.

VERDICT

Musical Fidelity Preamp/Typhoon II

■■■■□□ £598

PROS: Can be an economical upgrade; clean and detailed.

CONS: No output protection measures.

▶ **MUSICAL FIDELITY LTD, 15-16 Olympic Trading Estate, Fulton Road, Wembley HA9 0TF. ☎ (081) 900 2999**



close your eyes and see



the Delta 290 amplifier with the Delta 280 digital FM tuner

Close your eyes and see how a 75 watts per channel amplifier with "real clout" can, at the same time, be "subtle and intriguing" (Audiophile magazine). Discover a "big-boned" six-input unit that, whatever the sound-source, still "presents the detail in a wholly natural fashion" (What Hi-Fi?). Prove to yourself, as Hi-Fi Choice did, that "amplifiers of this calibre are certainly uncommon." And realise why the world's most important consumer electronics show, the Chicago CES, gave it a Design and Engineering Award for being "one of the most innovative consumer electronics products of 1993."

Next, try the Delta 280 slimline tuner (20 presets, remote controllable). You'll find its sound, too, is "weighty" (What Hi-Fi?) yet "articulate" and "lucid" (Audiophile). Put the 280 and 290 together and, though you might have heard the epithet "working in perfect harmony" before ... now you'll understand it.

Just listen. Simply sample the experience that is the Delta 290 coupled with the Delta 280.

Just close your eyes, open your mind, and see the light.

ARCAM

For more information, complete the coupon and post it to:
 Arcam, Pembroke Avenue, Waterbeach, Cambridge CB5 9PB. Or telephone: (0223) 440964

Please send me information about: (please tick box)

- Arcam CD players
 Arcam tuners
 Nicam TV tuner
 Arcam amplifiers
 Arcam speakers
 Arcam cassette deck

Please send me a brochure with details of all your products

Title _____ First Name _____

Surname _____

Address _____

Postcode _____



(The handset shown is an optional extra.)

In Australia: Silver Australia Pty Ltd., 4 Rushdale St., Scoresby 3179. Victoria Tel: (613) 7630177. In Canada: Avalon Audio Ltd. Unit 17, 975 Frazer Drive, Burlington, Ontario L7L 4X8 Tel: (416) 333 4633. In New Zealand: Avalon Audio, PO Box 5373, 119 Wellesley St., Auckland Tel: (649) 7793511. In South Africa: Hi-Fi Installations, 134A Fox St., Johannesburg, 2001 Tel: (2711) 3312011. In the USA: Audio Influx Corporation, PO Box 381, Highland Lakes, New Jersey 07422 0381 Tel: (201) 764 8958.

Choice Sessions

D/A CONVERTER

QED Positron

A firm *Hi-Fi Choice* Best Buy, the little QED *Digit* D/A converter is so well engineered and sounds so good that, if reboxed, it could easily sell for several times its £125 price-tag. However, sonically the *Digit*'s limiting factor has been the plug-top power supply that comes with the converter.

Enter the £85 *Positron* dedicated power supply for the *Digit*. This simply replaces the unregulated supply with one that is optimised for the little converter. It is also possible to buy the 'Dac Pac', which is a *Digit* complete with *Positron* power supply and *Digitflex* interconnect, for £229, which makes a small saving over buying the units separately.

After extensive tests, QED found that the giveaway power supply did little to reduce mains frequency harmonics, ripple and noise, which were likely to undermine the *Digit*'s overall performance. Replacing this power supply with a fully regulated, high current model improved matters greatly. The *Positron* did run warm, however, and was best positioned as QED suggest — to the left of the *Digit*, well ventilated and away from the CD player.

The improvements to the *Digit* were dramatic, instantaneous and irreversible — played with a *Positron* for a few minutes, it proved impossible to live with the *Digit* alone. Almost every aspect of the *Digit*'s performance was improved, but its focussing abilities were the most readily apparent. Adding the *Positron* was like a trip to the



The *Positron* may not have a pretty face but it revamps the *Digit*.

optician; often, the slight softening of focus goes by unnoticed for some time, until the right lens snaps everything back into focus. The *Positron* was just such a lens.

Instruments began to have their own space and identity, adding depth and solidity to the bass, but without losing the tautness of the *Digit*'s low end. This was combined with better definition and separation, although the neutral tonal balance of the *Digit* remained, not surprisingly, identical. The *Positron*'s ability to tighten up the *Digit*'s sense of rhythm, was surprising, however.

If you already own a QED *Digit*, the *Positron* power supply improves it so fundamentally that it should be next on the shopping list.

Alan Sircom

DCC RECORDER

Philips DCC-600

As anticipated, an entire range of DCC recorders is now available for our delectation, albeit almost solely under the Philips brand name. The £500 DCC-600 is numbered among them, and is one of two machines to stutter from European rather than Far Eastern production lines. Visually it betrays an elegance lost to the early DCC-900, thanks to a new sideways-loading RE-D mechanism, bold fluorescent display and the rationalised layout of its transport controls.

This player even sounds very much more ordered, if no more detailed, than its forebear, with an economy of tonal colour that's as typical of Philips' SAA7321 DAC as it is of the

PASC system itself. In fact there's some technical evidence to suggest Philips has recently up-dated the decision-making heart of its PAS-coder which now manipulates the very quietest high frequency sounds slightly differently to the older DCC-900.

Incidentally, the poor results obtained with our test DCC-900 (issue 117) were eventually attributed to a rogue SAA7350 DAC — the latest batch of DCC-900's are as clean as proverbial whistles.

The DCC-600, meanwhile, may not enjoy the low-level linearity of the DCC-900 nor the marginally lower levels of distortion, yet the overall performance of the 600 remains more attractive. Stick to recordings that maintain a fairly consistent dynamic theme and the DCC-600 will bob happily along, sustaining the major elements of the music if not the subtle wash of harmonics that lie beneath.

The music is simply very comfortable, providing the listener with little or no inclination to search the rather flattened soundstage for ingenious twists, turns or sub-plots. What you get is a broad picture of sound viewed from a distance.

Unfortunately, this very affable approach is rather less convincing when faced with the agitated dynamics of Brahms' *Fantasias*, for example. For here the ringing retorts of the piano

The DCC-600 is happy so long as you avoid *Fantasias*.



VERDICT

QED Positron

£85.00

PROS: Improves the *Digit*'s performance; excellent value.

CONS: It runs hot; the box!

AUDIO PRODUCTS LTD,
Ridgeway House,
Ridgeway Close,
Lightwater, Surrey GU18
5XU. ☎ (0276) 451 166

Choice Sessions

disturb the ambience of the venue, while also confusing the the DCC recorder. A CD of the same event reveals this shimmering acoustic in a very natural fashion, whereas any ambience recreated by the DCC-600 is, frankly, implausible.

Overall, the DCC-600 remains a very attractive machine and certainly the most polished of Philips' latest range. Nevertheless, in common with all 'reduced-bit' recorders, its success in your system depends as much on your choice of music as partnering ancillaries.

Paul Miller



In spite of its appearance, the Chord SPM 800 is a real muscle amp.

and unique power supply system, it makes the SPM 800's amplifier circuit more than capable of dealing with the large and fast dynamic changes between channels in a normal music signal.

The amplifier simply performed without fuss, never drawing attention to itself. It's difficult to try and describe the sound of a product, when its very strength is the absence of an amplifier sound. When hard pushed, it could sound a trifle bright, and the bass could sound gutless with the wrong speaker, but aside from these minor caveats, it was a paragon of absolute neutrality and it was very difficult to identify problems, let alone criticise.

If there was a noticeable strength, it was the holographic imagery that made the majority of amplifiers sound flat by comparison. The SPM 800 had a broad dynamic range and was tight and fast-paced rhythmically, although it didn't make a special feature of this important aspect of a performance.

To those weaned on 'musical' sounding amplifiers, the

stark, almost scholarly neutrality of the Chord SPM 800 may be disconcerting. However, the SPM 800 makes such a valid case for the 'straight wire with gain' school of amplifier that it demands to be listened to.

Alan Sircom

TURNTABLE

Ariston Elite

As almost anything is available through the post or over the phone these days, why not turntables? Hi-Fi Direct has made this a possibility with its recently established mail order service. No need to leave the armchair, just pick up the phone and dial a turntable — although they don't promise a 20 minute delivery or extra toppings.

The £170 Elite turntable is incredibly well packaged, as indeed it should be to withstand the rigours of the postal system. After spreading the contents of

the box before me, I was slightly phased by the Meccano aspect. There was a lot more to do than just add the plug. However, the concise and precise instructions enabled me to set the whole thing up within 25 minutes.

The plinth is of rock solid MDF fibre board, resting on four, non-adjustable feet. The aluminium platter with felt mat settles above this. Both are matt black in finish. The tonearm, which continues the sober colour theme, sports the popular AT95E cartridge from Audio-Technica, which was a Choice Best Buy in issue 48.

No flashing lights or gimmicks, this is a simple workhorse of a turntable. Changing the speed between 45 and 33.3rpm is a manual operation, and the drive itself is by means of a round section peripheral belt turned by an AC synchronous motor. Solid in its quaker-like simplicity, it possesses no artifice or snobbery and doesn't pretend to be anything other than what it is — a 'middle class' record player. The weighty, solid plinth, platter and tonearm carry through the minimalist theme, with only a basic style on/off switch in the corner of the plinth to start the motor.

The novelty factor of having a turntable at home once more, plus the rediscovery of all my old LPs, kept me playing and listening until the early hours. The Elite seemed to make a real difference to my mean and moody tracks, polishing and opening them out. This wasn't



Ariston's answer for enthusiasts who haven't taken the vinyl oath.

VERDICT

Philips DCC-600

£499.99

PROS: Neat appearance; easy to use; unfatiguing sound.

CONS: Perplexed by the most dynamic of material.



PHILIPS CONSUMER ELECTRONICS LTD, City House, 420-430 London Road, Croydon CR9 3QR. ☎ (081) 689 2166

AMPLIFIER

Chord SPM 800

Although the Chord SPM 800 does not look and weigh the part — as it delivers over 160W into a standard eight ohm load and a healthy 15 amp peak current — this £1,750 model lives in the world of the muscle amplifier. It is also, in a slightly modified form, the BBC's amplifier of choice to partner its LS5/8 monitor, following the demise of the Quad-derived AM8/16.

It manages to keep big amplifier performance, without the size and weight penalties, by using a switched mode power supply. This is more commonly found in the computer industry, although it first appeared in the early Eighties and is currently also used by companies such as Meridian in its power amplifiers.

Switched mode supply translates the standard 240v 50Hz DC mains supply through a MOSFET amplifier into a highly stabilised 80v 80kHz DC supply. Although this is a dramatic oversimplification of a complex

VERDICT

Chord SPM 800

£1,749.00

PROS: Neutral performance; small and beautifully made.

CONS: Can sound too analytical for some ears.



CHORD ELECTRONICS, 3 Bower Mount Road, Maidstone, Kent ME16 8AX. ☎ (0622) 764 874

quite as noticeable with more complex, large scale music, which didn't stir or move in quite the way one would desire.

When compared directly with the CD player, the same track on the *Elite* sounded muffled. It was not as clear, sharp or detailed which was rather disappointing. Nor did it cope too well with records that weren't in pristine condition, and on a couple of occasions gave up and skated across the surface. It did, however, have a pleasant sound, which was very easy to listen to.

At first, the impulse to jump up and bounce the tone arm over unwanted tracks was overwhelming, but once I allowed myself the indulgence of sitting back to listen, the *Elite* experience was very relaxing. This is because ordinarily I'm a CD user. It's so easy to come home from work, point the remote at the corner of the room and get instant music — you don't even have to look at the machine.

A turntable is a very different kettle of fish. It's far more interactive, and not convenient at all. You have to be committed to listening to the music before you go through the whole rigmarole of getting a record out of its sleeve and cueing it up — what an effort in this age of instant tea. Some people prefer the ritual, however, and I like the option of playing records when I'm in the mood, and CDs for when I've neither the time nor the inclination to pff around.

The *Elite* is the perfect answer for someone who is still keen on vinyl but who hasn't taken any oaths of devotion. It's the next step up from a midi system deck, and would also make an ideal first turntable.

Lisa Nickson

VERDICT
Ariston Elite
■■■■ □ □ **£169.95**

PROS: Perfect as part of a mixed source system.
CONS: Basic; limited tweaking opportunities.

HI-FI DIRECT LTD,
202 Long Lane, London SE1 4QB.
☎ (071) 827 9827



LOUDSPEAKERS

Pioneer S-4UK

Late in 1991, Pioneer UK asked its design team in Japan for a high quality compact speaker — something hot for serious audiophiles on a limited budget. And naturally hope that the £250 *S-4UK* speaker will follow the outstanding success of the *A-400* amplifier.

The full development story is quite fascinating and runs to eight A4 pages! Pioneer wanted a very simple speaker without the usual passive crossover. So, it designed a special bass/mid drive unit that could roll off its upper frequencies naturally

without needing the usual series inductor.

The Audax tweeter has a single series capacitor, making the *S-4UK* virtually crossoverless. The ported cabinet ensures a nice full bass despite its smallish size, and sensitivity is acceptably high at 88dB/1W.

Tonally the *S-4UK* sounded open and natural. It is well-balanced, smooth and very neutral, yet quite lively and detailed. The bass is nicely extended for such a small speaker, but not overblown or boomy. The treble sounds articulate and sharp, with good presence. Clarity is excellent.

Because Pioneer avoids a resistor in series with the tweeter

Hot for the UK, Pioneer's virtually crossoverless S-4UK.

to damp it slightly, high frequency transient response is excellent; cymbals have lots of shimmer and bite, while plucked instruments and percussion sound tactile and immediate.

There is some treble roughness and glare at times — almost unavoidable, alas, when you wire the tweeter 'direct'. It isn't always apparent though, and arguably it's a price worth paying in order to get superior transient attack and detail.

Despite these slight misgivings, the *S-4UK* deserves a lot of praise. It's an excellent speaker for its size and price and I could certainly live with a pair.

Jimmy Hughes

VERDICT
Pioneer S-4UK
■■■■ □ **£250.00**

PROS: Open, natural sound; great transient attack.
CONS: Treble glare.

PIONEER HIGH FIDELITY (GB) LTD,
1-6 Field Way, Greenford, Middlesex UB6 8UZ.
☎ (081) 575 5757

RECORDING

Fourth World
B&W Music, BW030

Back in the March issue I wrote a piece about the recording of this disc down in Wardour Street, Soho, where producer Mark St John was spending considerable time trying to get Airtó Moreira's various percussion instruments to sound 'right'. Some three months later the disc turned up and I've been listening to it since. We even used a track for this month's amp reviews.

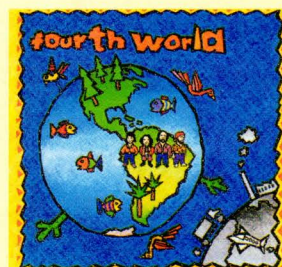
Fourth World is made up of major league percussionist Airtó Moreira, his wife, the singer Flora Purim, reed player Gary Meek and guitarist Jose Neto. As they all hail from South America it's no surprise that their music has a strong latin feel, but this is mixed with a jazz style that is as much

inspired by *Black Market* period Weather Report as it is by the strong percussive styles found in World Music. What I really like about it is the way the band gets a groove going and builds it gradually into a mountain of sound. The process is slow enough for you to hardly notice it happening and yet it has enough diversity to keep your attention.

While Fourth World is very much a percussion led band it wouldn't work as well if the diversity of other instruments and voices were just blended in. As

it is, each musician makes a significant contribution that results in a complex and yet accessible melange of latin/jazz that should appeal to a wide cross section of music lovers.

In fidelity terms, the disc is not of the 'hi-fi' variety and was not intended to be so. It has a strong tendency to sound overly busy, and the sheer variety of



percussion instruments crowding the high frequencies proved too much for many of the amps this month.

However, it has a very enduring and fluent feel that draws you in

and renders notions of absolute sound quality unimportant. The music transcends the medium.

Jason Kennedy



HIS LIFE REVOLVES
AROUND THE CITY.
THE CLUB. AND A
COTTAGE IN KENT.
HE'S FAR TOO BUSY
TO LISTEN TO A LINN
HI-FI. HE'S THE MOST
BORING OLD FART
YOU'LL EVER MEET.

Systems from £22,000 to £1,500. Available worldwide, only through Linn-authorized hi-fi specialists. Call Linn free on 0500 888 909 or fax 041 644 4262, for a full information pack.

Linn Products Limited, Floors Road, Waterfoot, G76 0EP, UK.

LINN HI-FI
music for life®

Lynnfield 500L

Ignoring the hype, radical and original loudspeaker designs are few and far between. Paul Messenger finds one in the new flagship from Boston's Lynnfield project — the tall, elegant 500L.

Boston Acoustics speakers have a reputation for being solid and competitive but not very adventurous. They've made the company financially sound, but no one enters the hi-fi business purely to make money — there are easier ways of doing that. But there's always an element of idealism, especially among speaker specialists searching for that ultimate compromise. A sound financial base provides an opportunity to indulge such idealism.

But to keep the bean-counters happy, there's also the marketing perspective. Boston is looking towards exports for future growth, and a flagship design, such as the Lynnfield speaker project, makes considerable sense in helping create an international reputation.

Its very existence will create plenty of publicity. Reviewers will grab the chance of a scoop, and magazines will splash out on colour spreads. And should the product turn out to be something really special, the whole effort will have a handsome brand credibility payoff.

Material problems

This £4,500 500L is the larger of two Lynnfield models which share very similar drivers and enclosures. The main difference is that this is the three-way version, which uses something very similar (but not identical) to the compact two-way 300L model to handle the midrange and treble parts of the audio range, each supported on a substantial separate subwoofer unit.

The senior designer, Phil Jones, has been connected with metal diaphragms since he designed the Acoustic Energy AE1 in the Eighties. However, while Phil is a leading apostle of this technology,



he's no simple acolyte who attempts to convince others through faith alone.

Jones is well aware that there's a downside as well as an upside to every material, and one of his toughest early tasks was convincing Boston's top engineer, Andy Petit, that there were valid reasons for using metals at all. He's also pragmatic rather than dogmatic, happy to use paper pulp for the internal bass drivers because it has some advantages over metal in this application.

Used as a loudspeaker diaphragm, metals can have some useful advantages over other materials, but they're no universal panacea. Indeed, the way any material is used matters just as much as the material itself, and the Lynnfield drivers were only finalised after years of experimentation with shapes, materials and surface treatments. Metal's advantages of excellent consistency and linearity on the plus side must be set against high relative mass (and hence lowish sensitivity) and the colorations associated with breakup modes which can be audible even when they occur outside the nominal working band.

The technology tweak that makes Lynnfield both unique and visually distinctive is something which Boston calls AMDs (amplitude modification devices). Even a child knows that if you blow across its end, a drinking straw will emit a single note. The same principle lies behind a host of musical instruments from a piccolo to a church organ.

What is less immediately obvious is that such a tube will also absorb energy

The Boston skyline. Standing tall on its subwoofer, the Lynnfield 500L's elegant looks match its refined performance.

of a specific frequency in a rather similar way. Phil's lateral thinking applied this to counter and cancel the out-of-band resonances which afflict metal diaphragm drivers. The bars across both midrange and tweeter units have slots and dimples precisely shaped and dimensioned to absorb the unwanted driver break up modes. Although other metal diaphragm speaker systems attempt the same task electrically by building a notch filter into the crossover network, Boston's acoustic solution has particular elegance.

The other obvious radical feature of the mid and treble drivers is that although the units have separate spaced diaphragms, coils and magnets, both are built onto the same complex cast chassis. This not only gets them physically and acoustically as close together as possible, but also ensures superb mutual mechanical integrity. The whole thing acts as a giant heatsink too, giving prodigious power handling and helping avoid temperature compression.

Although they don't have quite the same level of innovation, the bass modules are still very advanced and thoroughly thought out. There are two drivers hidden inside each multi-braced and carefully selected MDF cabinet, to give plenty of cone area while keeping the box nice and slim; they fire up/down rather than to/fro to avoid rocking the cabinet; and three quarters of the box acts as generous sealed box loading. The lower quarter is a coupled-cavity, with ports that exit at the rear close to the floor. This technique is good for bass units because most of the unwanted midrange output they generate stays in the box. Loads of terminals on the back allow for flexible wiring.

Compact it may be, but three boxes weighing nearly 100 kilos in total takes a bit of unpacking. I was surprised by the spiking arrangement, which has a stiff thumbwheel for individual height adjustment plus a screw-in tiny spike, but no form of lock-nut. Gravity and nearly

The tweeter and midrange sit high off the ground, implying that listeners really have to sit up in their armchairs rather than lounge about on the floor.



Bars over midrange and tweeter units (AMDs) absorb unwanted driver break up modes.

50 kilos of mass isn't going to permit much movement, but I'd still feel happier with a proper locking arrangement.

Its mid/treble enclosure sits on decoupling rubber pads inset into the top of the subwoofer. Phil has tried out various alternatives (his favourite being to float the satellites using repelling neodymium magnets!), and opted for this decoupling approach, to minimise the transfer of vibration between the boxes and consequent coloration, though such decisions are always a compromise.

Although the brochure implies you can place these speakers as close as three inches from a wall, I feel this should be regarded as a free space design for any but the very largest rooms — the over-

excitation of my 55Hz room mode was exasperating.

The tweeter and midrange sit rather high off the ground and well out into the room, implying that listeners really have to sit up in their armchairs rather than lounge about on the floor. An option which I explored to very good effect was to draft in a pair of regular height stands for the mid/treble enclosures, experimenting with the placement of the subwoofers relative to the satellites and room boundaries.

Since everything else about this speaker is pretty weird, the measured performance was bound to be too. Not only does the 500L have one of the lowest sensitivities I've measured, it combines this with just about the most evil amplifier load imaginable. I'll give it an averaged 84dB for sensitivity, within a decibel of what is claimed, but the load it represents for the amplifier is a monster, dipping to around 20ohms in that very power hungry part of the spectrum, 100-150Hz.

The reason has less to do with the bass unit than the midrange, the former hit-

The highest fidelity. Naturally.

HD 520 II

A very comfortable and musically capable headphone.



HD 450 II

"This headphone made a very good impression. It managed to reproduce music in a relaxed and open fashion... to a standard commensurate with the price."

Hi-Fi Choice Oct 91.



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 480 II

"A comfortable and enjoyable listen, whatever your taste."
What Hi-Fi Jan 93.

 **SENNHEISER**

The 500L sounded so clean that the temptation to wind up the volume was irresistible — which is where the problems started.

ting 4ohms at 150Hz while the latter registers less than 3ohms at 110Hz. While most decent transistor amps should be able to cope with either bass or mid driver alone without difficulty, putting them together and attempting conventional full range drive will pose practical problems for all but the most over-engineered and extravagant designs. Realistically, the 500L needs to be bi-amped, and four channels of at least 200W should be considered the minimum.

The balance is pretty good, with notably well extended bass (-5dB at 20Hz in room), a flat but slightly recessed midband, a mild suckout at the upper crossover point, and a flat but slightly exposed treble.

There's actually a very close correlation between the measurements and the sound quality. The mild balance anomalies discussed above are clearly audible as a degree of character which isn't strictly neutral, but which gets pretty close all the same. Likewise, the horrible load explains why I suffered so much grief trying to get them to play loudly.

What these simple measurements don't reveal, however, is how startlingly clean, transparent and natural this speaker can sound, nor what a superb dynamic range and amount of detail it can reproduce. The reason has much to do with the very low inherent coloration, and little if any detectable overhang beyond a touch of bass thickening. Furthermore, there was absolutely no hint of any 'metallic' quality, so the AMD devices are presumably doing their stuff.

However, although the dynamic range (the ability to reproduce both loud and soft signals accurately at the same time) is exceptional, the actual dynamics themselves (the way a particular sound swells or diminishes in volume) did seem rather less convincing than higher sensitivity designs. By the same token there's some lack of grip, and a slightly laid back, lazy and 'airy fairy' quality.

The 500L sounded so clean that the temptation to wind up the volume was irresistible — which is where the problems started. My regular 70W Naim NAPI35 monoblocks quickly ran out of steam, and the speakers started to emit alarming cracks (indicative of clipping)

at comparatively modest levels. A Linn Klout seemed to go a little louder, but again started emitting its own particular distress calls without getting anywhere near serious levels.

To try and satisfy the 500L's craving for power I borrowed a Chord SPM1200, rated at around 250W per channel. This was both instructive and impressive, giving the expected increase in loudness and a quite startling clarity and control. But it still gave up well before the speakers showed any such signs, politely switching off if the volume was raised too high.

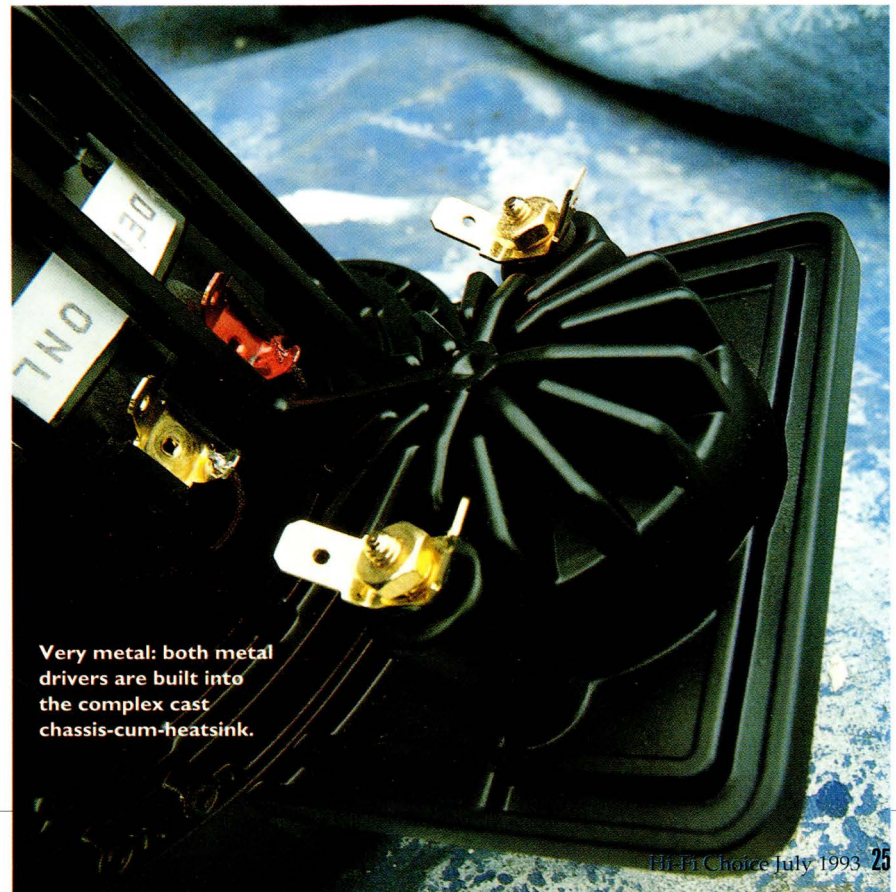
Power cravings

Having by then measured the speakers and discovered that any single amplifier was being asked to do the near impossible, I obtained a pair of big NAD 208 power amps (250W per channel stereo, 500W bridged mono) to give them some real stick and try bi-amping. This was largely successful, at any rate in generating serious levels at last, and confirming the exceptional power handling of the speakers, although these relative bargains (£800) among high power amplifi-

ers do represent something of a quality mismatch. Potential 500L purchasers should be contemplating a power amp budget closer to £10,000 to do the speakers justice, I regret to say.

One thing that these extended experiments did show was that the 500L has truly remarkable powers of analysis. Its tendency to over-stress driving amplifiers may be a practical pain, but its ability to unequivocally lay bare the various sonic strengths and weaknesses of the several high quality amplifiers tried is unprecedented in my experience — and the most convincing evidence of all that this loudspeaker is a true thoroughbred.

This is one of the best but also one of the least practical speakers I have ever encountered. The bass matching may prove suspect in modest size UK rooms, while very powerful, high quality amplification is essential. The overall sound may lean rather more towards intellectual than emotional sensibilities, but the vanishingly low inherent colorations and prodigious dynamic range together create a very large and clear window onto the reproduced sound that is thoroughly intoxicating and highly addictive.



Very metal: both metal drivers are built into the complex cast chassis-cum-heat sink.

David Mellor discusses the politics of hi-fi and music with Dan Houston.

Mellor moments

David Mellor considers his greatest contribution to politics to be a musical one. As Heritage Minister, or 'Minister for Fun', he was responsible for steering the Broadcast Bill through parliament, paving the way for new independent national radio stations. While the subsequent Act effectively nobbled free radio and pirate stations like the already beleaguered *Radio Caroline*, it was both husband and midwife to *Classic FM* and, indeed, the *Virgin AM* station. It is successful politics that has allowed a diversification of new radio stations, not market forces.

A year down the line, Mellor basks in the reflected light of *Classic FM*'s success story. With 4.4 million listeners, the station has proved that there was a hungry market waiting to be tapped.

It was partly Mellor's own taste in classical music which prompted the new direction for British radio, and broke the BBC's dominance of national broadcasting. As a political high-flyer under Thatcher's government, he became aware that *Radio 3* was hardly serving the burgeoning interest in classical music.

"I thought it would be marvellous to have a classical music station, like they have in the United States, which is far more accessible than *Radio 3*, although I

"In fact, I think *Classic FM* has created a new audience, attracting people who might otherwise listen to pop music."



don't see the two stations competing," he says. "In fact, I think *Classic FM* has created a new audience, attracting people who might otherwise listen to pop music. True, some may be using the station as musical wallpaper, but the whole joy of music is in making discoveries — be it new types, styles or composers. Anyone who enjoys a popular tune can enjoy classical music. The only barrier is attitude."

As the political instrument behind an increasing change in attitudes to classical music, David Mellor says the Broadcasting Act stands out as his proudest achievement in 11 years as a government minister.

Since his very public fall from grace last summer, over infidelities which rendered his political position untenable, David Mellor has been able to watch *Classic FM*'s quantum leap in popularity, and see *Virgin 1215* successfully bring the *Radio Caroline* style of album rock music back to the medium wave — on *Radio 3*'s old frequency. Yet he won't be drawn into any criticism of Broadcasting House, and sheds no light on the politics of broadcasting music. His stance clearly reflects Conservative politics, where suppliers should follow the market. If *Classic FM*'s style of bite-size chunks from the musical canon appeals to a nation hooked on a three minute culture, then so be it.



Mellor's own taste in music is less bite-size. He is currently listening to composers from the Second Viennese school, such as Schoenberg and Weber, "music I certainly wouldn't have listened to five years ago," he says.

Mellor's music comes via a Technics-based system with CD player, cassette deck and record player, powered by a JVC receiver through Bose Acoustimass loudspeakers. He's pleased with the sound quality, and particularly the looks of the loudspeakers: "They have a remarkable sound, and in my room, which measures about 14 feet square, they blend in quite well."

For him, hi-fi is a tool to be heard and not seen. "We're thinking of moving at present, and I'm planning a through house system with loudspeakers in the ceiling in different rooms."

Such a solution would undoubtedly be better than the present 'around house' system which is his Sharp portable radio, cassette deck and CD player. "But that's

The music from the Bose Acoustimass speakers gets Mellor's toes tapping.

David Mellor's *Desert Island* choices

- 1) Elgar: *Cello Concerto in E minor*
- 2) Jussi Bjorling: *Now take my heart*, written by Hugo Alfvén and Tove Ditlevsen
- 3) Bach: *Jesu joy of man's desiring*
- 4) Beethoven: *Seventh Symphony*
- 5) Tchaikovsky: *The Nutcracker*
- 6) Malher: *No 5*
- 7) Mozart: *Mass in C minor*
- 8) Wagner: *Tristan und Isolde* (the *Liebestod* section)

given me sterling service," he maintains. "I keep it in the bedroom so that I can have a bit of music late at night." He has two Sharp portables. The second resides in his House of Commons office.

He keeps up with the latest releases on these or on a Sony CD personal, a favourite companion from the days of ministerial cars, and which now anaesthetises long train journeys. "CD personals are a bit temperamental, so I have to have two of them. They're not very stable, which can be a real pain. You can't really class them in the same category as a personal cassette player. I use Sennheiser headphones, which are better than the ones Sony supply, and I find it's a great combination for music on the move."

Having CD portables and personals avoids the need to make tapes or use other media, and as far as David Mellor is concerned CD is, and should be, the dominant carrier. However, his music library contains some 2,000 LPs and 500 cassettes. "Playing records used to make me furious, especially when I could barely

"Playing records used to make me furious, especially when I could barely afford them — which I couldn't for many years. I found the rustle and clicks really annoying."

afford them — which I couldn't for many years. I found the rustle and clicks really annoying. But I put on a record the other day, and I must say I was really surprised at the

CREATIVE AUDIO

9 DOGPOLE, SHREWSBURY, SHROPSHIRE. Fax: (0743) 271010 Tel: (0743) 241924 (Closed Mondays)



“It’s life Jim...but not as we know it”

Roksan’s CD player boldly goes where only the best in analogue has gone before. Available in two or three-box form, the Roksan sets new standards at the price. Alternatively the DP1 can be partnered by Audiolabs excellent 8000 DAC. Hear them all alongside the Naim CDI & Meridian 200/263.

Authorised retailer for:

ARCAM · AUDIOLAB · CELESTION · CYRUS · DENON · EPOS · KEF · MERIDIAN
MISSION · NAIM · QUAD · REGA · ROKSAN · ROTEL · RUARK · SOUND ORGANISATION
TRIPODS

With the kind permission of Playmobil UK

warmth of sound. I didn't mind the surface noise at all. But I have become a CD convert, and I tend to use them all the time. I find the convenience of being able to change track appealing, whereas I used to find it difficult to bang the old needle down in the right place.

"A lot depends on the transfer when they are re-releasing the back catalogue. I have some of the Chesky transfers, items like the Sibelius *Second Symphony*, which is just fantastic, and conveys a real warmth of sound. But some CDs are transferred in a hell of a hurry and, occasionally, I buy recordings which I already have on LP, and can hear a metallic edge to the sound. Like everything else, a lot boils down to tender loving care."

What about tender loving care with the introduction of new media? David Mellor was one of a select panel of judges chosen by *The Sunday Times* to evaluate the separate sounds of DCC and MD. "We did some blind listening and I found that DCC was marginally ahead in terms of sound quality. But I heard nothing to make me think I should change from CD, and I can't see CDs being replaced, certainly not by these new formats," he says.

At prices which more or less equal that of general issue CDs, he is distinctly unimpressed by DCC and MD, and it's not surprising to hear a keen music lover berate current record industry pricing policy. "I shop around," he says, "and I always go to shops where there is a discount. I can usually find a couple of racks of remainder items. To me, the joy of collecting CDs is not walking into WH Smith and paying £13.99. I love paying £3.99 for something great. The pleasure of the market is that there is a tremendous range of music at all prices, and in the whole history of music there has never been as much choice as there is now."

Marsh Mellor

As a serious music collector, David Mellor is into musical interpretation, or the great conductors, as much as he is into the repertory. And like many music lovers, he finds the interpretations of the past musically more appealing. Hi-fi buffs often point to simpler engineering techniques, with the golden age of recording cited as the days of early stereo, where the job of cutting a track demanded consummate playing, and very little editing and post production were involved.

David Mellor sees a whole musical tradition disappearing, and he berates the modern approach of musicians, especially conductors, who feel it necessary to have a string of common great works under their belt. "I have a sense, like a lot of people, that there are greater perform-

ances to be found in the recordings of yesteryear than there are today," he says. "People no longer build up their careers working hard in the tradition with minor roles in opera houses or concert halls. For the most part, a musician's career used to be spent working in one place with a limited number of other musicians. That made it easier for them to pick up the idiomatic tradition, which the composer had shared. Now every modish conductor has to have his Beethoven cycle, but I wonder how many of them can do it, when they haven't shared the tradition.

that you can hear how wonderful someone like Furtwangler actually was."

While Mellor sees musicians bowing more to their pay packets and jet set lifestyles than to 'The Great God Music', he is also aware of the producer's point of view and a more clinical approach to recording music.

"I go to Abbey Road sometimes and I really enjoy sitting in on recording sessions. There is no doubt that, in terms of engineering, what can be reproduced is wonderful. The downside is that the quest for aural perfection turns the recording



In the cabinet: a Technics-based system and JVC receiver provide the Mellor music (above). Below: when not watching the Sharp television set, David is always ready for a good book.

With the great recordings at their fingertips, should conductors now be taking a leaf from the scores of the past? "Learning from other people's interpretations can be bad," David Mellor points out. "I remember Georg Solti telling me that, with any piece of music, he puts away all his old scores to see how the basic score impacts on him now. I think it's interesting to hear what others have done but it should never be a substitute for creative thought. Otherwise, music might become just a museum piece.

"I must admit, though, I do find myself drawn to older recordings. I hate golf club bores who say everything was better in the past, but this isn't just from memory. The great thing about recorded music is

process into a laboratory experiment. Of course, with something like a four hour opera, union restrictions mean that it's a case of stitching together three weeks' work, with about 20 minutes recording every day. And doing that it's very difficult to get the tempo right. Without the correct tempo, it's hopeless."

With this in mind, it's not surprising to hear David Mellor say that some of his favourite recordings are from live works, such as the 1962 Bayreuth Festival under Knappertsbusch. "They could never have done that in a studio, and it is a totally spatial recording," he enthuses.

His comments prove that the former Minister for Fun has an ear at least as sharp as his political mind.

HELP!

OUR EXPERTS SOLVE YOUR HI-FI QUERIES

Hong Kong prices

Q My current system comprises a Denon DCD-800 CD player, Arcam Alpha amplifier and Infinity Reference 30 speakers hooked up with Audioquest Crystal cables and Monster interconnects. I intend to upgrade both my CD player and amplifier, which I've had for five years.

My problem is that in Hong Kong, where I am currently living, there is a great discrepancy in the prices of equipment.

Generally, UK-made equipment sells for much higher prices than in England, while Japanese equipment is considerably cheaper. I intend to take advantage of this by getting a Pioneer PD-75 CD player and I am interested in either the Sansui AU-X911DG or the Akai AM-95 digital amplifiers. I am intrigued by the on-board digital facility, but dealers in Hong Kong do not have the demonstration facilities of British dealers.

Is it worth looking at one of the amplifiers I have shortlisted, or should I pay through the nose for a British product?

**G Robertson
Hong Kong.**

A The Sansui AU-X911DG fared better than the Akai in our tests, as the latter tended to sound a little too eager. The Audiolab 8000A is still a contender, however, even with an inflated Hong Kong price. Either of these amplifiers, partnered with the Pioneer PD-75, will give an exemplary level of performance.

Generally, however, we have been less than impressed by the analogue performance of amplifiers with on-board DACs. If you intend to use the Sansui with sources other than the Pioneer CD player, it may be worth considering alternative amplifiers, such as the Audiolab.

Ghostly speaker replacement

Q I use an AR Legend turntable, Linn Basik LVX arm and Linn K9 cartridge as my prime source.



Sansui's AU-X911DG amplifier: the price is right over in Hong Kong.

This is backed up by a Sony Walkman Professional cassette recorder and a Marantz CD-52II CD player. All of these run through an Inca Tech Claymore amplifier, into a pair of old Tannoy Mercury M20 speakers on decent stands, and I

use Audioquest Type 4 speaker cable.

My speakers have been driven hard for too long and are giving up the ghost — too many parties, perhaps, or maybe it's just that I enjoy my music loud.

Query of the month

How to split the budget

I am an Italian subscriber to *Hi-Fi Choice* and I am writing to you with some questions concerning my system. It currently consists of a Denon DCD-660 CD player and DRM-800 cassette deck, Quad 44/405 pre and power amplifier and Altec-Lansing Three Series II speakers.

I wish to change the CD player and loudspeakers, but I am very happy with the amplification. I have about £2,000 to spend, and expect to pay about £500 on the CD player and about £1,500 on the loudspeakers.

**Massimo Palatini
Italy.**

Although some may feel it better to apportion the bulk of the budget to the source component, in this case adding a pair of speakers well suited to the 405 amplifier — like the Castle Winchester or Vandersteen 2Ci, for example — could be more appropriate. Combine these with a Pioneer PD-S901 or a Technics SL-PS840 CD player for an elegant and smooth, if a little over-polite, system.

On the other hand, swapping the budget around a bit is more likely



to produce better results. Armed with a Meridian 206ΔΣ or a Linn Karik CD frontend, the sound produced through a pair of Mission 753s, Rega Elas or Castle Chesters should be more balanced-sounding, overall.

I play lots of rock and jazz music and I need speakers with a warm, deep bass, sweet treble and a clear, punchy sound. They have to fill a big room (8x3m) and I have a budget of around £300. Could you please advise me on my best bet?

Also, if I want to upgrade my turntable in the future, is it worth getting a Systemdek or should I aim higher if I want to see much improvement?

**Alan Cameron-Duff
Swindon, Wilts.**

A To fill a large room with sound is not impossible, but playing music loud in a large room with a relatively small amplifier is a recipe for disaster. Speakers often fry under the pressure of an overdriven amplifier clipping. We suggest listening to the Heybrook HB1 III or the Tannoy 609 to replace your Mercurys, but with the proviso that the amplifier should be changed for a bigger design, such as the Denon PMA-450 or Arcam Delta 290, in order to prevent further broken speakers.

Swapping your Legend turntable combo for anything less than a top Systemdek IIXE 900 AP, with a decent arm and cartridge, would not reap substantial rewards. To clearly better the Legend, we are in the territory of the Linns, Roksans and Pink Triangles of this world.

Better than a Rega?

Q I want to buy a decent turntable to replace my old Dual CS-505. I shall not upgrade it again, so I'd like something I can live with.

Aside from the Dual, my system consists of a Rotel RCD-965 BX CD player, an Audiolab 8000A amplifier and Mission 780 speakers — on wall brackets, because I've had to compromise with aesthetics and practicalities (like young children who push speakers off their stands). This has also limited the choice of cable to bi-wired Audioquest F-18.

I listen to most types of music, especially rock blues and Irish folk. I am looking for a sound that

is vibrant and detailed. I've listened to the Rega Planar 3, which is impressive, but I would be prepared to push the price a little further if it was really worth it.

**Andy Bigger
Mapperley, Notts.**

A The Rega Planar 3, with a Rega Elys or Linn K9 cartridge, is difficult to better at the price. For a little extra, though,



The Rega 3 is difficult to better at the price, but spending big bucks will bring rewards.

it is possible to get more out of the groove from a Michell Mycro, Roksan Radius or the PT Little Pink Thing. With your 8000A amplifier, it should be easy to spot the improved sound that these turntables offer.

Often, when asking questions about value, don't think of 'can I afford it', but instead 'can I live without it'. If you feel that the improvement is worth the effort, go for it, as you may feel disappointed with the lesser turntable in the long run.

Best Buy boost on a budget

Q I recently purchased my first real 'hi-fi' system and am now looking to my first upgrade. My system consists of a NAD 5425 CD player, Rotel RA-930AX amplifier and Linn Index II speakers, sitting on open frame stands and connected with QED 79 Strand speaker cable.

I was initially considering buying the specially designed Ku-Stone stands, but at £120, I am not convinced the money is justified by the improvement in sound quality. If I was to clear my bank balance and look to a component upgrade, then which piece should I upgrade, and to what? My musical tastes range from Suzanne Vega to classical.

**David Woulds
Sleaford, Lincs.**

A Sorry to disagree with you, but the Linn Ku-Stone stands are an integral part of the Index II's performance, and would be the first part of the system that we would change. If you upgrade the rest of the system, without addressing the speaker

stands, it will never sound happy.

From here, upgrade the cables with DNM interconnects and Linn K-400 bi-wired speaker cables, which suit the Index well. Following that, go for a Sound Organisation table. The next stage involves substantial cash input — the £280 Rotel RCD-965BX CD player and Arcam's £450 Delta 290 amplifier, for example.

About face bi-amping

Q I will be changing amplifiers later this year. A monoblok pre/power amp combination is a possibility, but as my Tannoy 615 speakers are quite sensitive, most monobloks (valves excepted) are over powerful.

Is it possible to take the right (and left) output from the pre-amp and feed it into both inputs on a stereo power amp, or even the line input of a well respected integrated amp, and use the left/right speaker outputs of the power amp to bi-amp the speakers?

**D T M Range
London.**

A Yes, it is possible, in theory, to run two stereo amplifiers effectively as monobloks. However, it is more common to use a stereo amp to the bass and treble, rather than to different channels. We have heard about a number of Michell Argo or ECA Finestra preamp owners running two Pioneer A-400s in such a fashion, with some success.

One is unlikely to destroy a pair of loudspeakers with an overpowered amplifier, unless one has a tendency to turn the volume dial up full at regular intervals. We have heard of small LS3/5a loudspeakers driven by massive Krell power amplifiers without problems, and the amps used in the Choice speaker test are 75W Naim NAP 135s. The moral of the story is, don't be afraid to use a set of monobloks with your Tannoy 615s.

Cable conundrum

Q Last year, I bought a new hi-fi system, which consists of a Marantz CD-42II Compact Disc player, Amadeus ACS preamplifier, APS power amplifier and a pair of Heco Interior Reflex 35 loudspeakers.

I had some trouble with the bass of my Hecos due to the wooden floor, but this was cured by putting them on Audiostatic Isocoins. Further, my CD player is fitted with an ASM CD-lens filter. My pre/power combination is currently linked with Monster Interlink 400 cable.

I would like to know what the best cable and interlink is with

which to upgrade my system. I have about £150 to spend.

**Gert-Jan Zom
Eindhoven, Netherlands.**

A As you don't say how far the amp is from the speakers, any judgements on speaker wire have to be a little vague. After all, £150 can buy 100m of QED 79 Strand, or less than 23cm of Furukawa 7N cable!

In terms of interconnects, if you are happy with the Monster Interlink 400, why not add a further set of Interlink 500, which achieved Recommended status in our cable survey. Otherwise, try looking at DNM interconnect, or vdH's The Source.

Moving over to speaker cables, look at Audioquest's F-14, Furukawa's FS-2T14, Mission's Stranded, or Straight Wire's Waveguide 1.5 and Flex 4. All of these should suit your system well.

Speakers to suit Best Buy system

Q I am in the process of buying a new hi-fi system, comprising a Rotel RP-855 turntable and RCD-965BX CD player, Denon PMA-450 amplifier and TU-260L tuner, and an Akai GX-52 cassette recorder — all Hi-Fi Choice Best Buy products. But I am undecided about suitable speakers. I wish to spend up to £400.

The room is 5x3.46m and I usually play a mixture of rock, pop, blues and classical. I would like the speakers to give me a combination of bass and crispness. Do you think floorstanders or small speakers on stands will suit the system and room?

**Dr Robert Marshall
Renfrew.**

A The room is almost perfectly sized for the average British mid-priced speaker. This throws the market wide open, but given the system that you are currently putting together, try the stand-mounted Tannoy 609, or

the floorstanding B&W 620. Both have received Best Buy status in Hi-Fi Choice.

They are both more than capable, and have plenty of low end grunt, yet they are different enough for you to be able to express a preference.

The readies to rock the system

Q I have around £1,000 to spend on a new Compact Disc player, as well as upgrading my present system. This consists of a Linn Sondek LP12 turntable, Linn Basik arm, Audio-Technica AT-95E cartridge, NAD 1020 preamp and 2140 power amp, Mordaunt-Short Pageant Series II loudspeakers on Target stands and QED 79 Strand cable in a room measuring 4x9m. I listen mainly to rock and dance music. The Linn is in need of a service.

My problem is what path to follow — should I spend most of my money on the CD player and turntable, upgrading the amplifier and speakers at a later date, or should I upgrade the whole system? Also, if I upgrade the cabling, will it breathe new life into the system? Finally, as the preamp has no dedicated CD input, will it sound acceptable through one of the line inputs?

**Paul Hornsey,
Hull, Humberside.**

A With about £1,000 to spend, and given your tastes in music and the current state of your system, the Rotel RCD-965BX or the Arcam Alpha Plus CD player would be an obvious choice. Rather than going for a more expensive player, this leaves you with money to distribute throughout the system.

At the very least, have the LP12 re-set, but consider adding the Linn

Complete a Best Buy system with a pair of B&W 620 loudspeakers.



**REFERENCE
POINT**

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 Electricentres, Helston 0326 573285
ETS Electricentres, Penzance 0736 64274
H.B.H. Woolacotts,Bude 0288 352269
Turo 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 551329

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 204965
0708 444765
Waters & Stanton, Hornchurch 0708 444765
Woolfmans, Basildon 0268 285922
Woolfmans, Ilford 081-514 7231

GLOUCESTERSHIRE

Hutchinsons, Cheltenham 0242 573012
Robbs, Gloucester 0452 419777

GREATER MANCHESTER

Bill Hutchinson, Manchester 061-839 8800
Clearstone Hi-Fi, Manchester 061-835 1156
Hamlets Audio Visual, Ashton-u-Lyne 061-343 5127
Tomorrow Studios, Sale 061-962 4651

HAMPSHIRE

Bryants Hi-Fi, Aldershot 0252 20728
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

Chew & Osborne, Bishop's Stortford 0279 656401
David Orton Ltd, Hitchin 0462 452248
Herts Hi-Fi, Huddesdon 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 56860
V J Hi-Fi, Margate 0843 226977
Whitstable Tele-Radio, Whitstable 0227 272028

LANCASHIRE

Clearstone Hi-Fi, Bolton 0204 31423
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

Babber Electronics, W13 081-579 6315
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
Kamla Electronics, W1 071-323 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
Superfi, NW11 071-388 1300

MERSEYSIDE

Beaver Hi-Fi, Liverpool 051-709 9898
Tomorrow Studios, Southport 0704 531500

MIDDLESEX

Musical Images, Edgware 081-952 5535
Musical Images, Hounslow 081-569 5802
T.A.S., Eastcote 081-866 4911
T.A.S., Ruslip Manor 0895 632217

NORFOLK

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

NORTHAMPTONSHIRE

H.G. Rapkin, Northampton 0604 37515

NOTTINGHAMSHIRE

F.L. Smith Electrical, Mansfield 0623 655684
F.L. Smith Electrical, Worksop 0909 479770
Forum Hi-Fi, Nottingham 0602 622150
Superfi, Nottingham 0602 412137

OXFORDSHIRE

Sound 'n' Vision, Bicester 0869 246491
Witney Audio Centre, Witney 0993 702414

SHROPSHIRE

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

SOMERSET

Paul Roberts, Taunton 0823 270000

STAFFORDSHIRE

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

SUFFOLK

Peter Watts, Bury St Edmunds 0284 703045
System Sound, Sudbury 0787 72348

SURREY

Audiolite, Thornton Heath 081-653 3657
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

Amrik Electronics, Bradford 0274 722530
Amrik Electronics, Leeds 0532 752285
Bill Hutchinson, Leeds 0532 427777
Eric Wiley, Castleford { 0977 553066
0977 556774
0532 449075
Superfi, Leeds

NORTHERN IRELAND**CO. DOWN**

Hi-Fi Experience, Belfast 0232 249117
Hi-Fi Experience, Belfast 0232 732452
LRG Sound & Vision, Belfast { 0232 451381

CO. ANTRIM

LRG Sound & Vision, Lame 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

Quinn's Audio Visual Systems, Swansea 0792 773644

GWENT

Hi-Fi Western, Newport 0633 262790

GWYNEDD

Owens, Bangor 0248 362951

 **PIONEER**
The Art of Entertainment

HELP!

Cirkus modifications at the same time. From here, re-cable the system completely, using Sonic Link Violet interconnects and Linn K20 speaker cables, or similar.

You don't mention the tables that the deck and amplifier sit upon, but it is worth having a set of dedicated tables, if possible. Assuming the rest of the system is working fine, leave well alone.

Finally, there is no problem in using a line input with a CD source, although on occasion older inputs can overload, because of CD's comparatively high output. This is more of a problem with classic amplifiers of the Sixties and early Seventies, however, so use your NAD with pride.

Flashing light free system

Having yearned for years for a decent system, and after getting over the 'I've got more flashing lights than you' syndrome, I finally decided to start building.

After numerous demonstrations, I found the most satisfying results came from an Arcam Alpha Plus CD player, Mission Cyrus Two amplifier with PSX power supply and a pair of Mission Cyrus 753 loudspeakers. I bought the CD player and speakers only, as I couldn't afford the entire system at once, and I am using an old amp as a temporary measure.

I am very pleased with the system, but the time has come to buy a new amplifier. Is the Cyrus Two the amp for the job, or would you suggest something else? If it is, is the PSX worth the extra £250, or would the money be better spent on something like a D/A converter? Could you also recom-

mend a £300 turntable and cassette deck, a decent tuner and, finally, interconnects and speaker cables.

Name and address supplied.

A The Mission Cyrus Two amplifier is a logical partner for the 753 speakers, especially with the PSX power supply, but it is not the only choice. It might be worth looking at similarly priced integrated designs from the Pioneer A-400 to the Arcam Delta 290.

If you liked the sound of the system with the Cyrus Two/PSX, however, it seems unwise and potentially confusing to shop around further.

The PSX is worth the extra £250, as it adds extra power and transparency to the Cyrus Two. In terms of tuners, the current fave has to be the Audiolab 8000T which is a superb all-rounder, but good quality performance can be had from the £270 Harman Kardon TU9400, or even the surprisingly good Denon TU-260L at £120. All of these tuners are only as good as the aerial that feeds them, so allow about £100 for a decent installation.

At about £300, there are only four real turntable contenders. Cheapest of the group is the well-made Thorens TD280/IV, with an Audio Technica AT-95E cartridge, but better results can be had from the Systemdek I.920 with a Goldring 1012 cartridge, the Projekt 2 with an Ortofon 510 and the Rega Planar 3 with an Elys.

When it comes to cassette decks,

the Pioneer CT-S610 and the Yamaha KX-650 will fit your budget, although the legendary Sony Pro Walkman must also be mentioned.

Finally, we have always found that Mission amps and speakers work best with Mission speaker cable, while QED Incon and DNM Interconnect should suit the system well.

Future formats

Q My system consists of a Systemdek IIXE 900 turntable with a Moth arm and an Ortofon MC15 cartridge. In addition, I use a Musical Fidelity CDT CD player. This is connected, with Tandy interconnects, to a Musical Fidelity A1 amplifier and a pair of Epos ES11 speakers on Epos stands, via Linn K-400 cable.

The turntable sits on its own Sound Organisation table, with a second three-tier Sound Organisation table for the CD and amp. I want to fill that third shelf with a recorder of some kind. Originally, I used an old Optonica cassette deck — a hangover from my earlier system — but this died about a year ago and I have yet to find a replacement.

I am tempted to buy a Nakamichi DR-1 cassette deck, but I am concerned that it may soon be outmoded, compared to the new digital formats. Should I go for a Digital Compact Cassette player, or a MiniDisc machine, or stick with cassettes? My existing tapes are a bit worn out, I admit, but I would still like to play them.

DCC: it's too early to say who will win the new format war.

Also, my amplifier is not blessed with a headphone socket, but on occasion I would like to listen to music through headphones. Is there any way a headphone socket can be added to the system?

Nigel Saunders, Sandy, Bedfordshire.

A At the moment, it is hard to say which, if either, of the two new digital formats will finally replace the ubiquitous compact cassette. Within the industry, there are strong supporters of MiniDisc and Digital Compact Cassette, but it is still too early to suggest that one will triumph over the other.

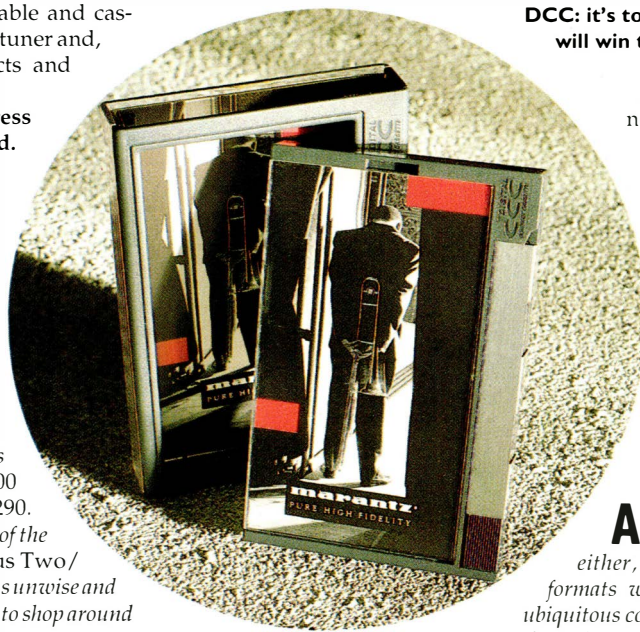
If you want to play back existing cassettes, the options are limited to a DCC or a standard cassette machine. Until personal and in-car DCC machines appear, and given the excellent recording quality possible from decks like the Nakamichi DR-1, it's prudent to stick with a conventional cassette deck.

The new format market is still in its infancy, however, and this situation could easily be reversed in the near future.

There is no headphone socket on the A1, but that's the price you have to pay for good sound.

It is possible to get headphone amplifiers, made by companies like QED, that fit between the amplifier and the speaker cables. These generally degrade the sound of the system, unless you are prepared to consistently plug and unplug into the back of the amplifier.

Unfortunately, the only headphone amplifiers that do not seem to degrade the sound come with expensive electrostatic headphones from the likes of Audio-Technica, Jecklin or Stax.



The Cyrus PSX: a great supplier of extra power and transparency.

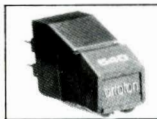
SEND YOUR HI-FI QUERIES TO HI-FI CHOICE

**Hi-Fi Choice (Help!)
Dennis Publishing Ltd,
19 Bolsover Street,
London W1P 7HJ**

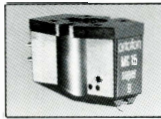
Great tracking

Ortofon is famed the world over for the tracking capability of its cartridges. Cartridges which will breathe new life into a cherished LP collection, divulging detail as never before.

The cartridge is always the key factor in the reproduction of music from records and Ortofon has dedicated nearly 50 years to the manufacture of the finest pick-ups possible. Enjoying constant critical acclaim along the way. So if you want to bring more out of your records than ever imagined, an Ortofon Cartridge will have you hot on the scent.



