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WORLD

JUNE 1996 £2.30

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6 PAGES OF HI-FI
BARGAINS**

**ARE NAD STILL THE
ONES TO BEAT? WE
TEST THEIR 412 TUNER**

PIONEER CT-S740S

TOP QUALITY DOLBY S CASSETTE DECK

SUPPLEMENT NO. 22
(overseas: inside)
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FLOORSTANDERS**

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World Radio History

THIS MONTH'S WORLD

- First of a new breed from Marantz is the CD-63mkII KI-Signature CD player, bearing the initials of senior designer Ken Ishiwata. This £500 player looks set to turn heads - find out why on page 16.
- Arguably the King of budget tuners, NAD's 402 has now been replaced with a newly up-dated model, the 412. Will it continue to lead the field - answers on page 26.
- Spondor have recently launched a range of more affordable loudspeakers. Using a custom designed elliptical bass driver the 2030s have a few neat tricks up their sleeve - page 20.

Has British hi-fi been overtaken? I visited the Paris Salon HIFI show recently and was surprised to see such a strong and dedicated audiophile following. The range of equipment was spectacular, from high end valve amplifiers and High Definition Aerogel coned loudspeakers, to kits and affordable test equipment, aimed at the hobbyist as well as the audiophile.

There was a real buzz here, the kind you used to find years ago at the UK's leading shows. Perhaps we need to adopt a clearer path in the UK, one that everyone can relate to. Consumers must be confused by AV, DVD, MD, DCC, HDCD and what have you. The French show had a simple angle - music and fun. Perhaps there is a message here for the UK marketplace?

Dominic Baker, Editor

TEST EQUIPMENT



- Hi-Fi World has its own advanced test laboratory and acoustically treated listening room. No other hi-fi magazine has the benefit of such facilities.
- Hi-Fi World has a dedicated in-house team of experienced listeners, and uses selected freelance professionals. We review thoroughly by extensive auditioning, rather than by quick-fire group listening tests.
- Hi-Fi World's engineering team designs a wide range of products in-house. No other hi-fi magazine is so expert and dedicated.

LISTENING ROOM

(TREATED BY RFG ACOUSTIC TOOLS)



IN THE JULY ISSUE

ROTEL RDD/RDP980 CD TRANSPORT & CONVERTOR

Rotel have just added a new CD transport and convertor to their established and well liked range of CD players. The RDD/RDP980 look good value too at £450 apiece.

JBL S2600 LOUDSPEAKERS

A winner of Japan's Golden Awards prize for "Excellent Audio Products", the JBL S2600 is a large floorstanding loudspeaker using a 12" bass driver along with a horn loaded compression driver. JBL claim 92dB sensitivity and ask £3,500 for the pleasure of owning a pair.

WILSON BENESCH TURNTABLE

Supplied with their new Hybrid carbon fibre bodied MC cartridge and ACT 2 carbon fibre tonearm, this Wilson Benesch turntable system offers a real taste of high-end sound.

TECHNICS RS-AZ7 CASSETTE DECK

Technics' new 3-head RS-AZ7 cassette deck uses an Amorphous-Z head developed from thin film technology used in their DCC machines. It is said to bring new life to old recordings, with lower noise and wider frequency response.

AMC 3025 AMPLIFIER

Making a strong return to the UK's market, AMC have recently launched a wide range of equipment. We've covered their new CD player and valve CD convertor, now it's time for their entry level amplifier.

WHARFEDALE VALDUS 300

At a smidgen under £150, Wharfedale's 2-way Valdus 300 loudspeakers promise a big and powerful sound for their size. Can they worry the competition though?

AUDIO PUBLISHING LTD
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MAIDA VALE,
LONDON W9 1EX.

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THIS MONTH'S REVIEWS

AMPLIFIERS

CROFT EPOCH AND SERIES V 41

Haider Bahrani switches on to see if this new Croft pre/power combination can set his heart a-glow.

TEAC A-BX7R 65

Eric Braithwaite finds that size isn't everything with the A-BX7R from TEAC.

COMPACT DISC

MARANTZ CD-63mkII 16

Ken Ishiwata, Marantz's senior designer, has delved inside a CD-63 to bring us another super-tuned, audiophile aimed CD player.

AMC CDM7 23

Dominic Baker checks out AMC's CDM7, and hits the bottle with the optional plug-in valve output stage.



THORENS TCD/TDA2000 30

Eric Braithwaite pins back his ears for a session with the digital combo from the turntable company.

TUNER

NAD 412 26

Jon Marks listens in to find out if NAD's new 412 tuner is a worthy successor to the 402.

CASSETTE DECK

PIONEER CT-S740S 50

Noel Keywood records his verdict on Pioneer's CT-S740S deck. Read on to discover what it is.



LOUDSPEAKERS

SPENDOR 2030 20

Built around an oval mid-bass driver, the 2030 stands tall and slim. Dominic Baker lends an ear.



QLN QUBIC 122 28

Haider Bahrani tries out the QUBIC 122, budget sibling of QLN's Signature Series.

UKD CALLAS GOLD 33

With its hardwood cabinet and 24k gold-plated terminals, the UKD Callas Gold promises much. Eric Braithwaite is there to see if it delivers.

HARBETH HL COMPACT 7 57

Our very own in-house private eye Dominic Baker investigates Harbeth's HL Compact 7.



WORLD VERDICT

OUTSTANDING - Superb sound, something we'd use ourselves.

GOOD - Has strong merit. Well worth an audition.

ADEQUATE - Mediocre in vital areas. May be worth auditioning.

POOR - Seriously flawed. Not worth considering.

REGULARS

NEXT ISSUE

Find out about all of the wonderful things we'll be bringing you in the July issue.

NEWS

A tape deck, a subwoofer, some tiles and a web on the net amongst other things. Just say you read it here first.

READERS' LETTERS AND Q&A 42

Our letters pages are filled with intrigue and prizes too.

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Opinionated, they might be. In the know is a definitely maybe. Fun to read, absolutely.

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WORLD FAVOURITES GUIDE 99

Over the years we've come across some top class hi-fi. Here's a list of the ones we might buy.

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You want it, they could have it. Find a dealer now and get those index fingers punching.

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Pay your respects to the ones that brought heaven to your living room.

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Everything we listen to gets a thorough probing.

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7 A world of hi-fi bargains waiting to be snapped up.

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The latest from Paris. Sham, or real hi-fi? Dominic Baker was our man with the phrase book finding out.

CASSETTE MYSTERIES EXPLAINED 36

Noel Keywood delves into the world of cassette deck technology.

DIY SUPPLEMENT NO.22

89 It's that time for us to give you another FREE DIY Hi-Fi Supplement. This month we build Hart's Chiara single-ended headphone amplifier, check out Electronics Workbench - a circuit simulator for the PC and of course all of the usual book reviews and DIY letters.

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COMPETITION

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A chance to win Technics loudspeakers this month. First prize is a pair of SB-M500 loudspeakers and there are four pairs of SB-M300s for runners up too.



MUSIC

The best of this month's albums

ROCK AND POP 82

RECORD OF THE MONTH:
Sine: Mercury Falling

JAZZ 85

CLASSICAL 93

RECORD OF THE MONTH:
Biber, Schmeizer:
Sonatas, Freiburger
Barockorchester Consort

WHO SAYS THE

BRITISH DON'T

PLAY BRILLIANTLY

IN EUROPE?

EUROPEAN LOUDSPEAKER OF THE YEAR



At B&W we've just scored another major success. Our CDM1 has now won European Speaker of the Year, which was judged by the Editors-in-Chief of leading photo, video and audio magazines from thirteen countries. High praise indeed. But with a winning team of engineers coming up with a hat trick of technological innovations: outside tweeter mounting, kevlar drive unit and contoured edges for reduced sound diffraction, it's not an entirely unexpected result. For more information call B&W UK on 01903 750750. And see that the best European players don't have to start at £8.5m.



B&W

World Radio History

LISTEN AND YOU'LL SEE

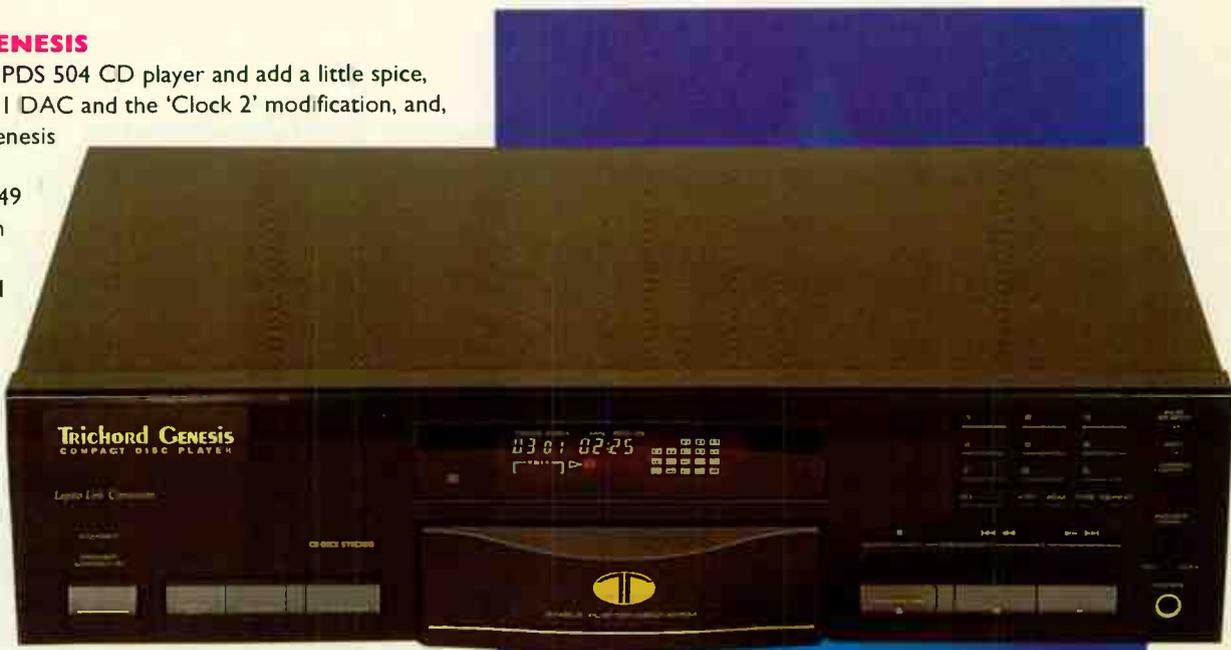
TRICHORD GENESIS

Take one Pioneer PDS 504 CD player and add a little spice, namely the Pulsar 1 DAC and the 'Clock 2' modification, and, hey presto, the Genesis CD player.

Retailing at £549

Trichord Research claim that their player offers a real taste of high end performance at a less than high end price. Watch out for the review

Trichord Research
73 Church St.,
Malvern,
Worcestershire
WR14 2AE
☎ 01684 573524



trade winds

AND THEY KEEP ON COMING

Hot on the tail of recent product launches NAD set another integrated amplifier onto the market. The new 314 builds on its highly acclaimed predecessor, the 304, delivering 35 watts per channel into 8 ohms.

The 314 has 6 line inputs and one MM phono stage, using precision metal film resistors and polypropylene capacitors. In fact the whole amplifier is built with discrete components for a high level of performance. The 314 also uses NAD's Extended Dynamic Power (EDP) circuit topology. This allows it to sustain high levels of dynamic power on transients; NAD claim 200watts into 2Ω is possible from this '35watt' amplifier. It's available now and retails for £259.95.

Audio Club
401-405 Nether St.,
London N3 1QG
☎ 0181 343 3240



G T AUDIO

THE VALVE AND VINYL SPECIALISTS



The new CROFT Epoch pre-amp and Series 5 power amp like all Croft amplifiers represent unparalleled performance at very realistic prices. As Ken Kessler once said "Croft has products which can take on the world" "they've proven to be reliable beyond my wildest dreams and embarrassingly underpriced" If you have had trouble finding a Croft dealer then look no further as we have these items on permanent demonstration

The new GRAAF 5050 power amplifier 50 watts of glorious power using the latest Russian KT88/6550. This Italian beauty which is built at Modena, the home of Ferrari, also equals their standard in performance and finish. The matching WFB TWO pre-amp with MM/MC input is also a little stunner. If you are considering valve pre/power combination for around £3000 then the GRAAF should be at the top of your list.



If you are considering purchasing a new piece of audio equipment and are totally confused by the volume of equipment available then have no fear. The equipment I recommend has to pass strict criteria before I undertake to sell it. These criteria are build quality, reliability, performance and appearance in that order. I also recommend equipment whose performance is above and beyond that of the established references, creating new references like the Nottingham Analogue Turntables and Posselt loudspeakers. Two new products that come firmly recommended are the new Glass Audio Tube Engineering (G.A.T.E.) KT88 & 300B amplifiers and the Yamamura Churchill Millennium 5000 cables. These cables are the most remarkable I have ever heard. The improvement they make to a system is greater than upgrading a major component for example a new amplifier or loudspeaker. If like me you appreciate the beauty of real music and want to re-create its illusion at home then consult Graham Tricker to arrange a demonstration or for information on the following products.

Agents for:- APOLLO, CROFT, G.A.T.E., GRAAF, G T AUDIO CABLES, LEAK TROUGHLINE TUNERS, MONRIO, NOTTINGHAM ANALOGUE, POSSELT, UNISON RESEARCH, UKD OPERA AND YAMAMURA CHURCHILL ACCESSORIES AND CABLES.

Ex-demonstration equipment for sale

BEARD CA35 pre-amp, BEARD M70 MkII monoblocks + matching stands (list over £4000) used once at Ramada, all boxed & still under warrant, a give-away at £1500. UKD Opera Loudspeakers:- Callas Mk1's £300, Operetta's inc. stands £400, Prima's (oak) £350, Divinas (walnut) inc stands £999, SME V £750, Unison research Smart 845's £2500.

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We are situated on the outskirts of NW London 4 minutes from junction 16 of the M25 (M25/M40) or 20 minutes by train from Marylebone Railway Station

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Confused sound? Is your living room too live? For these and any sound room niggles Barry Larcombe Associates might be able to help. As used in performance halls, recording studios and sound processing venues (not to mention HFV's in-house listening room), B.L. Associates supply the full range of RPG acoustic products from B.A.S.S. traps to wall diffusers.

Barry Larcombe Associates
52 Fryerning Lane,
Ingatstone,
Essex CM4 0DE
☎ 01277 352066



DENON'S 'S' QUE

The two head DRM-650S is Denon's first domestic outing into the field of Dolby S cassette decks. At £229.99 it battles head on with standard Dolby B and C models available.

This new machine from Denon boasts many other features alongside Dolby B, C, S and HX Pro, including Auto Tape Tuning which sets bias and sensitivity when recording. There's also a manual bias control for playback and the transport has two motors, 'Non-Slip Reel Drive' and a 'Silent Logic' mechanism. To minimise interference, completely separate power supplies are employed for the audio and transport circuitry.

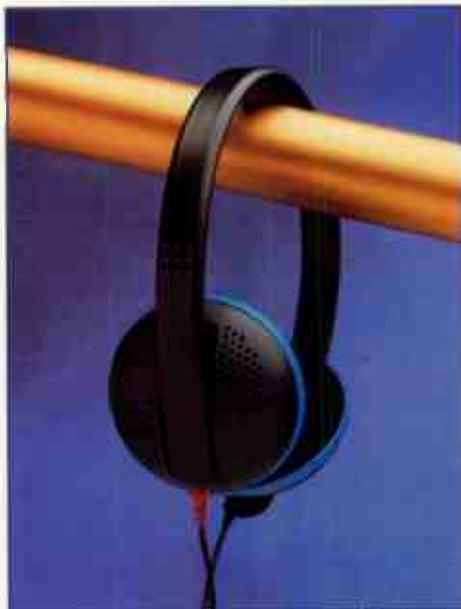
Hayden Laboratories
Hayden House,
Chiltern Hill,
Chalfont St. Peter,
Buckinghamshire
SL9 9UG
☎ 01753 888447



THE ART OF COMPROMISE

Sennheiser, the headphone specialists, claim that they have mastered the art of compromise. Their new headphones, the HD 445s, are a cross breed using the drive units from their Expression line packaged in the more cost effective physical design of the HD 435 series of 'phones.

The aforementioned drivers use Neodymium-Iron magnets for a claimed high sensitivity, clean bass and extended treble. As with their other models construction is modular and all parts are user replaceable. The cables used are Oxygen Free Copper strengthened by strands of woven Kevlar. All this will set you back just £39.95.



Sennheiser
13 Century Point,
Halifax Road,
High Wycombe,
Bucks. HP12 3SL
☎ 01494 551551

NOW HEAR THIS SUBWOOFER

Updating their SW-2p powered subwoofer system, NHT have recently unleashed the SW-2pi. The new version uses a 10inch polypropylene, high excursion woofer in a vented enclosure. It is driven by a 120watt amplifier and produces bass, NHT claim, that extends down to 27Hz.

Amongst its features are high (fed from your amplifier's speaker outputs) and line level inputs, outputs for use with satellite speakers, adjustable low pass filtering and a phase switch. Retail price is £689.

Sound Dept.
19 Blacklands Way,
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Abingdon,
Oxfordshire
OX14 1DY
☎ 01235 555622



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We are too busy building the World's best hi-fi to design adverts.

But not too busy to talk to you if you want information.

dpa digital ltd., Units 7 & 8, Willowbrook Lab Units, Crickhowell Rd., St Mellons, Cardiff CF3 0EF
Tel: 01222 795621 fax: 01222 794267.

REFERENCE NEUTRONS

As the fad for miniature loudspeakers builds up to a frenzy, AVI have hopped on the bandwagon. Their offering is the Neutron, a natural Cherry veneered ported box housing a 4.5" bass/mid driver and a 19mm soft dome tweeter. The drive unit comes in a high pressure die cast chassis with a doped paper cone. The crossover unit uses large air cored inductors and polypropylene capacitors. Low frequency cut off is 70Hz at -6dB. Nominal impedance is 8Ω.

AVI claim a tonally accurate sound and a life-like image is produced from these tiny specimens. Retail price is £499.

AVI
Unit F3C3,
Bath Road
Trading Estate,
Stroud,
Gloucestershire
GL5 3QF
☎ 01453 765682



HIGH END RESEARCH

Harman Audio have formed a small company for the purpose of designing "loudspeakers of exceptional quality and performance". The current and supposedly temporary name for the new company, which is to be located in Los Angeles, is Newspeak.

The engineering team will be headed by Kevin Voecks of Mirage and Snell fame. Organisation and management will be directed by Sanford Berlin, the former chairman of Madrigal.

INTO THE QUADRASPIRE

New on the hi-fi furniture scene are a company called Quadraspire. Their first product, the Q4 table, comes with a choice of either Cherry or Walnut shelves with 12 aluminium spacers and 4 adjustable feet. The spacers are available in 4 different lengths from 100mm to 216mm.

The whole rack retails at £200.

Additional shelves including spacers are available at £50 each.

Quadraspire
62 Riverside,
Sir Thomas
Longley Rd,
Rochester,
Kent ME2 4BH
☎ 01634 296615



ITALIAN INVASION

GRAAF have handed over UK distribution to, um, U.K. Distribution. Their current range consists of two pre-amplifiers; the WFB One & Two, each with an in-built MM/MC phono stage, the GM 13.5B balanced line pre-amp and three power amplifiers; 5050, GM100 and GM200. Prices start at £1100 with the WFB Two and go up to £8000 for the GM200 power amplifier.

The amplifier shown is the £2100 5050 power amplifier. This model uses KT88A power valves in push-pull configuration driven by 6922 double triodes.

U.K. Distribution
23 Richings Way,
Iver,
Bucks. SL0 9DA
☎ 01753 652669



DESPERATELY SEEKING SIEMEL

Siemel, based at Vatan in France was originally founded in 1986 and now with a range of hi-fi components is making efforts to set up an international distribution network.

Their current range of products includes two line pre-amplifiers, one tube and one transistor and separate MM and MC phono pre-amps. Further new products are sitting on the test bench.

SN Siemel Industrie
ZI Les Noyers,
36150 Vatan, France
☎ (+33) 5449 9406



SUPER IMAGES

Musical Images have recently refurbished their Covent Garden store. They claim to be the only location in the UK to have the Systemline multi-room Super Controller on permanent demonstration. This system can be used to control up to four separate music/video systems in four separate zones.

Musical Images
18 Monmouth Street,
Covent Garden,
London WC2H 9HB
☎ 0171 497 1346

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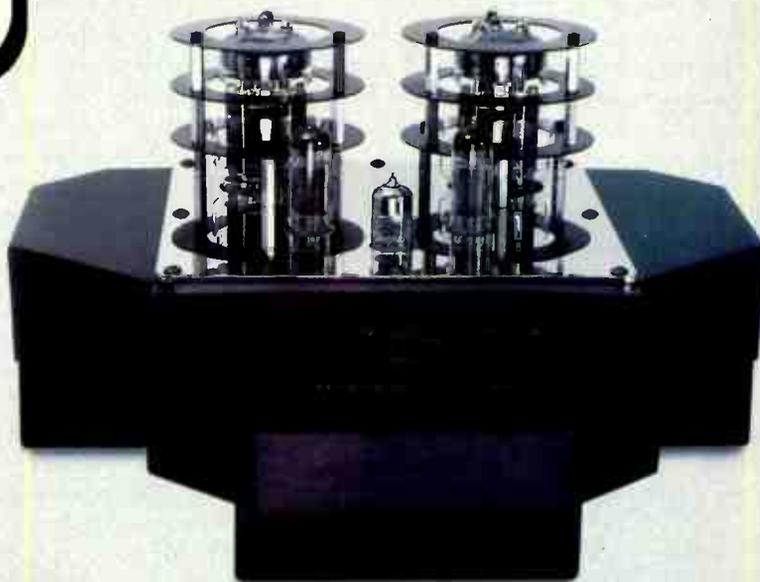
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Enlightened Audio Design
Mirage Bipolar Loudspeakers

Koss

TRIODE 100 SB

MONO BLOCK / BLOC DE PUISSANCE



DON'T THINK TWICE IT'S ALRIGHT

Sometimes we ask too many questions. But always asking for explanations can be a waste of time. Trusting to your instincts, believing your own eyes and ears, that is the way to reach the truth. If you doubt that, just ask yourself why it is that a well-designed single-ended valve amplifier can beat its solid-state cousin hands down for sheer musical enjoyment, when the specifications on paper might have you believe just the opposite.

At Unison Research, we make amplifiers to give musical pleasure. And we believe that in the best designs, those which go on to achieve classic status, form should follow function. That is why our amplifiers are different from those of other manufacturers. We don't make 'black boxes with knobs on, and we never will. Take a close look at our Mystery One preamplifier. It certainly doesn't look like any other preamp you've ever seen. But like all our products, from the delightful Simply Two to the awesome 845 Absolute (considered by many to be the finest valve amplifier ever made, *irrespective* of price) it is intelligently-engineered, beautifully styled, and above all, made to give you a lifetime of musical pleasure.

The moral of the story, quite simply, is this: sit back, relax, and listen to your music. If it *sounds* right, and *looks* right then don't think twice, it *is* right



MYSTERY ONE by Unison Research.

Unison Research Mystery One valve preamplifier. £1750. For details on the full range and a dealer list call:

UKD
23 RICHINGS WAY,
IVER, SLO 9DA, BUCKS, ENGLAND
TEL: 01753-652669 FAX: 01753-654531

SALON HIFI 96

HAUTE FIDÉLITÉ & HOME CINEMA

LE MEILLEUR DE LA HIFI & DE L'AUDIO-VIDÉO

Dominic Baker visits Paris for the weekend, but gets caught by a hi-fi show on his way to the Eiffel tower.

Held over the weekend of 22-25th March, this year's Salon Hi-Fi 96, held at the Palais des Congrès in Paris, saw a strong enthusiast following. Standing outside in the sun I was amazed at the number of people who had flocked to this event, but once inside I could see why. Here was a show for dedicated audiophiles, with valve amplifiers and kits alongside numerous weird and wonderful loudspeaker designs.



Not available in the UK at present, but **Euraudio's** portable 1/3 octave analyser looked very sleek.

It comes with a built-in microphone and has a range of 80dB, ideal for home constructors or in-car response measurements.

Cairn seem to be addicted to High Definition Aerogel drivers - every loudspeaker in their range used them. Their top models, Eiger and Meane, also use the HD-3P oval piezo-electric dome tweeter - the first time we've seen it in a production loudspeaker. ▶



Marantz were showing the first samples of the soon to be re-launched Model 8B and Model 9 valve amplifiers.

Cabasse occupied a large part of the 6th floor with their huge range of loudspeakers. Pictured is a selection playing in front of an audience of a few hundred in a small concert hall. ▶



Leedh were also demonstrating loudspeakers using HDA drivers and the HD-3P oval piezo-electric dome tweeter - not surprisingly really, they're based just around the corner from the Audax factory in Chateau du Loir. ▶



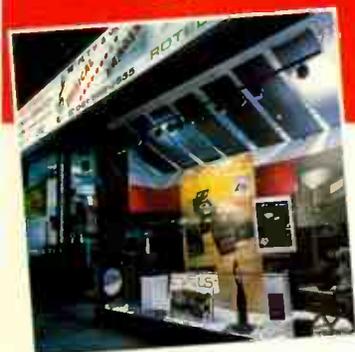
Davis Acoustics, a name I've not come across, had a remarkable range of loudspeakers and drive units, both in built-up form and as kits. The drivers use a range of materials including kevlar and carbon fibre and included several boasting 90dB or higher sensitivity. ▼



ROUND UP - JM Lab (Focal) had a wide range of loudspeakers and drive units on display, including their new 'W' cone drivers. 'W' is a glass sandwich material comprising two fine veils of woven glass with a layer of rigid syntactic foam in-between. **Rogers** took the retro approach to a sweet sound and drove a pair of LS3/5as with an original Cadet III valve amplifier. In their other room the latest E-40a valve amplifier was driving the LS33/AB33 combination. **JBL** had a pair of S3600 loudspeakers on

demonstration. Again a product not available in the UK, they're bigger brothers to the award winning S2600 horn/bass reflex hybrid loudspeakers we hope to be reviewing next month. Both **Triangle** and **SEAS** were showing their latest kit designs. **Luxman** were showing their CL-38 valve preamplifier and MA-88 KT88 monoblock valve power amplifiers alongside their normal range of electronics. Sadly these valve amplifiers are not available in the UK at present ●

MUSICAL IMAGES



The Power House of Choice

Technology continues to march forward at an alarming rate – since the advent of Compact Disc in the early eighties there seems to have been an almost endless stream of new ideas, some successful, some not. Keeping abreast of all this new technology is difficult for both newcomer and enthusiast alike. So where do you go to receive expert, unbiased advice? Which equipment will suit your budget and, just as importantly, your listening or viewing environment?

An Isle of Sanity in a Sea of Madness

As an authorised dealer for over 100 of the world's premier manufacturers, Musical Images are able to offer superb choice for their customers and, having attended numerous Supplier Training Courses, their staff are fully qualified to offer expert advice on all aspects of Hi-Fi and Home Cinema.

The three branches in Hounslow, Edgware and Covent Garden offer a total of six demonstration rooms, with 'single speaker dems' a speciality. So whether you're looking to invest in a dream system or simply shopping for

accessories, you'll find nothing is too much trouble for the people at Musical Images.

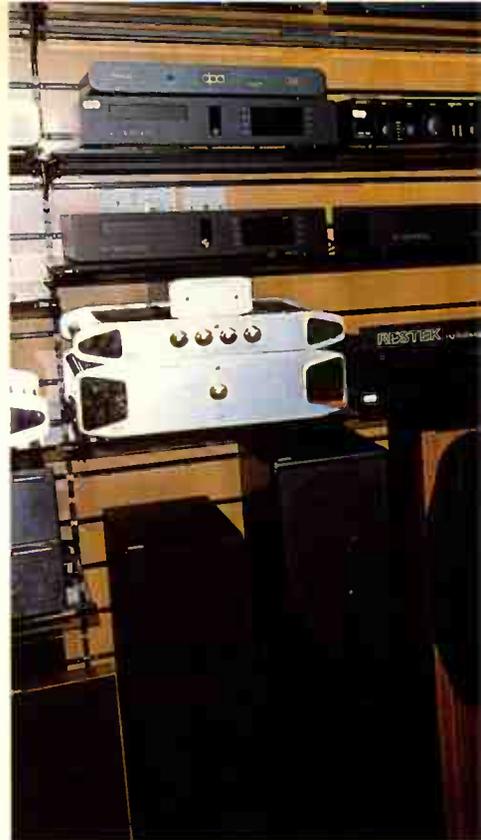
An Audiophile's Delight

Award winning and well-reviewed Hi-Fi separates from all the top manufacturers form a major part of Musical Images' product line-up... However, as the old saying goes, "one man's meat is another man's poison", so you owe it to yourself to take advantage of the superb demonstration facilities and let Musical Images' staff guide you through the various options that are available.

Or, if you feel so inclined, why not enquire about Home Trial Facilities?

Lovers of vinyl have certainly not been neglected, because Musical Images realise that many of those treasured recordings will never be committed to CD. Therefore, you will find a comprehensive range of integrated turntables together with separate arms and cartridges at all branches.

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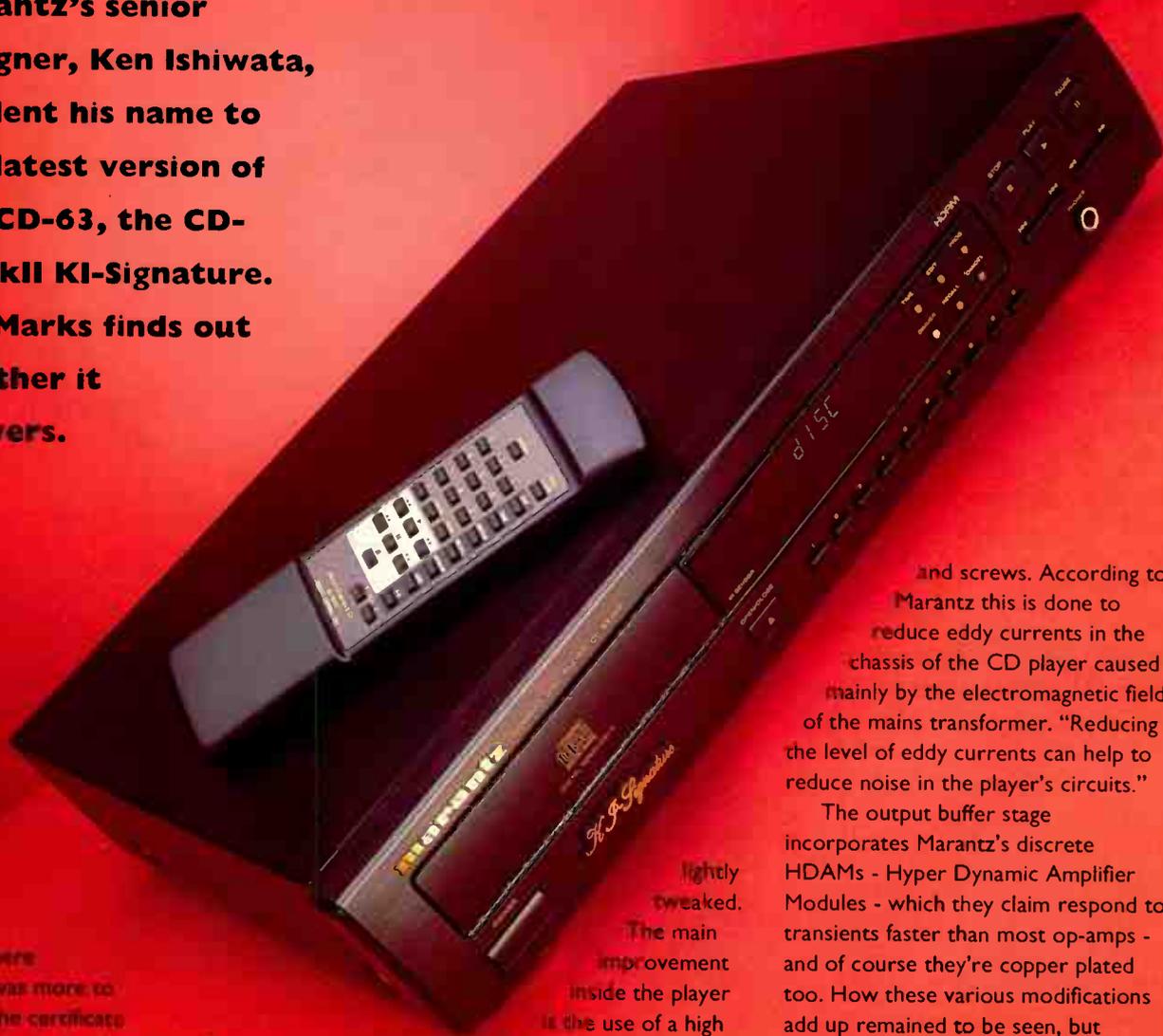
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Signed, sealed

Marantz's senior designer, Ken Ishiwata, has lent his name to the latest version of the CD-63, the CD-63mkII KI-Signature. Jon Marks finds out whether it delivers.



There was more to the certificate supplied with this latest tuned version of Marantz's CD-63mkII than the usual "Thank you for buying this..." and a spot on my wall. This particular piece of paper bore the seal of Ken Ishiwata, Marantz's senior designer, a man widely respected for his in-depth knowledge of all things high fidelity. This certificate and the gold-printed "KI-Signature" badge signifies more than Marantz's normal SE tag too - the KI-Signature is more super-tuned than

lightly tweaked. The main improvement inside the player is the use of a high quality toroidal mains transformer, which features composite materials and high grade copper windings. Marantz say this improves bass, both in terms of extension and punch, but it obviously also has a knock-on affect on sound quality as a whole.

Copper-plating has always been widely used by Marantz on their higher end products and the KI-Signature is no exception with copper finished chassis

and screws. According to Marantz this is done to reduce eddy currents in the chassis of the CD player caused mainly by the electromagnetic field of the mains transformer. "Reducing the level of eddy currents can help to reduce noise in the player's circuits."

The output buffer stage incorporates Marantz's discrete HDAMs - Hyper Dynamic Amplifier Modules - which they claim respond to transients faster than most op-amps - and of course they're copper plated too. How these various modifications add up remained to be seen, but carrying the kudos of Ken Ishiwata's signature and the weight of a £500 price tag, there was a certain air of expectancy as I inserted Tori Amos into the CD drawer and took my seat.

First impressions were good - it was nice to hear a vocal rendition so free from grain and spit, especially with breathy vocals like Ms. Amos'. Detailing was also fine, showing up a strange electrical whirring in the recording I'd never really noticed before on 'Beauty

& delivered

Queen' and 'Horses' from her Boys for Pele album.

It was with the fourth track, 'Professional Widow,' that this player really started to show some of its mettle. This song has a heavy drum machine beat with kick drum and electric bass in a dense mix which can get confused in the lower registers. With the Marantz I could make out the three bass-line components without having to strain. The leading edges of bass guitar notes were impressively detailed, dynamic and easily distinguished from the hard, artificial punch of the drum machine. Kick drum had the same organic quality as the bass guitar and for once the drum kit sounded like a vital part of the music, as opposed to merely providing the rhythm for other musicians to hang their performances on.

One particular quality which emerged as my listening progressed was the manner in which the Marantz presented music. There was an even-handedness which allowed me to look in on individual instruments as they appeared, rather than forcing me to follow the player's preference. I found myself noticing guitar notes and cymbals that had seemed merely incidental before.

Switching CDs to Archiv Produktion's Vivaldi's Four Seasons

produced a soundstage that, while little wider than usual at this price level, was impressively deep, allowing the players of the English Concert sufficient room to really let rip. With the separation and clarity of imaging on offer, it was easy to make out the different layers in the mix and the positions of the various sections.

Two aspects of the player's performance which really allowed the music to breath in a convincing, organic fashion were evident in this recording.

The first was its rendition of tonal colour. Period violins possessed the kind of woody, varnished resonance and acidic string tone that's simply delicious to listen to.

The second was the ability to play each note separately. I've often heard this piece produced in a rather off-hand way, the notes having a habit of

blurring together. With the KI-Signature though, each note was enunciated separately, with its attack and decay natural and complete - a subtle difference to listen consciously for, but one which has a large impact on its ability to portray a performance convincingly.

It was difficult not to simply press the repeat button at the end of the Four Seasons, but John Lee Hooker's

Chill Out CD was next in line and I was looking forward to a dose of the blues.

As I had hoped, here again was that natural tonal colour and easy articulation that allowed the essence of the music through. 'Serves Me Right To Suffer/Syndicator' has a wonderfully slow, grinding rhythm which caused the Marantz no problems whatsoever. The music slipped on its shades, buttoned up its jacket and stepped out looking so sharp it was a threat to public safety.

Regardless of the genre of the CD in its drawer, this player always turns in an impressively musical and involving performance. On that attractive owner's certificate is a quote from Ken Ishiwata, stating that "For me, hi-fi is about conveying the essence of a recording in its purest, most enjoyable form." I think that in the CD-63mkII KI-Signature he has succeeded better than anyone for £500 ●

Marantz CD-63mkII KI-Signature £500

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Middx. UB7 0EH
☎ 01753 680868

*"The music slipped
on its shades, buttoned
up its jacket and
stepped out looking
so sharp it was a
threat to public safety"*

WORLD VERDICT

Similar sweetness and smoothness of tone to the CD-63SE, but better still. Bass has greater power and authority too; top audiophile value.

**Measured Performance
see P103**



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GOING ELLIPTICAL

Dominic Baker squares up to Spondor's elliptical drive unit in the new 2030 loudspeaker. Did it drive him 'round the bend?



Was I ever reluctant to return flagship SP9/I loudspeakers to Spondor. As traditional as they come, with heavy cabinets and real wood veneer, they were impressive. In their place, Spondor sent me something very different. "What a departure" I thought as their new high tech, grey satin textured 2030 speakers sat before me.

These floorstanders look as if they could have come from a different company. Perhaps one of the reasons for such a change was the input of designer Robin Marshall, who worked alongside Spondor's in-house designer Derek Hughes on the 2000 series. He's the man responsible for the Epos ES11.

One key feature of all loudspeakers in the 2000 series is an elliptical bass driver. The reason is down to a phenomenon known as cone 'break up', which describes where a driver's behaviour starts to become erratic, causing

response to become rough or uneven. Normally, a loudspeaker's electrical crossover circuits roll-off a driver's output before 'break up', to suppress the audibility of this effect, normally heard as a roughness or coarseness.

Cone 'break up' is really an acceleration limit beyond which a driver's cone fails to work in a controlled manner due to erratic flexure. It's a problem of bass/midrange drivers, because of the frequency range they must cover. Good bass demands a big cone, but this breaks up earlier than a medium size one. Most manufacturers cross over from the bass/mid driver to the tweeter at around 3kHz to avoid breakup. But this is where the human ear is sensitive to phase and amplitude distortion, so often the transition is, subjectively, not a smooth one.

Spondor's elliptical driver spreads and reduces the problems of break-up, due to its mechanical asymmetry. The short sides of the cone are stiffer and have a different flare to the longer sides. Also, surface wave reflections are staggered because of the different distances to the edges of the cone. These effects in combination smooth out high frequency response, allowing Spondor to raise the crossover point to around 5kHz. Aside from this, the 2030s are a simple enough two way design using a 1" soft dome tweeter and bass reflex loading.

From the opening few bars of Counting Crows' 'Omaha' that familiar Spondor sound was apparent. This was a bit of a surprise to me at first, for I'd expected something quite different. Not that Spondor's family sound is a bad thing - quite the opposite in fact. Bass had much of the taut and tuneful nature of their more up-market designs. It's not as expressive as, say, their SP2/3s, but it

certainly seemed to drive deeper. That tight, controlled and rhythmic thwack behind every note, without boom, waffle and all the other evils many fall prey to was a delight.

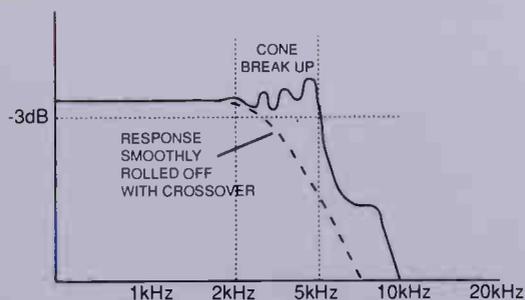
With 'Perfect Buildings' the image was as tightly defined as their smartly tailored appearance would suggest. Strings were snappy and cut crisply through the wash of sound. But the 2030s certainly couldn't be described as having holographic qualities. They're strongly focused in their delivery, precise, but on acoustic pieces they could sound a touch restricted.

Low level detail, the kind that paints a picture of the studio and creates the atmosphere of a song, wasn't captured by the 2030s as well as, say, Castle's Chesters or Mission's 752s.

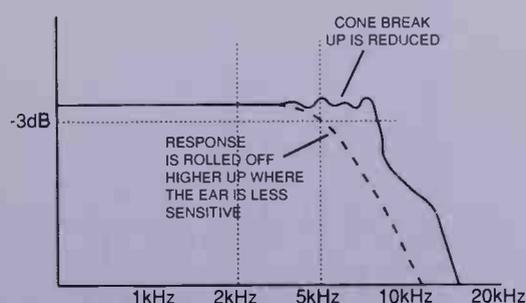
Changing from my current fave integrated, the Audiolab 8000S, to a long trusted Sugden A21a brought a smidgen more out of the Spondors, but its 20watts weren't enough to grip them properly. Four feet from the back wall and three feet in from the sides, they had plenty of space and were able to describe stage width and depth well, but were not up with the best.

Dubstar's 'The Day I See You Again'

CIRCULAR CONE



ELLIPTICAL CONE



With 'It Could Be Sweet' the deliciously smooth and beautifully projected vocals, delicately performed treble and rich and fruity bass were a real treat.

shed more light on this. The tweeter in the 2030s is surprisingly sweet and open, with fantastic detail. It gave great insight, but as the frequency dropped the scale of the performance reduced with it. Lower midrange, although punchy and clear, didn't express the scale or acoustic well. This said, just sitting back and listening to several tracks on this album was satisfying. The 2030s have a smoothness and a charm to their presentation that makes them easy to sit enjoy. They're very well balanced in this respect, being neither too bright nor hard but still clear enough to relay music coherently.

Although perhaps not the best loudspeaker for fastidious classical listeners, jazz and acoustic rock thrived. They have a BBC LS3/5a kind of sound, a touch thick through the midrange but full of texture - and with a nicely timed punch.

Portishead brought out the bass depth of the 2030s. With 'It Could Be Sweet' the deliciously smooth and beautifully projected vocals, delicately wrought treble and rich and fruity bass were a real

treat. Bass is heavy on this track, but even at quite high levels the 2030s held onto the notes tightly and cleanly.

At this point I reached for Bjork's 'Big Time Sensuality'. This is a neatly structured track with brightly metallic cymbals alongside full and vibrant bass. Simple keyboard chords between vocals were as cold and dryly etched as I expected. But there was also a hint of plasticity colouration, although it added texture and depth without affecting clarity.

With PJ Harvey's 'Working for the Man' a warming of tone could be heard, but again it didn't detract from my enjoyment. Bass was more than plentiful without becoming overbearing.

Rounding off with Inspiral Carpets' 'Uniform' I was reminded of quite how precise and well mannered the 2030s are. With this normally quite messy recording, they untangled instruments well, each allowed at least enough space to play its part unhindered. And 'Saturn 5' just rocked as well as it always does, drums beating out their tribal chant.

I suspect many listeners who aspire to Spondor's up-market designs will welcome the more affordable 2000 series. The 2030s are a fine loudspeaker, retaining enough of the Spondor sound and quality of engineering to give them strong appeal. It's a competitive market at this price level nowadays, but I believe the 2030s will carve out a niche in it.

Spondor 2030 £599.00

**Spondor Audio Systems
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WORLD VERDICT



Smooth, focused and coherent in their delivery with deep and taut bass extension. Not the most spacious sound though.

**Measured Performance
see P103**



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Changing FACES

At a first glance, the AMC CDM7 appears to be just another CD transport. But Dominic Baker finds its appearances pleurably deceptive.



AMC's CDM7 is a CD transport. But it's also two CD players, depending on which module you choose to fit. They're simple to change, making upgrading simple. A nifty little idea that.

At present there are three. MD5401 is the standard bitstream convertor module, MD5402 is an optical digital output module for those who want to use the CDM7 as a transport only, and MD5403, the most interesting one, a bitstream convertor using a valve output stage. We had the standard bitstream convertor and the valve one supplied with the CDM7. Both use the same Philips SAA 7323 D/A convertor chip.

Swapping from one to another is a simple enough task. Four retaining screws hold the module in place, which slides in and out making its connection to the transport via a 15pin D-type socket. The standard bitstream module takes its power from the CDM7; the valve version has its own mains lead,

presumably because of the higher HT voltage and heater supply required by the ECC82 valves.

The MD5401 is pretty standard, with just a couple of phono sockets for audio output on the rear. The MD5403 not only has a valve output stage, but is also transformer-coupled to give a differential output for balanced operation. We didn't have a preamplifier with balanced inputs handy, and the leads supplied converted from XLR balanced to conventional phono plugs anyway, but this is how most are likely to use the CDM7.

CDM7 + MD5401 Standard

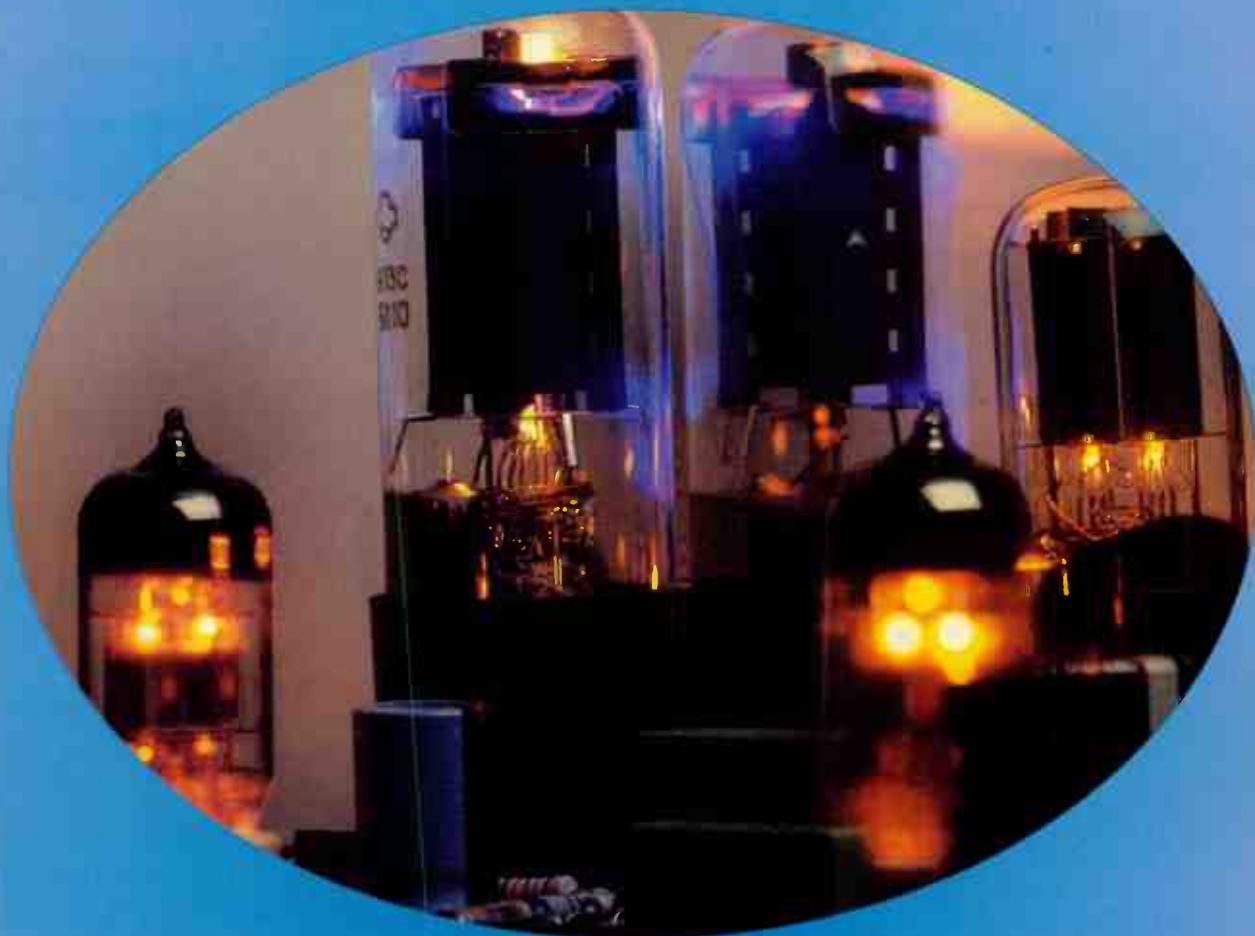
From the opening few bars of Pink Floyd's 'Marooned' it was obvious that the CDM7 had a strong presentation of its own. Hi-hats were sharply spot-lit and accentuated to give a real sense of attack and power to them. Bass too shared similarly captivating properties,

lending fantastic slam to bass guitar notes.

As the following track kicked in, the CDM7 demonstrated its impressive openness and clarity with David Gilmour's vocal. As he spoke the words in characteristic Floyd style "now life devalues day by day/as friends and neighbours turn away" there was a real sense of drama conveyed, firmly holding my attention. As the high pitched and powerful electric guitar played out though, I got my first hint of sharpness from the AMC, along with an almost nasal quality to the upper midrange.

On smoother, richer recordings like Sheryl Crow's 'Solidify' or Lou Reed's 'Perfect Day', the MD5401 convertor gave a thoroughly musical performance. With strong, clear treble, a well-focused

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*“The AMC’s
more one for
raw musicality
than a fine
polishing job”*

midrange and great power to the bass, performances really leapt into life.

‘Mutant Jazz’ by T-Power v. M.K. Ultra was supported by a deep, melodic bass line, percussion exploding into a wide soundstage to create a super sense of space and acoustic. The MD5401 was always involving, but could become a touch ragged at times.

CDM7 + MD5403 Valve

Moving eagerly on to the MD5403 valve output convertor, things softened noticeably. The slight nasal quality became warmer and smoother, giving a more angelic balance. Sadly, image definition and transients softened with it, but the sound stage was now spread even wider than before. The change in balance was a pleasant one though, being immediately more relaxing to sit in front of.

Back with Pink Floyd, cymbals were still as strong and clear, but sweeter in tone. They had all the presence of the solid state convertor, but with a more silky texture.

Bjork’s ‘Hyper-ballad’ emphasised again the AMC’s terrific bass power. The Mission 752s I was using don’t have particularly deep bass, but fed by the AMC an Audiolab 8000S drove their cones to within millimetres of their end stops when describing the rolling subsonics on this track. Vocals were impressively smooth and free from the grittiness that plagues a number of players at this price level.

In many ways, in this guise the AMC reminded me of Marantz’s CD-63SE. Its super-smooth, focused midrange and treble lacked a little of the Marantz’s detail, but it more than made up for this in the bass. The AMC’s more one for raw musicality than a fine polishing job.

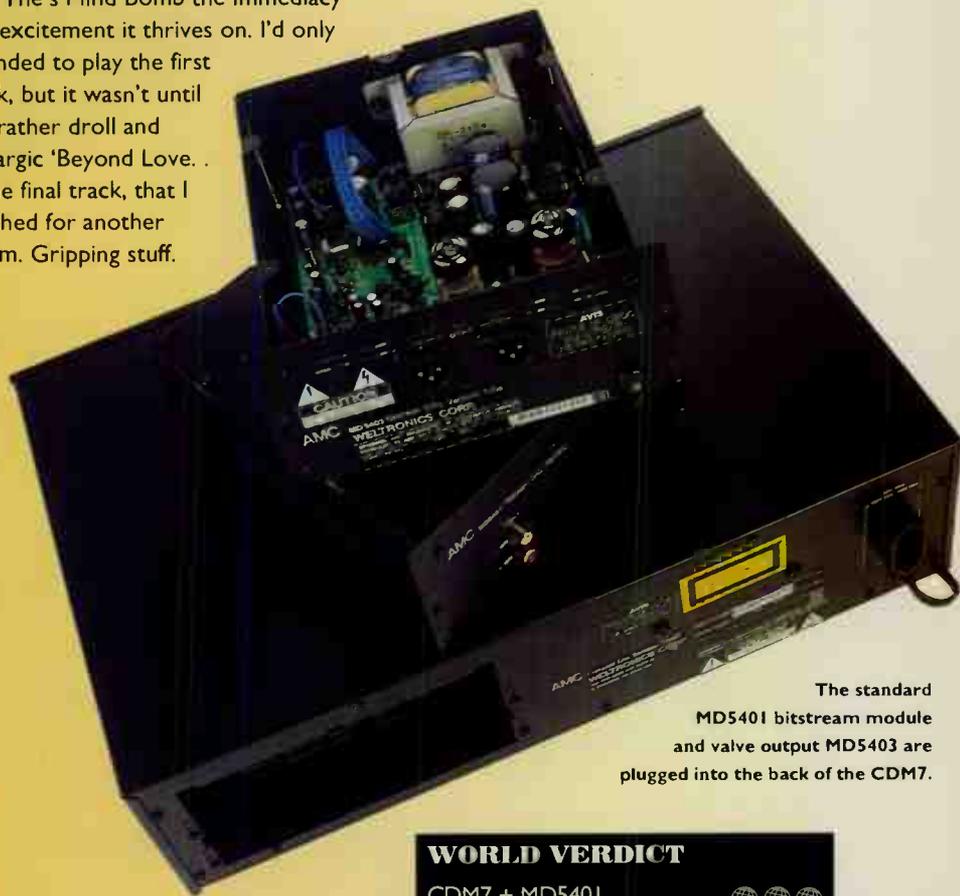
On Nightmares on Wax’s track ‘Night Introlude’ percussion was crisp and cutting enough to break cleanly through the sound stage. Keyboard notes had a juicy punch to them, behind which vocals soared effortlessly. It was a fantastic mix, combining tightly defined melodies with a sweeping backwash of ambient sound.

This ability to describe a wide-open soundscape punctuated with detail gave The The’s Mind Bomb the immediacy and excitement it thrives on. I’d only intended to play the first track, but it wasn’t until the rather droll and lethargic ‘Beyond Love...’, the final track, that I reached for another album. Gripping stuff.

Matched carefully in a well balanced system the AMC’s a tough one to beat in this area, encouraging involvement at all times. Whatever you do, don’t miss it ●

AMC CDM7 £339.95
AMC MD5403 £149.95

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Narcot Lane,
Chalfont St Giles,
Bucks. HP8 4EU
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The standard MD5401 bitstream module and valve output MD5403 are plugged into the back of the CDM7.

CONCLUSION

I have my reservations about the AMC. The standard convertor’s sharpness will be too much for many listeners, especially in already bright systems. Some of this bite also remains with the valve convertor, enough for it to be intrusive on classical music. But both have an underlying raw musicality that had me captivated for many hours.

WORLD VERDICT

CDM7 + MD5401 
A little sharp for some tastes, but its heart is firmly with the music.

CDM7 + MD5403 
Similar in character to the standard MD5401, but sweeter and more open with it. Musically involving.

Measured Performance
see p103



KING OF THE AIRWAVES

Jon Marks surfs the ether on NAD's new 412 tuner.

Cosmetically, there's little to tell the new NAD 412 tuner apart from its predecessor, the 402, which made such an impression on us back in January 1994. The colour of the casework is still an un-inspiring shade of industrial grey. The grey Tune and red Store buttons have been rationalised to a standard black to match the other

function buttons, although power on/off remains staunchly green. The LEDs used to be yellow and dark green - they're now orange and light green. Subtle changes to point out I know, but with NAD's styling that's all there is.

Round the back are the various aerial connections; 75ohm coax, with 300ohm balun adaptor and an AM

“The massed male voices were all easily distinguished, rising together in what amounted to a captivating performance”

terminal for a simple length of cable. There's one pair of phono sockets for audio out and another labelled NAD Link In and Out. This allows similarly equipped NAD components to be connected together and controlled from an overall system remote, leaving only one remote to be lost down the back of the sofa instead of the usual three or four.

Operating the tuner should be easy for anyone who's used a digital tuner before. The Tune buttons have three different uses, depending on which mode is selected. In Search, you can scan the airwaves, the tuner stopping automatically at a strong signal. Switching to Tune gives manual tuning, which crawls slowly between stations. Preset allows any one of twelve stations to be stored in memory, and then selected using the Tune buttons. It took just a minute or two to fill the memory with Radio 1 to 3 and several independent broadcasters.

The first frequency sampled was R3's Composer Of The Week, featuring the poems of Machaut. Immediately noticeable was a lack of noise - volume had to be uncomfortably high before any hiss became audible. The upshot of this was that retrieval of low level detail was especially good, making it easy to work out where a particular piece of music had been recorded, complete

with all of its ambience.

The solo voices of 'Puis qu'en oubli' for example hung crystal-clear in the reverberant acoustic. Both male and female vocals were treated even-handedly, the former sounding nicely weighty without any boominess in the lower registers and the latter smooth and coherent, avoiding compression even at high levels. The massed male voices of 'Dix et sept cinq' were all easily distinguished, rising together in what amounted to a captivating performance.

Changing stations to R2 found me listening in on Anne Robinson in the studio. A slightly nasal tone caught my ear here, but skipping around the various presets revealed that this was simply part of her delivery, and not a tonal error on the part of the NAD. Announcers in general came across with all their breathing and lip-smacking satisfyingly intact. Again, the 412 put together a convincingly musical performance. Electric bass was very well defined, individual notes tripping along with verve, never becoming muddled with the resonant thud of the kick-drum.

In fact, on Jools Holland's show on Jazz FM, featuring Sammy Rimmington, tonal colour was so good it was actually possible to tell where a close-miked cymbal was being struck. The track was obviously recorded in a large hall with high ceilings, saxophone and trombone soaring out above the audience. On a particularly energetic solo the power and inflection of the drumming was real enough to place me in the audience.

Imaging was above standard for any tuner under £500, let alone one of less than half that price, with the various instruments hanging together coherently within the soundstage. One very small quibble emerged at this point though. The spread of sound across the front of the 'speakers didn't stretch as wide as I'd have liked. Front-to-back depth was especially good, but this did highlight the narrowness of stage width further. The effect was more noticeable on orchestral than smaller-scale recordings, but it never got in the way of the music.

Dropping in on Lisa l'Anson on R1

showed that the NAD was equally skilful in its portrayal of Rock and Indie tracks. Although the quality of the signal isn't in quite the same league as R3's, it was still eminently listenable. The treble on World Party's 'Put the message in the box' was nicely detailed, but the mid and bass had lost some of their separation and dynamism, tending to sound a little slower in terms of rhythm than music on R3.

AM reception on Capital Gold was as impressively noise free as the FM stations had been, but the sound quality here was as poor as expected. Announcers' voices sounded clear enough though and 'Keep on Running' by the Spencer Davis Group was again treated very even-handedly, but I found myself constantly wanting to change back to FM.

I hate to state the obvious, but I was impressed by the 412. It didn't stand in the way of the music, or try to give it a euphonic boost; it simply allowed it to do its own thing, letting through whatever emotion the engineers managed to capture in the studio. There was a sense of life and colour to its performance that the average synthesiser tuner doesn't even hint at, with well-proportioned images hanging together in a three-dimensional soundstage. The 402 is dead. Long live the 412 ●

NAD 412

£189.95

NAD Marketing Ltd.
NAD Building,
401-405 Nether Street,
London N3 1QG
 ☎ 0181 343 3240

WORLD VERDICT ●●●●●

Like its predecessor, the 412 is a remarkably musical and natural sounding tuner. Unbeatable at the price, or even at twice the price for that matter.

Measured Performance
 see P103

SQUARING UP TO

The new Qubic 122 floorstanders claim to follow in the footsteps of QLN's more up-market designs. Haider Bahrani squares up to them.

QUBIC



At £269.95 QLN's new Qubic 122 loudspeakers come in at a price that you'd expect a good pair of shelf or stand mounters to cost. This came as a bit of a surprise: QLN's loudspeakers have traditionally been higher-end products, like the Signatures we reviewed recently.

As part of the new 100 Series from QLN, the 122s are a two way floorstander with a 6.5" paper coned bass unit and a Vifa 19mm dome tweeter, ferrofluid cooled. The drive unit chassis is made from fibreglass reinforced polycarbonate to improve stability and damping. The speaker

cabinets are braced and made from vinyl-wrapped dual density particle board.

The Qubics aspire to the greatness of their more up-market siblings and some aspects of these aspirations have certainly been met. To get the best out of the Qubics I partnered them with an Aura VA 80. Keeping the grilles on I let Poritshead's 'Wondering Star' out of the bag. The bass was well enough controlled without sounding dry and the treble was smooth and detailed.

Their delivery at the lower end is in keeping with floorstanders of greater stature in both price and size. Extension was impressively deep, easily hitting low notes with power and authority. They were kept reasonably well spaced with around 8ft between them and 2ft off the back wall. Bjork's 'Hyper-ballad' which is a little less than conservative in the bass, rumbled around the room, shaking the furniture. Buying a subwoofer to complement these speakers would be a complete waste of money.

“ Bjork's 'Hyper-ballad' rumbled around the room, shaking the furniture.”

Bjork's vocal on 'It's So Quiet', off her Post CD, suffered slightly, seeming to be 'gasping for air' at times, the richness lower down thickening the sound. The mid-band had a nice warmth about it, despite some muffling in the upper ranges which detracted from the solidity of image and projection.

I took the grilles off, as 'strongly' recommended in the User Instructions, to see if I could get rid of some of the muffling. This experiment seemed to be a success - there was certainly a new

openness to the treble. Bowie's 'Rock 'n' Roll Suicide' gave a similar impression, with some of the confusion experienced earlier disappearing into a wider and more dynamic sounding image.

But in this form there is definitely a brightness to the sound. On the one hand this gave them good detail, but on the other it could add some sharpness to the music. This property was evident on 'Lady Stardust' from David Bowie's Ziggy Stardust collection of ditties. The piano was duplicated well and Bowie's voice came across as being truthful, but tinkling the ivories at the top end of the scale gave rise to a slightly jangly tone.

Slipping in a disc of Mozart's 21st piano concerto, with the leading instrument played more than amiably by Vladimir Ashkenazy, I found some good control in nether regions, allowing the instruments to have their say. The violins though were thin sounding and the lower notes on the piano tended to bloom with the rest of it. Not all was lost, however, as a lot of the musicality was retained. What these speakers get right is done quite elegantly, but with a clear effort to impress.

I then changed over to the highly dynamic, fast responding Audiolab 8000S integrated amplifier. Playing something more acoustic like Lisa Loeb's 'Snow Day' and Tori Amos' harpsichord-riddled 'Talula' exposed more clearly some of the strengths and frailties of the Qubic 122s. On both of these tracks vocals were well positioned centrally in the image, with the instruments giving a good, clean impression. The bass response was there when called upon, although it could overshadow some of the instrumental goings on in the registers above it.

The result of this was that the image became cluttered at the centre with general confusion looming over the reproduction. Bruce Springsteen's title track of his Born To Run CD behaved in much the same manner. The difference was that Bruce's vocals, normally prominent, were lost among the instruments. On high notes

though, the sharp-edged saxophone, which was otherwise quite rich and full in its behaviour, did lend some sense of stability to the image.



Standing just under a metre tall, veneer finished, bi-wireable and sitting on spikes they do look a lot more expensive than their price tag would suggest. Bass hungry 'keepum tumpin' rave masters might just fall for these for their lower end characteristic alone. But they are certainly not loudspeakers for small rooms, where I suspect their power in the bass could become overwhelming.

In many ways the Qubic 122s very nearly succeed, hinting that with a little help they might just deliver. Be choosy with whom you let them play and you may be pleased ●

QLN Qubic 122

£269.95

**QLN
Unit 7,
Aber Park Ind. Est.,
Aber Road,
Flint,
Clwyd CH6 5EX
☎ 01352 730251**

WORLD VERDICT



Solid bottom end will drive a large room well, but they're a bit bright too.

**Measured Performance
see P103**

BEATEN BY BELSHAZZAR



**Eric Braithwaite thinks
Belshazzar might've beaten
Thorens to understanding CD. Have they
finally got the message with the new TCD
2000 player and TDA 2000 DAC, he asks?**

If Belshazzar had held his feast 12 years ago in a turntable manufacturer's dining room, the writing on the wall would have read "Beware: digital's time has come!" It's taken Thorens, who have been making turntables since the first cylinder, a while to read the message. Only now has a CD player and CD converter with their name on it appeared. Maybe the words were writ a bit small on Thorens' wall.

The kind of CD player Thorens has finally come up with could only have been dreamt up by a turntable maker. Would you believe the TCD 2000 has a three-point suspension for the casting that holds the motor and laser head, just like a vinyl spinner? There's a fixed spirit level in the corner to help. At least, unlike most Thorens turntables,

the levelling is done from above.

It feels, and looks, simply luxurious. As the lid rises on this top-loader, two small lights shine onto a CDM12 Pro mechanism and a gold-plated platter. Pretty and practical. Less practical, maybe, are two other gold-plated entities. One is the puck which has to be placed over the CD before play. As is common with the breed, haste results in a wobble and a nasty whine.

Practice makes perfect, however, as it does with the two control knobs. One 'knob' is pushed in to stop the player or raise the lid; the second pushed to start or again to pause, twisted a little to one side for track search or skip.

The TDA 2000 shares the slinky gold and black looks, has a single on/off knob to match the CD player and a central 'Thorens' name which lights up. A row of orange lights indicate sampling frequency, lock, which of the three co-axial and one optical inputs is selected, and another called 'Error'. This caused a bit of a fright; every time a CD started spinning it lit and I thought all my CDs had less digital data intact than I believed. It's supposed to do that at first, however, then indicate error correction later.

THORENS TCD 2000

At first hearing, the player is a typically smooth bitstream affair, reminiscent of a number around two or three years ago. Most marked is a smooth and gentle midrange, especially where instrumentals and vocals were involved. P J Harvey's vocals were clear, if a little subdued; the electric guitars fluid. Strings in Ravel were equally pleasantly sweet and flowing. Absolutely perfect for late night listening.