500 Series
Moving magnet
cartridges from £30-£100



MC Series
Moving coil cartridges
from £80-£110



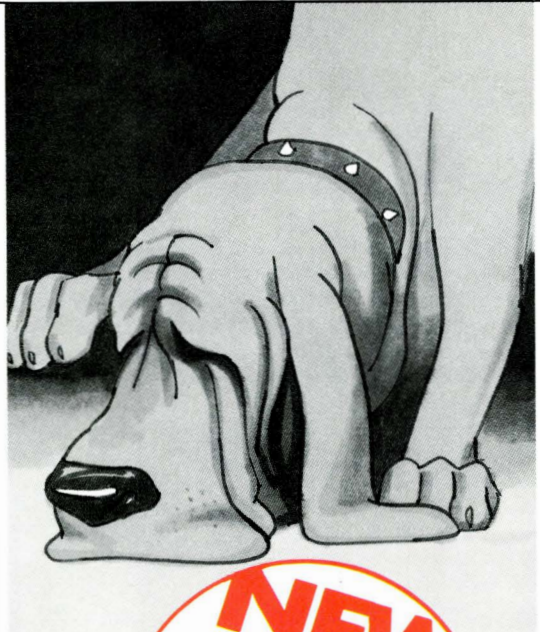
Q Series
Moving coil cartridges
from £140-£500



1000 Series
Moving coil cartridges
from £600-£1500

ortofon

Ortofon (UK) Limited, Chiltern Hill, Chalfont St Peter, Bucks SL9 9UG.
Tel: 0753 889949.



NEW FOR OLD
ortofon
25% 15%
Trade in your moving coil cartridge for a new Ortofon model
discount with an Ortofon moving coil cartridge
discount with any other moving coil brand.

A & R • Audiolab •
Audioquest • Audio Technica • Aura • B & W • Beyer • Cyrus • Denon • Dual •

HARROW AUDIO

MAIL ORDER

Carriage Free Hi-Fi

To Your U.K. Address

Amplifiers		Speakers	
Denon PMA260 III	159.99	Acoustic Energy AE1	763.75
Rotel RA930AX	169.95	Aeigis New 2001	452.00
Denon PMA350 II	219.90	B & W 2002	119.95
Arcam Alpha 3	199.90	DM600i	159.95
Mus.Fidelity Tempest	199.90	DM610i	179.95
Marantz PM44-SE - New	199.95	Twin Bass Sub Woofer	239.95
Rotel RA940BX	249.90	DM805	199.95
Denon PMA450 - Best Buy	249.90	Epos ES11	844.95
Aura VA100	299.95	Mission M760i	350.00
Audiolab 8000A	449.90	M761i	129.90
A&R Delta 290	449.90	M762i	179.90
Mission Cyrus III	499.90	M763i	249.90
Audiolab 8000C Pre.	429.90	M763i	379.90
Audiolab 8000P Pwr.	599.00	Cyrus 780	199.90
Receivers		781	249.90
Denon DRA345	249.99	751 New	299.90
Denon DRA545-RD	319.99	753	699.90
Tuners		Mon.Audio MA1	149.95
Denon TU260	119.95	MA7	179.95
Denon TU580-RD - New	219.95	MA9 Gold	289.95
Aura TU50	299.90	MA11	329.95
Marantz ST72 (+ cable TV)	259.90	MA14 Gold	469.95
A&R Delta 280	349.95	Tannoy 603 II	139.99
A&R Delta 150 - Nicam	229.95	605 II	169.99
Audiolab 8000T The Best!	599.90	607 II	219.99
Cassette Decks		605 II	294.99
Yamaha KX260	159.95	611 II	429.99
Denon DRM510	159.95	Wharfedale Diamond V	129.90
Marantz SD415 Double	189.90	2130 Satellite/Sub Sys.	299.90
Yamaha KX360	199.95	Denon Mini Systems	
Denon DRS610 Drawer	199.95	D70	Excl. Spkrs 589.99
Denon DRW760 Double	249.95	D100	Excl. Spkrs 769.99
Denon DRM710 3-Head	259.95	D250	Excl. Spkrs 929.99
Denon DRS610 3-Head Drwr	299.95		
Nakamichi DR3	349.95		
Nakamichi DR2 3-Head	579.95		
Arcam Delta100 Dolby-S	849.90		

Compact Disc		Target	
Denon DCD595	179.90	Speaker Stands	
Marantz CD42II	199.90	TR30 or TR40	54.95
Yamaha CDX470	199.95	TR50 or TR60	54.95
Denon DCD690	199.99	HS12 or HS16	66.95
Yamaha CDX570	239.95	HS20	67.95
Denon DCD890	269.99	HS24 or HS28	74.95
Marantz CD52 II Se	299.90	HJ17/2 Heavyweight	99.95
Mission DAD5 *	299.99	Hi-Fi Stands & Tables	
Yamaha CDC635 - 5 Discs	299.95	TT2 Table	69.95
Rotel RCD965BX	299.95	TT4sa Flat Pack	101.95
Denon DCD1290	329.99	TT5sa Flat Pack	114.95
Nakamichi CD4	349.95	ATH2 DeLuxe	109.95
Aura CD50 - New	399.95	AER3	127.95
Mus.Fidelity CD2	350.00	AER4 Racks	155.95
Arcam Alpha + CD	449.90	AER5	169.95
Nakamichi MB3 Mus.Bank	579.95	-- Check for full range --	
Arcam Delta 70.3	699.90	Audio Technica	
Arcam Delta 170.3	699.90	Headphones	
Mission *CD Package - comprising		ATH L1A Lightweight	19.95
DAD5 CD, DA Converter & Isoplat		ATH 308 - New	25.95
Total Value £630.00		ATH 910 Closed Back	69.95
		ATH 70 Electret Cond	195.95
		ATH 900 Electret Cond	249.95
		Cartridges	
		AT-101P P-Mount	16.95
		AT-95E Bi-radial	19.95
		AT-110E LC-OFC	24.95
		AT-OC3 Moving Coil	94.95
		AT-OC5 Moving Coil	129.95
		-- Check for full range --	
		Beyer	
		DT311 Telephone	44.90
		Denon	
		DL304 MC Cart	199.90
		RIAA Pre-Amp	
		QED Discsaver	34.95

All goods insured against loss or damage in transit. Prices correct at time of going to press (5 Weeks prior to publication). Prices incl. VAT and are valid for current month. Next Day FREE delivery on cleared payments. E&OE

Mail Orders to: Harrow Audio, 27 Springfield Rd., Harrow HA1 4QF

Credit Card Line: 081 863 0938

Daytime Tel. N°: 081 863 2443

Fax Orders: 081 863 2443

Please Send Me

I enclose Cash/ Cheque/ Card N° + Expiry Date

Name

Address

Daytime Tel. N°

Please Send Me

HFC 8

• Sennheiser • SME • Spendor • Stax • Tannoy • Target • Thorens • Wharfedale • Yamaha • Epos • Goldring • Jeeffin • KEF • Marantz • Mission • Monitor Audio •

WRITE ON!

TELL US WHAT YOU THINK ABOUT HI-FI AND MUSIC

Each month we're giving away a fabulous *Hi-Fi Choice* sweatshirt worth £15 to the writer of the most interesting letter.

Get scribbling and send in your views on anything to do with hi-fi and music to:

The Editor, *Hi-Fi Choice*,
19 Bolsover Street, London
W1P 7HJ, or send a fax on
(071) 323 3547.

No ears like your own ears

Like Mr J R Payne, (*Write On*, issue 119) I too was thinking of purchasing a pair of Mission 753s, and I can only hope that when Mr Payne gets them home, he will not be as disappointed as I was.

Fortunately, I had mine on a home demonstration. I heard them at the store and thought I would just confirm the glowing reviews I had read. Consequently, I persuaded the salesman to let me take them home for the evening. A wise move — they sounded even worse at home than they had in the store.

The sound was bright, almost to the point of being brittle. They went back the next morning.

Some time later, while looking round my local hi-fi shop, I came across a pair of Musical Fidelity MC4s. Someone else was having a demo so I just stood and listened. It's one of those stores where the speakers stand in banks, everyone mills about and the speakers are connected with bell wire. Yet they sounded really good, so I persuaded the salesman to let me take a pair home.

I was astonished. They sounded absolutely marvellous — natural, sweet, and with a good soundstage. Now I know that they are a discontinued model, and I could not find a review or even a mention of them in the hi-fi press, but they cost me the princely sum of £299 and I am pleased as punch. The Missions would have set me back £700!

T E Day, Barking, Essex.

We too had reservations about the 753's treble (issue 114), but as we are at pains to point out, it's your own ears that count. Listen before you buy, and be guided by your instincts. We can point you in the right direction. The final decision is yours. Ed.

Letter of the month

Freaking out

I am pleased to read that Paul Messenger enjoys the improvements made by fitting a *Cirkus* upgrade kit to his Linn LP12 turntable (*Hi-Fi Choice* issue 119).



Could its now clinical presentation be due to the upgrade finally ridding it of coloration — which, at the end of the day, was the reason for the LP12's excellent 'musicality'?

Having acknowledged that the *Cirkus* now reveals what really is on his records, are we to assume that this style of musical presentation is now acceptable to vinyl freaks such as yourselves, and that your magazine will stop belittling CD for its supposedly clinical sound?

Surely your responsibility as a hi-fi magazine is to advise readers on how to extract as much information as possible from vinyl or CD — yes, some of your readers actually want to hear the music as it was recorded, not process it like some form of karaoke.

I believe that both mediums are equally coloured and the differences are not of the magnitude you claim. After all, how can you criticise a CD for not being a record any more than a Townshend Rock turntable for not being a Linn LP12?

May I add that while enjoying your aspirational system reviews, I would find it of more interest if the majority were the result of successful upgrading rather than a 'turnkey' system installed by a dealer. The former would have merits of its own, and not be dependent on the size of the customer's wallet.

David Carter, Trowbridge, Wiltshire.

You make a perfectly valid point. Vinyl and CD both have a great deal to offer the music lover, and we do our best to highlight the best ways to enjoy both formats in the pages of Hi-Fi Choice.

As to our Aspirations feature, we can only report on interesting systems if we know about them. If you have a system that you think would make an interesting feature for Aspirations, write to The Editor at Hi-Fi Choice, Dennis Publishing Ltd, 19 Bolsover Street, London W1P 7HJ and mark your envelope 'Aspirations'. Ed.

Boot sale bargain

Many years ago, I was the proud owner of a pair of B&W DM1s. Over the years, I have moved with the times and changed my speakers accordingly.

While walking round a carboot sale a month ago, I saw something which made my pulse race, for there in a corner were two speakers with B&W badges on the front — taller than my old DM1s, and bearing the legend B&W Electronics DM3 on the rear. Trying to be casual, I asked how much they were and was told £15 the pair. Still trying to be casual, I handed over the £15 and staggered to my car with them.

On arriving home, I hurriedly connected the speakers into my system. What a revelation. I was rewarded with a wonderfully smooth middle and top, and a rich round bass to match.

I wrote to B&W and they were most helpful, sending full details about the speakers and where they should be positioned for the best results. I had the cabinets repolished and they now occupy pride of place in my living room.

The standard of workmanship and finish are first class. More importantly, the sound is by far the best I've heard in a long time — a real joy for just £15.

Roy Cottam, Cheshire.

Blind fury

I was a keen supporter of the blind listening tests used by *Hi-Fi Choice* and, in the main, I agreed with your panels on the occasions that I auditioned products. However, recent experience makes me question whether individual tests are any use at all.

I auditioned the Meridian *Delta Sigma* over a weekend and found it to be anaemic (particularly in the bass) and uninvolved when compared with the Teac *VRDS10*. I am not talking about subtle differences either. The Teac was a vast improvement, and I bought it. Your panel found the opposite. Why? There are three possible explanations:

1. Faulty equipment (unlikely).
2. Human inconsistencies (possible).
3. System mismatching (likely).

You yourselves have reported the effects of system mismatching. In fact, they are sometimes so huge that individual Recommendation or Best Buy tags are meaningless. And don't tell me about providing the reader with a shortlist. In my system (*A100/Talismans*), the *Delta Sigma* wouldn't make any list.

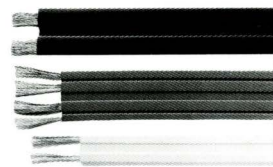
Oh yes, and why do you only print grovelling letters these days? I think your new format is tacky. Stuff your sweatshirt, and print this — if you dare.

David Kelly, St Ives, Cambridgeshire.

The letters we print are a fair representation of those we receive. If we are sent a critical letter, like yours, it will be treated in exactly the same way as any other. As to the effects of system mismatching, our review staff who conduct the blind listening tests are as aware of the problems as you are. They take every precaution to ensure that all the products to be auditioned are heard at their best. The final judgment then boils down to the opinions of the panel listening blind.

This has always been the Hi-Fi Choice approach, and the fact that it is only one product you appear to disagree over only serves to highlight the importance of listening for yourself. You may disagree with the panel on a specific product, but that's no reason to condemn a consistently fair and repeatable system of evaluation. And don't worry, we won't send you a sweatshirt. Ed.

Don't trip up on your speaker cable!



When you invest in good quality hi-fi equipment, why skimp on the cable?

Especially now that Ortofon can offer 3 types of top-quality cable for under £10.

Each cable is made up of very fine core copper strands rated at 6-Nines (that's a copper purity of 99.9999% – it doesn't come much better), is flat and flexible for easy installation and features a 'tack-rack' for panel-pin fixing.

Cable Type	Description
SPK 100	Twin-core white cable, each core with 130 copper strands (total 260 strands).
SPK 200	Triple-core grey cable for bi-wiring with twin-core treble (260 strands) and 3-core bass (390 strands).
SPK 300	7-core blue cable having 13 strands per core (each strand laminated). Requires soldering.

You'd better hound us for the name of your nearest stockist.

ortofon

Ortofon (UK) Limited, Chiltern Hill, Chalfont St Peter, Bucks SL9 9UG. Tel: 0753 889949.



Pollock Audio Developments Introducing the PAD Support System

Whatever turntable you use, if you consider it to be the best currently available, then you owe it to yourself to investigate the PAD Support System, which we believe is the best currently available.

Initially designed for the superb Void Turntable, we have now developed a unique support for most leading brands. Each PAD is individually sized and mass loaded as required.

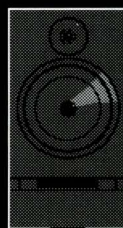
Absolutely stable, mechanical earthing is provided by direct couple spikes and excess energy dispersed through silicon beads.

Constructed from T.I.G. welded aluminium, the PAD is available in a range of finishes.



Equipment supports also available
For further information and literature: Tel/Fax: (0984) 23100
or write to us at: Wiveliscombe, Somerset TA4 2NB

WELL FANCY THAT



Q. WHAT'S GOT SIX LEGS, THREE HEADS,
LOTS OF ARMS, MAKES CRAP COFFEE
AND SELLS THE BEST HI-FI IN THE WORLD?



A. WE DON'T HAVE TO BE SERIOUS
TO BE PROFESSIONAL.

1/1A DUKE ST CONGLETON CHESHIRE CW12 1AP
TEL: 0260 297544

ARCAM • DENON • EPOS • LINN • ONIX • MARANTZ • NAKAMICHI

EXCLUSIVE!

First chance to try the new BBC FX 60 ferric cassette tape

FREE!

Don't throw away that piece of card stuck to the front of this month's *Choice*, as it's your passport to our superb BBC Blank Audio Tape offer!

For the first time, the British Broadcasting Corporation has put its name to a range of blank cassette tapes. BBC Blank Audio Tapes are perfect for recording all types of material, from *Test Match Special* to a favourite album that you just cannot survive another car or tube journey without. The tapes are normally sold in packs of three and five. However, in an exclusive *Hi-Fi Choice* reader offer, we have arranged for free samples of the 60 minute FX ferric tape to be made available at branches of Dixons throughout the UK.

Dixons are stocking the entire range of BBC blank audio cassettes, including the CDS 90 chrome. This top quality tape offers superb value among high quality chrome types. At only £4.99 for a pack of five, it's sure to attract the attention of music lovers on a tight budget.

Other tapes in the range include the 60 minute version of CDS chrome, available in packs of three for £3.99, the FX 90 ferric tapes, at £4.99 for a pack of five, and also FX

60 ferric, once again priced at £3.99 for a three-pack. In addition, there is a BBC VHS Blank Video Tape for TV and movie buffs. The video tape is also available through Dixons stores nationwide.

All of the BBC's new tape formulations look set to offer quality reproduction at an affordable price. The technical performance of the tape is good enough to justify the British Broadcasting Corporation name, which brings with it a promise of top quality and reliability.

To claim your free tape, simply take the coupon on the front of this magazine to any Dixons store. (If the coupon is missing from

the front of this copy, speak to your newsagent). The kind folk at the Dixons store will then exchange the coupon for a free sample of BBC Tapes' FX 60 cassette.

We regret the offer applies to UK readers only. The coupon cannot be exchanged for cash.



This month, you've a chance to win one of three pairs of Acoustic Energy speakers or one of 10 sets of Tara Labs cables — for the cost of a stamp!

Win Acoustic Energy prizes worth over £2,500!

Answer just five simple questions and you could win one of the superb Acoustic Energy products pictured here.

The first lucky winner will receive a pair of beautiful rosewood finished Acoustic Energy *AE1* loudspeakers, worth £870. Second prize is a pair of the excellent new *Aegis Model One* loudspeakers, complete with stands and lead shot filling, worth £620. The third prize winner will also receive a pair of £450 *Model One* loudspeakers. Finally, the ten runners-up will each receive a one metre pair of bright green Tara Labs *Quantum CD* cables, worth £63 apiece, which achieved a firm Best Buy rating in our cable test supplement (issue 108).

How to enter

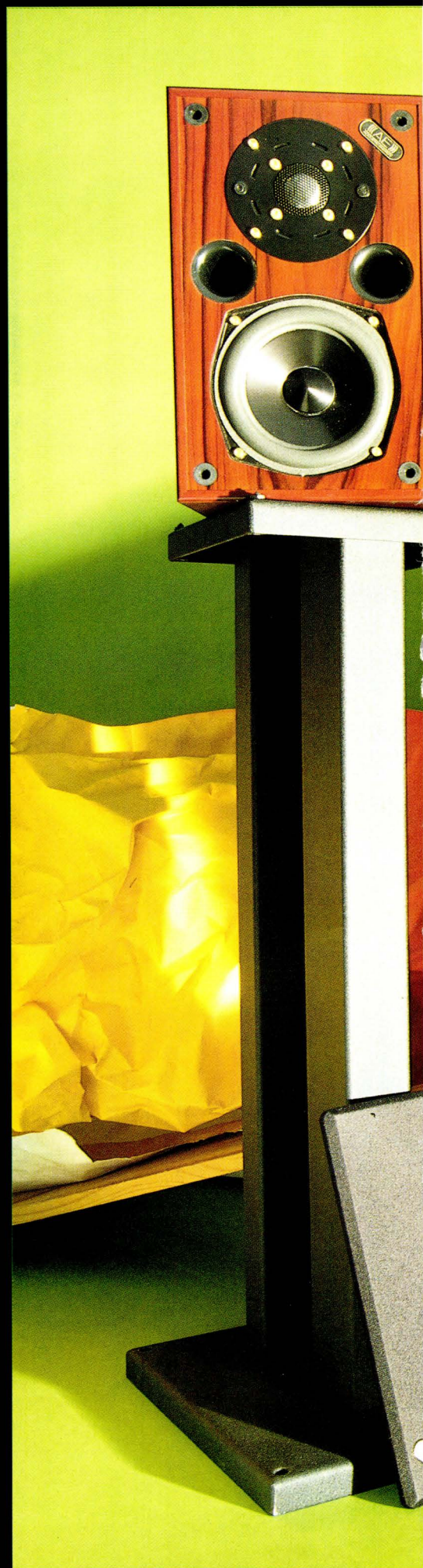
Write your answers to the five questions, along with your name and address, on the back of a postcard or sealed-down envelope. Send your completed entry to: Acoustic Energy Competition, *Hi-Fi Choice*, Computer Mailing Services, PO Box 249, London WC2H 0HS. Entries must be received by Monday, August 23, 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, Acoustic Energy, 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 meaning 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

1. What is the sensitivity of the Acoustic Energy *AE1* loudspeaker?
a) 80dB b) 84dB c) 89dB
2. What type of DAC is used in the Forte Audio *Model 50 D/A* converter?
a) 16-bit b) MASH c) DAC7
3. Where should you position the *Aegis Model One* loudspeaker?
a) free space b) wall-mounted
c) behind the sofa
4. How powerful is the Threshold *SA-4e* amplifier?
a) 100W b) 160W c) 200W
5. What is the bass driver of the *AE1* loudspeaker made from?
a) paper b) polypropylene
c) metal





Uxbridge

A U D I O

- ACOUSTIC ENERGY ●
- ARCAM ●
- AUDIOLAB ●
- CASTLE ●
- CREEK ●
- CYRUS ●
- DENON ●
- EPOS ●
- EXPOSURE ●
- ION SYSTEMS ●
- JPW ●
- LINN PRODUCTS ●
- MARANTZ ●
- MERIDIAN ●
- MISSION ●
- MONITOR AUDIO ●
- NAIM AUDIO ●
- NAKAMICHI ●
- QED ●
- QUAD ●
- REVOLVER ●
- REVOX ●
- ROGERS ●
- ROTEL ●
- ROYD ●
- RUARK ●
- SHAHINIAN ●
- STAX ●
- TANNOY ●
- TARGET ●
- THORENS ●
- WHARFEDALE ●



BRITISH AUDIO DEALERS ASSOCIATION
BADA
 THE ULTIMATE IN SOUND ADVICE

LINN TURNTABLE SERVICE
 Since 1984 we have sold over 1500 Linn turntables and serviced hundreds more. If you need service - we have the experience.

**Stubbington Fareham,
 Kent**

Dear Sir,

I thought I would drop you a quick line to say thank you to the team for delivering my system last Friday night.

Despite the late hour, both Adam and Jas showed no (obvious!) signs of wanting to 'install and run'. In fact, just the opposite. Especially when it came to choosing a pair of Stax headphones at the last minute, they were both very patient and relaxed about the whole thing. Very important from our point of view I would say.

Anyhow, this afternoon, after pussyfooting around at 'sensible levels' of music, I decided to warm the AE1s up a bit. After putting the house sound insulation to the ultimate test I discovered that the neighbours couldn't hear a thing. Not to be beaten I invited some round for a demo. After a short while they left looking very sick indeed. More customers? I don't know, but I got the impression a few 'stack systems' could be heading for the tip this weekend.

I may actually be forced into committing a crime to obtain the funds for an LP12/Nakamichi etc. to complement my new equipment. So if you recognise me on a building society video recording on 'Police Five' don't say a thing. It'll be to your advantage in the end! Robbery or not, you can be assured when I'm in the position to buy the rest of the gear I'll be knocking on your door.

Until then. Thanks again for everything.

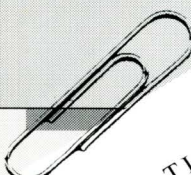

Regards

Bob Murdoch

Bob Murdoch

UXBRIDGE
 278 High Street
 Uxbridge
 Middlesex UB8 1LZ
 0895 230404
 Open 10am till 6pm
 Monday to Saturday

CHISWICK
 109 Chiswick High Road
 Chiswick
 London W4 2ED
 081-742 3444
 Open 10am till 6pm
 Monday to Saturday

- 
- TWO DEMONSTRATION ROOMS
 - 7 DAY EQUIPMENT EXCHANGE OR REFUND
 - RECORD CLEANING SERVICE
 - HOME INSTALLATION SERVICE
 - WIDE CREDIT OPTIONS AVAILABLE
 - 2 YEARS GUARANTEE
 - PARTS AND LABOUR
 - FULL SERVICE AND TURNTABLE SET UP FACILITIES
 - PART EXCHANGE
- 

Dimbos, digits & dirty tricks

Do you remember how the marketing brains at Philips came up with the double page advert of digital ones and zeros, headed 'Mysterious Ways by U2', and explaining that 'what you see here represents only the first 4.7 seconds of the piece'?

Philips got rather huffy when I counted the bits on the two pages and told them the numbers were completely and utterly wrong. The number of bits needed for 4.7 seconds of U2 is 1.85 million, and there were only 42,000 in the advert. If a company is trying to impress with technical adverts it should take care to get it right.

Well, those brains have been at it again, running single page adverts in the same vein. A quick count puts the number of bits at 13,300. But the dimbos have used the same wording. 'What you see here represents only the first 4.7 seconds of the piece' (*Mysterious Ways by U2*). So the numbers are even more wrong than before.

I tell this story to set the scene for something completely different.

Doubtless others will report on the top end hi-fi show which tags onto the Consumer Electronics Show in Chicago. I stuck with the main show and it was clearly on its last legs. Big names missing included Sony, Pioneer, Canon, Casio, Sharp, Hitachi, JVC, Toshiba and

Mitsubishi. Both Pioneer and Sony had set up their stalls in hotels around town, and invited selected dealers. As the American trade paper *TWICE* put it, 'too many companies are taking advantage of the show without paying for it'. This is what helped kill the UK's Harrogate Hi-fi Show. In what turned out to be that show's final year, Pioneer ducked out of the official show and took over part of a local department store.

The only real buzz of the show was in multimedia. Philips has now changed its stance on CD-I and sees it as a fun vehicle for games and video. The rival 3DO consortium put on an even bigger show, with Panasonic of America turning its back on CD-I and making 3DO the centrepiece of its stand.

The 3DO consortium promises a hardware and software launch in October, with \$700 players shipping to the US trade in September. Japan and Europe get 3DO next year. Although visitors to the show were clearly impressed, closer investigation revealed that all was not as it seemed. Demonstrators on both the Panasonic and 3DO stands were telling visitors that they were seeing

finished players, but many were not. They were dummies, or mock-ups or half-finished kit relying on Apple workstation computers hidden out of sight.

We only got to the truth by challenging what the demonstrators were saying and standing our ground until they had to own up. It was very tacky and helped explain why Panasonic did not risk a press conference, and why 3DO's own gung-ho press conference ended with no question and answer session.

After our discovery that things were a lot less ready than we were meant to believe, I asked both 3DO and Panasonic if they still promised a launch in October.

Both said yes. Despite the fact that some of Panasonic's players were switched off, had no discs in them and used hand controllers with wires that disappeared into a hole hidden behind the player, Panasonic's spokesman Bill Pritchard still maintained that the players shown were complete. And Trip Hawkins, the head of 3DO, wrote:

"I actually find it delightful that our competitors, in their desire to remain in denial about our existence, start rumours like that and want to believe them . . . As a journalist you should be sceptical about our claims and challenge them and ask for proof. But you should treat these kind of wild rumours with the same scepticism."

No-one started the rumours. As far as I know, I was the first to get suspicious and start digging. The news soon got round though and others started to look and challenge for themselves. Both 3DO and Panasonic have some homework to do before launching in the UK. Philips may concoct daft adverts, but if they show unfinished equipment that relies on outboard electronics, at least they play fair and make no secret of the fact.

Multimedia: what it is and how it works

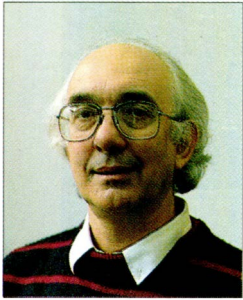
Multimedia is a great idea, a mix of sound, pictures and text on a CD, controlled by a personal computer. But the world of the so-called 'IBM compatible CD' is a mess of incompatibility. This is why multimedia companies want reviewers to see their CD-ROMs working on the companies' own PCs.

I resisted many invites from the Oxford University Press (OUP) to judge its Oxford English Dictionary running on one of OUP's systems. When I tried a copy on my own machine, I found it a pig to get working. Virgin launched the much puffed *Seventh Guest* with a party. The disc I got to try on my own PC would not work.

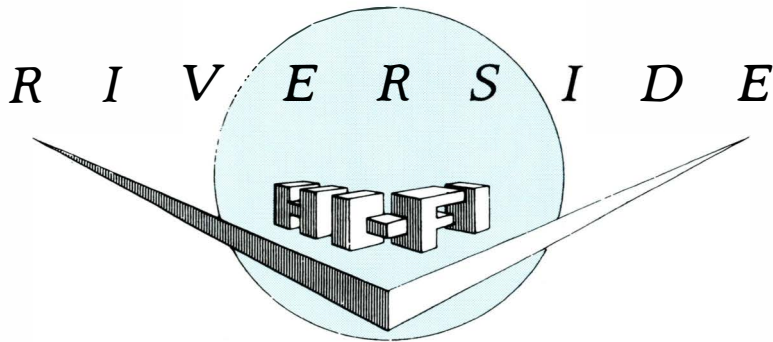
Compatibility problems such as these create the market for a 'plug and go' system, where standard discs are guaranteed to play on standard domestic players. Unfortunately, there are several plug and go multimedia systems, all incompatible.

Commodore's CDTV was the first, but was very poor and failed. CD-I, from Philips, is the most widely-backed. But one of CD-I's backers, Panasonic, decided also to back a rival system developed by Californian company 3DO. The 3DO system runs the CD at twice normal speed, to accelerate action on the screen. The trade-off is that this cuts the storage capacity.

Until recently, 3DO was only a paper promise. This year's Consumer Electronics Show in Chicago proved to be the first public confrontation between CD-I and working 3DO.



There's no fooling Barry Fox as he uncovers some very curious happenings in the hi-fi world.



Great advice on everything Hi-fi

When you drop in at **RIVERSIDE HI-FI**, East Twickenham, you'll soon know that you are at the home of hi-fi professionalism. We are aware how mind-blowing it is looking for a hi-fi system or just upgrading a component and so we offer you a friendly atmosphere in which you are welcome to browse and chat. We are open 6 days a week Monday to Saturday 10am-5.30pm, Thursday till 7pm.



AUDIOLAB 8000A
£450

Our staff are **EXPERIENCED** and interested in the products that we stock and in ensuring that our customers receive a personal service.

We have a **LARGE DISPLAY** area where you can see selected products from most of the better hi-fi manufacturers. We also have **FIVE COMFORTABLE DEMONSTRATION ROOMS**, of which three are devoted to **AUDIO** as well as **VIDEO** and two other rooms that are for hi-fi listening in private where you can **JUDGE FOR YOURSELF** which sounds best. (Early booking is recommended particularly on Saturdays.) Customers are encouraged to bring pieces of equipment they may wish to retain or upgrade and also music of their own preference.

The magazines only give guidelines, the best judge of your system is you, not a reviewer or even us. Our job as a dealer is to **DEMONSTRATE** the **DIFFERENCE** between products in order to help you make your buying decision, to present you the customer with products that are different not only in sound quality but also in build and finish, e.g. different wood finish speakers that may better suit your individual environment and personal taste. Not only do we supply the hi-fi equipment but also all the necessary accessories needed to achieve the best from your system.

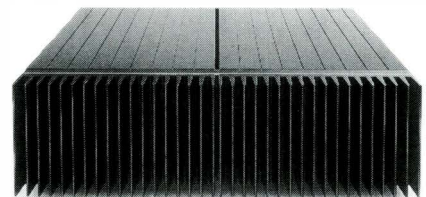
We offer a **FULL INSTALLATION** service and can also advise about **MULTI-ROOM LINKING**.

We welcome **PERSONAL EXPORT** enquires as well as other **TELEPHONE** and **MAIL ORDER** requests. Deliveries to the UK mainland can normally be made next working day. Please call or fax for details.

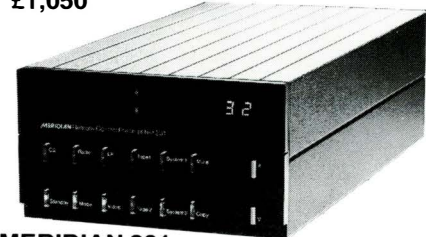
We of course accept all **MAJOR CREDIT CARDS** as well as offering **0% INTEREST FREE CREDIT** (subject to status).

Acoustic Research
Arcam
Audio Innovations
Audiolab
Aura
B&W
Bang & Olufsen
Bose
Conrad Johnson
Castle
Dali
Denon
Dual
Exposure
JPW
KEF
Meridian
Marantz
Michell

Micromega
Mission
Monitor Audio
Musical Fidelity
NAD
Nakamichi
Pioneer
QED
Quad
Revox
Rogers
Rotel
Spendor
Snell
Systemdek
Tannoy
TDL
Wharfedale
Yamaha



MERIDIAN 205 MONOBLOCKS
£1,050



**MERIDIAN 201
PRE-AMP**
£760



**MERIDIAN 206
DELTA SIGMA**
£995 (CD) *Best Buy*

It'll sound better coming from us

Come along and see our showpiece. We now have a Ford Popular in our showroom that lets YOU take the driving seat whilst listening to the very best of In Car Hi-fi.



081-892 7613

or Fax us on: 081-892 7749

RIVERSIDE HI-FI

422 Richmond Rd, East Twickenham, Middlesex TW1 2EB.

Subscribe today and get a FREE Demon CD!

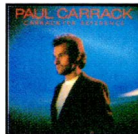
Yes folks, it's outrageous bribery time. Although the whole planet readily acknowledges that *Hi-Fi Choice* is the best hi-fi magazine in the entire universe, there may a little something holding you back from becoming a subscriber, thus ensuring that you don't miss a single copy of your favourite hi-fi mag. So, if a substantial saving on the cost of 12 issues isn't enough in itself, and if the prospect of us delivering a pristine copy to your door every month, and paying the postage, still has you caught in the jaws of indecision, here's this month's amazing offer.

We've got together with our friends at Demon records to give away a selection of better than average albums. Simply fill out the order form below, pick which album you would like as a free gift and send the form to: *Hi-Fi Choice* Subscriptions, Freepost Wd7, Market Harborough, Leicestershire LE87 4AU. Overseas subscribers, please post to *Hi-Fi Choice* Subscriptions, Tower House, Sovereign Park, Market Harborough, Leicestershire LE16 9PG. The free CD offer applies to the UK only. The cost of subscribing is going up next month, so fill in the form NOW!

Now choose your free disc

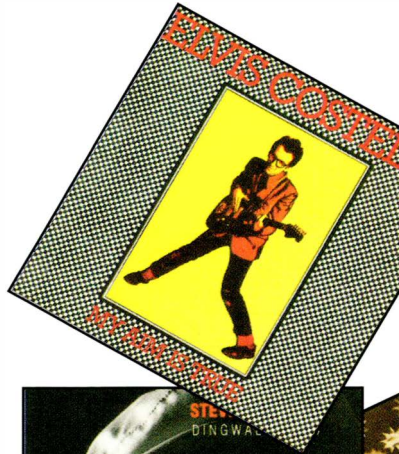
Paul Carrack: *Carrackter Reference*

A 16 track compilation from a great British singer, songwriter and musician; tracing his hits with Ace, Squeeze, and Mike and The Mechanics. Includes classic Carrack vocals such as *Tempted*, *How Long* and *Silent Running*. CD and LP.



Elvis Costello: *My Aim Is True*

Originally released on Stiff in 1977, this is the first Elvis album. Reissued here in its original form, it includes the classics *Less Than Zero*, *Alison* and *(The Angels Want To Wear My) Red Shoes* - the first three Stiff singles. CD and LP.



Ian Dury & The Blockheads: *Sex & Drugs & Rock & Roll*

The compilation companion to the classic *New Boots & Panties* featuring some of the best known tracks but carefully crafted so as not to duplicate any titles from that famous album. As the man himself was given to remark - there ain't half been some clever bastards. CD and LP.

John Hiatt: *Bring The Family*

For many, the absolute all-out winner in the finest album of 1987 stakes. Guitarist Ry Cooder joins forces with Jim Keltner on drums and bassist Nick Lowe for an album recorded in just four days, and mixed in three. CD and LP.



Sly & The Family Stone: *There's A Riot Going On*

Deservedly voted into the NME's list of All-time Greatest Albums, *Riot* was unavailable for far too long. Licensed from CBS/Epic, it makes a welcome return to the record racks in a modified gatefold sleeve. *Riot* was, and is, a landmark album in the history of black music. CD and LP.



Loudon Wainwright III: *A Live One*

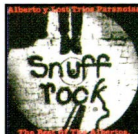
Compiled from various mid and late Seventies in concert performances, many of Loudon's best-loved songs are featured here including *Motel Blues*, *Suicide Song* and *Nocturnal Stumblebutt*. CD and LP.

Johnny Winter: *Johnny Winter*

The albino Texas blues guitar hero is featured here on his first major label album release. After years of playing in his native Texas and recording for various small independent labels, Johnny was 'discovered' by CBS as a result of a major survey of the burgeoning Texas music scene of 1968. The album *Johnny Winter* introduced him to the rest of the world. CD only.

Alberto Y Lost Trios Paranoias: *Snuff Rock: The Best of the Albertos*

At last, a compilation of one of rock's more anarchic combos. Featuring a drummer known for wearing a very large porn-adorned tie, they lampooned a multitude of popular musical genres. This 31 track, 80 minute CD is drawn from their albums *Italians From Outer Space*, *Skife*, *Alberto Y Lost Trios Paranoias* and, of course, the whole of the Nick Lowe produced *Snuff Rock* EP. CD only.



Steve Marriot: *Dingwalls 6.7.84*

As the titles suggests, this was recorded at Dingwalls in July 1984 and captures the late Steve Marriot in great shape, with the voice in fine form, as he takes on classics like *All Or Nothing*, *Bad Moon Rising* and *Walking The Dog*. CD only.



The Only Ones: *Live*

A live document of one of punk's great near-misses. Always tipped as the great hope of the British new wave, they ultimately broke up in 1981 as a result of record company difficulties and the extraordinarily self-destructive personalities within the band. This album captures one of their finest ever performances, and includes the classic *Another Girl, Another Planet*. CD only.



Priority subscription form

Either: I enclose a cheque/postal order for £..... made payable to Dennis Publishing Ltd

Or: Please charge my Access Visa

Account number

□□□□ □□□□ □□□□ □□□□

Expiry Date

SignatureDate.....

ADDRESS TO WHICH YOU WISH YOUR MAGAZINES TO BE SENT

Mr/Mrs/Ms SurnameFirst name

Address

.....

.....Postcode

Daytime telephone number.....

Please tick the subscription you require

UK, £22.95 Europe/Eire, £32.95

Rest of the world, £49.95SCHC212A

Now choose your free CD or LP

Carrackter Reference CD LP A Live One CD LP

My Aim Is True CD LP Johnny Winter CD

Sex & Drugs CD LP Snuff Rock CD

Bring The Family CD LP Dingwalls CD

There's A Riot Going On CD LP Live CD



The cast list

Adcom GCA-510	£349
Denon PMA-250II	£160
Exposure XX	£625
Harman Kardon HK6550	£430
JVC AX-R562	£250
Kenwood KA-4050	£260
Magnum Quartet-A	£330
Marantz PM-52SE	£429
NAD 304	£230
Nakamichi IA-3	£350
Orelle SA-020.2	£419
Rotel RA-935BX	£200
Sansui AU-X417R	£310
Sherwood AT-2210	£80
Teac A-X1000	£150
Wharfedale 2050	£250
YBA Integre	£1,200

The latest crop of integrated amplifiers tested and rated by
Paul Miller and Jason Kennedy.



On test: amplifiers

At the heart of every hi-fi system there is an amplifier, the one component that links every other. This is the product that allows you to copy from CD or vinyl onto tape, for instance, but its principal role is to provide an interface between source and loudspeaker.

This apparently simple task is dominated by extremes, from handling the minute voltages produced by a moving-coil cartridge to levels, say, 100,000 times higher demanded by an inefficient and power hungry loudspeaker.

Just how adequately an amplifier copes with these extremes is reflected in both its technical and subjective performance, though these two arbiters are not mutually dependent.

The bulk of amplifiers made today are solid-state in design, because these are simply more efficient, flexible and reliable in execution than their valve forefathers. But even here there is a broad

How to get the best from your amp

1 In common with virtually any other piece of hi-fi, amplifiers will only reach their full potential once they have been left running for an hour or so. Some amplifiers even need a breaking-in period of a week or two from new. Keep the amp well ventilated and keep it permanently powered up. This should not reduce its life expectancy — most failures occur as the amp is switched on and off.

2 Try plugging the amp into a different ring main supply to the rest of your equipment. Some mains stabilisers and/or interference suppressors will influence the sound of the amp. In many cases, they will 'slow' its subjective performance, encouraging a warmer but often less dynamic sound quality.

3 Most amps are susceptible to mechanical vibration from the speakers or even structural noise that creeps in from a busy road. Equipment tables or isolation platforms are often worth a try.

4 Pay careful attention to the quality of interconnect and speaker cables, as they can easily thwart the potential of an amp. See our cable guide (issue 108) for the full picture.

5 Some makers will load or tailor their CD inputs in a different way to the aux, tuner, video or tape inputs. Never connect a CD player to the MM/MC phono input of your amp, but do experiment with the other line inputs. You never know, your CD player may sound better through the tape or tuner input!

canvas of style and design that is reflected in the sound, flexibility, features and build quality of amplifiers at every price point.

Incidentally, technological

trends are trickier to pin down because the amp scene is not driven by new developments to the same extent as CD players or DACs, for example. Nevertheless, it's interesting

to see a return to MOSFET power transistors in many new models, chosen for their thermal stability as well as the opportunity to manipulate sound quality.

Naturally, this month's test reflects this diversity of ideas. Take a stroll through the coming pages and you'll discover for yourself how different manufacturers have very different priorities when it comes to pitching an amp at a particular price point.

That's just one reason why we've sub-divided the test into three distinct price bands, assessing the value of each amp against its immediate competitors rather than some notional 'absolute'. For an amplifier to be Recommended it must achieve a given standard of quality within its band, a benchmark that is judged to be above average for the price. By contrast, a Best Buy is something very special indeed. It's an amp that is great value, combining subjective and technical excellence in a reliable and compatible package.

First things first. Do not worry too much about 'matching' the nominal output of an amplifier to the power rating of your speakers. If the boxes have 50W slapped on the back this does not prohibit the use of a 30W or even a 100W amplifier, for instance. Furthermore, it's also important to appreciate that a ten or 20W difference between two nominal 100W amplifiers isn't going to exert much subjective influence.

For an increase in loudness of 3dB, for example, you would

have to double the power output of the amplifier. Similarly, the difference between a 50W and 200W amplifier is just 6dB which is rather less than the difference in sensitivity between competing speakers.

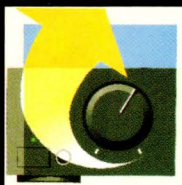
So if it sounds right then it is right. After all you're the one that has to live with the decision, not your dealer. In fact, it's easier to damage

your speakers by pushing an under-powered amp too hard than blasting out the occasional clean peak from a monster amp. Don't get hooked on power though, because more power does not mean more quality.

So what's all this fuss about peak current?

Well, current comes into the equation because a certain number

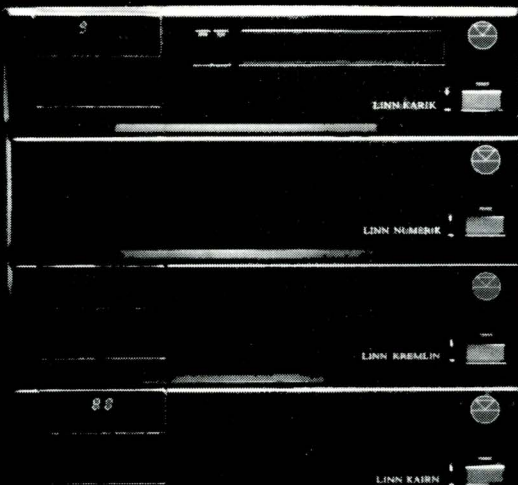
What's in a watt?



of Amps (or milliamps) are required to maintain the voltage across the speaker load, and the lower the load (or impedance) the more current is demanded for any given voltage level.

Combine a demanding style of music with low impedance speakers and your amplifier's reserve of current may suddenly run dry. Distortion shoots momentarily through the roof, blunting the impact of these dynamics and potentially damaging the speakers en route. So look for amps with, er, Amps.

Our best speakers cost nothing



Walk into Audio Excellence and you'll hear the difference straight away. The first thing you'll notice is that our staff are music lovers first and salesmen second. By talking and listening to you they'll be able to recommend a system or

separate that will give you the best sound possible. But you won't have to take our word for it. Just step into our listening room and you'll discover that here, music does all the talking.



- Carefully selected range of great Hi-Fi
- Comfortable listening rooms
- Friendly helpful advice from trained staff
- Free 2 year warranty
- Essential accessories
- Home installation where required
- In-house service department

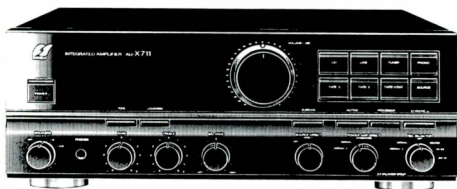
Bristol
65 Park Street,
Bristol BS1 5PB
(0272) 264975

Cardiff
134/6 Crwys Road,
Cardiff CF2 4NR
(0222) 228565

audio excellence
WHERE THE MUSIC MATTERS

Gloucester
58 Bristol Road,
Gloucester GL1 5SD
(0452) 300046

Swansea
9 High Street,
Swansea SA1 1LE
(0792) 474608



*"BEAUTIFUL
ENGINEERING
-
IMMACULATE
LOOKS"*

THE NEW SANSUI AMPLIFIER RANGE

Amplifiers and A/V amplifiers from £150 to £8,000.

North West: Acton Gate Audio - Wrexham, Leyland Hi-Fi Centre - Leyland, Mainland Products Blackburn, Shadoo's - Manchester, Sound Centre - Altrincham, M. Murray - Bolton, Sounds Great - Healds Cottage Audio Bromsgrove, Norman Davie Around - Leice Kington, South St. Neots, Hi-Fi Road London, Electric - Waltham Brixton, Telefix NorthWood Audio Camborne, D Southampton, Newton Abbot Oxford, Scotland Elgin, N. Ireland ColourVision Randalstown, John Hargy - Ballymoney, Traffic - Strabane, Vincent Toner - Newry, JKL Electronics - Newcastle, C.T. McCauley - Londonderry, Channel Islands: Teleskill - St. Peter

Contact:
SANSUI (UK)
EMLYN STREET
FARNWORTH
BOLTON
BL4 7EB
TEL: 0204 700139
FAX: 0204 862033

For details of local dealers
and our free literature pack.

THE NEW SANSUI CD RANGE

CD Players from £180 to £1,500

 **SANSUI**

DIAL-A-SYSTEM

DOLBY PRO LOGIC
SOUND SYSTEM AVAILABLE

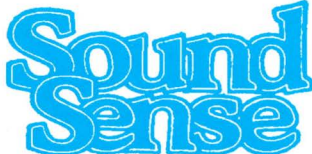
SPEAK CD	1 ROTEL RA935BX	2 TANNOY 607	3 MARANTZ CD52 II
AIWA ARCAM AURA DENON HARMAN/KARDON KENWOOD MARANTZ MUSICAL FIDELITY NAKAMICHI PIONEER ROTEL SONY TECHNICS TEAC YAMAHA	4 ROTEL RT-950 BX	5 HARMAN/ KARDON 6150	6 MISSION 760iSE
TURNTABLES ALPHASON KUZMA ARISTON ROTEL THORENS CASSETTE DECKS	7 ROTEL RCD965BX	8 DENON PMA450	9 TEAC VR DS 10
AIWA AKAI DENON HARMAN/KARDON KENWOOD MARANTZ NAKAMICHI PIONEER ROTEL SONY TECHNICS YAMAHA	* DENON TU260L	0 THORENS TD280V	# HARMAN/ KARDON TU9400

**LISTEN
AMPLIFIERS**

AIWA
AUDIO INNOVATIONS
ALPHASON
ARCAM
AURA
DENON
HARMAN/KARDON
KENWOOD
MARANTZ
MUSICAL FIDELITY
NAKAMICHI
NVA
PIONEER
ROTEL
SONY
SUGDEN
TECHNICS
YAMAHA

SPEAKERS

ACOUSTIC ENERGY
B&W
CASTLE
CELESTION
CERVIN VEGA
DALI
HEYBROOK
INFINITY
JPW
JBL
KEF
MISSION
MONITOR AUDIO
ROGERS
SNELL
TANNOY
WHARFEDALE



350 EDGEWARE ROAD, LONDON W2
TELEPHONE: (071) 402 2100
FACSIMILE: (071) 724 7750

Variety and objectivity are the keys to the success of our comprehensive listening tests. Variety comes in our choice of music which extends from pop, rock and jazz through to classical, female vocal and folk — an extensive battery of software chosen by our listeners at the beginning of each session. Even the panellists themselves are interchanged to cross-check on the results of a previous day's listening.

Then there's the system itself, a combination of DPA's PDM2 DAC and Pink Triangle's PT/TOO turntable mustering up a fine

front-end, while Audio Note's AN/JII loudspeakers bring up the rear. Naturally, the choice of Silver Sounds cabling has been arrived at from our previous blind survey of speaker and interconnect cables.

It's very important to remember that our auditioning is performed under blind conditions, with each amplifier being adjusted to not

How the listening tests were done



one but two predetermined listening levels. Furthermore, the amplifiers are assessed in a random order, having already warmed-up each contender on the test bench before it goes behind the curtain.

Many amplifiers are auditioned several times to confirm the consistency of our results though only the price band — not the model number — is revealed to the panel. This enables them to make a value judgement without being influenced by a product's reputation or, for that matter, the details of the lab report.

Most people are interested in the macho areas of performance like power output, headroom and peak current so it's as well to know that all three parameters are quoted with a maximum distortion limit of just one per cent.

The peak current rating is often quoted with no regard to distortion. This is crazy — after all, one amp might squeeze out 20A at 50 per cent total harmonic distortion (THD) while another could deliver the same 20A at just one per cent THD. By adopting a common hurdle you can readily compare the power, headroom and current rating of amplifiers in this and previous issues.

Look for amplifiers that not only have a healthy current rating but that also get close to doubling their power output between 8 and 4ohm speaker loads. These beasts should have no trouble driving difficult or multiple loudspeaker combinations. Unfortunately, any amplifier with an appropriately 'stiff' power supply will, per-versely, also suffer from a limited

What the tests mean

dynamic headroom. This latter figure gives us some idea of the maximum short-term power.

Then there's that dubious subject of distortion. It would be very convenient for us to believe that very low distortion necessarily goes hand-in-hand with very high sound quality but, unfortunately, it doesn't! Sure enough, there are many superb-sounding amplifiers with vanishingly low levels of THD but there are just as many 'Recommendeds' cluttered with harmonics.

What counts is not the amount of THD but how its composition varies with the changing power output of the amplifier. Broadly speaking, so long as distortion rises and falls in sympathy with the music, most listeners quickly become accustomed to its consistent presence or colour. Of course, some types of distortion

are more tolerable than others and this is where the 3D ultrasonic distortion plot comes in handy.

In this instance, we throw a combination of signals at the amplifier and increase the volume till it's ticking-over at 2/3 output into 4ohms. The three signals are shown on the reference plot and include a continuous tone at 20kHz, a sweep running from 0-20kHz and another stretching from 0-50kHz-0Hz. Ideally the plot taken from the output of the amplifier should exactly match the input, only louder!

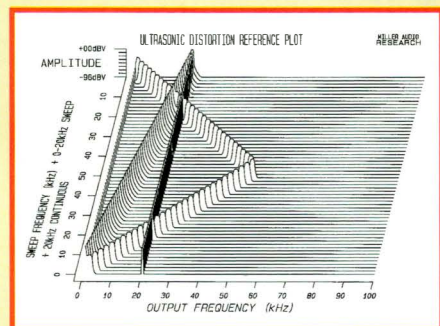
Inevitably, there's some corruption in the form of harmonic and intermodulation distortion. Harmonic distortions are seen as multiples of the original signal. So lines at 40kHz and 60kHz are harmonics of the original 20kHz signal while 'new' sweeps running from 0-40kHz and 0-60kHz are

built-up from harmonics of the original 0-20kHz sweep. The further these harmonics are from the 'mother signal' the more audible they become, though it's possible for bold harmonics to disguise the sound of weaker distortions further out.

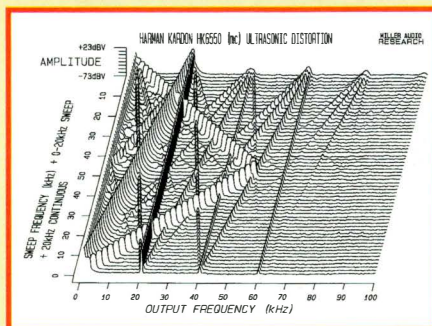
Intermodulation distortions are caused by combinations of two or more original signals and are most clearly seen, or heard, to the left of the main 20kHz line.

This busy nest of distortion can also be complicated by the ingress of hash from central heating systems, dimmer switches, fluorescent lights, CD players and the like. This hash is called Radio Frequency (RF) noise and, once inside an amplifier, can cause music to sound more gritty or fatiguing than perhaps it should.

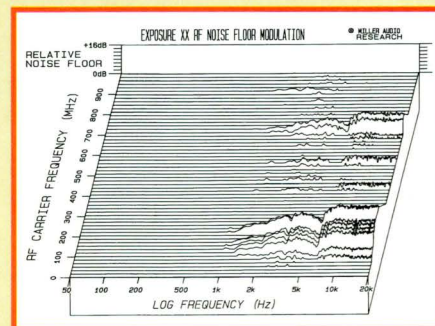
Anyway, this hash shows up as raised areas on the 3D RF plot, drawing attention to an amplifier's sensitivity to RF noise within a certain frequency band. If RF hash just happens to exist at these frequencies in your general location, then the amp will probably never give of its best.



The 3D ultrasonic distortion plot should match the input, but at a higher level.



Harmonic and intermodulation distortions corrupt the ideal 3D plot.



Raised areas on an amplifier's 3D RF plot betray a sensitivity to RF noise or hash.

ROMULUS

BY C.R. Developments Ltd.

The ROMULUS line level integrated stereo valve amplifier, a small step backward in technology, a giant leap forward in sound sense.
£907.00



Telephone for an early demonstration

Available direct from
C.R. Developments Ltd.

8 Craftsman Square Temple Farm Industrial Estate, Sutton Road, Southend on Sea, Essex
SS2 5RH

Tel 0702 469055, Fax 0702 601883

(Demonstrations by appointment.) U.K. dealer enquiries welcome

U.K. Dealers:-
CHANTRY AUDIO
Newark Notts
0777 870372
HERTFORD MUSIC
0992 700900



THE ADVANCED PRECISION SERIES Amplification at its finest

"The T&Rs are nothing if not revealing of what and how a signal is fed through them..."

"...superb resolution of information which, combined with excellent separation creates very deep and tactile images."

"...providing a smooth controlled and powerful soundstage with precisely located images that stay put and often sit way back from the speakers." HIFI Choice, June 1990.



T & R Precision Audio Products 55 Frankton Ave, Coventry, CV3 5BA.
Tel: 0203 419605

L i s t e n i n n

HI-FI SPECIALISTS

Linn, Naim, Epos, Heybrook, Arcam,
Mission, Royd, Audiolab, Creek,
Cyrus, Quad, Denon, Rotel, NAD,
Marantz, Kef, Chord Company
(Naim and Epos Northampton only).

LISTEN INN Northampton
Appointed REGA Agent

32 GOLD STREET, NORTHAMPTON
TEL: 0604 37871
6 HOTEL STREET, LEICESTER
TEL: 0533 623754

Denon PMA-250III



This latest incarnation of Denon's PMA-250 betrays very little obvious change over its MkII predecessor. The face design is familiar, with its bass and treble controls, balance knob and rotary input selector. Similarly, Denon has preserved its range of MM and line inputs, though its headphone socket will now mute the main 4mm speaker outlets.

Lift the lid and you'll discover the PMA-250III is as busy-looking as ever, even though its 5532-based disc stage and Sanken power amp are also largely unchanged. Revisions, where they do occur, concern board layout, a new IC-based line stage, choice of key passive components and the physical positioning of its power supply. Hardly mind-blowing stuff, but neither has Denon slapped any extra on what remains a very attractive price-tag.

Sound quality

This inexpensive amp is nothing if not eager. It tries very hard and for the most part makes a reasonable job of the work it's given. However, its performance with CD split the panel more than usual, although there were some common threads.

It made a valiant attempt at resolving as much detail as it could, and so long as things didn't get too busy, succeeded in producing a coherent sound. However, more complex passages were apt to get hurried or overly busy. Most budget amps take the easy way out, ignoring a lot of low level information in an attempt at resolving the fundamentals, but this little Denon went all out for detail. It displayed a wider tonal palette than most and dealt with the vibrant jazz track in an engaging, if not entirely tidy, fashion.

Bass was either a little constrained or had plenty of weight, depending on whereabouts in the room the listener was sitting.

Listening to vinyl, the results were much the same, although the extra depth and listenability of the medium were apparent, if not taken advantage of.

Conclusion

The latest PMA-250 is a lively and engaging little amp. It can stumble over demanding material, but in the context of its low price is a pretty competent performer. This, combined with its increased current capacity and lower distortion, makes it worthy of Recommendation.

Hayden Labs Ltd, Hayden House, Chiltern Hill, Chalfont St Peter, Bucks SL9 9UG.
☎ (0753) 888 447

Verdict

▲ Lively and engaging sound, load tolerant for price.

▼ When the going gets tough, the 250 gets a tad less impressive.

▶ **£160.00 RRP**



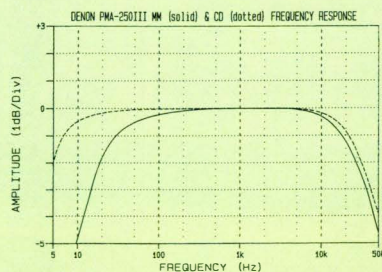
Laboratory Report

If Denon's literature is somewhat vague about its revisions to the PMA-250, then we can always refer back to issue 80 and compare the performance of this MkIII version with the older MkII. Doing so reveals two principal upgrades. First, Denon has increased its current capacity from 9A to 14A, reinforcing its ability to drive difficult and low impedance loads, even though its nominal 55W 8ohm specification remains virtually unchanged.