The best thing about it was no rocket-fuelled spectaculars designed to grab, and then strain, a listener's attention. The Thorens kept a very equable temperament throughout. Against, say, the Quad 77, orchestral tuttis however, were a little cramped for space, the players seemingly shoulder-to-shoulder, with the top end a little soft. Teac's similarly priced player, though on the bright side for some, produces a crisper bite. It was

almost as though the Thorens was striving - and in a sense doing it very successfully - for a turntable sound.

This was all very beguiling and a number of people will stop there and decide the Thorens is for them. Against the available competition at the price, however, the overall sound is at the lower end of the quality scale rather than at the totally expressive and innovative top.

“ *Combining convertor and CD player, the Thorens pair dance together like Torville and Dean.* ”

Against it is a shallower depth perspective than some players produce, with a mild compression (heard as a softening) of orchestral climaxes. The chorus in Bach's B Minor Mass by The Sixteen was also a trifle cramped in space against, say, the Quad 77. The orchestra on the Ravel disc also lacked some of the 77's spaciousness.

After a while, too, more critically listening to Gerry Mulligan on Telarc, I began to develop a desire to hear a sharper beat in the bass. Double-bass players in jazz recordings had a lovely rich, warm, buzzing tone, but somehow the timing sounded a touch lackadaisical. Like vocals and rhythm guitars on rock recordings, saxophones were forward, not overly projected, but attractively judged.

THORENS TDA 2000

The convertor was a real surprise. It is a different kettle of fish altogether. Suddenly, the CD player's transport sounded as though it was something rather special and deserving of the attention obviously paid to its build

quality. Now, the orchestral picture in Ravel snapped much more sharply into place. Top violin notes soared while cellos and double basses spun an almost visible spider's web of interlocking notes. The bass was tighter and drier and markedly better defined. Now, there was space around players' shoulder blades and plenty of space for their elbows.

A softening of sibilants that had been evident through the CD player on female vocals was sharpened up. Rhythm guitars snapped more cleanly into place, altogether brighter and with markedly cleaner individual notes. Equally suddenly, Gerry Mulligan's quartet gained more air, space and 'togetherness', now underpinned by a beat that was precisely timed. Rock music generally was tighter and faster, with better dynamics and almost 3-D projection.

Combining convertor and CD player, the Thorens pair dance together like Torville and Dean (well, like they used to, anyway.) The convertor is one well worth inspecting along with the Audiolabs and Sugdens of this world. It opens up the CDM-12 Pro mechanism of the player in a way that reveals what an excellent device it is ●

Thorens TCD 2000 £899.99
Thorens TDA 2000 £699.99

Portfolio Marketing
PO Box 442,
Great Missenden,
Bucks. HP16 0JB
☎ 01494 890277

WORLD VERDICT

TCD 2000: A soft and warm sound will please vinyl lovers, but it's not the last word in detail.

WORLD VERDICT

TDA 2000: Using the TCD 2000 as a transport, the TDA 2000 produces a sound that is focused, detailed and spacious.

Measured Performance
see P103



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"so much dynamics"
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Divva!

New from UKD is an up-rated Opera Callas loudspeaker, the Callas Gold. Eric Braithwaite sings an aria over it.

When it's perfume, fancy packaging is to be expected. When it's a loudspeaker like the UKD Opera Callas Gold, it's a surprise. Not that the cardboard box that contains the pair is shaped like Maria Callas, either in her puppy-fat days or the later slim-line version. It's ordinary, brown and might well be recycled.

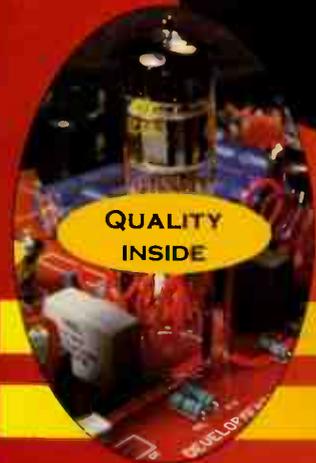
Inside, though, each loudspeaker is tucked away inside a colourful stripy cloth draw-bag. These are apparently made by a seamstress in the UK, and every one is different. They're just the thing for the laundry or carrying the swimming togs to a Club Med beach party. On second thoughts, it'd be empty then, wouldn't it, but it'd still make a natty accessory for carrying a six-pack of... something or other.

Not that I'm one for Club Med holidays, but the Opera Callas was lively enough to be the soul of a party there. It

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Chris Beeching, Hi-Fi News '95

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has a T-shirt and ripped jeans sound to it in just the right places. Starched-collared like Covent Garden, it isn't. Whatever they play in the Club Med discos I don't know, but to prove the Callases could bop, on went Madonna's 'Material Girl' on the illusory grounds the ladeses would have their minds on material things at least some of the time.

They achieve an
extraordinarily
good balance of
virtues that offers
a real sense of
orchestral scale
and perspective

This was sharp, fast and very upbeat, enough to raise anybody's interest as Ms M puts it. Even more interesting was the near studio-monitor quality of the track as it powered out of these loudspeakers. There was Madonna's voice, trapped in a sound booth; here were a couple of tinkles on the triangle lifted right out forrard two feet over the carpet; then the male backing vocalists in front and stretching beyond the side of the left-hand Callas. Wonderful, and more exciting and vibrant than any disco in Ibiza.

It is not very fashionable in hi-fi circles these days to talk about how loudspeakers are 'voiced', but the Callas Golds have what can only be described as a thoroughly lovable and musical balance. They are not true 'warts and all' monitors like the Harbeth HL Compact 7s which are my

favourites, and benchmarks, among box loudspeakers.

Listening to the Allegretto from Shostakovich's Tenth Symphony, for example, the cellos of the Bournemouth Symphony Orchestra had a burnished richness which was good for the ears but a little too good to be true. But that does mean they produced a thoroughly exciting sense of dynamic scale in something like Janacek's Sinfonietta or Copland's Rodeo, when you need a strong rasping muscularity and elbow grease in the brass sections.

In Rodeo, the Callas Golds were rhythmically right on their points, as they were with Vivaldi's concerto for two mandolins. This recording also showed where the Golds strayed just off the straight and narrow of the true monitors that exist at this price. The two mandolins have a different tonal quality, just a little more accentuated through the Golds than through the Harbeth HL-P3ES speakers that were briefly slotted in as a control.

The harpsichord which tinkles away amidst the strings was a touch brighter and more forward. That judicious added brightness led back to a rather rough early digital Sibelius Fifth, and lo and behold, the violins at the upper end of the treble clef had an almost searing quality. A cross-check with the Harbeths demonstrated that the recording was fairly piercing in any case, but the Callas Golds, richer and warmer lower down than the Harbeths, tended to make it more obtrusive.

It is this warmth towards the bottom end, and the remarkable bass strength for their size, that makes the Callas Golds a significantly good loudspeaker for their price. They achieve an extraordinarily good balance of virtues that offers a real sense of orchestral scale and perspective that few others at the price can offer. The change of tweeter, from Focal kevlar inverted dome to Scanspeak silk dome, and differences in the crossover and internal wiring over the 'ordinary' Callas, have resulted in a loudspeaker that gives a real sense of being present at the music-making, whatever genre it happens to be.



Whether the subjectively surprisingly extended bass is due to the solid wood cabinet or is a combination of other factors is not something I want to get into. The Italians have a 500-year tradition of cabinet-making and wood carving behind them which is still active, when the British have long ago dropped the methods of Chippendale (not the Chippendales!) and Hepplewhite for MFI.

What that draw-bag that took my fancy as I opened up the box really protects, much more imaginatively than a placky bag, is the gorgeous solid mahogany they are made of. It is beautifully carved into shape, too, tempting anybody to stroke it like the Venus de Milo's bottom. Or, let's not be sexist, Donatello's David, which I've seen tempt more than one girl in Florence. That's the effect of true Italian style. The Opera Callas has plenty of it.

Opera Callas Gold

£995

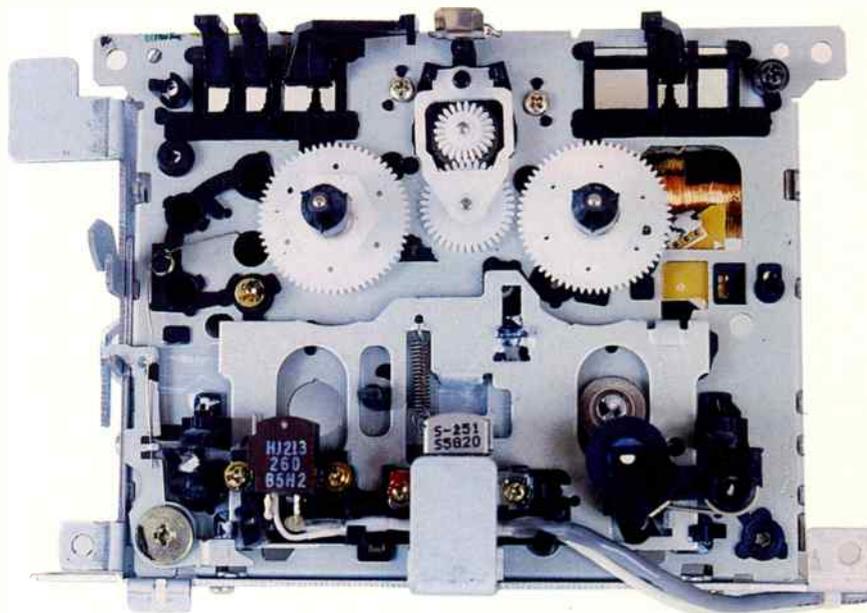
**UK Distribution,
23 Richings Way,
Iver,
Bucks. SL0 9DA
☎ 01753 652669**

WORLD VERDICT 

A rich and open sound, extremely musical if not strictly accurate. Great bass extension for their size.

**Measured Performance
see P103**

THE TRICKS OF TAPE



A Denon DRM-550 transport mechanism showing gear drive to left or right hub from a central hub motor (top). At bottom lies the head (centre) and capstan (right).

Pioneer and Technics are both showing new high technology cassette decks.

Noel Keywood explains the mysteries of cassette and what's so special about them.

Surprise, surprise! Just when the cassette seemed done with, about to be discarded for, er, not a lot, two major manufacturers have suddenly relented. Pioneer have released the unusually complex CT-S740S tested in this issue and Technics sent engineers all the way from Japan to tell us about a novel design they will be launching soon, the RS-AZ7 which we test next month.

These two put cassette jargon back on the agenda! The CT-S740S in particular possesses so many complex systems it is impossible to explain them in the body of a review. Instead, here's a look at cassette technology with brief and, I hope, understandable explanations of its mysteries, with special reference to these two machines.

HISTORY

Germany pioneered magnetic recording with ferric oxide coated paper during the Second World War, whilst Britain and the USA grappled with wire recorders. The Americans carted off German recorders after the war and started their own development of ferric oxide recording technology. Paper was replaced by acetate, then stronger and more stable polyester backing, producing tape much as we know it today.

Philips launched the Compact Cassette in 1963, for dictation purposes. It was too hissy for music until Ray Dolby, an American working

in London, introduced the Dolby B (domestic) noise reduction system in 1968. It offered a useful 10dB reduction in tape hiss.

Japanese audio companies like Sony proved skilful at the sort of precision engineering needed to develop the cassette transport mechanism. In conjunction with Dolby B and German BASF chrome dioxide tape, made quiet by use of stronger high frequency equalisation (70µS, instead of 120µS used by early ferrics), the cassette became acceptable for music recording.

Cassette outsold all other music media through much of the 1980s, Philips pointing out that it's the world's second most popular electrical item, after the electric light bulb.

By the end of the 1980s however, cassette sales - blank and prerecorded - had gone into decline in developed countries around the world. DAT, then MD and DCC have all been launched as digital replacements, but so far none have proven popular.

THE TECHNOLOGY

The basic circuit topology of a cassette deck is shown in Fig 1. The machine has two distinct functions: 1) Replaying 2) Recording

1) Replay

Replay must meet standards originally laid down by Philips and subsequently updated by the International Electrotechnical Commission (IEC), if compatibility is to exist between machines.

The replay head must sit perfectly upright, at right angles to the direction of tape travel, if it is to read high frequencies. Minute azimuth errors introduce high frequency loss, an intractable problem with cassette. The loss is amplified by Dolby action, producing dullness and muffling.

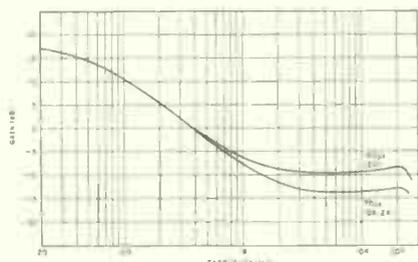
Replay equalisation must also be correct, so that the entire replay system exhibits flat frequency response from an IEC test tape. The replay EQ circuits switch from 120µS for ferric tape to 70µS for chrome and metal tape.

To combat azimuth error, Nakamichi introduced automatic head azimuth adjustment in the fabulous Dragon, and manual head adjustment in the CR-7E and DR-3.

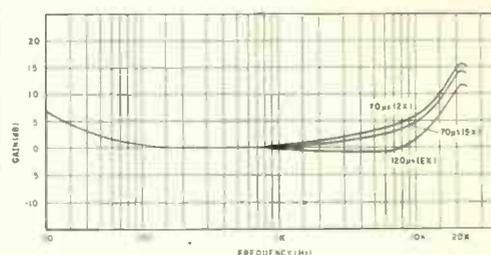
Inspired by Dolby/B&O research, NAD offer a simpler alternative, Play Trim (See Fig 1). It adjusts treble level to compensate for losses caused by head azimuth error (and other errors), before Dolby processing. Only Yamaha followed them. This system has the benefit that it is simple and cheap, and it also compensates for innately dull or bright recordings.

In the CT-S740S Pioneer have taken the idea further by automating it. The deck measures the treble energy in music over a short period of time and adjusts high frequency gain to make it fall at a steady rate with increasing frequency (or 1/f as Pioneer put it). With 12dB of adjustment at 10kHz available, it brings even the most dull sounding prerecorded cassettes to life.

Technics tackle the azimuth



Playback equalisation (E.Q.) of a Nakamichi ZX-9 shows the greater treble cut of the 75µS characteristic, which lessens hiss.



Record equalisation (E.Q.) of a Nakamichi ZX-9 shows the treble boost needed to minimise hiss and compensate for losses.

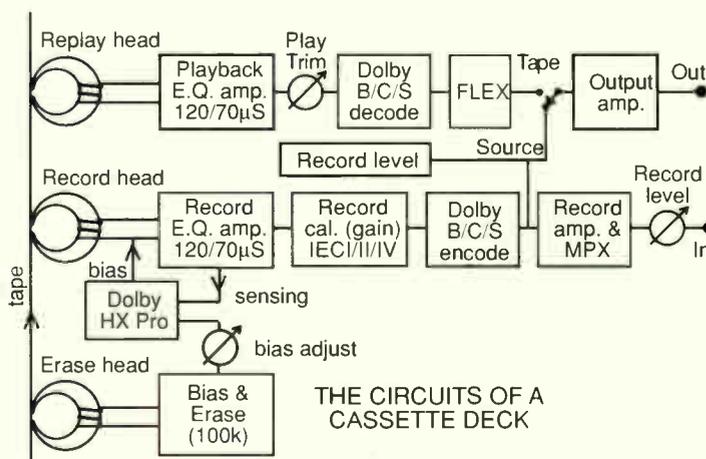


Fig 1: The circuit arrangement of a three-head deck most clearly shows how a tape recorder works. An incoming signal is amplified, Dolby encoded, treble-boosted by record EQ, then carried onto tape by a 100kHz bias signal. The bias oscillator also provides the erase signal.

Replay is basically a mirror image process, but with differences in replay EQ and no bias requirement. Two-head designs use one amplifier chain that switches function from record to replay.

problem by giving the playback head of their new RS-AZ7 a smaller span than usual, 489µm instead of 600µm (0.6mm). According to Technic's figures this makes the head less sensitive to azimuth error, by 10dB at 12.5kHz no less.

Dolby replay processors expand dynamic range in a process exactly complementary to the compression used during recording. Dolby S not only pushes down low level signals, it pushes up high level signals too, in a peak-comparing (companding = compressing/expanding) process that reduces overload distortion.

2) Recording

The signal goes direct into the record level control, then through an input amplifier with MPX filter (usually switchable) to remove 19kHz pilot tone from FM stereo transmissions. After this it is fed to the record level meters

and the recording compression circuits of the Dolby B/C/S noise reduction system. At this stage Dolby makes weak signals louder, raising them up above the noise floor. Dolby S also makes strong peaks weaker, so they don't cause the head to overload, at low frequencies as well as high frequencies. This makes recording more foolproof, but unfortunately manufacturers have recently reduced head quality to make savings, compromising potential benefits.

After Dolby compression the signal passes to the record equalisation circuits where treble lift is applied, to keep the signal well above tape hiss. The amount of lift is switched to suit ferric tapes (120µS), or chromes and metals which can accept more lift (70µS). This makes the latter types quieter by around 4dB.

The precise amount of record equalisation applied is adjusted to give

a net flat response from a tape when replayed through the replay system as calibrated by the IEC test tape. This process takes into account (as it must) frequency characteristics of the record head.

Ideally, to adjust to flatness the frequency response of recordings, it is record equalisation that should be altered; in other words, the amount of treble lift. Nobody bothers, including Nakamichi - except Pioneer in their CT-S740S. Their auto-tune system adjusts both bias and record equalisation, as well as sensitivity. I suspect they do this because it offers better adjustment control; the Pioneer tuned flat more consistently than is usual.

The audio signal is then mixed with

the high frequency (100kHz) bias current needed to carry the audio onto tape with least distortion. The composite signal is then fed to the recording head. The same bias signal also feeds the erase head.

Bias affects tape performance considerably, altering relative sensitivity (i.e. frequency response) and overload margins. Ideally, bias strength should be set to achieve balanced middle and high frequency overload figures, then record equalisation set to get flat frequency response. Trouble is, no one can agree what ideal overload figures should be (Nakamichi say treble overload should be 6dB lower than midrange overload; others say they should be equal; Nakamichi say they say that because

their heads aren't good enough, etc, etc).

The treble content of music acts like bias, the effect being amplified by record equalisation. Dolby HX Pro automatically cuts back bias with music possessing strong treble, in order to apply "constant bias energy" (a nebulous concept) to the head. This reduces treble overload, giving cleaner treble, Dolby say.

Nakamichi disagree, saying manufacturers wouldn't suffer such problems if they fitted better heads in the first place. Measurement confirms that Nakamichi decks without HX Pro (which they refuse to use) outperform rivals, if only by a small amount.

THE MECHANICS

The transport mechanism of a conventional cassette deck has just one rotating capstan that pulls tape from left supply reel to right take-up reel. The take-up reel must be powered, but the supply reel is unpowered. However, both must be driveable, in order to fast wind/rewind.

Budget transports use one motor for all functions, usually driving through belts.

Higher quality designs isolate the capstan motor from the loading fluctuations imposed by the reels, in

order to improve speed stability (wow & flutter) and constancy from start to end of a tape. The Denon transport shown at the start of this article works like this. A rear-mounted capstan motor drives the capstan flywheel via a belt.

Dual capstan transports are complex and expensive to make, and difficult to adjust. Their back tension capstan runs about 5% slow, keeping the tape in constant tension over the heads, whilst eliminating scrape flutter from cassette shell's guide pins, etc. Tape elasticity allows this to occur without damage. Potentially, the dual-

capstan system offers superb speed stability and low flutter, although mediocre ones suffer capstan wow. Below is a rear shot of Pioneer's CT-S740S dual-capstan transport, showing D.C. servo-motor for capstan drive, the drive belt and the closely spaced capstan flywheels.

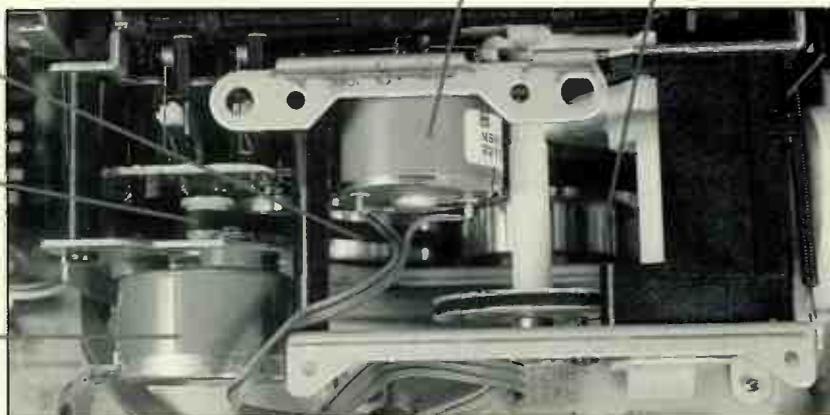
Main capstan flywheel driven by belt from the capstan motor.

The drive pulley of the capstan motor. Note the belt which runs to the capstan flywheel.

Capstan motor. To maintain speed stability a D.C. servo motor is used.

Centrally positioned reel motor.

The heavy flywheel of the back-tension capstan. It is driven by belt from the main capstan flywheel.



BASIC CASSETTE TRANSPORT

TWO HEAD/ SINGLE CAPSTAN

Tape passes from the left **supply reel** to the right **take-up reel**, pulled across the heads at a steady 4.75cms/sec by the rotating **capstan**.

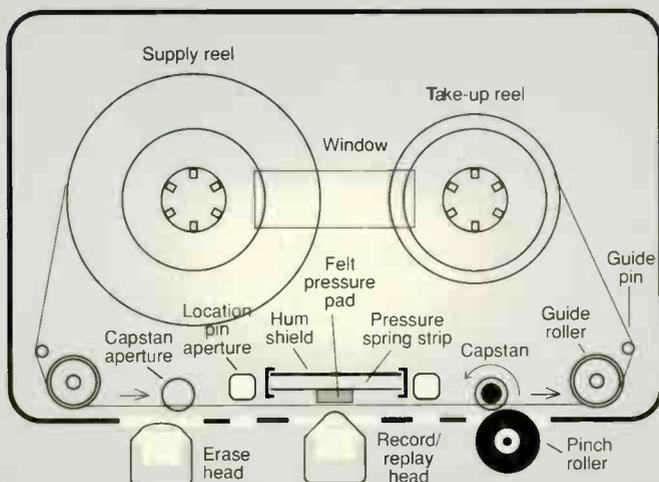
Drive is engaged by pushing the **pinch roller** against the **capstan**, sandwiching the tape inbetween.

The supply reel sometimes has a brake to maintain back-tension. The take-up reel winds on tape leaving the capstan.

The **erase head**, pinch roller and record/replay head sit on a platform that swings against the cassette when the transport is started. In order to maintain close contact, the record/replay head sandwiches the tape against a felt pressure pad mounted on a non-magnetic

phosphor bronze spring within the cassette shell. The erase head moves into the second capstan roller aperture.

During recording, the tape



passes first across the erase head, where it is wiped clean, and is then recorded by the single head that serves to both record and then replay.

Two tracks, left and right, are recorded onto the bottom 1.5mm of the 3.8 mm wide tape. Each track is just 0.6mm wide, with a 0.3mm guard band between them, making tape guidance critical. Guide pins hold the cassette shell in position. When the tape is turned over, the remaining 1.5mm is recorded (with a 0.8mm guard band between sides A and B).

The cassette has left/right mirror image symmetry that allows it to be turned around (side A or B).

To replay, current to the erase head is switched off. The tape induces a signal into the

Record/replay head as it passes over it.

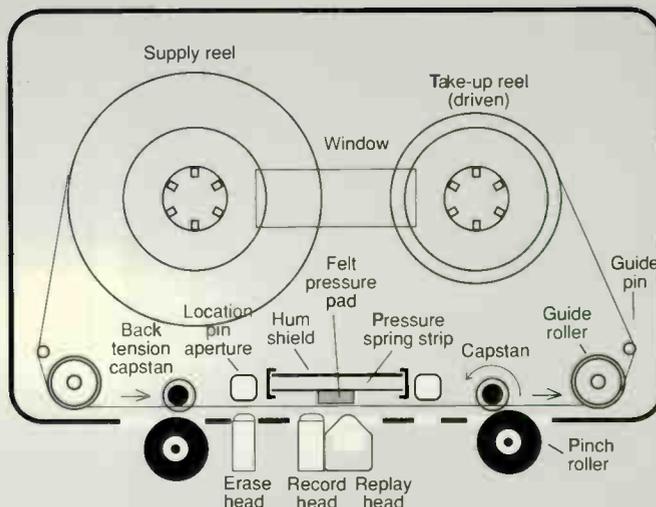
This basic arrangement uses a single capstan, a single motor that drives both the capstan and the reels, and two heads: one for erasure, one for recording and replaying.

QUALITY CASSETTE TRANSPORT

THREE-HEAD DECK/ DUAL CAPSTAN

This arrangement uses individual record and replay heads, "siamesed" together. With the erase head, this makes three heads in all. It allows a recording to be listened to (monitored) whilst it is being made, since the tape passes over the record head before the replay head.

Also shown is dual-capstan drive. Complex and expensive, it is always accompanied by three heads. The erase head must squeeze through a small aperture below the location pin. The back tension capstan runs 5% slower than the main capstan, eliminating scrape flutter and supply reel loading.



Next month we review Technics' RS-AZ7, which uses a high tech head developed from their DCC machines. There's a feature on head technology too.

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At last we have received the Unison Research Mystery One Pre-amplifier. Exquisitely sculptured in solid cherry and offering superb sound quality. Combined with their Smart 845 amplifiers, it produces a sound so musical and very transparent.

Cary Audio have impressed us with their range of 300B amplifiers. Really good sound with a tighter bass than most. Their CD-300 player incorporates 3 tubes in the output stage and produces a sound tonally quite different to that normally associated with CD.

The new Mentor turntable from Nottingham Analogue is well ahead of the high level established by their first version. Hard to believe but true. Probably the last turntable that serious vinyl lovers need to consider, especially when combined with their Paragon linear tracking arm.

Because of the success we have had with the CDs and DACs designed by John Curl, we are pleased to be able to demonstrate pre- and power amplifiers from Parasound. This amplification not only provides incredible value for money but has a sound closer to valves than solid state.

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*Review of PASSION - Martin Colloms
 HiFi News April '93 and November '94*

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Croft's Epoch preamplifier and Series V power amplifier achieve a fine balance of qualities, finds Haider Bahrani.

VALVE

EQUILIBRIUM

Croft's Epoch is a valve preamplifier with four inputs; three line and one MM phono stage. There are separate volume controls for left and right channels, echoing the dual-mono construction inside. Component quality is high throughout, with the pair of ECC83s, ECC82 and ECL85 valves surrounded by custom made polypropylene capacitors, silver-plated switches and supplied by a 85A2 valve regulated power supply.

The Series V is a 30watt per channel power amplifier using four EL84s per channel in parallel push-pull operation. Again component quality is high. Small signal valves comprise three ECC83s and an ECC82. Both have front panels finished in chrome with gold plated fixings matching the control knobs on the preamp.

Attached to the Crofts I had a pair of Mission 752s and an Audiolab 8000CDM transport feeding a Pink Triangle Da Capo CD convertor. Playing through some of my standard run of test CDs, Prince's (I have it on good authority that we can call him that again now) explosively dynamic 'Max' off the Symbol album expressed width and depth with an open and easy quality.

Lisa Loeb's slower 'It's Over' off her Tails CD was very sweet sounding across the whole range with a cleanly plucked guitar sound that sent tingles down my spine. With the faster track

'Taffy' the Croft managed to deliver clean and snappy bass when called for. It definitely showed itself off as being able to handle pace well without getting too excited. Playing David Bowie's Ziggy Stardust CD, the first track 'Five Years' again had a breadth that far exceeded the boundaries of the loudspeakers. And Bowie's voice dominated the forefront of the stage.

'Starman' off the same album revealed a dryness in this amplifier's sound that made it almost transistor like in its grip and control. Joni Mitchell's Blue CD had some good acoustic tests waiting for the Crofts, particularly with the third track 'Little Green'. Joni sang intimately to me and the sparse instrumental was smooth at the top end and laid back and open in the mid to lower registers.

Mozart's piano concerto No.17 in G major was next. Strings, the piano on the Andante, in fact the whole thing was absolutely engaging. The staging allowed me to pick out the position of each instrument in the orchestra with ease. It's reproduction wasn't wholly truthful, but musically the slight richness of the Croft's midrange was wonderful.

The phono stage was a slightly different matter. First on the platter was Fleetwood Mac's Rumours LP. Stevie Nicks' voice was sumptuous on 'Dreams' though leaving the instrumental with some brightness at

the top end. Bass was well controlled, but economical. On the Texas' LP Ricks Road problems at the top and bottom were more obvious, but so were the wonderful happenings in between.

Together the Epoch and Series V don't do a bad job at all. Against similarly priced competition, valve or solid state, the Crofts will take some beating. I am sure that lovers of both idioms, who are often poles apart, will come together on this one ●

Croft Epoch £600
Croft Series V £800

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WORLD VERDICT

Epoch ●●●●●
A fine sounding preamp, but phono stage weak in the bass.

Series V ●●●●●
Fast, clear and detailed sound will win friends in both the transistor and valve camps.

Measured Performance
see p103

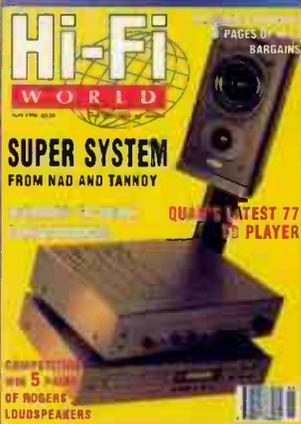
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LETTER OF THE MONTH

WANTING JAM ON IT?

When I started work in 1979 I began to collect music on LPs- classical, jazz and dance- buying between five and twenty a month.

However, the poor quality of records was pretty alarming. Much of what was on offer was pressed on vinyl so thin it could not support its own weight when held by the edges, with appalling surface noise- caused either by the use of inferior or reconstituted vinyl, contamination in the manufacturing process, or both. Many LPs I bought were pressed off-centre too.

Most of these I returned as faulty, to be checked in the music shop on a music centre with an autochanger and ceramic cartridge complete with blunt needle by an assistant who would invariably pronounce the record "OK". Then digital recording was introduced on LPs. These put me off completely. After three years of attempting to collect music on record, I gave up.

Then CD arrived, publicised as the only reproducing medium you could spread jam on and still have 'perfect' sound. A Tomorrow's World demonstration proved this. I bought a CD player. Oh dear- not as good as I thought. Perhaps a different jam would help. I didn't buy many CDs.

I discovered Hi-Fi World in 1994 and was surprised that anyone was still supporting LP this far into the CD era. So I had my amp rebuilt by the manufacturers, bought a better turntable for the records I still had and started adding to my collection from charity shops and car boot sales. LPs from the mid-1950s to the mid-1970s are generally better than the stuff I was able to buy later on. I am glad that I bothered!

With this Hi-Fi World-generated enthusiasm, I've also been buying CDs again, with an alarmingly high rejection rate for the following reasons.

Recordings of classical works that I enjoy often suffer seriously from distant traffic or aeroplane noise. The latest reject is an EMI recording of Hampstead High Street and Ravel's String Quartet in F Major with heavy breathing.

(EMI UK: CDCFP 4652, for car engine and respiration fans.)

There are some really nasty edits audible on many classical CDs. Examples are changes in recorded reverberation pre- and post-edit, a wrong note changing into a right one after the wrong one has started, or if the aforementioned traffic noise is interrupted mid-flow (where did that bus go?).

The appalling quality of LPs by the time CDs became available meant that many people like me were prepared to spend on the new hardware and software merely to achieve results inferior to those obtained by earlier LP users who knew what the medium was capable of!

**Jonathan Gray
Feltham
Middx.**

The recording quality of fifties and sixties LPs was often superior. Mind you, there were some utterly dreadful labels then, too, though mercifully most seem to have been weeded out even from the car boot sales.

Where we might differ is on current CD quality (we are talking classical and jazz, here, be it noted; I find all too many current pop recordings downright dire).

Many pre-digital recordings did have obvious edits and changes in background noise; while some, when re-mastered, are digitally tidied up, some companies adopt a conservative approach and stay with the original.

Changes in reverberation and intrusive traffic noise are always awkward; I too, dislike the 'disappearing bus' syndrome. The trouble is, if a player fluffed a note in the middle of the Number 7's route, what does the engineer do? Fake another few seconds of bus noise behind a re-take? Leave the wrong note in? EB

MAKE A RIGHT!

Living in Tasmania, which as you know is a rather isolated place where we have limited access to products and information on anything high-end, brings out the importance of a magazine such as Hi-Fi World. It feeds interest accurately while introducing the new to help in the selection of hi-fi equipment.

we love it is exact.

So thank you for that particular review and for all the articles we have read and will read.

Nicole Duncan and Robert Shanahan Tasmania, Australia.

As you have gleaned from the review we were very taken with DPA's Renaissance CD player. It



DPA's Renaissance CD player brings its own uniquely musical style to the silver disc.

So it was with your recent review of DPA's Renaissance CD player. The fact that it was reviewed by three people was a most fair and fruitful approach for us, as it happened. After reading the triple critique, previous possibilities faded and we ordered a Renaissance player into our lives.

To say the Renaissance has met our audiophilic expectations is not enough (we listen to music all day and every day and have a weekly radio programme). It has exceeded them and has taken our whole system into a new aural world. All our CDs, of all musical styles, simply sound phenomenal. Their true depth is revealed, more detail, more natural-sounding, more musical. More of everything, really. A gift to music - to say

has a very musical and involving presentation, one that many music lovers appreciate. We printed several opinions because it was so different from the normal run of players, having qualities that few seem able to approach.