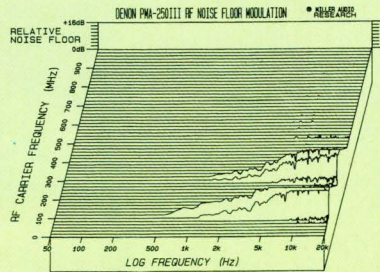
Furthermore, distortion has been squeezed from typically 0.04 to 0.0016 per cent, an improvement exposed in the cleaner-looking 3D plot and one that brings the MkIII back into line with the original MkII! Its susceptibility to RF noise, however, remains unchecked.

TEST RESULTS

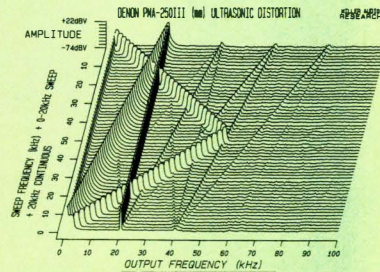
	20Hz	1kHz	20kHz	(2/3 power)	-95.9dB	-99.6dB
Maximum Continuous Power Output, 8ohms	48.8W	54.9W	51.8W	CCIR Intermod. Dist. (0dBW)	-95.4dB	-78.5dB
4ohms	67.4W	79.3W	77.5W	(2/3 power)	-96.3dB	-79.9dB
Dynamic Headroom (IHF)	+1.34dB (74.7W)			Noise (A wtd, 0dBW)	-82.5dB	-70.8dB
Peak Current (5msec, 1% THD)	14.1A			(2/3 power)	-98.1dB	-81.5dB
Output Impedance	0.047ohm			Residual noise (unwtd)	-76.5dBV-76.3dBV	
Damping Factor	169.5			Input Sensitivity (for 0dBW)	25.8mV	420uV
	CD/Aux	MM		(for full output)	193.3mV	3.11mV
Stereo Separation (1kHz)	71.3dB	72.2dB		Disc Overload (1kHz)	173.5mV	
(20kHz)	46.5dB	45.9dB		(50kHz)	4050mV	
Channel Balance (1kHz, -20dBV)	0.35dB	0.36dB		Tape Output/Impedance	10.9V (disc) / 244ohm	
(-60dBV)	0.31dB	0.32dB		Input loading	38.6kohm/80pF 46kohm/200pF	
Total Harmonic Dist. (0dBW)	-94.9dB	-97.3dB		DC offset, left/right	+0.5mV/+2.0mV	



Limited bass output via MM input stage reduces 'cone wobble' with warped discs.



Sensitive to RF noise just above the busy FM radio band at a little over 100MHz.



Relatively low-level second and third-order distortions are visible.



xperience live music

in your home.

Experience a personal service second to none.

At Sound Gallery we will help you tailor a hi-fi system that sounds exactly the way you want it, not the way you've been told it should sound.

Experience the options in the neutral conditions of our demonstration room, and the professional home installation of your desired system.

**FOR A SOUND EXPERIENCE
AND SOUND ADVICE, CALL**

**THE SOUND
GALLERY**

0494 531682

65 CASTLE STREET • HIGH WYCOMBE • BUCKS HP13 6RN

NAD 304



NAD: a name that has become synonymous with unadventurous, high-value hi-fi. The new 304 amp does nothing to detract from this reputation. In fact, it looks identical to the fabulous 302 (issue 116) give or take an extra line input and A/B speaker terminals.

There's an extra LED too, provided by way of indication for its Soft Clipping option. This latter facility will enable the power amp to gently back-off near full power, preventing any bursts of distortion caused by sudden surges into clipping.

More importantly, the 304 is equipped with NAD's EDP (extended dynamic power) circuit, momentarily switching-in a high voltage supply rail to cope with abrupt dynamics within the music. As a consequence, the 304 provides all the oomph of a 180W amplifier while falling back on

its standard 50W stage during the bulk of the music.

Sound quality

For once we have an amp that was unanimously popular with the listening panel. Everyone warmed to it's exuberant enthusiasm and was inspired to write a few more interesting descriptions than usual. Probably the most apt was 'this amp really gets a move on'. It was certainly one of the quickest in the bunch, and another panelist remarked that this helped maintain interest in the tracks being played.

But it wasn't all pace. There was plenty of dynamic contrast as well. It injected a greater sense of life to the test tracks, a vibrancy that made the jazz combo sound as though its members were really swinging along and enjoying themselves.

However, the 304 is not entirely perfect. Some sibilance was noted on certain tracks, and some might find it a little too quick for comfort.

With vinyl, it put in an equally entertaining performance, bringing out more of the dynamics and depth that the medium excels in. One listener found it less clear than the line input, but concluded that it was still very fluid.

Conclusion

It looks like NAD has done it again. Although the 304 may not look very thrilling, it is a cracking amplifier that proved both entertaining and informative. The stuff of Best Buys if ever was.

NAD, NAD Building, 401-405 Nether Street, London N3 1QG. ☎ (081) 343 3240

Verdict

- ▲ High level resolution and entertainment at a low price.
- ▼ Looks a bit boring, no gizmos or remote control.
- ▶ **£230.00 RRP**

■ ■ ■ ■ ■

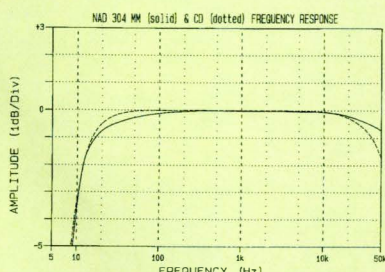
Laboratory Report

NAD has opted for a decidedly lax supply regulation, one that enables it to achieve a massive dynamic output of +5.7dB (187W) but that also renders very little increase in continuous power between 8 and 4ohms. Nevertheless, the true effectiveness of EDP is also reflected in the similarly massive 18.5A of current, an unexpected pool of power just waiting to clout any unsuspecting loudspeaker.

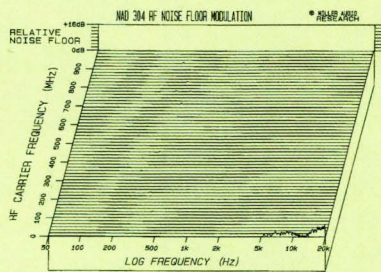
Meanwhile, you might care to compare the low distortion (0.0025 per cent), the 3D plot, RIAA curve and rigorous RF filtering with the very similar specification of NAD's 302 amplifier (see issue 116).

TEST RESULTS

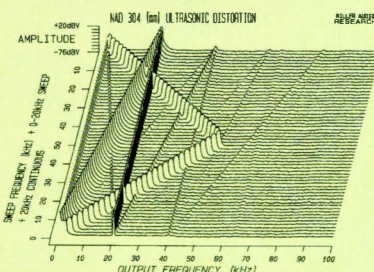
	20Hz	1kHz	20kHz	(2/3 power)		-91.4dB	-89.0dB
Maximum Continuous Power Output, 8ohms	50.3W	50.3W	48.8W	CCIR Intermod. Dist. (0dBW)		-98.7dB	-75.8dB
4ohms	52.0W	52.7W	52.8W	(2/3 power)		-96.8dB	-74.9dB
Dynamic Headroom (IHF)		+5.7dB (187.2W)		Noise (A wtd, 0dBW)		-90.1dB	-84.6dB
Peak Current (5msec, 1% THD)		18.5A		(2/3 power)		-100.8dB	-85.5dB
Output Impedance		0.057ohm		Residual noise (unwtd)		-76.1dBV	-76.0dBV
Damping Factor		140.9		Input Sensitivity (for 0dBW)		28.7mV	424uV
		CD/Aux	MM	(for full output)		205mV	2.93mV
Stereo Separation (1kHz)	78.8dB	77.3dB		Dise Overload (1kHz)		247mV	
(20kHz)	61.0dB	57.0dB		(20kHz)		2265mV	
Channel Balance (1kHz, -20dBV)	0.01dB	0.03dB		(50kHz)		3875mV	
(-60dBV)	0.46dB	0.48dB		Tape Output/Impedance		16.0V (disc) / 1.7kohm	
Total Harmonic Dist. (0dBW)	-92.7dB	-90.3dB		Input loading		19.5kohm/320pF	46kohm/120pF
				DC offset, left/right		+2.0mV/+4.5mV	



All the NAD's inputs are rather too abruptly rolled-off below 20kHz.



The 304 betrays little or no reaction at all to spurious RF noise.



Once again, favoured second-order distortions decorate the plot.



It costs the same to get it right as it does to get it wrong.

At the Listening Rooms, we pride ourselves on matching your needs with exactly the right equipment, whatever your budget, and because we only stock the best, that's what you get.

What you'll also get is sound professional advice and a chance to relax and listen to some of the world's finest Hi-Fi equipment.

35 years combined experience.

Two Fully equipped listening rooms.

Home installation service.

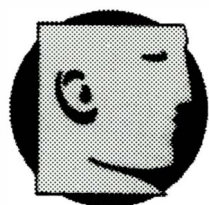
Multi-room design and installation.

2 years Parts and Labour guarantee.

Home cinema surround-sound.

Export and Credit facilities.

• LINN • QUAD • MERIDIAN • NAKAMICHI • ARCAM • AUDIOLAB • ACOUSTIC ENERGY SME • AUDIO RESEARCH • KRELL • CLASSE AUDIO • WADIA • THETA • APOGEE • MARTIN LOGAN • SONUS FABER • MUSICAL FIDELITY • REL • REVOX • ROGERS • PIONEER • TANNOY • STAX • AURA • LEXICON • SYSTEMDEK • PINK TRIANGLE • MICHELL MONITOR AUDIO • YAMAHA • MARANTZ • KEF • BOSE • CELESTION • EPOS • MISSION • DENON • NEAT PETITE •



THE listening rooms

161 Old Brompton Rd. London SW5 0LJ. Tel: 071-244 7750/59. Fax: 071 370 0192
Monday - Saturday 10am-6pm. Nearest Tube; South Kensington or Gloucester Road.

Programma Cinque

TAKEBOND Hotline: 071-323 2722 Fax: 071-631 4659



New to the UK, a brilliant range of hi-fi and video furniture is introduced by Artexport of Italy. Their **Programma Cinque** collection for 1993 contains over 50 models so the choice is yours. Although some units are built specifically for the hi-fi enthusiast, many will handle your home cinema equipment as well. There is also a stunning range of storage towers to accommodate your CDs and Videotapes.

Prices range from £53 to £429 - featured here is Fos which retails at £235. For information and catalogues telephone the **UK distributor Takebond** on 071 323 2722 or write to them at 31 Bedford Square London WC1B 3SG.

ATACAMA AUDIO SUPPORTS

A New Innovation in Audio Furniture Design, manufactured to the highest quality standards.

The "SE" range of speaker supports are designed to complement your speakers, and more importantly, offer uncompromised Audio performances.



Five models in the standard range: sizes 8", 12", 16", 20" & 24" high.

A further three specialist stands for "Tannoy Sixes" loudspeaker models 603, 605, 607 & 609.

All stands can be filled with sand, shot or other suitable medium. Each stand is supplied with adjustable carpet spikes, with top spikes being available as an option.

Please ring for your nearest stockist or send a S.A.E. for your free illustrated brochure.

Manufactured by: **Sambell Engineering Ltd**
Winston Avenue, Croft, Leicester LE9 6GQ
Telephone: (0455) 283251 Facsimile: (0455) 283908



Rotel RA-935BX



The evolution of any fine amplifier usually involves a little backtracking from time to time. After all, very few manufacturers hit the bulls-eye on every occasion. To this end, the new line-only RA-935BX is an acknowledgement on the part of Rotel that its previous BX-Series was not the raving success it had anticipated. The lack of any phono stage, even the option of a phono stage, is a further submission to the reality of a rapidly-changing market.

From the outside, the simple friction-locked L/R volume control and independent rotary selectors for its CD, tuner, aux and two tape inputs adhere to the modern Rotel style. Yet inside we witness a return to the older Rotel school of design with its thumping great mains toroid and high-gain Sanyo-based power amp.

Sound quality

This Rotel put in a characteristically 'sensible' but engaging performance, so much so that one of the panellists guessed what it was by the second track! The same guy described the opening track as 'lively, wiry, twangy and elastic', which is a fair description of the track, even if it gives a rather energetic impression of the amp. Bass was considered a bit light, but the clean and fluid midband allowed detail to flow easily.

It had better resolution than the dearer Adcom which preceded it on test, and presented the Mahler piece with aplomb. The reverberation that creates depth and reinforces the sense of menace was nicely preserved, even though the double basses could have dug down a little deeper. Brass was particularly well presented, with sheen and power but not too much rasp.

One listener was less easily won over, and found it a bit flat and uninspiring. It's definitely not superficially exciting, but when the music gets going, it's there on the beat. It's ability to create the sense of acoustic environment was noted by everyone on the panel, suggesting that its high frequency performance, while not obvious, is extended and reasonably natural.

Conclusion

This sparsely equipped Rotel has not skimped on the important ingredients. It can't be used with a turntable, but CD users on a budget could do worse than listen to the RA-935BX. Recommended.

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

Verdict

- ▲ Fine, natural sound that should win it many friends.
 - ▼ Lacks the spark of life that would have made it a Best Buy.
 - ▶ **£200.00 RRP**
-

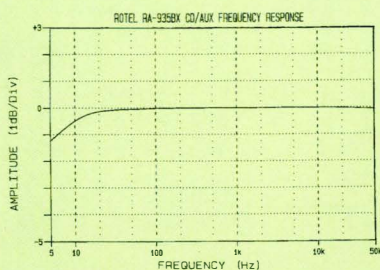
Laboratory Report

Linking the RA-935BX with any previous Rotel amp is rather tricky, because its various plots were always influenced by the performance of the on-board phono stage. This line-only version has been tweaked for lower (cf 0.0022 per cent) distortion, which tracks its power output in a very even and predictable fashion while maintaining a very wide S/N ratio — two features that bode well for the sonic performance of this amplifier.

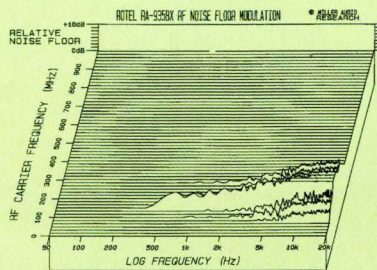
Unfortunately, the maximum 8.5A current is limited not by a one per cent distortion limit but by the fast-acting relays of its over-ambitious protection circuit. This, if nothing else, could do with being relaxed.

TEST RESULTS

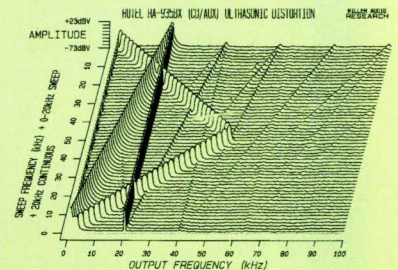
	20Hz	1kHz	20kHz	(2/3 power) CCIR Intermod. Dist. (0dBW)	-92.5dB
Maximum Continuous Power Output, 8ohms	54.9W	58.2W	55.9W	(2/3 power) Noise (A wtd, 0dBW)	-91.2dB
4ohms	83.8W	99.0W	90.8W	(2/3 power) Residual noise (unwtd)	-91.5dB
Dynamic Headroom (IHF)	+0.91dB (71.8W)			Input Sensitivity (for 0dBW)	-101.3dB
Peak Current (5msec, 1% THD)	8.5A			Residual noise (for full output)	-80.1dBV
Output Impedance	0.014ohm			Line Overload (1kHz)	>15V
Damping Factor	587.0			Tape Output/Impedance (50kHz)	>15V
	CD/Aux			Input loading	As Source / 1.1kohm
Stereo Separation (1kHz)	104.4dB			DC offset, left/right	21.5kohm/60pF
(20kHz)	78.4dB				-18.8mV/-20.4mV
Channel Balance (1kHz, -20dBV)	0.45dB				
(-60dBV)	3.75dB				
Total Harmonic Dist. (0dBW)	-93.9dB				



Another very flat frequency response plot that extends well below the audio band.



Distortion will erupt if contaminated with RF noise around 150MHz.



There is little or no obvious distortion through the audio band.

Sherwood AI-2210



Richer Sounds has a reputation for cultivating knock-down hi-fi bargains of one sort or another. And how else would you describe an £80 amplifier equipped with five line and MM phono inputs plus bass, treble and balance controls? Quite frankly, the fact that the AI-2210 comes in a neat cardboard box and lights up when plugged-in is something of a miracle at this price!

Nevertheless, Sherwood's budget amplifier not only lights up, but also squeezes some 40W from its spring-clip speaker terminals. Return to the fascia and there's a couple of extra push-buttons for loudness and direct (tone defeat) facilities. All this plus a headphone socket too.

Richer's bulk-buying power and slick distribution network keeps costs low, yet the AI-2210 is no audiophile's dream. Its

guts are utilitarian, sufficient to achieve a designated specification and no more.

Sound quality

This, the least expensive amplifier in the group, made its debut near the end of the listening session and put up a brave fight. However, the panel wasn't slow in picking it out as being in a somewhat different league to its predecessors that day.

It started off sounding lively and crisp but devoid of the solid platform that music requires in order to be reproduced with any real depth. Still, it wasn't too messy and retained a sprightly if rather weak balance. The next track revealed the lean balance in full, the midrange and treble standing head and shoulders above the rest of the band. The fairly complex interplay of instruments on the jazz tracks was

not very well followed. The balance made them sound clear but failed to resolve their sense of cohesion.

Joni Mitchell's voice lost some of its smoothness but the woodwind and acoustic guitar retained their life and clarity.

With a vinyl source things got worse, the Sherwood giving LPs that shellac quality so beloved of 78 collectors, but not entirely appropriate to Julia Fordham.

Conclusion

Lightweight in all respects, the AI-2210 is a bit of a slave to its diminutive price-tag. Still, it's better than most amplifiers supplied with midi-systems, and, unlike more expensive alternatives, is pretty painless.

Hi-Fi Direct Ltd, 202 Long Lane, London SE1 4QB. ☎ (071) 827 9827

Verdict

▲ A lot of features for the price but nothing else of note.

▼ Rather weedy sound and spring clip terminals, phase inverting.

▶ **£80.00 RRP**



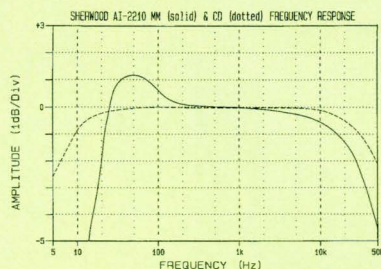
Laboratory Report

By employing IC op-amps for its stripped-down phono and line stages, Sherwood has left sufficient cash for a discrete Sanken-based power amp. This output stage tends to dominate the performance of the amp as a whole, proving responsible for the strong second-order THD and IMD (typically 0.05 per cent) visible on the 3D plot regardless of your choice of input. In fact, at 20kHz its distortion hovers around 0.2 per cent regardless of input or power level!

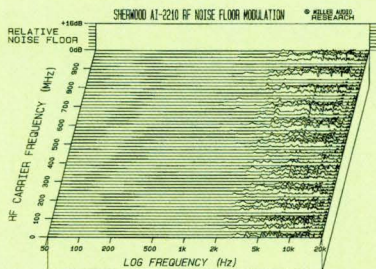
Otherwise its power rating, noise and input sensitivities are all par for the course. Do experiment with cabling, however, for the AI-2210 is also phase-inverting.

TEST RESULTS

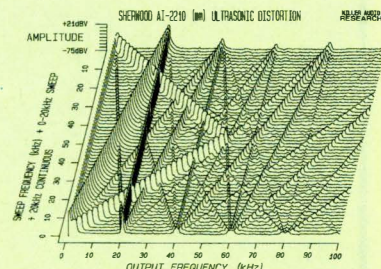
	20Hz	1kHz	20kHz		
Maximum Continuous Power Output, 8ohms	41.6W	46.8W	45.5W	CCIR Intermod. Dist. (0dBW)	-75.2dB -75.1dB
4ohms	55.3W	64.2W	63.0W	(2/3 power)	-86.5dB -85.4dB
Dynamic Headroom (IHF)		+1.25dB (62.4W)		Noise (A wtd, 0dBW)	-78.5dB -78.3dB
Peak Current (5msec, 1% THD)		10.8A		(2/3 power)	-82.1dB -76.2dB
Output Impedance		0.114ohm		Residual noise (unwtd)	-93.8dB -77.9dB
Damping Factor		70.3		(for full output)	-74.6dB -74.7dB
		CD/Aux	MM	Input Sensitivity (for 0dBW)	28.2mV 438uV
Stereo Separation (1kHz)		42.0dB	41.9dB	(for full output)	194mV 3.08mV
(20kHz)		41.8dB	43.2dB	Disc Overload (1kHz)	209mV
Channel Balance (1kHz, -20dBV)		0.73dB	0.90dB	(20kHz)	182mV
(-60dBV)		0.61dB	0.78dB	(50kHz)	161mV
Total Harmonic Dist. (0dBW)		-84.8dB	-84.7dB	Tape Output/Impedance	12.0V (disc)/3.24kohm
				Input loading	41kohm/100pF 47kohm/300pF
				DC offset, left/right	-20.5mV/-16.9mV



MM input has a warm-sounding bump at 50Hz before quickly rolling-off.



Unsophisticated design renders it broadly, though not seriously, susceptible to RF.



The power amp, rather than line or disc stages, dictates the level of distortion.

Teac A-X1000



Unlike its range of CD players, which are updated every season, Teac's cast of matching amplifiers has now been available for over two years. The A-X range is based upon a series of common themes, seemingly worthwhile precepts like short-path signal switching, individual calibration of the output bias level and a 'high power drive capability'.

This last claim is hardly borne out in practice (see lab report) though there's no mistaking the superficial similarity between the A-X1000 and its relatives. Its black fascia, for example, is dominated by four rotary controls catering for bass, treble, input and rec-out selection (inc MM phono) while loudness and source direct facilities lie in-between. Incidentally, its mic input and level control is a decidedly novel addition.

Sound quality

The Teac started out at speed with a busy, bass light version of the Fourth World track, the complex percussion work sounding controlled but a little hazy at high frequencies. The rendition was quite familiar, having the same controlled liveliness as some other amplifiers in the group.

The Kenny Davern combo sounded reasonably enthusiastic if a little small, the saxophone gaining a slightly dusty quality that hadn't previously reared its head, and probably wasn't on the disc. The clarinet was either clarinety or too hard, depending on the listener, but the timing was definitely a bit suspect.

By the third track, the panel's enthusiasm was beginning to wain. Comments like 'lacks power' and 'potentially mediocre' began to appear in the notes. It never

got unpleasant, but lacked anything that could be described as thrill power, and the higher frequencies seemed to be conspicuous by their absence.

The phono option sounded a bit more relaxed and made a welcome change. However, one listener complained that it turned Julia Fordham into Alison Moyet. There are worse transformations.

Conclusion

The Teac A-X1000 is a reasonably competent amplifier, but it has its limitations. It can't drive anything too tricky and it doesn't sound all that swift either. But it is worth considering as a budget option.

Teac (UK) Ltd, 5 Marlin House, The Croxley Centre, Watford, Herts WD1 8YA.
☎ (0923) 819 630

Verdict

- ▲ Microphone input with level control; doesn't grate sonically.
- ▼ But doesn't thrill either; avoid more than one pair of speakers.

▶ **£150.00 RRP**
■ □ □ □ □

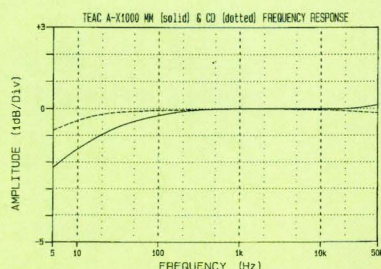
Laboratory Report

Various parallels obviously exist between this A-X1000 and the A-X5000 from issue 97. The convoluted speaker-switching, for example, helps lift its output impedance to a high 0.23ohm and stereo separation to a poor 39dB (20kHz), even though there's lashings of feedback to keep THD down to 0.002-0.0035 per cent (see 3D plot).

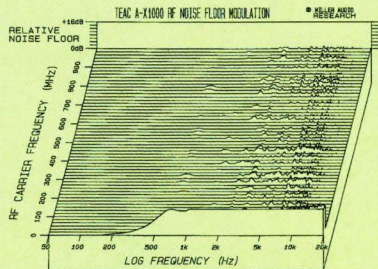
Similarly, though its 80hm power delivery seems generous enough at 62W, the residual 2.8A of current is pathetic bearing in mind these amps are equipped with 'over-designed power supplies'! Difficult or multiple speaker loads should be avoided with a vengeance.

TEST RESULTS

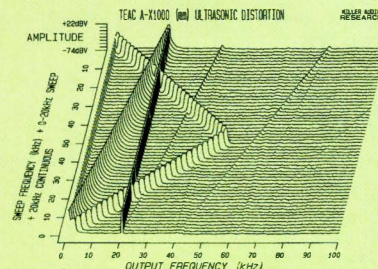
	20Hz	1kHz	20kHz		
Maximum Continuous Power Output, 8ohms	64.6W	61.6W	61.3W	CCIR Intermod. Dist. (0dBW)	-89.3dB -91.5dB
4ohms	86.2W	93.2W	90.3W	(2/3 power)	-96.5dB -87.0dB
Dynamic Headroom (IHF)		+1.3dB (83.4W)		Noise (A wtd, 0dBW)	-97.8dB -88.9dB
Peak Current (5msec, 1% THD)		2.8A		(2/3 power)	-80.5dB -76.5dB
Output Impedance		0.234ohm		Residual noise (unwtd)	-95.4dB -79.1dB
Damping Factor		34.2		(for full output)	-76.6dBV -76.5dBV
		CD/Aux	MM	Input Sensitivity (for 0dBW)	22.2mV 352uV
Stereo Separation (1kHz)		63.9dB	66.4dB	Disc Overload (1kHz)	175.6mV 2.80mV
(20kHz)		39.3dB	39.1dB	(20kHz)	147.5mV
Channel Balance (1kHz, -20dBV)		0.14dB	0.14dB	(50kHz)	1450mV
(-60dBV)		0.40dB	0.40dB	Tape Output/Impedance	9.04V (disc) / 1.43kohm
Total Harmonic Dist. (0dBW)	-92.2dB	-94.1dB		Input loading	18kohm/180pF 44kohm/400pF
				DC offset, left/right	-20.8mV/-19.5mV



Unusually, all inputs are only gently rolled-off through the bass.



The A-X1000 could be sensitive to the noise generated by some 1-bit CD players.



Judicious use of feedback keeps distortion firmly in check.

Adcom GCA-510



As interest in AV systems seems to grow by the month, it makes sense for a loudspeaker specialist to gain a toe-hold in the electronics market. For Celestion that toe-hold is Adcom, an established manufacturer responsible for the highest-selling range of amp separates in America. Its current range includes six power amps, three preamps and this GCA-510 line-only integrated model.

A similar topology and component list is adopted in an effort to both standardise the range and reduce manufacturing costs. Aesthetics are plain and features strictly limited — just rec-out and input selection plus volume and balance controls.

Our first sample had an unexpected shock up its sleeve, however, leaving some 120V floating across the metal chassis as a result of a stray capacitance between this

and our CD player earth. A second sample was correctly earthed and zap-free!

Sound quality

Once Paul had got over the excitement of acting as an earth path for this lively amplifier, we were able to sit back and enjoy an entertaining performance. Its primary characteristic was an emphasis on the midrange, which tended to highlight different aspects of the tracks being played to the amps that preceded it.

On the whole it worked well. The rather excitable Fourth World disc sounded as energetic as it could get without completely losing control. With all the material that we listened to it picked up on midrange detail, bringing out the interplay of musicians and the sense of timing displayed therein. This was particularly true

of the saxophone, drums, clarinet and piano on the Kenny Davern track: all of these instruments realised more of their subtle expressiveness. The backing vocals on Joni Mitchell's *Cherokee Louise* made themselves clear and more of the articulation in her voice was presented.

Limitations included imaging and dynamics, but as the latter are an anathema to most inexpensive amps, it put in a worthy performance.

Conclusion

Had the Adcom been £100 cheaper, it would have been recommended. Unfortunately, it is economically hampered by its stateside origin.

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

Verdict

▲ Good sound and a vice-like grip on your loudspeakers.

▼ A little too expensive for the sound quality on offer.

▶ **£350.00 RRP**



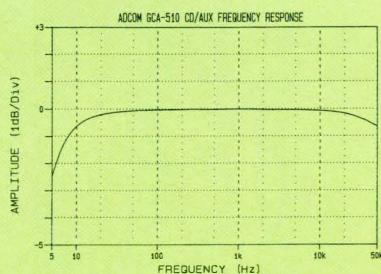
Laboratory Report

Thanks to its very substantial power supply and robust Sanyo output transistors, the GCA-510 will develop a full 81W into 8ohm, increasing by +2.1dB to 130W into 4ohm and ably supported by some 21A of reserve current. With this acting in concert with a low 0.01ohm output impedance, the GCA-510 will exert an iron grip over the most difficult of loudspeakers.

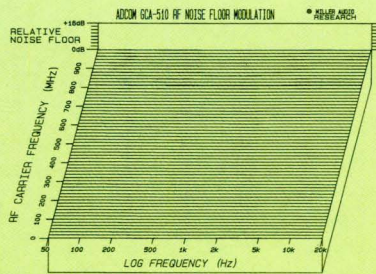
A symmetrical board layout and the use of discrete, low-noise components has also helped squeeze out a wide 104dB S/N ratio allied to a sensible 731mV input sensitivity and low 0.003-0.0056 per cent distortion. All told, this is a fine example of modern, reliable amp design.

TEST RESULTS

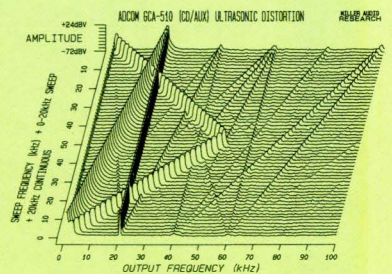
	20Hz	1kHz	20kHz	(2/3 power)	-85.1dB
Maximum Continuous Power Output, 8ohms	77.5W	80.6W	78.7W	CCIR Intermod. Dist. (0dBW)	-95.6dB
4ohms	123.6W	129.8W	126.4W	(2/3 power)	-91.8dB
Dynamic Headroom (IHF)	+1.1dB (104.2W)			Noise (A wtd, 0dBW)	-91.3dB
Peak Current (5msec, 1% THD)	20.8A			(2/3 power)	-103.8dB
Output Impedance	0.0099ohm			Residual noise (unwtd)	-75.0dBV
Damping Factor	809.8			Input Sensitivity (for 0dBW)	731mV
				(for full output)	>15V
Stereo Separation (1kHz)	75.0dB			Line Overload (1kHz)	>15V
(20kHz)	49.8dB			(20kHz)	>15V
Channel Balance (1kHz, -20dBV)	0.50dB			Tape Output/Impedance	9.2V (line) / 114ohm
(-60dBV)	0.70dB			Input loading	23.3kohm/420pF
Total Harmonic Dist. (0dBW)	-90.0dB			DC offset, left/right	+0.5mV/-29.0mV



Flat response, sensibly curtailed at very low bass frequencies.



Adcom's RF filtering prevents any interference breaking through via its line inputs.



A harmless smattering of harmonic and intermodulation distortions.

JVC AX-R562



The last couple of seasons saw JVC flirting with one or two no-frills amplifiers, gimmick-free boxes designed to make life a little less comfortable for the likes of Pioneer, Denon and Rotel. Yet its new range of six amplifiers marks a return to greater flexibility, especially as a select trio, including this AX-R562, also include full remote control.

So you can either spin its rec-out and input controls or resort to the IR handset before settling on a chosen source. Either way, your selection is routed internally via electronic rather than mechanical means. The unnecessarily huge volume knob is also motorised for armchair control though you'll need to get off your bottom before reaching for its bass, treble and balance controls or the A/B speaker selector!

Otherwise, the AX-R562 is standard

fare from JVC, its only notable feature being a Sanken-based power output stage similar to that in Denon's PMA-250III.

Sound quality

The AX-R562 was not a great favourite with the panel. From the off its brash character was all too clear, causing one listener to exclaim 'have moicy'. The basic problem seemed to be a lack of bass extension and an excess of upper midband energy. This, coupled with a very limited ability to separate out the various strands in the music, resulted in a messy sound.

The limited bass weight also affected the amount of perceived depth the amp could reproduce, which wasn't a great deal. If the midrange had been cleaner, it would have almost got away with a lightweight balance, but emphasising such a

critical part of the band in this edgy way wasn't going to win it any friends.

One rather apt description was 'more fuss and bluster than detail and dynamics', and the performance it put in with vinyl was no better. It sounded noisy and added a sandyness to Julia Fordham's vocals, before going on to rob the Rachmaninov of its usually impressive dynamics.

Conclusion

The AX-R562 is a well equipped amplifier that is let down by a rather less than agreeable sound quality. At this price there are several more alluring alternatives to consider, so we can't commend it.

JVC (UK) Ltd, JVC Business Park, Priestley Way, London NW2 7BA.
☎ (081) 450 3282

Verdict

▲ Remote control, highly compatible, measures well.

▼ Not very appealing sound and limited current.

▶ **£250.00 RRP**
■ □ □ □ □

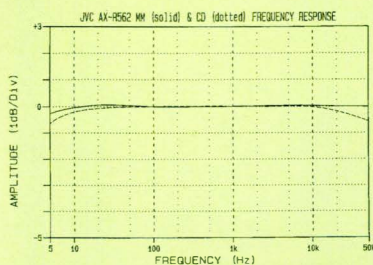
Laboratory Report

What a difference a power supply makes! Just compare the AX-R562 with, say, Adcom's GCA-510 and though both amps have a similar nominal 8/40hm power rating, you'll see that JVC's version is struggling with less than half the Adcom's current. Low impedance or multi-speaker applications should be treated with caution as a result.

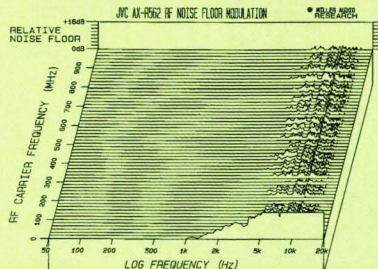
Otherwise, we find the wide and extended frequency response, very low distortion (typically 0.0018 per cent) and wide 100dB signal-to-noise ratio that's typical of JVC's earlier efforts. Plenty of headroom on the disc input and sensible input sensitivities add up to a very compatible package.

TEST RESULTS

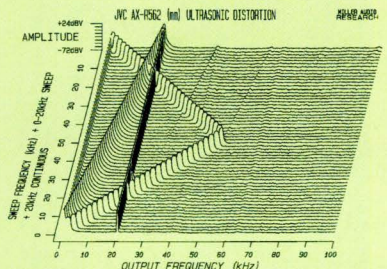
	20Hz	1kHz	20kHz	(2/3 power)		
Maximum Continuous Power Output, 8ohms	87.7W	89.7W	87.7W	CCIR Intermod. Dist. (0dBW)	-96.4dB	-94.7dB
05v4ohms	120.9W	133.2W	127.1W	(2/3 power)	-95.5dB	-88.9dB
Dynamic Headroom (IHF)	+1.34dB	(122.2W)		Noise (A wtd, 0dBW)	-96.5dB	-89.5dB
Peak Current (5msec, 1% THD)		9.2A		(2/3 power)	-100.4dB	-81.0dB
Output Impedance		0.047ohm		Residual noise (unwtd)	-78.7dBV	-78.5dBV
Damping Factor		168.9		Input Sensitivity (for 0dBW)	25.5mV	332uV
		CD/Aux	MM	(for full output)	244mV	3.15mV
Stereo Separation (1kHz)	90.7dB	89.9dB		Disc Overload (1kHz)	127.4mV	
(20kHz)	65.2dB	63.6dB		(20kHz)	1109mV	2671mV
Channel Balance (1kHz, -20dBV)	0.42dB	0.32dB		Tape Output/Impedance	9.2V (disc) / 544ohm	
(-60dBV)	0.45dB	0.35dB		Input loading	45kohm/100pF	48kohm/40pF
Total Harmonic Dist. (0dBW)	-95.2dB	-94.0dB		DC offset, left/right	+3.9mV/+35.6mV	



Very flat but unnecessarily extended response via the MM phono stage.



Despite JVC's best efforts, this amp is still bothered by RF noise.



Very low levels of distortion thanks to high levels of feedback.

Kenwood KA-4050R



The remotely-controlled KA-4050R closely mirrors the older KA-4040R (issue 104), and so its stylised appearance is as predictable as its internal design. Once again a digital encoder lurks behind its sculptured fascia, scanning the rotary input selector for your choice of either MM/MC disc, CD, tuner, aux or two tape sources.

These inputs are then routed via a cluster of gas-filled relays, separating the digital logic (which also processes commands from the IR handset) from the audio path itself.

It is possible to power-up the amp, adjust its volume, change the input or mute the output via remote control. Otherwise its tone controls, balance and rec-out selection must be attacked the old-fashioned way.

Sound quality

This Kenwood turned in a respectable, if ultimately uninspiring, performance in the listening tests. It started off quite well, sounding reasonably coherent and lively without resorting to 'brashness', and prompted the adjective 'comfortable', which turned out to be very appropriate.

One panellist was enthusiastic, pointing out its good sense of pace and scale, while at the same time noting that high frequencies seemed a bit curtailed, and that what poise it had disappeared when the going got complex. It did some things very well. The acoustic guitar on *Cherokee Louise* sounded particularly natural and the lyrics were clearer than usual.

However, the heavy duty, higher volume Mahler track revealed a rather plodding, matter of fact approach that robbed

the music of its vitality and excitement. In the final analysis the most common view from the panellists was that the Kenwood didn't do anything very badly, but it didn't do anything particularly well either.

Results with vinyl were much the same. The amp was deemed generally competent, but also rather restrained, making the tracks sound more bland than usual.

Conclusion

The KA-4050R is a well equipped beast with a dependable, but rather bland, sound that is unlikely to offend or enthuse. If you have an overly energetic system and want remote control, it's worth considering.

Trio-Kenwood UK Ltd, Kenwood House, Dwight Road, Watford, Herts WD1 8EB. ☎ (0923) 816 444

Verdict

Dependable sound is never likely to offend; remote control.

It's not going to set your pulse racing either; limited hf.

£260.00 RRP



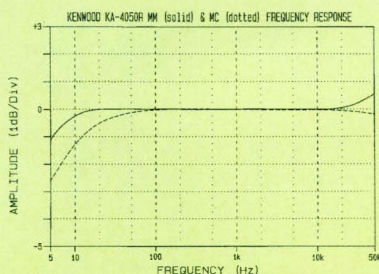
Laboratory Report

In many respects this KA-4050R shadows the older KA-4040R (issue 104), offering a similar spread of specifications but trading its traditional bipolar power amp for flavour-of-the-season MOSFETs. As a consequence, its output has increased very slightly from 121W to 131W into 4ohm with a similar increase in current from 11 to 14.3A.

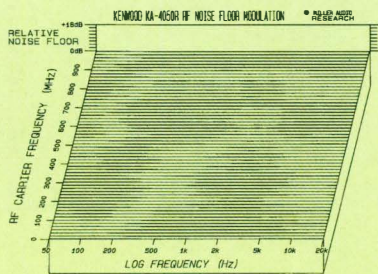
On the other hand, this new power amp section begins to flag at higher frequencies, falling by 15W (0.6dB) at 20kHz with a commensurate increase in distortion. Just compare this 3D plot with that from issue 104. Otherwise, its input sensitivities, signal-to-noise ratios and reduced output impedance are all positive signs.

TEST RESULTS

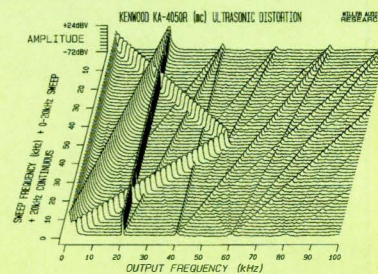
	20Hz	1kHz	20kHz	CCIR Intermod. Dist. (0dBW)
Maximum Continuous Power Output, 8ohms	87.0W	84.6W	79.4W	-96.1dB -77.7dB -80.6dB
4ohms	126.4W	130.9W	115.5W	-96.5dB -75.4dB -80.5dB
Dynamic Headroom (IHF)	+1.29dB (113.8W)			Noise (A wtd, 0dBW)
Peak Current (5msec, 1% THD)	14.3A			(2/3 power)
Output Impedance	0.033ohm			-81.5dB -80.3dB -74.9dB
Damping Factor	244.4			-97.0dB -91.7dB -75.7dB
	CD/Aux	MM	MC	Residual noise (unwtd)
Stereo Sep. (1kHz)	65.1dB	63.7dB	62.0dB	-76.4dB -76.7dB -76.8dB
(20kHz)	47.6dB	47.3dB	46.9dB	25.1mV 306uV 24uV
Channel Balance (1kHz, -20dBV)	0.29dB	0.32dB	0.29dB	(for full output)
(-60dBV)	0.70dB	0.73dB	0.71dB	233mV 2.78mV 224uV
Total Har. Dist. (0dBW) (2/3 power)	-89.6dB -82.8dB -89.9dB	-82.8dB -81.6dB -82.5dB		Disc Overload (1kHz)
				137.2mV 11.2mV
				(20kHz)
				1230mV 101.2mV
				(50kHz)
				1520mV 171.5mV
				Tape Output/Impedance
				11.2V (disc) / 1.48kohm
				Input loading
				43kohm/420pF 44kohm
				/580pF 103ohm
				DC offset, left/right
				+28mV/+24mV



This MM input will reproduce disc warps beautifully!



Thorough filtering of inputs and outputs prevents the intrusion of RF noise.



Distortion increases at higher frequencies as feedback decreases.

Magnum Quartet-A



Trust Magnum to come up with another wacky amplifier! Having already wowed us with its Class A beastie in issue 116, this issue sees a genuine four-channel amplifier designed for quick-and-easy bi-wiring or bi-amping. Rather like the Lecson *Quattro* (issue 92), Magnum's *Quartet-A* houses four nominally identical power amplifiers, but, unlike the *Quattro*, two of these monoblocks are deliberately band-limited below 1kHz.

The output of this pair is fed to a series of 4mm sockets labelled 'Treble/mid X-over' while the full-bandwidth channels are linked to sockets marked 'Bass driver X-over'. Assuming your speakers have separate bass/treble crossovers and binding posts to match, it's possible to feed each bass and treble drive unit from an independent amplifier.

Meanwhile, push-buttons for mute, mono and tape monitor, plus input selection for five line inputs (MM/MC available at no extra cost), only add to its flexibility.

Sound quality

This, unfortunately, was another model that failed to stir the panel's emotions. It had a tendency to make the treble sound rather sandy, a factor that cropped up throughout the listening session and one that would take a relaxed loudspeaker to play down. One might expect such a balance to improve spatial resolution and imaging, but in fact the opposite seemed to be true. The images it produced lacked focus, though they had a bit more depth than some dearer alternatives.

In other respects this was a rather grey amplifier. It didn't sound unnatural, but

failed to inject any real colour or life into music. There was a little more sense of musical interplay between instruments than with similarly priced alternatives, and occasionally the sandiness of the high frequencies helped matters. The 'skin' detail on a snare drum was picked out well, but a lot of high notes lost their purity.

Conclusion

The Magnum *Quartet-A* is an interesting concept, and it would be worth investigating in fully bi-wired mode with a selection of sympathetic speakers. However, when used in our single-wired, blind tests it didn't make a good enough impression to deserve much acclaim.

Hailey Audio, 328 Ware Road, Hailey, Hertfordshire SG13 7PG. ☎ (0992) 714 811

Verdict

➤ Designed for bi-wiring with four separate mono amplifiers.

➤ Rather colourless; sandy sound lacks appeal.

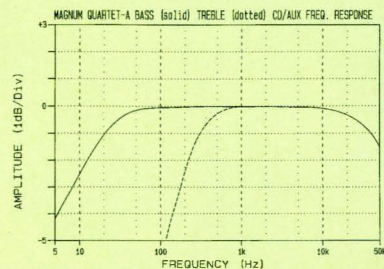
▶ **£330.00 RRP**

■ ■ □ □ □

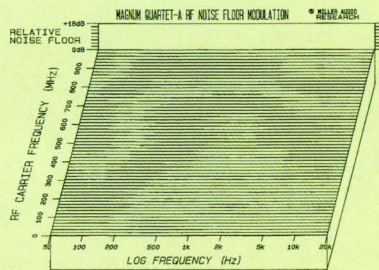
Laboratory Report

Each of the monoblock amplifiers in the Quartet are significantly more powerful than those that made up the *Quattro* (issue 92). However, the output of its 'treble' amplifiers is restricted to 56W, if only to prevent too much power being fed directly to unprotected tweeters! Incidentally, as you can see from the plot, the treble response is manipulated very effectively using negative feedback.

Do experiment with the various line inputs, because the LD, tuner, video and tape stages are both more sensitive and are loaded at 13.8kohm instead of the 9.7kohm chosen for the CD input. Unusual, but worth a dabble.



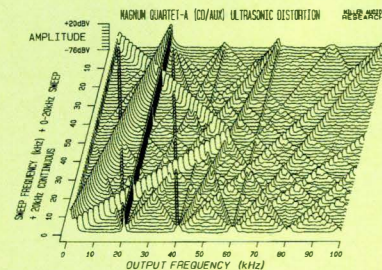
'Treble' outputs are deliberately rolled-off below 200Hz to prevent tweeter damage.



The amplifier design, rather than RF filtering, reduces interference.

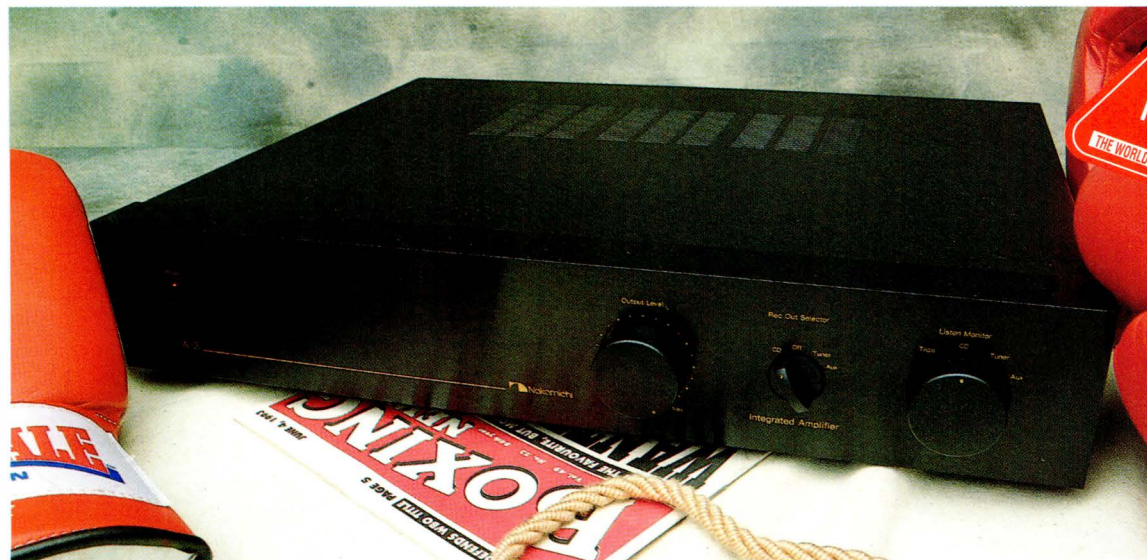
TEST RESULTS

	20Hz	1kHz	20kHz		
Maximum Continuous Power Output, 8ohms	71.5W	72.1W	68.6W	(2/3 power) CCIR Internod. Dist. (0dBW)	-73.9dB
4ohms	54.5W	55.7W	53.5W	(2/3 power) Noise (A wtd, 0dBW)	-57.3dB
Dynamic Headroom (1HF)	+1.55dB (103.0W)			Noise (A wtd, 0dBW) (2/3 power)	-82.9dB
Peak Current (5msec, 1% THD)	14.5A			Residual noise (unwtd)	-69.7dBV
Output Impedance	0.110ohm			Input Sensitivity (for 0dBW) (for full output)	52.3mV
Damping Factor	72.9			Line Overload (1kHz) (20kHz) (50kHz)	447mV >15V >15V
Stereo Separation (1kHz) (20kHz)	70.9dB 50.1dB			Tape Output/Impedance	9.6V (line) / <1ohm
Channel Balance (1kHz, -20dBV) (-60dBV)	0.10dB 1.02dB			Input loading	9.7kohm/20pF
Total Harmonic Dist. (0dBW)	-75.3dB			DC offset, left/right	+13.7mV/+13.0mV



Distortion is very consistent with frequency if not power output.

Nakamichi IA-3



Despite 'UK-orientated' amplifiers establishing themselves as the norm these days, the launch of Nakamichi's 'less-is-more' IA-3 still comes as something of a surprise. After all, the line-only IA-3 has received no input from these shores. Instead, this elegant looking amplifier with its essential volume, input and rec-out selectors is the brainchild of Nakamichi's own designers.

It's tempting to portray the IA-3 as an audiophile amp yet, in reality, it's best described as minimalist. Sure enough, there are key features like all-discrete circuitry, isolated L/R ground lines, chunky 4mm binding posts and black 'Almite' heatsinks to its credit. Nevertheless, the standard componentry, the complementary Sanken power amp, over-ambitious relay protection and fierce RF filtering may well

have succeeded in knocking the soul from a well-meaning effort.

Sound quality

The IA-3 made its sonic debut with some confidence, controlling the high energy percussion on the Fourth World track and presenting it in an orderly but lively fashion. The jazz piece sounded more forward than usual, but the reedy tone of the clarinet was resolved most effectively, and the band's strong rhythmic qualities made a better showing than usual.

Joni Mitchell's dulcet tones were reproduced with assurance, and the counter play between the guitar and bass was well highlighted. Overall, the track sounded open and pleasant, the rhythm being maintained rather than emphasised and the dynamic contrasts restrained.

It maintained this style through the orchestral piece which, though unusually seamless, was found to be wanting as far as high frequency extension was concerned. Inner detail from the various instruments was well preserved, but harmonics seemed to be suppressed.

Conclusion

The Nakamichi IA-3 put in a relaxed and articulate performance. As the test results predicted, a little more dynamic variety wouldn't have gone amiss, but it was certainly one of the better models in the review group and deserves *Hi-Fi Choice* Recommendation.

Nakamichi B&WUK Ltd, Marlborough Road, Lancing, West Sussex BN15 8TR.
☎ (0903) 750 750



Verdict

- ▲ Confident and controlled sound, generally compatible.
- ▼ Minimal selection of facilities, a little soulless.
- ▶ **£350.00 RRP**

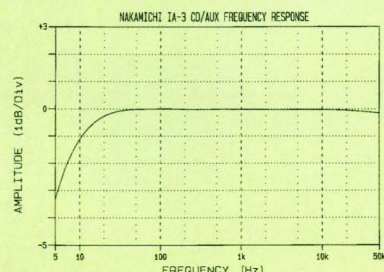
Laboratory Report

Erring firmly on the side of caution, Nakamichi specifies its IA-3 at some 40W into 8ohms, a rating clearly exceeded by the healthy 62W clocked-up here. Then again, the 197mV input sensitivity is a trifle too generous, bearing in mind the 2V peak output of most CD players. Anyway, its +1.6dB rise to 89W into 4ohms is laudible enough, but any output into progressively lower impedances is hampered by an over-zealous protection circuit, limiting current to just 4.7A.

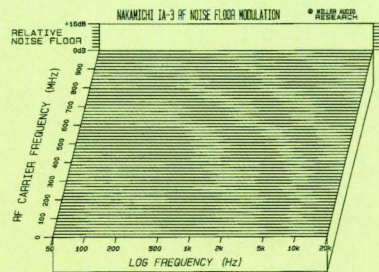
Meanwhile, internal track and wiring increases the output impedance to 0.1ohm while distortion (see 3D plot) is dominated by intermodulation patterns once the speaker impedance drops from 8 to 4ohms.

TEST RESULTS

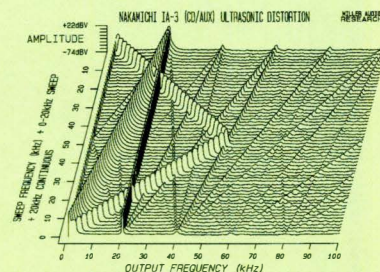
	20Hz	1kHz	20kHz	(2/3 power)
Maximum Continuous Power Output, 8ohms	57.7W	62.0W	58.0W	-82.5dB
4ohms	79.3W	89.4W	78.4W	-79.3dB
Dynamic Headroom (IHF)		+1.4dB	(84.9W)	-80.1dB
Peak Current (5msec, 1% THD)		4.7A		-88.1dB
Output Impedance		0.104ohm		-87.9dB
Damping Factor		77.1		-78.8dBV
Stereo Separation (1kHz)		83.4dB		24.8mV
(20kHz)		57.9dB		197mV
Channel Balance (1kHz, -20dBV)		0.92dB		>15V
Total Harmonic Dist. (0dBW)		1.09dB		>15V
		-82.9dB		
CD/Aux		77.1		
Line Overload (1kHz)				
(50kHz)				
Tape Output/Impedance				
Input loading				
DC offset, left/right				



A very well-judged frequency response for most line sources.



Nakamichi's input filtering acts as a brick wall to incoming RF noise.



Intermodulation distortions increase quite markedly when driving low impedances.

Sansui AU-X417R



It's rare to find plenty of features, oodles of power and a good sound at anything other than an inaccessible price. Yet Sansui has nailed this brief with its new AU-X417R. There's even a matching remote handset to duplicate the on-board volume and input selection facilities.

This amp will cope with both MM and MC phono cartridges, with independent rec-out selection and A+B speaker selection to boot. Incidentally, there is an 'impedance' switch located at the rear of the case, restricting the power available to multiple 4ohm speaker pairs.

Inside, a large frame mains transformer accounts for much of the amp's prodigious bulk, though the general standard of construction is rather messy. Quite how this jamboree of components sounds so good is something of a mystery!

Sound quality

The Sansui made a good impression from the first few bars, and built on it as the various tracks progressed. Its coherency and naturalness, the result of plenty of detail combined with a rare degree of tidiness, struck everyone on the panel and inspired comments such as 'good positioning in soundstage' and 'fundamental correctness'. The only dissenting comments related to a slight brightness.

It was clear within one track that this was no ordinary amp, and the second piece did nothing to harm that image. The tone and intonation of the various instruments were particularly well preserved, although once again there was slight criticism of the high frequencies, which one listener felt had a digital shimmer.

The panel agreed that the AU-X417R

captured better than most the mood, ambience, depth and space in the music being played. Quite a lot was made of its imaging abilities, several comments relating to the positioning and scale of instruments being made, particularly in respect to the Mahler piece.

With vinyl, the balance was the same. The sound was slightly more relaxed and detail retrieval was of a high order.

Conclusion

Undoubtedly the most pleasant surprise in the batch, the Sansui AU-X417R combines the user friendliness of remote control with enthusiastic, inspiring sound quality. A firm Best Buy if ever was.

Sansui (UK), 91 Coleman Road, Leicester LE5 4LE. ☎ (0533) 460 021

Verdict

- ▲ Remote control combined with superbly detailed, lively sound.
- ▼ Vinyl disc input could be better; hf can sound a little digital.
- ▶ **£310.00 RRP**

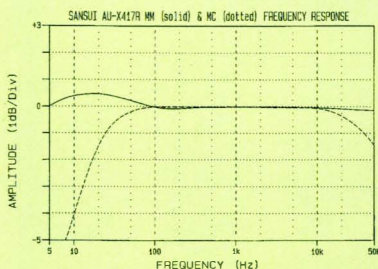
Laboratory Report

Unusually for a Far Eastern design, Sansui's 55W specification was not achieved on test even though its measured 53/86W capacity is ably supported by a substantial 15A reservoir of current. Low impedance and multi-speaker applications should not prove troublesome, even though the 3D plot clearly demonstrates that IM distortion picks-up quite strongly under these difficult conditions.

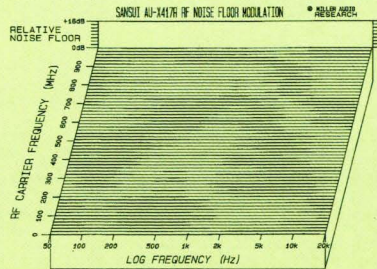
Sure enough, the 0.19ohm output impedance and meagre 61-62dB A-wtd signal-to-noise ratio (MC phono) are rather disappointing, but its low 0.002-0.006 per cent distortion and generous disc overload margins redress the technical balance. Indeed, via CD and MM disc this amp clocks up an admirable set of figures.

TEST RESULTS

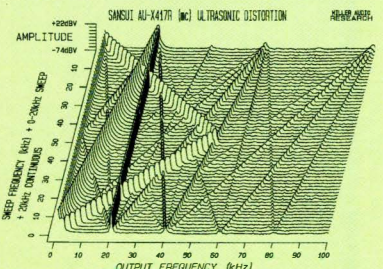
	20Hz	1kHz	20kHz	CCIR Intermod. Dist. (0dBW)	-96.8dB	-91.6dB	-72.8dB
Maximum Continuous Power Output, 8ohms	55.4W	53.3W	52.3W	(2/3 power)	-95.8dB	-88.5dB	-72.5dB
4ohms	84.7W	84.7W	76.7W	Noise (A wtd, 0dBW) (2/3 power)	-81.2dB	-78.1dB	-61.1dB
Dynamic Headroom (IHF)			+0.95dB	Residual noise (unwtd)	-70.2dBV	-70.1dBV	-70.1dBV
Peak Current (5msec, 1% THD)			15.3A	Input Sens. (0dBW) (for full output)	27.7mV	442uV	51uV
Output Impedance			0.190ohm	Disc Overload (1kHz) (20kHz)	206mV	3.28mV	364uV
Damping Factor			42.2	(50kHz)	172.7mV	19.8mV	330.4mV
	CD/Aux	MM	MC	Tape Output/Impedance	10.2V (disc) / 4.07kohm		
Stereo Sep. (1kHz) (20kHz)	58.3dB	58.0dB	57.9dB	Input loading	34kohm/900pF	37kohm/600pF	100ohm
Channel Balance (1kHz, -20dBV)	0.17dB	0.35dB	0.41dB	DC offset, left/right	-0.6mV/-1.7mV		
(-60dBV)	0.29dB	0.16dB	0.08dB				
Total Har. Dist. (0dBW) (2/3 power)	-92.5dB	-93.7dB	-92.3dB				
	-91.9dB	-85.1dB	-84.9dB				



MC input stage is sensibly tailored, unlike that of the MM input.



This clean-looking plot pays tribute to Sansui's careful RF filtering.



Clumps of second and third-order distortions lie in and out of the audio range.

Wharfedale 2050A



Having stuttered off the starting line, Wharfedale's own brand of electronics is now feeding itself into specialist dealers across the country. The 2050A amplifier, for example, has already been recalled for a major overhaul and re-fit. No change to the friction-locked volume control, independent recut and input selection. Nevertheless, the revised layout and educated choice of components should, we were informed, make better use of its various MM/MC, CD, tuner, aux and tape inputs.

A switched headphone socket and single pair of 4mm speaker terminals complete the list of facilities, so at least its construction is solid, if not inspiring. Inside, Wharfedale has opted for localised input switching, a discrete low-noise MC head amp and a Sanyo-based power amp.

Sound quality

As soon as laser hit the polycarbonate, the Wharfedale was up and at us with a robust, fast and forward sound that took a bit of accommodating. Subjectively, this was a loud amplifier, and when things got busy the percussion adopted an on-going metallic sizzle that was rather pervasive.

Its energy imbued the jazz track with an extra crispness which worked well except on the higher notes of the sax and cymbals, which suffered from a bit of hardness. The bass lines were nimble but not as extended as they had been, and the clarinet sounded a little brash. Having said that, it did hang together reasonably well through most of the tracks we played. Spatial resolution was good as well, placement of instruments within the soundstage being unusually precise.

It was also better than average at resolving low level detail. There was, however, a sense of relief when the CD selection finished, the amp's forcible style of presentation proving a bit of an ear bender in the long run.

We tried both the MM and MC inputs on vinyl and found the latter to be smoother and more relaxed, but lacking the bandwidth of the MM alternative which shared a lot of its character with the line input.

Conclusion

The Wharfedale 2050A is a detailed, lively amplifier, albeit one that can be overbearing at times.

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

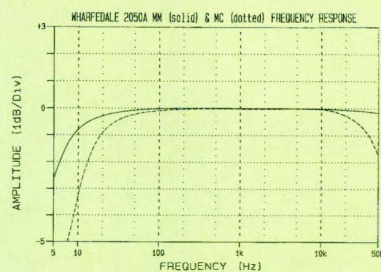
Verdict

- Robust and forward sound that'll keep you dancing.
- But won't let you rest, it's a relief to switch it off.
- **£250.00 RRP**

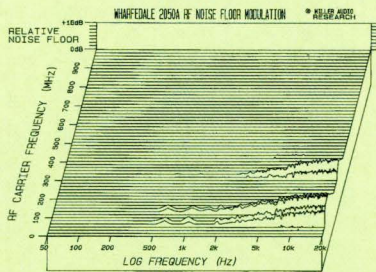
Laboratory Report

The 2050A readily meets its specification, sustaining some 70W into 8ohms and 96W into 4ohms despite its rather average 11.7A pool of current. Stereo separation is also rather weak at 20kHz, while the amp shows signs of RF susceptibility either side of 100MHz and at 350MHz. Otherwise, all is broadly well with the CD and MM inputs, leaving the MC stage with just +22dB of headroom at 1kHz and +14dB at 20kHz.

This causes THD to leap from 0.01 to 0.08 per cent via MC (IMD from 0.005 to 0.5 per cent), even though its best case signal-to-noise ratio still adds-up to a favourable 75-76dB. Stick with the MM input for best results.



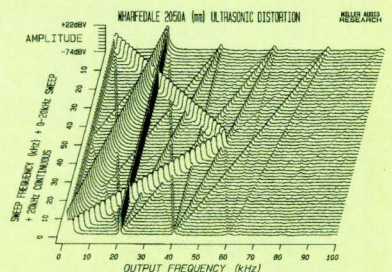
MC input shows some extra tailoring at bass and treble frequencies.



Unfortunately, there's some reaction to RF noise in the busy FM radio band.

TEST RESULTS

	20Hz	1kHz	20kHz	CCIR Intermod. Dist. (0dBW)
Maximum Continuous Power Output, 8ohms	68.0W	70.3W	68.6W	-80.0dB -79.9dB -39.5dB
4ohms	86.6W	96.1W	89.4W	-78.6dB -78.5dB -39.4dB
Dynamic Headroom (IHF)	+1.65dB (102.8W)			-85.7dB -80.2dB -75.3dB
Peak Current (5msec, 1% THD)	11.7A			-99.0dB -81.0dB -75.4dB
Output Impedance	0.099ohm			Residual noise (unwtd)
Damping Factor	80.2			-74.9dBV-74.9dBV 74.9dBV
	CD/Aux	MM	MC	Input Sens. (0dBW) (for full output)
Stereo Sep. (1kHz)	58.2dB	58.4dB	58.1dB	35mV 329uV 24uV
(20kHz)	33.0dB	32.7dB	32.7dB	294mV 2.77mV 202uV
Channel Balance (1kHz, -20dBV)	0.71dB	0.64dB	0.61dB	Disc Overload (1kHz)
Total Har. Dist. (0dBW)	1.23dB	1.16dB	1.13dB	85.3mV 6.3mV
(2/3 power)	-82.8dB	-84.2dB	-61.8dB	(20kHz)
	-78.4dB	-79.5dB	-61.5dB	793.4mV 25.1mV
				(50kHz)
				1829mV 25.1mV
				Tape Output/Impedance
				9.0V (disc) / 887ohm
				Input loading
				18.9kohm/200pF 47kohm/100pF 66ohm
				DC offset, left/right
				+16mV/+48mV



Second and third-order distortions are introduced by the power amp stage.

Exposure XX



In the dim and distant past, all specialist amplifiers were required to adopt a rather bleak and utilitarian uniform, a badge of office betraying an audiophile pretention. Nowadays, Exposure seems keen to resurrect this tradition, presenting the XX by way of example. So having whetted your appetite, Exposure will tempt you further with its XV alternative, an identical-looking package equipped with either an MM or MC phono stage.

This latter version will set you back another £100, a burden avoided by the line-only XX. Both amplifiers have evolved from the older Exposure X and both are equally quirky in their design. Central and local power supply regulation is maintained at every stage in the amp, for example, though the L and R channels are not constructed in a symmetrical fashion.

These and other foibles combine to yield an amplifier that positively loathes difficult speaker loads, while suffering differences in distortion (and presumably sound) from its left and right channels.

Sound quality

The first time we heard the XX its character was dominated by a tonal balance that can only be described as lightweight. Comments like: thin, wispy and 'has the bass player fallen off the stage' were very common. The only positive remark related to the midrange, which one listener described as vivid and communicative.

However, on its second appearance the panel received the XX with rather less criticism, warming to its keen sense of timing and general lack of hash. In fact, it seemed to have relaxed considerably. It

was still slightly dulled at very high frequencies, but with a sense of coherence that made for a refined performance.

These descriptions could be for different amps, but they reveal the extent to which views on the XX can differ.

Conclusion

The Exposure XX is obviously not an amplifier for all seasons. Its limited power and load tolerance make it unpredictable, and the different responses it elicited in the blind listening suggest that, though capable of fine results under the right circumstances, its appeal is too narrow to warrant commendation.

Exposure Electronics, The Works, 59 North Street, Portslade, Sussex BN41 1DH.
☎ (0273) 423 877

Verdict

- ▲ Under the right circumstances its fluency can be very alluring.
- ▼ Very system dependent; limited bass power.
- ▶ **£625.00 RRP**

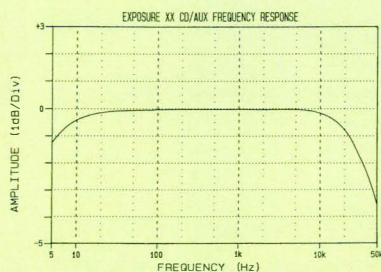
Laboratory Report

Despite being laden with a vast toroidal mains transformer and excessive supply regulation, Exposure's XX is neither powerful nor load tolerant. Indeed, it only just achieves its 40W specification into 8ohms, while struggling to maintain 50W into 4ohms. Meanwhile, the restricted 4.7A current delivery tells a story of an amp denied its true freedom.

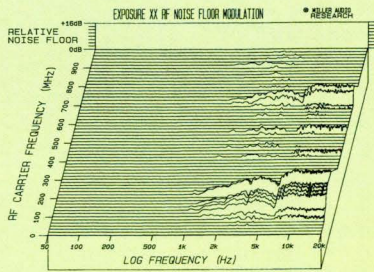
Inevitably, the curtailed HF bandwidth (see frequency response) and strong even-order distortions (typically >0.1 per cent into 4ohm — see 3D plot) will add a certain 'colour' to its sound and possibly even cloak the effects of RF IMD. All told, the XX will prove very, very system dependent.

TEST RESULTS

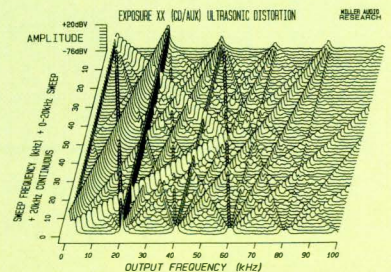
	20Hz	1kHz	20kHz	(2/3 power)	
Maximum Continuous Power Output, 8ohms	42.2W	42.7W	41.6W	CCIR Intermod. Dist. (0dBW)	-67.4dB
4ohms	50.3W	52.0W	49.9W	(2/3 power)	-70.9dB
Dynamic Headroom (IHF)		+0.35dB	(46.3W)	Noise (A wtd, 0dBW)	-70.9dB
Peak Current (5msec, 1% THD)			4.7A	(2/3 power)	-78.3dB
Output Impedance			0.195ohm	Residual noise (unwtd)	-89.9dB
Damping Factor			41.1	Input Sensitivity (for 0dBW)	-66.9dBV
Stereo Separation (1kHz)			CD/Aux	(for full output)	19.4mV
(20kHz)			67.6dB	Line Overload (1kHz)	128mV
Channel Balance (1kHz, -20dBV)			43.9dB	(20kHz)	>15V
(-60dBV)			0.15dB	(50kHz)	>15V
Total Harmonic Dist. (0dBW)			0.20dB	Tape Output/Impedance	As source / 30ohm
			-66.3dB	Input loading	9.1kohm/100pF
				DC offset, left/right	-20.9mV/-20.4mV



Output is band limited, and falls by nearly 1dB of level at 20kHz.



The Exposure shows a sensitivity to noise produced by some CD players at 80-240MHz.



Strong second, third and fourth-order distortions fall within the audio range.

For all that's Best in Hi-Fi



313-315 Edgware Road London W2 1BN

Telephone: 071 402 2441

For all the Best Prices

For all that's Best in CD Players

Every One a Winner

Technics SL PG520

CD Player

MASH Conversion

Remote Control

'Best Buy' Hi Fi Choice

Offered with FREE Technics CD Cleaner worth £39.95

£199.95

Marantz CD-52II £229.00

CD-52II SE £299.00

Philips CD-920 £149.95

Sony CDP-597 £179.95

Pioneer PD-S901 £470.00

Technics SL-PS804 £420.00

Teac P700/D700* £1598.00

Yamaha CDX-660 £249.95

* Hi-Fi Choice 'Best Buy'

For all that's Best in Loudspeakers

B & W 600 Improved Series



DM 600 £179.95

DM 610 £239.95

DM 620 £399.95

DM 630 £649.95

DM 640 £849.95

For all that's Best in AV Speakers



Mordaunt-Short Home Entertainment Series

Bose Acoustimass-7

Home Cinema System

'Best Buy' What Video

For all that's Best in Mini Hi-Fi's

Denon D-70 2x30 Watts

Three Piece System

with Phono Input

£589.00 Exc Speakers

£689.00 Inc Speakers

"Head and shoulders above most other minis" What Hi Fi

Thorens



TD-280 Turntable with TP

35 Tone Arm & Audio

Technica AT95 £219.00

For all that's best in Audio-Video

Create your own Home Cinema



AV Amplifiers

Denon AVC 3020 £729.00

Yamaha DSP A1000

£899.00

Yamaha DSP A2070

£1099.00

Laserdisc Players

Philips LDP 600

Pioneer CLD 1750 £579.00

Sony MDP 650D £649.00

The Revox

'evolution' System with 150 WPC gives a performance as stunning as it looks

£2880.00

Also at 242 Tottenham Court Road London W1 Tel: 071 636 5974

Mail Order Hot Line 071 402 2441

Send to HI-WAY HI-FI LTD 313-315 EDGWARE ROAD LONDON W2 1BN

Please Supply.....

I enclose cheque/PO for £.....or debit my Access/Visa/Amex Card

No.....

Expiry Date.....Name.....

Address.....

.....Post Code.....

Day Time Tel No.....

We will try not to be undersold. Our prices may be Negotiable.

Harman Kardon HK6550



Reviewing HK amplifiers is rather like painting the Sydney Harbour bridge. No sooner had we tucked its entire range into the *Choice Directory* than Harman revamped its entire collection. With the *HK6550*, which replaces the popular *HK6500* (issue 92), we are half-way through the task.

The large rotary tone, balance, input and speaker selection controls all reflect HK's very bold and purposeful styling. Unfortunately, its internal construction is somewhat messier. The use of fully discrete circuitry, even throughout its MM/MC phono stage, is laudible enough, but the logistics of its layout could certainly stand improvement.

Otherwise, the *HK6550* appears very similar indeed to the older *HK6500*, offering the same features and a similar high-

current/low-feedback power amp. Nevertheless, its execution lacks the polish of the original.

Sound quality

It soon became clear that this amp has a distinctly grainy character which influences everything you play through it. Each note that sits in the upper midband is treated to a generous dose of fizz which has a significant effect on the way information is presented.

To begin with, this character was mistaken for detail, but as we worked through the various tracks it became clear that all was not well. The jazz track sounded relatively frantic and the various instruments lost their richness of tone, becoming dry and nasal. Joni Mitchell's voice was treated to a dubious reshaping which

made it sound more edgy, and the soprano sax made the uncomfortable metamorphosis into a kazoo.

Other limitations included an inability to reproduce dynamics. All the panellists mentioned how flat everything sounded.

The phono inputs provided a better sound, though one that was still troubled by edginess and unlikely to ever merit the appellation 'relaxed'.

Conclusion

Not a success in either sonic or technical terms, the *HK6550* seems to be a bit of a backward step for Harman Kardon, and hardly a worthy successor to the *HK6500*.

Harman Audio, Unit 2 Borehamwood Industrial Park, Rowley Lane, Borehamwood, Herts WD6 5PZ. ☎ (081) 207 5050

Verdict

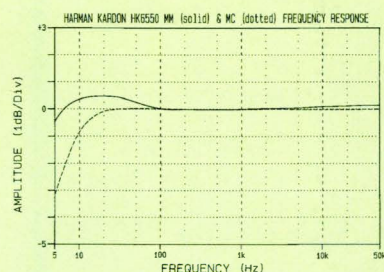
- ▲ Purposeful styling; reasonably powerful.
- ▼ Sound lacks much that can be described as appeal.

▶ **£430.00 RRP**
■ □ □ □ □

Laboratory Report

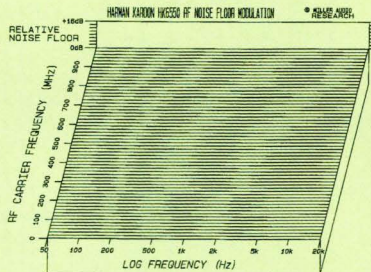
Compared back-to-back with the *HK6500* (issue 92), this *HK6550* is both fractionally less powerful (69W instead of 74W) and also marginally less tolerant of tricky loads. Still, a maximum current delivery of 16.9A remains more than generous for the task at hand.

The moderate 0.01-0.018 per cent distortion is presumably linked to HK's sparing use of negative feedback, yet the nature of this distortion varies from second, third and fourth at low power levels to almost pure second at medium/high levels. By contrast, the high levels of IM distortion encountered via the MC disc input (typically 0.7 per cent) are a side-effect of its limited headroom and premature slewing.



The MM input has a very strong and extended bass response.

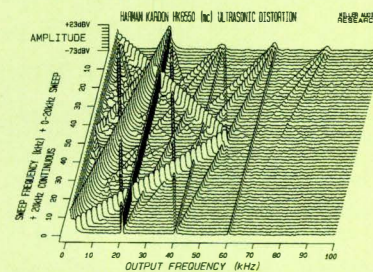
	20Hz	1kHz	20kHz
Maximum Continuous Power Output, 8ohms	67.4W	69.0W	65.2W
4ohms	106.1W	108.1W	100.0W
Dynamic Headroom (IHF)	+1.15dB (89.8W)		
Peak Current (5msec, 1% THD)	16.9A		
Output Impedance	0.147ohm		
Damping Factor	54.3		
	CD/Aux	MM	MC
Stereo Sep. (1kHz)	75.8dB	73.7dB	75.0dB
(20kHz)	51.1dB	49.5dB	48.8dB
Channel Balance (1kHz, -20dBV)	1.21dB	1.06dB	1.11dB
(-60dBV)	1.30dB	1.09dB	1.17dB
Total Har. Dist. (0dBW)	-74.5dB	-75.0dB	-67.3dB
(2/3 power)	-75.7dB	-80.5dB	-67.8dB



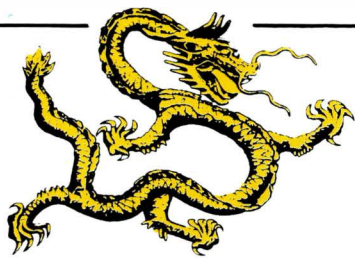
Scrupulous filtering prevents any RF distortion via the HK's line inputs.

TEST RESULTS

	20Hz	1kHz	20kHz
CCIR Interm. Dist. (0dBW)	-77.5dB	-68.0dB	-37.5dB
(2/3 power)	-74.2dB	-67.5dB	-37.4dB
Noise (A wtd, 0dBW) (2/3 power)	-79.6dB	-80.5dB	-76.7dB
Residual noise (unwtd)	-73.8dBV	-73.9dBV	-73.9dBV
Input Sen. (0dBW) (for full output)	18.6mV	294uV	14.4uV
Disc Overload (1kHz) (20kHz)	156mV	7.43mV	618mV
(50kHz)	703mV	29.1mV	703mV
Tape Output/Impedance	10.3V (disc) / 355ohm		
Input loading	29kohm/300pF 40kohm/120pF 46ohm		
DC offset, left/right	-1.5mV/-2.5mV		



Clusters of audible IM distortions are typical of HK's MC inputs.



Golden Dragon

Precision Audio Tubes

Please enquire for any tube types not listed. We have an inventory of over 2,500 different types in stock.

RETAIL PRICE LIST

Golden Dragon Pre-amplifier Tubes	Singles	Golden Dragon Triodes	Singles	Pairs	Quads	Golden Dragon Power Tubes Pairs	Quads	Octets
6AQ8/ECC85	£6.50	2A3 4PIN	£22.50	£47.50	£95.00	EL84/6BQ5	£8.50	£17.00 £34.00
12AT7A/E81CC/ECC81	£6.50	2A3 OCTAL	£22.50	£47.50	£95.00	E84I/7189a	£12.50	£25.00 £50.00
12AU6A/E82CC/ECC82	£6.50	211	£28.50	£59.00	£118.00	KT66	£25.00	£50.00 £100.00
12AX7A/E83CC/ECC83	£6.50	300B	£69.00	£140.00	£280.00	KT88	£49.50	£99.00 £198.00
6DJ8/E88CC/ECC88	£10.95	811A	£11.50	£25.00	£50.00	KT88 SUPER	£59.00	£118.00 £236.00
6SL7GT/ECC35	£7.50	845	£36.50	£75.00	£150.00	6L6GC	£18.50	£37.00 £74.00
6SN7GT/ECC33	£8.50	805	£36.50	£75.00	£150.00	6550A	£39.50	£79.00 £158.00
Special Quality Golden Dragon Pre-Amplifier Tubes	Singles	Golden Dragon Power Tubes Pairs	Quads	Octets		50CA10	£75.00	£150.00 £300.00
E81CC-01 Gold Pins	£9.50	EL34/6CA7	£18.50	£37.50	£74.00	6L6WGB	£25.00	£50.00 £100.00
E82CC-01 Gold Pins	£9.50	EL34S/CA7S	£25.00	£50.00	£100.00	807	£25.00	£50.00 £100.00
E83CC-01 Gold Pins	£9.50							
E88CC-01 Gold Pins	£14.50							

Golden Dragon Select Tubes

5AR4	£9.50
5U4G	£8.50
85A2	£6.50
ECL82	£4.50
ECL86	£4.50
EL509	£7.50
PL509	£7.50
12E1	£25.00
13E1	£125.00
310A	£60.00
572B	£45.00
5687	£8.50

Gold Plated Ceramic Valve Bases

4 PIN UX4	£3.50
4 PIN JUMBO GOLD PLATED	£25.00
7 PIN B7G CHASSIS	£3.50
8 PIN OCTAL PCB	£3.50
8 PIN OCTAL CHASSIS	£3.50
9 PIN B9A PCB	£1.95
9 PIN B9A CHASSIS	£2.50
GOLD PLATED ECC83 SCREENING CAN & SKIRT	£8.50
GOLD PLATED ECC83 DAMPING CAN	£4.50

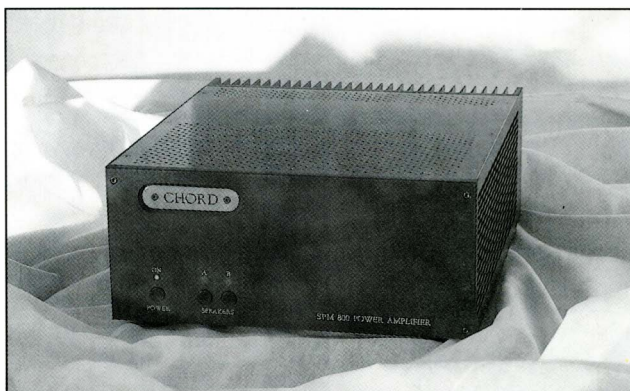
Carriage charge: £2.50 on any order. All prices plus VAT @ 17.5%. Payment: Cash with order or Visa - Mastercard - American Express. 24 Hour Answerphone Services

We also have available ceramic valve sockets and holders for the entire Golden Dragon range. For further details please contact:

P.M. COMPONENTS LTD., Springhead Enterprise Park, Springhead Road, Gravesend, Kent DA11 8HD, England
Tel: 0474 560521. Telex: 966371 TOS-PM-GM. Fax: 0474 333762
GOLDEN DRAGON MAIN DEALERSHIPS, available in selected areas. Please call Clive Norris for details.

DOUG BRADY HI-FI

"You really must hear this"



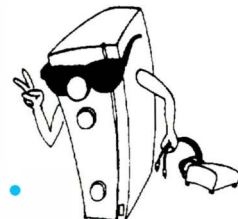
and these . . .

Audio Innovations • Acoustic Energy • Teac
• Orelle • CD • Pink Triangle • Naim
• Accuphase • Mission • Counterpoint • etc

MAKE FRIENDS AT DOUG BRADY HI-FI

Kingsway Studios Kingsway North Warrington Cheshire (0925) 828009 Open six days Fax: (0925) 825773	401 Smithdown Road Liverpool L15 3JJ Merseyside (051) 733 6859 Closed on Wednesday	14/18 Monmouth Street Covent Garden London WC2H 9HB (071) 379 4010 (071) 497 1346 Closed Sunday and Monday	The Forge Cottage 19 Crossgate Otley, Leeds, West Yorks LS21 1AA (0943) 467689 Closed Sunday and Monday
--	---	--	---

Walkin' the dog . . .



Just when you thought it was safe
to go back into the demo room . . .

The PIONEER A400 GTE

From the same designer that brought you the Iso, Argo and Alecto, a cost effective conversion that will transform the performance of your A400. You will gain faster transient response and greater bass authority. The sound becomes far smoother at high frequencies without resorting to band width limiting.

See the review in this, and other national magazines, against the standard model.

THE COST OF £141.00 INCLUDES
RETURN CARRIAGE AND INSURANCE

T. Evans Audio Design

0443 816 856

9am to 5pm Monday to Friday

Marantz PM-52SE



It was Marantz who began the trend for Special Edition models which, to the casual enthusiast, might seem a neat way of paying more for distinctly less. The PM-52SE is certainly much more expensive than the basic £230 PM-52.

Cast a glance back to issue 80 and you'll see the styling of this latest 50 Series has hardly altered. The tone controls have been abandoned, but its complement of source direct, balance, tape switching and four line plus MM/MC phono inputs remain broadly unchanged.

Under the bonnet, Marantz has relinquished the high-power Darlington output stage of the PM-52 and returned to the bipolar transistors of the PM-50. This time, however, it's also upgraded the mains transformer and supply caps, improved the tolerancing of components in the

phono stage and returned once again to a fully copper-plated chassis. Subtle revisions that command a £199 premium.

Sound quality

The Marantz PM-52SE didn't make a particularly good start, but as listening progressed its strengths showed through. On the first track it presented a fair amount of detail in a tuneful, even forceful way. High frequencies had what one listener called a rice paper quality, and low bass was not that well represented, although the upper bass was tightly controlled.

The interplay of the jazz musicians on track two was nicely portrayed and the timbre of the various instruments well preserved. Definition was, however, not that spectacular, two panellists noting a degree of blurring on the saxophone. Joni

Mitchell's voice and the instruments on the track sounded confident, if not as civilised as they had been, but the essential feel of the track was well presented.

Using the phono input was rewarded by a result worthy of the medium. The sound opened out, extending in both image and bandwidth to reveal the dynamic abilities of vinyl.

Conclusion

The Marantz PM-52SE asks a high price for its improvements, but as the results show, it's not money spent in vain. This is a musically satisfying amp that's well suited to both CD and vinyl. Recommended.

Marantz Hi-Fi UK Ltd, Kingsbridge House, Padbury Oaks, 581 Bath Road, Longford, Middlesex UB7 0EH. ☎ (0753) 680 868

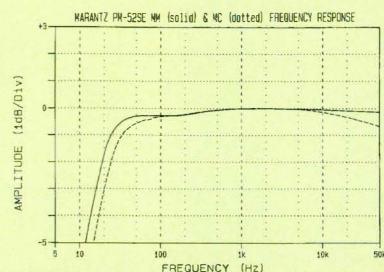
Verdict

- ▲ Nice fluent sound that works well with all sources.
- ▼ Low level channel balance could be improved.
- ▶ **£429.00 RRP**

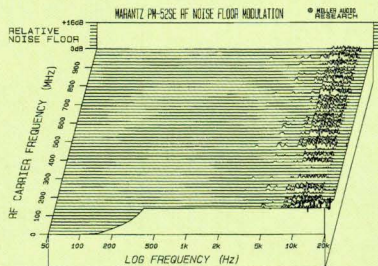
Laboratory Report

It is quite remarkable how, three years and three models on, the basic performance of this 50 Series has endured. Back in issue 80, we complimented the PM-50 for its tight power supply regulation, healthy +2dB power increase from 8 to 4ohms and substantial 23A peak current. Figures of merit that are just as important today.

Neither has the disc response, with its abrupt LF cut-off, or 3D plot, showing characteristic second-order distortions, changed a jot. In fact, only the low-level channel balance has really deteriorated, suggesting Marantz' selection of its volume pots could stand some improvement. Otherwise, this is a reliable and thoroughly compatible good egg!



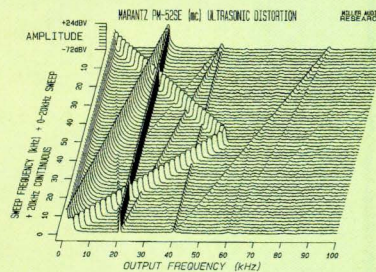
Both disc inputs are sensibly rolled-off to avoid problems with record warps.



The Marantz still shows some residual sensitivity to incoming RF garbage.

TEST RESULTS

	20Hz	1kHz	20kHz
Maximum Continuous Power Output, 8ohms	94.4W	95.0W	91.7W
4ohms	143.8W	148.6W	142.6W
Dynamic Headroom (IHF)	+1.3dB (128.7W)		
Peak Current (5msec, 1% THD)	22.6A		
Output Impedance	0.045ohm		
Damping Factor	176.6		
	CD/Aux	MM	MC
Stereo Sep. (1kHz)	98.4dB	94.5dB	94.2dB
(20kHz)	74.2dB	72.4dB	70.7dB
Channel Balance (1kHz, -20dBV)	0.29dB	0.28dB	0.02dB
(-60dBV)	2.05dB	2.04dB	1.77dB
Total Har. Dist. (0dBV)	-95.6dB	-98.2dB	-98.4dB
(2/3 power)	-94.6dB	-97.8dB	-97.7dB
CCIR Intermod. Dist. (0dBW)	-97.8dB	-90.5dB	-91.5dB
(2/3 power)	-96.2dB	-89.6dB	-90.6dB
Noise (A wtd, 0dBW)	-87.7dB	-85.4dB	-73.7dB
(2/3 power)	-98.3dB	-91.3dB	-73.9dB
Residual noise (unwtd)	-81.9dBV	-82.1dBV	-82.0dBV
Input Sen. (0dBW)	17.7mV	266uV	28uV
(for full output)	173mV	2.59mV	273uV
Disc Overload (1kHz)	163.4mV	17.1mV	
(20kHz)	1408mV	158.7mV	
(50kHz)	1497mV	175.5mV	
Tape Output/Impedance	10.9V (disc) / 227ohm		
Input loading	32kohm/230pF	44kohm/360pF	100ohm/15mV/2mV
DC offset, left/right			



Simple and innocuous second-order distortions dominate the spectrum.

Orelle SA-020.2



After a protracted absence from the pages of *Choice*, Orelle has gained both an 'e' and a substantial number of new separates including the SA-020.2 featured here. And, as is increasingly common these days, the amp comes in line-only guise with the option of either MM or MC disc stages at extra cost.

Flush-mounted controls for volume and input selection lie on the right of its slate-grey fascia, while a series of obscure hieroglyphics are provided to indentify its seven separate inputs. Fine so far, except the underside of the SA-020.2 will run very hot indeed if the amp is pushed with 'difficult' speakers. To be perfectly fair, Orelle does point out that its amp 'will work best with speakers rated at 8ohms'. Indeed, Orelle does not even publish a figure for power into 4ohms.

Sound quality

The Orelle turned in a spritely, if not particularly well received, performance in the listening tests. It inspired a wide range of comments from the panel, which was not entirely in agreement about this amp. Body was described as both full and lacking, though not on the same track, and there was a degree of contention over the Orelle's ability to reproduce bass.

The high energy Fourth World track sounded lively, forward and exciting, almost to the point of brashness, particularly when things got busy. But there was also some body to the sound, even if the tonal balance was on the light side. The jazz musicians sounded more hurried than usual, which had the effect of robbing tonal colour from the usually rich saxophones, and the soundstage lacked depth.

A degree of flatness was noted with the Joni Mitchell track as well. It could, at times, sound quite detailed, but this was largely a result of a high frequency emphasis that also created the impression of speed. The same character lent extra 'air' to the Mahler track, which sounded reasonably dynamic.

Conclusion

A bit more consistency all round would not go amiss with the attractive Orelle SA-020.2. The combination of occasionally inspiring but often unbalanced sound and limited output into lower impedances make it hard to endorse.

Orelle Hi-Fi, Unit 11, I-Mex House, 6 Wadsworth Road, Perivale, Middlesex UB6 7DJ. ☎ (081) 810 9388

Verdict

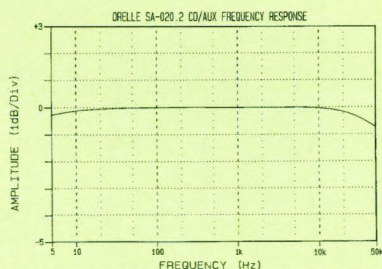
- ▲ Quite a speedy sound that suits certain types of music.
 - ▼ Not suitable for low impedance speakers; inconsistent.
 - ▶ **£420.00 RRP**
- ■ □ □ □

Laboratory Report

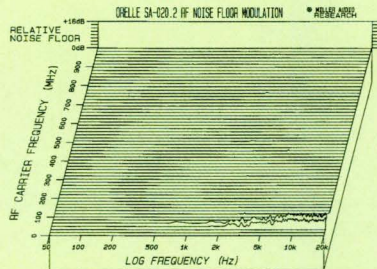
Under the bonnet we discover that Orelle has opted for a similar set of compromises to those first witnessed in the Aura VA-100 (issue 109), relying on the 'self-protection' of its MOSFET power amp which gently collapses as it overheats. So, like the VA-100, the SA-020.2 will sustain a continuous 80-85W into 8ohms but no more than 33W into 4ohms. Of course, so long as the amp has not already overheated it will deliver a clean 94W/107W/101W for a second or two into 4ohm. Perhaps Orelle should invest in proper heatsinking if its continuous performance is ever to match its dynamic performance.

TEST RESULTS

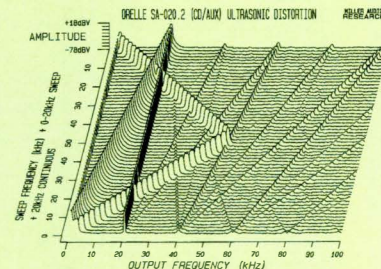
	20Hz	1kHz	20kHz	(2/3 power)	-94.7dB
Maximum Continuous Power Output, 8ohms	87.0W	85.7W	80.0W	CCIR Intermod. Dist. (0dBW)	-95.7dB
4ohms	28.0W	32.8W	38.0W	(2/3 power)	-96.1dB
Dynamic Headroom (IHF)	+1.13dB (111.1W)			Noise (A wtd, 0dBW)	-85.8dB
Peak Current (5msec, 1% THD)	11.5A			(2/3 power)	-99.3dB
Output Impedance	0.057ohm			Residual noise (unwtd)	-74.9dBV
Damping Factor	140.8			Input Sensitivity (for 0dBW)	36.9mV
	CD/Aux			(for full output)	346mV
Stereo Separation (1kHz)	84.9dB			Line Overload (1kHz)	>15V
(20kHz)	60.4dB			(20kHz)	>15V
Channel Balance (1kHz, -20dBV)	0.25dB			Tape Output/Impedance	As source / As source
(-60dBV)	0.12dB			Input loading	50kohm/260pF
Total Harmonic Dist. (0dBW)	-94.6dB			DC offset, left/right	-12.7mV/+0.5mV



The Orelle produced a very flat and very extended frequency response.



Some minor sensitivity to RF noise is apparent in the 50MHz region.



Distortion is kept at bay provided that the amplifier is not driven hard.

YBA Integre



Some amplifiers are born to be eccentric and so it is with YBA's *Integre*. There's nothing too disturbing about its fascia, just an elegant combination of record and input selectors for its MM phono and five supplementary line inputs. The rear is decorated with a row of substantial gold-plated phonos plus a parallel series of L/R 4mm sockets.

But lift the lid and YBA's traits stand out in bold relief. Everything from the damped mains transformer, symmetrical board layout, single-core OHFC cabling, custom-made metal-film resistors and polypropylene capacitors mark this out as an audiophile product. Yet the charming 'extras', which include conductive paint on the phono op-amps plus mica shims that separate its power transistors from their heatsinks, are the true hallmarks of YBA.

Sound quality

The *Integre* split the panel somewhat. Reactions ranged from considerable enthusiasm to mild criticism, but everyone was surprised when they found out how much it cost. It put in a reasonably well balanced performance, adding muscle that several of its predecessors had lacked and resolving low level detail with some aplomb. Which meant that the Fourth World track retained its energy but had a bit more power and body than usual.

As the various selections progressed, the YBA revealed quite a lot of fine detail, not to the degree one might hope for with an amp of this price, but enough to suggest that this wasn't just another budget amp. It seemed to fare better with some pieces than others; the Joni Mitchell stimulating comments such as 'a slight electronic edge

or energy' and 'so much force', both suggesting that something in the amp's character was making its mark on the music.

Using vinyl as a source resulted in a distinct improvement, and probably the best analogue sound in the bunch. It made good use of the extra sense of openness some vinyl recordings possess.

Conclusion

Being the most expensive model in the group was never going to be easy, but the *Integre* made a fair stab at making up for its price-tag. The sound had many good qualities, but wasn't superior enough to warrant the extra cost.

Kronos Distribution, 35 Fairclough Road, Newmills, Dungannon, N Ireland. BT71 4DU. ☎ (0868) 748 632

Verdict

- ▲ Highly detailed and three dimensional sound.
 - ▼ A little too much energy at times; not up to the price.
 - ▶ **£1200.00 RRP**
- ■ ■ ■ □

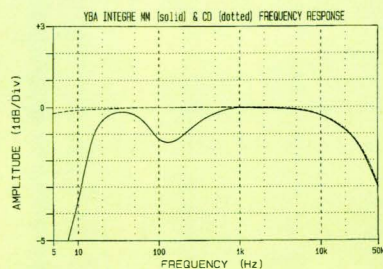
Laboratory Report

YBA's use of a very stiff power supply is reflected in its healthy +2.2dB boost from 57W to 95W into 4ohms, despite the fact that its reservoir of current is limited to just 8.6A (@ one per cent THD). At higher frequencies the maximum output is restricted by slew-limiting, a quirk that's responsible for strong third/fourth order IM distortion (typically -58dB and -71dB respectively) together with the extended odd-harmonics visible on the 3D plot.

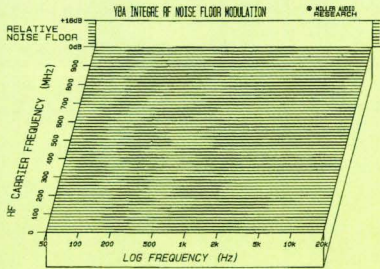
Disc input sensitivity is slightly low at 4.3mV, but the tape output impedance is quite marvellous at < 1ohm. This is unusual, bearing in mind the high 0.17ohm output impedance of its power amp (YBA specifies a nominal damping factor of 300 at 100Hz).

TEST RESULTS

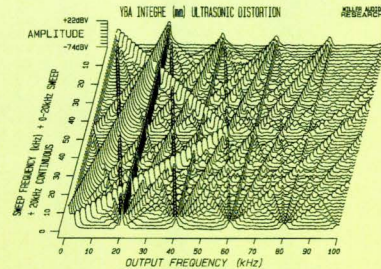
	20Hz	1kHz	20kHz		
Maximum Continuous Power Output, 8ohms	57.5W	56.6W	46.3W	CCIR Intermod. Dist. (0dBW)	-57.5dB -56.2dB
4ohms	95.1W	94.9W	45.1W	(2/3 power)	-65.6dB -64.2dB
Dynamic Headroom (IHF)	+1.27dB (75.8W)			Noise (A wtd, 0dBW)	-58.7dB -59.1dB
Peak Current (5msec, 1% THD)	8.6A			(2/3 power)	-84.8dB -72.7dB
Output Impedance	0.173ohm			Residual noise (unwtd)	-95.0dB -73.6dB
Damping Factor	46.4			Input Sensitivity (for 0dBW)	-76.8dBV -76.8dBV
				(for full output)	34.8mV 575uV
Stereo Separation (1kHz)	CD/Aux	MM		Disc Overload (1kHz)	267mV 4.30mV
(20kHz)	68.8dB	67.2dB		(20kHz)	190.1mV
Channel Bal. (1kHz, -20dBV)	45.3dB	43.5dB		(50kHz)	1694mV
(-60dBV)	0.30dB	0.31dB		Tape Output/Impedance	11.8V (disc) / <1ohm
Total Harmonic Dist. (0dBW)	0.96dB	0.98dB		Input loading	95kohm/60pF 48kohm/10pF
	-62.4dB	-61.1dB		DC offset, left/right	+2.0mV/-2.8mV



Tighter component tolerances may have prevented this 150Hz dip in the response plot.



At least the RF IMD plot can be seen to be free of audible nasties.



All types of distortion are represented in generous quantity!

Amps: conclusions, best buys and recommendations

This month's selection of integrated amplifiers proved nothing if not diverse. With prices ranging from an unfeasible £80 to an audiophile £1,200 we had the full gamut of models to assess, and an interesting bunch they proved. The base price of what can be generally termed a 'hi-fi' amplifier has noticeably been affected by the low value of the pound, and only one of our Recommendations this month comes in below the £200 mark. There are others on the market, however, so enthusiasts on a tight budget need not despair.

The £200-£300 sector has become the jousting field for 'budget' amplifiers with high fidelity aspirations, and we found two new contenders that could stir up the market.

The boring

Inevitably when you get a group of 17 integrated amplifiers together, some are going to shine more than others, and there were a few unimpressive models in there.

In the sub £230 bracket, the least expensive and pretty well least inspiring was the Sherwood *AI-2210* (£80), though in fairness it was not nearly so abrasive as some more costly designs. Teac's *AX-1000* (£150) nearly made it into the 'interesting' class, but didn't make the sonic grade.

In the £230 to £350 band, JVC's *AX-R562* (£249) was

well equipped but brash, the Kenwood remote controllable *KA-4050R* (£260) was rather uninspiring, while Magnum's *Quartet A* (£329) looks set to confuse those who buy it, with its unusual

four-way speaker connection system.

Over £350, a less than inspiring performance was put in by Harman Kardon's *HK6550* (£430), a disappointing follow up to the *HK6500*.

The interesting

Having dispensed with the less than delightful, we can move on to the models that made a better showing but weren't quite competitive enough to make it into the top

Best Buy and Recommended Listing

BEST BUY

NAD 304 (£230) Equally effective with CD and vinyl sources; another entertaining NAD product.

Sansui AUX-417R (£310) Unusually clean and precise; lots of subtlety and it's got remote control.



Left: NAD has done it again; the 304 has all the right ingredients, control, energy, sparkle, welly and enthusiasm.

RECOMMENDED

Denon PMA-250III (£160) Lots of resolution; occasionally loses its grip but is generally engaging.

Marantz PM-52SE (£430) The SE premium buys a degree of fluency that draws you into the music.

Nakamichi IA-3 (£350) A minimalist outing for the cassette heroes; confident if a little restrained.

Rotel RA-935BX (£200) A line-only winner that lets the music through and keeps a firm grip on it.



Right: the Denon PMA-250III has regained some of the technical ground lost by its predecessor and sounds good to boot.

Amplifiers—the best of the rest

We managed to find two pretty impressive integrated amps in this month's test group, but there are, of course, other good amplifiers on the market. If you are thinking of purchasing one it makes sense to consider some of the success stories from previous reviews.

In the sub £230 sector of the market, four Best Buys hold the high ground: the spritely and uplifting NAD 302 (£160),



the uncluttered and genuinely unpretentious Kenwood KA-3020 (£160), the clean, vibrant and thoroughly involving Rotel RA-930AX (£180) and the solid, punchy and expressive Harman Kardon HK6150 (£190). There's just one Recommended amp that's worth bearing in mind, the slimline Aura VA-50 (£220). None of this month's contenders offer much of a threat to the four Best Buys in

Above, Rotel RA-930AX.

this hotly contended part of the market. But at a mere £10 premium, the new NAD may make life uncomfortable for the Aura.

In the £230 to £350 zone, we find some of the real budget heavyweights, most notably the Best Buy budget bench mark Pioneer A-400 (£280), and big brassy Denon PMA-450 (£250).

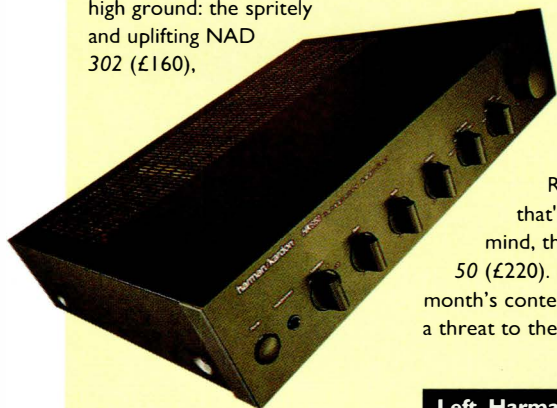
And a popular Recommendation is the big and exciting sounding Marantz PM-40SE (£250). It's quite feasible that both of this month's new Best Buys could upset the order in this region, though neither are superior to the A-400.

In the £350 plus field, two integrated models still rule the roost. They are the smooth and solid Audiolab 8000A (£430) and Arcam's Delta 290 (£450), which has the advantage of optional remote control. Neither need feel under threat from this month's offerings.

Below, NAD 302.



Left, Harman Kardon HK6150.



spots. To put it more plainly; reasonable sound but too much money.

In the £230 to £350 bracket, the Wharfedale 2050A (£249) in its latest guise proved too energetic for our panel.

In the £350 plus arena were the Adcom GCA-510 (£349), whose American manufacture gives it too high a premium; the Exposure XX (£625) with its distinct but rather limited appeal, and another British contender, the Orelle SA-020.2 (£419), which could do with being more load tolerant. Dearest in the bunch, the YBA Integre (£1,200) sounded good and might have won more friends had it cost about half as much.

And the flag worthy

Finally, we come to the cream of the crop, half a dozen new amplifiers that have proved themselves worthy of the most sought after accolades in hi-fi circles; the *Hi-Fi Choice* Recommended and Best Buy swingtags.

Recommendations

First up from the £230 and under sector is Denon's latest

version of its base amplifier, the PMA-250 (£160). Now in mark three guise, it has engaging if not always tidy sound and represents good value. Rotel's line only RA-935BX (£200) treads a rather safe sonic line, but does so with a characteristic aplomb that will endear it to a broad selection of systems.

Just inside the £230 to £350 band, we find Nakamichi's IA-3 (£350), which is quite a departure for the company and takes an uncompromisingly minimalist approach, resulting in a solid and coherent, if slightly restrained, sound quality.

Above £350, the Special Edition version of Marantz' PM-52 (£430) is considerably dearer than its standard sibling, but has a fluency worthy of Jeff Beck, even if it could do with being a bit more precise at times.

Best Buys

Just two out of the 17 contenders survived to emerge victorious from the blind listening with Best Buy tags proudly adorning their grey facias. Both are from the

hotly contended £230 to £350 price band. The NAD 304 (£230) was a hot favourite from the start, following in the 302's equally successful footsteps (issue 116) and carrying the brand into a previously unconquered price band.

Much more of an outsider was Sansui's remarkable AUX-417R (£310), which must be one of the first remote controllable budget amps to produce good enough sound quality to inspire real enthusiasm in our experienced and difficult-to-please panellists.

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 swingtag 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.





SEVENOAKS SUPERFI

This advertisement is valid until at least 31st July 1993 (11)

Display, Demonstrations and After Sales

Unlike many of our competitors, all products (subject to availability) are on display and may be auditioned in dedicated listening rooms in any of our branches. Our helpful staff enjoy and understand the equipment they sell and will be only too happy to assist you through the Hi Fi choices that lie ahead. Our Sevenoaks Superfi service dept is one of the largest and best equipped in the business and will maintain your purchase in tip-top working order at all times.

SUGGESTED SYSTEMS

The suggested systems priced below all include the popular NAD 5120 turntable but an alternative turntable or CD player is available at extra cost. Please see "OPTIONS" list below for further details.

SPEAKERS	AMPS	Turntable	CD Player	System Price	System Price	System Price	System Price	System Price
JPN Sonata (V) Celestion I Goodmans M100	Celestion 3 JPN Sonata (W) Tannoy 603 Mission 760i Widale Diamond 5	Tannoy 605 MoniAudio One	Celestion 5 B&W DM600 Kel K120 Heybrook Solo Mission 761i MoniAudio R7	311.95	319.95	327.95	335.95	348.95
				319.95	327.95	335.95	348.95	364.95
NAD 3020i	Marantz PM32	Rogers LS2A-2 JPN AP3 Kel 140	Tannoy 607 B&W DM610 Celestion 7	351.95	359.95	367.95	375.95	383.95
				359.95	367.95	375.95	383.95	391.95
Rotel RA 920AX	Nad 302 Kenwood RA3020	Mission 762 Castle Durham II Heybrook HB1/3	Rogers LS4A-2 Tannoy 609	367.95	375.95	383.95	391.95	399.95
				375.95	383.95	391.95	399.95	407.95
Harman HK6150 Rotel RA930AX Technics SUVA500K	Technics SUVX600K	Mission 762 Castle Durham II Heybrook HB1/3	Rogers LS4A-2 Tannoy 609	383.95	391.95	399.95	407.95	415.95
				391.95	399.95	407.95	415.95	423.95
Nad 304 Sony TAF540E	Marantz PM40SE Harman HK6250	Mission 762 Castle Durham II Heybrook HB1/3	Rogers LS4A-2 Tannoy 609	396.95	404.95	412.95	420.95	428.95
				404.95	412.95	420.95	428.95	436.95
Marantz PM40SE Harman HK6250	Technics SLPG520AK Technics SLPS620AK	Mission 762 Castle Durham II Heybrook HB1/3	Rogers LS4A-2 Tannoy 609	412.95	420.95	428.95	436.95	444.95
				420.95	428.95	436.95	444.95	452.95
Nad 304 Sony TAF540E	Marantz CD52SEII NAD 502 Philips CD930 Philips CD692 Pioneer PDS801 Rotel RCD955AX Technics SLPG420AK	Mission 762 Castle Durham II Heybrook HB1/3	Rogers LS4A-2 Tannoy 609	424.95	432.95	440.95	448.95	456.95
				432.95	440.95	448.95	456.95	464.95
Marantz PM40SE Harman HK6250	Technics SLPG520AK Technics SLPS620AK	Mission 762 Castle Durham II Heybrook HB1/3	Rogers LS4A-2 Tannoy 609	439.95	447.95	455.95	463.95	471.95
				447.95	455.95	463.95	471.95	479.95

FREE

- with suggested Systems
- Cartridge (turntable based systems only)
- Speaker Leads (80 strand cable)
- Carriage (Systems over £300)

Options

The following Compact Disc Player or Turntable may be ordered instead of the NAD 5120 in the above systems.

CD Players

- Aliwa XC300 Add £49
- Denon DCD595 Add £79
- Denon DCD695 Add £99
- Denon DCD890 Add £169
- Denon DCD1290 Add £229
- Marantz CD4211 Add £99
- Marantz CD5211 Add £129

Turntables

- Marantz CD52SEII Add £199
- NAD 502 Add £119
- Philips CD930 Add £99
- Philips CD692 Add £39
- Pioneer PDS801 Add £229
- Rotel RCD955AX Add £179
- Technics SLPG420AK Add £59

Turntables

- Dual CS503.2 Add £79
- Dual CS505.4 Add £129
- Thorens TD280 IV Add £99
- Systemdek IIX900 (+ choice of arm) P.O.A.

0% FINANCE

We offer 0% finance on a wide range of manufacturer's products. **Option 1:** 10% deposit followed by 6 equal monthly payments. Example: Cost £600. Deposit £60 plus 6 payments of £90. **Option 2:** 25% deposit followed by 9 equal monthly payments. Example: Cost £600. Deposit £150 plus 9 payments of £50. **Both options:** minimum balance £400. Subject to status. **0% APR.** Personal shoppers only. Written details on request. 0% finance not available on Suggested Systems or 'Price Match' sales. Added value offers not available on 'Price Match' sales.

FREE HEADPHONES

Spend over £500 on **selected** Hi Fi Products before 31st July and claim a pair of Audio Technica ATH-610 headphones worth £40 **FREE!**



BUY WITH CONFIDENCE

IN STORE & MAIL ORDER - You can buy with confidence from **Sevenoaks Hi-Fi**. We've been in business for 21 years and have lots of experience with personal callers and Mail Order customers. All goods are **BRAND NEW, FULLY GUARANTEED** and maintained by our own service department. For personal attention and demonstration call into any of our branches. If you live too far away, simply post or phone your order through our efficient Mail Order department at Sevenoaks head office should have your equipment safely delivered within 2 or 3 days, subject to availability. Carriage is only £7 per order and generally FREE if total exceeds £300 (UK mainland only). All goods are insured against loss or damage in transit. Payment may be made by cash, cheque, Access or Visa (Barclaycard). Prices include VAT.

Amplifiers

- Albany S308 £499.95
- Albany AP4 £349.95
- Alchemist Kraken £199.95
- Arcam Alpha III £299.95
- Arcam Delta 60 £219.95
- Arcam Delta 290 £299.95
- Aura VA100 Black £429.95
- Aura VA100 Black £649.95
- Audiolab 8000C(II) £599.95
- Audiolab 8000M (each) P.O.A.
- Audiolab 8000P(II) £159.95
- Cyrus (SOaks branch only) £219.95
- Denon PMA250 III £219.95
- Denon PMA350 III £249.95
- Denon PMA480R £549.95
- Denon PMA450 £529.95
- Exposure EXP20 £649.95
- Exposure EXP7 £569.95
- Exposure EXP15 MM £279.95
- Exposure EXP85TD £199.95
- Harman Kardon HK6250 £159.95
- Harman Kardon HK6150 £139.95
- Kenwood KA3020 £149.95
- Kenwood PM32 £199.95
- Marantz PM40SE £299.95
- Marantz PM44SE £199.95
- Marantz Fid A1 Mk III £299.95
- Musical Fidelity Pre 8 £299.95
- Musical Fidelity Tymphon £874.95
- Musical Fidelity MAE5 (Pair) £199.95
- Musical Fidelity Tempest £45.95
- Musical Fidelity Bridging cable £169.95
- Nad 302 £229.95
- Nad 304 £329.95
- Nad 306 £279.95
- Pioneer A30DX £842.95
- Pioneer A400 £388.95
- Quad 66 inc R1 £341.95
- Quad 34 £173.95
- Quad 306 £169.95
- Quad 606 £199.95
- Rotel RA920AX £249.95
- Rotel RA930AX £299.95
- Rotel RA935BX £209.95
- Rotel RA940BX £299.95
- Rotel RA960BX £424.95
- Rotel RA960BX £164.95
- Rotel RB960BX £324.95
- Rotel RC960BX P.O.A.
- Rotel RC980BX P.O.A.
- Sony Technics

Cassette/DCC Decks

- Aiwa ADF410 £119.95 (FT)
- Aiwa ADF810 £229.95 (FT)
- Aiwa ADWX828 £199.95 (FT)
- Aiwa ADWX929 £229.95 (FT)
- Arcam Delta 100 £849.95 (FT)
- Arcam Delta 100 £159.95
- Denon DRM510 £259.95
- Denon DRM710 £199.95
- Denon DRM510 £299.95
- Denon DRW760 £249.95
- Marantz DD82 - DCC £649.95 (FT)
- Marantz DD92 - DCC £799.95 (FT)
- Marantz SD52 £179.95 (FT)
- Marantz SD62 £269.95 (FT)
- Nakamichi DR1 £779.95 (FT)
- Nakamichi DR2 £579.95 (FT)
- Nakamichi DR3 £349.95 (FT)
- Philips DCC 900 P.O.A.
- Pioneer Rotele RD945AX £159.95 (FT)
- Rotel RD955AX £199.95 (FT)
- Rotel RD955BX £249.95 (FT)
- Sony TCK311 £199.95 (FT)
- Sony TCK411 £299.95 (FT)
- Sony TCK511S £179.95 (FT)
- Sony TCK611S £229.95 (FT)
- Technics RSB404K £169.95 (FT)
- Technics RSB646K £189.95 (FT)
- Technics RSTR323K £159.95 (FT)
- Technics RSTR333K £249.95
- Yamaha KX260 £319.95
- Denon DRA345R £299.95
- Denon DRA645RD £329.95
- Nad 701 £279.95
- Nad 705 £842.95
- JAMO £388.95
- Harman Kardon AVR30 £341.95
- Kenwood KAV8500 £173.95
- Kenwood KRV7050 £169.95
- Harman Kardon AVR30 £199.95
- Kenwood KRV8500 £249.95
- Marantz SP50 £299.95
- Marantz PM700 AV £209.95
- Mordaunt Short CS1 £424.95
- Mordaunt Short Stereo & sw £164.95
- Mordaunt Short Pro Logic £324.95
- Mordaunt Short Dialogue £164.95
- Mordaunt Short Sub Woofer £324.95
- Mordaunt Wall bracket P.O.A.
- Mordaunt DSPA500 P.O.A.
- Yamaha DSPA1000 P.O.A.
- Yamaha DSPA2070 P.O.A.
- Yamaha DSPA2000 P.O.A.
- Yamaha DSPA1000 P.O.A.
- Yamaha RW470 P.O.A.