We like to print several views on equipment to give a balanced opinion. But you must remember that even when only one writer is named, the equipment reviewed will have been auditioned carefully by at least two listeners and with a wide variety of partnering equipment. We have an in-house listening room specifically for this purpose, allowing any member of the editorial staff to drop in on a listening session to express their views. So more

often than not the review you see is the collective thoughts of several listeners penned by one writer.

This becomes even more important when using freelance experts. Before a piece of equipment is sent out to Dominic Todd or Eric Braithwaite for example, it has first been measured on our test bench to ensure it performs as the manufacturer intended and will have been auditioned by an in-house member of staff. All this makes our reviews extremely consistent and reliable. DB



Let the music flow from your DPA with this Siren interconnect.

EXPERIMENT!

Your articles in the past on room acoustics and positioning of 'speakers have provided much impetus for experimenting. My current set up includes a Lingo'd LPI2 with Ekos and Denon DL304 as front end with Quad solid state amplification and bi-wired Ruark Sabre 'speakers.

My point in writing relates to tweaking hi-fi equipment. I first moved my 'speakers about 18 inches away from the back wall, initial impression was of a clearer midrange though bass was definitely lighter. Moving the 'speakers back to the wall confirmed that the bass was stronger, but less defined and thicker sounding.

My next step was to fill my open frame speaker stands with Sound Bytes. My

conclusion is that whilst firming and tightening the bass, the midrange and treble can sound lack lustre, robbed of sparkle.

Therefore Sound Bytes can only be recommended for systems that are very bright sounding.

Next, I experimented with stands and supports. I was initially sceptical but surprised at the results that I achieved. I purchased some Mana stands and found that the music improved significantly in terms of clarity, dynamics and timing.

However, I was still not happy with the tonal quality, particularly relating to vocals, so I bought a pair of Slate Audio stands. This improved stage depth and imaging considerably but slowed the overall pace slightly, but I was amazed at the naturalness of the sound.



The £579 Sonneteer Champion can bring a rare sense of involvement to systems.

Although the Slate and Mana stands were not cheap, they improved the sound quality beyond recognition. The difference was bigger than when I upgraded from an Ittok/Valhalla to an Ekos/Lingo so in real terms they were a sonic bargain.

... 44 ►

I find that too many people upgrade without first ensuring that their existing system is properly set-up.

Will changing my speaker cable and interconnects to silver ones improve my sound quality further in terms of transparency and imaging? At present I use Chord Cobra and Linn LK400. I was also very enamoured by the sonic quality of the Sonneteer Champion One, are there similar sounding amps around? Also, will the Ringmat work on a LPI2?
M. Ling
Hounslow,
Middx.

The effect that filling your speaker stands with Sound Bytes will be particular to your stands, 'speakers and system. We recently filled a pair of Tannoy's Profile stands with Sound Bytes when auditioning the Tannoy 631SE loudspeakers and performance improved considerably. Not only was the bass tighter and better defined, but the midrange became better focused and treble more precise. Like many 'tweaks' effects vary depending on the equipment you are using.

For the same reasons as above there is no definite answer to your queries regarding cables and the Ringmat. Silver cables do tend to have a sweeter balance, but rather than use silver for both interconnect and 'speaker I'd tend to use a combination to get the balance you want. Too much silver cable can swing things the wrong way, giving plummy bass.

Try Chord's Siren interconnect which is a silver plated copper cable with a fine balance. I'm a great fan of silver plated copper cables, they seem to

combine the sweetness of silver with the solidity and power of copper. For 'speaker cable I'd recommend Ortofon's SPK200, a high purity copper bi-wire cable. This I find has a very neutral, open and detailed sound; it's reasonably priced too.
DB



Try Chord's Siren Interconnect for the sweet, powerful sound you want.

FORWARD TO AN UPGRADE

My present system is: Yamaha CR600 receiver, Yamaha TC800GL cassette deck, Technics SLI500 direct-drive turntable and Chartwell LS3/5a 'speakers. All this equipment is approximately 20 years old and I feel I need to upgrade the entire system.

I have decided, for a variety of reasons, to abandon vinyl in favour of a CD-based system. To this end about a year ago I purchased an Arcam Alpha 5

(not 5+) CD player, which seems to have served well enough, although perhaps sounding a touch conservative?

With regard to 'speakers, I am considering very strongly the new Apogee Ribbon Monitor, the KEF Reference Model I or the Rogers ABI sub-woofers to partner my existing LS3/5as as alternatives for consideration. I intend to upgrade my system over the next 12 months or so and need help specifically with two questions regarding the CD player and prospective amplifier.

Regarding the choice of amplifier, it would be an obvious advantage to use the one remote handset for both the CD player and amplifier controls. With this in mind, I am considering both the Arcam Alpha 6+ and Delta 290. Is there anything to choose between them in terms of sound quality. I am seeking a very natural, transparent, airy and detailed sound, but with considerable presence, if anything on the forward side of neutral? I do not want anything that smacks of a warm, smooth, laid-back, rich, plummy or varnished quality.

Alternatively, would I do better to forgo the

convenience of one handset and choose something like the Mission Cyrus III, Audiolab 8000A or even perhaps the AVI S2000M1. If so, which one please?

Would it be worth spending extra money to upgrade my Arcam Alpha 5 CD player to a 5+ or even 6+? If so, which one, please?

Christopher J Pett
Croydon,
Surrey.

First, the LS3/5as. The Chartwell variety may be 20 years old, but to adapt Gertrude Stein's "a rose is a rose is a rose", an LS3/5a is an LS3/5a, and they are wasted on the Yamaha. Chartwell was taken over by Rogers, by the way, so check the drive unit surrounds for any signs of wear and tear, and if they look a bit dodgy, talk to Rogers International about having them serviced. Then buy the AB-1.

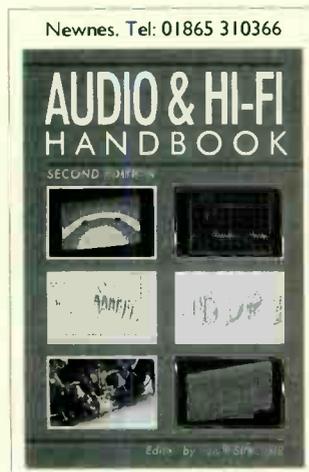
The criteria you propose for an amplifier are more problematic. The Mission Cyrus III arguably scores best against your criteria. I'd suggest you audition it against one of the Arcam's, probably the Delta 290 and see which you prefer. EB

As you seem keen to get a forward, detailed and transparent sound, I'd strongly recommend you take a look at Naim amplification. The £550 Nait 3 is their most affordable amplifier, producing a highly musical 20watts or so. This should go plenty loud enough for you in a modest size room, but if you feel you need a little more oomph, try their NAC92/NAP90 pre/power combination. These work out at around £850 the pair. Any good hi-



Typifying the Naim sound is the Nait III integrated.

fi dealer should be able to arrange a home demonstration of these products for you. DB



Keep up to date on Audio and Hi-Fi with the Newnes Handbook.

BASIC INSTINCTS!

I am looking to upgrade my Quad system, which comprises ESL-63s, 306 power amplifier and 34 pre-amplifier. I particularly want to extend the frequency response, top and bottom.

I have been variously advised to consider the 606 power amplifier, 77 integrated amplifier and/or REL Strata or Gradient sub-woofers. The latter are probably too big and too expensive (for me.)

Graham Peters, Maidstone, Kent.

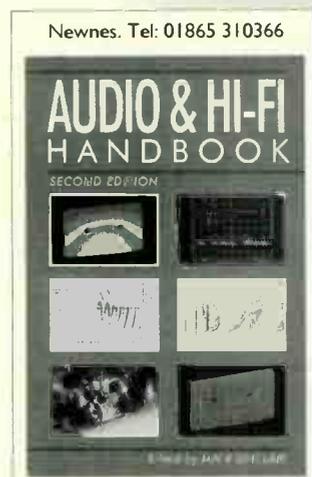
I have never been particularly enthusiastic about adding subwoofers to the Quads, with the exception of the pricier REL subs. It's always seemed to me that the better the amplification, the more bass the Quads deliver. My favourite is the Mitchell Stereo Alecto or Alecto monoblocks, with Mitchell Argo pre-amplifier.

Actually, the 306 ain't that bad; it produces rather more with a Mitchell Argo driving it than you might expect. How about starting there, and experimenting

with the position of the ESLs. I find replacing the front feet with spikes and tilting them back works wonders; they are also very susceptible to their position vis-a-vis reflective and/or absorbent walls. Ideally, place at right angles to and against a side wall. This effectively extends the baffle area and deepens bass.

In the pipeline from Quad themselves are the 77SA stereo power amplifier, with monoblocs to come. Watch this space! EB

The Quad 306 has relatively light sounding bass, whilst the 606 is a



Find out more about acoustics with the Newnes handbook.

heavy slogger with lots of welly, so it may well help. I'm assured the latest ones sound a lot better than earlier models due, I believe, the use of higher component quality.

Extending baffle area is another simple option for improving bass, although for most people the ESL-63 is big enough in any case. Placing the speakers up on closed-front stands will both brighten them up and improve bass.

Another option is placing them close to, or against a side wall, but you need a narrow and

long room for this. NK

MARITAL DISPUTE

Our system has taken a good few years to acquire. It consists of a Rotel RCD 855 CD player, a Linn Basik turntable, a Rotel RA 820 BX4 amplifier and Mission 761i loudspeakers. We want to upgrade the CD player, amplifier and the 'speakers but are at odds on how to go about it.

While I am keen on a simpler system based around either the Naim CD3/Nait 3, the Musical Fidelity Elektra E600/E100 or the Cyrus DAD7/Cyrus III with Mission 752 'speakers, my husband is keen on adding the new Rotel RDP 980 DAC to our existing player and then at a later stage adding the RDD 980 transport and going the pre/power route with the Rotel



TDL's RTL3 is capable of filling large rooms without needing vast amounts of power.



Eric Braithwaite's favourite amp for driving Quad's ESLs - the Mitchell Alecto.

RC980BX/RB980BX and the 752s or 753s if we could afford them.

I really like minimalist systems, although I must admit the Rotel system my husband is keen on is not without appeal. As a matter of interest, would the above Rotel system upgraded to two RB980BX amplifiers in bridged mode outperform the other systems mentioned?

If you had around £2,000

to spend on a CD player, amplifier (not necessarily from the same manufacturer) and floorstanding 'speakers. what would you buy?

We also want to replace our ageing K5 cartridge and as the amplifier we choose will determine between an MC or MM we will go with either the Goldring 1042 or Ortofon MC15 Super II. We have a large LP collection, so a lot of our listening is on vinyl; but as we are buying mainly

... 47 ▶

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**Anita Plant
Cape Town,
South Africa.**

Although they have not been reviewed in this magazine, one of the best and most affordable pre/power combinations around is the Creek P42 pre-amplifier and a pair of A42 monoblocks used in bridged mode. With an MC board, that takes up a little under half the budget.

Since the system is an upgradable one, it doesn't have to be purchased all at once; you can start with the pre-amplifier and a single A42 as a stereo power amplifier, which would cost around £600.

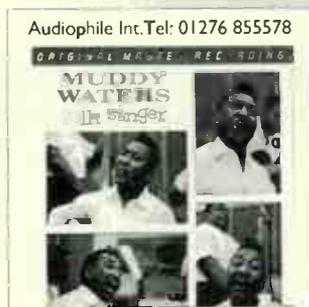
There isn't so much agreement on what we would buy, given your budget. Mission 752 loudspeakers rate highly in this office as very balanced all-rounders, but so do the new Technics SB-M500s. Your budget may stretch to KEF Reference Series 1s, according to South African prices.

We all like Mission Cyrus amps too, which are clear, precise yet sweet. Otherwise, Sugden get a stronger vote amongst us than most. And for CD, try Teac, Marantz and DPA. NK

I'd tend to start at the loudspeaker end first, as you express a preference for high level listening in a large room. You also want a rich and full sound, and a good

sound stage. This suggests TDL's RTL 3s to me. These are a quite large floorstander using twin 6.5" bass drivers in a reflex transmission line design. They have a very powerful, large scale sound that I think would suit you down to the ground.

Even better news is that the RTL3s don't take that much to drive them. With their high sensitivity you wouldn't need to go to the expense of a pre/power. A higher quality, lower powered integrated will give fine results. I'd go for the Cyrus III and DAD7 combination. They're beautifully made and engineered and minimalist in approach which you like. If your husband is intent on more boxes, add a PSX power supply to each which will improve performance still further. The matching FM7 tuner is superb too. DB



Check out your new cartridge with this Mobile Fidelity Sound Lab LP.

FINDING SOMETHING FOR THE FLOOR

For some time I have been considering purchasing a hi-fi system. I have now bought a Nakamichi amplifier (IA3) and a Nakamichi Compact Disc player (CD4). As I am new to hi-fi, I would be grateful if I would recommend a pair of floor-standing loudspeakers to

With their life and vigour, the 733s are a good match for a soft system.



suit these units and advise on upgrading the interconnects and suitable 'speaker cable.

**T Anderson
Sutton Coldfield,
W. Midlands.**

Nakamichi only ever excelled with cassette decks. Their amplifiers and CD players were prosaic, so you are best off not spending too much. I'd suggest you try something good and effective, but not overly expensive, notably Mission 733s. NK



You can hook up your Nakamichi components with the Chord Siren Interconnect.

SYSTEM RENEWAL

My present system is a mixture of old and new and consists of an Arcam Alpha 5 CD player, Rega Planar 3 turntable, Sugden A48 amplifier (ca 1976/8) and Linn Kan 'speakers.

While I am pleased with many aspects of the sound produced and consider the

'speakers to be accurate in both vocal and instrumental reproduction, there is something missing which I find difficult to describe or diagnose.

Local dealers have suggested that I should either stick with the Kans and purchase a modern, better-quality amplifier, or swap them for a pair of more 'user-friendly' floor-standers such as Mission 752s and then upgrade the amplifier later.

I am restricted to spending no more than about £500 on any single item.

**Mark Wilson
Leeds.**



For real speed coupled with impressive bass weight, the new 631ses are very hard to beat.

If you have a pair of original Kans, then your senses have not been fooled. They had a large midband peak, I recall from measurement. Later Kans were flatter, so you may well find them more natural sounding.

Quite what you should do is difficult to be concise about. You'll find most floostanders a lot less tight and lively than the

... 49 >

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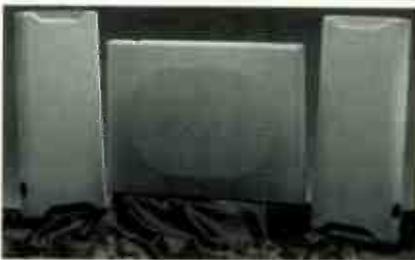
"...this subwoofer is remarkably self-effacing in appearance and easily accommodated in any room situation."

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"...a natural sounding system that impressed from first listening and continued to provide musical enjoyment over an extended listening."

"...the Sequence 400s thus gain an enthusiastic recommendation."

Hi-Fi NEWS & RECORD REVIEW



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MODEL 300 £250.00 SUBWOOFER £250.00
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HiFi Choice Recommended

"Airoflex, ★★★★★ rating" What HiFi

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ERGO HEADPHONES...
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Kans. You'd suffer less of a culture shock by going up to Toucans or the latest super-mini I've heard which is a real goer - the new Tannoy 631SE (on weighted stands). NK

I'd agree with Noel; once you're used to the Kans' speed and punch some floorstanders will sound slow. As well as the super 631SEs also audition Systemdek's 931s. These are a miniature similar in size to your Kans, but with a much more balanced presentation. As you're still using your Planar 3, audition them with a Linn Majik-I or an Audiolab 8000A, both of which have superb phono stages. DB

Sequence Model 30 (July '93, p45) which only rates 85dB is being driven at little more than half a watt because of its 14 ohm overall impedance. This 'speaker should be connected to the 16 ohm output and when driven by a full



The popular 300B power triode.

watt (4V!) would give an extra 3dB. It should therefore be rated as 'sensitive' rather than 'average' for valve amplifier use.

I agree with NK's reply to Chris Moorhouse (Jan. '96, p45) but I would have thought that pentode, ultra linear and triode output stages would react differently to impedance mismatches because of their different slope resistance and overall characteristics.

I would also expect some differences between single-ended and push-pull. M G Scroggie (Foundations of Wireless, 7th Edition, p312) gives the example of a single-ended pentode output stage where a small increase in load impedance from the optimum increases the output power slightly and also increases third harmonic distortion, although second harmonic distortion is reduced.

**Adrian Tollett
Addlestone,
Surrey.**

You are assuming that 'speakers not an exact 8Ω might be an exact 16Ω or 4Ω and also that suitable taps will be available. Most UK speakers lie in the

8-12Ω region and these are best connected to the 8Ω tap. Maximum power transfer will not occur, so the amplifier's output will not be fully utilised (but unless

the amp is run at full volume, it doesn't need to be) and we can say that sensitivity will decrease, but all this becomes unduly academic in the face of realities such as wildly varying impedances, absence of alternative output taps, etc.

Using a true watt for loudspeaker sensitivity specifications has problems with solid-state. Worst is that a high impedance loudspeaker looks more sensitive than it will seem in practice. This only causes confusion. A user would expect such a 'speaker to go loud with, say a low power amplifier, but in practice it will not. This rather defeats the object of making the measurement in the first place.

Our method of measuring sensitivity accurately reflects what a user will perceive. If we say one 'speaker produces 88dB and another 90dB then the 90dB one will be louder at any particular

volume control position, with a typical solid-state amplifier that is.

Of course, this means that using a low nominal impedance (e.g. 6Ω) gives higher apparent sensitivity, but since this is how it appears in practice to a user, fair enough. We always warn of this situation when we find it.

With valve amps the situation becomes more complex. As you say, any impedance other than correct nominal decreases sensitivity, but in my view the main issue to be addressed here is flatness of the impedance characteristic, rather than sensitivity differences.

Triodes are more load tolerant than pentodes and, in the past, there's been much debate about which is best. Pentodes have more gain and thus are a better choice for those wishing to use loop-feedback, which is why, in the past, they came to dominate. I've always found Scroggie's thoughts on such matters very illuminating; Second Thoughts on Radio Theory is a favourite of mine, where you'll find more on such fundamental matters. NK

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This Mobile Fidelity Sound Lab LP should keep you listening while you choose your new speakers.

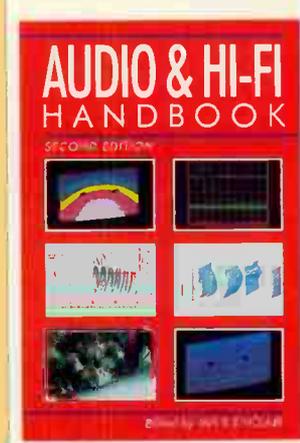
SENSITIVE SOULS

Having spent some time studying your loudspeaker reviews, I note that you quote sensitivity in terms of dB for 2.8V input (Mar. '94, p27). I agree that this is the most suitable specification for use with solid-state amplifiers, but it can be misleading for valve amplifier use.

Since loudspeaker and valve amplifier impedances need to be matched anyway, it is more appropriate to quote the sensitivity of a loudspeaker for one watt of actual input power. This means that relative to your quoted sensitivity figures, low impedance 'speakers will be less sensitive and high impedance 'speakers more sensitive.

As an example, the

Newnes. Tel: 01865 310366



Any dedicated follower of audio should have one of these in their library.



That's not just another hollow acronym. In this case it's a relatively complex replay equalisation system that Pioneer offer as an automated version of NAD's Play Trim. It joins Super Auto BLE, with XD of course, that in turn complements Dolby B, C, and S, with HX Pro. In music search you get P+XX or P-XX, depending on whether you are going forwards or backwards. It's all so obvious!

Pioneer's CT-S740S came as something of a surprise to me. Here's an unusually well engineered cassette deck in a standard black box. Appearances are deceptive. The prosaic front hides a complex interior - one that is perhaps over engineered.

That's the sort of statement that may make Pioneer cry, but after reading about FLEX in the owner's manual I nearly did too. Flex isn't something you hang yourself with in frustration, but Frequency Level Expander System.

Any old cynic like myself may well assume Pioneer are not serious with all this. But in fact they are. Wherever I looked, the CT-S740S proved to be a very dedicated piece of cassette deck engineering. Tests confirmed its abilities, but how users will ever cope with Flex or Super Auto BLE, with XD, I wonder.

With cassette decks it is of primary importance to get the replay chain to reproduce right up to 20kHz. The head must be upright within minutes of arc, the tape guidance immaculate, the

DEVILISH DETAILS

With cassette, the devil's in the detail. Pioneer tackle them well in their CT-S740S recorder, says Noel Keywood.

replay amps perfectly equalised (with strong high frequency boost) and the head must be super smooth, or free of asperities. Curiously, it mustn't be too smooth, 'cos then the tape simply sticks to it. Peek inside the cassette compartment and the use of a cast head block gives some indication of the effort Pioneer have put into attaining such a result. Most heads sit on a cheap stamped metal bracket, but not Nakamichi's, nor this one.

The CT-S740S doesn't have, in its replay amps, the upper treble lift of a Nakamichi. Nor does it have Play Trim. Instead, it has FLEX which worked very well. Put simply, this senses when a pre-recorded tape sounds dull by measuring the roll-off rate of high frequency energy and, if excessive, adds treble boost to brighten up the sound.

That makes Flex an automatic equivalent of NAD's Play Trim. However, Flex offers 12dB of variation at 10kHz, against Play Trim's 3dB, and it was audible. I heard it hunting a bit at first, but was very impressed by the final outcome. Tapes so dull the vocalists seemed to be mumbling were transformed. Roy Orbison's *Mystery Girl* was one example; it was good to hear clearly at last Elvis Costello's bitter observations on *The Comedians*. If anything, Flex seemed to over compensate, but it was effective and offered a dramatic improvement in sound quality from pre-recordeds.

With Flex switched out replay response runs flat from 20Hz to 20kHz - quite an achievement. The deck will produce perfectly standard recordings that transfer properly to other machines, like a Walkman or car player. I tested this by transferring recordings to my Nakamichi ZX-9 and they came over as well balanced.

Over a wide range of pre-recorded tapes the CT-S740S showed great consistency, offering a silky smooth sound from an impressively stable soundstage. It didn't quite have the dynamics of my ZX-9, but Flex gave it better clarity and image definition. I suspect most people would be pretty surprised at what the CT-S740S can wring from pre-recorded tapes.

Having got replay performance right I

wasn't surprised to find record performance was superb. This deck does a fine job recording onto ferrics, chromes and metals. Its head may not offer Nakamichi magnetic overload levels, but they were good enough. Pioneer fit an effective automatic tuning system that adjusts bias, sensitivity, then record equalisation too. This is an impressively correct way of doing things, if rare because of its complexity.

“Pioneer weren't fooling around when they designed the CT-S740S. . . It's something of a bargain and one of the few decks available today I can award top marks to”

With all Dolby systems present, including the most recent Dolby S, the CT-S740S lacks nothing. Throw in superb speed stability from a well-honed dual-capstan transport and both hiss and wow are just about banished from recordings.

Ferrics like TDK AD and AR consistently sounded a little warm in balance, but hash-free in the treble and silky smooth generally. Metal tape (TDK MA) gave transients more bite - even Dolby S couldn't disguise this. The tune system coped with Sony Metal ES, which was a surprise, probably explained by the use of adjustable record EQ, even if there was a little residual brightness.

Most people, I suspect, would be more than happy with results from a good ferric, however, like Maxell XL-IS, or TDK AR/AD, providing Dolby S is

used to keep hiss down and help prevent saturation (treble overload). TDK AR is a great test here since it readily saturates and goes soft in the treble. Tuned in and with Dolby S engaged it captured the transients from Steve Earle's steel strung guitar well. The rub here is that AR has a low frequency performance superior to metal tape, at half the cost. With Dolby S to suppress its hiss and minimise treble saturation, it offers impressive recording quality.

Finally, the display panel legends of the CT-S740S are so small I had to stoop and peer to see them, especially B, C or S Dolby status. Although fully automated, I suspect many people will find the Pioneer confusing to use, it has so many obscure facilities.

This deck is a curious proposition. It offers superb performance at a bargain price of £429.95. Few people except tape professionals will ever really understand Super Auto BLE and Flex and they, I suspect, won't go for the automation. The deck needs simplifying and a better instruction book, preferably not written in bland Japlish. But in spite of these gripes, I have to say that in many areas this is one of the best cassette decks I have tested for a long, long time. Pioneer weren't fooling around when they designed the CT-S740S. It's something of a bargain and one of the few decks available today I can award top marks to ●

Pioneer CT-S740S

£429.95

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see P103

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Many of the things we've been quick to abandon in the past had greater worth than most of us realised at the time. Hi-fi has been victim to the notion that tomorrow's technology must be better than today's.

Other industries are ahead of the hi-fi business in realising the drawbacks to this. I'm reminded often of the motor industry. Is the perfect car one that is ultimately fast, ultimately quiet and ultimately smooth? Surely not.

Technically, it would be a great achievement, but who cares? Only motor industry boffos: it demonstrates their skills. Crossing Ditchling Beacon on a bright, sunny day, gimme a TR3A with the top down please!

The motor industry has realised that a big market sector will always exist for the safe, economical and, invariably, bland. I call this the negative attribute market; value is seen mainly in what the product does NOT do. That is, it must not intrude into people's lives in terms of cost, unreliability, visual ugliness, or what have you. In this market blandness is, in effect, a prime attribute.

But equally, there's a market for something that offers a specific and more intense experience than anything whose *raison d'être* is to be invisible. This is the market that looks for positive attributes, ones that DO intrude upon the senses; is it fast, fun, rorty, etc?

A similar situation afflicts the hi-fi business. A large number of buyers will always want something that is cheap and reliable, but effective too. For them the compact "black box" is ideal, because of the way it does its job unobtrusively, day in, day out. It may well not be the best going, but it hasn't been bought specifically for that property.

I see black boxes as part of the Consumer Electronics Industry. This embraces radios, TVs, Home Cinema and what have you. As much as

anything, the C.E. business has the wrong outlook to manufacture hi-fi. C.E. is all about mass manufacture at the lowest possible price. It produces what is known as a commodity; a faceless item sold by weight of advertising.

I realised just how far C.E. had gone recently when Ken Ishiwata of Marantz, a hi-fi man who

because it's a low cost/high volume item with a perfect CE profile. They'll tell you it's hi-fi; I insist it's CE. Let's look at this and why we differ.

The heart of every CD player contains parts designed solely, utterly and completely to be cheap to make. Forget quality; it isn't a prime consideration. It doesn't need to be,

Unfortunately, whilst the motor industry seemed to realise it had made a big mistake in telling its customers what it wanted to hear, namely that there was no demand for sports cars, soft tops and anything with character, the hi-fi industry hasn't yet made this distinction within itself, except I suspect at Philips/Marantz, where marketing and market research are used heavily.

Philips/Marantz have a few other "structural" advantages, as I'd call them. Marantz is a very powerful player within the group and that company is essentially Japanese (albeit with an American name). It brings to the group the Far East outlook, which Europeans and Americans have yet to really

comprehend. For example, few Britons know that most Garrard 301 and 401 turntables left our shores ages ago, shipped out in containers to Japan. Marantz know this. They also know that these goods feed a voracious Far Eastern hi-fi market, that's why Philips relocated their Audio Division

Headquarters to Singapore. This market values good hi-fi, irrespective of all other factors, much like a car enthusiast might value a TR3A. As I said earlier, many of the things we've been quick to abandon in the past had greater worth than most of us realised at the time. In hi-fi we've yet to discover where value really lies and why ●

" Few Britons know that most Garrard 301 and 401 turntables left our shores ages ago, shipped out in containers to Japan. "

works in the upper echelons of Philips/Marantz's global C.E. business (unusual that) explained to me that their Japanese factories are so carefully but thoroughly planned in terms of production efficiency that visitors aren't allowed in. These are the factories we do not see. What they are guarding are not fantastic circuits or components that yield unheard of sound quality so much as the latest in production techniques. So let us ask ourselves a rhetorical question: what are their priorities? It isn't difficult to see, no matter how the industry views itself.

Not unsurprisingly, CD turns the CE industry on

conventional engineers will insist, because at this stage the system is digital. Now do you understand why the CE industry loves digital and why it wouldn't or perhaps couldn't accept analogue ever again? Yep, it's cheap, cheap - and in cold engineering terms it delivers the goods.

Remember our perfect car? Digital delivers perfect hi-fi equipment. Perfect for whom is another matter of course. And this is the bit the industry itself is just beginning to sort out in its own head, under intense consumer buying resistance.

It isn't enough to turn out bland product after bland product in the blind belief it will sell.

Simple,



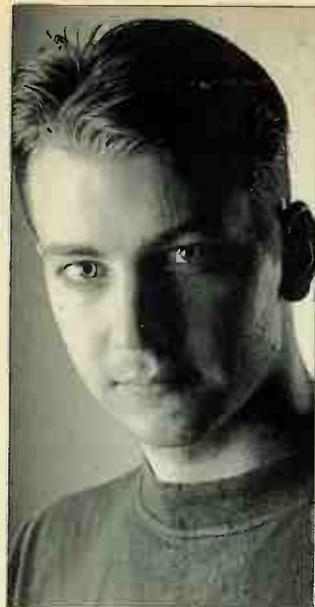
In art, the simplest disciplines can also be the most demanding. To write a haiku, a traditional Japanese poem, a poet is allowed just 17 syllables to capture a complete thought. So each word has to be weighed against every possible alternative to ensure there is no better alternative. The engineers and designers at Aura would immediately recognise the rigour of this approach. Like the poet, their goal is deceptively simple – to reproduce music perfectly. So each component must be carefully evaluated against alternatives. Every design route is checked against other possibilities. And when a decision is made, the key components are specially manufactured to

isn't it?



our own stringent specifications. Meticulous attention to detail has led to fewer and fewer details. The fascia of our amplifiers are uncluttered by unnecessary controls. Freedom from electronic gadgetry allows us to minimise the single paths to the electronic circuits inside the amplifier, reducing 'crosstalk' and distortion. Even Aura's distinctive chrome finish has taken us years to perfect. Stainless steel is repeatedly polished until it shines like a mirror. The result is simplicity and pure beauty. If you would like to know more about Aura amplifiers, tuners and CD players contact B&W Loudspeakers (UK Sales) 01903 750 750

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Dominic Baker

dB on the level

What is happening to our masters? How long do you think a master tape lasts? Like me you'd probably never even thought about it, but after speaking with a representative of a major record label I made a few interesting discoveries that prompted me to investigate further. Before I tell the story of what I discovered though, lets describe what a master tape is and represents.

Analogue masters are multi-track tapes, with 8, 16, 24 or 32 tracks. Individual performers record their own parts separately, and once 'perfect' these are then mixed down and blended on to a master, along with any electronic sound effects the engineer chooses. The stereo mix down master represents the closest, most accurate representation of what the band and recording engineer wanted their track to sound like, and it's extremely valuable.

Imagine my horror then, when the representative told me that many of the original analogue master tapes they had were going sticky, causing them to jam in machines and become unplayable. There is a cure, called "incubation" in the trade, where they are baked to dry them out so that they can be re-played. But once they have been baked, they only have a limited life span, after which they are useless and are binned. During this

time a copy is made. Many are only copied to DAT (Digital Audio Tape) though, so the original analogue information is lost for ever. The copy quality is now limited to the 16-bit resolution of a digital system - inadequate in our opinion.

But why do the tapes become sticky in the first place? It all started when BASF, AGFA and AMPEX started producing tape with a matt back surface to

and they had never experienced it.

Obviously though, with BASF, AGFA and AMPEX tapes all suffering, there was a lot of very valuable material involved, so something had to be done. AMPEX took the lead here, developing a technique which involved incubating the tape at 55°C for four days. This would set the lubricant back into the tape, but only temporarily, before the tape would

"Imagine my horror then, when the representative told me that many of the original analogue master tapes they had were going sticky, causing them to jam in machines and become unplayable"

improve the way they ran. These tapes had a special lubricant within the oxide, also to help running and lessen oxide shedding. Over time, this would rise and stick to the matt back surface. In some cases it would actually bring the big reel-to-reel machines to a halt, making them unplayable.

Scotch and EMI tapes don't seem to suffer from stickiness. They probably used a different chemical lubricant to that used by BASF, AGFA and AMPEX. I spoke to DECCA too, who said that the problem was confined to early tapes,

become sticky again. Depending on the type of tape and how bad it had become, this gave between 30-90 days of extra life, when duplicates could be made.

AMPEX carry out this service on their tapes. Examples of recent tapes which have been 'incubated' are King Crimson, Peter Green, Peter Sinfield (who wrote songs for ABBA) and Arthur Brown, but no doubt there are many more.

At AMPEX in Dorset, engineer Tony Arnold uses Dolby SR (Spectral

Recording), which enables analogue copies to be made of the original masters without affecting their dynamic range. Tony also uses the original machines - he has one of every machine AMPEX have made since 1952, all serviced and in full working order. So if the original was recorded on a 1954 Ampex 8-track, he will use a 1954 Ampex 8-track to play back the incubated master copy.

This isn't just sentimentality though. If the tape was mastered on a machine that was only capable of recording up to 15kHz, but then played back on a newer machine that can resolve what's on the tape up to 20kHz, the chances are it will reveal all sorts of noise and distortion between 15-20kHz. Bob Marley's original master tapes were actually flown to Tony at AMPEX for this very reason.

As an interesting aside, AMPEX was formed in 1952. Les Paul invented the multi-track recorder, and Bing Crosby put up the

money to start AMPEX and put his ideas into use.

No one would confirm that they only make DAT copies of incubated master tapes, losing the analogue originals forever. But in today's market, where speed and profit seem to come before quality, I suspect that it is a regular occurrence.

Finally, I'll leave with one parting thought. Tony told me that some of the digital masters made on DAT machines are also starting to go sticky, but that's a whole new story ●

LIGHT WEIGHT

BOXER

Harbeth's HL Compact 7 loudspeakers rely on high quality drivers finely tuned to a light and rigid cabinet structure. Dominic Baker finds they've got a clean punch.



It's unfair on reviewers. But that's their lot. Eric was raving about Harbeth's new HL Compact 7 monitors - so I pinched them for review. Freelancers in particular have to live with the threat of their prize possessions being appropriated by an unsympathetic editorial department. There are situations in a hi-fi reviewer's life when silence is golden.

In the HL Compact 7s there's a 200mm bass driver, reflex loaded by a front firing port. This driver uses Harbeth's RADIAL™ injection moulded polymer cone. This material has been developed for low colouration. The cone sits in a cast chassis fitted with a central phase plug. The tweeter is a 25mm aluminium dome, ferrofluid cooled.



THORENS CD PLAYER TCD 2000

★★★★★ WHAT HI-FI? NOVEMBER 1995

VERDICT: Arise Sir Thorens, with high digital status...

FOR: Open fast sound with great depth

AGAINST: Don't listen if you can't afford it,

MAJOR THUMBS-UP

PORTFOLIO MARKETING

PO BOX 442, GREAT MISSENDEN, BUCKS. HP16 OJB

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These drivers and every component in the crossover are measured to ensure consistency; a pair of HL Compact 7s are matched to within 0.75dB across their full audio bandwidth, a tight tolerance to adhere to in production.

A lot of the Harbeth sound is attributable to designer Alan Shaw's SuperTunedStructure (STS) cabinet. Where many manufacturers go for thick, heavy enclosures, trying to make them as solid as possible, Harbeth choose to laminate selected grades of MDF together, producing a thin 'lossy' structure. It is light, but very rigid, and Harbeth claim that when properly tuned, resonances are kept well away from the critical midband.

“ They seem in perfect harmony with the music, reproducing everything in seemingly correct proportion. ”

Another interesting feature is the grille. . . yes really. Grilles are troublesome objects. You spend months carefully engineering a loudspeaker to get an accurate response, then plonk the grilles on and ruin it all. The reflections caused by the grille frame can strongly affect the performance of a loudspeaker (see the QLN's measured performance section this month), causing phase suck-outs that affect the response and imaging. Harbeth loudspeakers are designed to be used with the grilles on, so they have developed a special frame that sits into the baffle leaving no hard edges that could cause these reflections.

Harbeth certainly pay a lot of attention to detail, and so did the Compact 7s when it came to the music.

I found the timbre of strings was described quite differently to usual, having a lighter, brighter tone and more of the woody resonance expected of cellos and violins.

From Nirvana's Unplugged in New York album, 'Come As You Are' had an open and breathy quality, free and easy in its expression. Acoustic bass was spot on, with just the right balance between the full and warm resonance of the body and the crisp leading edge of the steel strings. The HL 7s have quite a dry, analytical quality and a fiendish eye for detail when it comes to reproducing the complex harmonics of acoustic instruments like this.

Listening further into this album, 'Oh Me' had a perfectly weighted delivery and stereo images seemed tight in the certainty of their placement.

Acoustic bass was splendidly captured; soft, delicate and with a natural, uninhibited decay. But more captivating still was the way this live performance was delivered. You could feel the concentration of the performers, balancing lead guitar against percussion, whilst being careful not to overwhelm the gentle bass line. They left enough of a contrast for Kurt's vocal to push to the forefront. It was possible to hear the instrumental contribution soften slightly a fraction before each of Kurt's renditions, so as to clearly differentiate the vocal. It was an enchanting balancing act, an impressive live performance.

This demonstrated one of the Compact 7s greatest strengths: they seem in perfect harmony with the music, reproducing everything in seemingly correct proportion.

Harbeth's HL Compact 7s can almost sound over-dry at first, sterile maybe to the untrained and unaccustomed ear. But after hours, days, even weeks of listening you begin to realise that a lot of the time they're just very revealing of recording quality. Shifting back in time, The Doors' 'The End' on vinyl (I'd forgotten how thick and un-plastic like vinyl pressings were in those days) was captured in all its 70s splendour. Technicalities aside, it was surprising just how much the Goldring 1042's stylus dug out from the grooves. There was a realistic sense of acoustic space within the dry,

reverberant studio, which had a signature reminiscent of a small warehouse.

Although dry, the HL 7s are capable of producing surprisingly deep bass, I found. But they don't tell you about it often. There's little sense of drama as a powerful performance swells, but then you can't have everything, unless you have a subwoofer that is. That kind of stuff is all a little crude for the Compact 7s though; they're a Ming vase in a world of plant pots and deserve to be treated so.

With great insight and clear vocal projection, Bjork's 'Crying' from her Debut album was fast and incisive. Keyboards sounded solid and punchy across the upper bass spectrum; here the Harbeths appeared to dance along with the melody. The cymbals on 'Come To Me' were some of the best produced I've heard, sharply metallic and extended. Tuneful too, changes in pitch vividly discernible.

All this said, I can see that the Compact 7s won't be to everyone's taste. They could be accused of being dryly sterile next to a KEF Reference 1, but the KEF's equally could be labelled a little tubby perhaps. Here, taste and expectation affect judgement. The Harbeths are a thoroughly convincing and accurate monitor of recorded sound. They possess great resolution and clarity. Some might want more warmth or euphony, but I'm not sure they could wish for greater accuracy ●

Harbeth HL Compact 7 £1,329

Harbeth
Unit 1,
Bridge Road,
Haywards Heath,
W. Sussex RH16 1UA
☎ 01444 440955

WORLD VERDICT

Dry and analytical, but truthful with it. A first class monitor ideally suited to acoustic or classical music where its finer qualities shine.

Measured Performance
see p103

MS

Mordaunt-Short

Reach for the stars

The only thing better than a five star review - is *two* five star reviews!

In March 1996 WHAT HI-FI? reviewed the new Mordaunt-Short MS10i loudspeaker against five of its closest rivals.



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"We know there are those who find the KEFs' delivery a little relentless - those listeners will love the MS10is."

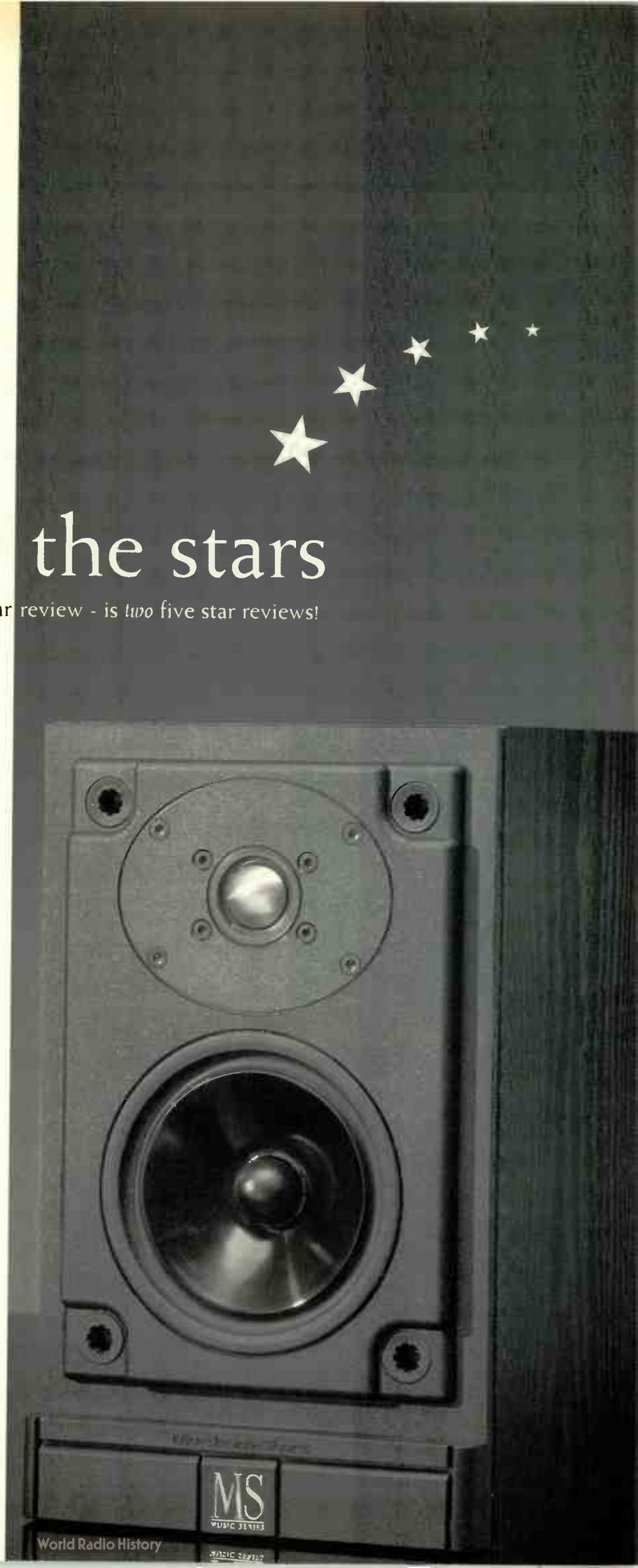
"But the stars here are the £140 Mordaunt-Short MS10is. They rock out with clarity, and deliver high standards of detail and focus at a price which makes them quite superb value for money."

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V'audio

Hi-Fi Consultants

Ian C. Vaudin
36 Druid Hill, Stoke Bishop,
Bristol BS9 1EJ
Tel/Fax: Bristol
(0117) 9686005

NEW BUDS FOR THE SPRING

THERE CAN BE NO DOUBT THAT ONE OF THE GREAT NEW FLOWERINGS IN THE 95/96 SEASON WAS THE AVI INTEGRATED 100W/CH AMPLIFIER, WHICH WAS A NATURAL FOR AN 'AUDIO CHOICE 1996' AWARD BY THE GRAMOPHONE MAGAZINE. THIS LITTLE WONDER TROUNCES MANY HIGHLY RESPECTED AMPLIFIERS COSTING UPWARDS OF £6000, WHICH CONSIDERING THE AVI ONLY COSTS £800 (INC. REMOTE) IS PRETTY GOOD FOR SALES. EVEN SOME OF THE BETTER KNOWN MASS PRODUCED SPEAKERS, SUDDENLY SOUND HALF DECENT WHEN CONFRONTED BY THIS LITTLE AMP. IT IS SO GOOD THAT ON SOME SPEAKERS SUCH AS THE RUARK CRUSADERS AND EQUINOX, THE INTEGRATED SOUNDED BETTER THAN THE MORE EXPENSIVE S200MP+MA PRE-POWER COMBINATION!

BUT ALL THAT IS ABOUT TO CHANGE WITH THE ARRIVAL OF THE NEW SPRING RANGE, NAMELY THE AVI S2000MP+P PRE-AMP AND MONOBLOCKS, EMPLOYING SIMILAR TECHNOLOGY TO THAT USED IN THE INTEGRATED, BUT WITH MORE POWER (150W/CH). PRICES HAVE GONE UP SLIGHTLY BUT STILL REPRESENT A BARGAIN AT £849 FOR THE LINE STAGE VERSION OF

THE PRE, AND £1049 FOR THE LINE + PHONO VERSION, AND A SUPERB MM/MC PHONO STAGE IT IS! THE MONOBLOCKS WILL SET YOU BACK £1250. THIS NEW COMBINATION, ESPECIALLY IF USED WITH THE NEW £1249 AVI REFERENCE CD PLAYER, ALSO DOES A SUPERB JOB DRIVING THE ATC 10, 20 AND 50'S, WHILE CUSTOMERS PRESENTLY USING THE ATC 50 ACTIVES WITH THE OLDER AVI PRE AND CD PLAYER ARE NOW SAVING TO UPGRADE TO THE LATEST COMBO. NOT TO BE FORGOTTEN IS THE NEW AVI NEUTRON SPEAKER; GREAT IN A SMALL STUDY.

BUT WE MUST NOT FORGET ALL THE OTHER NEW BUDS WHICH HAVE APPEARED RECENTLY, INCLUDING IN PARTICULAR THE ELECTROCOMPANET ECI-2 AMP AND QUBE SPEAKER, THE ALON PETITE, MODEL 1 AND 2 SPEAKERS, AND THE SHEARNE PHASE 1 TO 6 RANGE OF PRE, POWER AND INTEGRATED AMPS.

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ORCHID

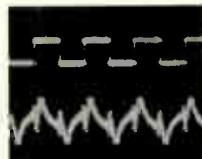
PRECISION AUDIO

In a world where many loudspeakers appear to be poured from a mould, we would like to show you something different, a loudspeaker which may turn out to be one of the most convincing in the world, a loudspeaker to give you and your music freedom and fidelity. Hidden beneath the classically styled cabinet is a radical 6 way design which might just change your pre-conceptions about "less being more".

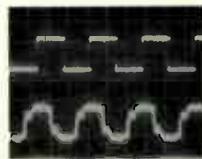
To produce an experience as intense as live music takes not only a flat frequency response, it also takes high acoustic output and low distortion too, and achieving all these requires that each individual driver be operated only over a narrow, optimum frequency range. To do otherwise results in aberrant cone behaviour, high distortion, and gross coloration. Sorry.

If we had just stopped there; made a 4 way system from premium quality drivers, it would be a good 'speaker, but it would not have been a great one. Because there is the other criterion, the one nobody mentions, the **PHASE RESPONSE**. Without a good phase response, you will always be conscious that you are listening to electronic equipment, and you can do better, as we hope to show you.

The square wave test is one of the most revealing indicators of a 'speakers frequency and phase response. It is rarely published since many 'speakers, like the one in the top photo, have poor phase linearity.



We use a 38 element crossover with unique trinary crossover points to achieve the fidelity shown here.



300 Hz TEST PLOTS

Hi-Fi nonsense? You are entitled to be sceptical, but we have only our commitment to excellence to rely on, and we believe that the Orchid Precision Audio PLL1 is the most convincing, powerful, and passionate loudspeaker you will find. If you're serious about high end audio you must audition this loudspeaker. To book a demo contact our dealer:

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THE PHASE LINKED LOUDSPEAKER
23 Hz - 24 KHz, 117 dB SPL peak, 300W

With summer on its way, the hi-fi industry is set to follow the usual practice of going into hibernation. Thoughts move away from cosy nights indoors listening to music, to burning yourself half to death in some exotic location.

Yet, whilst all may be quiet on the retail front, this is the time when many manufacturers quietly launch new ranges of equipment. The manner and timing of this tells you much about the hi-fi company itself. There are those who are quite content to let the years go by without altering their products in any way, or if they do, it's simply a case of evolution rather than revolution, and often there is good reason for this.

Why should Quad want to replace their long standing ESL 63 electrostatic loudspeakers, or Nakamichi their Dragon cassette deck, when they'd risk losing the status that these individual models bring to the brand as a whole?

For other manufacturers, normally mass manufacturers, a constantly changing product range is an important part of their operation. These companies tend to fall into two categories: those that constantly introduce new model lines every year (or even every six months), and those who leave things a little longer, allowing products to become absorbed more by both dealers and public alike over several years.

Companies that fit into the first category tend to be the highly competitive multi-nationals. To them, a brand new product range every year is not so much a luxury but an absolute necessity in order to keep one step ahead of the competition. If your competitor has something new, normally with some new feature, then your year old model pales next to it. Yet there are potential problems.

Many of these larger companies have been

Fair Views

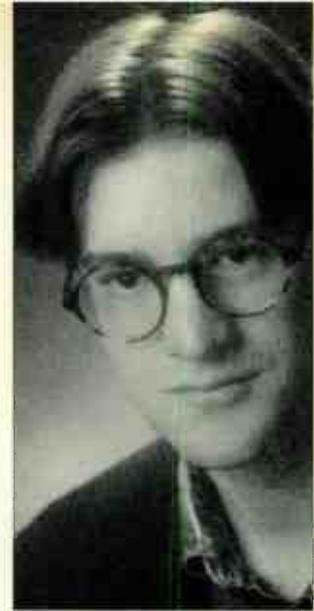
stealing the limelight from smaller, usually home-grown companies, in areas they traditionally haven't done so well in. Notable recent successes have been the Pioneer A-400 and Kenwood KX3020SE amplifiers, Technics' SB-M300 loudspeakers and numerous other products that have surprised sometimes even the manufacturer concerned with the sheer demand for the product.

“Notable recent successes have been the Pioneer A-400 and Kenwood KX3020SE amplifiers, Technics' SB-M300 loudspeakers”

Then there are all the additional electronics that the multi-nationals often do well with. If an amplifier or CD player does exceptionally well in the hi-fi press, demand for the matching tuner and cassette deck in the same range soars alongside. You don't have to look too far to see examples of this, either. The previous season's favourites were the Denon TU260 tuner, Sony STS265 tuner and Aiwa ADF450 cassette deck amongst others.

The crunch comes, however, when attempts are made to follow up on a roaring success. So concerned that the new range won't take off, existing products are often

from
Dominic Todd,
our man in
retailing



opinion

run in tandem. This year, it's the turn of Technics who, after having great success with their SLP570 CD player, are understandably reluctant to drop it totally in favour of the new 580. Hence, the two will be running alongside one another for the duration of the year.

The other alternative is the numbers game. Quite often a manufacturer will simply re-badge an existing unit with minimal changes.

Finally, if all these methods fail then there's always the good old stand-by of a marketing gimmick. I understand that this year we've got hi-fi containing bamboo (I kid you not) bursting on to the market. No doubt it'll be Super Linear, Super Clean Drive bamboo, too.

Not all hi-fi companies fall foul of their own success. The NADs, Arcams and Rotels of this world tend to take things at a steadier pace and, if something does well, will not be in a hurry to replace it. But a long product life can also be something of a double-edged sword, however. On the one hand, it may soon be overtaken by competition and end up

towards the end of its life-span almost totally forgotten. On the other hand, a long life can be beneficial in terms of the increased public awareness of a particular model that comes from steady exposure and word of mouth.

NAD for example have only just recently replaced their electronics range after four years of it remaining relatively unaltered. Yet the irony here is that the new 312 amplifier has been designed to sound more like the model its predecessor replaced (the 3020) than the predecessor itself (the 302). When a new model is less successful it's perhaps not such a bad idea to quickly change the model range again in the hope of rectifying things next time round.

What we must all learn from this is not to be wooed into buying a particular model simply because it's the latest thing. There are many excellent new products out there, but equally there will be some that are no better, or even worse than their predecessors. So the best advice, as always, is to keep an open mind and listen carefully to several options, both from the latest ranges and the not so recent. If you don't believe me, just take a look at some of the products in 'World Favourites'. A change, then, is not always for the better ●

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Simple

Are Teac hoping for a regular return from the interest their new A-BX7R amplifier generates? Eric Braithwaite counts the plus points.

INTEREST

Teach's new A-BX7R, like the A-BX10 before it, looks as though it's aimed squarely at the British hi-fi solar plexus. It is minimalist, with nothing more than a volume control, a selector for five inputs and a tape monitor button underneath for a second tape deck. There is an option for true balanced input using three-core cable and XLR plugs, as provided by some higher-end CD players and convertors (Audiolab and Meridian spring to mind). An optional phono board for MM and MC cartridges with a fully balanced signal path is available for unrepentant black disc addicts who haven't seen the digital light.

"That amplifier you were reviewing sounded impressive," said our layout artist after the session. And she heard it through the floorboards under her seat. . . It certainly sounds big with a lot of guts. Rhythm guitar on a Radiohead track was spectacular, with loads of full-frontal attack and a size that might have made Meatloaf look a bit on the small side, even before he went to Weightwatchers. So much so the vocals were all but left in the shade. On Sinead O'Connor's 'Fire in Babylon', the Teac lent a good heavy, weighty, threatening feel to the bass, exactly what the song is meant to have.

Some flamenco-like acoustic guitar mixed in with a half-acoustic, half-electric band, had an equally sparky attack. Continual excitement like this is all very well, but like Ecstasy it can do with being watered down. The Teac's bass goes, subjectively, loud, but it isn't particularly accurate and it leaves a blurred impression. The cellos and double basses in Rebel's 'Les Elemens' had a kind of cross-fade timbre so they weren't clearly distinguishable. This piece relies on their melody for its rhythm and it

couldn't fly at all.

A spell with an Audiolab 8000S, in the same price range, showed there was detail missing in the bass. The Teac concentrated more on shoving the music and the musicians vividly out onto the carpet, while the Audiolab

stablemate, the A-BX10, this cheaper sibling sounds more like an adopted orphan. And it's up against very tough occidental island competition - Audiolab, Sugden, Sonneteer and others. Against them, just sounding big isn't enough. I mean, even Meatloaf tired of being big, didn't he?



demonstrated there was a good deal more space behind the 'speakers and around the players.

As so often, classical music gave the game away with a touch of hollowness in the midrange, a bass that was strong but not clear and, on piano as Arrau went up the scale in Chopin, a jarring jangly sound at times. In Beethoven's 7th, it was a pity that the lilting dance movement sounded off-hand and casual instead of tight and rhythmical. It was also tricky to 'see' the orchestra very clearly. As the 80-odd Chicago Symphony Orchestra's players started melting elbow grease, the Teac's sound became congested.

Definitely one for rockers, this, as little as I like making that kind of judgement. It's one to impress your friends with. It has a big, pushy sound, but it doesn't always pay enough attention to what's enveloped inside it. Given what has been reported of the almost-£1000

TEAC
A-BX7R £699.95

TEAC UK
5 Marlin House,
The Croxley Centre,
Watford,
Herts. WD1 8YA
☎ 01923 819630

WORLD VERDICT

Big and powerful sound, but a little unsubtle with it.

Measured Performance
see p103

WIN TECHNICS 'SPEAKERS WORTH £1800

We've five pairs of Technics loudspeakers to give away this month; one pair of SB-M500 floorstanders for 1st prize, and pairs of standmounting SB-M300s for four runners up.

Getting good bass from a compact loudspeaker has always presented difficulties to manufacturers. Technics' SB-M300 and 500 loudspeakers use a novel system to get around this problem, providing deep, powerful, and clean bass from relatively compact enclosures.

Technics' SB-M300 is a three way, four driver system housed in a cabinet little bigger than your average bookshelf design. Mounted on the front baffle are the tweeter and midrange drivers, both of which make use of mica diaphragms. Retaining the same material for both drivers means there is less chance of an audible change in sonic character as the two drivers cross over.

But it's in the bass that the SB-M300s get interesting. Inside there are two bass drivers, two passive radiators and three separate chambers, and that's not including the sealed case of the midrange and treble section. This design, which Technics call Dynamic Dual Drive (DDD), is essentially similar to KEF's coupled-cavity system. The two bass drivers share one common volume, but each drives into a separate chamber individually loaded by a passive radiator. In the SB-M300s one passive radiator can be found on the rear baffle, the other vents through three slots in the front baffle.



The SB-M500s are essentially the same loudspeaker, but arranged in a larger floorstander to give even deeper, more powerful bass. With the SB-M500s though, instead of venting around the front baffle, the second passive radiator is mounted behind a grille below the midrange driver on the front baffle.



When we auditioned the SB-M300s in November '95 and the '500s last month, we were very impressed. Both have a clear and detailed presentation and fine imaging. They are open and dynamic sounding loudspeakers but smooth at the same time. And of course both have taut and powerful bass thanks to the use of Technics' DDD system

Send your completed entry form, fixed to the back of an envelope, to:

**Technics competition,
Hi-Fi World Magazine,
64 Castellain Road, Maida Vale,
London W9 1EX**

Closing date: 4th June 1996.

APRIL ISSUE COMPETITION

In the April issue we gave three of you the chance to win an Aura VA 80SE-x amplifier along with matching B&W DM 601 loudspeakers.

**The lucky winners were:
Martin Harris of Horsham
Bill Bryce of Edinburgh
Mr M. Wegg of Felixstowe**

CONGRATULATIONS!

COMPETITION ENTRY QUESTIONS

Cut out and affix to the back of a sealed envelope

- 1) What does Technics' acronym 'DDD' stand for?
- A. Double Drive Design C. Dynamic Dual Drive
B. Dynamic Driver Design D. Dynamic Definition Drivers
- 2) Below are four systems used for good bass performance. Which is most similar to Technics' DDD bass system?
- A. Isobaric C. Transmission line
B. 1/4 Wave horn D. Coupled-cavity
- 3) How many drivers (including passive radiators) can be found in a pair of Technics' SB-M500s?
- A. 5 C. 7
B. 6 D. 8
- 4) What cone material do Technics use in the drivers for the SB-M300 and SB-M500 loudspeakers?
- A. Mica C. Kevlar
B. Paper D. Carbon Fibre

TIE BREAKER (obligatory)

Complete the following in less than 30 words

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COMPETITION RULES AND CONDITIONS OF ENTRY

- [1] Only one entry per household. Multiple entries will be automatically disqualified.
- [2] In the event of more than one entrant submitting all-correct answers, the winner will be picked from the tie-breaker by the Editor. We will endeavour to publish the results in the second issue following the closing date.
- [3] Purchase of the magazine is not a precondition of entry.
- [4] No correspondence will be entered into; the Editor's decision is final.
- [5] No employees of Audio Publishing Ltd. or of any companies associated with the production or distribution of the prizes may enter.

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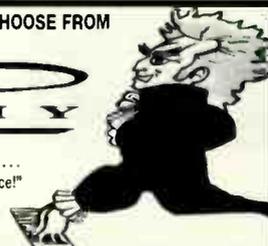
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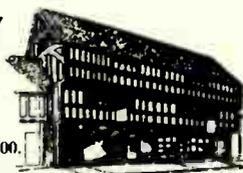
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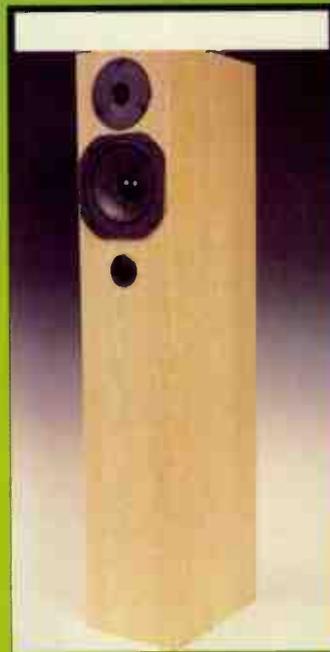
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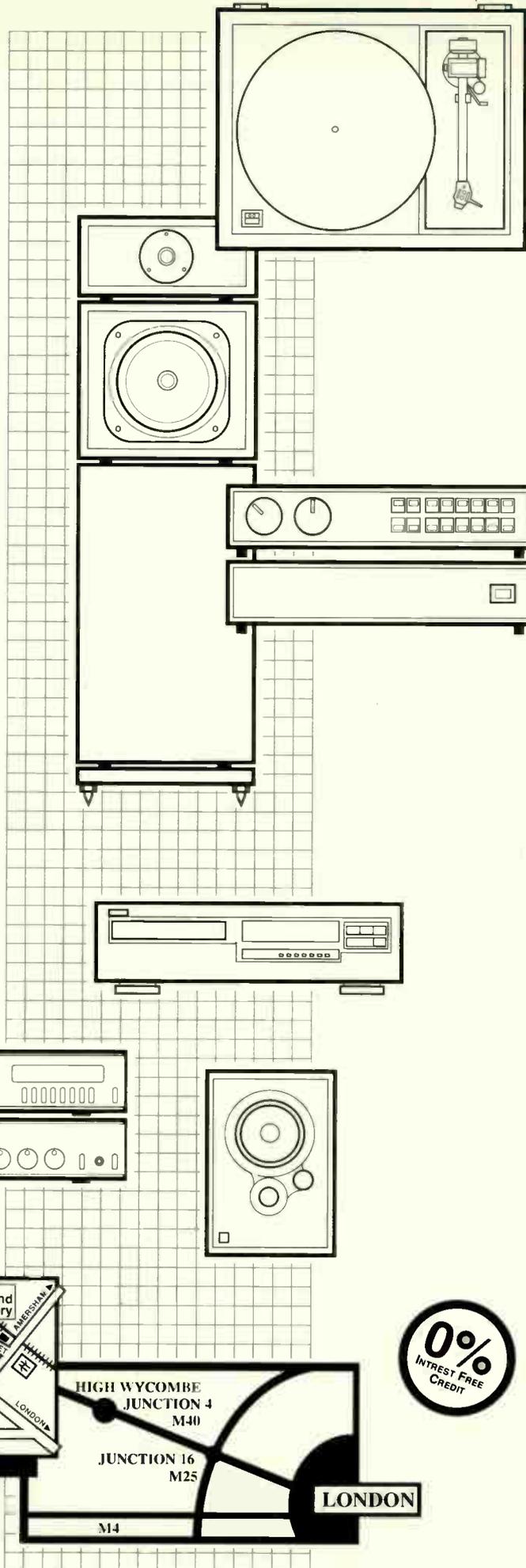
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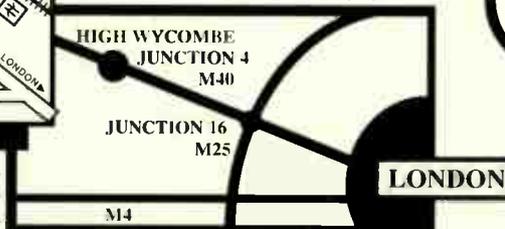
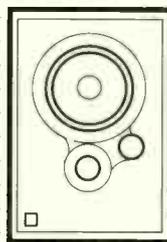
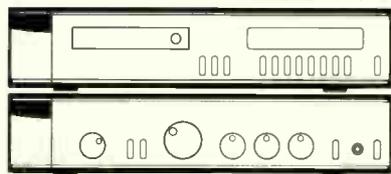
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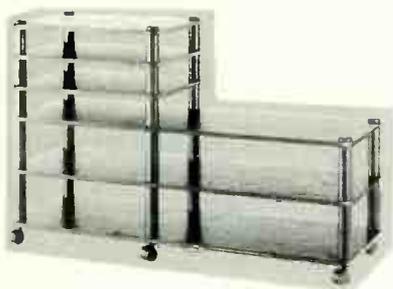
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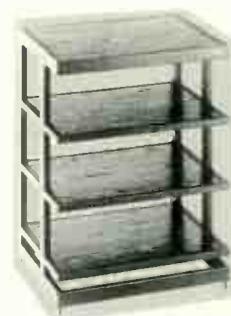
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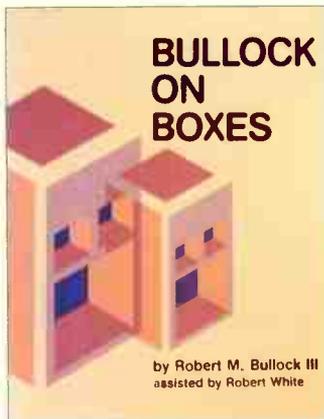
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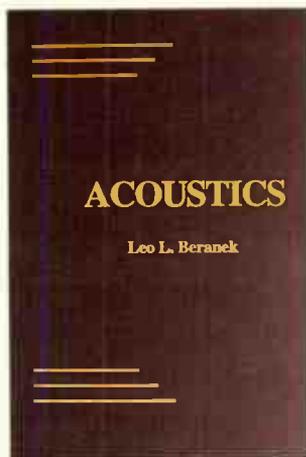
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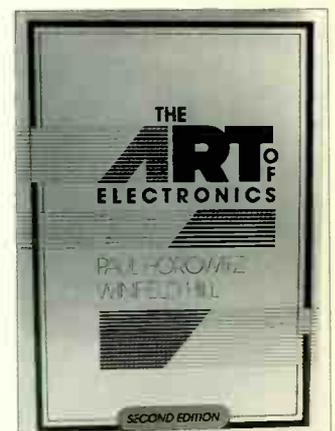
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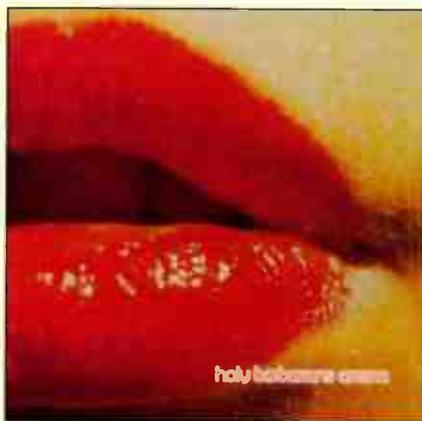
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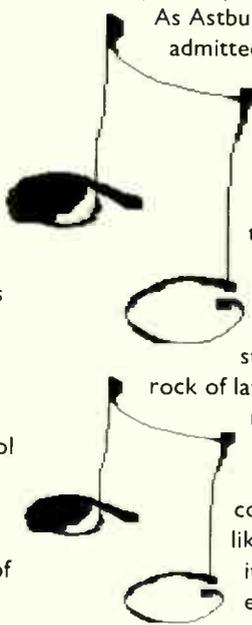


HOLY BARBARIANS HOLY BARBARIANS BEGGARS BANQUET

With the ashes of The Cult now consigned to the bargain bins of nostalgia and history, front-man Ian Astbury's gone right back to his roots to get his latest agglomeration off the ground. Born a Scouser of Yorkshire parentage, then spending his youth as far apart as Glasgow and Vancouver, Astbury has gone back to his Liverpool origins to record with his new band (the name doesn't need repeating yet, surely).