Speakers

- Arcam Delta 2 Black (Free 007 Stands & Cable with these models (ex S/Systems) (FS) £299.95 (FS)
- ATC SCM110 £994.95 (FS)
- B & W DM600 £179.95 (FS)
- B & W DM610 £239.95 (FS)
- B & W DM620 £399.95 (FS)
- B & W 805 £845.95 (FS)
- B & W Team Solid £129.95 (FS)
- B & W Team Solid £649.95 (FS)
- Castle Chester £249.95 (FS)
- Castle Durham II £349.95 (FS)
- Castle York £109.95
- Celestion 1 £129.95 (FS)
- Celestion 3 Mk II £169.95 (FS)
- Celestion 5 Mk II £219.95 (FS)
- Celestion 7 Mk II £299.95 (FS)
- Cerwin Vega AT20 £259.95 (FS)
- Cerwin Vega AT40 £130.95
- Hybrook HB113 P.O.A.
- Hybrook Prima P.O.A.
- Mission 761 £159.95 (FT)
- Mission 762 £499.95 (FT)
- Mission 763 £729.95 (FT)
- Mission 764 £1149.95 (FT)
- Mission 765 £699.95 (FT)
- Mission 780 £899.95 (FT)
- Mission 781 £1149.95 (FT)
- Mission Audio 1 Gold £549.95 (FS)
- Mission Audio 7 Gold £749.95 (FS)
- Mission Audio 14 Gold £1095.95 (FS)
- Mordaunt Short £249.95 (FS)
- NAD 800 £139.95 (FS)
- NAD 804 £129.95 (FS)
- Quad ESL 63 £649.95 (FS)
- Quad ESL 63 £249.95 (FS)
- Rel-Acoustics £349.95 (FS)
- Rogers LS2A-2 £109.95
- Rogers LS4A-2 £129.95 (FS)
- Rogers LS6A-2 £169.95 (FS)
- Rogers Studio 3 £219.95 (FS)
- Ruark Swordsman Plus £299.95 (FS)
- Ruark Sabre £129.95 (FS)
- Ruark Talisman II £219.95 (FS)
- Ruark Tempra £129.95 (FS)
- Tannoy 603 Mk II £299.95 (FS)
- Tannoy 607 Mk II £179.95 (FS)
- Tannoy 609 Mk II £179.95 (FS)
- Tannoy 611 Mk II £179.95 (FS)
- Tannoy 613 Mk II £179.95 (FS)
- Tannoy 615 Mk II £179.95 (FS)
- Wharfedale Diamond V £189.95 (FS)
- Wharfedale Diamond V £359.95 (FS)
- Aura TU50 £595.95 (FS)
- Arcam Alpha 3 £479.95 (FS)
- Arcam Delta 280 £225.95 (FS)
- Audiolab 8000T £114.95 (FS)
- Cyrus £69.95
- Denon TU260L £549.95 (FS)
- Denon TU560R £749.95 (FS)
- Denon TU580R £1095.95 (FS)
- Harman Kardon TU9400 £1495.95 (FS)
- Marantz ST40L £2095.95 (FS)
- Marantz ST50L £3395.95 (FS)
- Musical Fidelity II £169.95 (FS)
- Nad 402 £239.95 (FS)
- Pioneer Quad 66FM £329.95 (FS)
- Quad 66FM £399.95 (FS)
- Quad 66FM £549.95 (FS)
- Rotel RT930AX £699.95 (FS)
- Rotel RT950BX £299.95 (FS)
- Sony STS11RDS £129.95 (FS)
- Technics £149.95 (FS)
- Philips CD692 £179.95
- Philips CD920 £229.95
- Philips CD930 £79.95
- Philips CD950 P.O.A.
- Pink Ordinal £299.95
- Pink Triangle Da Capo £229.95
- Pioneer PDS01 £419.95
- QED Opto Digit £399.95
- QED Posttron £399.95
- Quad 65 £399.95
- Quad 67 £399.95
- Roksan Transport/DAC Special £179.95
- Rotel RCD945AX £299.95 (FT)
- Rotel RCD955AX £379.95 (FT)
- Rotel RCD965BX P.O.A. (FT)
- Rotel RCD965LE £769.95 (FT)
- Sony VRDS10 £149.95 (FT)
- Teac P700/D700 £169.95 (FT)
- Technics SLPG340 £169.95 (FT)
- Technics SLPG440 £169.95 (FT)
- Technics SLPG520AK £199.95 (FT)
- Technics SLPG620AK £229.95 (FT)
- Yamaha P.O.A. (FT)

PRICE PROMISE
We always try to ensure our prices are competitive. In the unlikely event of a product being available from an authorized dealer at a lower price - we will match it.*

Compact Disc Players

- Aiwa XC300 £149.95 (FS)
- Aiwa XC750 £199.95 (FS)
- Audiolab 8000 DAC £189.95 (FS)
- Aura CD50 £249.95 (FS)
- Arcam Delta 70.3 £469.95 (FS)
- Arcam Alpha Plus P.O.A.
- Arcam Black Box V £149.95 (FS)
- Arcam CD10 £299.95 (FS)
- Cyrus (SOaks branch only) £219.95 (FS)
- Denon DCD595 £399.95 (FS)
- Denon DCD695 £449.95 (FS)
- Denon DCD890 P.O.A.
- Denon DCD1290 P.O.A.
- Denon DCD650 £229.95 (FS)
- Goodmans GC050 £299.95 (FS)
- Marantz CD10 £399.95 (FS)
- Marantz CD52 II SE £449.95 (FS)
- Marantz CD52 II £299.95 (FS)
- Marantz CD52 II £384.95 (FS)
- Marantz CD62 £699.95 (FS)
- Marantz CD72 £479.95 (FS)
- Marantz CD72SE £139.95 (FS)
- Mission DAC £169.95 (FS)
- Mission DAD5/DAC £299.95 (FS)
- Mission DAD5/DAC £429.95 (FS)
- Musical Fidelity CD2 £599.95 (FS)
- Musical Fidelity CD2 £749.95 (FS)
- Nad 502 £129.95 (FS)
- Nad 505 P.O.A.
- Philips CD692 £179.95
- Philips CD920 £229.95
- Philips CD930 £79.95
- Philips CD950 P.O.A.
- Pink Ordinal £299.95
- Pink Triangle Da Capo £229.95
- Pioneer PDS01 £419.95
- QED Opto Digit £399.95
- QED Posttron £399.95
- Quad 65 £399.95
- Quad 67 £399.95
- Roksan Transport/DAC Special £179.95
- Rotel RCD945AX £299.95 (FT)
- Rotel RCD955AX £379.95 (FT)
- Rotel RCD965BX P.O.A. (FT)
- Rotel RCD965LE £769.95 (FT)
- Sony VRDS10 £149.95 (FT)
- Teac P700/D700 £169.95 (FT)
- Technics SLPG340 £169.95 (FT)
- Technics SLPG440 £169.95 (FT)
- Technics SLPG520AK £199.95 (FT)
- Technics SLPG620AK £229.95 (FT)
- Yamaha P.O.A. (FT)

Turntables

- Dual CS503-2 £179.95
- Dual CS505-4 £229.95
- Nad 5120 £79.95
- Pink Anniv/Expert/LPT P.O.A.
- Systemdek IX 900 (lex) £229.95
- Systemdek IX 900 - RB250 £324.95
- Systemdek IX 900 - Tabriz £419.95
- Systemdek SL1200 II £399.95
- Systemdek SL1200 II £399.95
- Technics SL1210 II £179.95
- Technics TD180 £209.95
- Thorens TD280 Mk IV £299.95
- Thorens TD166/RB250 £259.95

Tuners

- Aura TU50 £595.95 (FS)
- Arcam Alpha 3 £479.95 (FS)
- Arcam Delta 280 £225.95 (FS)
- Audiolab 8000T £114.95 (FS)
- Cyrus £69.95
- Denon TU260L £549.95 (FS)
- Denon TU560R £749.95 (FS)
- Denon TU580R £1095.95 (FS)
- Harman Kardon TU9400 £1495.95 (FS)
- Marantz ST40L £2095.95 (FS)
- Marantz ST50L £3395.95 (FS)
- Musical Fidelity II £169.95 (FS)
- Nad 402 £239.95 (FS)
- Pioneer Quad 66FM £329.95 (FS)
- Quad 66FM £399.95 (FS)
- Quad 66FM £549.95 (FS)
- Rotel RT930AX £699.95 (FS)
- Rotel RT950BX £299.95 (FS)
- Sony STS11RDS £129.95 (FS)
- Technics £149.95 (FS)

PLEASE CALL US BEFORE TRAVELLING TO VERIFY PRICE AND AVAILABILITY

Some branches closed on Wednesdays. Please ring before travelling to avoid disappointment.

*Price match conditions. To qualify products must be identical with those on offer by Sevenoaks Superfi both as in model and warranty, and be available ex stock from an authorized dealer. Proof of lower price will be required. Added value offers and 0% finance are not available on price match products.

20 Branches Nationwide

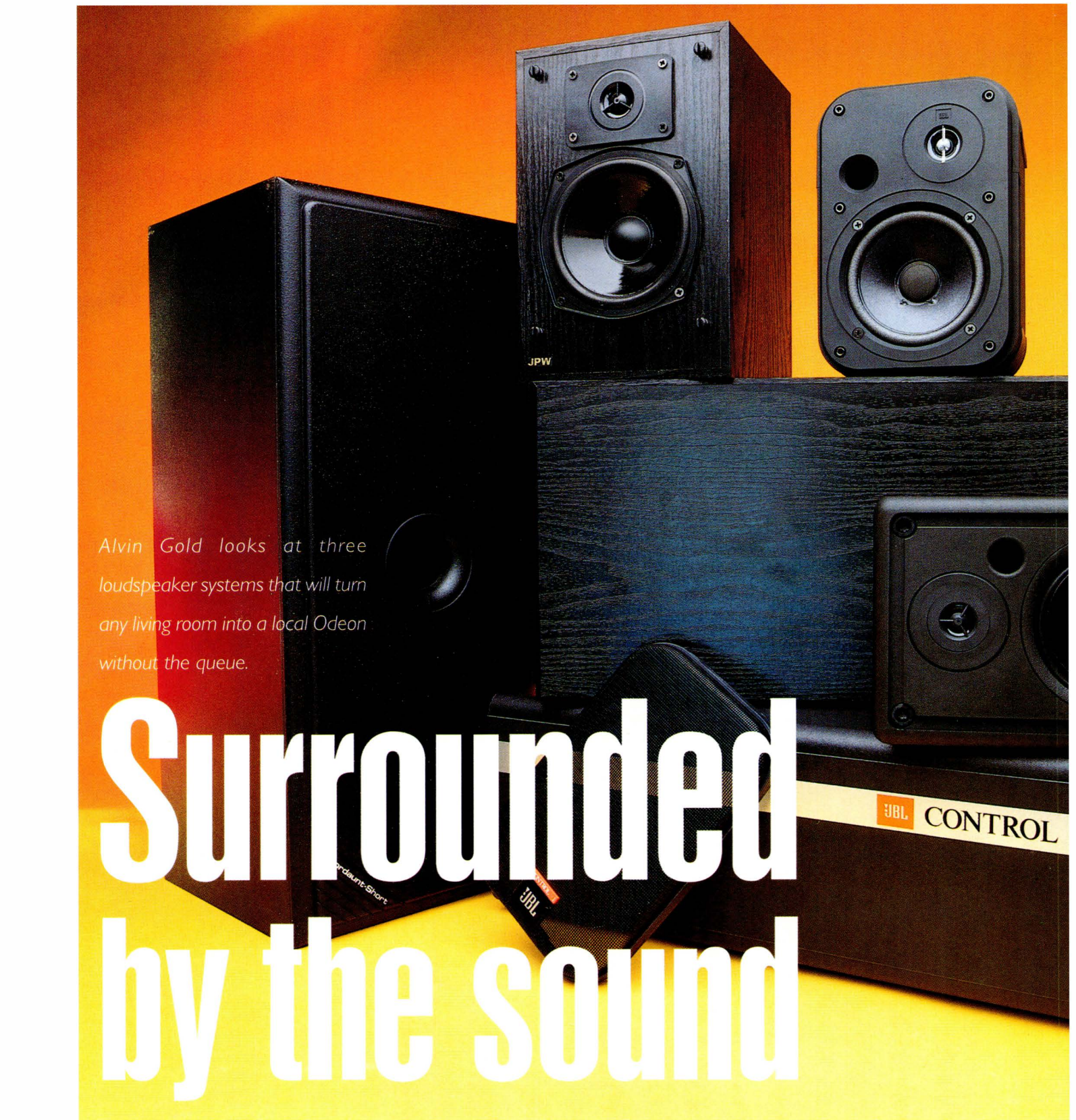


- 109-113 London Road SEVENOAKS 0732 459555
- 24 Pittville Street CHELTENHAM 0242 241171
- 162 Powis Street WOOLWICH 081 855 8016
- 67 Smallbrook, Queensway BIRMINGHAM *631 021 2675
- 4 Dock Street HULL 0482 24051
- 55 Preston Street BRIGHTON 0273 733338
- 1 Grove Centre Witham ESSEX 0376 501733
- 73b North Street GUILDFORD 0483 36666
- 41 St. Clements OXFORD 0865 241773
- 7 King Edward Street LEEDS 0532 449075
- 271a High Street LINCOLN 0522 520265

- 20a Lower Bridge Street CANTERBURY 0227 462787
- 369 London Road CROYDON 081 665 1203
- Now at 28 St Johns Rd TUNBRIDGE WELLS 0892 531543
- 2-4 Camden High Street LONDON 071 388 1300
- 15 Market Street NOTTINGHAM 0602 412137
- 4 Railway Street CHATHAM 0634 846859
- 7 GenotIn Road ENFIELD 081 342 1973
- Sevenoaks Branch only MAIL ORDER 0732 458985
- 1 Rockingham Gate, The Moor SHEFFIELD 0742 723768
- 51 Picadilly, Hanley STOKE ON TRENT 0782 265010

MAIL ORDER TO SEVENOAKS HI-FI 109/113 LONDON RD. SEVENOAKS, KENT. TEL: (0732) 458985. State finish required

Please send me _____ Name _____ Address _____ Daytime Tel No: _____ I enclose a cheque/cash/card No. + Expiry Date



Alvin Gold looks at three loudspeaker systems that will turn any living room into a local Odeon without the queue.

Surrounded by the sound

Whether the current explosion of interest in home theatre marks a genuine sea of change or merely the latest triumph of hope over experience is not yet entirely clear, but there is no mistaking how the prospect of home theatre has galvanised manufacturers into action.

Loudspeaker manufacturers especially are faced with the prospect of selling five loudspeakers (left, centre, right, rear left, rear right) for every two they sold previously, with precious little development being required except to ensure that the centre speakers have adequate magnetic

The cast list

The JBL system: five JBL Control 1 satellite speakers, one SB-1 subwoofer (includes four mounting brackets). Typically £799.00

The JPW Pro Logic system: four Mini Monitors, one System Subwoofer, one shielded (centre) Mini Monitor. Typically £199.95
Note: This system is only available by mail order from Hi-fi Direct, or from Richer Sounds stores.

The Mordaunt-Short system: five CS-1 satellite speakers (includes two mounting brackets), one SW-1 subwoofer. Typically £429.85

shielding. It hardly needs adding that this opportunity has come like manna from heaven at the end of a long, debilitating recession.

For the user, home theatre presents real problems. These include where to put the rear speakers, how to avoid turning the listening room into a rat's nest of wiring, but most of all how to get the go ahead from Number One, who probably doesn't like turning her (or his) home into something with all the user friendly properties of a small factory.

This test covers three products, which share an intriguing answer to these

Where to put the speakers for best effect

Positioning advice provided with Dolby Pro Logic systems is frequently vague, often contradictory and sometimes just simply wrong. Careful and informed listening experiments should always take precedence over theory, but the following points can be used as a guide.

- Use the main speakers on stands, clear of walls. In most rooms they should be disposed symmetrically either side of the TV set, about two to three metres apart, and with the tweeters at ear level when the listeners are seated.
- Use a single centre speaker rather than two, and place it above the TV set, midway between the front speakers. The three front tweeters should be as nearly co-linear as possible. This is often best achieved by inverting the centre speaker, so that the tweeter is at the bottom, and the bass unit on top. Also try tilting the front centre speaker downwards towards the listening position to improve central (speech) intelligibility.
- The rear speakers should be positioned near the back of the room, ideally on the side walls but away from the corners. Use wall brackets (often supplied), and position them above the level of listeners' heads when they are standing.
- Subwoofers should be positioned on a suck it and see basis. If you cannot point to the source of bass without looking when the system is fully installed, you're probably on the right track.

but there you go. You can't make omelettes without breaking eggs.

It is worth reiterating what you get in exchange for all this complication. Well, of course, you get wrap around movies. Given suitable Dolby Stereo source material, this means stereo plus a sense of depth, air and space that cannot be replicated by two speaker stereo alone. It is often forgotten, however, that Dolby Pro Logic systems remain fully stereo compatible, and that the only preparation needed to play stereo material in the usual way, through the traditional two loudspeakers, is to switch the Dolby Pro Logic decoder off.

Construction

JBL ■■■■□
 JPW ■■■■□
 M-S ■■■■□

The three systems are based on variations of the satellite plus subwoofer theme in which small, identical (or near identical) speakers are used for the front, centre and surround channels, and a single subwoofer is used to plug the low frequency gap they leave unfilled.

Differences between them are concerned with matters of execution rather than of basic principle. The three sets of satellite speakers are all compact two-way designs, but where the JPW uses a traditional vinyl wrap wood enclosure, the JBL and Mordaunt-Short models use a variation on the moulded synthetic enclosure theme, the latter being particularly sophisticated.

The Mordaunt-Short subwoofer is built in the same fashion, while JBL uses a wooden construction for its subwoofer.

The JBL is similar to the JPW but scaled up in size and it is a great deal more solidly built.

Compatibility

JBL ■■■■□□
 JPW ■■■■□
 Mordaunt-Short ■■■■

All three systems purport to work with a wide range of partnering equipment, but there are some important differences. The Mordaunt-Short and JBL systems can soak

up a great deal of power if required, and the JBL subwoofer is a positive glutton. In fact, it demands a great deal of power, ideally in the 100 Watts per channel region, though 50 Watts may prove marginally suitable.

The solid JBL line-up produces a tuneful bass and a very crisp mid and treble — an instantly attractive system.

The JPW system is quite different. It doesn't require a great deal of power to stoke it into life,

but it won't absorb as much as the others, and amplifiers with power outputs above 40 to 50 Watts per channel are probably wasted.

Sound quality

JBL ■■■■□□
 JPW ■■■■□□
 Mordaunt-Short ■■■■□

First on for alphabetical reasons, the JBL set a cracking standard. It produced a crisp, detailed and articulate performance when driven by a Harman/Kardon AVR30 Pro Logic receiver fed with LD



dilemmas. Given that it is not really possible to dispense with the need for five loudspeakers (normal left and right, centre for speech and rear speakers for sound effects and ambience reproduction), why not make them very small, and use a subwoofer to cover the lowest octave or so?

Bass is essentially non-locatable and a subwoofer can be stashed almost anywhere. Meanwhile, the visible satellite speakers can be placed as required around the room, without causing too much disruption. Of course, this does mean that you end up with six boxes instead of five,

P r e m i e r

The Premier HiFi Dealer In The South-West

View our selection of quality equipment from the world of HiFi, Televisions, Video, Multi Room, and Laser Disc Home Cinema Systems. With our special knowledge and skills Radford HiFi has the answer.

Our Premier HiFi Brands include Naim, Mission, Rega, Epos, Denon, Creek, QED, Meridian, KEF, Cyrus with TV / Video from Yamaha, Pioneer, Sony, Panasonic and many more.

We supply equipment that provides the finest sonic performance, build quality and after sales service from manufacturers at the forefront of performance and value.



PLYMOUTH 107 Cornwall St, Devon. Tel 0752 226011

BRISTOL 52/54 Gloucester Road. Tel 0272 428247

EXETER 28 Cowick St, St Thomas. Tel 0392 218895

BATH 12 James St West. Tel 0225 446245

TORQUAY 6 Fore St, St Marychurch. Tel 0803 236732

WINDSOR 43 King Edward Ct. Tel 0753 856931

mike manning
the hi-fi specialists **audio**

STOP PRESS:

New, more affordable products from Naim Audio
Nait 3 - NAC 92 - NAP90/3
NAT 03

New Style Full Width, Slimline Cases
Arriving June/July. Please Phone
for details.

Our naim is always on top



110 Middle Street, Yeovil, Somerset. Telephone (0935) 79361 (Closed Mondays)



and CD sources. The bass was tuneful and had good 'reach', though it tended to be a little plummy in quality if turned up too high (subwoofer levels can always be adjusted independently of the other speakers).

The mid and treble were crisp to a fault, though with close miked, percussive material the JBL system would sound edgy and bright, with occasional sibilance from female vocals and instruments of a similar nature.

The JBL subwoofer 'leaked' midrange detail which led to some muddling and inconsistency of stereo information. However, the other two were worse. The JPW subwoofer, for example, could almost have passed as a standard full-range speaker. In practice, it must be positioned carefully so that it is out of the line of sight, which will have the effect of muffling many of the unwanted higher frequency harmonics.

The JPW main speakers, however, sounded fine. The only weaknesses were an inability to go loud, (the cones could be made to bottom out at moderately high levels, well within the range that most would describe as reasonable), and a certain lack of dynamics. The JPWs are not very hard hitting.

On the other hand, they have that quintessentially British loudspeaker-style poise, and give a neutral, well balanced sound, with excellent integration. In its

characteristic, rather low key way, the JPW system produced results that were more accurate and complete than either of the others. The only jarring note was set by a rather obvious whistly resonance from the tweeters that didn't quite disappear as the speakers were run in.

The Mordaunt-Short offers JPW type performance, with bellson. The bass is deep and full, and capable of much higher sustained volume levels than the JPWs. This also holds true of the satellites. The Mordaunt-Short has some identifiable midband colorations, and the treble doesn't quite gel with the rest of the speaker. However, the shortcomings are obvious only in a direct comparison and, on the whole, were relatively benign.



Top: the traditional appearance of the JPWs hides another great tradition — unbeatable value for money. Bottom: Mordaunt-Short's civilised and stylish system is user-friendly and gives an impressive performance.

Verdict

JBL	■ ■ ■ □ □
JPW	■ ■ ■ ■ □
Mordaunt-Short	■ ■ ■ ■ ■

The JBL is the crispest and most immediately attractive of the three, while the rather subtler and much more affordable Mordaunt-Short system (which is superbly built), offers a fuller and more user-friendly balance that is equally appropriate to mainstream stereo music.

Choosing between the two is largely a matter of taste, and although I would go for the more civilised Mordaunt-Short, it would be for style rather than substance, a finding reflected in the scoring.

The JPW is less capable than the others in some crucial respects. It is a little softer and the subwoofer barely tickles the sub-bass, though the other two scarcely qualify as great examples of that lowest form of audio life, the subwoofer. The JPW also has strict volume limits that will inhibit full-throttle use, especially on red-bloodedly noisy video material like *Terminator 2*. Within its limits, however, the JPW doesn't just equal the others, it often goes one better.

The JPW has one additional factor in its favour: it's cheap. In fact, it costs about 25 per cent less than the JBL system, and under half as much as the Mordaunt-Short, a clear saving of £600 and over £200 respectively. Quite simply, it offers what can only be described as unbeatable value for money.

TV interference

Be warned that a number of supposedly shielded speakers can still disturb some TV pictures while leaving others unaffected. All three systems in the test group worked perfectly with a JVC TV on test, but the Mordaunt-Short and JBL had a noticeable effect on another test TV, a Nokia widescreen model. Try before you buy, or at least seek assurances on this score. If your dealer says it will work, the Sale of Goods Act can be invoked to provide redress if it doesn't.

How the Dolby Pro Logic system works

Dolby Pro Logic is a development of Dolby Surround, the system originally devised to decode the multi-channel Dolby Stereo soundtrack used on almost all feature films since *Star Wars*. The Dolby Stereo information is encoded as a stereo compatible two-channel signal, and in the Dolby Surround process, out of phase information is fed to the rear speakers via a delay line and passband filter. These are designed to exploit the ear's psycho-acoustics and keep the listener's attention centred on the front of the soundstage.

Dolby Pro Logic adds two features to this basic mix. The first is a centre channel, which reproduces the speech component of the composite signal. By siting the centre speaker near the screen, speech is effectively locked to the screen action, even for off-axis listeners. The second is the Pro Logic element which senses and

then reinforces directional cues, effectively improving inter-channel separation.

The Pro Logic system is capable of high performance standards — despite the complexity of the audio processing involved — but requires a dedicated five-speaker complement and careful speaker placing.

Front left, centre and right speakers are required, along with two speakers for the rear (effects) channel. The latter cover only a narrow bandwidth and large speakers are not required. However, this doesn't apply with the main left and right front speakers, though the bass can be reproduced by a dedicated subwoofer as in the test systems described here. The main front speakers should be of the highest possible quality, and the centre speaker must be consistent in quality with the left and right speakers.

Harman Audio Ltd, Unit 2, Borehamwood Ind Park, Rowley Lane, Borehamwood, Herts WD6 5PZ ☎(081) 207 5050

Hi-fi Direct Ltd, 202 Long Lane, London SE1 4QB ☎(071) 827 9827

Mordaunt-Short Ltd, 3 Ridgway, Havant, Hampshire P09 1JS ☎(0705) 407 722



Alvin Gold puts his head in the cans to find out which can and which can't make the grade.

On test: headphones

The major visible trends in headphone design have their roots firmly in history. The earliest popular class of headphones were more like telephones, using simple ceramic or moving coil transducers very similar to small loudspeakers of the period, and hard unyielding materials like Bakelite and canvass on the bearing surfaces. Weight was high and comfort scarcely came into the equation. They were bought for functional reasons — or not at all.

The A, B, C evolution

The majority of headphones in current use employ dynamic (moving coil) transducers. The main exception is the electrostatic type, no examples of which are included here. This has certain advantages such as

low moving mass, but needs to provide a high polarising voltage, and usually a transformer to increase the voltage of the audio signal to a useful level. Electrostatics, therefore, tend to be associated with the high-end.

Leaving the type of transducer to one side, there are three basic types of headphone. The oldest is the sealed type designed to keep environmental noise at a minimum. This means

blocking off back radiation from the transducer by, in effect, building a box around it, and using impermeable

circum-aural earpads pressed firmly onto the side of the head to avoid sound leakage. The problem is that such headphones are intrinsically heavy, and the two enclosed spaces — between the ear and the transducer, and behind the transducer diaphragm — are resonant cavities which

incur sound coloration.

The second main type is the open-back or velocity headphone. Here, the back of the diaphragm is opened up, the earpads allow sound to pass and external sounds are not impeded. Such headphones tend to be light and comfortable. Resonances are ameliorated, partly because there's no heavy structure to resonate, and also because acoustic loadings are much lower. Disadvantages include a less extended bass, unless large drivers are used, or unless there's some judicious sound baffling — for example, by impeding sound egress through the ear cushions while leaving the back open.

Another problem is the need for higher volume levels to help cope with the higher ambient noise levels at the ear.

The cast list

£50 & UNDER

Kenwood KH-1000	£20
Beyer DT-211	£25
Sennheiser HD440 II	£35
Bandridge EH910DD	£50

£50-£100

Vivanco SR808 Classic	£55
JVC HA-D910	£60
Philips SBC3390	£60
Quart Phone 75X	£70

£100 & OVER

AKG K400	£119
Sony MDR-CD850	£100
Technics RP-F10	£100
Sennheiser HD560 Ovation II	£140

obviously 'in the head' to be credible for sustained, critical listening.

The comfort factor

The issue of comfort and headphones is partly personal, but is also influenced by such factors as the activity being carried out while listening, and the length of time that headphones are worn at one sitting — or jogging.

Those who use headphones while exercising should first consider compact lightweights which won't build up too much momentum when the head is moved violently. However, models with reticulated foam earpads can make the ears hot and can also prove uncomfortable.

Bigger, circum-aural designs should be cooler and less intrusive, partly because they leave the ear itself unobstructed and therefore free to 'breathe', and also because they are generally covered in a more comfortable material. Ear cushions designed to let air pass through may be cloth or felt covered, and are cool and comfortable to the touch.

Sealed ear cushions (required for closed-back headphones) will often be covered in a less satisfactory impermeable plastic. Although prone to heat build-up, the wide 'footprint' on the side of the head often means that inwards pressure can be kept low without danger of the headphone falling off the head.

The headband's prime task is to hold the two capsules in the correct physical relationship, and this implies a hard (if springy) construction at odds with the need to follow the complex contours of the cranium. One solution is to add headband padding, but an altogether better one is to fit a wide, flexible inner hoop which will provide the necessary location without undue pressure.

In the head, son

The third class of headphones, which was developed directly from the velocity phone, is attributable to the growth in popularity of personal stereo players, which required very small, casual headphones.

This, of course, was the micro headphone, which was made possible through the use of high energy magnetic materials such as samarium cobalt. Without these rare earth magnets, micros would have been impossibly insensitive, and the battery drain on portable stereos would have been impossibly high.

A reasonable bass output could be maintained by placing the smaller transducer in the ear cavity rather than outside, but the result, though sometimes startlingly realistic in certain respects, is often too



Excessive volume can damage your hearing

Excessive sound pressure levels for prolonged periods will cause hearing damage, and the damage sustained will be irreversible.

Guidelines

- start with the volume low, and increase it slowly until the listening level is comfortable.
- avoid audible distortion, which can inject high frequency harmonics directly onto the ear.
- the ear quickly acclimatises to new volume settings. Having established a volume level as described, don't allow it to be increased. Remember that the lack of visceral bass from most headphones means that volume levels often seem lower than they really are.
- never turn the volume so high that external sounds are completely drowned out.
- never use headphones when driving a motor vehicle, or when hearing is important to your personal safety — for example, when crossing busy roads.
- finally, remember that hearing damage is only detectable *when it is already too late!*

How loud is loud?

Level (dB)	Perception	Typical example
0dB	Inaudible	Threshold of hearing
10dB	Very faint	Background noise in anechoic chamber
20dB		Whisper
30dB		Quiet conversation; noise in library
40dB	Fairly quiet	Quiet house
50dB		Urban house
60dB	Medium level	Normal conversational volume
70dB		Noisy car or street market
90dB		Motorcycle; tube train; busy workshop
100dB	Very loud	Car horn at 3-4 metres distance
110dB		Night club, pneumatic drill
120dB	Pain threshold	Jet aircraft take-off at 150 metres
130dB		Peak rock concert levels near speakers
140dB		Gunshot blast at close range

From *The Audio Handbook* by Gordon King (Newnes-Butterworths) and Electronics Industries Association, Washington DC.

Making the right connections

Poor quality headphone circuits are largely a thing of the past, but some modern integrated amplifiers, and most pre/power amplifiers, omit headphone sockets altogether for perfectly good performance related reasons. In such cases, headphone adapters are available which can be driven by the amplifier's loudspeaker terminals, though switch on thumps makes this potentially hazardous, and noise levels will be less than optimum. A better solution would be to use a dedicated headphone amplifier, such as the QED MB45 (£75), which is designed to be plumbed into the amplifier's tape monitor loop.

Bandridge EH910DD



Awakening dormant claustrophobia, it proves to be a stereotype.

There are certain stereotypes that many of us believe to be true of most headphones. However, these are disproved in one way or another by most of the models in this group. Not so with the Bandridge.

True, the *EH910* looks innocuous enough. It is compact and not unattractive, with quite sumptuous looking wipe-clean earpads. Lift them up, however, and the first thing you notice is that, though small, they are surprisingly heavy. Inside there is not one, but two transducers per capsule, a woofer and a mid/tweeter. Electrical parameters are standard enough apart from a higher than average sensitivity, and the three metre cable is a good quality ribbon design with dual plug arrangement, gold plated for conductivity.

Put them on, however, and you discover less welcome facts. This model clamps the head unmercifully, pressing especially on the outer ears which lie directly in the ear cushion's footprint.

The bad news continues. The structure of the *EH910* is peculiarly conch-like, acting as a frequency selective, resonant assembly for environmental sounds, which increased my normally dormant claustrophobia. And then I turned the music on . . .

The dual drive unit construction has the unintentional property that the two ends of the audio frequency spectrum sound quite different. The upper midband and treble is reasonably clean. There are few obvious colorations, and the amount of detail on hand is quite creditable, though the Vivanco sounds better still in this re-

gion without the complication of dual transducers. The bass, though, is awful. It is heavy, close and over-bearing.

The quoted 3Hz lower limit claimed by the manufacturer is quite misleading. Ultra-low audio band frequencies (say above 20Hz) are present in the usual way, but lower frequencies, which by general consent are felt more than heard, are simply not reproduced at a useful level by this design, even when tested using a sweep signal generator.

The middle bass region is full to overflowing, and the balance chosen here is cloying and excessive. Bass lines had an overbearing quality, and bass drums thumped unmercifully. On many tracks it was impossible to differentiate between acoustic and electric bass, or in orchestral music how many players were playing at any one time.

Bandridge Ltd, 18 Deer Park Road, Jubilee Way Business Estate, Wimbledon, London SW19 3TU
☎ (081) 543 3633

Verdict

- ▲ Tolerably good upper mid and treble reproduction. Looks compact and quite attractive.
- ▼ Bass is excessive in level, deficient in extension, definition or resolution. They're also uncomfortable.

▶ **£49.95 RRP**
■ □ □ □ □

Beyer DT211



Ear-friendly sounds with no fatigue; impractical for earwax sufferers.

One step up from the minimalist (or do I just mean cheap?) Kenwood *KH1000*, is the neo-minimalist *DT211* from Beyer, also responsible for the most popular studio monitoring headphones extant.

The *DT211* is surprisingly well built given that it costs only £25. The headband is a plastic moulding with a padded section at the head TDC (top dead centre). The transducer capsules fitted with some damping material at the back, and are wrapped with cloth covered foam earpads.

The design is both attractive and extremely comfortable, the inwards pressure being near perfectly judged. The captive three metre lead (with the usual 3.5mm plug and 6.3mm slip-over adapter) is ideal for domestic use, but long for personal stereo applications. The only fly in the ointment, and it's a significant one, is that the ear cushions are stuck down, which makes removal for cleaning impractical.

The Beyer *DT211* is otherwise an astute design. The price is simply not high enough to provide free rein to great ambitions, so the designer has wisely concentrated on making sure that the basics are done adequately, and that the important elements — comfort and treble quality especially — are handled sensibly.

The level of bass available is just enough to add some warmth to proceedings, but not enough to suggest the serious engineering required to make bass work well in more ambitious designs. The midband is good,

about on the level of the Sennheiser *HD440 II*, which is the yardstick against which most budget headphones continue to be measured — but the treble is both coloured and veiled. It gives an impression of lightness of tone and of being detached, but without the edgy raucousness that afflicts many budget designs.

Orchestral strings have a disembodied and rather soft edge, but at least they don't glare. Mary Black's voice was thin and pinched, but it remained reasonably expressive. The bottom line was of a light, airy and open sounding headphone. It is perhaps, a little short on the where-withal for serious in-depth listening, but good value for occasional use where its qualities are guaranteed to be ear-friendly — even when listening for several hours at a stretch.

Beyerdynamic, Unit 14, Cliffe Industrial Estate, Lewes, Sussex BN8 6JL
☎ (0273) 479 411

Verdict

- ▲ Well built, comfortable, presentable and easy on the ear, but...
- ▼ ...doesn't give the grey cells much to chew on; stuck down earpads are bad news from the hygiene angle.

▶ **£25.50 RRP**
■ ■ ■ □ □

Kenwood KH-1000



Should appeal to those suffering from years of personal stereo abuse.

The cheapest headphones you'll be offered by your neighbourhood electronics emporium will probably be miniatures, consisting of the simplest driver capsules held in position by a hoop of spring steel.

Kenwood's *KH-1000* is just such a design. The drive units are tiny, open back (vented) designs with high energy samarium cobalt magnets. They are covered in reticulated foam earpads that can be removed for cleaning, though carefully as they're delicate. A straight 'Y' lead, two metres long and with 3.5 and 6.3mm plugs, is supplied. With the cables and plug, the whole thing weighs less than 47gms. How low can you get?

The *KH-1000*s compress liberally. Bass doesn't figure much since there is little musical energy audible below about 100Hz, and whole swathes of music making therefore pass by unnoticed. The midband is distant and flat, and scarcely responds to musical dynamic shadings.

African drums and similar percussive sounds were rendered with a cardboard quality. The treble lacked clarity and extension (sibilants were usually completely inaudible, which made speech curiously inarticulate) but the *KH-1000* did at least avoid the aggressive resonances that distinguish many of its ilk.

Beyond this the Kenwood has only a limited contribution to make. One of the test tracks was Mary Black's *Carolina Rua*, a well recorded, open textured acoustic opus built on a subtly complex base in which various per-

cussive instruments play off against each other. It can be a good track for exploring stereo, pace and timing, but in this case it merely confirmed that many of the instruments couldn't be heard, while others had just a vague, plinky-plonky presence.

So what kind of user, if any, will find the Kenwood attractive? There's a simple answer to this. Those raised on personal stereo in-ear headphones.

This model could well prove a blessed relief to such listeners as it is smoother and mellower than most personal stereo phones. The *KH-1000* is also more comfortable in long-term use, and not just because the phones won't fall out of your ears every five minutes as in-ear phones are wont to do. But the little Kenwoods do nothing to advance the state-of-the-art in miniature headphone design.

Trio-Kenwood UK Ltd, Kenwood House, Dwight Road, Watford, Herts, WD1 8EB ☎ (0923) 816 444

Verdict

▲ **Small, light, comfortable, and cheap. Especially cheap.**

▼ **No bass; no treble; not much midband either.**

▶ **£19.95 RRP**
■ ■ □ □ □

Sennheiser HD440 II



The competition is hotting up but this Sennheiser still leads the field.

The Sennheiser *HD440*'s history is the history of the budget open-back (or 'velocity') headphone.

The 440 was a direct descendant of the *HD414*, the first of a species that eventually saw the demise of the sealed headphone as a mass market product almost 20 years ago.

It was the 414 that ushered in the use of delicate microphone-like capsules at a time when it was more usual to use transistor radio-like transducers with their heavier, and fuller but inevitably cruder sound.

History has all but turned full circle. The new *HD440 II* is by no means the same as that original, seminal design. The physical form has grown more complex and sophisticated (and put on some weight) though the interchangeable reticulated foam earpads and detachable 'Y' lead (now three metres long with a 3.5mm plug and a standard slipover adapter) would be recognisable to an owner of the original. But the sound . . .

A revelation in its day, the first *HD440*s now sound bright and raucous, and the current model is greatly improved. But others have had a long time to catch up, and it is now the Beyer *DT211* that sets the standards for control and delicacy in this market area. The *HD440 II* remains the model of choice for serious listening at this end of the market, but its lead has been largely eroded.

The great strength of this design on audition is its positiveness and openness in the midband. This is detailed and capable of rendering the

most complex material without ducking. Coloration levels are low, the bass is surprisingly meaty, and the treble is clean and largely non-resonant. An impressive mix of virtues.

So where are the vices? They lay in two areas. First, there is an endemic coolness which is mainly apparent as a hard, almost steely presentation of higher frequencies. The delicacy and subtlety of the Beyer in this region is absent, and although the Sennheiser is more accurate overall, it has an invariability in this region which defines the limits of its ability to mould itself to the incoming signal.

Secondly, stereo imagery is more in the head than usual. If you like, the 440 lacks 'air', and music consequently often lacks some of its less tangible qualities, and its mystery.

Sennheiser UK Ltd, 12 Davies Way, Knaves Beech Business Centre, Loudwater, High Wycombe, Bucks HP10 9QY ☎ (0628) 850 811

Verdict

▲ **Has an array of impressive qualities. The definitive budget headphones.**

▼ **Sound is a little heavy and coarse; treble can sound cold and clinical.**

▶ **£34.95 RRP**
■ ■ ■ ■ □

Speaker-like sound...



...it's in the cans!!!

"To call these transducers 'head phones' is to do them an injustice. 'Head speakers' would be a more accurate appellation"
AUDIOPHILE

"...the sound quality is more akin to a pair of speakers than most other headphones we know."
WHAT HI-FI?

"Their lightweight comfort and effortless sound make them a joy to use."
WHAT HI-FI?

"Frequency response is admirably smooth, and distortion is low even at high listening levels."
AUDIOPHILE

Jecklin Float Two
R.R.P. £99.00
AND
Jecklin Float Electrostatic
R.R.P. £399.00

FOR LITERATURE AND DETAILS OF YOUR NEAREST STOCKIST PLEASE COMPLETE AND RETURN TO MAY AUDIO MARKETING

Name

Address

MAY AUDIO MARKETING • 83 MAIN STREET • BURLEY-IN-WHARFEDALE • WEST YORKSHIRE • LS29 7BU • TEL: 0943 864930

HC-893



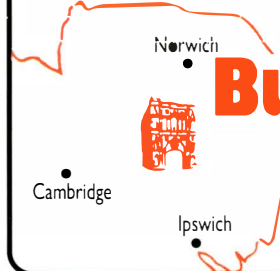
MAIL ORDER ACCESSORIES

- Cables - Audioquest, Furukawa, Heybrook, Ixos, Ortofon, QED, Van den Hul
- Stands - Alphason, Goldring, Sound Organisation, Stands Unique, Target
- Cartridges - Arcam, A.T., Denon, Dynavestor, Goldring, Lyra, Ortofon, Sumiko
- Headphones - **Beyer, Sennheiser**, Stax
- Accessories - Allsop, BIB, Discwasher, Hunt, Kontak Last, Michell, Milty, Nagoaka, Pixall, QED
- LP's/CD's - Audioquest, Klavier, Opus, Reference Recordings, Sheffield Labs.

TO ORDER OR FOR A FULL CATALOGUE
PHONE 0850 565693

EX DEMONSTRATION AND SECONDHAND OFFERS

SystemDek III + LVX + 61020.£160 S/H	Marantz PM 30SE.....£130 X/D
Marantz PM 40SE.....£180 X/D	Quad 66 Pre amp.....£650 S/H
Meridian 205 Monoblock.....£650 S/H	Pink Triangle Export.....£400 S/H
Alberty M1008 Monoblock.....£650 S/H	Meridian 605 Monoblock.....£1495 X/D
Infinity Reg 10.....£149 X/D	Heybrook HBI.....£195 X/D
Allison AL 120.....£240 S/H	Meridian Argent 2.....£625 X/D
	Shahinian Arc.....£1025 X/D
	Meridian 203 Dac.....£250 S/H



Bury Audio

**47 Churchgate Street
Bury St. Edmunds
Suffolk IP33 1RG**

Telephone 0284 724337

We aim to provide a well chosen selection of quality hi-fi and accessories including:
CREEK, EPOS, HEYBROOK,
MICROMEGA, NAIM, NEAT,
REGA, ROKSAN, ROTEL, ROYD,
TEAC and YAMAHA

Now on demonstration:

Naim's ARMAGEDDON *and coming soon*
the Micromega MICRODRIVE

Also on dem - the three best CD players available:

The Micromega CD3/PRO DAC, the Roksan
Transport and DAC and the Naim CDI

Our demonstration room is furnished to be
representative of your home environment
where you can enjoy listening in comfort
and privacy.

Tuesday 13th July, 7.30pm

**MICROMEGA
MUSICAL EVENING**

Please call for details

Infidelity
indecently good hi-fi

9 High Street, Hampton Wick,
Kingston upon Thames, Surrey KT1 4DA
Tel: 081-943 3530
Open Tues - Sat 10.30am - 7.00pm.

f
Buying
hi-fi
should be a
pleasurable
experience

HEYBROOK



Quartets

"... the company again has a gem ...

*the Quartets are speakers to fall
in love with."*

What Hi-Fi? Feb 93

Quartets

"... animation and verve by the
bucketload ... definately a speaker
that is worth making the effort to hear."

Audiophile March 93

Please send me details of the Heybrook Quartets

Name: _____

Address: _____

**HEYBROOK HI-FI LTD, ESTOVER INDUSTRIAL ESTATE, PLYMOUTH PL6 7PL
TEL: 0752 731313. FAX: 0752 733954**

JVC HA-D910



Not quite as classy as its price tag suggests, it's still a pleasing phone.

Like many other Japanese headphones, the JVC HA-D910 is a pleasing design. It's also a well screwed together product, though some of the fine detail is less than wholly satisfactory.

The three metre 3.5/6.3mm lead is connected to only one earpiece, which implies an asymmetric loading on the head when the cord is extended. Though padded, the headband remains hard and not altogether comfortable. The wipe clean ear cushions are well designed but, like the Vivanco, the rated impedance (32ohm) is a little lower than it should be if a flat frequency response is to be guaranteed.

The JVC is quite a good headphone which suffers only by comparison with the remarkable (and slightly cheaper) Vivanco. The JVC's treble is, if anything, balanced at a more appropriate level compared to the midband. There is no suggestion of brightness, but its quality is prejudiced to an extent by some low-level resonant effects which result in unnatural sibilants and a noticeable loss of fine detail.

The bass is not quite as well integrated into the JVC's quite classy midband. The sound is a little too over-cooked to be wholly convincing. Still, those who like a slightly heavier and fuller bass than headphones usually provide, or who simply find most headphones thin and anaemic, may discover that the JVC phones are just what they have been looking for. Even so, the JVC bass hangs on a little too long, and sounds a little too col-

oured, and in the end is not completely acceptable for critical long term listening, especially with material featuring acoustic bass instruments. Cellos have a slightly cloying quality, and bass lines on many rock tracks were muddled and indistinct, some timing cues being lost in the reproduction.

For more general applications, however, it is easy to overstate the shortcomings. With most material, the JVC sounded quite acceptable. On the whole it didn't so much misbehave as simply lack class. At a slightly lower price level, say £45, it could represent quite good value.

Leaving price to one side, the HA-D910 provides a standard of music making that is surprisingly untiring, even after an hour or more (which is saying quite a lot), and which has a pleasing warmth and balance.

JVC UK Ltd, JVC House, JVC Business Park, Priestley Way, London NW2 7BA ☎ (081) 450 3282

Verdict

▲ Warm bass; good mid/treble balance; untiring and easy on the ear.

▼ Some bass overhang and colorations; low level treble resonances.

▶ £59.99 RRP



Philips SBC3390



As subtle as a brick but with a 'certain cheerful charm' of its own.

Emblazoned with the slogan 'Now Let Philips Open your Eyes', accompanied by a picture of a man wearing headphones with his eyes closed, the packing opens to reveal a surprisingly small and sexy looking headphone, all curves and unlikely angles, and evidently well built.

Electrical parameters are good. The 100ohm impedance, for example, implies electrical compatibility with any mains driven machine. The SBC3390 is also equipped with a dual headband with a pliable inner hoop.

The odd styling is perhaps meant to give the same message as Philips' aggressive looking ghetto blasters, and this has been mirrored in the sound. Subtle it ain't, but the SBC3390 has a certain cheerful charm.

The bass is light, and the midband gives an immediate impression of openness and vivacity that bodes well. But the Philips turns out to be short of such qualities as depth and authority, and the sound overall is rather coarse in tone while resolving power is low. The ear capsules are beset by low-level resonances and colorations — none individually disastrous — but in combination they produce a rather messy, frazzled sound that lacks space and 'air'.

The mechanical design of these phones also has more 'come on' value than it lives up to. The dual headband design relieves pressure on the cranium, and the earpads have a vaguely ear-shaped profile. They are also asymmetrically designed in the fore-aft plane, presumably to ensure a better fit to

the head. The SBC3390 is compact too, though at 185gms it is not especially light. The ear capsules are fitted with impermeable wipe clean oval earpads, but although they look the part, they turn out to be hard and unyielding in service. They bear down with considerable force on the ears, and removing them after a listening session comes as a relief.

Sensitivity is unusually high, which means that you'll get a lot more level than you might expect at any given volume setting. There's no direct harm in this, and some benefit in the case of very low powered personal players where less sensitivity may cause the phones to be driven by a distorted or compressed signal. But it could result in excessively high volume levels unless care is taken.

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

Verdict

▲ Compact, sharp and sassy sound; good build quality.

▼ Lacks subtlety and grace; the comfort factor could be improved.

▶ £59.99 RRP

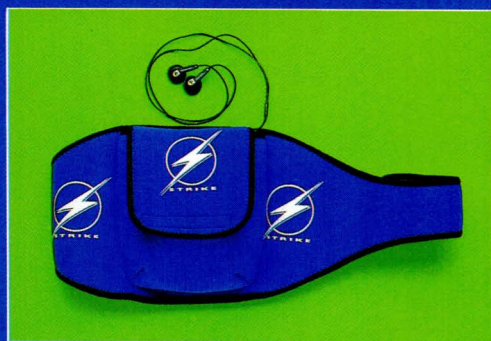


HI FI ON THE MOVE

with No More Bounce!

"STRIKE STEREO BELTS"

Special Price £14.00 (inc p&p)



STRIKE LTD
107 GRAYS INN ROAD
LONDON WC1X 8TZ
Order Tel No. (0353) 663388

Trade Enquiries Welcome

Wilmslow Audio

THE ULTIMATE HI-FI EXPERIENCE

Arcam Aiwa Audiolab B&W Castle
Denon Dual Heybrook Kef Marantz
Monitor Audio Mordaunt Short
Nakamichi Qed Revolver Rogers Rotel
Tannoy Target Teac Yamaha

Catalogue of our full range £2

Britain's leading loudspeaker kit and drive unit suppliers. Four demonstration rooms.

Wellington Close, Parkgate Trading Estate
Knutsford, Cheshire WA16 8DX

No appointment necessary. Closed Monday

Tel (0565) 650 605
Fax (0565) 650 080

V'AUDIO

36 Druid Hill, Stoke Bishop, Bristol BS9 1EJ
0272 686005

Having had an exciting session with the SME 20A turntable, it's time to return to the modern CD players, which in spite of many criticisms is capable of superb results, providing the system is right. It's amazing how acceptable CD's are when played through the **AVI Pre-amp** into the **ATC 50A's** using the **AVI CD player**. This player really is good, and sounds even better this week sitting on a granite slab supplied for the **Micromega Transports**. That's not to say that the **Wadia 8 Transport** via the **AVI**, **D'Acapo** or **Audio Note Dac 3** don't sound excellent, but they don't cost a mere £999.

By the time this advert appears we should also have in stock the new **AVI Series 2000 Stereo Power Amp**, producing 250 WPC RMS into 8 Ohms and 400WPC into 4 Ohms. At an amazing £1399 this promises to be an exciting addition to our range of powerful amps including the **AVI S2000 MM Monoblocks** and the **Chord SPM800** and **1200** models. Also arriving about the same time is the new **Sonic Link DM30** amp, which with an excellent phono stage (MM + MC) will be an excellent addition to the integrated amps. Also awaited is the **Harman-Kardon AVR30**, a high quality audio plus surround sound receiver at £1150.

SLATE AUDIO

HI-FI Design & Cable Services



THE SPEAKERSTAND Custom made to suit any loudspeaker. Solid slate, supremely rigid & totally stable. P.O.A.

"The resultant sound was characterised by its sheer lack of intrusive character, which was particularly evident on female vocal music. Voices have an open, diaphanous quality that makes suitably natural - dry or only mildly processed - recordings all the more intimate and communicative.

This same cleanliness and lack of clutter applies throughout the performance, the tonal balance being especially well judged. Low bass, for example, is never too forward yet was always clearly defined and lucid. The stand's clarity and order also made light work of rhythmic complexities that less rigid designs smeared.

This clearly focused sound is best described as pristine. The Slate Audio stands stood out for having the least recognisable character of their own among all the stands tried, providing a mid range as transparent as glass helping the speakers 'disappear!'"

Malcolm Stuart, Hi-Fi Choice, June 1993

The Finest Speaker Supports In The World

GARRARD 401/301 PLINTH SYSTEM With 20 years of experience, we are now the leading experts on the 401/301. In solid marble, this plinth eliminates motor noise, rumble and feedback.

The sound quality from these classic motors have now reached superdeck status. £349 + £25 p/p

THE TURNTABLESLAB Solid slate spiked turntable platform, can be placed anywhere with remarkable results. Size 17" x 14" £175.00

THE TABLESLAB Solid slate shelf which replaces any other shelf normally fitted to equipment racks, dramatically improving your turntable's performance. State size. £125.00

THE SPEAKERCABLE LC OFC. Meets the same high standard set for our loudspeaker stands. A supremely neutral and clean sound. Please state length required. £15 per metre

THE SPIKEKIT Specially developed to fit directly to floor standing loudspeakers or any wooden support. Adjustable and very simple to fit. £20.00

THE STONESET Spike kit for use with stone, slate or marble only. Fully adjustable. £20.00

ALL PRICES INCLUDE PACKING AND FREIGHT UNLESS OTHERWISE STATED (UK MAINLAND)

I ENCLOSE A CHEQUE/P.O. for £ _____ made payable to SLATE AUDIO

Name: _____

Address: _____

Tel: _____

47 GEMINI CLOSE, LEIGHTON BUZZARD, BEDFORDSHIRE, LU7 8UD. TEL 0525 384174



Quart Phone 75X



Initially attractive, long listening shows the Quart to be unexciting.

Here is a big circum-aural closed-back design culled from the house of Quart, fitted with a three metre (max) coiled cable. Sealed headphones generally have quite a lot of structure in the ear capsules to kill the back radiated sound, and fairly high inwards pressure to ensure a good seal around the ears. As a result they tend to be not very comfortable.

The 75X is an exception. It weighs in at 230 gms, but feels lighter due to the load-spreading, large diameter earpads, pressure on the ears is surprisingly moderate. The quid quo pro is that sound isolation is only modest.

There are Philips SBC3390 type qualities in the Quart Phone 75X, which, though not unpleasant, is close and rather hard sounding. The driver capsules appear to be of good construction and largely non-resonant, and the blame for audible shortcomings surely lays at the door of the transducers. These are cruder than their opposite number in some of the comparable models in this test — JVC, for example, and (notably) Vivanco.

The metallic colorations were pervasive, adding an identifiable and samey flavour to voices and instruments of all kinds. This reduced and simplified the rich spread of tonal colours that make individual recordings distinctive, in much the same way that grossly excessive levels of salt will swamp the flavours of individual foods in a dish.

At the same time, the metallic colorations help give the Quart a pushy, forward quality, bordering on the aggressive. Be warned. In my experience

such sounds can seem attractive on quick A-B shop comparison. It is only when you live with such a sound for a long time that it begins to prove musically debilitating, though often indirectly — by making the prospects of listening to music seem unattractive, for example.

The Quart, however, remains a much better headphone than the Philips, not least because its bass is fuller and deeper, and its treble more airy and open. The main advantage is rather more tangible. The Quart is much more comfortable, comparing favourably with the best in the group. The earpad's 'footprint' is large enough, and the cavity inside is deep enough to leave the ears unobstructed. The double headband design means there are no pressure points on the top of the head either.

Hayden Laboratories Ltd, Chiltern Hill, Chalfont St Peter, Gerrards Cross, Bucks SL9 9UG ☎ (0753) 888 447

Verdict

▲ **Good, comfortable design especially for a closed-back model.**

▼ **It lacks subtlety and expressiveness; sealing cuts outside sounds a little.**

▶ **£69.99 RRP**
■ ■ ■ □ □

Vivanco SR808



Open sounding, subtle and expressive — a real find, in fact.

Own up time. Both the brand and the model were a completely closed book to the author when this test began. Not now though. The SR808 provided an extremely welcome surprise.

First things first. As with all well made phones, the good news starts even before the music is switched on. Though not fabulously comfortable, the headband has an adjustable resilient inner band, and the wipe clean ear cushions, fitted to the semi-open back capsules, mould themselves to the contours of the head. They're just a little too small to fit around the ears. Heat build up over time is moderate and, without prejudicing stability, inwards pressure on the ear is far from excessive, though at 250gms, the Vivanco is no lightweight.

Equally, the structure of the SR808 is relatively non-resonant, and its effect on sounds from the outside world is largely neutral, though high frequencies are quite strongly attenuated. The straight cable, with a detachable 6.3mm sleeve adapter, is three metres long. The only technical gripe concerns the 30ohm impedance. This is potentially low enough to cause frequency response aberrations with some drive equipment, though I encountered no such problems on my travels.

Musically the news is all good, with the result that the SR808 is plainly more open sounding, subtle, expressive and less confined than any of the similarly priced models in this review. The comparison to the similarly priced Bandrigin in particular can hardly be

overstressed, though the latter costs only £5 less, and appears on paper to be a more sophisticated and complex design.

The Vivanco's bass is quite deep, but remains under firm control and is fully integrated with the rest of the audio band. There is little overhang or coloration. The midband is layered and expressive, and though a little lacking in depth and weight by the very best standards, it's well ahead of its rivals under the £100 mark.

Meanwhile, the treble almost escapes notice. There's plenty of it, but it simply gets on with the task at hand without imposing its own character on the music. Was there ever a better definition of what the treble is meant to do? The only possible criticism that may be valid is that the treble is a little excessive in level.

Vivanco UK Ltd, Unit C, Boundry Way, Hemel Hempstead, Herts HPT2 7SS ☎ (0442) 231 616

Verdict

▲ **Excellent middle price model; no important weak areas. Puts the cat among the pigeons.**

▼ **Ear cushions are too small. The drive amplifier needs a low output impedance.**

▶ **£54.99 RRP**
■ ■ ■ ■ ■

AKG K400



The K400 is a real musical instrument able to highlight fine details.

The K400, an open-back headphone, is a surprisingly austere looking design from a stable with a strong studio and domestic pedigree. The headband is no more than a double wire hoop, fitted with a spring-loaded flexible inner band which obviates the need for manual head size adjustment.

The design is equipped with deep, wide diameter, permeable ear cushions, which can be readily detached for cleaning or replacement. The cable is three metres long, and fitted with a 3.5mm plug and a screw on 6.3mm adapter, both gold plated.

On test, the K400 was a major, and pleasant, surprise. Not all the signs were positive. Bent wire and fine mesh are not luxury materials, and although the ear cushions are geometrically correct and allow the ears to breathe, they are somewhat hard and unyielding. Short-term comfort is moderate at best. However, after several hours continuous use, the K400 was considerably less overbearing than most of the rest, standing up to comparison with the initially more cossetting Sennheiser HD560.

The unusually large distance between the ears and the transducers may be partly responsible for the AKG's uniquely spacious, airy sound, which gives genuinely 'out of the head' stereo. It even makes the Sennheiser sound shut in by comparison. On the other hand, the AKG has a slightly detached quality in the bass, and a touch of excess in the treble (which can sound strident until fully run in) which pre-

vents it sounding as solid and as muscular as the Sennheiser.

The real strength of the K400, however, lies in a different area altogether. This is the only model of the 12 with the speed, transparency and subtlety to match many electrostatic headphones. Its ability to highlight the breathing techniques of different clarinetists, or the range of variation of notionally similar acoustic instruments and voices, was quite simply without parallel in this group.

The AKG K400 is a remarkably clear, open design. Although the bass end is light in balance, it is far from lacking in depth. It is also fully capable of resolving ambient information as well as the lowest frequencies of musical interest from any and all recordings I pushed its way. In short, the K400 is a real musical instrument.