Perverse as That Name, the rest of the group are actually American in origin, starring a truly remarkable young guitar wizard from Los Angeles going by the name of Patrick Sugg. He may sound like a character from 'VIZ' comic (cue "Patrick Sugg - He Knows

Where To Put His Plug" jokes) but his fingers really do the biz on items like 'Cream', 'She' or 'You Are There'. Astbury's vocals are strong and clean, high in a mix that manages to let you hear the words whilst still allowing room for the aforementioned mad axeman, as well as the unsurprisingly solid rhythm work of brothers Scott and Matt Garret on drums and bass respectively.

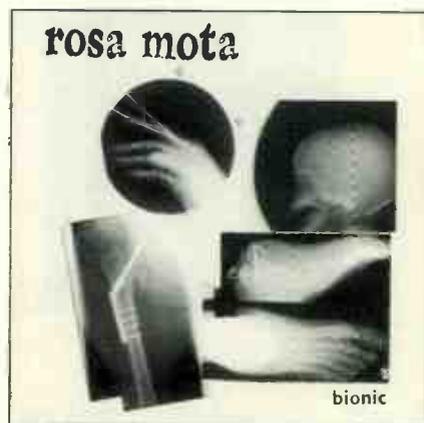


As Astbury himself has admitted, The Cult had got into something of a musical cul-de-sac, so it's a pleasant surprise to be able to report that Holy Barbarians (there, I've said it) are miles away from the more stadium-sized pomp rock of latter-day Cult. This may not be anywhere near as blatantly commercial as the likes of 'Electric', but it's a hell of a lot easier on the ear, as well as giving room to

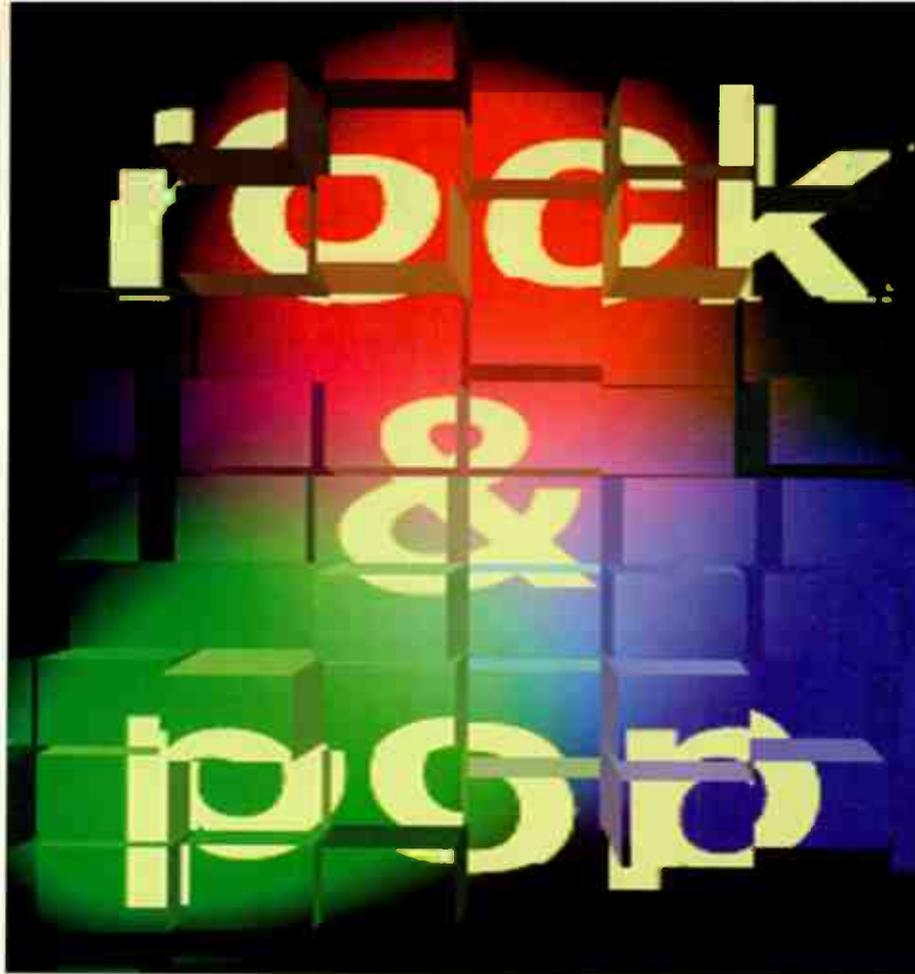
a gentler, more melodic even romantic side of Ian Astbury, a man clearly still possessed of imagination and notable creative powers. Gold star stuff.

ROSA MOTA BIONIC 13 - CD3

Singer/guitarist Ian Bishop is one of the Smoke's most imaginative and surprising musicians, as this new album from his band Rosa Mota demonstrates again and again. Rock'n'roll may be the basic format, but the addition of strings on three songs (try 'Frostbitten' at your nearest Listening Post for a thrill) are remarkable, as is the welcome re-appearance of Clare Grogan, who duets with Ian on 'This Grudge'.



Titles such as 'From Her To Maternity' and the charming 'Sometimes Narcoleptic' are clues to a lyrical wit that matches the group's



musical imaginativeness. And the mix and production, c/o the band and the truly legendary Steve Albini - a man who doesn't work with just anybody - are luminous and reflect much of the music's jagged harmonics with oodles of flair. True wizard stars, as Marc Bolan sort of said long time ago. (Somebody put something in my drink or what?).



RECORD OF THE MONTH

STING

MERCURY FALLING

A&M 540 486-2

A funny thing happened the other day - I heard a Sting record and really liked it. "I really like that", I thought to myself, suddenly realising it was Sting's 'I Hung My Head'. This is not so odd as it seems. Like a lot of my chums I sort of lost interest in Sting after The Police split and he put on his 'serious jazzman' beret, much the same as we all got a tad bored after Paul Weller quit pretending to be Pete Townsend when he cut loose from The Jam and tried being Curtis Mayfield instead via his Style Council days.

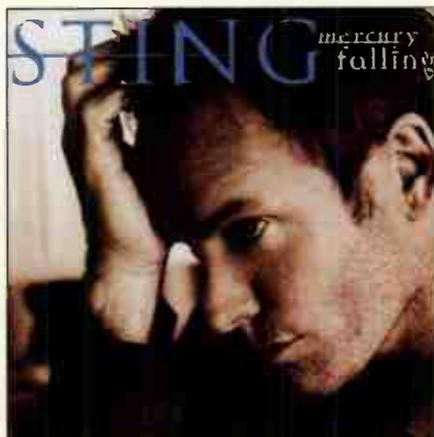
Weller's return to form since his "... Wildwood" solo foray is generally agreed on, and if Sting's career may not have taken such extreme ups and downs ('Englishman In New York' for example, was and remains impeccable) as Weller's, he certainly hasn't stopped me in my tracks as he did in the good old days.

Happy to say therefore, that "Mercury Falling" finds the man back on his creative uppers. It's a disc full of colourful contrasts, exquisitely played and thought out, and positively bursting with a sensitive, ripe maturity - lyrically, musically and vocally. Sting's voice and bass are back in classic band format, joined by Dominic Miller on guitars, Kenny Kirkland's glowing and informed keyboard work, the whole lot underpinned by the sure but never pedantic drum-work of Vinnie Colaiuta (try saying that after a couple of Tequila Shlammers, hic! etcetera. . .)

So, and in the final analysis, we find that the former Gordon Sumner - late school teacher, even more-lately-turned-closet-academic-wot-reads-Arthur Koestler within the four small walls of his pop band's obligatory cramped Transit - is now one World Class exponent of Music For The

Masses - and so on and so on. . .

Anyway - and as already stated - the prime mover here is the Sting boy's unimpeachable intelligence, amplitude of wit and wisdom, which illuminate this latest recording. In short - how can one solitary mensch take such a mandatory Country theme as that of 'I Hung My Head' and create a Cracker of a Song whilst skipping all the inevitable, not to say blatantly corny, clichés of same? Yet Massa Sumner manages just that, not only here but many a time enough on



this 11-cut opus to make him sound fresh from the egg of creation, let alone an old war-horse who's been in the saddle for getting on twenty years. Perhaps most daring is 'La Belle Dame Sans Regrets' - a title most A-Level scholars would recognise as a word-play on a poem by none other than venerable British dope-fiend-cum-poete maudit St. Coleridge (see, Sting babes, deux can play at that game!). Whatever, Sting takes this jokelet, dresses it up with more than capably winsome French lyrics and pins the entire thing to an easily credible Bossa Nova/Samba back-up. If there's a question left to ask, it's how a person of genuinely Gaelic

extraction will react to an accent born Geordie and strained through primarily US musical mentors? Probably sounds quite sexy to the mademoiselles, I'd guess, speaking as one often charmed by the transcontinental manglings of the likes of Francoise Hardy, Jane Birkin or even the legendary Edith Piaf. . .

Kenny Kirkland's keyboards are a regular joy. Witness only his pepper-hot infusions alongside the justifiably legendary Memphis Horns, whose crisp but invariably note and taste-perfect fills liven up the better part of half the disc, from the blatantly Stax-Volt tribute of something like the funksome - and so aptly-titled - 'Let Your Soul Be Your Pilot', across to 'I Was Brought To My Senses', where a clean, all but skeletal intro leads to fulsome and rich arrangements that echo both Steely Dan at their best as well as Sting's more successful forays into jazz. And here, as elsewhere and almost needless to say, its horn-man extraordinaire adds oomph and subtle fills where and as required.

All just acclaim rendered to the diamonds and pearls contained herein - and as already, there is the inevitable odd clinker. 'Twenty Five To Midnight' is the sort of run-of-the-mill item Sting could do standing on his proverbial bonce, and so on. . . But that's still not to say any Joe Soap off the nearest bus-stop could do the same. This, it must be said, remains a special and particular talent, and therefore is inevitably bound to suffer more stringent, demanding responses than a green, straight off the farm, Stingy-come-lately. It's a tribute to the man's continuing energy and effervescence that, even by his own self-set high standards, 'Mercury Falling' shows no alarming loss of heat or power, more a frequently remarkable return to form.

Viv Craske

VARIOUS

Future Funk

A&M Records 540495-2

Hype. This is the word that first came to mind. A CD combining trip hop and drum'n'bass - the biggest dance buzz words of the last couple of years. Fluid was the second word, due to the likes of Bjork, Massive Attack, Chemical Brothers and Goldie adding chart success to a compilation of slow-tempo electronic funk.

The woodwind beginning of Bork's 'Isobel' quickly adapts to a lilting ballad encompassing heartbreak and hope, wistful lyrics and yearning violins.



While Massive Attack's 'Karmacoma' contains a drum rhythm that smacks of urban wastelands, and some of the most emotive and succinct words that have been put to music. These acts who have had mainstream success give an audience to the underground gems on Future Funk. D*Note's 'The Garden Of Earthly Delights' explains itself in the title, and Rob D's 'Clubbed To Death' alternates a moving string arrangement with chunky bass, to a crescendo.

Creativity in music is one thing that the British have always showcased and a large slice has been harnessed for the 26 tracks on Future Funk. An album of dance-based tracks to wind down to, with soul, jazz and funk to casually waft over the listener. It's hard to find one sub-standard track on this two CD set. Believe the hype - if you buy one compilation this month, make it this one.



MOLOKO

Do you like my tight sweater?

ECHCD7

Imagine - an upbeat, off beat Portishead bass line and on top, every conceivable musical influence of the last two decades. Moloko consists of alternating layers of funk, jungle, soul, dub and even a helping of eighties synthesiser pop all scrambling for attention at once. And holding it all together - the compressed melodic whine of Moloko vocals for which the best description could perhaps be found in their own kooky lyrics; "I always try to impress, I put my tongue in the trouser press".

This is a refreshing CD. It washes over your ears with a stream of rhythms and sounds, rarely waiting between songs before suddenly shifting from one style to another. The tracks themselves range from the thumping dark chants of 'Killa Bunnies' to the wheezy electronic 'Party Weirdo' which sounds like a bizarre cross between Kraftwerk and Michael Jackson in his disco phase. The variety extends to the more accessible 'Dominoid', the single of the album (if there is one) where deep and funky foundations hide beneath a powerful soulfulness always peppered with acidic sci-fi sounds which bounce from speaker to speaker, before fading back into the melting pot.

It may take a while, but this quite surreal musical style will grow to be very popular - don't fight the confusion.

TINA TURNER

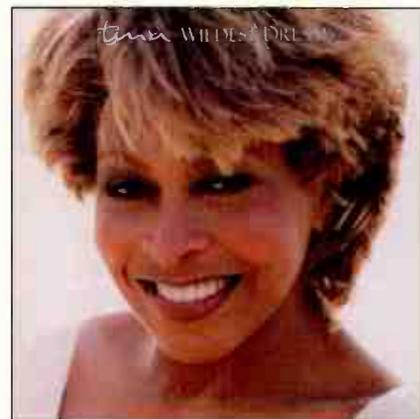
Wildest Dreams

CDEST 2279

She's a legend. She's highly respected in the industry. She sings from the heart with every performance. Wildest dreams proves all of this by the name checks on the sleeve alone. There's U2's James Bond smash single 'Goldeneye' and 'On Silent Winds' has cameo vocals

by Sting. There's also a low-tempo number 'Confidential' written by the Pet Shop Boys and a cover of Massive Attack's 'Unfinished Symphony'. However, these songs are still noticeably the writers' own, Tina lending little of her own style to them.

Despite this, Tina shines through elsewhere on the album. 'Missing you' is Tina at her best, adding raunchiness to a ballad that came to public attention in the late '80s in an aftershave commercial. Other tracks, such as 'All kinds of People' offer simple chord changes and strong guitar hooks to draw the listener into the deeply emotional vocals, while 'Thief Of Hearts' is a classic disco anthem.

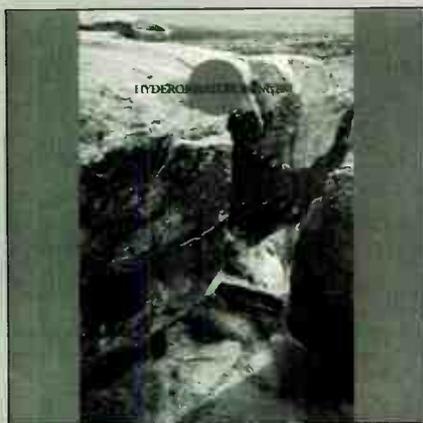


Now in the fifth decade of her recording career, Tina's passion for music comes through strong on this CD. The last proper studio album was released seven years ago and the passage of time is evident in the musical style of her latest release. This time around the music has mellowed and almost over-exudes an air of confidence. However, this also means that the vocal ferocity has lessened. The songs are not as instant as on her last album, Foreign Affair, but this a musical trade-off as Wildest Dreams is much more soulful. Whatever the changes in her personal life and on record, Tina's intuitive vocal style delivers the feel good factor as strong as ever.



Jazz

Simon Hopkins



RUINS

Hyderomastgroningem
TZADIK TZ7202

Released as part of Tzadik's New Japan series this album adds to the already substantial body of work by the rather incredible Japanese duo of bassist/singer Masuda Ryuichi and drummer/singer Yoshida Tatsuya, AKA Ruins. This series is home to recent releases from, among others, the extraordinary percussionist Ikue Mori, outrockers Ground Zero and guitarist Keiji Haino (of whom more later).

Ruins were responsible for one of last year's most outstanding jazz records, *Saisoro*. Their collaboration, as Derek and the Ruins, with British improv. guitarist Derek Bailey, is just one of a bunch of recent releases which have seen the godfather of the British improv. scene on blazing form.

Hyderomastroningem, recorded at the end of '93, actually predates *Saisoro*

and is a very different record indeed. Like those European Goth-prog masters Magma, Ruins use their own made-up language to create a unique world. Into this they bring the most insane, virtuosic and breathtakingly audacious music.

Like other Japanese musicians, Ruins seem to have avoided the prog. vs punk wars which still plague - and help to neuter - so much British and American rock music. Instead, Ruins are happy to marry spellbinding musicianship, a love of complexity and an improvisatory openness to a certain punkish aggression and disregard for musical conformity.

The results, recalling at times King Crimson or - that name again - Magma, at others more contemporary genre-benders Naked city, or (another astonishing Japanese group) Boredoms - see the group jump-cut effortlessly from pounding, lop-sided odd-metre rhythms to wiggled-out psychedelic solos to bizarre ambient atmospheres to bouts of general vocal self-abuse.

Gripping stuff; certainly essential for all you unreconstituted prog-rock fans.

KEIJI HAINO

Saying I love you, I continue to curse myself
BLAST FIRST BFFP109

While one might readily judge him to be part of the same scene - er, the extreme Jap New Music Scene (anybody?) - guitarist, singer, composer and sometime hurdy gurdy player Keiji Haino couldn't be more



different to the Ruins. Where their music delights in the rapid-fire and the quick change, and exhibits itself as a series of brief glimpses, Haino's prolific output, both as a solo artist and as leader of the truly magnificent rock-improv. quartet Fushitsusha and darkly ambient sound manipulators Nijiumu, generally reveals itself as long (indeed, giant) pieces, which are at once personal and blazingly declamatory.

Saying I Love You - a solo album - is Keiji at his most expansive, and at his most extreme. Just two tracks make up this album, with the opener really

setting the tone: a forty-five minute guitar solo, magnificent to the dying notes. Even as a self-confessed guitar junkie, I can think of few guitarists to whom I'd ever listen perform at that kind of self-indulgent length; Haino is a rare exception, but then his performance is beyond comparisons and categories.

This track is forty-five minutes of full-on feedback and distortion-drenched aural assault. Free of all clichés of jazz or rock guitar, this is the guitar solo as an act of public self-destruction, an endless exploration of the limits of sound.

The album's closing piece is altogether less expansive - though still fifteen or more minutes long - and entirely quieter, featuring an un-named, gorgeous string instrument and Haino's unearthly falsetto voice. Still stern and contemplative, this music is essential after the apocalypse that precedes it. A superb album.



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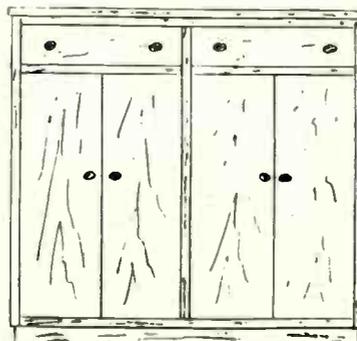
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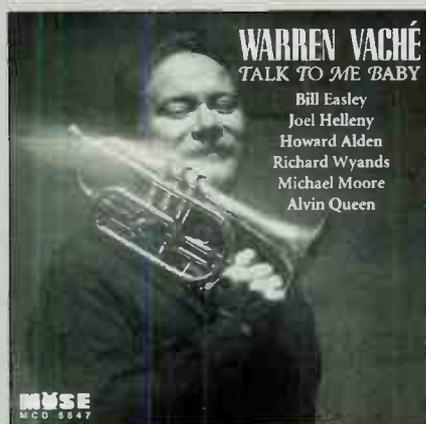


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WARREN VACHE
Talk to me baby
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Well, it says in the notes that this is probably Vache's best recording to date; I'm not going to argue, not having enough experience of his oeuvre, but it's certainly impressive.

Trumpet-man Vache fronts an expert line-up; Bill Easley on sax, Joel Halleny's trombone, Howard Alden (a name which will certainly be familiar to Ruby Braff fans) on guitar, Richard Wyands on piano with Michael Moore on bass and Alvin Queen on drums completing - and complementing the support.

Vache's style obviously encompasses influences from a huge range of past trumpeters and cornet players. So many, in fact, that I found myself listening to this CD with a growing sense of uneasy *deja vu* ("now where have I heard that riff before. . .?")

accompanied by a sense of that mild ennui which I often find with - for instance - well-played trad jazz a la Humphrey Littleton or Kenny Ball. It's nothing to do with the technique, which is excellent, but more to do with the fact that such a level of expertise is being applied to tunes which the players have all heard and played too often before and so are no longer stretched by them.

Maybe Vache feels this too, as he sings rather than plays on two tracks, and at the very least that shows a willingness to expand his (and our) horizons musically.

There are eleven tracks on this CD, kicking off with Vache's own 'On Y Va' and running through ten standards like Gordon/Warren's 'You'll never know', Burke/Van Heusen's 'Polka dots and moonbeams' Kern/Fields' 'Pick yourself up' and Flip Phillips' 'The Claw'. All good mainstream stuff, well played and superbly recorded, if just failing to pin the players on the sound stage quite as precisely as I'd like. A good one, though.

ANNIE ROSS
Music is forever
DRG 91446

Here's one for the movie buffs out there; Annie Ross cropped up on screen in Robert Altman's 'The Player' and 'Short Cuts'. She's better known as a jazz singer; you can find out why with this album, although the theatrical aspect is clearly recognisable in her



delivery of some of these thirteen songs.

There's some real old chestnuts in here; Jones/Kahn's 'It had to be you' and Singer/Zaret's 'One Meat Ball', but all the tracks are handled brilliantly by Ross and her cohorts, from the Cleo Laine scat opening of Warren/Freeds' 'Coffee Time' to the seductively druggy atmosphere of Johnston/Coslow's 'Marajuana': It's good enough to be banned by those who think *Trainspotting* is a pro-drugs movie.

The band is excellent; Mike Renzi and Tommy Flanagan tickle the ivories while Peter Washington and Jay Leonhart provide bass. Frank Wess plays sax and flute, Al Grey trombone, Louis Hayes drums, and Joe Beck completes the line-up with just the right, light, touch on guitar.

It's an excellent recording, but can make Ross sound slightly under-powered and unsure occasionally. Maybe she was just having an off-day at the recording session or it could be the mix: I can't say. What I can say is that this release knocks the spots off most younger female vocalists. What else do you need to know?



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PRACTICAL HI-FI, 33-35 Knowsley Street, Bolton, Lancs Tel: 01204 395789 - See our main entry under Lancaster.

PRACTICAL HI-FI, 10 Preston New Road, Blackburn, BB2 1AW Tel: 01254 691104. See our main entry under Lancaster.

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Brandenburg Concertos Nos 1-6 BWV1046-1051/Oboe Concertos in F Major BWV1053; in A Major BWV1055; in D Minor BWV1059.

The Chamber Orchestra of Europe; conductor and soloist, Douglas Boyd



Deutsche Grammophon Masters 445 578-2 (2 CD set) (DDD/141.14) Although Bach was enchanted with the sound of the oboe, he appears to have composed not a single concerto for the instrument; or, more accurately, none have survived. Oboists must have been delighted, therefore, when music scholars opined that the Harpsichord Concerto BWV1055 had most probably begun life as a work for oboe and, moreover, set about assembling - again with considerable justification - two further oboe concertos from movements extracted from four of the church cantatas (the process is lucidly described in Malcolm Boyd's accompanying booklet notes).

From the above, you may deduce the end result must be something of a hotch-potch; quite the reverse. These three works have a genuine unity and balance and, in the hands of as fine a soloist as Douglas Boyd, are completely convincing.

Two symphonies, one conceived in wartime, one played in wartime, bring together two of the world's great orchestras in this batch of new issues. Another link is to be found between the music of seventeenth century Austria and that of the nineteenth: startling originality, striking sonorities and an inner spirituality that can only be illuminated by a special kind of musicianship.



Boyd produces a most appealing sound, with a clear, well-rounded tone and not a hint of stridency. He is fluent in the lively outer movements, surmounting the technical difficulties with ease and always alert to the dynamic nuances. Meanwhile the slow movements - the sublime larghetto of BWV1055, for example - bring playing full of sensitivity, but are free from sentimentality. I do not know of any more expressive or persuasive performances of these concertos, and the accompaniment from the Chamber Orchestra of Europe is a match for the solo playing.

The COE, with Douglas Boyd now directing the performances, also offer enjoyable and exhilarating interpretations of the Brandenburgs, combining great rhythmic vitality with keen attention to detail. These may not be 'period' performances, but they share the litheness and freshness which characterises the period instrument ensembles. Anyone looking for these virtues in a modern recording of the Brandenburgs will not be disappointed with this set. There is much superb solo playing from members of the orchestra in each of the six concertos, with perhaps Ian Watson's dazzling harpsichord obbligatos in No5 being the high spot.

The recordings, made in 1990 and 1991, are uniformly fine, despite employing three different venues: the Kammermusiksaal of the Philharmonie in Berlin for the Oboe Concertos; Snape Maltings for Brandenburgs Nos2, 4 and 5; and the Teatro Comunale in Ferrara, Italy, for Nos1, 3 and 6. Each delivers a clean, bright, naturally detailed sound, with pleasing breadth and perspectives. All-in-all, this generously filled two-disc package, reissued at a special price, is well worth considering as a 'library choice' in these most popular of Bach's orchestral works.

ANTON BRUCKNER

Symphony No5 in B flat Major, Berlin Philharmonic Orchestra; conductor, Wilhelm Furtwängler.

Music & Arts CD538 (AAD/68.18)



How attitudes have changed. It would be unthinkable among most modern conductors (the late Leonard Bernstein excepted) to take quite so many liberties with a score as Furtwängler does here, even given the disparities between the different editions of the Bruckner symphonies.

But, then, the conductor is unlikely to have had one eye on posterity when this recording was made. It is taken from a concert given in Berlin during October 1942. We can only guess at the effect this epic symphony, with its granite-like grandeur and deeply spiritual heart, had on the hearers, especially in this incandescent performance.

Furtwängler has to be taken on his own terms, accepting that if he is not always faithful to the score, he is never less-than-faithful to the spirit of Bruckner's vision. Eschew comparisons with modern interpretations, and this performance, for all its technical flaws, becomes both compelling and enlightening. It has something to do

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with the circumstances in which it was made, but is more concerned with Furtwangler's unerring grasp of this gigantic musical structure, the way that everything builds to the extraordinary final movement, with its colossal double fugue, weaving together the threads of the previous movements in a manner reminiscent of Beethoven's Ninth.

Bruckner's Fifth is a similar affirmation of the power of the human spirit to win through, and even at five decades-and-more removed, you sense that Furtwangler both shares that conviction and desperately wants to convey it to his audience.

Although this Berlin Philharmonic is not the Rolls-Royce ensemble we became accustomed to hearing under Furtwangler's successor, Herbert von Karajan, the playing leaves little to be desired. The woodwind and brass are especially fine, the latter intoning Bruckner's lofty chorale melodies with power and precision. Moreover, once the ear has adjusted to the audience noise, the sound - given the conditions - is surprisingly good, with an adequate dynamic range and a genuine ambience; there is none of the hollowness or boxiness which characterises many recordings from this period.

Clearly, this version (unquestionably the finer of Furtwangler's two extant recordings of the symphony) only qualifies as an 'addendum' - albeit a valuable one - alongside a modern stereo recording of the work (Karajan, Chailly, Haitink, Wand would be my first choices), but it is most assuredly not just a curio worthy only of the attention of Bruckner specialists. This is great music-making: you may not always agree with the course that Furtwangler plots, but its integrity is undeniable, as is the fact that it attains its goal. Some fifty years after his death, the Furtwangler legend shows no sign of diminishing; this wartime recording will give you a good idea why.

**DMITRI SHOSTAKOVICH
Symphony No7 in C Major
Op.60 'Leningrad', St
Petersburg Philharmonic
Orchestra; conductor, Yuri
Temirkanov.**

RCA Victor Red Seal 09026 62548 2
(DDD/76.38)

How does any conductor - let alone a Russian one - formulate an interpretation of this symphony, given the historical, and apocryphal 'baggage' attached to it? Surprisingly, perhaps, Yuri Temirkanov offers an admirably straightforward reading of a work whose musical qualities have so often been overlooked in the quest to discover Shostakovich's 'true' intentions.

In his book 'Testimony: The Memoirs of Shostakovich', Solomon Volkov quotes the composer as saying: "The Seventh Symphony became my most popular work. It saddens me, however, that people don't always understand what it's about; yet everything is clear in the music. . . the Seventh and Eighth Symphonies are my requiem."

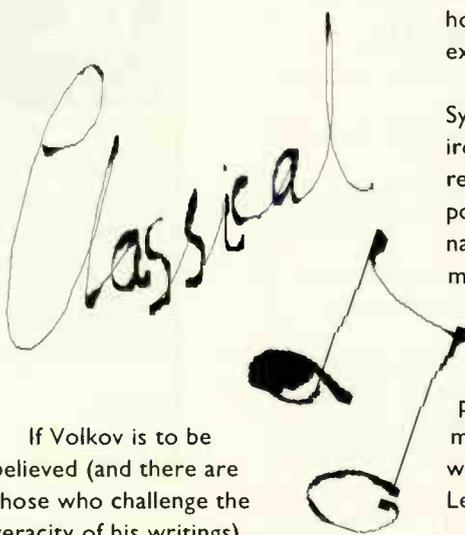
the Soviet Union, Operation Barbarossa. It was to last almost 900 days and cost an untold number of lives from bombing, shelling and starvation. Yet there were those in the city who initially welcomed the prospect of German conquest as preferable to the oppression they were suffering under Stalin. And, according to Volkov, Shostakovich was only too aware of that: "I had to write about it; I felt that it was my responsibility, my duty. I had to write a requiem for all those who died, who



had suffered. I had to describe the horrible extermination machine and express protest against it."

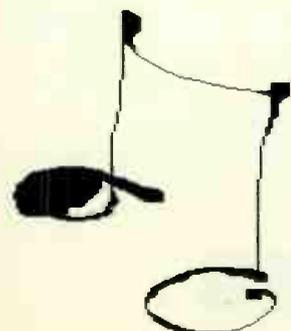
If this is true, then the 'Leningrad Symphony' is one of the greatest ironies in all art, for the monstrous regime which Shostakovich set out to portray elevated him to the status of national hero on the strength of this music. It came to symbolise the defiance of the Russian people not just in the Soviet Union but around the world, and the much-parodied march theme of the first movement depicts both the tyranny within, as well as outside the city of Leningrad.

However, long acquaintance with this symphony (I acquired my first LP version - the USSR State Symphony Orchestra conducted by Yevgeni Svetlanov - in a shop on Leningrad's Nevsky Prospekt in 1971) has convinced me that too much importance is vested in the descriptive first



If Volkov is to be believed (and there are those who challenge the veracity of his writings), then Shostakovich intended this work to convey much more than the 'programme' he outlined in the newspaper 'Soviet Art' on October 9, 1941: "But if I succeed in writing this symphony, I shall dedicate it to Leningrad. Because all that I have expressed in it is bound up with my native city, with the historic days of the defence of Leningrad against fascist oppressors."

The siege of Leningrad began soon after Hitler had launched his attack on



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movement; the 'pure' music of the other three movements surely tells us as much, if not more. It is here that this new reading from Temirkanov comes into its own. He uncovers the mixed emotions which characterise the lyrical moderato second movement. The glacial desolation of the brooding adagio is allowed to unfold naturally, and the transition to the triumphant finale is magically accomplished.

This is a performance of the 'Leningrad Symphony' for the post-glasnost era, an era when the city - and its orchestra, for that matter - has elected to revert to its pre-Stalin name of St Petersburg, with all that symbolises. Temirkanov rightly emphasises musical values above all else, and - given a score full of demanding solos, not least the 346-bar ostinato for side drum - the orchestral playing is outstanding. Moreover, it is

given a recording to match: rarely can the sound of this great orchestra have been so well captured on its 'home patch' - the Large Philharmonic Hall in St Petersburg, the concert hall dedicated to Dmitri Shostakovich.



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2 (DDD/74.29)

The more I discover of the music of Heinrich Biber, the more I relish its highly idiomatic sonorities and colours, and the more I come to appreciate the achievement of this comparatively unknown seventeenth century Bohemian-born composer.

Born in Wartenberg in 1644, Biber's career took the course followed by most gifted musicians of the period in finding employment among the many ducal courts of central Europe. However, his dazzling violin playing singled him out for special treatment and, in the service of the Prince Archbishop of Salzburg (a role destined to be filled a century later by Wolfgang Amadeus Mozart), Biber rose to the position of principal conductor.

It was in Salzburg, in 1676, that Biber published his 'Sonatae, Tam Aris, quam Aulis servientes' (Sonatas both for the altar as well as the table), the title reflecting both the secular and the spiritual roles of his employer. The orchestration of these splendid pieces is diverse: some are for strings alone,

others for glittering combinations of strings and trumpets, all with basso continuo; all are rich in colour, melody and rhythmic variety, an endlessly rewarding feast of artistry and virtuosity.