Entel Ltd, Vienna Court, Lammas Road, Godalming, Surrey GU7 1JG
☎ (0483) 425 702

Verdict

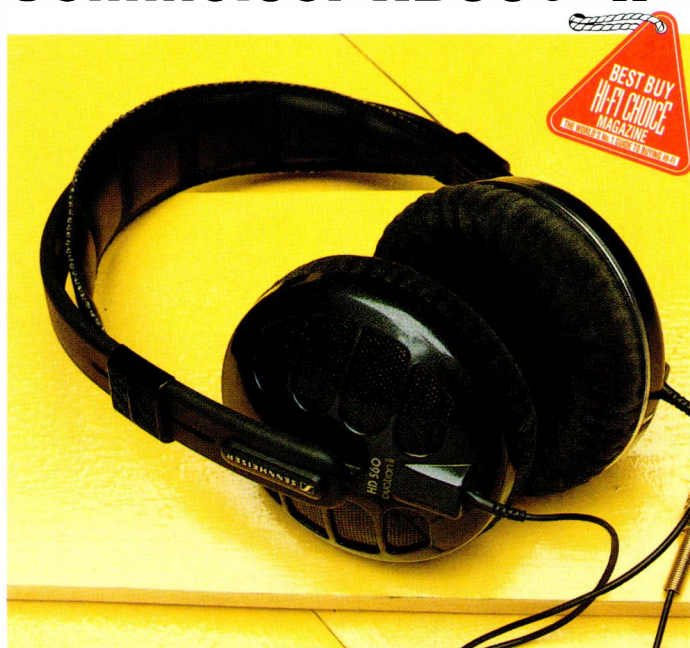
▲ Exquisitely detailed and refined; capable of genuine musical insights.

▼ Short term comfort is poor; frequency balance is a tad bright; bass lacks weight.

▶ £118.68 RRP



Sennheiser HD560 II



Facing strong competition from AKG, the 560 is still hard to beat.

One of the most ambitious of all Sennheiser dynamic headphones, the HD560 Ovation II is a rather high-tech — though physically simple — open-back design.

It is modular in construction, with replaceable felt-covered earpads and drive units, and is equipped with a plug in lead which is available in various colours for those with special requirements. The circum-aural earpad design, though prone to sag after some months, promotes comfort of the highest order.

From experience, I expected the 560 to perform well in this group, and it did. However, as you will have seen, it was unexpectedly pipped to the post by a cheaper model, the AKG K400. But this was no one-sided fight. Against the superbly clean and utterly uncoloured quality of the AKG, the Sennheiser has no real answer. But the HD560 has a more powerful and muscular sound, which has a more convincing way of getting to grips with musical architecture.

One of the Sennheiser's special strengths is its ability to sustain a large image scale. This has much less of an 'in the head' quality than applies to many competing designs. It also has a seamlessness and a lack of overhang that makes it an articulate performer with music and speech alike. By all normal standards, its treble is sweet and extremely refined. It has a high level of resolving power which makes it particularly impressive when reproducing rather more complex sounds — operatic and choral

material for example.

Its ready analysis is combined with an easy going nature; it doesn't pull the music apart with quite the laser-like ruthlessness that the AKG can bring to bear. But it produces a darker and ultimately less well differentiated sound than its opposite number from AKG. It is the latter which ultimately 'disappears' aurally, leaving the music transcendent and the means of reproduction forgotten.

Prior to the K400, the Sennheiser HD560 Ovation II had no competition at the price. It is hard to beat even now. The AKG shows the Sennheiser to be vaguely metallic in tone and not as open or responsive in the treble as it might be, yet its overall balance is superior, and its ability to portray image scale is in a class apart.

Sennheiser UK Ltd, 12 Davies Way, Knaves Beech Business Centre, Loudwater, High Wycombe, Bucks HP10 9QY ☎ (0628) 850 811

Verdict

▲ Unequaled for comfort and image scale; powerful and muscular sound.

▼ Sounds a little heavy and lacking in detail by the highest standards.

▶ £139.95 RRP



Sony MDR-CD850



A comfortable design that cuts you off from the outside world.

The write up on the outside of the box sounds impressive — 'ear-conscious' design, adjust-free headband and Digital Reference (whatever that means) are just the highlights. The MDR-CD850 is an enormous sealed headphone. It clamps the head firmly, and its circum-aural earpads are neither circum enough, nor deep enough, to leave the ears totally unobstructed. Nevertheless, this is a surprisingly comfortable design — if you can live with the lack of ventilation for the ears. This means that after a while, the enclosed space begins to become quite warm.

Sound isolation is in a class of its own in this group. If you really need to cut out noise from the outside world, this is the model for you. Microphony — the noise that results from handling the lead or ear capsules — is very low.

Musically, the Sony seems to be a victim of its own complexity. Undeniably impressive on first hearing, it doesn't take long to discover that the music it makes is lacking in low level resolution and finesse. Sony's engineers have done some sterling work on controlling the bass and treble. The former is man-size, yet under excellent control, while the latter is mildly coloured but generally tidy. The midband, however, seems to have been no one's particular responsibility, and the result is a sound full of unresolved colorations.

The words plasticity and quacky appear more than once in the listening notes, and the overall effect is one lacking in subtlety and grace. At high

volume settings, the Sonys tended to shout and sound glassy. The colorations were at their most pernicious with classical music, where the Sony added an unnatural sheen to strings and a brilliance to percussion.

In many ways, none of this is surprising. As already noted, the earpieces of the Sony are fully sealed to keep inside sounds in, and environmental sounds out. This kind of headphone has always been difficult to design since mechanical resonances in the structure tend to be much more efficiently driven than is the case with open back headphones.

The bottom line, however, is that even after all the caveats, the CD850 sounds as good as most sealed headphones and better than some open-back models. This is impressive enough in its way.

Sony UK Ltd, Sony House, South Street, Staines, Middlesex TW18 4PF
☎ (0784) 461 688

Verdict

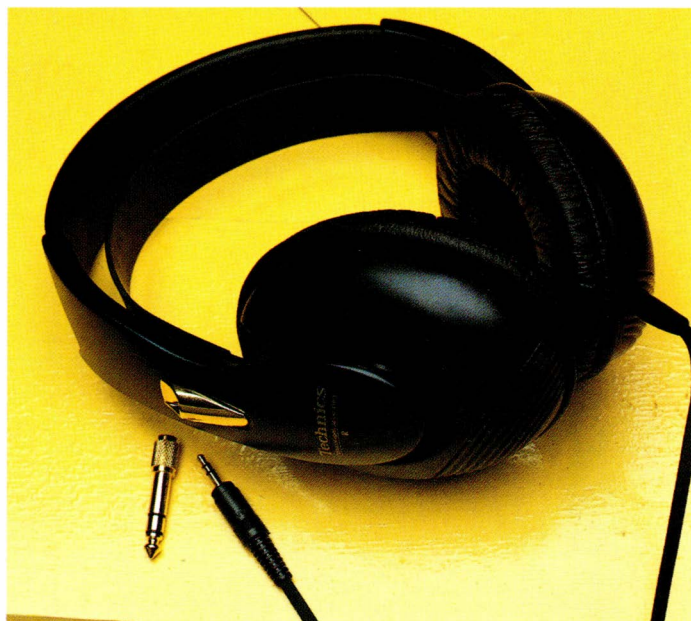
▲ Sound isolation is effective; more comfortable than might be expected of such a bulky design.

▼ Modest sound quality, especially in the all-important midband.

▶ £100.00 RRP



Technics RP-F10



The ideal model for those seeking fire alarm-proof isolation.

This model is aimed at exactly the same kind of customer as Sony is targeting with the MDR-CD850. They sell at around the same price and, like the Sony, the Technics is a closed-back headphone, which does its best to isolate the user from irritants like the fire alarm squawking in the next room.

Like all sealed phones, however, the effectiveness of the RP-F10 compared to open back headphones is a matter of a few decibels, and although it is more effective than many, the Sony offers superior isolation at an identikit price.

The electrical parameters are straightforward and unproblematical, and the three metre 3.5/6.3mm plug equipped item is standard issue stuff. The self-adjusting headband (more shades of Sony) is a minor but useful attraction, but the Technics is microphonic, with clearly audible resonances when handled.

This is an intriguingly uneven headphone on audition. It is bulky and quite heavy, but exerts a well judged inwards pressure on the ears through some of the most comfortable earpads I have encountered. Musically the story is less encouraging. The transducer is in some senses a quality design which has considerable bass extension, yet sings sweetly through the midrange, only really coming to grief in a treble that is at once recessive, jangly and coloured. The evidence has been concealed to an extent by the simple expedient of reducing the level of high frequencies.

The design is saved from sounding dull by maintaining the output through the midband and lower treble. However, as the music ascends the frequency band the effect is to introduce a degree of sameness and coloration.

The bass is interesting in more ways than one. This is a model that, uniquely in this group, comes close to justifying the claims that Bandridge makes for the EH910. It really does trawl the depths, plucking out and replaying tunefully and with conviction bass lines that would defeat many smaller loudspeaker systems.

The price, however, is that the bass is quite severely underdamped. Very low frequency sounds appear to carry on well after the music stimulus is history, pulling the sound of bass instruments forward in the mix.

Panasonic Consumer Electronics, Panasonic House, Willoughby Road, Bracknell, Berks, RG12 8FP
☎ (0344) 862 444

Verdict

▲ Deep, pure (if underdamped and excessive) bass; fine midband; superb earpad design.

▼ Cluttered treble presentation; lacks detail and subtlety.

▶ £100.00 RRP



Billy Vee sound systems

Telephone: 081 318 5755 & 852 1321



LOOK LEFT!

The photograph on the left cannot do justice to the NEW ARCAM ALPHA and DELTA range of equipment we now have on demonstration.

NEW STYLE - to complement the recently released Delta 290 amplifier.

BETTER PERFORMANCE - the new range now offers the latest in design technology enhancing an already great sound.

MORE FEATURES - better facilities, the new range includes more features for today's lifestyle.

GREATER FLEXIBILITY - with similar styling, mixing Alpha with Delta products maintains continuity.

JUST LISTEN! - come and listen to any of the NEW Alpha or Delta range in our comfortable listening rooms and we think you will agree, great products at an affordable price.

Welcome to the new Arcam Range!

248 Lee High Road, Lewisham, London SE13 5PL

Contributors: ARCAM - CYRUS - DENON - HEYBROOK - JPW - MARANTZ - LINN - MISSION - NAD - NAIM - NAKAMICHI - QUAD - REGA - ROGERS - TANNOY etc

Our services include, two listening rooms, part exchange, systems installation and :-

0% A.P.R. CREDIT - PLEASE CALL FOR DETAILS.

Headphones: conclusions, best buys and recommendations

The major headphone makers stopped innovating some years ago and have been exclusively engaged in refining variations on a theme ever since. You might, therefore, expect a degree of consistency from the models tested. In fact, the results ranged from genuine excellence to something not far short of incompetence.

The cheapest model tested was the Kenwood *KH-1000*. Although far from unpleasant, the Kenwood sounds soft and unexciting. However, it is adequately made and delivers modestly good value for money, albeit well short of the standard necessary for formal recommendation.

Bandridge's *EH910DD*, a two-way design, fared no better. It had a creditable mid/treble, sadly allied to a lead-footed, uncontrolled bass. Strictly for the boom or bust brigade.

The £60 JVC *HA-D910* also lost out, mainly because it too displayed mild symptoms of over the top bass syndrome. The identically priced Philips *SBC3390* had a generalised lack of refinement and comfort, while the £70 Quart *Phone 75X* offers the same musical qualities, in a much more comfortable design.

At the £100 level, both the Technics *RP-F10* and the Sony *MDR-CD850* suffered from audible colorations and resonances. However, they turned out to be surprisingly easy on the ears, and offer acceptable value if sound isolation is important. The Technics was the better sounding model of the two, at the cost of slightly inferior sound isolation.

Best Buy and Recommended Listing	
£50 AND UNDER	
BEST BUYS	
Sennheiser HD440II (£30) Still the one to beat, though now slightly leaden sounding; cold treble.	
RECOMMENDED	
Beyer DT-211 (£25) Good value compact; couth and enjoyable; earpads not removable for cleaning.	
£50-£100	
BEST BUYS	
Vivanco SR808 Classic (£55) A new mid price reference; good all-rounder with no obvious failings.	
£100 AND OVER	
BEST BUYS	
AKG K400 (£100) Comfortable to wear; sound is exquisitely detailed, dynamic and uncoloured.	
Sennheiser HD560 Ovation II (£125) Slightly heavy sound but still the reference; big on comfort.	

The only Recommended design was the Beyer *DT-211*. It costs just £25, yet is an exceptionally comfortable design with a clean, open midband. It's probably without peer at the price. The only significant limitations are a treble that is at once raw and recessed, and the earpads, which cannot be readily removed for cleaning.

The remaining four headphones are all Best Buys and come from Sennheiser (x2), Vivanco and AKG.

The *HD440II* is an excellent budget choice that sounds at least as good as many headphones costing double.

The *HD560 Ovation II* is a different kettle of fish. It is an analytical, wide bandwidth design, with excellent dynamics and a truly solid sound. Detail resolution is also good, and this is nothing less than a superb all-rounder.

But it was the AKG *K400* that took the honours on this occasion. The AKG does not aspire to the svelte comforts of the Sennheiser, but all objections are overridden in an

exquisitely detailed and refined quality which is as close to sounding like a good quality electrostatic as any dynamic headphone I have encountered. And if the £100 AKG *K400* is too expensive,

there's still the Vivanco *SR808*, a poor man's *K400*, with many of the same qualities.

In many ways, this is the outstanding find of this test, and it represents a superb buy at its £50 ticket price.

Best of the rest

There are a number of fine alternatives to the models tested, including several from Sennheiser. Highlights include a superb beer-budget design, the £20 *HD40*, and the *HD480II* at £50. Audio-Technica is also a prime source, with models like the £80 *ATH-911* and the compact £26 *ATH-308*. Moving up market, Beyer's excellent wide bandwidth *DT911* is good value for money, despite the £179 price tag.

At the headphone high-end, there's the stunning £500 AKG *K1000*, which suspends the drive units forward of the ears, so that each ear hears a sound that roughly corresponds to listening using loudspeakers. This is connected to an amplifier's loudspeaker terminals to take advantage of the superior damping available from this low impedance source.

Jecklin offers the Float range, including the £399 *Float Electrostatic* which, though simpler, also contrives with some success to offer a bigger, more loudspeaker-like presentation than usual.

For many, however, the high-end headphone is synonymous with only one name — Stax. These superbly engineered electrostatics reach their apotheosis in the *Lambda Pro* and *Signature*, which we have tested in various combinations ranging from £559 to £1,370.



A-T's *ATH-911*.

Choice accessories

Let our fine range of accessories help boost your system performance

Isolation cones

Supplied in packs of four, these cones are ideal for supporting just about any item of hi-fi, from sub-woofers through to amplifiers and CD players. The cones provide effective isolation and decoupling, thereby increasing the stereo image and fidelity. Available in precision turned brass or black anodized aluminium, some experimentation will reward the listener with improved sound quality, at a minimal cost.

Order ref: JE12A £14.00

4 Isolation cones (brass)

Order ref: JE11A £14.00

4 Isolating cones (black coated aluminium)

Goldingr Magic Record Cleaner

Kit consisting of a double-sided velvet brush and spray on Goldring Magic record rejuvenating fluid.

Order ref: JE13A £11.95

Technics Auto CD Cleaner

A powered wet/dry CD cleaner that can be run off batteries or the mains. It works by rotating the disc and applying the wet cleaner first (cleaning solution is supplied, then reversing direction and dry cleaning it. The whole process takes just 40 seconds and a set of batteries should clean 80 discs.

Order ref: JE20A £39.95

Kontak Cleaning Solution

A two stage contact cleaner for all audio and mains connections. All connections are susceptible to oxidation and contamination which impairs electron flow and thus affects sound quality.



Here's what Paul

Messenger had to say when he tried some on his system: "The effect on the power amps alone was so astonishing I had to carry on and cover the whole system. By the time I was finished the system was utterly transformed. Timing and coherence were back with a vengeance; surface noise and coloration were both much less audible and the soundstage had liberated itself from the boxes".

Order ref: JE17A £19.90

The Purifier

A ferrite cable clamp designed to reduce RF induced noise in audio, video and computer systems. The clamps will accept single or multiple cables of up to half an inch in diameter and can be used on both signal and mains cables. Can be particularly beneficial for digital interconnects.

Order ref: JE14A £16.90 per pair

Nagaoka Anti-Static Record Sleeves No102

Packs of 50 plastic record sleeves that can be used on their own or inserted into an existing card or paper sleeve. The sleeves keep records dust free and eliminate static.

Order ref: JE15A £6.99

Gold Plated 4mm Banana Plugs

Top quality solderless gold plated banana plugs for use with speaker cables. Simply push the speaker cable into the body of the plug and tighten for a perfect connection. This Furukawa plug accepts cables up to 4mm in diameter. Sold in packs of four.

Order ref: JE24A £7.95

Audio Technica CD Lens Cleaner AT-6078

The focusing assembly for the laser head of a CD player is a very delicate affair and yet it requires cleaning from time to time to give of its best. Rather than fumbling about with cotton buds, we would suggest you employ an Audio Technica AT-6978 CD lens cleaner.

This is a standard size disc with a set of eight tiny brushes set into it. To clean your laser, just apply a drop of cleaning fluid on to one of the brushes, place the cleaning disc in to your player and press play.

Ten seconds later, a clean laser assembly and a cleaner sound from your Compact Discs.

Order ref: JE21A £16.95

CD Jewel Case (Five Pack)

Everyone has them, now replace broken CD jewel cases and ensure your discs are properly protected.

Order ref: JE33A £5.00

DISC CLEANING AND MAINTENANCE

Last SF-100 Extra Strength Record Cleaner

Designed to remove the stubborn mould release compounds present in every LP from the pressing process. Use to deep clean new records as well as to revitalise older vinyl.

Order ref: JE25A £22.50

Last SF-200 Record Preservative

Last SF-200 interfaces with the vinyl and prevents gouging, fracturing and wear of the groove wall. A single application will maintain LPs in 'brand new' condition for 200 plays or more. The use of Last 100 and 200 improves fidelity and maintains precious LPs.

Order ref: JE26A £25.00

Last SF-300 Record Cleaner

SF-300 is the cleaner to use on a day-to-day basis on LPs which have been treated with SF-100 and SF-200.

Order ref: JE27A £18.50

Last SF-600 CD Clean And Protect

Yes CDs do need cleaning and Last have introduced a specially formulated cleaner and polish for CDs which removes grease, dirt and finger marks. The kit provides vinyl covers for the continued protection of cleaned CDs. Clean CDs sound better.

Order ref: JE29A £20.00

Last SF-601 CD Cleaner

Exactly the same as CD-600, but without the vinyl protective covers.

Order ref: JE30A £16.00

Last RCM Record Cleaning Machine Fluid

Last Record Cleaning machine fluid is formulated for use in conjunction with proprietary record cleaning machines, for the removal of grease, dirt and grime from Vinyl LP's.

JE35A £18.00

In order to introduce vinyl users to a meaningful protection and maintenance system, we have negotiated a special price on a full size bottle of SF-100 and SF-200 (SC012) complete with applicators for just £38.50. **Trial Pack, SF-100 And 200 (Full Size) Order ref: JE31A £38.50**

We've also secured trial samples of all three products, SL-123 and these are available at only £26.00. We sincerely recommend the use of these products to all who wish to maintain their record collections in pristine condition.

Trial Pack, SF-100, 200 and 300 Order ref: JE32A £26.00

HI-FI CHOICE SWEATSHIRTS

Improve the sound of your system for a mere £15

Ever wondered why some people get taken seriously in hi-fi shops while others get the runaround? Wonder no more. The answer to all your hi-fi problems is the ALL NEW Hi-Fi Choice Sweatshirt.



These gloriously hip garments are tastefully printed in white and red on navy blue. As well as being this year's most crucial fashion accessory, a Hi-Fi Choice sweatshirt will readily identify you as a reader of Britain's fastest growing hi-fi magazine.

As a result you'll almost certainly be taken more seriously and end up with a better system - and all for a mere £15.

We can supply the shirts in two sizes - large and extra large.

Order ref: JE22A

Best seller!

Special offer

Choice sounds

Choose from our superb selection of specialist label recordings.

REFERENCE RECORDINGS

FIESTA: DALLAS WIND SYMPHONY ORCHESTRA, HOWARD DUNN CONDUCTING

Warning: Please ensure the volume control is turned down on first playing, as transients on this CD/LP have the potential to damage speakers when played at high volume levels. This superb recording contains colourful, dynamic, fiesta-flavoured music for wind instruments and hi-fi demonstration-quality sonics. Contains, Reed: La Fiesta Mexicana - Gould: Fiesta del Pacifico - Williams: Symphonic Dance # 3 - Perkins: Fandango
Order ref: RR-38CD £13.99
RR-39 2 LP set £30.00

HOLST: DALLAS WIND SYMPHONY ORCHESTRA, HOWARD DUNN CONDUCTING

This title contains seminal works, together on one disc, all played in the exact instrumentation specified by the composer. The Dallas Wind Symphony is one of the most spirited and dynamic bands around, and is the front runner in the renaissance of the great American windband. Contains: Suite # 1 in E-flat - A Moorside Suite - Suite # 2 in F
Order ref: RR-39CD £13.99
RR-39LP £21.50

REFERENCE RECORDINGS HDCDs

HDCD is a new and patented process for encoding and decoding digital audio. The process is used during recording and playback, though as the name implies, HDCD recordings can be played back on all existing CD players, however, to fully realise the extraordinary potential the system is capable of providing, encoded recordings should be played on CD players incorporating an HDCD decoder, however, these discs may be played on ordinary players and out-perform 'normal' CDs by a considerable margin.

REFERENCE HDCD SAMPLER

Digital sound of unprecedented resolution and musicality. No hi-fi enthusiasts will want to ignore this incredible sonic experience.
Order ref: RR-S3HDCD £11.99

TESTAMENT: THE TURTLE CREEK CHORALE WITH THE DALLAS WIND SYMPHONY ORCHESTRA

A stirring programme of American music with words by Thomas Jefferson, Walt Whitman and Robert Frost introduces the magnificent sound of the 150 voice chorus, accompanied by the Dallas Wind Symphony Orchestra. This is a demonstration quality CD no audiophile should miss, the sound quality is absolutely breathtaking. Contains, Ron Nelson: Behold Man - Howard Hanson: Song of Democracy (text Walt Whitman) - Randall Thompson: The Pasture - Stopping By Woods on a Snowy Evening - Alleluiah - Aaron Copland: The Promise of Living - Leonard Bernstein: Make Our Garden Grow.
Order ref: RR-49CD £13.99
RR-49LP 2 LP Set £30.00

TRITTICO: THE DALLAS WIND SYMPHONY, FREDERICK FENNEL CONDUCTING

Under his inspired direction, Frederick Fennell with the Dallas Wind Symphony Orchestra delivers smashing performances of some of the most colourful music ever written for band. The programme is full of variety and brings together dynamic and seldom-heard works such as Trittico by Vaclav Nelhybel - Feast Day in Saville by Albiniz - Variants on a medieval tune by Norman Dello Joio - Funeral March by Edvard Grieg and Vittorio Giannini's Symphony # 3.
Order ref: RR-52CD £13.99

REFERENCE RECORDINGS MASTERCUT SERIES

Reference Mastercuts make available landmark analogue recordings of significant musical performances in no-compromise, numbered editions.

Disc mastering facilities are chosen for the best possible sonic properties, depending on the nature of the material and the format of the original tapes.

Pressings are made with the recently developed HQ 180 process, which provides a super flat, extra heavy vinyl disc of unprecedented resolving power. All Mastercuts are numbered limited editions, and are supplied in beautiful gatefold jackets.

RAVEL: BOLERO ETC. STANISLAW SKROWACZEWSKI CONDUCTING THE MINNESOTA ORCHESTRA

Bolero - Pavane pour une Infante Defunte - Le Tombeau de Couperin - Une Barque sur L'océan.
Order ref: RM-1001 £35.00

RACHMANINOV: SYMPHONY NUMBER 2 IN e minor, Op 27. LEONARD SLATKIN CONDUCTING THE SAINT LOUIS SYMPHONY ORCHESTRA

Order ref: RM-1002 £35.00

GERSHWIN: RHAPSODY IN BLUE, SECOND RHAPSODY, VARIATIONS ON 'I GOT RHYTHM.' LEONARD SLATKIN, THE SAINT LOUIS SYMPHONY ORCHESTRA, JEFFREY SIEGEL, PIANO

Order ref: RM-1003 £35.00

KLAVIER 180GM LPS

Klavier has introduced on super flat 180gm virgin vinyl two of the most famous recordings ever produced. These are 'collectable' limited edition LPs. Single step processing was used for these releases.

The stamper was made from the first generation master and not more than 1,000 LPs were pressed from that stamper. This process allows every LP to be of 'test pressing quality.'

Klavier LPs are used by many manufacturers and hi-fi specialists for demonstrating their equipment.

MASENET LE CID, BALLET MUSIC. SCENES PITTORESQUES. THE LAST SLEEP OF THE VIRGIN. THE BIRMINGHAM SYMPHONY ORCHESTRA, LOUIS FREMAUX CONDUCTING.

Order ref: KS-522 (LP) £25.00
KCD-11007 (CD) £13.99

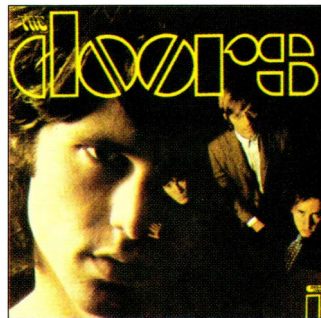
A BERLIOZ ORCHESTRA SPECTACULAR. THE BIRMINGHAM SYMPHONY ORCHESTRA, LOUIS FREMAUX CONDUCTING

Overture to 'Roman Carnival.' Op 9 - Funeral March for Hamlet - Hungarian March - Dance of the Sylphs - Minuet of Will-O'-The Wisps - Overture to 'Benvenuto Cellini' Op 23 - Royal Hunt and Storm from 'The Trojans.' (with The City of Birmingham Symphony Chorus) - Trojan March from 'The Trojans'.
Order ref: KS-553 (LP) £25.00

DCC 24CT GOLD CDS

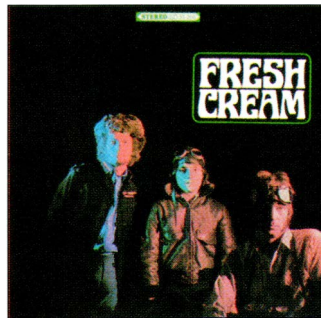
Discover an awesome listening experience. These 24 Karat gold Compact Discs are manufactured, specifically for hi-fi/audiophile

listeners. Better than the originals, these re-releases of popular music are a 'must buy' for all hi-fi enthusiasts. There are several advantages to using gold rather than aluminium for the reflective layer in CDs. Gold coating provides a smoother, more even layer than is possible with aluminium. Data pit conformity is optimised and laser beam reflectivity is over 95 per cent, resulting in excellent tracking, fewer bit errors, and the ultimate in data integrity.



THE DOORS: THE DOORS

Considered one of the five greatest rock albums of all time, this 1967 release influenced a generation. Specially re-mastered for this gold disc release from two-track stereo original mixes, The Doors sounds better than it ever has. The original glossy cover and liner are accurately reproduced for this CD. Featuring Light My Fire, Break On Through, The End.
Order ref: GZS-1023 £35.00



CREAM: FRESH CREAM Eric Clapton, Jack Bruce and Ginger Baker

Originally released in 1966, this classic album by England's power trio, is considered by many to feature Eric Clapton's best playing with the group. Remastered from the original two track master mixes, the original American running order has been restored along with the album artwork and liner, plus full recording information. Featuring Spoonful, I Feel Free and I'm So Glad. Contains two bonus tracks.
Order ref: GZS-1022 £35.00

THE BEACH BOYS: PET SOUNDS

This 1966 release is now considered to be one of the most innovative and influential American albums. It contains many classic hit Beach Boy singles - Wouldn't It Be Nice, Sloop John B, God Only Knows etc. Mastered from the original unequalised full-track master tapes, this CD is a must for music fans everywhere
Order ref: GZS-1035 £35.00

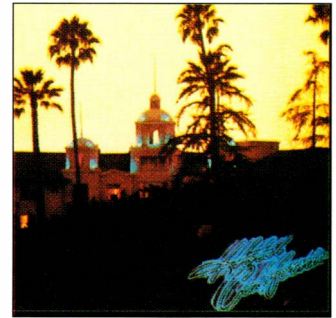
PAUL Mc CARTNEY AND WINGS: BAND ON THE RUN

Considered to be Mc Cartney's greatest album, Band on the Run really put Paul on

the map. Features the title track Band On The Run plus Jet, Bluebird, Let Me Roll It and Helen Wheels and many more.
Order ref: GZS-1030 £35.00

THE EAGLES: HOTEL CALIFORNIA

The Eagles are considered one of rock'n' roll's top five bands of the Seventies. Hotel California was No 1 on the U.S. Billboard charts for seven weeks. This album was the Eagles' biggest seller and remains a true classic. The original LP artwork and graphics are reproduced faithfully. Featuring New Kid In Town - Life In The Fast Lane - Victim Of Love and Hotel California.
Order ref: GZS-1024 £35.00



THE DOORS: STRANGE DAYS

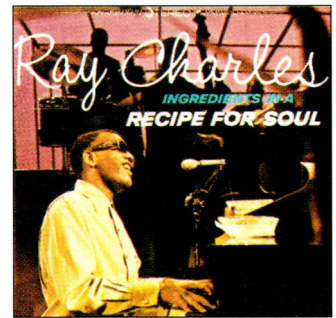
Featuring Love Me Two Times, When The Music's Over and People Are Strange, this million seller is a vital addition to the Gold Library. One of the most popular albums in the history of rock.
Order ref: GZS-1026 £35.00

JONI MITCHELL: COURT & SPARK

Considered to be Joni's best album. Filled with musical innovations and daring harmonies, this is one of the all time best loved albums of the rock era. Its influences can still be heard in many of today's arrangements, and its influence on the 'singer-songwriter' genre of music is unparalleled to this day. Featuring Help Me - Free Man In Paris - Raised On Robbery & the Grammy award winning Down To You
Order ref: GZS-1025 £35.00

RAY CHARLES: INGREDIENTS IN A RECIPE FOR SOUL

This album from 1963, peaked at No. 2 on the US Billboard album charts and yielded two top singles: 'Busted' and 'Lucky Old Sun'. Wonderful sound quality together with memorable performances make this a 'must buy' gold disc. Contains four bonus tracks from singles of the period.
Order ref: GZS-1027 £35.00



CREAM: WHEELS OF FIRE

Besides gleaming the best sound ever from the 1968 landmark Cream double album, DCC has unearthed a previously unheard

jam that was edited out of the original song *Passing the Time*. In addition to the remastering by Steve Hoffman, DCC has ensured that the packaging is also a hit by duplicating the original album art. From the aluminium foil over the day-glo interior, the original art and liner notes are all intact. All in all, *Wheels of Fire* is sure to grab the eye and ear of music lovers. (Double CD)
Order ref: GZS-1020 £50.00

BOB DYLAN: HIGHWAY 61 REVISITED

This landmark album from 1965 firmly established Bob Dylan as a force in rock music as well as an American cultural icon. DCC Compact Classics have painstakingly remastered this CD from the original Columbia two track stereo masters. The original LP artwork and back liner have also been faithfully recreated.
Order ref: GZS-1021 £35.00

BOB SEGER & THE SILVER BULLET BAND: NIGHT MOVES

Night Moves was originally released in 1976. This multi million selling album features the famous Night Moves plus several of the now standard favourites such as *R.Rock* and *Roll Never Forgets*. The *Fire Down Below*, *Mainstreet* and *Mary Lou*.
Order ref: GZS-1026 £35.00



CREEDENCE CLEARWATER REVIVAL: COSMOS FACTORY

Their best selling album. Released in 1970, this landmark album yielded three top ten double sided singles!
Order ref: GZS-1031 £35.00

THE DOORS: L.A. WOMAN

The last album The Doors recorded was also their best seller. Released in 1971, this instant classic gave the world *Riders On The Storm*, *Love Her Madly* & *L.A. Woman*. This top ten album was mastered from the original two track master tapes.
Order ref: GZS-1034 £35.00

THE CARS: THE CARS

The fabulous 1978 debut album from The Cars. Recorded in England by Roy Thomas Baker, this Boston band led by Ric Ocasek never recorded a better album. Featuring many tracks now consider classics: *Good Times Roll* - *My Best Friend's Girl* - *Just What I Needed* - *You're All I've Got Tonight* - *Bye Bye Love* & *Moving in Stereo* are some of the highlights. Mastered from the original Electra stereo unequalised two track master tapes.
Order ref: GZS-1032 £35.00

PAUL Mc CARTNEY: Mc CARTNEY

Recorded when Paul was still a Beatle, this album was released early in 1970 and shot to No 1 on the charts. Featuring classic tracks such as *Maybe I'm Amazed* - *Every Night & Teddy Boy*.
Order ref: GZS-1029 £35.00

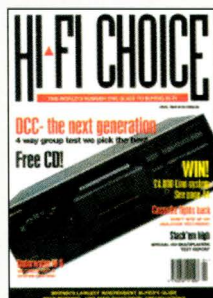
HI-FI CHOICE BACK ISSUES

All the issues you wish you'd never missed. Back issues are priced at £4.00 each (UK), £6.95 each (Overseas) including postage and packing.

Feb 1993 - Issue 115 ONE BRAND SEPARATES SYSTEMS and turntables on test plus a DCC software offer
Order ref: AE15B

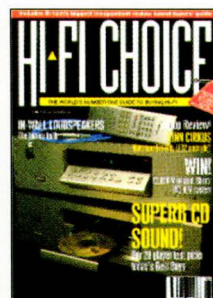
March 1993 - Issue 116 AMPLIFIERS
Order ref: AE16B

April 1993 - Issue 117 Ten of the latest cassette



decks take on four DCC machines, plus eight CD multi-players and a free Edelweiss CD.
Order ref: AE17B

May 1993 - Issue 118 SPEAKERS - 22 of the latest models on test plus SME Series 20.
Order ref AE18B



June 1993 - Issue 119 CD PLAYERS - 20 of the latest CDs reviewed plus eight of the very latest in-wall loudspeakers.
Order ref: AE19B



July 1993 - Issue 120 CD TRANSPORTS AND DACS eight of the latest digital combinations are reviewed, plus nine tuners tested and a close look at three laserdisc players.
Order ref: AE20B

PRIORITY ORDERING

Just enter on the coupon the items you require from both Choice Accessories and Choice Sounds using the correct code. Then clip out and send with the correct payment to: DENNIS DIRECT, PO BOX 2505, ALCES-TER B50 4JU. Prices shown include VAT and fulfilment in the UK. Please add postage as detailed at the bottom of this form. Be aware that all items on offer are subject to availability and a maximum of 28 days should be allowed for delivery.

OVERSEAS ORDERS: Please add £10.00 (Europe) or £12.00 (Rest of the World) to your order total to cover the additional postage. Please note that we can only accept Visa/MasterCard and EuroCheques in £s sterling and sterling cheques drawn on a London bank.

Important: To prevent any delay with processing your order, please enter the correct codes clearly! If necessary, please use a separate sheet.

CHOICE ACCESSORIES

Code	Description	Price	Quantity
JE__A	£.....
JE__A	£.....
JE__A	£.....
JE__A	£.....
JE__A	£.....

BACK ISSUES

AE14B	Hi Fi Choice Jan 93	£.....	.....
AE15B	Hi Fi Choice Feb 93	£.....	.....
AE16B	Hi Fi Choice Mar 93	£.....	.....
AE17B	Hi Fi Choice April 93	£.....	.....
AE18B	Hi Fi Choice May 93	£.....	.....
AE19B	Hi Fi Choice June 93	£.....	.....
AV02A	Home Entertainment Issue 2	£.....	.....
HiFi Choice binders	LE01A	£.....	.....

HI-FI CHOICE SWEATSHIRTS

JE22A/L	Hi Fi Choice Sweatshirt - Large	£.....	.....
JE22A/XL	Hi Fi Choice Sweatshirt - X Large	£.....	.....

CHOICE SOUNDS

Order reference	Description	price	qty
.....	£.....
.....	£.....
.....	£.....
.....	£.....
.....	£.....
.....	£.....
.....	£.....
.....	£.....
.....	£.....
.....	£.....

Total number of items ordered **Order total** £.....

For UK add £2.00 per order for postage **Order Total** £.....

For Europe add £10.00 per order for postage **Order Total** £.....

For Rest of World add £12.00 per order for postage **Order Total** £.....

I enclose a cheque made payable to Dennis Direct for £.....

Please charge my Visa MasterCard (Access) for £.....

Credit Card number

Expiry date / Signature

Mr/Mrs/Ms Surname..... Initials.....

Address.....

..... Postcode.....

Daytime telephone number.....

Please send me a VAT receipt
 The above information may be added to our mailing list. Please tick the box if you would prefer not to receive details of special offers. Dennis Direct is a division of Dennis Publishing Ltd. 05-93-08

SAVE TIME...USE THE FAX!
 You can now speed your order along by faxing it to us on 0789 490878. (Only available for customers ordering by credit card).

Dealer Guide

AVON

V AUDIO 36 Druid Hill
Stoke Bishop
Bristol BS9 1EJ
Tel: 0272 686005

ATC, AVI, Acoustic Energy, Audio Innovations, Audio Technica, AMC, Analogue Electronics, Cadence Valve, Chord AMPS, Exposure, Goldring, Jamo, LFD, Lyra, Ortofon, Pink Triangle, Ruark, Mitchell, REL, Sansui, SME (inc. 20A), Sonic Link, Stax, Sumiko, Townsend, Wadia.

Demos by appointment only. Home trial facilities.
Free installations. Servicing facilities.
We are not a shop.

BERKSHIRE

B&B Hi-Fi
Berkshire's Leading Specialist

Aiwa, Akai, Bang & Olufsen, Bose, B+W, Cambridge, Celestion, Denon, Dual, Heco, Heybrook, JPW, Kef, Kenwood, Marantz, Mission, Mitsubishi, Monitor Audio, Monster, Mordaunt/Short, NAD, Nagaoka, Nakamichi, Ortofon, Panasonic, Philips, Pioneer, QED, Quad, Revolver, Rogers, Rotel, Sennheiser, Sony, Tannoy, Target, Technics, TDK, Thorens, Wessex, Wharfedale, Yamaha.

Ask about FREE delivery & FREE installation

11-12 Market Place, Reading* Tel: 0734 583730
18 King Street, Maidenhead* Tel: 0628 73420
4 Priory Road, High Wycombe Tel: 0494 535910
62 North Brook Street, Newbury Tel: 0635 32474
Princess Square, Bracknell* Tel: 0344 424556

*DEMONSTRATION ROOMS

BUCKINGHAMSHIRE

SOUND GALLERY

**BUCKINGHAMSHIRES
PREMIER HI-FI DEALER**

Arcam, Denon, Linn Products, Naim Audio, Meridian, Rotel, Yamaha, NAD, Quad, Tripod, Nakamichi, Rega, Creek, Epos, Mordaunt Short, Celestion, Marantz, Mission, Cyrus, etc . . .

65 Castle Street, High Wycombe,
Buckinghamshire.

Open Monday - Saturday

0494 531682 / 464670

CAMBRIDGESHIRE

University Audio

Marantz Liquid Gold SC22
MA 24 Mono Blocks

Now on permanent demonstration
at

1 & 2 PEAS HILL

CAMBRIDGE CB2 3PP

TEL: 0223 354237 FAX: 0223 322079

CHESHIRE

ASTON AUDIO HI-FI SPECIALISTS
ARCAM • CYRUS • DENON • AUDIOLAB
• MERIDIAN • YAMAHA • MISSION •
B&W • AND MANY MORE
4 WEST STREET,
ALDERLEY EDGE,
CHESHIRE
TEL: 0625 582704

DISCOUNT CD & TAPE
EXTENDED GUARANTEE
INTEREST FREE CREDIT
VISA / ACCESS

CUMBRIA

Peter TYSON LEADING
HI-FI
SPECIALIST

Demos and Part Exchange Welcome
6 ABBEY STREET, CARLISLE 46756

DERBY

Active Audio

ARCAM, AUDIO INNOVATIONS, CELESTION, CYRUS, DENON, KEF REFERENCE, MERIDIAN, MARANTZ, MICROMEGA, NAKAMICHI, PIONEER, QUAD, MUSICAL FIDELITY, REVOLVER, ROKSAN, ROGERS, ROTEL, RUARK, TANNYO, YAMAHA, ETC.

Active Audio

12 Osmaston Road, The Spot, Derby
Telephone: (0232) 380385/385185

DUBLIN

ad Acoustic Dimension
67 Mountjoy Street, Dublin 7.
Tel: 305633 Fax: 305839

AVI • LFD • AUDIO NOTE • AUDIO INNOVATIONS • MAGNUM • PROJECT • ROTEL • MARANTZ • TRIANGLE • JPW • RUARK • PRO-AC • MICROMEGA • ACOUSTIC ENERGY
• IMPULSE. APOLLO FURNITURE. CABLES: VLS • LFD • IXOS • STRAIGHT WIRE.
Listening Rooms. After 6pm by apt. Open Tue-Fri 9-6. Sat 10-6pm.
Mail Order. Access • Visa.

CLONEY Audio

55 MAIN STREET,
BLACKROCK, DUBLIN
TEL: 01-2889449
2888477
FAX: 2834887

MAGNEPLANAR
MUSICAL FIDELITY
NAKAMICHI
ARCAM
PHILIPS
LINN
NAIM
REGA

TECHNICS
SPENDOR
APOGEE
ROGERS
CLASSE
DELTEC
CREEK
SONY

AND THE BEST OF THE REST!!
CLOSED MONDAY - OPEN LATE TILL 9PM THURSDAY/FRIDAY

EDINBURGH

RUSS ANDREWS HI-FI

34 Northumberland Street, Edinburgh.
Telephone: 031 557 1672

Linn, Naim, Rega, Arcam, Rotel, Marantz,
Nakamichi, Quad, Creek, Yamaha.

Demonstrations.

Open 10.5.30. Mon-Fri, 10-5pm Sat.

ESSEX



Akai • Alphason • Arcam* • B&W • Bang & Olufsen • Bose • Celestion • Dual • Harman Kardon • Kenwood • Quad* • Marantz • Mordaunt-Short • NAD • Nakamichi* • Pioneer • Ruark • Sony • Wharfedale • Yamaha •
* Epping and Saffron Walden only

148 HIGH STREET • EPPING • TEL: (0992) 574242
26 KING STREET • SAFFRON WALDEN • ESSEX • TEL: (0799) 523728
70 SOUTH STREET BISHOP'S STORTFORD • HERTS • TEL: (0279) 656401

GLOUCESTERSHIRE

Hutchinsons
TV • VIDEO • HI-FI

295 High Street, Cheltenham GL50 3HL
Telephone: 0242 573 012
AIWA, CELESTION, DUAL, KENWOOD,
MARANTZ, PIONEER, SENNHEISER,
TECHNICS, WHARFDEALE.
FREE INSTALLATION SERVICE Dept

HAMPSHIRE

MANA • CASTLE • ALCHEMIST • ALBARRY • AUDIO INNOVATIONS
AUDIO GALLERY
NR PETERSFIELD HAMPSHIRE
MAIL ORDER CABINETS SUPPLIED TO ORDER IN ANY SIZE WOOD & HAND PAINTED FINISHES STONE • GRANITE • MARBLE • SHELVING
HOME DEM ON DEM WADIA 6, MICROMEGA CD3, TDL, SME, TEAC, VRDS 10, IMPULSE
0730 - 895194
VALVE SPECIALISTS ON A SUPERIOR LEVEL
AUDIO ALCHEMY • TEAC • NAD • TRIPOD • ALPHASON • PIONEER • DENON

HERTFORDSHIRE

Hi-Fi City

Aiwa, Arcam, Bose, Canon, Cerwin Vega, Denon, Jamo, JPW, Kenwood, Marantz, Mission, NAD, Philips, Pioneer, Rogers, Rotel, Sennheiser, Sony, Tannoy, Target, Technics, Thorens, Wharfedale.

0% CREDIT AVAILABLE • FREE LOCAL DELIVERY
12 YEARS SOUND ADVICE (ASK FOR DETAILS)

FRIENDLY PROFESSIONAL ADVICE
WATFORD (0923) 226 169
15 CHARTER PLACE, HIGH STREET, WATFORD

HUMBERSIDE

Lend us your ears and
we'll blow your mind . . .

Audio Innovations, B & W, Celestion, Cyrus, Denon, Inca Tech, Kenwood, Kef, Marantz, Michell, Mission, Meridian, Mordaunt-Short, NAD, Nakamichi, Philips, Pioneer, Panasonic, Quad, Revox, Rotel, Sony, Tannoy, Technics and more.

Audition the very best at South Humberside's
premier Hi-Fi dealer . . .

MANDERS HI-FI LTD.
AUDIO • TV • VIDEO & SATELLITE SALES

2-4 EDWARD STREET (Off Pasture St.)
GRIMSBY. TEL: (0472) 351391

Dealer Guide

KENT

KIMBERLEY HI FI

A Sound Investment

SEPERATE DEMONSTRATION ROOM

BRANDS STOCKED: DENON TECHNICS KENWOOD AIWA NAD DUAL WHAFEDALE MISSION MARANTZ SPKS TANNOY CASTLE MONITOR AUDIO HECO JAMO CERWIN VEGA CELESTION ROTEL

SOUTH LONDON'S AND NORTH KENT ONLY



LARGE RANGE OF
ICE INC PIONEER
PANASONIC & JVC

193 BROADWAY, BEXLEYHEATH, KENT Tel: 081 304 3272

LONDON



ZEBRA

081 688 2093/2491
18 BRIGHTON ROAD
SOUTH CROYDON

MANCHESTER



30-32 SHUDEHILL,
MANCHESTER M4 1EY
TELEPHONE 061 834 6700

Main Agents for:

JBL, Mission, B & W, Wharfedale,
Aiwa, Teac, Dual, Thorens, Panasonic,
Pioneer, Technics, Sony, Bose,
Trio-Kenwood.

WEST MIDLANDS

HORNTON ELECTRONICS (1987) LTD

8-9 Lower Temple Street, Birmingham B2 4JD
Telephone: 021 643 0972

Aiwa • Denon • Marantz • Mission • Cyrus •
Monitor Audio • Rotel • Canon • Infinity •
Mordaunt Short • Sony • Technics • Wharfedale

Open 9-5.30 Mon-Sat. Service Dept.



Credit to £1000



LANCASHIRE



HI-FI
SPECIALIST

■ TECHNICS ■ SONY ■ PIONEER
■ PANASONIC ■ KENWOOD ■ DUAL
■ ARISTON ■ CREEK ■ CASTLE

■ QUAD ■ B&W ■ MARANTZ ■ SPENDOR ■ THORENS
■ ARCAM ■ ROTEL ■ WHARFEDALE ■ DENON ■ YAMAHA
■ TANNOY ■ PHILIPS CD ■ CELESTION ■ ROGERS
■ MORDAUNT SHORT ■ FOUNDATION ■ MONITOR AUDIO

■ AND MANY MORE

BIG DISCOUNT • TWO YEAR GUARANTEE ON HI-FI
EXCELLENT COMPARATOR DEMONSTRATIONS
PRIVATE LISTENING ROOM • FREE HOME INSTALLATION

CHORLEY (0257) 271935

54 Chapel Street, Chorley

LEICESTERSHIRE

SOUND ADVICE

THE MIDLANDS LEADING
BRITISH EQUIPMENT
SPECIALISTS,
FOR OVER A DECADE

NAIM • LINN • MICROMEGA • MISSION
CYRUS • ROYD AUDIO • REVOX
• SENNHEISER • ROTEL • YAMAHA
• NAKAMICHI • EPOS • CREEK • REGA • JPW
• ARCAM • MERIDION • MORDAUNT-SHORT

EXCLUSIVE REGA AGENT:

LEICESTERSHIRE & NOTTINGHAMSHIRE
TEL LOUGHBOROUGH : 0509 218254

Norman H. Field Hi-Fi

Consultants for Home High Fidelity

■ B & W ■ Thorens
■ Denon ■ Tannoy
■ Castle ■ Yamaha
■ Dual ■ Kenwood
■ Mordaunt-Short
■ Technics

NAD

Two-year guarantee
Private Listening Rooms

HURST STREET
BIRMINGHAM B5 4BJ
Telephone: 021-622 2323

WEST MIDLANDS



THE MOST EXCLUSIVE INDEPENDENT HI-FI STUDIO

The internal atmosphere and easy
access makes it so much more
exciting choosing your hi-fi from
the finest audio products available.

Just off the High Street, Bloxwich,
Walsall, West Midlands.
(Ample free parking)
(OFF M6 JUNCTION 10)

Tel: (0922) 493499-473499
Just call in or phone Richard or Dorian
for a demonstration.

EST 1981

ALBARRY • ACOUSTIC ENERGY • ARCAM • ART AUDIO • AUDIOLAB • AUDIO ALCHEMY
• AUDIO QUEST • B&W • BOSE • CABLE TALK • CHORD • CYRUS • DPA • ENSEMBLE
EPOS • INFINITY • JPW • KEF REFERENCE • MARANTZ • MERIDIAN • MICROMEGA
MISSION • MOTH • MUSICAL FIDELITY • NAKAMICHI • ORTOFON • PROJECT • QUAD
ROKSAN • ROGERS • ROTEL • SPENDOR • SUMIKO • SYSTEM DEK • TDL • THORENS
TRIANGLE • TUBE TECHNOLOGY • VAN DEN HUL • VANDERSTEEN • YBA • SONIC LINK
• TRIANGLE • INFINITY • SPENDOR

MIDDLESEX

Northwood AUDIO

126 Pinner Road, Northwood, Middlesex
HA6 1BP. Tel: 0923 820877



STOCKISTS OF

AUDIO INNOVATIONS.



CASTLE ACOUSTICS, CYRUS, DIAMOND
ACOUSTICS, EXPOSURE, HECO, HEYBROOK,
INFINITY, MARANTZ, MISSION, NAD, ROTEL,
SNELL, THORENS. PLUS MORE.

10% WORTH OF FREE ACCESSORIES
WITH ANY ITEM OVER £200.

• 2 DEM ROOMS • INSTANT CREDIT •



Now also at:

98 Cambridge Street, Aylesbury, Bucks.

NORFOLK



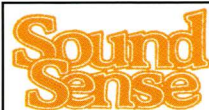
Near Norwich
Norfolk.
Tel: (0508) 70829

Basically Sound of Norfolk

STOCKISTS OF LEADING HI-FI

Arcam, Linn, Naim, Rega, Dichi, Audiolab, Creek,
Epos, Denon, Nakamichi, Acoustic Energy.

LONDON



350 Edgware Road
London W2
Tel: 071-402 2100
Fax: 071-724 7750

AIWA, AUDIO INOVATIONS, AUDIO QUEST, ARCAM, ALPHASON, B&W,
CASTLE, CELEF, DALL, DENON, DUAL, FURUKAWA, HARMAN KARDON,
INFINITY, JBL, JPW, KENWOOD, HEYBROOK, MARANTZ, MISSION, MONITOR-
AUDIO, MUSICAL FIDELITY, NAKAMICHI, ORTOFON, PIONEER, QED,
REVOLVER, ROGERS, ROTEL, SERWIN VEGA, SONY, TANNOY, TARGET, TEAC,
TECHNICS, THORENS, WHARFEDALE, VAN DEN HUL, YAMAHA

ELECTRO CENTRE

244 SOHO ROAD, HANDSWORTH, BIRMINGHAM
TEL 021 554 1878 & 523 2426

FULL RANGE OF HI-FI

PIONEER, TECHNICS, AKAI,
KENWOOD, JVC, SONY, AIWA,
Guaranteed the lowest price in the UK.
24 Hour Mail Order Facility Available

HI-FI CHOICE

The World's
No.1
Buying Guide

Classified

Dealer Guide

NOTTINGHAMSHIRE

NOTTINGHAM ANALOGUE STUDIO



NAS Here we can offer you what we consider the ultimate in domestic musical reproduction.

CROFT • ALBANY • EAR • TUBE TECHNOLOGY • MENTOR • ETC

0773 762947

DEFINITIVE AUDIO

As importer of the excellent Horning loudspeakers, and distributor of the remarkable living voice 'Air Partner' loudspeaker system, Definitive Audio will introduce you to a range of carefully selected products in an informal and realistic domestic environment. Having clearly identified your needs and experienced a coherent hierarchy of components, you will be able to make an informed, educated choice.

Definitive Audio is a specialist, appointment only service.

Mon - Sat 9.30 - 8.00 Telephone/Fax: (0602) 813562

OXFORD

o v e r t u r e

arcam	jpw
acoustic energy	linn products
audio alchemy	meridian
audio technica	mission
cyrus	naim audio
denon	quad
epos	rotel
heybrook	yamaha

3 Church Lane, Banbury, Oxon
(0295) 272158

SHROPSHIRE

SHROPSHIRE HI-FI THE HI-FI AND AUDIOVISUAL SPECIALIST

AUDIO TECHNICA, DELTEC, DENON, DUAL, INFINITY, KENWOOD, MARANTZ, MORDAUNT SHORT, MUSICAL FIDELITY, MONITOR AUDIO, ORTOFON, PIONEER, PROAC, QED, ROTEL, SONY, E S, TANNOY, TARGET, TEAC, THORENS, TOWNSHEND, WHARFEDALE, ETC.

2 Demonstration Rooms, Free Parking, Free installation, Repairs, Credit Available.

SHROPSHIRE HI-FI, ST. MICHAEL'S STREET, SHREWSBURY 0743 232065

SMC GROUP

STAFFORDSHIRE

Active Audio

ARCAM, AUDIO INNOVATIONS, CELESTION, CYRUS, DENON, KEF REFERENCE, MERIDIAN, MARANTZ, NAKAMICHI, PIONEER, MUSICAL FIDELITY, REVOLVER, ROKSAN, ROGERS, ROTEL, RUARK, TANNOY, YAMAHA, ETC.

Active Audio

29 Market Street
Tamworth, Staffs
Tel: (0827) 53355

Active Audio

29 Stafford Street
Hanley, Stoke-On-Trent
Tel: (0782) 214994

Car Parking

SURREY

All the very best equipment plus the world-famous Custom Cable service. Surround sound demo rooms. Free local delivery and installation. Phone for our unbeatable price list.

UNILET 081-942 9567
HI-FI SOUND ADVICE AT A BETTER PRICE
35 High St, New Maiden, Surrey

SUSSEX

WORTHING AUDIO

20 Teville Gate, W. Sussex. BN11 1UA Tel: (0903) 212133
The friendly shop with the best sound systems in the South.
Friendly advice • 3 yr guarantees • easy parking
Open Mon-Sat 10am-6pm Late night Wed 7:30pm

Agencies include: Arcam, Exposure, JPW, Naim Audio, Marantz, Orelle, Origin Live, Ruark, Audio Technica, Target, TDL, Tripod, and many more.

WEST SUSSEX

PHASE 3 HIFI

THE SOUTH'S LEADING HI-FI SPECIALISTS

Listening Rooms • Dedicated 'Home Cinema' Demonstration Room

ADCOM • ARCAM • B&W • MATRIX-CASTLE • CELESTION • CREEK • DENON • HEYBROOK • KEF • REFERENCE • KENWOOD • LEXICON • MARANTZ • MERIDIAN • MONITOR AUDIO • MUSICAL FIDELITY • NAD • NAKAMICHI • SHEARNE • SPENDOR • TANNOY • THORENS • YAMAHA • including all 'Home Cinema' products

215 TARRING ROAD, WORTHING, WEST SUSSEX BN11 4HW
TELEPHONE: (0903) 245577

NORTH WALES

ELECTRO-TRADER HI-FI

Phone John Hodgkinson for expert advice, personal service & keen prices

PRODUCT LIST:

ROTEL, YAMAHA, NAD, TEAC, HARMAN KARDON, MICHI, ALPHASON, AR, HECO, HEYBROOK, INFINITY, JBL, KEF & MORE!

19 COLWYN CRESCENT, RHOS-ON-SEA, COLWYN BAY, NORTH WALES.

PHONE: 0492 548932

YORKSHIRE

LINN NAIM REGA ARCAM QUAD DENON YAMAHA
AUDIOLAB CASTLE HEYBROOK NAKAMICHI
MARANTZ KEF TARGET ACOUSTIC ENERGY



send for our newsletter & privilege club details

SOUND WITH STYLE

THE HI-FI EXPERTS

284 Glossop Road Sheffield S10 2HS
tel 0742 737893
81 Nether Hall Road Doncaster DN11 2QA
tel 0302 321421

Specialist Services & Manufacturers

MULTIROOM INSTALLER

"One of The 5 Best Hi-Fi Shops in the World"

QED Systemline • Meridian Roomlink • In-Wall Speakers . . . Consultancy • Design Professional Installation

GRAHAMS HI-FI

Canonbury Yard, 190a New North Road, London N1 7BS . Tel: (071) 226 5500

Ring for a chat and a map!

SERVICING

• SOUNDS AROUND •

Professional Service Repairs and Accessories
Agent for Golden Dragon Valves

146 Clarendon Park Road, Leicester
Telephone: Leicester 702442

SPECIALIST DEALERS

HEATHERDALE AUDIO

TEL: 0903 261213 or 0860 660001

This Months Summer Bargains

Q.E.D. Stereo pre-amplifier	£175
Voyd (Voyd) turntable as new	£1195
Graham 1.5t lonearm (gold finish) new	£2500
Audionote ANJ speakers ex-demo fully guard	£650
Audionote ANE speakers ex-demo fully guard	£1150

Audio Innovations Bargains

800 Stereo power amplifier ex-demo	£395
200 stereo power amplifier ex-demo	£295
300 Int. amplifier ex-demo	£295
800 Moving Coil transformer ex-demo	£120
1000 Moving Coil transformer ex-demo	£295

New Audionote Stock

FULL RANGE OF AUDIONOTE SPEAKERS & AMPLIFIERS STOCKED

Few pairs slightly marked Audionote ANJ speakers at only £495

Open 9am to 9pm 7 days a week

Main Dealer for: VOYD-Audionote and Reference Imports

DEMONSTRATIONS A PLEASURE

HI-FI CHOICE

The World's No.1
Buying Guide

Dealer Guide

Specialist Services & Manufacturers

DISTRIBUTOR

Klipsch
HORN LOUDSPEAKERS
UK DISTRIBUTOR
021-430 7817
A LEGEND IN SOUND KLIPSCH AND ASSOCIATES INC

2ND HAND DEALER

hi CHOICE

081 892 5231

Equipment bought or part exchanged
Full demonstration facility by appointment.
Major credit cards are accepted.
9.30am to 8.00pm 7 days

hi Only the best is good enough . . .

Counterpoint SA20 'pwr amp' .....mint s/h.....£1095	Naim NAC 52.....mint s/h.....£3200	Meridian 602/606.....mint s/h.....£1595
Audio Innovations 2nd Audio.....x-demo mint.....£1495	Naim Hi Cap new/old.....mint s/h.....£325/425	YBA CD2.....new.....£2295
Naim NAP250.....mint s/h.....£795	B&W 801 Matrix III.....new.....£1895	KRELL MD1, SBP64 (reference upgrade).....mint s/h.....£7500
Valfet Monoblocks.....mint s/h.....£1895	Naim SBL's.....mint s/h.....£850	Wadia x32 dac.....mint s/h.....£895
Audio Research LSI (black).....mint s/h.....£895	Apogee Centaur Minors.....mint s/h.....£795	Micromega Junior, Leader, Logic.....new.....£p.o.a
Meridian 201/209.....mint s/h.....£450	Apogee Stage.....new.....£1750	Linn LP12/Lingo/ARO/Troika.....mint s/h.....£1495
Meridian 601 DSP pre.....mint s/h.....£1750	Apogee Caliper Signature.....new.....£2250	Poksan Xerxes/1.5/transfiguration.....mint.....£2795
Counterpoint SA3.1 pre (mm/mc) vgc s/h.....£895	U.K.D. Callas (Sonus Faber!).....new.....£595	Eminent Technology ET II.....mint s/h.....£695
Croft Micro pre.....vgc s/h.....£150	KEF C85.....mint s/h.....£350	Well tempered T.T and ARM/Pacesetter/Sig 2000.....£1195
Conrad Johnson PVII pre (mm/mc) new.....£1650	Audio Statics ES100/SW100.....mint x-demo.....£2995	Voyd Valdi/RB 300 or AKITO.....mint.....£595
Albarr PPI integrated.....mint s/h.....£275	Neat Petite.....new.....£350	Linn LP12/EKOS/Lingo.....mint s/h.....£1495
Musical Fidelity A1 integrated.....mint s/h.....£150	Celestion 700 SE.....new.....£895	Koetsu Vrushi.....mint s/h.....£995
Beard BB 100.....new.....£795	Meridian 602 (twin).....mint s/h.....£995	Nakamichi Dragon.....mint s/h.....£1195

SUMMER SALE

VALVES

TRADE ANNOUNCEMENT

ASTON AUDIO HI-FI SPECIALISTS

EX-DEMONSTRATION & SECONDHAND SALE

SPEAKERS

Magnetplanar SMG.....£199.00 SH

Meridian D600 B (Rosewood).....£2499.00 XD

Meridian Argent 2 (R/W).....£399.00 XD

Musical Fidelity MF10.....£299.00 XD

AMPLIFIERS

Creek 6060.....£299.00 XD

Musical Fidelity P180.....£499.00 XD

NAD 1000/2100 pre-power.....£299.00 XD

Yamaha AXX700 AV amp.....£299.00 NEW

Yamaha RXV660 AV receiver.....£299.00 NEW

COMPACT DISC PLAYERS

Arcam Delta 170.3 transport.....£599.00 XD

Arcam Delta Black Box 5 DAC.....£379.00 XD

Arcam Black Box 3 DAC.....£199.00 XD

Audio Alchemy DDE.....£199.00 XD

Deltac Little Bit.....£199.00 XD

Deltac Bigger Bit.....£399.00 XD

Meridian CD208 CD/pre.....£999.00 XD

Meridian ADC 607.....£599.00 XD

Mission DAD5 transport/dac.....£399.00 XD

Quad CD66.....£399.00 XD

TAPE DECKS

Nakamichi CR7E.....£1299.00 XD

TURNTABLES

Linn Aixs/Basik/K9.....£199.00 SH

SYSTEMS

Nakamichi Sound Space 7.....£899.00 XD

INTEREST FREE CREDIT
FREE DELIVERY ON MAIL ORDER IN UK
Full list available on request from:
ASTON AUDIO - HI-FI SPECIALISTS
WEST STREET, ALDERLEY EDGE, CHESHIRE
TELEPHONE: 0625 582794 FAX: 0625 582794

VALVES/TUBES FROM WEST EUROPE

Please note supplies to dealers, manufacturers and distributors only - minimum export order £200 GBP/\$350 USD. Minimum UK order £50 plus VAT

■ Limited stocks of West European made 6L6GC, 12AT7, 12AU7, 12AX7, 2116E, ECC81, ECC82, ECC83, EL34, EL84, KT66, KT88, VT4C by G.E.C. Mullard, Brimar, Tungstam, etc. We probably have the largest stocks of West European manufactured valves in the world.

■ Low cost, large volumes available from Russia/East European factories.

■ One million valves/tubes in stock including cathode ray tubes, tube sockets, etc.

■ DG7-32 C.R.T. (for Marantz tuner) £24.00 each. 200 in stock. Discount for quantity.

Send today for our updated audio valve catalogue

Billington Export Ltd
1E Gilmans Industrial Estate, Billingshurst, Sussex RH14 9EZ, UK.
CALLERS STRICTLY BY APPOINTMENT ONLY
FAX: (0403) 783519. TEL: (0403) 784961

THE AUDIO VISUAL ASSOCIATION

Are you a dealer or manufacturer involved in:

Home Cinema • High Definition TV
• Large Screen Video Projection
• Satellite Television • Laser Disc Hard & Software • Home Automation • Dolby & THX Stereo • Surround Sound

The Audio Visual Association is committed to fostering the highest standards of technology and services from its members, whilst offering them the latest information, tuition and advice available across the entire A/V industry.

For information on membership please contact:
THE AUDIO VISUAL ASSOCIATION
Campion House, 7 Campion Terrace, Royal Lemington Spa,
Warwickshire CV32 4SU. Tel/Fax: (0926) 430 933

VALVE AMPLIFIERS

Recession...? What Recession?

HiFi Choice is the only Hi Fi Buying Magazine to report a recent increase in newstand sales*.

To find out more about our advertising options, call Julian O'Kelly on (071) 631 1433 ext. 7643

* (ABC Figures July-Dec 1992)

Audiophile Cartridges,
Orfonon MC3000II,
MC2000II, Quasar, Audio
Technica AT-ART1, AT0C30.
I also supply: Denon, Shure
& Goldring
Phone/write for
exchange/discount prices
& reviews.
Ian Harrison, 7 Mill Hill,
Repton, Derby. Telephone:
(0283) 702875

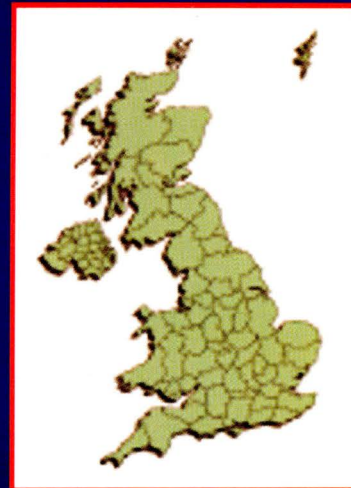
ALEMA UK LTD

Triode Amplifiers
Triode & Tube Amplifier
Manufacturers
"Probably the best amplifiers
in the world"
Phone for your nearest
stockist: (0273) 202 637
Prices ranging from £399 - £35,000

Classified

Choosing a good hi-fi dealer is the most vital step in acquiring the system that is right for you. This unique directory gives full information on dealers in your area

DEALER Directory



AVON

AUDIO EXCELLENCE, 65 Park Street, Bristol. (0272) 264975. Great hi-fi carefully selected and demonstrated by friendly enthusiastic staff. Closed Mon. **BADA**

PAUL GREEN HI-FI LTD, Kensington Showrooms, London Road, Bath. (0225) 316197. Musical Fidelity, Krell, Creek, Rogers, Quad, Yamaha, Rotel, Aiwa, Marantz, AVI. Cust. car park. Best selection in the West. **BADA**

V' AUDIO, 36 Druid Hill, Stoke Bishop, Bristol B59 1EJ. (0272) 686005. ATC, AVI, Acoustic Energy, Audio Innovations, AMC, Analogue Electronics, Cadence Valve, Chord Amps, Exposure, Jamo, LFD, Pink Triangle, Ruark, Michell, REL, Sansui, SME (inc20A), SonicLink, Stax, Townshend, Wadia. Demos by appt only, home trial facilities, free installation, service facilities.

BERKSHIRE

ARC AUDIO, 9 Dukes Ride, Crowthorne, Berks, RG11 6L2. (0344) 762201. Denon, Harman Kardon, JPW, Marantz, Monitor Audio, Onix, Rogers, Tannoy, Thorens, Yamaha. Demo facilities, no appt necessary, home trial facilities, free install. Access, Visa, Diners. Open Mon-Sat 9-6pm (closed Wed at 1pm)

B&B HI-FI, 11-12 Market Place, Reading, Berkshire, RG1 2EG. (0734) 583730. Aiwa, Denon, Kenwood, Mission, NAD, Panasonic, Pioneer, Rotel, Sony, Technics. Free installation. Service dept. Access, Visa, Credit Facilities including interest free credit subject to status. 9.30-5.30, Sat 9-5.30. Also at: Bracknell, Maidenhead, High Wycombe, Newbury. NEWBURY AUDIO, 2 Weavers Walk, Brook Street, Newbury, Berkshire, RG13 1AL. Tel/Fax (0635) 33929. Autotech, Creek, Denon, Epos, J.P.W., Linn, Marantz, Micromega, Ruark, Tripod. Full demonstration facilities. Home trial, Free install, and delivery. Service and parts dept on site. Various financial facilities available. Open 10-5.30 Mon-Sat.

READING HI-FI CENTRE, 4 Queen's Walk, Reading RG1 7QF. (0734) 585463. 'The best equipment, advice and service from Berkshire's premier Hi-Fi emporium'. **BADA**

BUCKINGHAMSHIRE

AUDIO INSIGHT LTD, 53 Wolverton Rd, Stony Stratford, Milton Keynes. (0908) 561551. Arcam, Audiolab, Heybrook, Ion, Linn, Meridian, Quad and more. Access, Visa, Finance, Dem. Room etc. DEJAC HI-FI CONSULTANTS, 21 The Broadway, Old Amersham, Bucks, HP7 0HL. Tel 0494 433173. AMC, Arcam, Bose, Meridian, Quad, Rotel, Denon, NAD, Tannoy, Mission, TDL. 2 Dem Rooms. Appts Necess. Free Installation. Tricity Finance, Instant Credit, Open 9.30-5.30pm including Sat.

D.L. CHITTENDEN LIMITED, 59-61 The Broadway, Chesham, Bucks, HP5 1BX. (Opposite Boots). (0494) 784441 Philips, Aiwa, Denon, Kenwood, Canon Audio, Koss, Wharfedale, Nicam, TV & Video, Surround Sound, AV Systems. Showroom Demonstrations from expert and friendly staff. No appts nec. Service Department. Credit facilities available. Open 8.30 to 17.30 Mon-Sat. TECHNOSOUND, 7 Granville Square, Willen Centre, Milton Keynes. (0908) 604949. Also at Luton and Dunstable.

CAMBRIDGESHIRE

AUDIO FILE, 2 Foundry Walk, Market Hill, St. Ives, Cambridgeshire. (0480) 66123. Naim, Rega, Quad, Yamaha, Mission, Arcam, Denon, Audio Lab, Meredion, JPW. Musical Fidelity. 9.30am-6pm 6 days. 0% Credit. **BADA**

STEVE BOXSHALL AUDIO, 41 Victoria Rd, Cambridge CB4 3BW. (0223) 68305. 10-6 - 6 days. 3 dem rooms, home trial, appts. preferred. Free installation and service dept. Access, Visa & credit. **BADA**

UNIVERSITY AUDIO, 1-2 Peas Hill, Cambridge. (0223) 354237. Roksan, Quads, Meridian, Arcam, Musical Fidelity, Marantz, ATC, Pioneer, Yamaha, Infinity. 2 dems, 1 single speaker. Home trial, free install, Service Dept. Visa, Access, Amex, Credit. 9-5.30.

CHESHIRE

ASTON AUDIO, 4 West St, Alderley Edge. (0625) 582704. Wide range of specialist audio, interest free credit. Visa, Access. Home trial. **BADA**

DOUG BRADY HI-FI, Kingsway Studios, Kingsway North, Warrington. (Padgate 0925) 828009. 'Largest choice of specialist Hi-Fi in N.W.' All credit cards. 3 Dem rooms. Open 6 days. **BADA**

CHRIS BROOKS HI-FI, 29 Gaskell St, Stockton Heath, Warrington. (0925) 261212. Tues-Sat 10-6. 2 dem rooms. Credit facilities. All credit cards. Total absence of bull****. **BADA**

CONGLETON HI-FI, 1/1a Duke St, Congleton, Cheshire, CW12 1AP. (0260) 297544. Acoustic Energy, Arcam, B&W, Denon, Epos, Linn, NAD, Nakamichi, Onix, Royd, Target, etc. Superbly appointed single speaker demo facilities. No appts nec, home trial facilities, free installation. 2 year guarantee on all equipment. Access, Visa. Open Mon-SAT, closed Weds.

NORMAN AUDIO, 106 Victoria Str, Crewe. (0270) 211091 Fx (0270) 211795. For full details see our Lancashire entry. **BADA**

PETERSHI-FI, 4 St Michaels Sq, Grosvenor Precinct, Chester. (0244) 322063/319392. Arcam, Technics, Sony, Marantz, Dual, Denon, Tannoy, Wharfedale, Quad. 2 Single speaker Dem rooms, no appts nec, free installation service dept. Access, Visa, Amex. Peters credit chargecard. Mon-Sat 9-5.30. PETER MARTIN HI-FI, 4 Duke St, Congleton (0260 273206), 1 Stanley St, Leek (0533 383780), Celestion, Creek, Exposure, Musical Fidelity, Pink Triangle, Rotel, Ruark, Sony, Systemdek, Tannoy, Technics. 2 Demo Rooms, No appts nec, Home trial, Free install, Service dept. Access, Visa, Lombard Tricity. Open 4-5.30, 6 days a week. SWIFT HI-FI, St Annes Parade, Wilmslow. (0625) 526213. Aura, B&W, Denon, Kenwood, Marantz, NAD, Pioneer, Rotel, Systemdek, Tannoy, Revolver, JPW. Open 9.30am-6:00pm dem room. No pressure! **BADA**

CLEVELAND

ACTION ACOUSTICS, 155-157 High Street, Redcar, Cleveland TS10 3AN. 0642 480723. Audio Innovations, Cambridge, Harman-Kardon, JBL, Michell, Musical Fidelity, Pink Triangle, Revox, Rogers, Thorens, etc. Dem Room. Appts nec. Home trial facilities, free installation, service dept. Access, Visa & H.P. Open 9.15-5.30.

GILSON AUDIO LTD, 172 Borough Road, Middlesbrough. (0642) 248793. Linn, Exposure, Arcam, Mission, Cyrus, Denon, Marantz, Rotel, Pioneer, Audiolab, Tannoy. Demonstration facilities in main shop and 1 dem. room, appt nec, home trial facilities, free install. on request, service department. Access, Visa, HP. 10-5 - 6 days.

CORNWALL

ART OF MUSIC, Near Launceston, Cornwall. (0566) 86649. AC Magnum, Basis, CAT, Cogan Hall, Diamond Acoustics, Graham, Lumley Reference, Magnum Dyalab, Moth, REL, Silver Sounds, Sonic Link, Transfiguration. Dem studio appointments necessary, home trial facilities, & free installation. Open 7 days.

DEFINITIVE AUDIO, Cornwall, Near St Austell, PL26 6R7 (0726) 844039. For Audio Components/Systems which actually work! Impulse, Micromega, Perception, Audio Innovations, Audio Note, Voyd, Systemdek, JPW, Silver Custom Design, D.N.M. Demonstration by appointment only. Demonstrations throughout Cornwall, Free Installation. Service Facilities.

RJF Audio Visual, 84 Pendarves Str, Tucking Mill, Camborne, Cornwall TR14 8NJ. (0209) 710777/612260. Exposure, TDL, Michell, Musical Fidelity, Nakamichi, Bower & Wilkins, Micromega, Pink Triangle, Pro-jekt, Perception, Harman Kardon. Integral Demo room/showroom and special home dems. Appts nec, home trial, free install, service dept. All cards, switch and transax. Open Mon-Sat 9.30-5.30.

CUMBRIA

MISONS SOUND & VISION, 11 Warwick Road, Carlisle CA1 1DH. Tel (0228) 22620. Bang & Olufsen, Arcam, Quad, NAD, Yamaha, Sony. Demo Suite, No appts nec. Home trial facilities. Free Installation, Service Department. 9-5.30 Mon-Fri. Thurs 9-1. Sat 9-5.

PETER TYSON, 6 Abbey St, Carlisle, Cumbria, CA3 8TX. "Cumbria's premiere hi-fi centre". Part exchange welcome. (0228) 46756. Linn, Musical Fidelity, Cyrus, Marantz, Denon, Philips, Nakamichi, Technics, Pioneer, Creek & more. Dem room. Demos without obligation. Home trial, Free install. In-house service dept. Access & Visa. HP 9-5.30pm.

DEVONSHIRE

CHELSTON HI-FI, 38 Walnut Road, Chelston, Torquay, Devon TQ2 6HS. Tel: (0803) 606863. Denon, Marantz, Rotel, Musical Fidelity, Acoustic Energy, NAD, Castle, Heybrook, Celestion, JPW etc. 2 dem rooms. Home trial. Free installation. Access, Visa, Amex, Diners, Hi-Fi Markets Chargecard. Credit facilities. 9.30-7.30 Mon-Fri, 9.30-6 Sat.

THE HI-FI ATTIC, 58 New George St, Plymouth, Devon PL1 1PJ. (0752) 669511. One of the South West's oldest hi-fi shops. We stock all leading manufacturers & if out of the ordinary, we'll get it for you. We are about to be completely re-furnished to give a large demo room with free coffee!! (& whiskey to console the big spenders!!) We have a genuine interest in hi-fi & believe the customer always comes first. Single speaker comparators & a (hopefully) relaxed atmosphere. Bring your own

equipment/dics etc. along to have a listen. We have been completely re-furnished to give a large demoroom with free coffee. Home demonstrations & installations & interest free credit over £700. Open 9.30-5.30 & demos can be by appt. STUDIO ACOUSTICS. (0626) 67060. OCM Technology, Shahinian Acoustics, Superplan amplifiers, Nobis loudspeakers & amplifiers, Mirror Image Audio, J.A. Michell, plus other fine equipment. home trial, free install, in-house service dept. Mon-Fri 9-4.30, appointments only.

DORSET

DAWSONS, 23 Seamoore Road, Westbourne, Bournemouth, Dorset. (0202) 764965. B&O, Castle, Canon, Jamo, JBL, Pioneer, Sony, Target, TDL, Technics. No appts necessary. Free install, Service depart. Various credit facilities available. Open 9.5.30 6 days a week.

SUTTONS HI-FI, 18 Westover Road, Bournemouth. 0202 555512. Linn, Arcam, Mission, Quad, Audiolab, Rotel, Yamaha, Denon, etc, 2 Single Speaker Listening Rooms, Home Demonstrations, Free Installations. Mon-Sat 9-5.30. Call for details. **BADA**

ESSEX

AUDIO T, Gants Hill, 442-444 Cranbrook Rd, Gants Hill, Ilford, Essex 1G2 6LL. Tel: 081 518 0915 Fax 081 554 8463. Arcam, Audiolab, Cyrus, Denon, Kef, Meridian, Quad, Micromega, Yamaha & many more. Mon-Sat 10-6. 3yr gntee on Hi-Fi. Free del & instal. 30 day upgrade scheme. Home dems. PX. **BADA**

1ST AND FOREMOST HI-FI CENTRE, 49-55 North Station Road, Colchester, Essex CO1 1RQ. Tel: (0206) 549842. Fax: (0206) 762900. Tlx: 987873 SAIDG. Trio Kenwood, JVC, Akai, Aiwa, Sony, Pioneer, Technics, Nakamichi, Panasonic, Revox, etc. Home trial, free installation. Service dept. Instant credit available + all credit cards accepted. Mon to Sat 9am-6pm.

BRENTWOOD MUSIC & HI-FI CENTRE, 2 Ingrave Rd, Brentwood. (0277) 221210. Alphason, Denon, Marantz, Quad, DNM, Rock/Glastonbury, E.A.R., Exposure, Kelvin Labs, Rotel, plus many more. Dem facilities, home trial, evening appts, (high end). Home installations. System problem diagnosis. Mon-Sat 9.30-5.30 (Thurs from 10am, Sat from 9am). Credit facilities, Access, Visa, Hi-Fi Markets Chargecard. Service facilities.

LYON AUDIO, 16 Peartree Business Centre, Peartree Road, Stanway, Colchester, Essex CO3 5JN. (0206) 560259. Mission, Cyrus, Arcam, Denon, Rotel, KEF, Rogers, Marantz, NAD, Tannoy. Dem facilities. Mon-Sat 9-6. Installations. Access, Visa, Instant credit. Service dept.

RAYLEIGH HI-FI, 44a High Street, Rayleigh, Essex. (0268) 779762/747571. 216 Moulsham St, On-the-Parkway, Chelmsford. (0245) 265245. 132-134 London Road, Southend-on-Sea. (0702) 435255. A&R, Audiolab, Creek, Cyrus, Denon, Epos, Linn, Meridian, Mission, Naim, Quad, Rega, Roksan, Royd. 0% finance. **BADA**

GLOUCESTERSHIRE

AUDIO EXCELLENCE, 58 Bristol Road, Gloucester. (0452) 300046. Great Hi Fi carefully selected and demonstrated by friendly and enthusiastic staff. Closed Mon. **BADA**

BRITISH AUDIO DEALERS ASSOCIATION



INDICATES MEMBERSHIP OF BRITISH AUDIO DEALERS ASSOCIATION

AUDIO T, 40-42 Albion St, Cheltenham, Glos. GL52 2RQ. (0242) 583960. Fax (0242) 226435. Great hi-fi from Arcam, Audiolab, Cyrus, Denon, Linn, Meridian, Mission, Rogers, Rotel, Yamaha and many more. Mon-Fri 10-6pm. Sat 9.30-5.30. 3 yr gntee on Hi-Fi. 30 day upgrade scheme. Home dems. PX. Single speaker dem room Free del. and instal

ITALIA

HUTCHINSONS, 295-297 High Str, Cheltenham, Glos. GL50 3HL. (0242) 573012. Pioneer reference point, Technics, Dual, NAD, iWharfedale, 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, Audiolab, 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.

ITALIA

HAMPSHIRE 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.

ITALIA

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.

ITALIA

HEREFORDSHIRE

ENGLISH AUDIO, 95 Whitecross Road, Hereford HR4 0DG. (0432) 355081. Cyrus Centre, Pink Triangle, Audion, Systemdek, Heybrook, Michi, KEF Reference, Micromega, Nakamichi, Chord, Arcam, Musical Fidelity, Rogers, NAD, Rotel, Denon, Tannoy, Marantz, Mission, Stax, Dual, TDL, Albary, 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. Kington, Herefordshire. (0544) 230254. New Shop open: Castle Video, 1 Spa Centre, Station Crescent, Llandrindod Wells (0857 824 0200) Alphonson, 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, Audiolab, Chord, Denon, Marantz, Meridian, SME, TDL., Teac, Tues-Sat 9.30-6.00.

ITALIA

AUDIO FILE, 27 Hockerill 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.

ITALIA

HERTFORD MUSIC. Music is pleasure. good when choosing your system in our, appointments only, demonstration rooms (and bar!) Home demonstrations encouraged. Systems from £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, Audiolab, 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.

ITALIA

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, SOUND CRAFT 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.

ITALIA

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) 3043272. Pioneer, Technics, Kenwood, Denon, NAD, Aiwa, Tannoy, Mission, Wharfedale, B&W. Separate dem room, no apt 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 dem room, no apt 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 £1000. Amex, Diners, Visa, Access. Service dept.

VJHI-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, Audiolab, Arcam, Mission, Cyrus, B&W, KEF, Sendeo Catalogue. Home Cinema Dem room. No apt nec, Home trial facilities, free installation. Instant credit subject to status. Open 9.30-5.30, latenight Wed till 8.00pm.

ITALIA

NORMAN AUDIO, also at 216 Church Str, Blackpool, (0253) 295661, Fax (0253) 295722.

ITALIA

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.

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. Meridian, 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

ITALIA

LISTEN INN, 6 Hotel Street, Leicester. (0533) 623754 (Fax) 0533 623758. Linn, Arcam, Royd, Heybrook, Creek, Neat, Mission, Cyrus, Audiolab, Quad, Denon, etc. 2 Dem Rooms.

ITALIA

SOUND ADVICE, The Factory, Duke St, Loughborough LE11 1ED. (0509) 218254. Shahinian, 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, Phillips, 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, JPW, Rogers, etc. Separate demo studio. 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. 9.30-6.00 days.

AUDIO T, 190 West End Lane, West Hampstead, London NW6 1SQ.

(071) 794 7848, Fax (071) 431 3570. Great hi-fi from Arcam, Audiolab, 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.

ITALIA

BILLY VEE 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.

ITALIA

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) 436 7165. 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, & 16X9 TV'S. Audiolab, 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.

ITALIA

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

ITALIA

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 8262/63. 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. 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, Sonus Faber. 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 Edgware Road, London W2 1DX. (071) 4022100. Alphonson, 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.

ITALIA

SUPERFI, 2-4 Camden High Street, Camden, NW1 0JH (071) 388 1300. See main entry under Notts for full details.

UXBRIDGE AUDIO - 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.

ITALIA

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!

ITALIA

MIDDLESEX

AUDIO T, 159a Chase Side, Enfield, Middx EN2 0PW. (081) 367 3132, Fax (081) 367 1638. Great hi-fi from Arcam, Audiolab, Cyrus, Denon, Meridian, Micromega, Mission, Philips, Rotel, Yamaha and many more. 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. AV Dept.

ITALIA

HARROW AUDIO, 27 Springfield Rd, Harrow. (081) 863 0938. Mon-Sat 9.30-5.30. A&R, Audiolab, Cyrus, Denon, Epos, Monitor Audio, Musical

DEALER Directory

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. Sunday opening. Open all week. A home cinema specialist. Mail Order. Part exch.

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 install, 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-£200'. 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 Nizam 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, Bromburgh, 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 till 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. 9.30-1 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 4 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 Derrigate, 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/Michell, 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, Deltec, 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. 3yr gntee on Hi-Fi. Free del & instal. 30 day upgrade scheme. Home dems. PX. 2 dem rooms. AV 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, Tanyo, 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), ION, 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. Albany, 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. 9.00-5.00pm. Closed Mon & Wed aft. 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, Shaninian, 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, Deltec, 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. Partexchange, 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, Philips, 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 8LS. (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 (Pourtsmouth), 29 London Road, Portsmouth, PO2 0BH Tel: 0705 663604. 2 Dem Rooms, Closed Mondays. Late night Wednesday. Freeparking. Bus route. Credit facilities. **BADA**

JEFFRIES HI-FI, 4 Albert Parade, Green Street, Eastbourne, East Sussex. Tel: 0323 313336. 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, Audiobab, 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, Audiobab, 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, 1 Becket Buildings, Little Hampton Rd, Worthing. (0903) 2 64141. B&W, Nakamichi, Castle, Denon, Dual, JVC, Mordaunt Short, Philips, Quad, Sony, Technics. 3 dem rooms. Mon-Sat 9-5.30, Wed 9-1pm. Home trial facilities, free install. Credit to £1000, Access, Visa. Service dept.*

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).

TYNE & WEAR

BADA
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 4HC. Tel (0926) 499963. A.R. B&W, LPW, Jensen in car, Marantz, ural 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, CV30W. 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. 9-7six days a week.

AUDIO T, 60 Fleet St, Swindon, Wiltshire, SN1 1RA. (0793) 538222, Fax (0793) 487260. Great hi-fi from Arcam, Audiobab, 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 nec 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 appt 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 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. (0723 374547. Aura, Albarry, 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. Audiobab, 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, Audiobab, 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. Sugen, ProAc, Impulse, Teac, Ruark, Michell, AMC valve, Art Audio valves, Heybrook, Monitor Audio, Albarry. 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, Audiobab, 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. Panaservice in-store service dept. Access, Visa, credit charge. Mon-Sat 9-5.30.

CLEARTONE (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. MonSat 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, Dual, Arcam, Musical Fidelity, Quad, Audio Lab, Philips, 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, DelL & Instal Mon-Sat 9:30 5:30 pm

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

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) 332522 Audio Innovations, Pink Triangle, Roksan, Marantz, Celestion, Linn, Meridian, Mission Cyrus, Ortofon, etc. Mon-Sat 10.00-5.30. Late night Thursdays.

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, Kilmarnick, Ayrshire, KA11 1DH. Tel 0563 40292. Audiobab, 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.

Call Julian O'Kelly to make sure you get listed in the Dealer Directory 071-631 1433

GLASGOW

STEREO STEREO, 278 St. Vincent St, Glasgow G2 5RL. (041) 248 4079. Linn, Naim, Rega, Arcam, Creek, Epos, Castle, Shahinian, Denon and Sehring etc. 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 singlespeaker 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, Audiobab, 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.

ACTION 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.

WEST GLAMORGAN

AUDIO EXCELLENCE, 9 High St, Swansea. (0792) 474608. Great Hi-Fi carefully selected and demonstrated by friendly, enthusiastic staff. Closed Mon.

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.

BADA
PETERS HI-FI Victoria Buildings, Mostyn Avenue, Craigh-y-don, Landudno. (0492) 876788. 1 Single speaker dem room. Open 9-5.30. Closed Wed. See Cheshire branch for details.

The Directory



This is the legendary HiFi 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 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

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.

rated turntable or CD player. 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.

Index

Amplifiers	103
Cassette Decks	106
CD Players	107
CD Transports	110
DACs	110
DATs	111
Headphones	111
Loudspeakers	113
Tuners	117
Turntables - Cartridges	117
Turntables - Integrated	118
Turntables - Motor Units	118



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 overload 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/RΩ	Line inputs	MM	MC	Integrated	Preamp	Power amp	Headphone socket	Remote control	Issue No.
Adcom GCA-510	349	G American power amp with line inputs and passive pot, highly detailed midrange but rather high price.	81	5								121
AMC CVT3030	460	A 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	A 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	G+ Plenty of widgets and an unexpectedly sharp, open and detailed sound. Looks ghastly but sounds strain free.	104	4	•							104
Akai AM-95	630	A- 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	A- 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	G+ Available with or without various MM/MC options, the 'basic' PP1 has an attractively warm, earthy sound.	48	4					•			104
Alchemist Kraken	444	A 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	A Generally lacklustre and bland sound offered on this occasion met with (unexpected) disapproval.	53	3	•							104
▲ Arcam Delta 110/120	1300	G 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	VG 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	G+ 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	VG 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	G 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	G+ 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	G+ 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	E 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	G+ It'll successfully tackle the most difficult of speakers and still provide a very warm, rich and euphonic sound.	46		•						•	116
▲ Audiolab 8000A	430	VG 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	970	VG Very distinctive, almost stark neutrality that will not appeal to all listeners. Good value engineering, nevertheless	157	7	•	•	•		•	•		97
▲ Aura VA-100 Evolution	300	G+ 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	VG 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/P35mkl	1790	VG 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	G+ 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	G+ A substantial British monoblok power amplifier, but not a great deal more impressive than the P35	70							•		50
▲ Concordant Excelsior	1040	E 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	E Fabulous preamplifier. Beautiful imaging, superb detail, plenty of gain on the phono stage; classy build quality too	4		•					•		78
▲ Conrad-Johnson Premier 7	11000	E 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	G 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
Creek CAS 4140 S2	250	A+ 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	G 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	VG Exceptionally load tolerant and very refined in delivery. Extra options available in future	74									80
▲ Denon PMA-250III	160	A- Pretty high resolution for the price, occasionally loses its grip but is generally engaging and enjoyable	55	3	•							121
▲ Denon PMA-350	190	G 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	G+ Denon's latest integrated amp swept the board with its big, brassy if somewhat extravagant sound.	99	5	•							116
▲ Dual CV600RC	160	G 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	VG Valves imitating trannies give exceptional power delivery but not the delicacy and transparency one expects	200							•		60
▲ E.A.R. 802/509mkl	4200	VG 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	G+ 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	A 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	VG 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	G+ 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	G+ 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	G+ 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	A- 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	G 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	A Heybrook has improved the manufacture of its power amp though flaws in the preamp's disc input remain	146	4	•	•				•		104

MUSICAL IMAGES

173 STATION ROAD
EDGWARE
MIDDLESEX HA8 7JX
TEL: (081) 952 5535
FAX: (081) 951 5864

NORTH
N/W
LONDON



MUSICAL IMAGES

45 HIGH STREET
HOUNSLOW
MIDDLESEX TW3 1RH
TEL: (081) 569 5802
FAX: (081) 569 6353

10 MINUTES
FROM
HEATHROW

MAIN DEALERS FOR:

ACOUSTIC ENERGY
ADCOM
AIWA
AKAI
AKG/AR
ALBARRY
ALCHEMIST (KRAKEN)
ALPHASON
ARCAM
AUDIO ALCHEMY
AUDIO INNOVATIONS
AUDIOQUEST
AUDIO TECHNICA
AURA
B & W
BANBRIDGE ACCESSORIES
BANG & OLUFSEN
BEYER DYNAMIC
BOSE
BOSTON
CABLE TALK
CANON
CASTLE
CELESTON
CERWIN VEGA
CREEK
CYRUS
DENON
DUAL
GOLDRING
HARMAN KARDON
HECO
HEYBROOK
INFINITY
JAMO
JPW
JBL
JVC
KEF
KENWOOD
KODAK (PHOTO-CD)
LUXMAN
MARANTZ
MAXELL
MICHELL
MICROMEGA
MISSION

HOME CINEMA - A/V EQUIPMENT SPECIALISTS

Our **SPECIAL SYSTEM** was **£795**

Amp - Rotel - RA940BX 40 x 40 RMS
CD - Rotel - RCD965BX - Award Winner
SPK - Mission - 760i - Award Winner

Interconnect - QED PI
Cable - 10m QED 79 strand
Strands - Apollo A21
Banana Plugs - 2 sets gold - IXOS

now **£595**

SAVE £200

E & OE

**DEMO
ROOMS**

**MAIL
ORDER**

BUY NOW PAY '94
Ask for details

**0% INTEREST
FREE
CREDIT**

ARP AVAILABLE (ALSO MAIL ORDER)
Please ask for details

**SUNDAY
OPENING**

**PART
EXCHANGE**

BUY NOW PAY '94
Ask for details

MAIN DEALERS FOR:

MITSUBISHI
MONITOR
AUDIOMONSTOR CABLE
MORDAUNT-SHORT
NAD
NAGAOKA
NAKAMICHI
ORTOFON
PANASONIC
PHILIPS
PINK TRIANGLE
PIONEER
PROJECT TURNTABLES
PROTON
QED
QUAD
REVOLVER
REVOX
ROGERS
ROKSAN
ROTEL
RUARK
SANSUI
SCOTCH/3M
SENNHEISER
SHURE
SME
SONY
SOUND STYLE
SPENDOR
STAX
SYSTEMDEK
TARGET
TANNOY
TDK
TEAC
TECHNICS
THORENS
TOSHIBA
TRIPOD
VAN DEN HUL
WHARFEDALE
YAMAHA
AND MANY MORE

Amplifiers continued

Product	EPrice	Comments	Output W/R/C	Line inputs	MM	Integr. MC	Headphone socket	Remote control	Power amp	Preamp	Issue No
▲ Heybrook Signature	2014	G+ A stunningly powerful and vivid-sounding combination which is equally impressive via vinyl or CD	148	4	•	•	•	•	•	•	109
JVC AX-A342	170	A A value-conscious budget amp offering plenty of power but a slightly untidy and inconsistent sound	77	5	•	•	•	•	•	•	109
JVC AX-R562	249	A- 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	G+ One of the best behemoths: a big amp with a big, boppy and unmuddled sound and a couple of ancient 16-bit DACs for good measure!	124	6	•	•	•	•	•	•	109
▲ Jadis JP30/JA30	10750	E French tubes. Beautiful build, nostalgic styling and delightful sounding midrange transcend limitations at frequency extremes	30	4	•	•	•	•	•	•	60
Kelvin AZI	700	A 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	G+ An unassuming little amplifier that turns in a remarkably balanced and entertaining sound. Lively, detailed and engaging	66	5	•	•	•	•	•	•	97
Kenwood KA-4020	200	A+ 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	A- Respectable but ultimately uninspiring model whose remote control is its main asset.	85	5	•	•	•	•	•	•	121
Kenwood KA-5040R	300	A 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	G Underpowered but with the flexibility of four independent power amps. Very deep, captivating sound with 3D soundstaging.	40	5	•	•	•	•	•	•	92
Lecson Stereo	230	G+ Can reflect the full weight of a classical performance. Genuinely deep, detailed and enthralling sound	76	6	•	•	•	•	•	•	104
Linn Intek	448	A+ Linn's no-nonsense Intek still lacks the authority and confidence to support its forward balance	55	5	•	•	•	•	•	•	104
Magnum Quartet A	329	A- An integrated model that incorporates four monoblocks optimised for bi-wiring, but sound is sandy in the treble.	72	5	•	•	•	•	•	•	121
▲ Magnum A-Class	599	G+ 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	G+ 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	G+ 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	A 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	A 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	G+ A fine preamp with option of full system remote, plus competent monoblock power amplifiers with generally good performance	100	6	•	•	•	•	•	•	62
▲ Moth Series 30	587	G+ 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	G+ 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	P+ 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	G+ A spritely and uplifting performance. Sounds loud but never intrusive or fatiguing.	39	5	•	•	•	•	•	•	116
▲▲ NAD 304	230	G+ Equally effective with CD and vinyl this is another successful and entertaining NAD amplifier for your shortlist	50	6	•	•	•	•	•	•	121
▲ Nakamichi IA-3	350	G A minimalist outing for the cassette heroes that's very confident if a tad restrained.	62	3	•	•	•	•	•	•	121
▲ NVA AP20	260	G+ Utilitarian amplifier sounds gentle and restrained but is euphonic and utterly engaging. Optional phono stage	35	4	•	•	•	•	•	•	109
Onix OA-21 S/SOAP	730	G- 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	A+ 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	A Potentially system dependent this split the panel but ultimately elicited only limited enthusiasm	86	6	•	•	•	•	•	•	121
▲ Philips FA-930	200	A+ Radical styling hides a digital switching facility plus full remote control over what is Philips' best effort to date	99	5	•	•	•	•	•	•	109
Philips FA890	230	G- Based on the FA880 model but tarted-up with a remote control facility. Inoffensive, civilised but unexciting sound is retained	120	6	•	•	•	•	•	•	97
Pioneer A-300X	200	A+ 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	VG 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	A- 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	A- 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	G+ 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	G 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	A 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	A+ 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	G+ Valve monoblocks represent good value. What they lack in musical subtlety they make up for in sheer muscle.	75	•	•	•	•	•	•	•	78
Rega Elex	298	A 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	G+ 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	G+ This budget wonder captivated our listeners with its clean, vibrant and thoroughly involving sound	53	3	•	•	•	•	•	•	104
▲ Rotel RA-935BX	200	G 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	G 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	G+ 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	G- Excellent standards of construction, flexibility and plenty of power under the bonnet, an ideal choice for the first-time buyer.	80	5	•	•	•	•	•	•	104
Rotel RC-980BX/RB-980BX	700	A 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 AU-X111	100	A An amp that's both solid and flexible for the price, but its sound is rather bland compared to competition in the £110 sector	52	5	•	•	•	•	•	•	92
▲▲ Sansui AUX-417R	310	G+ Unusually clean and precise with more subtlety than is usually attributed to remote control amps.	53	5	•	•	•	•	•	•	121
▲ Sansui AU-X911DG	800	G+ 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	P 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	G 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	G- 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	G 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	A- Initially entertaining but ultimately unsatisfactory and rather short on high frequencies	62	5	•	•	•	•	•	•	121
TEAC A-X5000	230	A- 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	G 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	A+ 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	A- 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	G+ Almost valve-like limpidity and excellent soundstaging are star qualities of the Threshold amps	100	7	•	•	•	•	•	•	Col
Wharfedale 2050A	250	A- 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	A Smooth and inoffensive valve amplifier if one that lacks the sparkle and euphony required for a truly entertaining sound.	27	5	•	•	•	•	•	•	116

Amplifiers continued

Product	£Price	Comments	Output W/8Ω	Line inputs	MM	MC	Integrated Preamp	Headphone socket	Remote control	Issue No.
Woodside SC26/STA35	2743	G+ Synergistic pairing with a cool, controlled sound, good focus and transparency. More about poise than grunt	35	5				•	•	100
YBA Integre	1199	G+ Audiophile spec French integrated with good resolution and nice phono stage	57	4	•					121
▲ YBA 1 power amp	3999	E Well finished power amp offers front rank stereo staging and transparency, and is capable of driving the most difficult loads	85					•		62
▲ YBA 1 preamp	3650	E A front line French audiophile product. Great stereo and a fine Krell style finish		5	•	•		•		62
▲ YBA 2	3624	G+ Superbly finished with very good space and transparency, slightly softened bass. Needs transformer for MC cartridges	70	5	•	•		•	•	56
YBA 3	2350	G 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	G Neutral yet lacks the ability to involve on an emotional level	131	5	•	•	•		•	97
Yamaha AX-750	400	A Impressive handling, but two samples split the opinion of our listeners, one sounded squashed the other fast and articulate	149	5	•	•	•		•	104



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 ferric (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 calibrat Bias adjust 3 Head	Twin deck	Autoreverse	Issue No.
▲▲ Aiwa AD-F410	100	A Comparable to AD-F500 but cheaper: Good all round performance, well adjusted, useful basic and not so basic features	•	•	•					99
▲ Aiwa AD-F500	160	G 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	G First class budget 3-head machine with a dual capstan transport that really works at reducing the 'fudge' factor	•	•	•					99
▲▲ Aiwa AD-WX929	200	A Superbly equipped twin deck that works and works well - remote control	•	•	•	•			•	117
▲ Aiwa XK-S9000	700	G+ Fabulous build, clunky transport and sharp, refined sound quality with Dolby S or B and metal tapes	•	•	•	•	•	•		105
Akai DX-57	220	G 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	A Fine ungimmicky middle ranking deck with simple, purposeful controls, works best with metal tapes. Performance fair to good	•	•	•	•	•			87
▲ Akai GX-95II	440	G+ Sharp, clear and articulate sounding deck, with superb performance extending to frequency extremes	•	•	•	•	•	•		99
Akai GX-R35	220	A Middling sound quality at best with Dolby B; deteriorates with Dolby C	•	•	•	•	•			99
▲ Akai GX-W45	320	A 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	E Superb transport and a ripe, spacious sound. The Dolby S installation more successful than most. Some replay incompatibility	•	•		•	•	•		111
▲ Denon DRM-510	150	A+ 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	A 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	G Unique loading mechanism provides stability, and the deck has a crisp, clean quality. Occasionally anaemic bass.	•	•	•			•		111
Denon DRS-810	300	A Basically good deck with non-stressful material let down by an inability to deal with high energy tapes properly.	•	•	•			•		105
▲ Denon DRW-650	200	A This simply equipped model is a little fiddly to operate at times, but sound quality is generally workmanlike - good value	•	•	•				•	93
Dual CC800RS	170	A- Low(ish) cost auto-reverse deck. Delivers a punchy but ultimately rather crude impersonation of source material, thin, lightweight bass.	•	•	•					105
Harman Kardon DC5500	500	A Workmanlike sound quality offset by high price and inexplicable shortcomings like 'forgetful' Dolby switching and no timer support.	•	•	•				•	117
Harman Kardon TD4600	600	A 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	A- Tidy, stable but ultimately rather soul-less experience. Auto-reverse is useful though.	•	•	•					117
▲ JVC TD-V1010	400	E Very high grade enthusiasts deck with almost CD-like resolution and stability, especially with Type IV tapes	•	•	•	•	•	•		111
JVC TD-X352	150	A- Disappointingly amorphous sound despite decent measured results.	•	•	•			•		117
▲ Kenwood KX-3050	160	A Acceptable sound quality marred only by a loss of midband analysis and slightly edgy treble.	•	•	•					117
Kenwood KX-5030	200	A 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	A- Neat looking, well equipped deck, adequately engineered but somewhat lacking musically. Worth considering if auto-reverse is a must	•	•	•				•	105
▲ Kenwood KX-7030	260	G Fine, articulate middle price cassette deck whose only (mild) failing with some programme material is a just perceptibly synthetic glaze	•	•	•	•	•	•		99
▲ Marantz CP230	330	A This is a competitively priced portable recorder though not suited to replay of musicassettes	•	•	•					52
▲ Marantz CP430	400	A Uniquely flexible and compact package for outside work which at a pinch can double as a domestic cassette deck	•	•	•		•	•		87
Memorex SCT-5	150	P Poor example of a twin cassette deck where everything has been sacrificed on the altar of flexibility	•	•	•					87
▲ Nakamichi DR-1	780	VG Typically idiosyncratic Nakamichi with manual everything, Good azimuth adjustment and dynamic, authoritative sound.	•	•	•					117
▲ Nakamichi RX-202E	600	G+ Fine, clear and articulate sounding player. Excellent with prerecorded material, but idiosyncratic and sometimes obstructive control	•	•	•			•	•	63
▲ Pioneer CT-339	150	A Auto BLE tape alignment is the most interesting feature. Sound quality is a little flaky.	•	•	•				•	105
Pioneer CT-676	250	P Dull, compressed and hard sounding deck, which is hamstrung by high measured transport flutter.	•	•	•				•	99
Pioneer CT-900S	500	A High spec and well built derivative of CT-93, but disappointingly lacklustre sound	•	•	•	•	•	•		99
▲ Pioneer CT-91a	550	G+ 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	E State of the art deck, built like something out of NASA's shuttle, with superb all round performance	•	•	•	•	•	•		99
▲▲ Pioneer CT-S410	200	A+ Powerful selection of features, excellent ergonomics and the fine, explicit sound with metals, though some instability was noted.	•	•	•			•		111

Cassette decks continued

Product	Price	Comments	Dolby B	Dolby C	Dolby HX Pro	Dolby S	3 Head	Bias adjust	Auto calibration	Twin deck	Autoreverse	Issue No.
▲▲ Pioneer CT-S510	240	A- Slightly highlighted balance, but open and detailed, and backed by a basic but excellent set of features	•	•	•	•	•	•	•	•	•	117
▲ Pioneer CT-S610	270	G+ Exactingly engineered and highly articulate up-market cassette deck. Imagery and dynamics are finely resolved	•	•	•	•	•	•	•	•	•	111
Pioneer CT-S910	500	G+ Refined and able performer, strong detail and excellent imagery, but slightly laid back.	•	•	•	•	•	•	•	•	•	117
Pioneer CT-W601R	200	A- Mediocre performance attributable to flimsy build and less than stable transport. Frequency responses not wholly accurate.	•	•	•	•	•	•	•	•	•	111
▲ Pioneer CT-W650R	200	A There were some intermittent problems with the tape alignment system on the test sample, but the deck was otherwise good,	•	•	•	•	•	•	•	•	•	105
▲ Revox B215	1322	G+ 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	G+ This is a superbly engineered deck with a classically fine performance that almost transcends the stereotypes	•	•	•	•	•	•	•	•	•	75
Revox Professional Series C115	1083	G 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	P 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	P 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	G+ Clean, stable and open sounding recording quality distinguishes this player, - and auto-reverse too. Excellent value.	•	•	•	•	•	•	•	•	•	93
Sansui D-X311WR	250	A- 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	P Good range of features, let down by poor transport and iffy electronics.	•	•	•	•	•	•	•	•	•	117
▲▲ Sony (WMD6C) Pro Walkman	280	G+ 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	G Fine, assured and detailed performer with a very well designed and straightforward user interface	•	•	•	•	•	•	•	•	•	87
Sony TC-K870ES	350	A+ Good but not outstanding deck which proved slightly disappointing on audition. This model is no standard setter	•	•	•	•	•	•	•	•	•	99
TEAC R-9000	500	G Much better than average auto-reverse deck, well worth considering. Nicely engineered too	•	•	•	•	•	•	•	•	•	105
TEAC V-7000	480	G Intrinsically sharp, clear and solid sound spoiled by exaggerated detail with prerecorded material and losses imposed by Dolby circuits	•	•	•	•	•	•	•	•	•	99
▲ TEAC V-8000S	700	G 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	G 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	G 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	A Lively, entertaining deck that trades gadgets for a convincing performance at an attractive price point	•	•	•	•	•	•	•	•	•	111
Yamaha KX-360	200	A Performance has both dryness and precision. Good - but doesn't 'breathe,' and occasionally sounds unstable	•	•	•	•	•	•	•	•	•	111
▲ Yamaha KX-650	260	G Fine audio manners, especially in the midband and treble, mark this high class deck out from the crowd	•	•	•	•	•	•	•	•	•	99
Yamaha KX-W362	250	A- Almost a good deck, it is let down by audible levels of wow & flutter, apparent even with prerecorded material, audio circuits are good	•	•	•	•	•	•	•	•	•	111



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 keypad are those with calculator style buttons which makes track access much quicker.

CD Players

Product	Price	Comments	DAC type	Optical digital output	Electrical digital output	Remote control	Track entry keypad	Headphone socket	Phase invert	Issue No.
▲ Aiwa XC-300	150	A+ Cheap, cheerful and gratifyingly free of digital 'nasties', well-equipped but safe rather than thrilling on the sonic front.	Toshiba BS	•	•	•	•	•	•	107
Aiwa XC-750	180	A A refined version of the XC-700, sadly it has lost the magic of the original	SAA7350	•	•	•	•	•	•	119
▲ Arcam Alpha Plus	420	G+ 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	G+ 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	A+ A multi-box combination with a Bit Stream DAC that is fundamentally more inspiring than its partnering transport.	DAC7	•	•	•	•	•	•	120
Aura CD-50	400	G- Based on an older Philips board with new CDM9 transport, this is a slim player with an innocuous sound	SAA7321	•	•	•	•	•	•	119
AVI S2000MC	999	G+ A stylish, midi-width player with an exceptionally refined and comfortable sound. Lacks passion	20-bit	•	•	•	•	•	•	119
Cary Audio Design CAD-955	899	A+ 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	G 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	G- Looks 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	G 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	G- Similar to the DCD-1290 in its execution, sounds lively and powerful but lacks subtlety.	18-bit	•	•	•	•	•	•	112
DPA Digital T-VPDM2mkl	3245	G An ingenious combination that includes a clock-feed from the DAC to CD transport. Capable of astonishing results	DAC7	•	•	•	•	•	•	120
Dual CD1080RC	200	A- 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	VG 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	A- A 6+1 magazine-loading autochanger with an exaggerated and often aggressive sound	Hybrid	•	•	•	•	•	•	117
Harman Kardon HD7450	260	A+ 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	G+ Tonal integration is very good, packed with detail that's expressed with enthusiasm.	MASH	•	•	•	•	•	•	95
Harman Kardon HD7600II	400	A+ 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	A This 5-disc carousel player sounds civilised enough but lacks the detail and finesse of its peers	MASH/PWM	•	•	•	•	•	•	117

CD Players continued

Product	£Price	Comments	DAC type	Electrical digital Remote control	Optical digital output	Headphone output	Track entry keypad	Phase invert	Headphone socket	Issue No.
JVC XL-M406	270	A A 6+1 disc magazine-based autochanger with a rather lean, bright and disappointingly synthetic sound	PEM	•	•	•	•	•	•	117
JVC XL-V152	130	A 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	A Technically advanced and luxuriously equipped, this player remains rather bland and unsatisfying on audition	PEM bitstrm	•	•	•	•	•	•	119
▲ JVC XL-Z452	180	G+ Another lightweight player but graced with a surprisingly bold and detailed sound. Impressive stuff for the money	PEM BS	•	•	•	•	•	•	112
▲ Kenwood DP-3040	180	G+ The sophisticated sound of this budget player could teach Kenwood's costlier offerings a thing or two!	NPC BS	•	•	•	•	•	•	112
Kenwood DP-5040	200	A 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	A 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	G 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	G This 6+1 CD multichanger is hardly the slickest available but it still sounds impressively open and detailed	PWM	•	•	•	•	•	•	117
▲ Linn Karik	1497	VG Based on Linn's original CD transport, this player sounds dry but very positive, detailed and engrossing	Crystal BS	•	•	•	•	•	•	119
Linn Karik/Numerik	2500	G+ 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	G Launched to usurp the position of its own CD-52SE, the '52II is less colourful but equally appealing	SAA7350	•	•	•	•	•	•	119
▲ Marantz CD-52IISE	300	G 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	G+ A heavily-constructed player. This implementation sounds astonishingly solid and immediate but also rather too 'clean'	bitstream	•	•	•	•	•	•	107
Marantz CD-72SE	500	G+ A recommendation just eluded the grasp of this superbly built player thanks to its very polished but restrained sound.	bitstream	•	•	•	•	•	•	112
▲▲ Meridian 206ΔΣ	995	E A new variation on the 206 theme with the most liquid and captivating sound to date	Crystal BS	•	•	•	•	•	•	119
▲ Meridian 208	1550	E State of the art CD sound combined with a decent preamp and full remote control	bitstream	•	•	•	•	•	•	83
Meridian 200/263	1390	G 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	VG 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	G Extravagantly styled, finished and built. The good lab performance led to an only 'good' sonic display	16-bit	•	•	•	•	•	•	72
Micromega Logic	500	G 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	A+ 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	G+ 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	G 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	A+ A new budget player with an appalling technical record but a surprisingly clean if understated sound	SAA7341	•	•	•	•	•	•	119
Philips CD930	180	G- Featuring digital circuitry similar to Marantz's players but a sound that's a little too ripe and soft.	bitstream	•	•	•	•	•	•	112
▲ Philips CD950	350	G+ 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	G A budget player with a genuinely fizzy and exciting sound. Hardly neutral but audacious and entertaining nevertheless.	PDM BS	•	•	•	•	•	•	112
Pioneer PD-75	800	G+ A confident yet beautifully poised and relaxing sound from an equally luxurious package. Oodles of refinement	PDM BS	•	•	•	•	•	•	107
▲ Pioneer PD-M701	300	G+ A 6-disc multichanger from the originators of the breed. A little untidy perhaps, but still sounds fresh, dynamic and exciting	PDM	•	•	•	•	•	•	117
Pioneer PD-M901	400	A 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-S501	190	A+ The cheapest player to be equipped with a Stable Platter mechanism, but compromises elsewhere have suffocated its flair	bitstream	•	•	•	•	•	•	112
Pioneer PD-S801	300	G Pioneer's Legato Link digital filtering provides an unpredictable sound. Capable of poor or superb results, depending on system	bitstream	•	•	•	•	•	•	112
▲ Pioneer PD-S901	400	G+ 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	G+ 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	A Top quality build and finish for the Revox system enthusiast. For high value sound look elsewhere	16-bit	•	•	•	•	•	•	76
Rotel RCD-955AX	280	A 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	E An exceptionally refined bitstreamer: transparent, exquisitely detailed and powerfully emotive. A landmark player	SAA7323	•	•	•	•	•	•	100
Rotel RCD-965BX LE	380	G- This 'tweaked' version of the fabulous '965BX certainly sounds different, but different is rarely better	SAA7323	•	•	•	•	•	•	119
▲ Sansui CD-X217	230	G- 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	A 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	A 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

Do you live in **GUILDFORD?**...

...or Addlestone, Aldershot, Ashford (Middx), Bagshot, Basingstoke, Bracknell, Camberley, Chertsey, Cranleigh, Dorking, Epsom, Esher, Farnborough, Farnham, Frimley, Godalming, Haslemere, Hook, Horsham, Liphook, Leatherhead, Odiham, Petersfield, Reading, Reigate, Redhill, Shepperton, Virginia Water, West Byfleet, Weybridge, Windsor, Woking?

Nobody else in these areas stocks all the following major brands: Acoustic Energy, Arcam, Audio Innovations, Audiolab, Aura, B&W, Celestion, Creek, Cyrus, Dali, Epos, Deltec, Finestra/Lectern, Furukawa, Harman Kardon, Heybrook, Infinity, JPW, KEF (Reference), Linn Products (including records), Marantz, Meridian, Mission, Musical Fidelity, NAD, Nakamichi, Onix, QED (Systemline), Quad, Revox, Rogers, Rotel, Sony, Supra, Sound Org., Target, Yamaha & Top Tape, Target, Yamaha & Top Tape. Rega products now in stock!

Visit us first and you won't need to go anywhere else: we have superb demonstration rooms, where you can decide in comfort, and we will deliver and install free of charge (and part exchange is possible).

Complete service - We are the only outlet in the area to offer the *complete* service. As well as stocking selected items from the above manufacturers we are able to service and/or repair *on the premises* all the above brands (and others also).