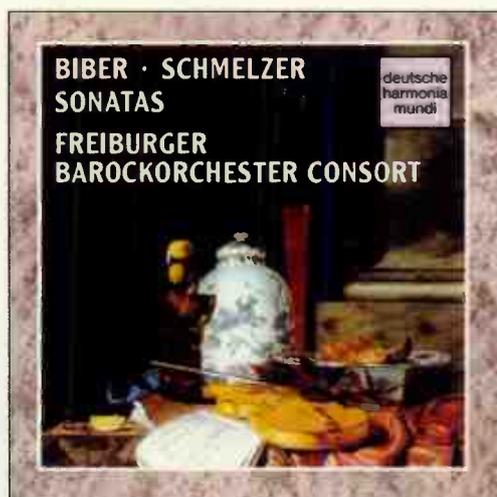
Biber, and his contemporary, Johann Schmelzer, were the leading exponents of this distinctive Austrian style of ensemble music. It had its origins around 1640 and was clearly influenced by Italian music, chiefly the Venetian canzonas of Giovanni Gabrieli and the sonata concertata of Davio Castello. Schmelzer, born around 1620, rose through the ranks of the imperial court orchestra in the course of a

have taught Biber) and secured his reputation through the publication of a large number of sonatas and other instrumental works. While adhering to the established structure of the form, Schmelzer - like Biber - manages to explore all manner of techniques and sonorities, to stimulating and often thrilling effect.

Included among this selection of his works are two moving laments: one - from 1657 - in memory of Emperor Ferdinand III, and the Lamento a tre for which we have no date of composition but which was almost certainly to mark the death of another member of the imperial family. It is truly captivating music, archaic in some respects, but always accessible.

Naturally, much of the success of this recording in communicating this musical treasure-trove is down to the instrumentalists, with the string players especially tackling the demanding virtuoso writing with relish. All the performances by this consort drawn from the superb Freiburg Barockorchester are filled with enthusiasm, warmth and an evident affection for the music. Both Biber and Schmelzer could wish for no better modern-day advocates, and the former clearly merits wider recognition than that thus far accorded largely to his undisputed masterpiece the Mystery (or Rosenkranz) Sonatas.

The sound, I should add (a recording made in the Church of Maria Minor in Utrecht) is ideal for the music in its clarity, atmosphere, detail, timbre and balance: like the music-making, it is of demonstration standard.



thirty-year career, becoming its conductor in 1679. His tenure, however, was sadly short-lived: he died of the plague whilst in Prague the following year.

Like Biber, Schmelzer was an accomplished violinist (indeed, he may

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COMPACT DISC PLAYERS

DENON DCD-315 £150

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NAD 510 £200

A competent all rounder with lifelike soundstaging and impressive treble clarity.

NAD 512 £250

Its smooth sound and fine treble extension make the 512 something of a rarity at the price. For the money rivals are few.

ARCAM ALPHA ONE £300

An excellent entry-level player from Arcam that's far better than equivalently priced Japanese machinery.

MARANTZ CD-63 Special Edition £350

A superb budget buy. Addressing the problems of the CD-52II SE, its detailed and musical sound embarrasses many expensive players.

NAD 514 £350

The 514 conveys deep bass notes with conviction and weight. A supremely relaxing player to listen to with fine build quality.

ARCAM ALPHA FIVE PLUS £480

A well built mid-price player that's a great all-rounder. Although highly musical and engaging, it has lost some of the warmth that made its antecedents so pleasant to listen to.

LINN MIMIK £839

The Mimik does what it's designed to do very well, with super-tight rhythmic presentation and plenty of detail. It can sound rather grey and clinical though.

QUAD 67 second-hand

One of Quad's best products for a long time, the 67 is warmer and smoother than most, yet is highly musical and revealing. Good enough to frighten many rivals.

DPA RENAISSANCE £895

Words cannot describe its infinite variety, but suffice to say you'll love it or hate it. Highly emotional, involving presentation with not a hint of self-doubt.

MARANTZ CD-16 £1399

An extremely neutral CD player, smooth and reserved in its performance. Beautifully built too.

LINN KARIK 3 £1600

Superb one-box player. Its supremely rhythmic, musical sound with delicacy and finesse puts it up with the best of the rest.

NAIM CD1 £1600

This single box 16-bit player sounds very engaging compared to your average bitstreamer. Has that vital tingle factor of the larger, two-box CDS.

MCINTOSH CDM7009 £2635

A thoroughly inspiring machine. One of the most musical CD players around; sweet, open and detailed.

COMPACT DISC TRANSPORTS

TEAC VDRS-T1 £550

Not as substantially built as its chunky looks suggest, the T1 is nevertheless a good entry-level transport with a warm, expansive sound.

ARCAM DELTA 250 £800

A well-built transport with serious sound quality. It partners the BB50 well, especially when sync-locked.

AUDIOLAB 8000CDM £1300

Beautifully built and finished, the CDM is packed with sensible features and performs superbly, day-in day-out.

CD CONVERTORS

DPA LITTLE BIT III £300

A lot more weight at frequency extremes than the II and far better control. For £300 there's nothing to beat it.

THORENS TDA2000 £700

Used with the TCD2000 as a transport, the TDA2000 produces a sound that is focused, detailed and spacious. Good value.

DPA ENLIGHTENMENT £795

Some believe this to be the best convertor around. A truly charismatic performer, it dives into rock music with rare passion.

PINK TRIANGLE ORDINAL £837

Pure, smooth sound free from hardness. One of the best at any price, losing little to the big guns.

PINK TRIANGLE DA CAPO £1450+

Offers a choice of filter modules, all up there with the best. The Da Capo is superb in many respects, but can sound a touch polite on rock.

DPA 1024 £6000

Proof positive that today's CDs needn't sound CD-like! Uses an in-house discrete convertor, and DPA haven't skimped on the build either!

TURNTABLES

GARRARD 401 second-hand

In a decent plinth with an arm of SME309 calibre, the 401 has a highly authoritative overall sound with the most solid, expressive bass in the business. Very musical, but treble isn't up to modern standards.

THORENS TD124 second-hand

One of Thorens' best-ever turntables. Needs a modern plinth to give its best. Duly installed, it's good enough to face off the Garrard 401, swapping some of its bass power for a more delicate, incisive treble.

SYSTEMDEK IIX900/RB250 £330

A fine all rounder and easy to upgrade. Brings more depth and breadth than a Rega 3.

RESON rs1 £600

A lean, yet vibrant sound quality that really draws the listener in. With good detail and rhythmic integrity this is an impressive turntable package.

MICHELL GYRODEC £800

Stunning looks, build and engineering, and don't underestimate the sound. Standard PSU and Rega arm gives a detailed, architectural, if undynamic sound. With QC PSU and SME V, its scale and insight kills the competition at the price.

PRO-JECT 6.1SA £999

The Pro-ject places the listener in the best seat in the control room. Outrageous dynamics and a punchy, seriously deep bass. Comes with Sumiko arm and Ortofon MC30 Supreme.

LINN SONDEK LP12 £840 - £1530

Cirkus bearing puts it back up with the best. Superbly beguiling, rhythmic sound that plays jazz like few others, but lacks the Gyrodec's detail or imaging. With a Lingo PSU and EKOS tonearm, you'll forget CDs were ever invented.

PINK TRIANGLE ANNIVERSARY £1200

One of the finest-sounding turntables around, the Anniversary takes the listener nearer the recording studio than almost any other deck. Works with Rega, Linn and SME arms alike.

MICHELL ORBE £1950

The Darth Vader of analogue, the Orbe builds on the strengths of the Gyrodec. An ultra-tuneful, expansive sound.

SME MODEL 20 £2495

Including the excellent SME V tonearm, the Model 20 is possibly the last great turntable, unless you've got £11,000 for the Model 30, that is.

TO NEARMS

REGA RB300 £130

Supremely capable at the price, but not quite humankind's salvation as has been suggested. Detailed, tight, rhythmic sound but tonally rather grey and cold-sounding.

LINN AKITO £300

A well made entry-level tonearm which works especially well with the LP12, but struggles to match the RB300 on other decks.

SME 3009SII £375

This Paleolithic device doesn't bother with frequency extremes or detail, but its legendary serviceability makes it a cult in Japan. Oh death, where is thy sting?

SME309 £570

A down-market version of the IV and V with aluminium armtube and detachable headshell. Tight, neutral sound with good tonality, but lacks the IV's pace and precision.

SME IV £850

A Series V with lower toleranced bearings, cheaper cables and no damper. Still vastly over-engineered and almost capable of its bigger brother's sonic fireworks. SME's best value product.

SME V £1235

A masterpiece of precision engineering with a cohesive, ultra-transparent sound. A dream to set up and use.

LINN EKOS £1400

A thunderous battleship of an arm, with a very impressive sound, masses of detail and dynamics, but lacks the SMEV's cohesion and musicality.

World favourites guide

CARTRIDGES

ORTOFON VMS-2E £110

Warm, full-bodied, punchy and fast. Not to be sniffed at for a tenner. Can be upgraded with a better stylus at a later date.

GOLDRING 1012GX £60

An accomplished MM with a solid bass, slightly forward midband and clean transients. £20 buys the faster, more dynamic 1022GX.

GOLDRING 1042 £100

The best moving magnet available. Has an extremely cohesive sound that's warm but highly involving. Deliciously delicate treble and strong, powerful bass.

ORTOFON MC15 SUPER II £109.95

An excellent budget moving coil with a smooth, polished, detailed sound. Tracks superbly but verges on the analytical at times. A bargain.

ORTOFON SUPREMES £225-£450

The MC10, MC20 and MC30 Supremes all offer superb sound and value for money, with a distinctively rich, smooth and detailed musical performance. The valve brigade love them.

LINN KLYDE £450

The Klyde's soft treble and prodigious bass mean it's tonally unbalanced, but it's still a real music-maker that many will love in the right system.

ORTOFON MC1000 £450

We came across this one in an SME IV on a Garrard 401; it duly gave one of the best results we've ever heard.

ORTOFON ROHMANN £1000

In a way it's MC2000 meets MC7500 with all the tonal strengths and dynamo sound Ortofon has been putting into its best moving-coil cartridges of late.

LYRA LYDIAN £649

A truly musical, sophisticated device that makes most other MCs sound frigid.

VAN DEN HUL MC-10 £840

Fluid bass, finely etched treble and highly tuneful in between. The MC10 is honey, pure and simple.

ORTOFON MC7500 £2000

Conclusive proof that there's hope for humankind. Makes music of enormous scale and vibrancy. CD lovers would die if they heard it.

INTEGRATED AMPLIFIERS

NAD 3020 second-hand

Classic sweet sounding, punchy budget super-amp with strong phono stage. Able to embarrass many modern budget amps.

NAD 310 £130

A real hi-fi amplifier at a bargain price. Forms the heart of a separates system that will murder any midi system at twenty paces. No phono stage, but you can't have everything at this price.

NAD 312 £200

Smooth, clear and dry. Fine detailing with little to complain about at the price. Good facilities.

ARCAM ALPHA 5 £230

A well-engineered budget amplifier with a bold, exciting presentation. Plenty of power and facilities, but lacks subtlety.

DENON PMA 450II SE £270

A solid, refined sound with plenty of power make this a good all rounder, but hard and steely with the wrong ancillaries. Mediocre phono stage.

AURA VA-80 £280

The VA-80 is superb for the price with a confident, powerful sound. One of the smoothest around, it is capable of embarrassing more upmarket competition.

PIONEER A400X £300

A good budget amplifier but not as competitive as it once was. Phono input lets the side down somewhat.

AUDIOLAB 8000A £500

A jack-of-all-trades whose facilities, build, power and top-rate phono input make it a steal. Sound is good, but less involving than the Naim Nait 3.

NAIM NAIT 3 £500

A taste of high-end audio. The most involving, musical design at the price, but low power. Superb phono stage is £100 extra.

MISSION CYRUS 3 £500

Superb engineering, a solid cast chassis and a clear, spacious sound. Phono stage could be better.

SONNETEER CHAMPION £579

An amplifier that delivers near studio definition along with exemplary timing. Utterly gripping.

DPA RENAISSANCE £595

Rich and smooth, the Renaissance is one of the sweetest amps around, if lightweight.

AUDION STERLING ETSE £600

Economically but well built single-ended valve amplifier. Wonderful clarity with vocals. £600 with 1 line input, £800 with 5.

SUGDEN A21a £640

Class A transistor amp. Rich, crisp, deep, tight sound and it images well too. Wonderful.

AUDIOLAB 8000S £650

Fast, clear, crisp sound with a wide-open sound stage. One of the best at the price.

MERIDIAN 551 £795

Beautifully-built integrated with a sweeter, clearer sound than mid-price alternatives. Plenty of facilities and remote controllable.

UNISON SIMPLY 2 £995

This single-ended valve amplifier is smooth, sweet and open. An extremely musical amplifier.

UNISON SIMPLY 4 £1495

Sonically similar to the Simply 2, but with more power and control.

AUDIONOTE QTO SE £1500

Ten watts of the sweetest sound around. Use sensitive speakers though, because it's unlikely to crack windows or trigger earthquakes.

McINTOSH MA6800 £1735

The MA6800 not so much plays music as takes control of it, with effortless bass drive and a three-dimensional sound stage. Versatile with a broad range of abilities.

PRE-AMPLIFIERS

NAIM NAC12.5 second-hand

Naim's one-time top preamp is still a force to be reckoned with thanks to its precise, fast sound and excellent phono stage.

ROTEL RQ-970BX £130

Superb value entry-level phono stage with audiophile quality components and clear sound.

DPA DSP1005 £495

Not quite the 50S, but there's little to match it at this price if outright sound quality is your priority.

ROSE RV23-S £495

This interesting valve/transistor hybrid has a smooth, rich, spacious sound.

AUDIOLAB 8000C £520

Versatile with superb phono input. Can sound sterile, but latest version is much improved.

MICHELL ISO/HERA £530

This phono stage has fine midband and treble detail, with taut bass. The £850 ISO/HR brings more of everything, and for many people is the last word on the subject.

AUDIO INNOVATIONS P2 £749

Fantastic bass and super insight make this one of the best phono stages around. One for vinyl lovers.

AUDIOLAB 8000Q £995

Excellent line-level only preamp, greatly improves on 8000C with a more fluid, musical sound and greater grip. Remote control.

NAIM NAC21 £1945

This remote control preamp thrusts detail forth in true Naim fashion.

POWER AMPLIFIERS

QUAD II second-hand

Classic valve monoblock with many thousands still in use around the world. Archetypal warm, smooth valve sound, although not the last word in detail or dynamics.

LEAK STEREO 20 second-hand

The Stereo 20 can sound impressively up-to-date, although power and detail are ultimately limited.

QUAD 405II second-hand

Solidly built, but lifeless sounding, power amp which can be substantially improved by a Quad factory service.

MISSION CYRUS POWER £450

This power amplifier is a honey. Rich and smooth, but with a firm grip; a fine blend of properties.

ROSE RP190 £495

Used with the partnering preamp it gives 70watts of smooth, relaxing sound.

SUGDEN AU41P £530

Extremely competitive at the price with 100W of unusually smooth, full-bodied sound.

SHEARNE PHASE 3 £619

A neutral, highly dynamic and thoroughly exciting amplifier. A sonic bargain.

World favourites guide

QUAD 606II £675

Quad's latest 140W powerhouse is smooth and civilised, but engagingly musical. Legendary back-up service.

DPA DPA2005 £750

Better than anything else at the price. Not as dry as the 505.

NAIM NAP1B3 £900

Partnered with a NAC82, this has classic Naim control, making for a superbly rhythmic presentation. A touch lean for some tastes.

MICHELL ALECTO STEREO £1300

A refined transistor amplifier with valve-like transparency and a full, warm, easy-going sound. The £1800 Alecto monoblocks have rare lucidity and three dimensional realism.

AUDIOLAB 8000M £1500

Beautifully built, powerful amps that will drive anything you care to throw at them. Detailed, analytical sound, but a touch grey compared to valve rivals.

CHORD SPH 1200 £2595

This is one of the best solid-state power amps around, with a massively powerful, dynamic and detailed sound.

TUNERS

LEAK TROUGHLINE second-hand

Our favourite way of listening to the wireless. A deliciously smooth, mellifluous sound that will have you junking your transistor radio in seconds. Ergonomics are crude, and you'll need a decent aerial and stereo decoder.

NAD 412 £190

The 412 is remarkably musical and natural sounding. Rich sound and full bass are a rarity. Unbeatable at the price

KENWOOD KT-6050L £300

Very, very tuneful and as clear and detailed as CD. Tuners like this have you sitting in your seat wondering at the sheer wealth of music out there.

MISSION CYRUS FM7 £300

Clear and lucid sound that puts it up with the best regardless of price. Superb build and superior ergonomics to the NAD.

ROTEL RT9906X £500

High quality Michi-based tuner with a sophisticated, forward sound with great imaging and soundstage. Sensible facilities and remote control.

NAIM NAT03 £380

The NAT03 is further proof of Naim's proficiency with tuners, with a warm, easy sound and a good sense of atmosphere.

FANFARE FT-1 £1350

In its native US the FT1 is no mere tuner but a 'broadcast monitor' no less, a task at which it acquires itself well, with a clear and powerful sound.

NAIM NAT01 £380

The best solid-state tuner available. For better radio, live in the studio.

CASSETTE DECKS

AIWA AD-S750 £150

Sonically a very decent machine. For the price there's nothing better. With Dolby B, C and S

AIWA AD-FH50 £210

A real bargain with fine recording quality and good playback.

PHILIPS DCC 730 £250

Digital playback gives a good 'analogue' presentation and analogue playback is reasonable too. A DCC bargain.

AIWA AD-S950 £300

A stable transport, superb head and Dolby S make this an excellent recorder.

PIONEER CT-S740S £410

A great piece of engineering from Pioneer, a bit complex, but a first rate sound on playback and recording. Dolby S included.

NAKAMICHI DR2 £600

Where serious cassette decks start. The DR2 pushes recordings to the limit, remaining unflustered at all times.

NAKAMICHI DR1 £850

Better still than the DR2, with manual head azimuth adjustment to boot.

NAKAMICHI CR7 £1500

Kills every other cassette deck and stamps on their graves. And the CR7 doesn't need baubles like Dolby S, either!

LOUDSPEAKERS

MISSION 7305E second-hand

Big clear sound and tuneful bass with plenty of punch. An audiophile bargain at a budget price.

KEF CODA 7 £129

Arguably the new king of budget standmounters, the 7 has a highly musical presentation.

MISSION 731 LE £149

An extensive reworking of Mission's entry level 'speaker, much tighter on transients and more refined treble. Neutral and revealing.

TANNOY 631 SE £170

Great bass extension, super open and focused midrange and fine detail up-top. Work best on filled dedicated stands; unmatched at the price.

BAW DM401 £209

Tight, solid and tuneful bass with a clean and pure tonal quality. Midrange is a little laid back, but sound stage is wide and open.

ROGERS LS33 £249

Big sound and a wonderful impressionist. Combine with matching AB33 subwoofers for extra bass depth.

TDL RTL 2 £300

Bass on a budget from one of TDL's best floorstanders. Solid, vibrant and spacious sound.

SYSTEMDEK SYSTEM 911 £300

One of the best mini-monitors around, with a coherent, involving sound that really sings.

REL Q-BASS £350

Few subwoofers match the Q-Bass at the price. The tuning controls can be a bit of a fiddle, but once set up the rest is pleasure.

EPOS ES11 £445

Extremely refined, well engineered standmounters that need distinguished partnering equipment if they are not to sound over-polite.

REL STRATA £500

The Strata is not a toy. Offers superb, true hi-fi bass depth and power.

MISSION 752 £500

More capable than many twice the price. Using advanced High Definition Aerogel drivers, the 752s are clear, crisp and focused. Good sensitivity makes them easy to drive.

TANNOY D100 £650

This small dual-concentric loudspeaker produces believable three dimensional imaging.

CASTLE CHESTER £700

Good sound allied to Castle's exquisite cabinetry and finish. Quarter-wave bass loading.

PROAC STUDIO 100 £700

Excellent monitors with detailed, natural sound and plenty of atmosphere.

HARBETH HL-PJES £799

A fine example of good loudspeaker engineering. The top of the mini-monitor league.

UKD CALLAS £850

High quality sound with a high quality bass from this solid walnut miniature.

KEF REFERENCE SERIES ONE £995

The KEF's combine pin-point imagery and detail with a smooth and polite balance. Good, agile bass too.

HEYBROOK SEXTET 11 £1129

Heybrook have retained the strengths of the original Sextet, whilst improving on bass extension and smoothness. Treble and imaging still up with the very best.

HARBETH HL COMPACT 7 £1329

Dry and analytical, but truthful and uncoloured with it. A cohesive sound from this top class monitor.

KEF REFERENCE SERIES TWO £1500

A truly endearing 'speaker, with clarity, cohesion, detail and precise imaging. Bass has superb extension.

EPOS ES25 £1505

Epos' best. Combines near-uncoloured tonality with characteristic fireworks in the rhythm department. Superb by any other name.

SPENDOR SP7 I £1970

This big Spendor is very appealing thanks to its lucid sound and valve-friendly load.

QUAD ESL-63 £2840

A reference against all other loudspeakers, with superb imaging qualities and genuine transparency. Earlier ESL model is an excellent second-hand buy, and both enjoy that legendary Quad service back-up.

SPENDOR SP9 I £3400-£3600

One of the clearest and most expressive loudspeakers you'll find for a large room. Beautifully finished.

TANNOY WESTMINSTER ROYAL £10,000

An incredibly dynamic, detailed full-range horn design with a rich sound. Its high sensitivity predisposes it to valve amplification.

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MEASURED PERFORMANCE

It's important to measure products to assess performance, find explanations of sound quality and warn of peculiarities or faults. Only Hi-Fi World has an advanced in-house laboratory with digital signal analysis for this purpose. In conjunction with this facility we assess sound quality in our own acoustically treated listening room. We measure most products reviewed. Here's a simple guide on our test results.

LOUDSPEAKERS

Smooth, flat frequency response is important to ensure a balanced sound. Look carefully at overall trends; rising treble will give a bright sound, falling treble a dull sound. A rise through the midrange normally corresponds with good projection.

High sensitivity (better than 86dB) means less power is needed for a certain volume, meaning a low power amp. can be used.

The impedance curve tells us how easy loudspeakers are to drive. Low or wildly varying impedance is bad; a flat impedance around 8Ω is good.

CD PLAYERS

Even small trends in frequency response of CD players can affect their subjective balance. Generally, those with a gently rolled off treble and, more

rarely, a rising bass will sound best. Rising treble can produce a sharp sound.

The distortion plot we show is taken at -30dB, to represent a typical music signal. High distortion at this level, combined with rising treble, can result in a harsh sound. Yet other effects have to be considered, especially low level linearity, which we also test for, including -90dB signals with dither applied.

AMPLIFIERS

Distortion from solid state amplifiers should be no more than around 0.2%. Even order (2nd, 4th, 6th etc) distortion is aurally innocuous, but odd order (3rd, 5th, 7th etc) distortion makes for a glassy, hard sound, or grittiness.

Frequency response can be band limited, with bass and treble rolled off just out of the ear's range, or wideband. Each has its own characteristics. Small wideband response variations colour tonal balance.

Power output is easy to understand: the higher the figure, the louder it will go. Just make sure there's enough power output to drive any loudspeakers you intend to use.

TUNERS

Frequency response, as always, says much about tonal balance and character traits, like peaky treble (due to a mis-matched MPX filter). Distortion and

channel separation need to be less than 0.3% (according to harmonic structure) and better than 25dB.

Hiss level must be lower than -70dB for Radio 3 silences to be just that - silent. And full quieting, the strength of aerial signal needed for optimum results, should be around 1mV or less.

Selectivity, the ability to separate stations under the most difficult conditions should be better than 60dB and sensitivity better than 30μV on stereo.

CASSETTE DECKS

Replay performance is measured to IEC 94 Standards using IEC test tapes. This ensures that recordings made on a machine transfer to a car player, personal stereo or another domestic recorder properly, as well as ensuring optimum results with commercially prerecorded tapes. Look for a quoted replay response of 40Hz-10kHz, no more than 1% speed error and hiss in the replay amps lower than -58dB.

Recording quality considers frequency response, bias variation, head performance and alignment. Frequency response should stretch from 40Hz-15kHz or so. Head overload (MOL315) must be above 0dB, reaching around +4dB for good results.

From the transport mechanism look for less than 0.15% wow or flutter. Overall (DIN weighted) wow and flutter should be no more than 0.1% or so.

AMPLIFIERS

CROFT EPOCH/SERIES V

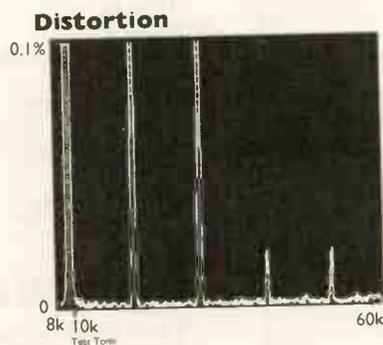
Testing the Croft pre/power on an 8Ω load and with its 8Ω output tap, it delivered the specified 30watts. Frequency response was quite respectable, spanning 14Hz to 32kHz within 1dB limits. Noise was low.

Line stage sensitivity at 800mV was too low for most cassette decks and tuners, if not CD players. More gain is needed.

Distortion at normal listening levels was low at mid frequencies (0.035% at 1kHz, 1W) rising gradually with frequency, dominated by second order harmonic, although third was clearly evident. There was some deterioration at higher power levels.

The Moving Magnet phono stage didn't match exactly on both channels, bass rolled off earlier on the right channel, but stretched

between 40Hz and 30kHz at 1dB roll off points. This indicates some sort of warp filtering has been used. Otherwise phono



input figures were more than respectable, with 2mV sensitivity which should cope with most cartridges and an input impedance of 47kΩ paralleled with 100pF capacitance. HB

Power	30watts
CD/tuner/aux.	
Frequency response	14Hz-32kHz
Separation	58dB
Noise	-90.9dB
Distortion	0.4%
Sensitivity	800mV
Disc MM	
Frequency response	40Hz-30kHz
Separation	58dB
Noise	-72.9dB
Sensitivity	2mV
Overload	110mV

TEAC A-BX7R

Producing 60watts into 8Ω and 105watts into 4Ω, this amplifier gives a kindly punch. It will have little trouble driving most loudspeakers.

Frequency response at 1dB limits was flat between 12Hz and 100kHz which gives quite a wide bandwidth. The noise figure obtained was respectably low.

The one minor surprise was that the input sensitivity for line level signals was 400mV, lower than quoted (300mV). Except when using very low output sources, this shouldn't be too much of a hindrance.

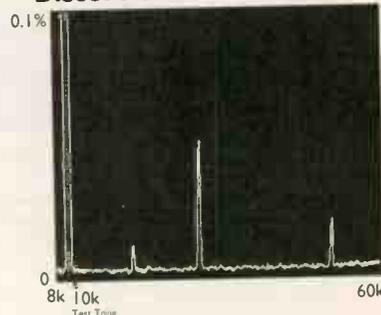
Otherwise, dc offsets were low and

distortion average at normal listening levels, but it does rise somewhat at full power.

The workmanship inside the A-BX7R is immaculate, using surface mount technology throughout with a minimal amount of hard wiring. Very neat indeed. HB

Power	60.5watts
CD/tuner/aux.	
Frequency response	12Hz-100kHz
Separation	82.7dB
Noise	-114dB
Distortion	0.03%
Sensitivity	400mV

Distortion



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Roy Gregory Hi-Fi Choice

TEMPO

I feel that the Art Tempo amplifiers are among the finest valve power amplifiers currently available. The imagery that the Tempos create is vivid, lifelike and full of space and air.

Alan Sircom, Hi-Fi World

MAESTRO

...they are just so stunningly gorgeous and open to listen to, I can barely imagine anything more alluring.

Noel Keywood, Hi-Fi World

...the Maestro is part of that rare breed of Hi-Fi that makes you forget about the equipment and think about the music. In all, unlike the car, the Maestro lives up to its name

Alan Sircom, Hi-Fi World

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LOUDSPEAKERS

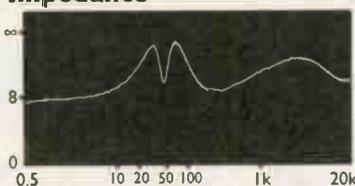
SPENDOR 2030

The 2030s are part of a new line of products from Spendor. The bass driver is a completely new development, using an elliptical cone. Their frequency response is respectably smooth, but has some trends that prevent it being flat. Upper midrange level drops into a shallow trough above 1kHz or so, which will lessen projection but ensure a smooth sound. Above this, treble rises to a peak at 8kHz which will provide good apparent insight and detail. Bass extension was good, and the gentle lift here will give them a solid footing.

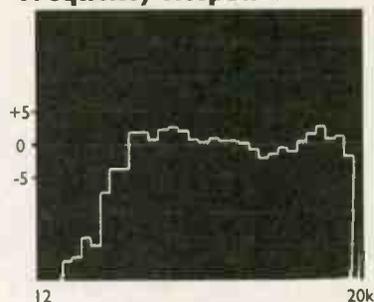
High current isn't going to be a necessity with the 2030s, since they exhibit a high overall impedance of 11.4Ω and a very smooth impedance curve. It's a bit of a pity

then that they are also insensitive, nearly as low as a Quad electrostatic at 83dB at 1m (2.83V pink noise signal). I'd recommend at least 50watts, to get enough voltage swing, for best results. DB

Impedance



Frequency Response



QLN QUBIC 122

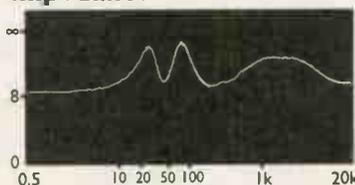
Testing with pink noise, straight away I heard the brightness of the QLNs; the Qubic 122s have rising treble above 5kHz or so. This, I suspect, will reveal itself more as extra detail and incision, rather than fierceness, which is normally caused by peaks lower down (1-3kHz). This was without the grilles on.

With the grilles, high treble level is attenuated significantly, losing around 3dB of level. But because the grille frame itself is made of 15mm thick MDF and surrounds the drivers quite closely, it causes strong reflections, producing a suck-out in the upper midrange. The same thick grille cloth on a thinner frame would seem ideal here, balancing high treble without disturbing

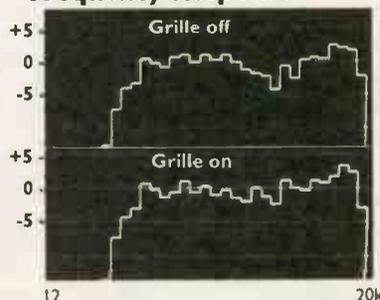
integration between midrange and treble.

With a very smooth impedance curve, overall impedance a high 12.4Ω and sensitivity around average at 86dB, the QLNs will be easy enough to drive properly. I'd recommend 30watts or more depending on the size of room. DB

Impedance



Frequency Response



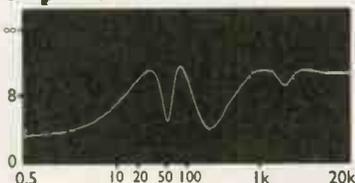
UKD CALLAS GOLD

The 'Gold' version of the Callas loudspeakers uses a version of the ScanSpeak D2905 tweeter, rather than the inverted Kevlar dome of the standard version. The Golds have a very well balanced response, with no strong dips or peaks to colour the sound. There is a shallow dip just before the tweeter comes in, but this should give the a smooth balance. Bass was surprisingly well extended for their size.

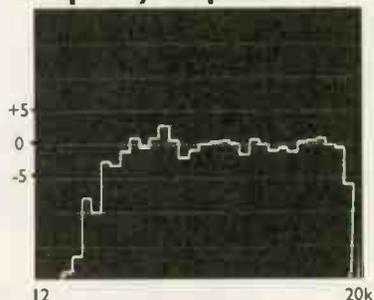
Looking at the impedance curve it can be seen that the Golds drop to around 4Ω in the bass. A sharp rise above 200Hz indicates they are reactive, but above 1kHz things level

out at a high 12Ω or so. Overall they averaged out at 8Ω and sensitivity was a mediocre 85dB. I'd recommend amplifiers capable of producing 40watts or more for best results. DB

Impedance



Frequency Response



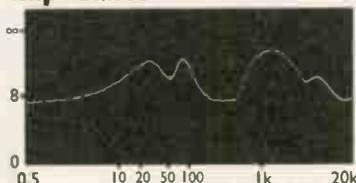
HARBETH HL COMPACT 7

The Compact 7s have an interestingly tailored response. It is very smooth, showing good engineering, but a peak in the treble will add detail and insight, balanced by an upper bass lift for punch and dynamics. I'd expect the HL Compact 7s to have a lively and engaging presentation as a result.

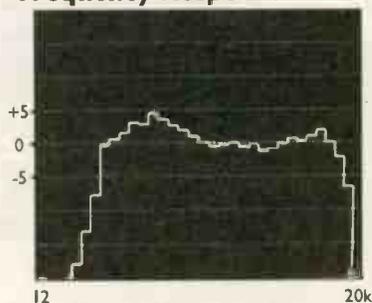
Their impedance curve is a relatively smooth one, staying above 6Ω across the whole of the audio band to give an overall figure of 10.5Ω. Sensitivity was quite high too; I measured 87dB at 1m using a nominal watt pink noise signal. This makes the HL Compact 7s suitable for a wide range of

amplifiers, including low-power valve designs. I'd recommend 20-50watts for best results. Oh yes, and keep the grilles on; that's how they work best. DB

Impedance



Frequency Response



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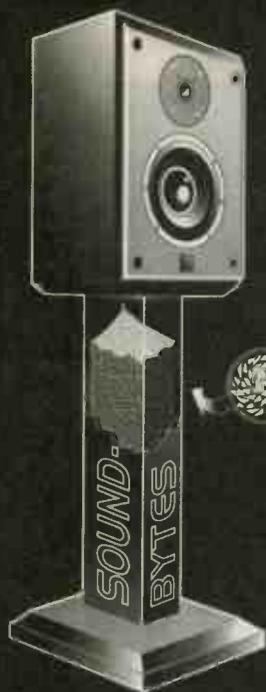
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CD PLAYERS

AMC CDM7

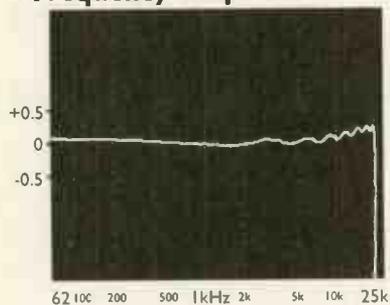
With the standard MD5401 bitstream module fitted, the CDM7's response plot showed quite strong treble lift, up +0.3dB at 20kHz. AMC say that the response varies according to the input impedance of the amplifier used. The input impedance of our FFT analyser is 1MΩ, but an amplifier's input impedance is typically 10-50kΩ. We simulated this, but it didn't affect results. There is a lift in the bass too, so I would expect the AMC to have powerful bass.

The plot taken at -30dB shows a mainly odd-order structure with just a little 2nd and 4th visible. Higher than average distortion at -60dB yields a lower than average dynamic range of 98dB, but elsewhere the AMC performed well, with good separation, low noise, and output (2.3V) just above standard.

TEST RESULTS - MD5401

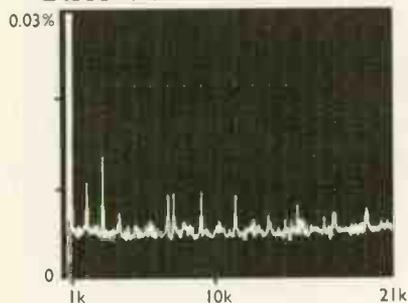
Frequency response	4Hz-20.8kHz	
Distortion (%)		
-6dB	0.005	0.006
-30dB	0.028	0.029
-60dB	1.44	1.00
-90dB	28.5	32.3
-90dB dithered	11.2	13.8
Separation (dB)	left	right
1kHz	96	107
20kHz	96	99
Noise		-95dB
with emphasis		-97dB
Dynamic range		98dB
Output		2.3V

Frequency Response



62 100 200 500 1kHz 2k 5k 10k 25k

Distortion



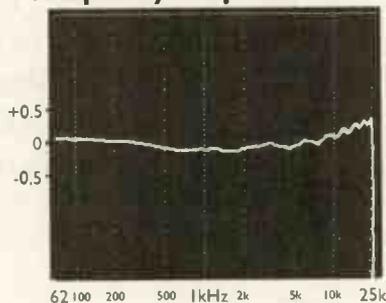
1k 10k 21k

converter of 103dB (EIAJ test). Again, noise was low and separation wide, but output was a little lower than the standard at 1.85V. DB

TEST RESULTS - MD5403

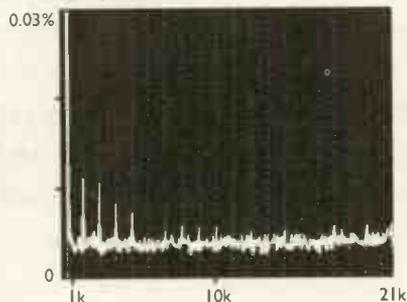
Frequency response	4Hz-20.8kHz	
Distortion (%)		
-6dB	0.004	0.005
-30dB	0.021	0.025
-60dB	0.66	0.75
-90dB	34.9	40.4
-90dB dithered	14.8	15.1
Separation (dB)	left	right
1kHz	102	92
20kHz	98	87
Noise		-101dB
with emphasis		-102dB
Dynamic range		103dB
Output		1.85V

Frequency Response



62 100 200 500 1kHz 2k 5k 10k 25k

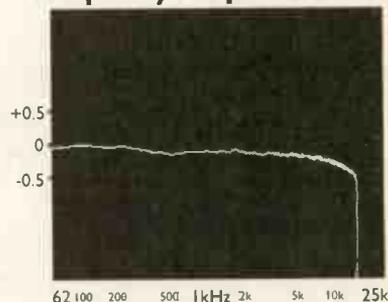
Distortion



1k 10k 21k

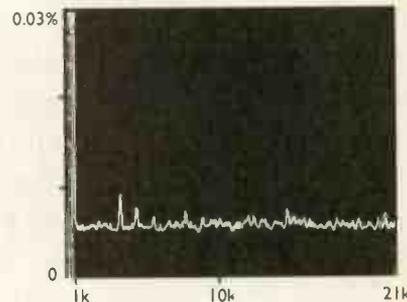
Noise	-110dB
with emphasis	-110dB
Dynamic range	104dB
Output	1.47V

Frequency Response



62 100 200 500 1kHz 2k 5k 10k 25k

Distortion



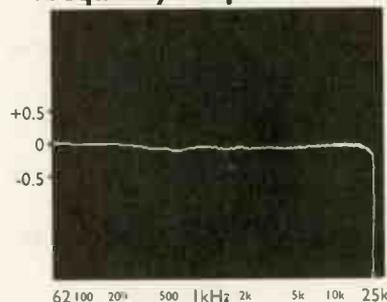
1k 10k 21k

TDA2000 DAC

Frequency response 4Hz-21kHz

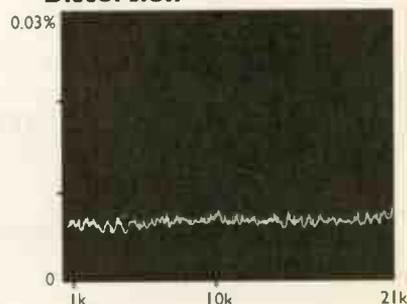
Distortion (%)		
-6dB	0.009	0.009
-30dB	0.03	0.025
-60dB	0.7	0.7
-90dB	18	17.1
-90dB dithered	6.3	5.9
Separation (dB)	left	right
1kHz	124	124
20kHz	106	107
Noise		-117dB
with emphasis		-124dB
Dynamic range		107.2dB
Output		2.3V

Frequency Response



62 100 200 500 1kHz 2k 5k 10k 25k

Distortion



1k 10k 21k

THORENS TCD2000 AND TDA2000

The frequency response of the TCD2000 CD player was a standard 4Hz to 21kHz at 1dB limits and distortion measurements were average, but quite acceptable. There was a lift at lower frequencies which may add a little weight to the sound, whilst the gentle roll off at the top will smooth treble. Output was lower than usual at 1.47V.

The response curve of the TDA2000 DAC starts to roll off at a higher frequency, resulting in a flatter trace than that of the CD player. Output was higher at 2.3V, there was better separation, a wider dynamic range and lower noise figures. HB

TCD2000 player

Frequency response	4Hz-21kHz	
Distortion (%)		
-6dB	0.012	0.012
-30dB	0.04	0.038
-60dB	0.69	0.69
-90dB	33	33
-90dB dithered	9.2	11.6
Separation (dB)	left	right
1kHz	92	92
20kHz	87	85

Next was the MD5403 'valve' converter. Interestingly, the treble and bass lift were notably stronger with the valve stage, treble now +0.5dB up. This alone will give the valve converter a different subjective performance.

More interesting still, the distortion figures were lower at all but the lowest signal level. At -30dB the distortion plot shows the harmonics falling towards higher frequencies, with an underlying even order structure.

Lower distortion at -60dB corresponds to a wider dynamic range for the valve

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8 January 1995

Hello Peter,

Recently you supplied me with Slate Audio speaker stands for my Harbeth Compact 7 monitors and a plinth, arm and cartridge for my Garrard 301 turntable. I can honestly say that this was money well spent !

I am a studio engineer and as I use my Harbeths for mixing sessions, it is absolutely critical that they reproduce what has been recorded without colouration, warts and all ! Other stands, despite manufacturers' claims, are not always neutral, not so Slate Audio. They give me definition from the loudspeaker I have not heard before. They also give me positive imaging....I can place an instrument or effect wherever I want in the stereo sound stage with confidence. Recently I worked with a group that used a 26 inch kick drum...notoriously difficult to record. But I was able to record and mix knowing that what I was hearing was true. The proof of the pudding was when the test pressing arrived at my home and all the 30 and 40 Hz were still present and not "rolled off" in the cut. Thank you Abbey Road cutting room.

The marble plinth for my 301 is a work of art. I am happy to say that it sounds as good as it looks. I had been listening solely to compact discs at home for the last five or six years, and when I first put up the Slate Audio 301 I must admit to having quite a shock. It took me a short while to get used to the sonics of vinyl. However, once adjusted, forever converted! Now that my cartridge is run in I am more than happy to ditch the CD player in favour of my old records. They have new life, dynamics and energy.
Thank you Peter Soper.

Kind regards,


KEVIN VAN GREEN

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MARANTZ CD-63mkII KI-Signature

On the test bench this Marantz machine measured well. Its frequency response was a typical 4Hz to 21kHz, but with a very gentle plateau lift around 5kHz which, although subtle, may well help push detail forwards.

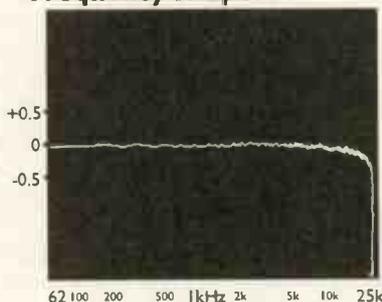
The distortion figures were around average at all levels. There was just the smallest amount of 2nd order poking through the noise floor, but even order distortion tends to be innocuous anyway.

Separation was very wide, being above 125dB at 1kHz and 20kHz. Dynamic range was good exceeding the 100dB barrier and noise was also very low indeed.

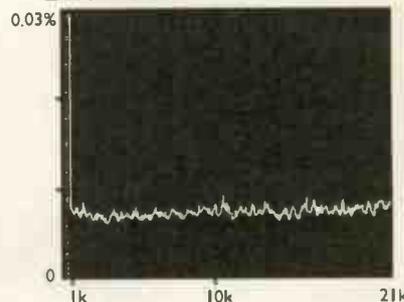
Compared to the 63SE reviewed in the May '95 issue most of these results are virtually identical with the exception of the distortion which appeared to be slightly worse. HB

Frequency response	4Hz-21kHz		Separation (dB)	left	right
Distortion (%)			1kHz	132	137
-6dB	0.006	0.006	20kHz	126	127
-30dB	0.027	0.028	Noise		-123dB
-60dB	0.8	0.7	with emphasis		-123dB
-90dB	47.6	41.9	Dynamic range		103dB
-90dB dithered	15	13	Output		2.3V

Frequency Response



Distortion



TUNER

NAD 412

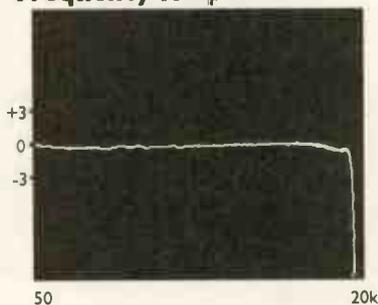
The NAD has a flat audio frequency response that extends to 15.8kHz (see analysis), about normal these days. In spite of good flatness, the MPX filter worked well, getting rid of unwanted products like 19kHz pilot and 38kHz sub-carrier.

Channel separation on stereo was a healthy 41dB, again normal enough. Audio distortion (stereo) was satisfactorily low all round, measuring just 0.13% and hiss low enough to be inaudible at -73dB. For this performance to be met, however, a minimum of 0.8mV (800µV) of aerial signal is needed, which is quite a low value, indicating good sensitivity. This was borne out, stereo sensitivity measuring just 25µV. Selectivity was high also, at 74dB (alternate channel). At 380mV audio output was low.

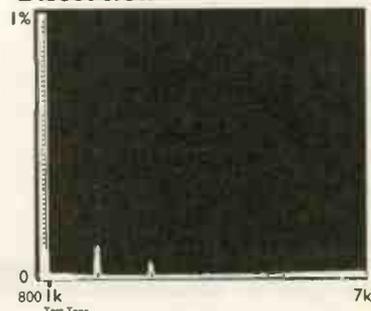
The 412 measured well in all areas. I'd expect a clean, balanced sound. NK

Frequency response	10Hz-15.8kHz	Selectivity (at 0.4MHz)	74dB
Stereo separation	41 dB	Sensitivity	3µV
Distortion (50% mod.)	0.13%	mono	25µV
Hiss (CCIR)	-73dB	stereo	none
Signal for minimum hiss	0.8mV	signal strength meter	

Frequency Response



Distortion



CASSETTE

PIONEER CT-S740S

The Pioneer is a great all rounder. The dual-capstan transport was incredibly speed stable, producing a meagre 0.025% wow - as low as you can get. There was minimal modulation noise and drift too.

The head might not provide spectacular overload levels, but it was very respectable all the same, giving +3.5dB at 300Hz and -3dB at 10kHz with metals, for example. Music peaks can be taken to around +5 or so on the record level meter, which puts 0VU high, at IEC 0dB flux level.

After auto-tuning, frequency response with blank tapes - ferrics, chromes and metals - was very flat from 20Hz to 20kHz.

Even better, at least in pure engineering terms, replay only response hit 20kHz flat.

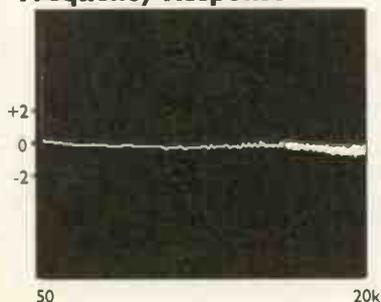
Super-stable high-treble output told me head finish, azimuth alignment and replay equalisation all reach the highest standard. With low intrinsic noise figures and Dolby S too, the CT-S740S is quite a machine. Very impressive in all respects. NK

REPLAY (prerecorded tapes)	
Frequency response (-2dB)	20Hz-20kHz
Speed accuracy	+0.8fast
Hiss (70uS, Dolby out)	-60dB

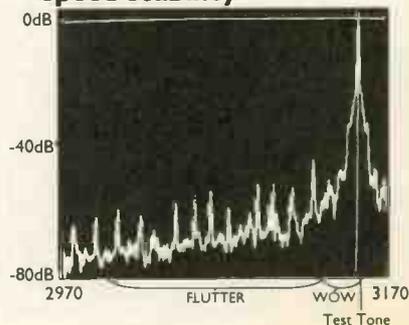
RECORDING (blank tapes)	
Frequency response (IEC Primary Refs.)	
ferric (IECI)	20Hz-20kHz
chrome (IECII)	20Hz-20kHz
metal (IECIV)	20Hz-20kHz

Separation (1kHz)	47dB
Distortion (315Hz)	1%
Hiss (70uS, Dolby out)	-56dB
Speed variations (DIN total)	0.025%
Flutter energy (3-3.13kHz)	-39dB
MOL/SAT (IEC Refs)	315/10k
IEC I (ferric)	+3dB/-9dB
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IECIV (metal)	+3.5dB/-3dB

Frequency Response



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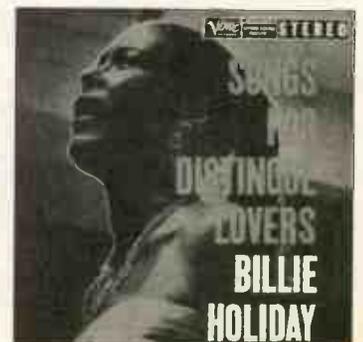
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NEWS LETTER NO.1A

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I too am in full agreement, having been experimenting with Sugdens wondrous Azla, Symmetra mono blocks and Audio

Note UK's OTO SE and Quest mono blocks, mainly fronted by Pro acs amazing Studio and Response range. The results I have heard either with Sugdens Digital range or Michells Gyrodek have been a revelation. To experience a truly amazing musical experience, arrange a demonstration either here or at home! I look forward to hearing from you

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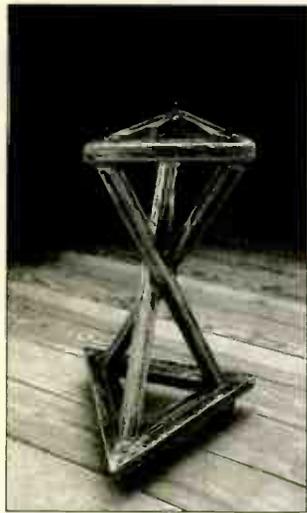
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	E77, E77 Mg	N/A	£36.00	R20 XE, DLM, 34/86, XLM III	£12.50
	P77, P77 Mg	N/A	£47.50	AN 5/11/30/60/8745	£8.00
Audio Technica	AT 95E	£21.00	£12.50	AN 2/50/70/77/4932/8743	
	AT 110 E	£26.50	£16.00	RS 33/35/38/84/85/890	£8.00
	AT DC9	£220.00	£160.00*	SP 8/9/12A	£25.00
Denon	DL 110	£70.00	£55.00*	BSR ST 14/15/16/17/19/21	£3.00
	DL 160	£90.00	£72.00*	Dual DN 145/155/165/185/EN 149 S	£12.50
	DL 304	£190.00	£160.00*	G800/820/850 (D110/D120/D130)	£10.00
Dynavector	DV 50X MK2	£135.00	£108.00*	G800 Sup E	£12.50
	DV 10X4 MK2	£160.00	£128.00*	Hilachi DS-ST 7/12/14/15/26/30/35/102	£8.00
	DV 23RS MK2	£319.00	£255.00*	DS-ST 5/16/23/24/25/55/103/114	£10.00
	DV 1702 MK2	£359.00	£288.00*	DT 33/35/36/45/55/60/65, DT Z1 S	£8.00
Goldring	ELECTRA	£24.00	£16.00	N 47/48/51/53/60/61/63/66/72	£8.00
	1006	£44.00	£29.00	N 36/37/43/45/56/59/62/67/69	£10.00
	1012 GX	£60.00	£40.00	EPS 23/24/25/30/33/51 CS/270 D	£8.00
	1022 GX	£76.00	£49.00	EPS 43/52/75/76/ STSD, P30/33 D	£8.00
	1042	£94.00	£61.00	P30 (E upgrade), EPS 205/207 E	£12.50
	ERONCA (LX/M)	£90.00	£60.00*	FF 15/MS/10/20 Ell, OM/P 20	£12.50
Ortofon	DM5E, DMP SE	£18.00	£16.00	GP 371/400/780/400 II/III	£8.00
	OM 78 (Stylus)	N/A	£26.00	GP 330/370/401/401 II/412 II	£10.00
	OM10, DMP10	£27.00	£20.00	PN 210/220/240/M65/2507/295T	£8.00
	OM20	£66.00	£36.00	SN 27/28/29/33/34/37/41/50/80/101	£8.00
	OM30	£81.00	£67.00	ST 80/100/150/G6/G13	£6.00
	DM N CLUB S	£34.00	£21.00	ST G 8/9/10, ST 28/29/35/37/40 D	£8.00
	510	£34.00	£22.00	STY 104/111/116/117/118/123/124	£8.00
	520	£59.00	£45.00	N 75-6/C/G, N 91 G, SS 35 C	£8.00
	530	£90.00	£67.00	N 44 E, N 70 EJ, N 75 ED/EJ T2	£10.00
	540	£117.00	£90.00	N 55 E, N 95 ED/EJ, N 97/105 ED	£12.50
	MC1 Turbo	£63.00	£49.00	VN 15E, VN 35E (V 15 IIIE)	£15.00
	MC3 Turbo	£117.00	£90.00	N 95/97 HE, VN 35 HE	£8.00
	MC 10 Super	£90.00	£67.00	ND 133/134/142/150/155/200 G	£20.00
	MC 15 Super	£85.00*	£67.00*	ND 115/143/148/153/220/250 G	£10.00
	MC 25 E	£160.00	£121.00*	N 53/45/60 DV N 62/292 N 71/250	£8.00
	MC 25 FL	£220.00	£165.00*		
	MC 10 Supreme	£260.00	£202.00*		
	MC 20 Supreme	£375.00	£280.00*		
	MC 30 Supreme	£465.00	£350.00*		
Shure	VN 45 MR	(V15 IV)	£90.00		
	V15 V MR	N/A	£130.00		
Slantone	500 AL Disco	£30.00	£18.00		
	680 ALX Disco	£46.00	£36.00		
	680 ELX Disco	£57.00	£41.00		
	Trackmaster	£99.00	£41.00		

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ELITE ROCK Turntable with Mission 774 arm, Linn K9 cartridge £350. Jecklin Floax 2 headphones £75. Marantz CD40 CD player £70. Quad valve FM mono tuner £60.
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UNITY AUDIO SIGNATURE 3 speakers. A unique blend of beautiful looks and sound. Rave stereophile reviews. Mint condition and boxed. List £2000, Will accept £1150 o.n.o.
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SPENDOR SPI speakers with stands £300. System Audio 1050 speakers (Danish) New, boxed £400.
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VINTAGE VALVE amplifiers for sale Leak, Quad etc. Phone for details. Rogers LS3-5a bi-wireable Walnut, boxed, as new £375. Wanted: Leak TL10, TL12.
Tel: 01548 821 360

KEF 104/2, Rosewood, boxed, £500. Musical Fidelity MA100 Class A monoblocs, immaculate, boxed £500. Siltech HF6 0.5m £50. Musical Fidelity Lifeline speaker cable, Monster interconnect.
Tel: Simon 0171 915 9208

WANTED: QUAD 66FM tuner. For Sale. Quad FM4 tuner £250 o.n.o.
Tel: 01883 653 165 (Surrey).

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SPENDOR SPI Speakers. Teak finish. Cabinets in fair condition. Sound quality excellent. £375. Spendor stands £75. Also 'Slate Audio' 12" high slate stands. (cost £345) £250
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KEF REF 107 MkII Rosewood bi-wired with Kube hoods and box's. Mint, cost new £4000, sell £2,200 o.n.o. Wanted: Kenwood LI000T tuner. Wanted: Tannoy Buckingham or Windsor.
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CLASS E DR10 Power-amp, retail £2300, black finish, mint condition, purchased (listening rooms) 23/05/95 on dem. Owner now upgrading £995. Delivered.
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ROGERS LS7T with stands, excellent condition, £160, JPVV AP3, excellent condition £120 with Atacama stands £40, or together £150.
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SONY MDS-302 Mini Disc player. Unwanted Christmas present, unused, boxed and still under warranty. 3 blank discs. £350.
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TEAC A3440HS Professional tape deck 10.5", 4 channel c/w DBX processor, mixer boxes, remote, mint, light domestic use only. Unused since service £550. Matching mint Teac 450 cassette deck £100.
Tel: 01202 823 818 (Bournemouth)

NAKAMICHI 700ZXE Auto cassette deck, Dolby/C. Improvement on Dragon. Mint, unmarked, occasional use, unused since B+W service, original packing, manual £800. Consider exchange for mint Ferrograph 722D.
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HAFLENER SE100 pre-amp, SE240 power amp, mint £500. Better than Audiolab. Swordsman Plus speakers and stands £150. Rotel RCD R965 CD £160. Boxed and instructions.
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LINN HELIX II Loudspeakers complete with KU Stone stand, boxed £200.
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MONITOR AUDIO Studio Fifty speakers Ebony Piano lacquer finish, six months old £3950 (£4950). Target B5 equipment rack £100 (£175)
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PINK TRIANGLE PTTOO, Black, separate power supply in matching plinth, SME 309 tonearm, ATOC9 cartridge, superb sound and condition £695. Kit loudspeakers, slim, floorstanders, Focal Kevlar bass/tweeters, custom made spiked stands, 4 x 5m DNM cable (bi-wired) very rigid, very heavy design in unfinished MDF. Excellent sound. Bargain at £275.
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KRELL KST 100 Mint boxed still guaranteed £1750. Gradient-Quad Xover balanced £275.
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RE-OFFERED Immaculate Tandberg Series 12 stereo twin track integrated tape recorder. Fully renovated. Cash offer please. Consider exchanges. WHY? Nakamichi DR-2? Vinyl equipment? 7" recording tapes for sale.
Tel: 01286 831 340 (North Wales).

NAIM 72, 82, HiCap, 250, CD1, IBL, SBL, ARO, NACA5; LP12, Kabers, Troika, Koetsu, Lingo, Helios, Orion, Fi-Rax, Equipment, Rack, Onix amplifier, Rega speakers. May split p/x swap.
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GARRARD 301/401, Quad 22, Leak, Troughline, Sterio 20, JBE, Slate, Turntable, Mana, Table, Various interconnects, cartridges, arms, Siesmic, Sink, Nakamichi Receiver. Split pre/power, full remote. May swap, p/x W.H.Y?
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WANTED Large Wharfedale corner units!
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STAX LAMBDA Signature headphones with SRM-1/Mk-2 Pro energiser. Boxed, complete with instructions and leads. Excellent condition. Cost £1300, sell for £590. Stax SR-3 headphones £40.
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Tel: Richard 01908 563737

NAIM 32.5 Pre-Amp, fitted K board phono. Good condition. £175
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LOWTHER CORNER Horns with refurbished speaker units. Highly sensitive. £550. Concordant Exhilarant line level pre-amp, wooden and/or metal case. Superb sound quality £400.
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WANTED: LINN K18. Either alone or with late model Ittok. Also wanted, Hi Fi World 12" record storage cubes. Milton Keynes area.
Tel: 01908 647798

BEARD BB100 Mk II, 50 watts/channel valve amp. Mint condition, boxed with instructions. Stunning sound and looks. £650. Wanted: Teac P500/D500, SD Acoustics Ribbons, original Roksan DPI.
Tel: Noel 01628 521885 or 0956 688506

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Tel: 01843 587732

MARK LEVINSON Madrigal HP interconnect cable, 7 metre stereo pair £450 (£995). Peter Sanhen SP 1.5 pre-amp, unusual but highly regarded design, very rare high resolution pre-amp with phono stage £850 ono (£2350 new)
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QUAD ESL Lovely pair £395. Spendor SPI mint £375. Grace G707 arm boxed £65. Kmal M9BA arm new £45. Leak Stereo 30 as new £75. Wanted: Naim; ARO, NAC72, Prefix, Armageddon. Linn: Ekos, Lingo. SME IV.
Tel: Peter 01203 713501 (Coventry)

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Please call with any aspect of upgrading Roksan products.

As always, Midland Audio Exchange (M.A.X.) have some limited SPECIAL OFFERS on certain ROKSAN Products:

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World Audio 5881	£450
Aura VA80 (new)	£179
Marantz p.m. 55 SE	£195
Project o.5 (OM10) new	3109
Project 1.2 (510) new	£139
Project 2.1 (MC1) new	£179
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MERIDIAN 200 Transport, 203 DAC, excellent condition, very little used, two years from new, bargain £595 for quick sale. Metre pair Chord First Interconnects £75
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QUAD 67 Mint condition, hardly used, brilliant sound. Dual 435 turntable + 510, mint both boxed and manual £650 the lot.
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QUAD 34 PRE-AMP and 303 power amp £250. B&W Acoustitone subwoofer £100. Wanted: Linn Karik CD player and Linn K400 speaker cable.
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NAIM 135s WANTED or 4 pack, also matched pair NAP 250s (follow on serial nos) Black SBLs, may consider system any age or condition. Cash waiting, can collect, meet half way, whatever.
Tel: Paul 01924 271043 (eves)

NAIM HICAP, 2 factory reconditioned old style mint, boxed Naim guarantee £385 each - 1 new style £440. New Ekos, boxed, highest offer secures, latest Sumiko SMO cartridge, 3 point mount for Ekos/ARO on demo.
Tel: 01924 271 043 (eves)

LEAK TL12+ (pair) mint £495; Quad II (pair) £295; Quad II (pair) rebuilt £395; Leak TL25+ £295; Quad FMII Tuner £40; Leak Troughline £95; Leak Point One Pre £45.
Tel: 01444 459196

REVOX A77 MINT £395. Revox A77 fair £150. Revox B77 mint £595. Garrard 401 SME arm/plinth £225. Roger Junior fair £95, Leak Stereo 30 plus and Stereofetic Tuner in Teak sleeve £125.
Tel: 01444 459196

LINN KAIRN phono £650. Linn Klout £1000, both excellent and as new.
Tel: 01248 712276

NAIM NAIT 2 amp, new design, mint condition, boxed £250. Arcam Alpha 5 CD player, remote, mint condition, boxed £295. Garrard AP76 turntable £35.
Tel: Brian 01904 490796

TOWNSHEND ROCK MkII Merlin power supply. Rega RB 300 Decca Gold cartridge £450 ono. Garrard 401 £140. Both decks in mint condition, unmarked.
Tel: 01707 372652 (Welwyn Garden City, Herts)

GARRARD 301 TURNTABLE, White with original manual. Both mint. £195. SME 3009 arm with standard & Decca head shells £35. Audiomaster mono valve power amplifier, v.g. condition, revalved. £100
Tel: 0161 283 1689

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Tel: 01354 56217 (eves)

MICHELL GYRODEC with Rega RB 300 £600. Perspex PSU £50. As new condition, 2 years old. Spondor SP2 speakers £125.
Tel: 0181 427 6936

SONUS FABER Minima Amator £850. Lecson HLI horns £185. IMF professional monitors £450. All good condition. Phone for full details, maybe swop for large Maggies.
Tel: 01993 883882 (Oxon)

AUDIOLAB 8000 C/P £450. Target HJ15 stands £65. Mission DAD Sharkwire - 5m x 2, 10 awg x 0.08 speaker. 6m phono Neutrik, 91 x 0.08 OFC. Ditton 121s £30, NAD items.
Tel: 0121 553 4777

LINN LP12 WALNUT, Ekos, Troika £1050; Sara 9s, stands £385. Perfect condition, very little use. Exchange or purchase LK100, Klout.
Tel: 01492 650053 (eves/w/ends)

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WANTED: LINN LK100 amplifiers Active Cards for Kabers. Must be in good condition. For Sale: Linn LK 280 power amps, in mint condition.
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Tel: 01793 850847 (Swindon)

LINN AXIS turntable, K9 cartridge £225. Nakamichi amplifier 2, 50W £225. Both owned from new. Excellent condition. Makers boxes, manuals. Will sell separately.
Tel: 01243 606053

LINN ISOBARIKS, Walnut, 1987 spec, beautiful condition c/w stands and panels £875. Rotel pre/power 870, MA R352 speakers black c/w stands, offers, all mint.
Tel: 01530 831574

THE VOYD TURNTABLE mint condition with Rega RB300, new Denon DL304 cartridge, cost £1850 sell £850. Denon DRM 44 cassette new heads and capstans, spent £100, accept £120.
Tel: 01598 760247

QUAD 606 POWER AMP, Avondale Audio modified, boxed, instructions, mod details. Denon DR-M12 cassette deck, light use, boxed, instructions. AudioQuest Ruby interconnects, Exposure speaker cable 4 x 5m. Offers
Tel: Colin 01734 610485 (Reading)

LINN SARA, Black, spiked stands, boxed, can demo vgc £200 ovno.
Tel: 01342 324306

SPENDOR SP2/2 Loudspeakers, black, mint condition, original packaging £375. Quad 44/405 pre/power amp £250. Carriage paid.
Tel: 01232 843663

LINN ISOBARICS DMS, recent dealer service £550. Naim 250 old style, good vintage £550. Sony Walkman Pro with dedicated Naim power supply £225. Snaps £50. Would consider PX late Mk2 Kans Naim 160.
Tel: 01422 372063 answerphone (Halifax)

FOR SALE: Sony Walkman Pro, excellent condition £150. Wanted: Naim 160 and CR5E
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Tel: 01323 410816 (after 6pm)

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Gryphon S100 power amp	mint s/h	£3500	Wharfedale Harewood	mint s/h	£395
Nestoronic Alpha 1 150w monoblocks	mint s/h	£1495	Gamma Acoustics Epoch Five	x dem	£90a
Electro Companiet AW100	mint s/h	£1295	Meridian M1	mint s/h	£695
Proceed amp 2	mint s/h	£1295	Soundlab Pristine III	mint s/h	£3995
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Jadis JA500 monoblocks	mint s/h	£8995	Kel 103.4	mint s/h	£695
Jadis JA80 monoblocks	mints s/h	£4995	Quad ESL 57	mint s/h	£395
Meridian 605 monoblocks	mint s/h	£1395	Alon 0.5	x dem	£750
Copeland CTA 501	mint s/h	£895	Magnaplanner SMGA	mint s/h	£350
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Adcom GFA 535	mint s/h	£195	Gallo Acoustics Reference system	mint s/h	£2750
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Exposure VIII	mint s/h	£250	Castle Durham	mint s/h	£195
Krell KSA 250	mint s/h	£3500	meridian A500	mint s/h	£495
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MISSION 770 FREEDOM speakers, black, integral stands, excellent sound and condition £175. Sansui 222 Mk2 turntable £25. Tel: 01977 684343 eves (Yorks)

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AUDIOLAB 8000A, 5 months old (receipt) perfect £380. Audio Alchemy DAC-in-the-box, 11 months old £135. Tel: 0116 234 5019 day or 01530 831357 eves (Leicestershire)

SONY TA-N55ES Power amp, 110W per channel stereo (300w mono-bridged). Exc condition with instructions £215. Entre-I m/coil cartridge £35. Tel: 01908 260112 eves

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