The **Hi Fi** Shop

Guildford's only **REAL** Hi-Fi shop

We are at:-

3 BRIDGE STREET, GUILDFORD

(by the traffic lights - next door to Alfred Marks)

0483 504801 · 0483 304756

Access • Visa • Switch. Open Monday-Saturday 9am-6pm (later by appointment)



The new Audiolab 8000T Tuner



The Audiolab product range:

8000A Integrated amplifier

8000C Pre-amplifier

8000P Stereo power amplifier

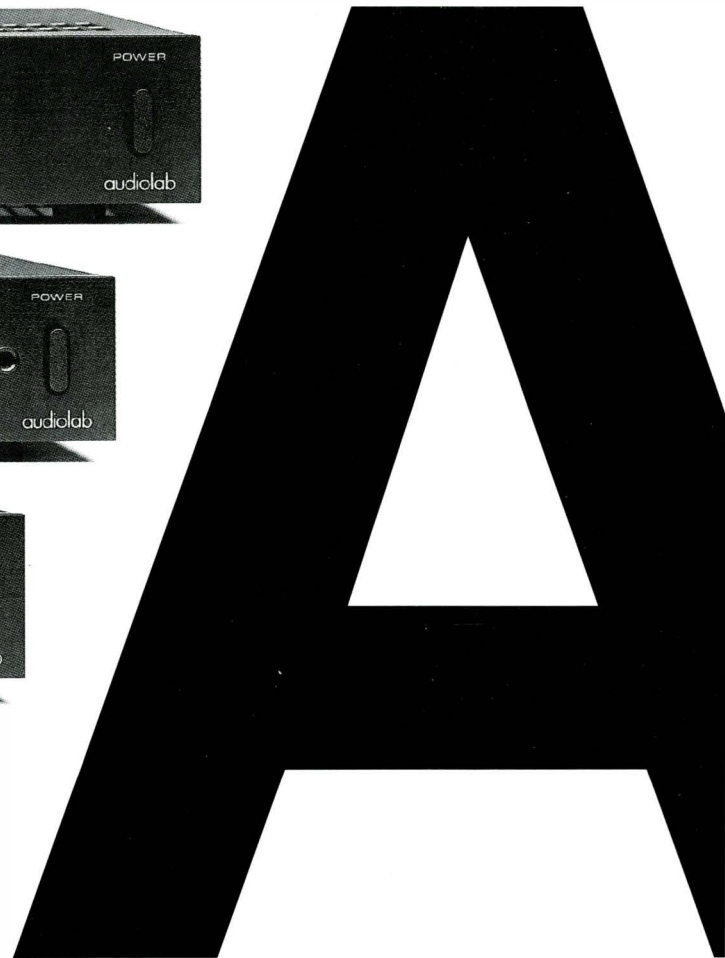
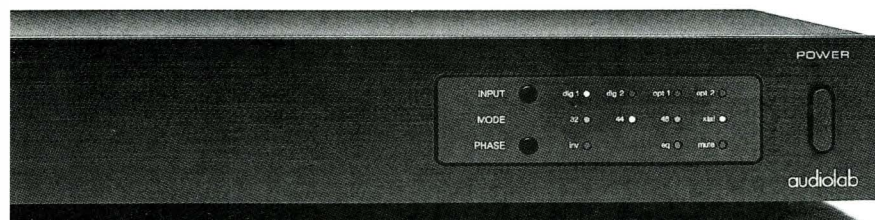
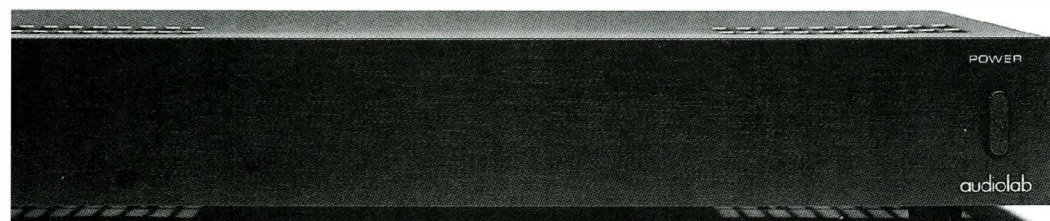
8000T FM/AM tuner

8000M Monobloc power amplifier

8000DAC digital-analogue convertor

Winner of '92 *What Hi-Fi?* award for "Best CD upgrade"

Winner of '92 *Audiophile* award for excellence



AUDIOLAB

CD Players continued

Product	£Price	Comments	DAC type	Electrical digital output	Optical digital output	Remote control	Track entry	Headphone socket	Phase invert	Keypad	Issue No.
▲ Sansui CD-X711	600	G+ Luxury features, finish and sound from this classy Sansui; excuses required here	bitstream	•	•	•	•	•	•	•	83
▲▲ Sherwood CD-3020R	120	G Although this budget wonder has little respect for musical convention, what emerges is still remarkably entertaining	NPC bitstrm	•	•	•	•	•	•	•	119
▲▲ Sherwood CDC-5010R	200	G+ This highly affordable 5-disc carousel player sounds unexpectedly deep, spacious and involving - a rare find	PDM	•	•	•	•	•	•	•	117
▲▲ Sony CDP-397	140	G The first CD player to be almost entirely composed of miniature surface-mount components. Unsophisticated but enthusiastic sound	PLM	•	•	•	•	•	•	•	112
▲▲ Sony CDP-597	180	G 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	G- Succeeds with its taut imaging, clean and impressive soundstaging. Can seem a little too lean or dry, however.	PLM	•	•	•	•	•	•	•	107
Sony CDP-X229ES	300	G- 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	A 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	A 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	G 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	A+ 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	VG They may lack the resolution of high-end colleagues but still sound warm, bubbly and perpetually entertaining.	20-bit	•	•	•	•	•	•	•	120
▲ Technics SL-PG320A	140	G+ 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	G+ Offers an open, transparent and uncommonly fresh sound but a little of the 'magic' is missing.	MASH	•	•	•	•	•	•	•	107
▲▲ Technics SL-PG520A	200	G+ A cracking player. Superb clarity and dynamics, thrilling but musically involving too	MASH	•	•	•	•	•	•	•	107
▲▲ Technics SL-PS620A	230	G+ 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	A 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	G- Just about the quietest transport in existence and a sound that is equally unobtrusive, polite and refined	MASH	•	•	•	•	•	•	•	100
Woodside WS2	1095	G+ 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	G 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	G A reassuringly solid 5-disc carousel player that sounds smooth, cultured and 'delicately proportioned', Good value	Hybrid	•	•	•	•	•	•	•	117
▲ Yamaha CDX-660	249	G 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	G+ 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 when the facilities shown in the headings are available on a transport or DAC. Remote control is not yet universal, and we have included a tick box, more to show which machines don't have them than which do. 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, multi-bit indicates the use of a 16-bit, four times oversampling chip. 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. 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, and is worth having.

The choice of interconnect used to link drives and DACs is also important. Despite the fact that you are conveying a digital bitstream differences can be heard between interconnects and conventional interconnects, a dedicated 75ohm digital cable will give the best results.

The choice of interconnect used to link drives and DACs is also important. Despite the fact that you are conveying a digital bitstream differences can be heard between interconnects and conventional interconnects, a dedicated 75ohm digital cable will give the best results.

The choice of interconnect used to link drives and DACs is also important. Despite the fact that you are conveying a digital bitstream differences can be heard between interconnects and conventional interconnects, a dedicated 75ohm digital cable will give the best results.

CD Transports

Product	£Price	Comments	Electrical digital output	Optical digital output	Remote control	Class 1	Issue No.
Kenwood DP-X9010	500	A+ 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	G+ Broadly compatible and offering a light, fresh and very bubbly sound that is both natural, engaging and unfatiguing	•	•	•	•	96
TEAC P-2	3300	G Beautifully styled and constructed but sound is bleached and generally less inspiring than that of the P-10	•	•	•	•	96
Technics SL-PA10	470	G 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	G+ 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	G Equipped with Sync Lock for D170.3. It gives off its best with a standard 75ohm transport like the TEAC P-10.	hybrid	•	•	•	113
▲▲ Audio Alchemy DDE v1.0	420	VG 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	G+ 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	A- 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	G 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	VG 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	G+ 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	G Elegantly designed bitstreamer with plenty of inputs, can sound too bright, immediate or artificial for its own good.	Bitstream	•	•	•	113

DACs continued

Product	£Price	Comments	Electrical dig input	Optical dig input	Phase invert	Issue No.
▲ Forte Audio Model 50	950	VG A typically big and full-blooded sound, infiltrated by a slightly euphonic quality but never hard or gritty.	DAC7	•	•	103
▲ Meridian 203 DAC7	560	VG A broadly compatible DAC that's free of fatiguing nasties yet remains bubbly and exciting	DAC7	•	•	101
Meridian 606 DAC7	1350	G By refining the 203's sound further Meridian have also tempered its vibrancy and 'life' Fickle with other transports	DAC7	•	•	101
Micromega Duo BSII	550	G 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	A+ Described as a modest but entertaining performer, achieving its sweetest balance with Arcam's D170.3 transport.	SAA7321	•	•	113
▲ Mission DAC5	299	G+ 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	G+ 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	G- Does the business with Meridian's 200 but can sound bloated, smeared and even vaguely electronic other transports	18-bit	•	•	103
▲▲ QED Digit	139	G+ Bearing in mind its expressive but very forgiving performance the Digit is almost embarrassingly cheap	SAA7323	•	•	113
Roksan ROK-DA1/ROK-DS4	995	G+ A creditable affair, both expansive and expressive in character but rather also lean in balance.	Crystal	•	•	113
Stax DAC-Talent	1400	G+ 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	G+ 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	G+ 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	G+ Can sound beautifully detailed with a marvellous sense of scale and sharp, solid images. Compatibility is unpredictable	MASH	•	•	103
Woodside DAC1	909	G Fine but slightly dated and costly package in performance terms - but flexible, musical and well built	16-bit	•	•	87
▲ Woodside DAC2	510	G+ Offering a sharp and dynamic sound, all the more captivating for its lack of graininess and 'tizz'. A reliable upgrade	16-bit	•	•	101



DAT

DAT, 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

Product	£Price	Comments	Electrical in/outputs	Optical in/outputs	AES/EBU in/outputs	S/PDIF in/outputs	Remote control	LP mode	Issue No.
JVC XD-Z1010TN	1050	A+ 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	G Competent middle market DAT with uncomplicated (but still flawed) user interface, but good basic sound quality	•	•	•	•	•	•	105
Kenwood DX-7	500	A Sound quality is pretty fair, but a little rougher than the best of the breed. Controls are good, the display however is poor	•	•	•	•	•	•	94
Kenwood DX-7030	700	A- 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	A Slick, powerfully equipped, this pro DAT has a clear, quick and colourful sound somewhat lacking in weight and substance	•	•	•	•	•	•	111
▲ Sony DTC-56ES	550	G Broadly comparable to a middle ranking CD player sonically, the Sony is particularly well equipped and well priced.	•	•	•	•	•	•	93
Sony DTC-77ES	1000	A Superb engineering, many nice features (including off tape monitoring) but perceptibly slowed, thickened sound	•	•	•	•	•	•	105
▲▲ Sony TCD-D3	500	G+ At the time of writing, this model represents the state of the art, and beats all comers.	•	•	•	•	•	•	94
Tascam DA-30	1199	A+ 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.

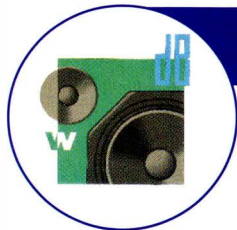
Headphones

Product	£Price	Comments	Type	Open back	Closed back	Dynamic	Electrostatic	Issue No.
▲ AKG K1000	500	E 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	A 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	G Something of a classic, these AKGs are very user friendly in all respects; sonically on the warm side of neutral	Circumaural	•	•	•	•	63

Headphones continued

Product	£Price	Comments	Type	Open back	Closed back	Dynamic	Electrostatic	Issue No.
▲ AKG K280 Parabolic	90	G+ 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	E Heavyweight cans in most respects, the K340 with its electrostatic tweeter is a very revealing headphone	Circumaural			•	•	75
AKG K44	40	A Good quality personal oriented phone, could have a better sense of space but is musically quite communicative	Supra-aural	•		•		99
▲ AKG K400	100	VG Comfortable over long sessions. Sound is exquisitely detailed, dynamic and uncoloured	Supra-aural	•		•		121
▲ AKG K500	119	G+ 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	G- 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	A- 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	A- Warm feeling and sounding with impressive physical substance for the price, could be more relaxed and open	Circumaural	•		•		99
Audio-Technica ATH-611	51	G Same basic design as 609 but bigger thinner diaphragm makes this a more relaxed and informative headphone	Circumaural	•		•		99
Audio-Technica ATH-9000	246	G 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	G 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	VG Nicely finished dynamic headphones with all the trimmings, plus a very clean and subtle sound	Circumaural	•		•		63
Bandridge EH910DD	50	A- Modestly successful mid/top, but dreadfully cloying, ploddy bass makes this model essentially unlistenable	Circumaural		•	•		121
▲ Beyer DT-211	25	A Good value compact, couth and enjoyable, esp in midband. Earpads not removable for cleaning	Supra-aural	•		•		121
Beyer DT411	49	G A reasonable but not very thrilling headphone that doesn't really offer enough at the price	Supra-aural	•		•		111
▲ Beyer DT911	179	VG Probably too revealing for many headphone amps these are very subtle and fine if expensive cans	Circumaural	•		•		111
▲ Beyer DT990	102	VG 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	VG 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	A Competent but rather undistinctive cans, a bit middle of the road and well suited to aggressive sources	Supra-aural		•	•		111
JVC HA-D910	60	A Broadly acceptable if unexciting design with low level losses and some colourations	Circumaural		•	•		121
▲ Jacklin Float Electrostatic	399	E These electrostatics have an openness of sound rarely found in the breed, with good dynamic range to boot	Circumaural	•			•	55
▲▲ Jacklin Float Model One	79	G+ Whilst very unusual in appearance, the Floats give remarkable sound quality and openness at a reasonable price	Circumaural	•		•		55
▲ Jacklin Float Model Two	99	G+ Helmet shaped and pretty unflattering but open sounding and comfortable in the long term. te lack of adjustment	Circumaural	•		•		63
Kenwood KH-1000	20	A- First step up from a true mini: a near miniature which is cheap, comfortable and inoffensive	Supra-aural	•		•		121
Philips SBC3390	60	A Up front but rather aggressive headphone with lightweight, coloured sound. Not very comfortable.	Supra-aural		•	•		121
Quart Phone 75X	70	A Unusually comfortable sealed headphone, though sound isolation poor. Hard, edgy sound quality.	Circumaural		•	•		121
▲▲ Sennheiser HD440 II	30	A+ 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	G Not the most accurate cans on the market but amongst the most enjoyable	Supra-aural	•		•		111
Sennheiser HD 540II	100	G+ 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	G- Very light and comfortable headphones with an even sonic balance that will suit most sources. 6.3mm jack	Supra-aural	•		•		75
Sennheiser HD450II	40	G- 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	G 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	G+ 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	G+ 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	VG Characteristic slightly heavy sound, but still the benchmark at this price level. High class sound and comfort	Circumaural	•		•		121
▲ Sony MDR-CD1000	150	G+ A fine sounding and comfortable headphone that's likely to work well with most sources	Circumaural		•	•		111
▲ Sony MDR-CD3000	300	G+ 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	G Very impressive, possibly the most open sounding cheap closed back can around, lightweight in balance but transparent	Circumaural		•	•		99
▲▲ Sony MDR-CD550	50	G+ 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	G+ Reasonably comfortable and eminently listenable these Sonys have characteristically good bass power and relaxed hf	Circumaural		•	•		111
Sony MDR-CD850	100	A+ Very comfortable, and reasonable sound - better than most sealed designs - though hardness intrudes	Circumaural		•	•		121
▲ Sony MDR-R10	2500	E 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	E 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	E The Signature when combined with the SRM-T1 valve driver must be the most transparent headphone available	Circumaural	•			•	72
▲ Stax SR Gamma	219	G+ 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	G+ An industry reference, frighteningly revealing, bringing across more information than loudspeakers costing twice as much	Circumaural	•			•	55
▲ Stax SR Lambda Pro/SRM-1	1020	E 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	G+ The electret driven SR34s are lively and rhythmic with good tight bass and a sweet midrange	Supra-aural	•				55
▲ Stax SR84	210	G+ The stepping stone between dynamics and full electrostatics, these electret phones are revealing, open and highly enjoyable	Supra-aural	•				63
Technics RP-F10	100	A Another very comfortable sealed model, modest sound isolation and uneven sound favouring bass	Circumaural		•	•		121
▲▲ Vivanco SR808 Classic	55	G A new mid price reference from a new and interesting source. Good all round, no obvious shortcomings	Supra-aural	•		•		121
Yamaha YHD-1	46	G Stylish semi-folding design with a slightly forward balance that very nearly scraped a recommendation	Supra-aural	•		•		111

**ALL THESE REVIEWS AND MORE COULD BE YOURS,
JUST USE THE FORM ON PAGE 92 TO ORDER
THE APPROPRIATE BACK ISSUE**



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 Sensitivity (dB)	Site in free space	Floorstanding	Issue No.
ATC SCM20	1461	G+ Massively built, invariably informative but the rather forward presentation can be uncomfortable	44x24x31	28	82	•	86
▲ Acoustic Energy Aegis 1	452	G 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	G 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	G+ Solid, authoritative and impressively accurate – if a shade ponderous and slow	63x26.5x37	23	85	•	86
Acoustic Research Pi 3	219	A 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	A 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	G 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	A 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	A 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	A- 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	G- 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	A 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	A- 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
▲ Apogee Caliper Signature	3998	G+ 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	G 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	G+ 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	G+ 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	G+ 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	A Cunningly concealing its (very real) limitations, this is just about the smoothest and best balanced miniature around	29x18x21	48	87	•	118
B&W 610	220	A Bass extension and impressive loudness credentials, but rather indifferent integration and coherence	49x23.5x30	25	89	•	102
▲▲ B&W 620	370	G 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	A+ An impressively smooth overall balance, but sound is a touch bland with it	35x20.5x25	30	85	•	98
▲ B&W Matrix 801	3495	G+ 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	G Stylish, with remarkable imaging properties, good balance and low coloration, though less successful at musical communication	42x26x22.5	30	87	•	98
▲ Bose 305	390	G- 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	A 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	A The pre-equalised multi-driver 901 is cleverly engineered to deliver exceptional loudness	33x54x32	28	89	•	86
Bose Interaudio 3000XL	170	A- 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	A 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	A+ Omnidirectional design with rococo styled urn-shaped ceramic enclosure. Distinctly bass light, but impressively coherent	48x29 (diam)	50	85	•	106
▲ Cabasse Bisquine	600	G+ Classy French large bookshelf speaker has great coherence and dynamic grip, but a rather mid-forward overall character	48x26" 30.5	30	91	•	110
▲ Canon S-30	150	A+ Clever and unusual moulded design has attractive lively coherence, along with 'wide imaging stereo' effect	27x22.5x23.5	50	88	•	114

Audio Designs



HI-FI SPECIALISTS



CYRUS MUSICAL EVENING

On 19 August we proudly present the **worlds** first public demonstration of a new benchmark CD player from Cyrus along with their new range of electronics and loudspeakers.

Admission by ticket.

Please call for further details.

Tickets £1.50 each

All proceeds to RNIB Sunshine School East Grinstead.

26 High Street, East Grinstead, West Sussex RH19 3AS. Telephone: (0342) 314569.

Open 9.30-6.00 Mon-Sat • ACCESS • VISA • CREDIT FACILITIES •

Loudspeakers continued

Product	Price	Comments	Size: HxWxD (cm)	Site Sensitivity (dB)	Site in free space	Floorstanding	Issue No.
▲ Canon S-50	350	A+ 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	G+ A brilliant throwback, using horn-type approach to provide startling midrange dynamics and coherence	94x23x27	45 87	•	•	98
Castle Durham	250	A Like the slightly larger York, the very pretty presentation is not reflected in a similarly sweet sound	40x22x24	48 88	•	•	118
▲ Castle Pembroke	400	A+ Comfortably recommended, a sweet smooth sound with good overall balance of engineering-based performance	55x37.5x30.5	46 88	•	•	31
▲ Castle Trent	169	A This miniature wall-mount sounds lively and engaging, if a bit rough at the top.	33.5x18x20	50 88	•	•	102
▲ Castle Winchester	1499	G+ Unconventional and beautifully crafted, large for its bass extension but engagingly agile and attractively open and airy	114x24x47	25 87	•	•	90
Castle York	340	A+ 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	A 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	G 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	A Good balance and stereo imagery, with a character which leans more towards offensiveness than excitement	31x18.5x21	55 86	•	•	78
Celestion 5	169	A 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	G+ 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	A+ 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	A Nicely presented and fair material value, with impressively flat bass-to-mid balance	49.5x20.5x24	30 89	•	•	102
Celestion SL12Si	629	A 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	G Has certain remarkable qualities that some will find irresistible, but needs careful system and room matching	27x20x23	52 82	•	•	68
Celestion SL6Si	429	A+ 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	G 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	A 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	A 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	G Compact floorstander with superb coherence but rather forward midband. Would suit smaller rooms best	91x26x21	30 86	•	•	114
▲ Diamond Acoustics Reference III	895	G+ Lovely free stander suffers from indifferent bass alignment, but is fast, coherent, solid and very informative indeed.	87x27.5x28	30 90	•	•	106
▲▲ Epos ES11	350	G+ 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	G+ Substantial stand mount delivers delightful midrange focus and delicacy with good bass control. System sensitive	49x22.5x29	25 85	•	•	98
▲ Faraday FS1	225	A+ Concrete box on a budget, works surprisingly well despite cheap drivers, wood veneers here Direct sale only	47x27x28	45 86	•	•	114
Faraday FS5	589	G 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	A- Interesting if ugly high mass concrete cabinet is let down by imbalance of ageing driver combination	46x27x27	48 87	•	•	94
Genexa SE100	150	A Tandy-stocked miniature is attractively lively, coherent and communicative, could do with more grunt and lower coloration	28x15.5x19	50 84	•	•	110
▲ Goodmans Maxim 3	110	A Smooth and accomplished wall-mount miniature makes a worthy replacement for the bestselling Maxim 2	26x17x21	50 85	•	•	106
Harbeth HL Compact	584	A Clean, neutral sound lacks resolution and gives rather unobtrusive though well differentiated stereo.	52x27.2x28.1	65 87	•	•	59
Harbeth LS3/5A	379	A 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	G Very limited loudness but impressive full-range scale from uncoloured and very well balanced but time-smeared sub-miniature	31x19x17	23 82	•	•	118
Heco Presto Superior 750	650	A 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	A 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	G Latest version of long established favourite delivers good liveliness and fine coherence for the price	47x29x24	30 88	•	•	98
▲ Heybrook Prima	120	A+ 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 Sextet	1079	G+ Engagingly coherent and a highly analytical, partly due to distinct and t always comfortable upper-mid forwardness	96x27x20	25 85	•	•	102
▲ Heybrook Solo	170	A+ 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	G 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	A+ 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	A An engaging and lively sound from a prettily finished and substantial small bookshelf size model	36x23x23	50 87	•	•	98
Infinity Reference 20	230	A Well presented and balanced with good bass control, but somehow lacks convincing cohesion and agility.	46x27x24	27 88	•	•	102
▲ Infinity Reference 30	330	G Drivers from Ref 20 in box from Ref 50 creates a well balanced and extended floorstander at a very competitive price	85x26.5x25	25 87	•	•	106
Infinity Reference 50	550	A- Despite hi-tech drivers, good bass extension and sensitivity, this three-way suffers from a forward, coloured sound	86x26.5x25	25 89	•	•	98
JBL Control 1 Plus	250	A Sub-miniature with forward midrange and real bass; highish price partly justified by near-indestructible Pro build	23x15.5x14	50 89	•	•	90
JBL ti1000	1500	G Ultra-engineered, beautifully crafted bookshelf model. Performance compromised by over enthusiastic midbass output from port	44x30x28	45 89	•	•	118
▲ JPW AP2	180	A Offers real wood veneer at a bargain price; performance is cleaner but broadly comparable to P1 Vinyl overall	43.5x25.5x26	45 86	•	•	106



Tel: 081 348 5676 (2.00-7.00 pm)
Fax: 081 341 9368

Esoteric High Fidelity CABLES

Dealers in: Absolute, Audio Note, Audioquest, Deltec, Harmonix, Kimber, Mandrake, MIT, Siltech, Symo, Van den Hul, WBT and others

... the **RIGHT** cables
... in **YOUR** system
... for **YOUR** ears
... in **YOUR** home

Contact us by phone, fax, or letter and we'll do our best to help you achieve your goal.
(Auditions may be subject to a handling charge)

CONNECTIONS

11 Archer St, London W1V 7HG (A division of Connection 90' Travel Ltd.)

Loudspeakers continued

Product	Price	Comments	Size: HxWxD (cm)	Site in free space	Site close to wall	Floorstanding	Issue No.
▲ JPW AP3	225	A+ 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	A- 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 P1	155	A+ 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	A 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	A+ 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	A- 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	G+ A fair share of cosmetic deficiencies do little to spoil the impressive coherence and timing	59.5x28x36	28	86	•	86
▲ JRT AD1 Micro	389	G 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	A- 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	A 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	A 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	A+ 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	A+ 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	A+ 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	G- 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	G+ 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	A Physically pretty and sonically competent but undistinguished bookshelf size model has good sensitivity but limited extension	34x20.5x26	45	87	•	106
▲ KEF Q80	549	A+ 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	A Generous floorstander has even balance and decent extension but fails to communicate excitement and involvement effectively	90x25x32	25	88	•	118
Kammerzelt Ref Mini Monitor	425	G 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	G Impressively communicative bookshelf model has fine vigour, scale and dynamics, if not the smoothest sound around	48x27x25	25	89	•	106
▲ Kenwood LS-500G	500	G Japanese designed and built luxury compact delivers an invigorating and exciting sound; an interesting contrast to some lazier models	45x23x26	48	89	•	118
▲▲ Linn Index II/KuStone	374	G 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	G+ Dry, bright balance emphasises superb dynamic range and transient precision, but can sound unforgiving	89x19x29	25	85	•	118
Linn Kan II	530	A+ 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	G+ Stunning timing and coherence and awesome bass drive, especially with ceramic plinth; sounds a bit shut in	83x20x27.5	22	87	•	114
▲ Magneplanar MG1.4	1090	G+ Offers a very crisp and articulate sound, particularly revealing of upper mid vocal details	155x8x57	40	88	•	72
Magneplanar SMGa	688	A Tonally 'rich', in the right room it proved a satisfactory musical experience	122x48x4.5	56	85	•	46
Marantz DS110	200	A+ Pretty near-miniature trades bass extension for sensitivity, delivering fine midband dynamics but little grunt	33x19.5x20.5	55	88	•	114
▲ Martin Logan CLS II	4200	G+ 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	G+ 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	G 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	A Pricey active speaker, easy on the ears and worth considering especially where space is at a premium	38.5x18x32	40	NA	•	46
▲ Mission 753	700	G+ 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	A+ 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	A 760 theme adds an extra driver for easier amp loading and power handling. Slightly inferior to simpler, cheaper 760i	38x19x24	48	88	•	102
Mission 764i	480	A Generous and handsome floorstander looks fine material value for money, but good scale sound has lazy tendencies	89x25x32	22	86	•	118
Mission 765i	680	A+ Big heavyweight floorstander has good sensitivity and bandwidth, but somehow lacks agility, authority and dynamic grip	102x25x33	22	91	•	110
▲ Mission Cyrus 780	200	A+ Pretty miniature based on Mission 760 but with beefed up box and crossover network to enhance sound quality still further	29x18x26	50	88	•	90
▲ Mission Cyrus 781	250	G Properly run in, the pretty little 781 delivers a fast, dynamic and informative sound which more than justifies its price.	43x22.5x28	28	88	•	86
Monitor Audio MA1800	1350	A+ 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	A 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 MA800	600	G Beautifully finished compact has a delightfully even and uncolored midband transparency, sensitivity and bandwidth are limited	51.5x20x27.5	45	85	•	114
▲ Monitor Audio Monitor 11	330	G 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	A 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	A 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	A 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	A+ 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	A+ 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	G 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	A+ 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	A+ 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	A 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	A 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	A- 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	G 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	A+ Luxuriously finished, beguiling mid transparency, bass is altogether less convincing	37x22x27	45	86	•	102
Morel Bassmaster 602	1200	G+ 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	A+ 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	G+ 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	G A rude but exciting miniature, with unusually accomplished bass capabilities for its size	28.5x27x28.5	48	85	•	82
NVA Cubix	1400	G 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	G 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	G+ Impressive scale, full bandwidth, coherent, attractively discrete, coloured midband, very well balanced and agile	88x26.5x17-27	25	86	•	102
▲ Neat Petite	525	G+ Far from perfect, but one of the most entertaining and enjoyable speakers around, colorations notwithstanding.	30.5x20x18	33	86	•	102

Loudspeakers continued

Product	Price	Comments	Size: HxWxD (cm)	Site close to wall	Site in free space	Floorstanding	Issue No.
	£			Bass from (Hz)	Sensitivity (dB)		
Nobis DM7	560	G 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 OL1	499	G 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	A 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	G Generous sounding and impressively uncluttered, loudness and bass extension don't quite match plasticky looks	110x29x41	25	88	•	90
▲ Pro Mon Co LB1	998	G+ Delightful smoothness and transparency, though bass extension and sensitivity are both limited	53.5x18x26	33	86	•	110
Professional Monitor Co AB1	1600	G 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	A Model One exaggerates the Signature's rich and heavy midbass and lacks its velvet smoothness	35x25x27	28	85	•	82
QLN Signature	1100	G 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	G+ This classic electrostatic may not be punchy in the bass, but has strengths that some can't live without	92x66x27	34	84	•	60
▲ Rega ELA	405	G 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	G 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	A- Neatly presented small reflex design can sound engagingly communicative, but is flawed sonically and technically	38x19x23	80	88	•	68
▲▲ Rogers LS2a/2	220	G 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	A+ 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
Rogers LS6a/2	350	G 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	A+ 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	G 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	G- 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
▲ Roksan Darius	1895	G+ Provides an exceptionally impressive combination of transparency and delicacy with fine information retrieval and speed	47x27x40	20	82	•	86
Royd Topaz	173	A+ 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	A+ 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	A Real wood variation on the Swordsman theme looks and measures rather better than it sounds	38x20x28	27	84	•	98
▲ Ruark Talisman 2	700	G 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	G+ 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	G+ 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	G 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	G Tall slim floorstander has fine balance, good bass extension and lovely open midband transparency	100.5x20x30.5	25	85	•	114
Sequence 30	200	A 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	G Unusual and occasionally wonderful small floorstanding omni; too bright but exceptionally coherent and revealing	69x35x25	24	85	•	110
Snell JIII	770	G 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	A 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	A- 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	A 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	G Maintains Spendor's tradition for peerless mid-to-treble coherence and perspectives. Bass is rather unconvincing.	38x22x26	25	83	•	102
Spica Angelus	1295	A 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	G 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	G 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	G+ 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	G 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	500	G Genuinely extended bass from a compact enclosure, very detailed but a shade clinical and detached in presentation	76x23x33	25	84	•	78
▲ TDL Studio 1M	500	G+ Transmission line helps bring the best from metal cone driver: lovely transparency and fine bass extension	81x23x33	<20	84	•	118
▲ Tannoy 603	125	A+ Pretty hexagonal cabinet delivers fine imaging with little boxiness, but little in the way of welly and power either.	33.5x22x16	45	85	•	102
▲ Tannoy 605	160	A+ Largish bookshelf size hexagon is potentially fine performer, though unusual stand sensitivity makes optimisation difficult	40x27.5x18	25	85	•	106
Tannoy 605LE	189	G Mass-loaded audiophile variation of 605 sounds lively, with decent weight and timing	40x27.5x18	30	87	•	114
▲▲ Tannoy 607	200	A+ Modest and pretty hexagonal box helps give fine bass and mid performance, but treble is rather shut in	50x32x23	25	88	•	118
▲▲ Tannoy 609	270	G Hexagonal cabinet and dual concentric driver is sweeter than its predecessors, making this one very superior speaker	50x32x22	25	90	•	102
Tannoy 611	399	A This compact floorstander would seem to have plenty going for it, but somehow failed to gel musically	72x32x24	25	92	•	110
▲ Tannoy Westminster	6000	G+ 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	A Nicely presented, well built and decent size enclosure sounds solid but somewhat dull	48x23.5x27	20	86	•	98
▲ Technics SB-RX50	650	A+ A smooth and well balanced loudspeaker, its minor weakness being a mildly excessive low bass	48x30x26	40	86	•	46
▲ Thiel SCS	1069	G+ 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	G Elegant compact floorstander has fine balance and dynamic range, but transient timing and dynamics are less convincing	94x27x27	30	86	•	118
Vandersteen Model One	1395	G+ 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	P Sharp styling but the complex grillwork worsens a sound which starts off with too much top and not enough bottom	20x12x13	130	87	•	74
▲ Wharfedale 425	200	A+ 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	G 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	A 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	A 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 Diamond V	130	A 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	G+ 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	A+ 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

YOU ARE READING THE WORLD'S NUMBER ONE GUIDE TO BUYING HI-FI



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 ampli-

er 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 digi-

tal 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	£Price	Comments	Presets	FM	LW	MW	Signal strength meter	Automatic tuning	Manual tuning	Issue No.
Aiwa XT-003	110	A- 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	G+ By AM standards presentable (good) while FM delivers the goods	20	•	•	•	•	•	•	65
▲ Arcam Alpha 2	185	A+ Arcam's cheapest tuner makes up for its lack of features with a sensitive front-end and mellow sound.		•		•		•	•	93
Arcam Delta 280	350	G+ Fine sound quality marred by mild synthesiser whine; RF performance only average, remote £60 extra	20	•			•	•	•	120
▲▲ Audiolab 8000T	700	VG Unusually combines fine sound quality and RF performance (inc AM); superb ergonomics are a joy to use	39	•	•	•	•	•	•	120
Aura TU-50	260	G Tonally neutral, but with rather poor imaging and a certain woodenness to the sound.	16	•				•		109
Creek T40S3	250	A Analogue tuner. Sample was hampered by an obvious bass 'hump', production units are said to be cured		•				•		93
▲▲ Denon TU-260L	120	G+ Bare minimum of features. Careful designwork promises a surprisingly open and vivacious sound, so don't overlook it!	20	•		•		•	•	93
▲ Denon TU-580RD	220	G Fine feature package including remote and RDS, plus excellent RF performance and decent sound quality	30	•		•	•	•	•	120
Harman Kardon TU9200	200	A The listening panel appreciated its liveliness, but found it a little muddled.	32	•		•		•	•	109
▲ Harman Kardon TU9400	270	G+ 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	G Good bass and detail, and good - perhaps slightly enhanced dynamics	24	•		•		•	•	109
Kenwood KT-3050L	170	A Excellent RF performance and plenty of features including RDS, but did sound rather ordinary under our conditions	39	•	•	•	•	•	•	120
▲ Linn Kremlin	1779	E 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	G+ Although expensive for its fairly minimum set of facilities, its excellent sound makes up for what it lacks elsewhere		•			•	•		72
▲ Marantz ST-40L	120	G 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	G Pleasant sounding with a fine finish but does not make the grade at this price	18	•				•	•	55
▲ Meridian 604	1350	VG Unique digital convertor makes most sense in Meridian system context; smooth sweet sound with fine front end	30	•			•	•	•	120
▲ Naim NAT 01	1425	E There may be better sounding tuners in the world, but we have yet to hear one		•				•		50
Nakamichi ST-7E	765	G+ Exceptionally good for weak-signal areas, and good all round	16	•	•	•		•	•	55
▲ Pioneer F-676	200	VG A tuner that's detailed and clean-sounding. Perhaps a little bright, but not unpleasant.	36	•		•		•	•	108
▲ Quad FM4	424	G+ Fine sound, excellent ease of use, good build and finish and a more than satisfactory technical performance	7	•				•	•	50
Quad 66	519	G+ Very pretty and compact but technically unadventurous. Smooth sound but only makes sense in Quad system context	19	•				•	•	120
▲ Rotel RT-930AX	160	G- A competent rather than exciting performer, with low audible interference though slightly compressed and muddled sound.	20	•	•	•			•	108
▲ Rotel RT-950BX	200	G+ Fine fast and coherent sound quality for price, but RF performance only adequate and sample build was suspect	20	•	•	•	•	•	•	120
Sherwood TX-3010C	120	A Lots of features and fine RF discrimination for price. Sound is communicative but inconsistently tacky	30	•		•	•	•	•	120
Sony ST-S570ES	230	A A host of features, but the sound is muddled, compressed and lacking in frequency extremes.	30	•	•	•		•	•	109
▲ Technics ST-G70L	200	G+ 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	G+ Very clean and civilised, tonal balance, detail and clarity are all very good, lots of useful features	40	•		•		•	•	108



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	A+ A sensible moving magnet package with good bounce at a competitive price	6-16	N	•		48
▲▲ Arcam C77Mg	40	A 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	A Our sample had a disappointing stylus, but gave a coherent, rich and laid back sound, with good 'scale'	3-8	N	•		48

Turntables – cartridges continued

Product	£Price	Comments	Arm effective mass (g)	Output	MM	MC	Issue No.
▲ Arcam P77Mg	73	A+ 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	E One of the best, giving 'an extraordinarily relaxing midrange clarity', needs a transformer	8-18	VL		•	100
▲ Audio-Technica ART1	850	VG 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	A 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	A Clear, dynamic if richly balanced, the magnetic '95E is a definite Best Buy	8-14	N	•		48
▲ Audio-Technica OC-10	320	G+ Good treble and good detail too, but some congestion and coloration reduces its informativeness	4-12	L		•	103
▲ Audio-Technica OC-5	130	G 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	G+ Slight harshness detracted from the performance of this otherwise clear-sounding and detailed cartridge	8-16	L		•	84
Audioquest AQ 7000	1300	G+ 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	A+ 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	G 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	G 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	VG Uncolored, detailed, neutral, superb tracking; top notch altogether, and a top notch bargain too.	4-12	L		•	103
▲ Dynavector 17D2	298	VG Clear, detailed, neutral and generally very informative - excellent	6-18	L		•	91
▲ Dynavector DV10X IV	138	A+ Fine sounding and realistically priced, damping is recommended to ensure successful tracking ability	8-18	N		•	48
Dynavector XX-1	698	G+ 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	VG 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	G 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	G 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	G+ Offers a warmer and very transparent account of the music. Its tracking prowess is slightly limited	5-12	L		•	72
Glanz GMC-10LX	80	A+ 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	G+ Very good tracking, smooth sound and good detail. Very slight surface noise enhancement	5-10	L		•	91
▲ Goldring 1012	50	G Slightly harsh sound but plenty of life and quite good detail. Some very high frequency coloration apparent	6-12	N	•		85
▲ Goldring 1022	70	G 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	G Not terribly subtle, and not such good value alongside 1012 and 1022. Quite lively, though	7-12	N	•		91
▲ Goldring Elan	20	A 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	G 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	G- More confused and coloured than low-output LX, high output less of an issue these days	8-15	N		•	84
▲ Goldring Eroica LX	100	G Not the most subtle cartridge in the world; can sound edgy at times, but lively and informative	8-14	L		•	84
Goldring Excel	549	G 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	G+ 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
Kiseki Blackheart	1995	G 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	G+ Good bass and imaging, but hints of spit and coloration let the side down slightly	8-15	L		•	84
Kiseki Lapis Lazuli	5000	G+ 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	G+ 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	A+ Not as crisply focused as the costlier Linn magnetics, the K5 offers a smoother presentation	7-16	N	•		67
▲▲ Linn K9	98	G 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	A+ Now manufactured under the London brand name this Decca cartridge is as iconoclastic as ever	9-20	N	•		67
London Super Gold	339	A- Immediate and detailed, but very coloured, very nonlinear and questionable effect on records. Devotees swear by it	9-15	N	•		84
▲ Militek Aurora	299	G+ An overall feeling of relaxed ease characterised this clear and atmospheric Kiseki-built cartridge	8-16	N		•	Col
▲ Nagaoka MP10	19	A 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	G+ For the price, a good blend of virtues weight, clarity and neutrality.	3-11	N	•		85
▲ Ortofon 520	50	A+ Very sensitive to load capacitance this new Ortofon maintains the company tradition for a lively, effervescent SQ	7-16	N	•		67
▲ Ortofon 530	80	G+ Very clean and assured sound; transients not quite perfectly pure but plenty of detail.	4-11	N	•		85
Ortofon 540	100	A 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	G "What a delightfully sweet-sounding cartridge this is . . ." we said	5-15	L		•	48
▲ Ortofon MC15 Super	100	G+ 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	G 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	E 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	G 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	G Lively, quite detailed, and a touch bright, the Quartz has many qualities of the much dearer Quasar	3-12	L		•	91
▲ Ortofon Quasar	350	G+ Many of the qualities of the MC3000, although a touch bright. Good detail and delicacy	8-15	L		•	84
Ortofon Quattro	210	G+ Undoubtedly a competent performer. Generally neutral, but can be edgy and bright in loud passages	6-18	L		•	103
Rega Bias	34	A+ Difficult to mount in some arms due to its shallow build, the bias offers a gentle, refined SQ	4-10	N	•		67
▲ Rega Elys	74	G 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	A 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	G Recognisably related to Corus Blue, but distinctly more civilised and smoother.	7-12	N	•		91
Roksan Corus Blue	75	G Roksan-specified modified Goldring 1012; slight harshness detracts from otherwise good sound.	7-12	N	•		91
▲ Shure ME97HE	55	A+ 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	A+ 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	G+ 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	G+ 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	G+ 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	G+ A neutral balanced performer giving transparent midrange, fine depth and focus with firm extended bass. Gosh!	5-10	L		•	60
▲ van den Hul MM1	275	G+ If woody midrange coloration could be tamed, the excellent imaging and admirable security would make it excellent	7-15	L		•	103



Turntables

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. The only serious limitation in this day and age is the dearth of software and it's debatable whether those of you without significant record collections should consider spending large sums on a turntable. It's also worth remembering that getting the most out of a record player is something of a labour of love, requiring very careful set-up, proper support and the best vinyl disc amplifier stage that you can find. Basically it's all about enthusiasm for getting the most out of the medium and allows a degree of tweakability that

CD users can only dream about. Alternatively you could say that it's a major pain in the butt with a complete lack of convenience features. 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 'naturally sympathetic' combinations exist (and are often made by the same company), and a good dealer can be invaluable.

Listed separately as integrated players and as motor units, our sound quality rating is based on results achieved using a high quality system – but in point of fact the deck is usually the limiting fac-

tor soundwise in any system.

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, which means better sound quality.

Turntables – integrated

Product	Price	Comments	Suspended subchassis	Arm effective mass (g)	Manual	Automatic	Cartridge	Electronic PSU	Belt drive	Issue No.
▲ Alphason Sonata/HR100S MCS	1785	G+ 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	A 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	A Consistent sounding and well isolated turntable. It is slightly lacking in balls, compensates with a consistently unmuddled presentation		10			•	•	•	103
Dual CS-750	330	A- Attractive but lazy performance from a deck with many good ideas and which is a pleasure to use. 78rpm facility					•	•	•	103
▲ Dual CS430	120	A- Ragged, sometimes unpleasant cartridge mixes with a modest pleasing player in a very sharply priced package		5			•	•	•	67
▲ Kuzma Stabi/Stogi Reference	2000	G+ 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	A+ 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	A+ 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	G 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	G+ The classic reference is improved by the Lingo but charming character remains. Ekos is well made and suited to many decks		9	•	•			•	91
▲ Rational Audio Aura 01	180	G Poor lab results but midrange and treble are very pure and clean; idiosyncratic sound and styling should be tried!		10	•				•	91
▲▲ Rega Planar 2	185	G A remarkable product at the price, surprisingly articulate and confident		11.5	•				•	48
▲▲ Rega Planar 3	250	G 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	G- Quite lively and detailed but not the strongest on subtlety, with slightly lumpy bass. Motor breakthrough audible		12	•	•			•	91
Revox B291	1003	A- Subjective bandwidth is narrow and the music lacks grace and energy. Ease of use however is unrivalled					•			55
▲ Roksan Radius/Tabriz zi	740	G 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	G At its optimum with a relatively inexpensive arm/cartridge unless upgrade to full Xerxes is contemplated. XPSII PSU		9	•				•	103
▲ Roksan Xerxes/Artemis/Artaxerxes	2114	E 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	A- 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	A As with the QD33 though better value. P-mount cartridge		7.5			•	•		48
▲ Technics SL-QD33	180	A 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
▲ Technics SLBD-22	130	A- Not bad for the price and a great improvement on the L20, it performs reasonably when not stretched		6g			•	•		48
▲ Thorens TD-3001/TP90SF	760	G Excellent middle ranking esoterica, with strong all round abilities rather than excellence in particular areas			•	•			•	103
▲▲ Thorens TD166 V/UJK/RB250	280	A- Refined and articulate sound with well focused imagery, suitable for use with good MM and budget MC cartridges		11.5	•	•			•	103
Thorens TD2001	650	G- Similar to TD320 but much dearer - why? Sound is comfortable but not very detailed		15	•	•			•	91
▲ Voyd Reference	5950	E 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	G+ 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	G Sweet and natural sounding player, well suited to Rega RB300. Aesthetics, and the acres of clear acrylic are very distinctive				•	55
▲ Michell Syncro	325	G 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	G- Rather coarse sound lacking resolving power - but lively sound may appeal. Industrial appearance				•	79
▲ Pink Triangle Anniversary	1495	E Possibly the most detailed, clear and neutral deck around. Likeness to master tape is uncanny				•	91
▲ Pink Triangle Export	890	E The PT TOO with built in PS. Retains features of great transparency and neutrality. Review sample had highish motor noise				•	91
▲ Pink Triangle Little Pink Thing	500	G+ Semi suspended, leads the field for clarity and neutrality at the price. It also looks good. Excellent value				•	79
Revolver	200	A Nicely balanced, but unimpressive timing and lightweight bass made this deck rather average for the price				•	48
▲▲ Systemdek IIX/900	230	G A high performance budget turntable which is particularly strong at fine detail resolution and imagery				•	103
▲ Systemdek IIXE/900AP	388	G+ 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	E Halfway between standard and Reference Voyds with the latter's platter and bearing. Superb finish, colourful and dynamic sound				•	72
▲ Voyd Valdi	955	VG Acrylic plattered twin motor deck is remarkably capable, revealing and neutral, for dynamics it's hard to beat at the price				•	79
▲ Zarathustra S4/PSU	3000	E A hand made high mass design that's built to the highest standards, it sounds superb and makes most of the competition look shabby				•	72

Health and efficiency

My Boston Lynnfield *Statement* in this issue (page 22) turned into something of a saga revolving around the relationship between amplifier and loudspeaker. Although the *500L* is exceedingly good in many respects, it is notably insensitive, needing a great deal of power to make it go loud, and it is also a pig of a load for the amplifier to drive.

The contrast with my previous loudspeaker *Statement*, the gigantic, high efficiency, horn-loaded Living Voice *Air Partner* (issue 117) couldn't have been greater. Whereas the LVAPs could sound glorious and generous driven by a 3W per channel single-ended valve amp, the

Bostons turned out to need something like a kilowatt of amplification to generate seriously loud listening levels.

In my opinion, a genuine top line speaker system ought to be able to generate an in-room sound pressure level (SPL) of at least 110dB (pair at 2m). The LVAP has a midband sensitivity of 101dB per watt, so on the basis that doubling the power increases the SPL by 3dB, it therefore only needs 8W of amplifier power to reach the target — and can, of course, go much louder still without strain.

The *500L* has a midband sensitivity of only 85dB, so to reach 110dB requires an amplifier power of 300W. But even that is a significant underestimate because of the evil impedance characteristic which drops down to around 2ohms. At this point it will be drawing four times the current and power of a pure 8ohm load. Put that into the equation, and the kilowatt or so the speaker system needed subjectively seems about right.

In fact, the Boston has a surfeit of bass and treble extension and relative level. This resembles a mild loudness contour, so the system doesn't really need to be driven to exactly the same midband level to give an equivalent total loudness effect. But in essence the basic principle still holds, and the gulf in the amplification required by these two admittedly extreme systems remains rather astonishing.

Doing the same calculations on more mainstream hi-fi equipment, the combination of a typical 60W per channel amplifier and an average 87dB sensitivity loudspeaker will deliver a maximum loudness of 105dB.

Most people will find this entirely satisfactory for most purposes, which in turn suggests that the amplifier and speaker makers are getting the norm just about right, at any rate in terms of loudness capability.

Although manufacturing costs and amplifier compatibility keep mainstream models in a pretty tight straitjacket, speaker designers perform a juggling act with a number of variables, and even cost-no-object, state-of-the-art contenders have certain practical limits. In broad terms, the larger the speaker the greater its sensitivity (or efficiency) and bass extension. So if you want to create a compact high quality speaker you've got to give up one, the other, or a bit of both.

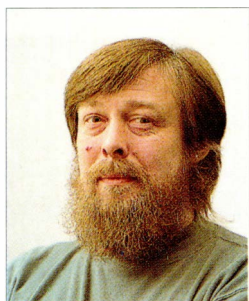
The Boston *500L* has, in fact, traded efficiency for fine bass extension from a compact enclosure, while exceptional power handling allows massive amplifiers to be used. At the opposite extreme, the LVAP sacrifices any real bass extension in order to match the exquisite midrange dynamics of low powered valve amps.

A simpler prototype horn design codenamed *Bra-vura* and based on a single Lowther driver which I measured recently also registered a very high sensitivity of around 98dB, though again with little sub-50Hz bass, and also with obvious coloration. Another horn, the Tannoy *Westminster Royal* adopts a rather less extreme posture, registering sensitivity of about 94dB alongside a relatively deep bass level of -8dB (at 20Hz in room).

Few conventional direct radiator (non-horn-loaded) designs get much over 90dB, and many of those only manage it by resorting to lowish impedances that draw heavily on amplifier reserves. All of which explains why many valve enthusiasts are busily investigating horn loading — and why many high-end direct radiator speaker systems prefer a multi-amped approach, or the active-drive variation favoured by leading British specialists like Meridian, Naim, ATC and Linn.

There are lots of arguments for and against the high and low sensitivity approaches, mostly of a partisan nature. I tend to favour high sensitivity designs myself, as I like their relaxed dynamics, headroom, and I am relatively tolerant of coloration and image anomalies. I also tend to prefer the sound of lower powered amplifiers.

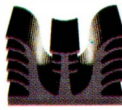
However, the Lynnfield experience did help open my ears to the alternative, with the emphasis on control giving minimal coloration. Driven by the big Chord amp in particular, the open transparency provides its own reward in superb dynamic range, natural tonality and precision that only serves to emphasise the breadth of choice available at the serious end of the hi-fi market.



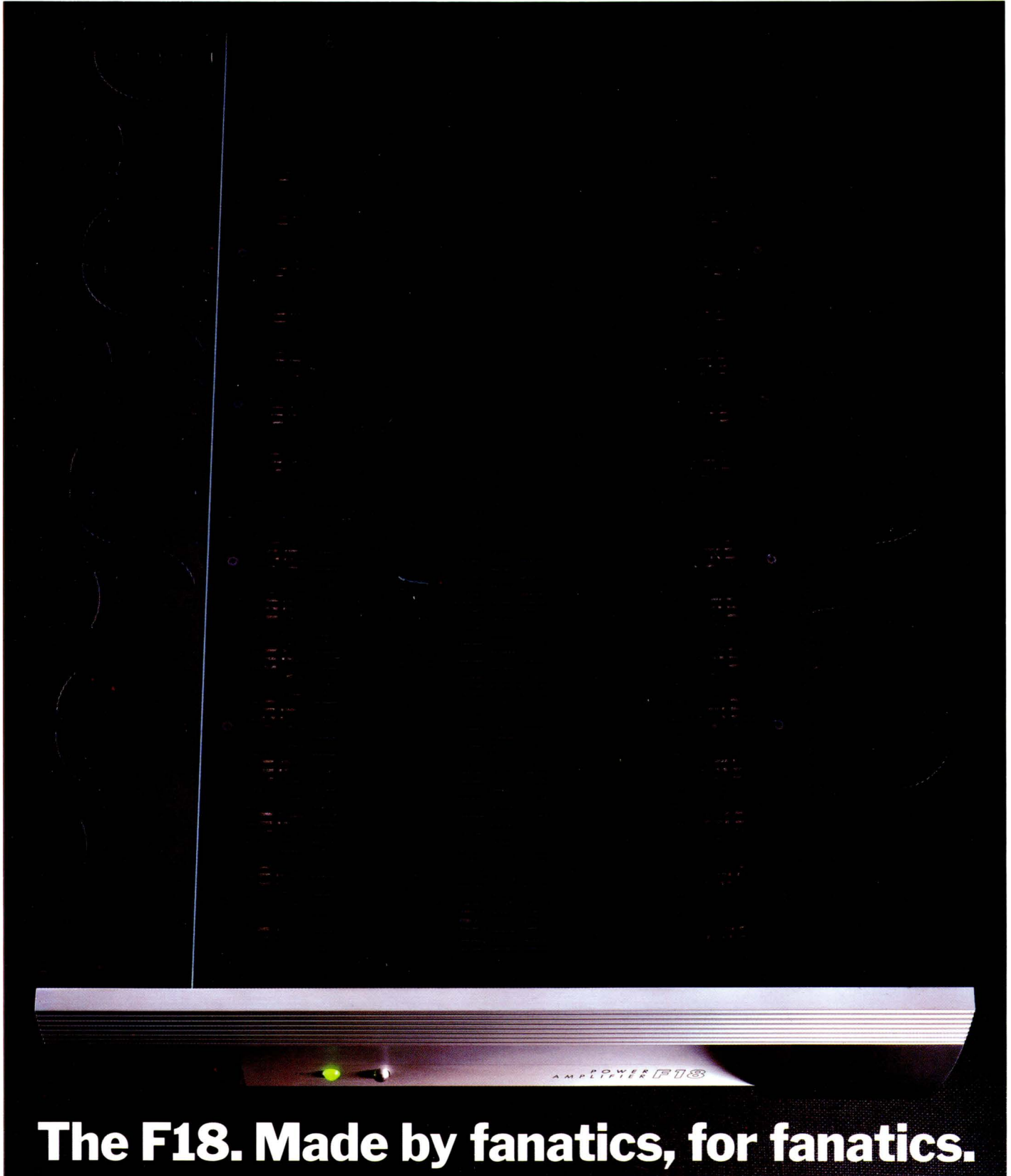
Fresh from his Lynnfield *500L* experiences, Paul Messenger looks back to the vast *Air Partner* horns.



The Living Voice *Air Partner*: sense and sensitivity.



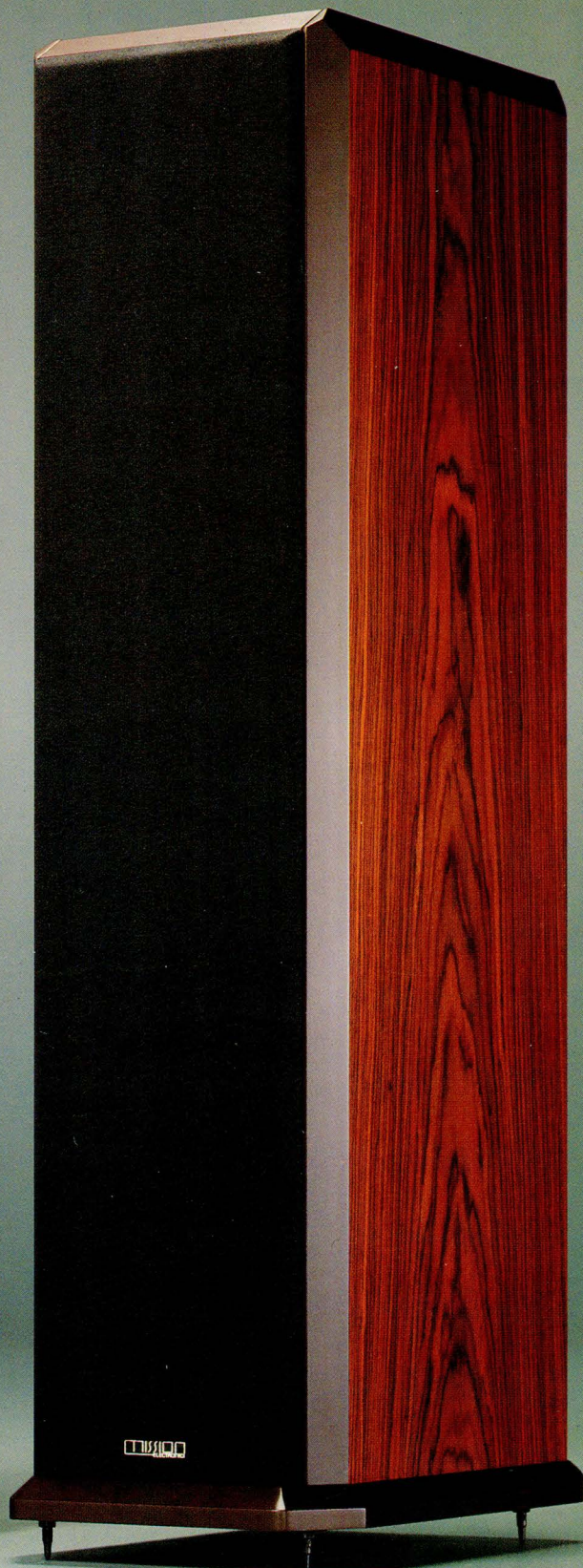
THE F SERIES: F22-REMOTE CONTROL TUBE PREAMPLIFIER. F15-100 WATTS PER CHANNEL HYBRID STEREO POWER AMPLIFIER WITH TUBE BALANCED INPUTS. F18-220 WATTS PER CHANNEL HYBRID STEREO POWER AMPLIFIER WITH TUBE BALANCED INPUTS. FX-90 WATTS PER CHANNEL STEREO POWER AMPLIFIER.



The F18. Made by fanatics, for fanatics.

MISSION

because...



BBC



SUPER FERRIC

NORMAL BIAS 120 μ s EQ
FOR QUALITY REPRODUCTION.

BBC
FX

Take this voucher to any branch of Dixons in the UK and you will receive, free, one C60 BBC FX Super Ferric blank audio tape.

To the manager:

Discount using head office reason code 4

Return to sales audit